Trans Adriatic Pipeline

Consolidated ESMS Project Standards

TABLE OF CONTENTS

Tables

Figures

Appendices

Glossary of Terms

BOD_5	Biological oxygen demand: the amount of oxygen consumed in five days by biological processes breaking down organic matter
Coalescence separator	A tool used to separate hydrocarbons from water
Company	Trans Adriatic Pipeline AG
Contractor	Construction EPC Contractors for Greece, Albania and Italy
Cultural heritage impact	Change to cultural heritage (in this context, 'cultural heritage' refers to any tangible (e.g. objects, artefacts, structures, spaces) or intangible element that is of value or importance to people's culture, history and/or identity) that has occurred as a result of Project activities. Impacts may be considered positive or negative.
Environmental impact	Change to the environment (in this context, the 'environment' refers to any aspect of the natural of semi-natural physical environment (air, water, soil etc.)) that has occurred as a result of Project activities. An impact may be considered positive or negative
Grey water	All waste water generated in accommodation or office buildings from streams without faecal contamination, e.g. from sinks, showers
Hydrostatic test water	Water used for hydrostatic testing of the pipeline – process during which the pipeline is filled and pressurised with water to test its integrity
Member State (MS)	The European Union (EU) comprises 28-member states. Each member state is party to the founding treaties of the union and thereby subject to the privileges and obligations of membership.
MPN	Most Probable Number: A standard unit of measurement often used for micro-organisms, derived from successive dilution of a sample to estimate the level of items. In the context of the Project, it is used to estimate numbers of coliforms. The term 'most probable' derives from the fact that it is an estimated number.
Pipeline	Proposed pipeline scheme (TAP), including related facilities such as access roads
Project	Pipeline scheme that will bring natural gas from the Caspian Region to Western and South-Eastern Europe (TAP)
Project Standards	The standards for environmental performance required by TAP AG for the TAP Project
Sanitary waste water	Waste water consisting of black and/or grey water
Soakaway	A pit, typically filled with hardcore, into which waste water is piped so that it drains slowly out into the surrounding soil.
Socio-economic impact	Change to the existing socio-economic environment (in this context, the 'socio-economic environment' refers to any combination of existing social and economic factors) that has occurred as a result of Project activities. Social factors may include aspects such as demographics, health and wellbeing, and may refer to individuals,

groups or wider communities of people. Economic factors may include aspects such as employment, finances and livelihoods. An impact may be considered positive or negative.

Additional terminology specific to noise is defined in Section 4.1.3.

List of Acronyms and Abbreviations

Al	Aluminium
ALARP	As Low As Reasonably Practicable
As	Arsenic
bcm/yr	Billion cubic metres per year
BOD	Biological oxygen demand
$CaCO_3$	Calcium carbonate
CCP	EPC Contractor Control Plan
Cd	Cadmium
Cfu	Colony forming unit
Cl	Chlorine
CO	Carbon monoxide
CO_2	Carbon dioxide
COD	Chemical oxygen demand
Cr	Chromium
DDT	Dichlorodiphenyltrichloroethane
EASEE	European Association for the Streamlining of Energy Exchange
EBRD	European Bank for Reconstruction and Development
Effluent	Discharged liquid waste or sewage
EHS	Environment, health and safety
EIA	Environmental Impact Assessment
EQS	Environmental Quality Standards
ESCH	Environment, Social and Cultural Heritage
ESIA	Environmental and Social Impact Assessment
ESIP	Environmental and Social Implementation Plan
ESMD	Environmental and Social Management Document

ESMS	Environmental and Social Management System
EU	European Union
EQS	Environmental quality standards
HDD	Horizontal directional drilling
Hg	Mercury
HOCl	Hypochlorous acid
IFC	International Finance Corporation
JMD	Joint Ministerial Decision
kW	Kilowatt
MD	Ministerial Decision
Na	Sodium
MHWS	Mean high water springs
MWth	Megawatt thermal
ng/l	Nanograms per litre
NH3	Ammonia
NH4	Ammonium
Ni	Nickel
NNG	Night Noise Guidelines
NO_2	Nitrogen dioxide
NO_3	Nitrate
NO_X	Nitrogen oxides
O_2	Oxygen
O_3	Ozone
P	Phosphorus
PAH	Polycyclic aromatic hydrocarbons
Pb	Lead
PD	Presidential Decree
p.e.	Population equivalent

PO_4	Phosphate
P_2O_2	Diphosphorus dioxide
P_2O_5	Phosphorus pentoxide
$PM_{2.5}$	Particulate matter less than 2.5 micrometres in diameter
PM_{10}	Particulate matter less than 10 micrometres in diameter
PR	Performance Requirement
PRTR	Pollutant Release and Transfer Register
PS	Performance Standard
pW	Picowatt
RTM	Remedial Targets Methodology
SES	Specific environmental studies
SO_2	Sulphur dioxide
SO_4	Sulphate
SO_x	Sulphur oxides
SS	Suspended sediments
TAP	Trans Adriatic Pipeline
TOC	Total organic carbon
TSS	Total suspended solids
UNECE	United Nations Economic Commission for Europe
WFD	Water Framework Directive
WHO	World Health Organization

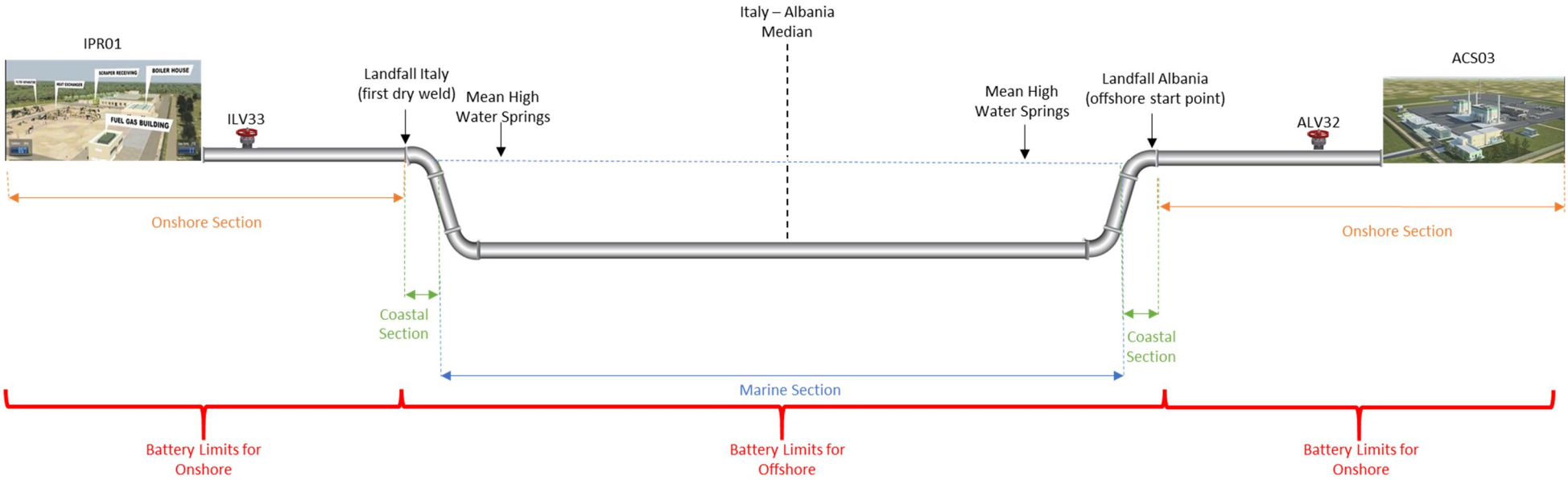
1.1 Defining onshore and offshore areas

Onshore section is defined as all areas located from the Landfall point in Italy (i.e. the location of the first dry weld) and the pipeline receiving terminal (PRT), including the PRT itself. In Albania, onshore section is defined as all areas located on dry land starting from the Landfall.

Coastal areas are defined as all areas located between the Landfall point and the mean high-water springs (MHWS). Marine areas are defined as all areas located between MHWS and the Italy – Albania median line. Offshore areas include both the marine and coastal areas, and therefore include all areas located between the two Landfall points in Italy and Albania.

Further information on the Battery Limit Point Italy location, see the TAP Battery Limits Onshore – Offshore Sections document (CPL00-ENT-100-F-DFO-0002).

Figure 2-1 Marine, coastal and onshore limits



2 Introduction

2.1 Background

The Trans Adriatic Pipeline is a natural gas pipeline project. The pipeline will start in Greece, cross Albania and the Adriatic Sea and come ashore in southern Italy, allowing gas to flow directly from the Caspian region to European markets. The pipeline will initially have a capacity to transport 10 billion cubic metres of gas per year (bcm/yr). In the second stage, this capacity can be doubled to 20 bcm/yr. The timeframe for the potential capacity expansion beyond 10 bcm/yr (i.e. to 20 bcm/yr) is not yet defined and will depend on natural gas market conditions.

In Greece, the Project has two development phases:

1. the main construction phase of the Project (for the initial transportation capacity of 10 bcm/yr), including construction of the pipeline system, compressor station GCS00 (incorporating 2 operating and 1 spare compressors) and 23 block valve stations (BVSs), is anticipated to take approximately 3.5 years. This will be followed by a commissioning phase and the start of transportation operations with 10 bcm/yr capacity, currently anticipated to occur in 2020;

2. at a later stage, an expansion from 10 bcm/yr to 20 bcm/yr capacity will comprise the extension of GCS00 by the installation of three additional compressors, and the construction of an additional compressor station (GCS01) (4 operating and 1 spare compressors).

In Albania, the Project has two development phases:

1. construction of the offshore and onshore pipeline system including compressor station ACS03 (2 + 1 compressor units) and metering station ACS02 will take place from March 2015 until March 2019 followed by a commissioning phase and the start of transportation operations in January 2020 with 10 BCM capacity;

2. at a later stage, an expansion to 20 BCM capacity will comprise the extension of ACS02 to a compressor station (3 + 1 compressor units) and the increase of transportation capacity at ACS03 (in total 4 + 1 compressor units).

In Italy, the main construction phase of the Project (for the initial transportation capacity of 10 bcm/yr) consists of construction of an onshore and offshore pipeline, a pipeline receiving terminal (PRT), a block valve station, a micro-tunnel and associated infrastructure (e.g. access roads). The dates for the commencement of micro-tunnel excavation and marine components

have not been set yet. It will take approximately three years, with construction in coastal areas suspended during the peak tourist season (i.e. the summer period). The first supply of gas is planned to take place in early 2020.

To enhance consistency and uniformity across the Project, the standards for environmental performance during the construction and operation of the pipeline will be assessed against national legislation, the European Union (EU) framework and international /Lender standards, whichever is more stringent. This approach has been taken in all of the three countries that the Project operates within. Although Albania is not currently a part of the EU, as good practice, the TAP will use the EU framework as a benchmark in Albania.

The Project has also committed to adhere to the following standards:

- EBRD Performance Requirements (PRs 1 through 6 and 8 through 10)[1] as per EBRD's Environmental and Social Policy (2014)
- EIB Environmental and Social Practices and Standards (2013)
- IFC Performance Standards (PS 1 through 6 and 8)[2] (January 2012)
- IFC EHS General Guidelines (2007)
- IFC Industry-specific Guidelines
    - the IFC EHS Guidelines for Onshore Oil and Gas Development (2007)
    - the IFC EHS Guidelines for Offshore Oil and Gas Development (2015)
- The Equator Principles III (2013)
- OECD Common Approaches (2012).

TAP also expects EPC Contractor and any of its sub-contractors to comply with these commitments.

2.2 Objectives

This document sets out the standards for environmental performance required by the TAP for the pipeline construction and subsequent operational phase of the TAP (i.e. Environmental Project Standards) across all three host countries.

[1] EBRD PR 7 is a performance requirement in relation to Indigenous Peoples and is not applicable to TAP Project.

[2] IFC PS 7 is a performance standard in relation to Indigenous Peoples and is not applicable to TAP Project.

The document provides an overview of relevant national, European and international environmental legislation and performance standards. Legislative and performance standards applicable to the construction and operational activities are then set out in detail in relation to noise, air, surface waters, groundwater and soils. Environmental standards for both the construction and operational phases of the Project are described as necessary within each topic.

2.3 Integration with the TAP Environmental, Social and Cultural Heritage (ESCH) Management System

The TAP is managing the environmental, socio-economic and cultural heritage requirements for the construction phase of the Project through the development of an ESCH Management System. The TAP ESCH MS includes a set of TAP's ESCH Standards and Specifications, that include EPC Contractor Control Plans (CCPs) for each host country, and a set of TAP's Environmental and Social Management Documents (ESMDs) listed in Tables 2 and 3 of the TAP Environmental and Social Management Plan (CAL00-PMT-601-Y-TTM-0006). Additionally, as part of the compliance oversight verification E&S Route Impact Registers were developed to assist TAP & EPC Contractor in the identification of the environmental and social commitments and to serve as Oversight planning tools for the TAP field staff in identifying known upcoming ESCH risks that will require focussed monitoring (see Section 4.4 of the E&S Compliance Assurance Plan (CAL00-PMT-601-Y-TTM-0005)). This Consolidated Environmental Project Standards document incorporates environmental standards and commitments referenced in the TAP ESCH MS. In implementing the TAP ESCH MS, the Project is aiming to reduce its environmental, social and cultural heritage impacts to as low as reasonably practicable (ALARP[3]).

In addition, EPC Contractor will prepare its own EPC Contractor ESMS based on the requirements of TAP. This will contain Environmental and Social Implementation Plans (ESIPs) that correspond to the relevant topic-specific CCPs. These ESIPs will identify the processes and procedures that EPC Contractor shall develop and implement to ensure compliance with all of the CCP requirements.

[3] For a risk (or impact) to be ALARP, it must be possible to demonstrate that the cost involved in reducing the risk/impact further would be grossly disproportionate to the benefit gained. The ALARP principle arises from the fact that infinite time, effort and money could be spent on the attempt of reducing a risk/impact to zero. It should not be understood as simply a quantitative measure of benefit against detriment. It is more a best common practice of judgement of the balance of risk and societal benefit.

3 Framework for the assessment of Project Standards

3.1 Introduction

TAP is ultimately responsible for ensuring that the Project complies with TAP Policy, the Legal Framework and TAP ESCH Management System (detailed within Section 2.3 of this document). EPC Contractors are responsible for compliance with TAP ESCH Standards and Specifications throughout all their activities. TAP management controls and oversight and assurance processes of EPC Contractor compliance to project standards are summarised within Section 5 of the ESMP (CAL00-PMT-601-Y-TTM-0006) and are detailed within TAP E&S Compliance Assurance Plan (CAL00-PMT-601-Y-TTM-0005).

This chapter summarises the legal framework in which the Project will be conducted and describes the international good practice guidelines to which the Project will adhere.

Although complete, this document is not exhaustive and does not discharge EPC Contractor from the liability to identify, consider, and where necessary implement all applicable legal requirements or changes in requirements during construction.

This document was based on the information available in July 2017. However, both Project and legal requirements do change and the information provided must be reviewed and confirmed as current and accurate by EPC Contractor before it is used.

This document will be periodically reviewed and updated as part of the ESMP cycle described within Section 1.1 and Section 6.0 of the ESMP (CAL00-PMT-601-Y-TTM-0006).

3.2 National legislation and standards

The independent review of relevant host country legislation was conducted based on information provided in the Project ESIAs and relevant amendments and other related documents.

3.2.1 Legal Framework - Greece

Greece is a member of the EU and, therefore, EU legislation is transposed in its legal framework. Greek environmental legislation is composed of laws and regulatory acts, such as Presidential Decrees (PDs), Ministerial Decisions (MDs) and Joint Ministerial Decisions (JMDs). The Ministry of Environment and Energy is responsible for the regulation of environmental legislation in Greece.

A list of relevant Greek environmental and social legislation is provided in Annex 2 of the ESIA Greece. Section 3 of the ESIA Greece summarises the key legislation concerning Environmental Impact Assessments (EIAs) and the ratification of the Inter-Governmental Agreement between the Republic of Albania, the Hellenic Republic and the Italian Republic. Section 4 of the ESIA Amendment 1 Greece identifies changes to the legal framework following the submission of the ESIA Greece. These documents can be found on the TAP website (http://www.trans-adriatic-pipeline.com). However, it should be noted that these lists may not be complete and it is the duty of EPC Contractor to be fully compliant with national legislation in force.

3.2.2 Legal Framework - Albania

3.2.2.1 Onshore legal framework - Albania

Although not part of the EU, Albania applied for membership in 2009, and therefore its legal framework is largely and progressively being harmonised with EU legislation.

The Albanian legal framework for environmental issues is based on the Constitution of the Republic of Albania and consists of laws and regulatory acts, such as Decisions of the Council of Ministers (DCM), ministerial acts, regulations, guidelines and standards.

The regulation of environmental legislation in Albania is the responsibility of the Ministry of Environment, Forestry and Water Administration (MoEFWA) and the National Environmental Agency.

A list of relevant Albanian environmental and social legislation is provided in Annex 2 of the Environmental and Social Impact Assessment (ESIA) for Albania. Section 3 of the ESIA also presents a summary of the key regulations and standards applicable to the Project in Albania. These documents can be found on the TAP website (http://www.trans-adriatic-pipeline.com), however, it should be noted that these lists may not be complete and it is the duty of EPC Contractor to be fully compliant with national legislation in force.

The ESIA for TAP Albania was approved by MoEFWA in 2013 and the Environmental Permit was published by the National Licensing Centre.

3.2.2.2 Offshore-specific legal framework - Albania

The Albanian legislative framework requires a permit for the construction and operation of the offshore section of the pipeline.

Albania approved a Coastal Zone Management Plan in 2004. The World Bank is working to update the Coastal Zone Management Plan into an Integrated Coastal Zone Management and

Clean-up Program, which aims to protect coastal and maritime natural resources by establishing an institutional and policy framework and by strengthening regulatory procedures.

The TAP will apply industry good practice technology and applicable EU and international standards on environmental pollution prevention in the maritime area (see Sections 3.3, 3.4 and 3.5).

3.2.3 Legal framework – Italy

Italy is a member of the European Union (EU) and, therefore, EU legislation is transposed in its legal framework. Italian environmental legislation is composed of laws and legislative decrees that are regulated by the Ministero dell'Ambiente e della Tutela del Territorio e del Mare[4] (MATTM) and the Istituto Superiore per la Protezione e la Ricerca Ambientale[5] (ISPRA).

Section 3 of the ESIA Italy summarises the legislative framework, including key regulations and standards applicable to the Project in Italy. Further information on legislation regarding labour, health and safety, and the energy and gas sector are included in Annexes 3 and 4 of the ESIA Italy respectively. These documents can be found on the TAP website (http://www.trans-adriatic-pipeline.com). However, it should be noted that these lists may not be complete and it is the duty of EPC Contractor to be fully compliant with national legislation in force.

3.2.3.1 Offshore-specific legal framework - Italy

The Italian legislative framework requires a permit for the construction and operation of the offshore section of the pipeline.

The Apulia Regional Coastal Plan (PRC) is the instrument that governs the use of the Maritime State Property areas in Italy, with the purpose of ensuring a balance between the protection of the environment and landscape of the Apulia coast and the free use and development of tourist and recreational activities. According to the criticality (erosion risk) and sensitivity (environmental risk) of the shore within the Project area, as interpreted by the PRC, there are no specific restrictions on Project realisation.

[4] Ministry of the Environment and Protection of Land and Sea

[5] Institute for Environmental Protection and Research

In addition to Italian national legislation and standards, the TAP will apply industry good practice technology and applicable EU and international lender standards on environmental pollution prevention in the maritime area (see Sections 3.3, 3.4, 3.5).

3.2.3.2 Environmental Monitoring Plan *Piano di monitoraggio ambientale* (PMA)

An Italy Environmental Monitoring Plan (PMA) (IAL00-ERM-643-Y-TAE-1028) has been developed by the TAP in order to outline monitoring requirements for the Project. The PMA has been submitted to the relevant authorities for approval.

Any relevant environmental limits or standards included in the PMA (against which compliance monitoring is required) have been considered when developing the Project Standards.

3.3 European Union (EU) standards

Table 3-1 summarises the environmental European Directives applicable to the Project (guided by the Project ESIAs for each of the host countries). Relevant EU legislation is discussed in more detail in relation to noise, air quality, surface waters, soils and groundwater in the subsequent chapters.

Project standards on waste management and biodiversity are detailed within TAP Waste Management Plan (CAL00-PMT-601-Y-TTM-0001) and Ecological Management CCPs developed individually for each TAP host country.

Table 3-1 Key environmental European Directives

Directive number	Directive name
2015/2193/EU	European Parliament and the Council Directive on the limitation of emissions of certain pollutants into the air from medium combustion plants
2010/75/EU	European Parliament and the Council Directive on industrial emissions (integrated pollution prevention and control)
2008/1/EC	European Parliament and the Council Directive concerning integrated pollution prevention and control (the IPPC Directive)
2009/147/EC	European Parliament and the Council Directive on the conservation of wild birds

Directive number	Directive name
2008/105/EC	European Parliament and the Council Directive on environmental quality standards in the field of water policy
2008/98/EC	European Parliament and the Council Directive on waste (Waste Framework Directive)
2008/50/EC	European Parliament and the Council Directive on ambient air quality and cleaner air for Europe
2006/118/EC	European Parliament and the Council Directive on the protection of groundwater against pollution and deterioration
2004/107/EC	European Parliament and the Council Directive relating to arsenic, cadmium, mercury, nickel and polycyclic aromatic hydrocarbons in ambient air
2003/87/EC	European Parliament and the Council Directive establishing a scheme for greenhouse gas emission allowance trading within the Community and amending Council Directive 96/61/EC
2002/49/EC	European Parliament and Council Directive relating to the assessment and management of environmental noise
2001/80/EC	European Parliament and the Council Directive on the limitation of emissions of certain pollutants into the air from large combustion plants
2000/60/EC	European Parliament and the Council Directive establishing a framework for Community action in the field of water policy (Water Framework Directive)
2000/14/EC	European Parliament and the Council Directive on the approximation of the laws of the Member States relating to the noise emission in the environment by equipment for use outdoors
92/43/EEC	Council Directive on the Conservation of natural habitats and of wild fauna and flora

Directive number	Directive name
91/271/EEC	European Parliament and the Council Directive concerning Urban Wastewater Treatment
2003/10/ EC	European Parliament and the Council Directive on the minimum health requirements regarding the exposure of workers to the risks arising from physical agents (noise)
89/391	European Parliament and Council Directive on the introduction of measures to encourage improvements in the safety and health of workers at work (OSH Framework Directive)
2013/30/EU	European Parliament and Council Directive on Safety of Offshore Oil and Gas Operations
2008/56/EC	European Parliament and Council Directive on Marine Framework Strategy

3.4 International lender standards

3.4.1 EBRD Performance Requirements

In its commitment to the environment and society, the TAP has adopted EU legislation and the EBRD Performance Requirements (PRs) as the main international lender standards for compliance during the execution of Project activities. The EBRD PRs refer to other international good practice guidelines, such as those of the IFC and World Bank. The TAP also demands that EPC Contractor and any of its sub-contractors comply with these commitments.

The Project will address, where appropriate, the following policies:

- EBRD Environmental and Social Policy 2014 (including EBRD PRs 1 – 6 and 8 – 10)
- EBRD Public Information Policy 2014.

The EBRD PRs can be found at:

(http://www.ebrd.com/who-we-are/our-values/environmental-and-social-policy/performance-requirements.html%20)

3.4.2 International Finance Corporation (IFC) standards

The IFC is an international financial institution that offers investment, project funding, advisory, and asset management services to encourage private sector development in developing countries. The IFC is a member of the World Bank Group.

The IFC's Sustainability Framework articulates the Corporation's strategic commitment to sustainable development and is an integral part of the IFC's approach to risk management. The framework also comprises the IFC's Policy and Performance Standards (PSs) on Environmental and Social Sustainability and the IFC's Access to Information Policy.

The following IFC standards and guidelines are considered key IFC documents in derivation of Project standards.

3.4.2.1 IFC Performance Standards (PSs) on Environmental and Social Sustainability 2012 (including IFC PSs 1 – 6 and 8)

The IFC Performance Standards on Environmental and Social Sustainability provide benchmark on how to identify risks and impacts and have been adopted by TAP as standards for compliance during the execution of Project activities. They are designed to help avoid, mitigate and manage risks and impacts as a way of doing business in a sustainable way, including stakeholder engagement and disclosure obligations in relation to Project-level activities. The Performance Standards particularly relevant to the Project are listed below (PS 7 relates to indigenous people and is not considered relevant to the Project and is not discussed further):

- Performance Standard 1: Assessment and Management of Environmental and Social Risks and Impacts
- Performance Standard 2: Labour and Working Conditions
- Performance Standard 3: Resource Efficiency and Pollution Prevention
- Performance Standard 4: Community Health, Safety and Security
- Performance Standard 5: Land Acquisition and Involuntary Resettlement
- Performance Standard 6: Biodiversity Conservation and Sustainable Management of Living Natural Resources
- Performance Standard 8: Cultural Heritage

As the scope of this document is limited to environmental standards (i.e. not social standards) only the requirements of PS 1 and PS 3 are described further in relevant sections below. Project social standards are detailed with Stakeholder Engagement Strategy (TAP-HSE-ST-0009) and other ESMDs such as Industrial Relations Management Plant (CAL00-PMT-000-B-TTM-0004), Grievance Management Framework (CPL00-PMT-601-Y-TVO-0001), and Stakeholder Engagement Plans developed individually for each TAP host country.

The Performance Standards can be found at:

(http://www.ifc.org/wps/wcm/connect/topics_ext_content/ifc_external_corporate_site/ifc+sustainability/our+approach/risk+management/performance+standards/environmental+and+social+performance+standards+and+guidance+notes)

3.4.2.2 IFC Environmental, Health and Safety (EHS) General Guidelines (2007) and IFC Industry-specific Guidelines

The Environmental, Health and Safety (EHS) General Guidelines are technical reference documents with general and industry-specific examples of good international industry practice. When one or more members of the World Bank Group are involved in a project, the EHS Guidelines are applied as required by their respective policies and standards. Industry-specific EHS Guidelines are designed to be used together with the General EHS Guidelines document. The sector specific Guidelines applicable to the Project as revised are:

- the IFC EHS Guidelines for Onshore Oil and Gas Development (2007)
- the IFC EHS Guidelines for Offshore Oil and Gas Development (2015)
- the IFC EHS Guidelines for Thermal Power Plants (2008)

The EHS guidelines can be found at:

(http://www.ifc.org/wps/wcm/connect/topics_ext_content/ifc_external_corporate_site/ifc+sustainability/our+approach/risk+management/ehsguidelines)

3.4.3 World Health Organization (WHO) standards

The WHO is the directing and coordinating authority for health within the United Nations. It is responsible for providing leadership on global health matters, setting norms and standards, providing technical support to countries, and monitoring and assessing health trends. Relevant WHO guidelines in relation to noise, air quality, surface waters and groundwater are detailed in the subsequent chapters.

3.4.4 EIB Environmental and Social Principles and Standards

The EIB Environmental and Social Principles and Standards set the policy for the protection of the environment and human well-being. An EIB Environmental and Social Handbook provides an operational translation of those EIB policies, principles and standards. Volume I of the Handbook provides a description of the standards to achieve, grouped across 10 thematic areas covering the full scope of environmental, climate and social impacts. Volume II describes how the services are expected to carry out that important work within the procedures and processes supporting EIB's activities.

As part of the framework for assessment of project standards, TAP has undertaken a review of the EIB E&S principles and standards along with those of other lending institutions. Due to alignment of the EIB principles with those of other international standards considered and due to absence of specific performance thresholds or limits in relation to physical impacts (noise and vibration), atmospheric emissions and discharges to surface and groundwaters these standards were referenced but not used in derivation of numeric project standards.

3.5 International conventions

Table 3-2 summarises the main environmental conventions and agreements that the host countries have signed and/or ratified. Additional relevant international conventions are included in **Error! Reference source not found.**-3. Note that this provides an overview only; it is the duty of EPC Contractor to be fully compliant with applicable international conventions and agreements as well as national legislation in force.

Table 3-2 Key international environmental conventions and agreements signed/ratified by host countries

Convention name	*Greece*	*Albania*	*Italy*
Pollutant Release and Transfer Register (PRTR) Protocol, 2009	2003 (signed)	2009 (ratified)	2003 (signed)
European Landscape Convention, 2000	2010 (ratified)	Not party	2006 (ratified)
Espoo Convention on Environmental Impact Assessment in a Transboundary Context together with amendment and Protocols, 1991	1998 (ratified)	2006 (ratified)	1995 (ratified)
Aarhus Convention - Convention on Access to Information, Public Participation in Decision	2006 (ratified)	2001 (ratified)	2001 (ratified)

Convention name	*Greece*	*Albania*	*Italy*
Making and Access to Justice in Environmental Matters, 1998			
Kyoto Protocol to the United Nations Framework Convention on Climate Change, 1997	2002 (ratified)	2005 (ratified)	2002 (ratified)
Convention on Biological Diversity,1992	1994 (ratified)	1994 (ratified)	1994 (ratified)
UN Framework Convention on Climate Change, 1992	1994 (ratified)	1994 (ratified)	1994 (ratified)
Convention on the Transboundary Impacts from Industrial Accidents, 1992	1998 (ratified)	1994 (ratified)	2002 (ratified)
Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and Their Disposal, 1989	1994 (ratified)	1994 (ratified)	1994 (ratified)
Bonn Convention - Convention on the Conservation of Migratory Species of Wild Animals, 1979	1999 (ratified)	2001 (ratified)	1983 (ratified)
United Nations Economic Commission for Europe (UNECE) on Long Range Transboundary Air Pollution, 1979	1983 (ratified)	2005 (ratified)	1982 (ratified)
Bern Convention - Conservation of European Wildlife and Natural Habitats, 1976	1983 (ratified)	1999 (ratified)	1981 (ratified)
CITES - Convention on Trade in Endangered Species of Wild Flora and Fauna, 1975	1992 (ratified)	2003 (ratified)	1975 (ratified)
Ramsar Convention on Wetlands of International Importance, especially as Waterfowl Habitat, 1971	1975 (ratified)	1996 (ratified)	1987 (ratified)
Barcelona Convention: Integrated Coastal Zone Management (ICZM) Protocol 2008	2008 (signed)	2008 (signed)	2008 (signed)
UN Convention on the Law of the Sea 1982	1994 (signed)	2003 (accession)	1995 (ratified)

Convention name	*Greece*	*Albania*	*Italy*
Barcelona Convention for the Protection of the Mediterranean Sea against Pollution, 1976	1976 (signed)	1976 (signed)	1976 (signed)
International Convention for the Prevention of Pollution from Ships 1973 as modified by the Protocol of 1978 (MARPOL 73/78)	1995 (ratified)	2008 (ratified)	1982 (ratified)

4 Noise and vibration

4.1 Introduction

This section considers standards relating to temporary construction and operational noise and vibration in the each of the TAP host countries.

4.1.1 Onshore and coastal noise and vibration

Onshore and coastal noise and vibration have the potential to cause disturbance to humans and damage to buildings and other infrastructure such as roads and bridges.

4.1.1.1 Sources and receptors in Greece

Sources of noise and vibration during the construction and commissioning phase will mainly come from construction traffic, camp and pipe-yard construction and operation, pipeline delivery and stringing along the ROW, bending, reaming, welding and coating of pipeline sections, earth moving and excavation for site preparation and restoration, blasting/hydraulic hammering, and excavation for trench preparation, piling/ground improvement or stabilizing activities, horizontal directional drilling (HDD) and micro tunnelling for the trenchless crossings, thrust boring, augering and other tunnelling activities at crossings, hydrostatic testing (particularly at the water/gas filling and discharge points) and pipeline pigging and drying.

The pipeline route crosses mostly agricultural and undeveloped areas. However, 13 settlements within 200 m of the working strip are likely to be moderately impacted by the noise and vibration of the construction phase. The noise impact on additional settlements located beyond 200 m of the working strip is considered minor. No significant impact (noise or vibration) is expected on residential properties from blasting, pipe-working and trenchless construction activities, as these activities will occur at relatively remote sections of the pipeline route.

During the operational stage, the only significant source of noise emissions will be the two compressor stations GCS00 (for both 10 bcm/yr and 20 bcm/yr capacity) and GCS01 (for 20 bcm/yr capacity only). Several settlements are near GCS00 and GCS01, the closest of which are:

- Peplos, 1650 m from GCS00
- Krinos, 1950 m from GCS01.

The noise assessment indicates that under normal operating conditions for both the 10 bcm/yr and 20 bcm/yr capacities, the noise and vibration impacts at these settlements is not significant.

4.1.1.2 Sources and receptors in Albania

Along the pipeline route in Albania the noise environment varies substantially as it extends through residential, agricultural, and undeveloped areas. The majority of the potential receptors are villages which can be considered sensitive noise receptors.

Sources of noise and vibration during the construction phase will mainly come from construction traffic, equipment involved in earth movement and site preparation, piling activities and pipeline drying during pre-commissioning.

During the operational stage, the only source of noise emissions will be the two compressor stations ACS02 and ACS03. No vibration is expected during operation of the facilities; therefore, no operational standard has been set.

4.1.1.3 Sources and receptors in Italy

Along the pipeline route in Italy, the noise environment varies substantially as it extends through residential, agricultural and undeveloped areas. The majority of the potential receptors are residential buildings (either single dwellings or residential and/or touristic areas), which have been considered sensitive noise receptors.

Onshore and coastal sources of noise and vibration during construction and commissioning phase will mainly come from construction traffic, equipment involved in earth movement and site preparation, piling activities, hydrostatic testing, micro-blasting, micro-tunnelling and pipeline drying. During the operational stage, the only key onshore source of noise emissions will be the PRT. Significant noise emissions or vibration are not anticipated in the coastal area during operation.

4.1.2 Underwater noise

In the marine environment, underwater noise has the potential to cause behavioural responses in fish, turtles and marine mammals (e.g. avoidance, and disturbance/disruption of feeding, breeding and migration patterns). There is also the potential for socio-economic effects, for example, avoidance reactions may result in displacement of fish away from potential fishing grounds resulting in reduced catches. In cases of intense underwater noise, auditory impairment is possible.

Sources of underwater noise likely to cause disturbance during the construction phase are dredging, pipeline trenching activities and general shipping activity. Noise and vibration from micro-tunnel excavation activities in Italy can be considered negligible compared to these. TAP has commissioned a study on underwater noise to assess likely levels.

During the operational stage, underwater noise and vibration will be limited to that generated by natural gas movement in the pipe (negligible) and vessel engines involved in routine inspection and maintenance works. Therefore, no operational standards for vibration have been set.

4.1.3 Definitions

The following terminology is used within this section:

Table 4-1 Noise terminology and definitions

Term	*Definition*
Ambient noise level	Noise level produced by all the sources affecting an area
Background noise level	Noise level at a given location and time, measured in the absence of any alleged noise nuisance or sound sources being studied. It is common practice to calculate the background noise using the L_{A90} statistical parameter of measured levels. This is defined as the sound level exceeded for 90% of the measured time.
dB	Decibel: common measure of sound intensity that is one tenth of a bel on the logarithmic intensity scale
dB(A)	Expression of the relative loudness of sounds in air as perceived by the human ear. In the A-weighted system, the decibel values of sounds at low frequencies are reduced. This correction is made because the human ear is less sensitive at low audio frequencies, especially below 1000 Hz, than at high audio frequencies.
Differential noise level	Increase of noise above background level due to a project's activity. It is calculated at receptor as the difference between cumulative noise level (background + project contribution) and background level.
$L_{Aeq,\ T}$	Equivalent continuous sound level. Average of total sound energy over a specific period of time *T* measured in decibels. Can be A-weighted

Term	*Definition*
$L_{Amax,\ T}$	Maximum sound pressure levels measured over a measurement period in decibels. Can be A-weighted
$L_{Aeq,f}$ / $L_{Aeq,s}$ $L_{Aeq,I}$	Time weightings determine how quickly the sound level meter responds to changes in sound pressure level: f = fast 125 ms period, s = slow 1 second period, I = instantaneous 35 ms period. Can be A-weighted
Hz	Hertz: unit of frequency
$L_{Ar,Tr}$	Free field rating level, site noise only plus tonal correction
PEL	Electric power
$mm \cdot s^{-1}$	Millimetres per second

4.2 National standards

4.2.1 Greek national standards

4.2.1.1 Presidential Decree (PD) 1180, 6 October 1981 (Gov. Gaz. 293/A) “On regulation of matters relating to the establishment and operation of industries, manufacturing of all kinds, machine installations and warehouses and the protection of the environment in general from the foregoing”

Article 14 of the Environmental Protection Act 1985, Presidential Decree (PD) 1180, 6 October 1981 (Gov. Gaz 283/A) “On regulation of matters relating to the kinds of establishment and operation of industries, manufacturing of all kinds, machine installations and warehouses and the protection of the environment in general from the foregoing” provides the main legal framework for Greek national noise limits.

PD 1180/1981 establishes noise limits according to the land use of the surrounding area (see Table 4-2 below). These limits apply at the borderline of a plot area, with the part of the borderline oriented to the emission source being relevant. Area land uses for which these noise limits are applicable include industrial, urban and mixed areas. No statutory noise limits exist for areas of agricultural use.

The compressor stations are considered “industrial areas”, whereas surrounding areas are used for agriculture. As such, it has been agreed[6] that the land use type of the area is classed as “areas with predominantly industrial characteristics”.

The noise limits shown in Table 4-2 correspond with the noise limits set out by the WHO.

Table 4-2 Greek standard: noise emission limits as stated by PD 1180/1981[7]

Description	*Noise limits L_{Aeq} in dB(A)*
Established industrial areas	70
Areas with predominantly industrial characteristics	65
Areas with equivalent industrial and urban characteristics	55
Areas with predominantly urban characteristics	50

In cases where a noise emitting site borders a home property, the noise limit is set at 45 dB(A), as measured in front of an open door or window.

4.2.1.2 Joint Ministerial Decision (JMD) 9272/471 2 March 2007 (Gov. Gaz. 286/B) “on the amendment of Article 8 of JMD 37393/2028 1 October 2003 (Gov. Gaz.1418/B)”

Joint Ministerial Decision (JMD) 9272/471 2 March 2007 (Gov. Gaz 286/B) “on the amendment of Article 8 of JMD 37393/2028 1 October 2003 (Gov. Gaz.1418/B) in compliance to the provisions of Directive 2005/88/EC ‘for the amendment of Directive 2000/14/EC on the approximation of MS legislation on noise emissions to the environment from equipment used in open spaces’ of the Council of December 14, 2005” transfers the standards of Directive 2005/88/EC into Greek legislation.

The standards of this Directive are discussed further in Section 4.3.1.1.

---

[6] Based on the meeting held with the Ministry of Environment, Energy and Climate Change, Dept. of Air Pollution and Noise Control, on 27 February 2013, these are the applicable noise limits. The compressor station itself is considered an industrial area and the surrounding area is of agricultural use, where no statutory noise limits exist. Consequently, the land use type of the area is ‘area with predominately industrial characteristics’.

7 Sources: Noise Control Study GCS00 (GCS00-WGP-000-S-TRS-0001) Table 3 and Noise Control Study GCS01 (GCS00-WGP-000-S-TRS-0001)

4.2.1.3 Ministerial Decision (MD) 13586/724 28 March 2006 (Gov. Gaz. 384/B) "Determination of measures, terms and methods for assessing and managing environmental noise, in compliance with the provisions of Directive 2002/49/EC"

Ministerial Decision (MD) 13586/724 28 March 2006 (Gov. Gaz. 384/B) "Determination of measures, terms and methods for assessing and managing environmental noise, in compliance with the provisions of Directive 2002/49/EC 'relating to the assessment and management of environmental noise' of the Council of June 25, 2002" into Greek legislation.

The standards of this Directive are discussed further in Section 4.3.1.2.

4.2.2 Albanian national standards

4.2.2.1 Albanian Directive No.8 "Noise limits in the design environments"

Directive No.8, pursuant to Law 9774 dated 12/07/2007 "On the evaluation and management of environmental noise", defines noise limits for residential areas (for areas "outside the house") affected by operational activities. The Directive does not relate to construction activities. The noise limits in this Directive are listed in Table 4-3 below and correspond with the noise limits set out by the WHO.

Table 4-3 Albanian standard: Guideline values for community noise[8]

Specific Environment	*Critical Health Effects*	*L_{Aeq} dB(A)*	*Time, T (hours)*	*L_{Amax} dB(A)*
Residential area				
Outside housing	Serious inconvenience (discomfort), during daytime and evening	55	16	-
	Moderate inconvenience (discomfort), during daytime and evening	50	-	-
Inside housing	Understanding of conversations and moderate inconvenience (discomfort), during daytime and evening.	35	16	-
Inside the bedroom	Disturbance of sleep at night.	30	8	-
Outside bedroom	Disturbance of sleep, open window (5)	45	8	60
Institutions				

[8] Source: Directive No.8, pursuant to Law 9774 dated 12/07/2007 "On the evaluation and management of environmental noise"

Specific Environment	*Critical Health Effects*	*L_{Aeq} dB(A)*	*Time, T (hours)*	*L_{Amax} dB(A)*
Classroom teaching, preschool institutions (inside)	Understanding of conversations, difficulties in terms of information, communication of the message	35	During the class	-
Sleeping rooms in the kindergarten	Disturbance of sleep	30	Sleeping time	-
School yard, school play areas	Inconvenience (discomfort) – external sources	55	Rest time	-
Hospital, halls, rooms (inside)	Disturbance of sleep at night	30	8	40
	Disturbance of sleep during the day and evening	30	16	-
Hospital, treatment rooms (inside)	Influence on rest, recuperation	(1) (6)	-	-
Areas of social – economic activities				
Industrial, commercial zones, traffic (inside and outside)	Hearing impairment	70	24	110
Urban environment				
Public environment, inside or outside	Hearing impairment	85	1	110
Ceremonies, festivals and entertainment	Hearing impairment (clients < 5 time/year)	100	4	110
Hearing music through headphones	Hearing impairment	85 (4)	1	110
Impulsive sounds – noise of fireworks and firearms	Hearing impairment (adults)			140 (2)
	Hearing impairment (children)			120 (2)
Public parks				
Public parks and protected areas	Disturbance of silence	(3) (6)	-	-

1. as low as possible;
2. peak sound pressure (not LA_{max}, fast), measured 100 mm from the ear;
3. existing quiet outdoor areas shall be preserved and the ratio of intruding noise to natural background sound shall be kept low;
4. under headphones, adapted to free-field values;
5. the perception of noise in the bedroom with open windows.
6. Based on WHO Guidelines, Guidelines for Community Noise (1999) 'Existing quiet outdoor areas should be preserved and the ratio of intruding noise to natural background sound should be kept low.'

Specific Environment	*Critical Health Effects*	*L_{Aeq} dB(A)*	*Time, T (hours)*	*L_{Amax} dB(A)*
7. Article 10 of Law No. 9774 defines daytime as 06:00 – 19:00, evening as 19:00 – 23:00 and night-time as 23:00 – 06:00.				

4.2.3 Italian national standards

4.2.3.1 Regional standards - Official Bulletin of the Puglia Region – No. 25 (12 February 2002): “Norme di indirizzo per il contenimento e la riduzione dell’inquinamento acustico” [Rules of address for containing and reducing noise pollution]

The Puglia regional law provides the following noise emission limits at the receptor for the purposes of construction noise.

Table 4-4 Italian standard: Puglia Region construction noise limit

Location	*Noise Limits L_{Aeq} in dB(A)*	
	Morning (07:00 to 12:00)	Afternoon (15:00 to 19:00)
Nearest noise sensitive receptor	70	70

Exceptions to the above limits can be applied for at the municipal administration.

4.2.3.2 Law n. 59/2013 “Regulation about Environmental Unique Authorisation (Autorizzazione Unica Ambientale - AUA)”

Law n. 59/2013 “Regulation about Environmental Unique Authorisation (Autorizzazione Unica Ambientale - AUA)” requires installations to apply for an operational authorisation that will specify environmental standards that must not be exceeded. AUA is an integrated environmental authorisation that covers many environmental aspects, such as air emissions, wastes, noise emissions and water discharges. An installation needs an AUA if it requires just one authorisation covered by AUA (e.g. an air emission authorisation, or a water discharge permit). The limits and the requirements within the AUA are based on relevant national and local law as a minimum. For instance, the AUA section regarding air emissions will be based on the limits provided by the D.lgs 152/2006 - Part V, as amended. However, the competent authority has the power to require more restrictive limits based on a specific environmental context.

4.2.3.3 Law n. 447/1995 “Law on acoustic pollution”

Law n. 447/1995 “Law on acoustic pollution”, establishes a common framework for noise and defines acoustic limits on the basis of territorial characteristics. Law n. 447/1995 refers to various ministerial decrees, regional laws and local regulations, of which DPCM 01/03/91 “Maximum noise levels allowable indoor and outdoor” and DPCM 14/11/97 “Definition of noise limits for noise sources” are discussed in further detail (see Sections 4.2.3.4 and 4.2.3.5 respectively).

According to the Law (and other relevant legislation referenced within it), every municipality is to approve an Acoustic Zoning Plan classifying the territory into acoustic classes on the basis of current or forecasted land use and territorial characteristics (residential, commercial, industrial areas etc.) (see Section 4.2.3.4).

However, the Law also states that the Mayor can establish, with specific municipal decrees, the possibility to temporarily exceed the noise limits defined by the Acoustic Zoning Plan or DPCM 01/03/91 (see Section 4.2.3.4) for construction activities only. These potential new limits shall be decided according to the environmental context in which the project is located and the intended use of the surrounding area and buildings.

A request for the authorisation for temporary construction activities to exceed the established noise limits must be applied for by the proposer to the municipality for approval, and should contain the following information:

- project phase duration
- list of all equipment to be used in planned activities
- list of all available techniques implemented to reduce noise impact.

4.2.3.4 DPCM 1 March 1991 (‘DPCM 91’) “Maximum noise levels allowable indoor and outdoor”

DPCM 91 “Maximum noise levels allowable indoor and outdoor” defines the acoustic classes to be allocated to each territory as part of each municipality’s Acoustic Zoning Plan (see Section 4.2.3.3). Once allocated to a certain acoustic class, all territories within that class require the same level of protection. Table 4-5 below describes the acoustic classes.

Table 4-5 Italian standard: on Acoustic classes[9]

Class		*Description*
I	Protected areas	Hospitals, schools, parks, rest houses, areas of urban and architectural interest, protected areas
II	Residential areas	Areas with local traffic road, low-density residential area, small commercial activities, absence of artisan and industrial activities
III	Mixed areas	Areas with local and crossing traffic road, medium-density residential areas, offices, commercial and small artisan activities, agricultural areas and absence of industrial activities
IV	Areas with intensive human activity	Areas with intensive traffic road, high residential density, several commercial and artisan activities, areas in proximity of highway and railway, harbour areas, areas with small industrial activities
V	Principally industrial areas	Industrial areas with low residential density
VI	Only industrial areas	Industrial areas with absence of residential buildings

Noise limits to be applied to the classes identified with the Acoustic Zoning Plans are described by DPCM 97 (see Section 4.2.3.5).

If a municipality has not yet approved the Acoustic Zoning Plan, DPCM 91 defines noise limits for all of the municipality's territory (see Table 4-6). Currently, neither Melendugno Municipality nor Vernole Municipality (of which the PRT is close to the border) have approved the Acoustic Zoning Plan.

[9] Source: ESIA Italy, Table 6-33. Information originally taken from DPCM 1 March 1991 "Maximum noise levels allowable indoor and outdoor."

Table 4-6 Italian standard: noise limits in the absence of an Acoustic Zoning Plan[10]

Zone	*Absolute noise limits(3) (L_{eq} dB(A))*		*Differential noise limits(4) (L_{eq} dB(A))(2)*	
	Day (06:00–22:00)	*Night (22:00–06:00)*	*Day (06:00–22:00)*	*Night (22:00–06:00)*
All national territory	70	60	5	3
Zone A (D.M.1444/68)(1)	65	55	5	3
Zone B (D.M.1444/68)(1)	60	50	5	3
Industrial areas	70	70	-	-

Notes:

(1) Zones as for D.M. 2 April 1968 article 2

- Zone A: parts of the territory affected by urban areas that are of historical, artistic or of particular environmental value or portions of it, including the surrounding areas, which can be regarded as an integral part, of the same agglomerations
- Zone B: parts of the territory totally or partially built, other than the areas A): are considered partially built-up areas in which the covered surface of existing buildings is not less than 12.5% (one eighth) of the land surface of the area and in which the spatial density is more than 1.5 m^3/m^2.

(2) Defined as the increase of noise above background level due to project's activity. It is calculated at receptor as the difference between cumulative noise level (background + project contribution) and background level (residual noise).

(3) Absolute noise limits refer to noise levels in the external environment. They are measured outside of receptors identified in a study area

(4) Differentials noise limits refer to nose levels inside a receptor

[10] Source: ESIA Italy, Table 6-34. Information originally taken from DPCM 1 March 1991 "Maximum noise levels allowable indoor and outdoor"

4.2.3.5 DPCM 14 November 1997 “Definition of noise limits for noise sources”

DPCM 14 November 1997 “Definition of noise limits for noise sources” establishes noise limits applicable to the acoustic classes identified within the Acoustic Zoning Plans (see Section 4.2.3.4). Separate limits are established for emission noise and noise at receptors.

The emission noise limits (as described in Table 4-7) establish the maximum noise levels that may be produced by a noise source, monitored at the source. This value is related only to the noise emitted by the single source and not influenced by other factors (including the presence of other sources).

Table 4-7 Italian standard: Emission noise limits by DPCM 14 (1997)[11]

Class	*Noise limits (L_{eq} in dB(A))*	
	Day *(06:00–22:00)*	*Night* *(22:00–06:00)*
I – Protected areas	45	35
II – Residential areas	50	40
III – Mixed areas	55	45
IV – Areas with intensive human activities	60	50
V – Areas mainly dedicated to industrial activities	65	55
VI – Industrial areas	65	65

Noise limits at receptors (as described in Table 4-8) establish the maximum noise level produced by one or more noise sources that can affect an area (indoor or outdoor), monitored in the proximity of the receptor(s). This value takes into account the cumulative effect of all sources and the background noise level.

[11] Source: ESIA Italy, Table 6-35 Emission Noise Limits. Information originally taken from DPCM 14 November 1997 “Definition of noise limits for noise sources“ – Table B

Table 4-8 Noise limits at receptors[12]

Class	*Noise limits (L_{eq} in dB(A))*	
	Day (06:00–22:00)	*Night (22:00–06:00)*
I – Protected areas	50	40
II – Residential areas	55	45
III – Mixed areas	60	50
IV – Areas with intensive human activities	65	55
V – Areas mainly dedicated to industrial activities	70	70
VI – Industrial areas	70	70

4.3 European standards

The following section includes European standards. It also includes British and German standards, where it is not considered that European standards would fulfil the requirements of noise assessment criteria. Where appropriate, a standard from a different European country has been considered.

4.3.1 EU standards

4.3.1.1 Directive 2005/88/EC (amending 2000/14/EC) on the noise emission in the environment by equipment for use outdoors

Directive 2005/88/EC “On the noise emission in the environment by equipment for use outdoors” provides maximum acceptable sound pressure levels from a range of equipment

[12] Source: ESIA Italy, Table 6-36. Information originally from DPCM 14 November 1997 “Definition of noise limits for noise sources“ – Table C

types, many of which will be used during project construction. This Directive applies to the manufacturers of plant and equipment. These levels are set out in Table 4-9 below.

Table 4-9 EU Directive: 2005/88/EC (amending 2000/14/EC) Sound Levels of Equipment for Outdoor Use

Type of equipment	*Net installed power P (kW)* *Electric power P_{el} (1) (kW)* *Mass of appliance m (kg)* *Cutting width L (cm)*	*Acceptable sound power level (dB(A)/1 pW)* *Stage II as from 03/01/2006*
Compaction machines (vibrating rollers, vibratory plates, vibratory rammers)	$P \leq 8$	105 (2)
	$8 < P \leq 70$	106 (2)
	$P > 70$	86 + 11 lg P (2)
Tracked dozers, tracked loaders, tracked excavator loaders	$P \leq 55$	103 (2)
	$P > 55$	84 + 11 lg P (2)
Wheeled dozers, wheeled loaders, wheeled excavator loaders, dumpers, graders, loader-type landfill compactors, combustion engine-driven counter-balanced lift trucks, mobile cranes, compaction machines (non vibrating rollers), paver-finishers, hydraulic power packs	$P \leq 55$	101 (2) (3)
	$P > 55$	82 + 11 lg P (2) (3)
Excavators, builders' hoists for the transport of goods, construction winches, motor hoes	$P \leq 15$	93
	$P > 15$	80 + 11 lg P
Hand-held concrete breakers and picks	m ≤ 15	105
	15 < m < 30	92 + 11 lg m (2)
	m ≥ 30	94 + 11 lg m
Tower cranes	-	96 + lg P
Welding and power generators	$P_{el} \leq 2$	95 + lg P_{el}
	$2 < P_{el} \leq 10$	96 + lg P_{el}

Type of equipment	*Net installed power P (kW)* *Electric power P_{el} (1) (kW)* *Mass of appliance m (kg)* *Cutting width L (cm)*	*Acceptable sound power level (dB(A)/1 pW)* *Stage II as from 03/01/2006*
	10 > P_{el}	95 + lg P_{el}
Compressors	$P \leq 15$	97
	$P > 15$	95 + 2 lg P
Lawn mowers, lawn trimmers/lawn edge trimmers	$L \leq 50$	94 (2)
	$50 < L \leq 70$	98
	$70 < L \leq 120$	98 (2)
	$L > 120$	103 (2)

Notes:

(1) P_{el} for welding generators: conventional welding current multiplied by the conventional load voltage for the lowest value of the duty factor given by the manufacturer. P_{el} for power generators: prime power according to ISO 8528-1:1993, point 13.3.2

(2) The figures for stage 2 are merely indicative for the following types of equipment:

- walk-behind vibrating rollers
- vibratory plates (> 3 kW)
- vibratory rammers
- dozers (steel tracked)
- loaders (steel tracked > 55 kW))
- combustion engine-driven counterbalanced lift trucks
- compacting screed paver-finishers
- hand-held internal combustion engine concrete breakers and picks (15 < m < 30)
- lawn mowers, lawn trimmers/lawn hedge trimmers.

Definitive figures will depend on amendment of the Directive following the report required in Article 20, Paragraph 1. In the absence of any such amendment, the figures for stage 1 will continue to apply for stage 2.

(3) For single engine mobile cranes, the figure for stage 1 will continue to apply until 3 January 2008. After that date, stage 2 figures shall apply.

The permissible sound power level will be rounded up or down to the nearest integer number (less than 0.5, use lower number; greater than or equal to 0.5, use higher number).

4.3.1.2 Directive 2002/49/EC on the assessment and management of environmental noise

Directive 2002/49/EC "On the assessment and management of environmental noise" defines a strategic approach to avoid, prevent or reduce harmful effects as a result of exposure to environmental noise, including monitoring, public consultation, action plans and long-term strategy. This Directive is not directly applicable to the Project, as it contains no criteria for either construction or operational noise.

4.3.2 German construction standards

4.3.2.1 General Administrative Regulation to Protect Against Construction Noise, 1970

This standard provides guidance limits for construction noise dependent on the receptor type, ranging from 45 dB and 35 dB for residential locations (for day and night respectively) up to 70 dB for industrial locations. Information on compliance monitoring and assessment is also provided[13].

4.3.3 UK standards

4.3.3.1 UK BS 5228-1 (2009+A1: 2014) Code of Practice for Noise and Vibration Control on Construction and Open Sites – Part 1: Noise

This Code of Practice provides recommendations for basic methods of noise and vibration control where work activities/operations generate significant noise levels, including industry-specific guidance concerning methods of predicting and measuring noise and assessing its impact on those exposed to it.

Annex E Section 3.3, Example Method 2 is considered the most appropriate for assessing the significance of noise in relation to Project construction activities. This method takes into account variations in baseline levels and provides a realistic limit for construction noise, which allows for temporarily higher levels than would be possible using operational noise criteria while still protecting sensitive noise receptors.

Example Method 2 specifies that noise levels generated by construction shall not be above the following absolute values:

- daytime (07:00–19:00), L_{Aeq} of 65 dB

[13] verwaltungsvorschriften-im-internet.de/bsvwvbund_19081970_IGI7501331 .htm

- evening (19:00–23:00), L_{Aeq} of 55 dB
- night-time (23:00–07:00), L_{Aeq} of 45 dB.

If the existing noise level before construction already exceeds these values, Example Method 2 specifies that noise levels generated by construction shall not increase the existing noise by 5 dB or more. This applies to single dwellings and residential settlements. This method applies to construction noise activities with a duration of one month or longer. The absolute values can also be used as a guide for the assessment of construction traffic.

Annex E of the standard also provides criteria for providing sound insulation at affected receptors. If the identified trigger levels are exceeded, it is the developer's responsibility to provide noise insulation or facilitate temporary rehousing of residents. In the unlikely event that the trigger levels are exceeded, TAP will make temporary rehousing considerations on case by case basis following a noise risk assessment and a consultation with the affected parties.

The standard suggests that noise insulation should be provided if trigger levels, presented in Table 4-10, are predicted to be exceeded for a period of 10 or more days of working in any 15 consecutive days, or for a total of days exceeding 40 in any six-month period.

Table 4-10 UK Standard: Time periods, averaging times and noise levels applicable to assessing eligibility for noise insulation[14]

Time	*Relevant time period*	*Time, T (hours)*	*Noise trigger levels dB $L_{Aeq, T}$ (1)*
Monday to Friday	07.00–08.00	1	70
	08.00–18.00	10	75
	18.00–19.00	1	70
	19.00–22.00	3	65
	22.00–07.00	1	55
Saturday	07.00–08.00	1	70

[14] Source: BS 5228-1: 2009+A1:2014 – Code of practice for noise and vibration control on construction and open sites – Part 1: Noise

Time	*Relevant time period*	*Time, T (hours)*	*Noise trigger levels dB $L_{Aeq,\ T}$ (1)*
	08.00–13.00	5	75
	13.00–14.00	1	70
	14.00–22.00	3	65
	22.00–07.00	1	55
Sunday and public holidays	07.00–21.00	1	65
	21.00–07.00	1	55
Note: (1) Equivalent continuous A-weighted noise level predicted or measured at a point 1 m in front of the most exposed windows or doors leading directly to a habitable room (living room or bedroom) in an eligible dwelling.			

4.3.3.2 UK BS 5228-2 (2009) Code of Practice for Noise and Vibration Control on Construction and Open Sites – Part 2: Vibration

Part 2 of the Code of Practice provides guidance on the control of vibration from construction sites and response limits for cosmetic damage (i.e. non-structural and affecting only superficial elements). Table 4-11 shows the limits at which the vibration level (measured as a peak particle velocity) would result in cosmetic damage at a range of vibration frequency levels.

Table 4-11 UK Standard: Transient vibration guide values for cosmetic damage in buildings[15]

Type of building	*Peak component particle velocity (PPV) in frequency range of predominant pulse*	
	4 Hz to 15 Hz	**15 Hz and above**
Reinforced or framed structures Industrial and heavy commercial buildings	50 mm·s^{-1} at 4 Hz and above	

[15] Source BS 5228-2: 2009 – Code of practice for noise and vibration control on construction and open sites – Part 2: Vibration

Type of building	*Peak component particle velocity (PPV) in frequency range of predominant pulse*	
	4 Hz to 15 Hz	**15 Hz and above**
Unreinforced or light framed structures Residential or light commercial buildings	15 mm·s^{-1}at 4 Hz increasing to 20 mm·s^{-1} at 15 Hz	20 mm·s^{-1}at 15 Hz increasing to 50 mm·s^{-1}at 40 Hz and above
Note 1: Values referred to are at the base of the building. Note 2: For line 2, at frequencies below 4 Hz, a maximum displacement of 0.6 mm (zero to peak) is not to be exceeded.		

Part 2 of the Code of Practice also presents levels of vibration that may cause complaint, which is predicted to occur between 0.3 mm·s^{-1} (just perceptible) to 1.0 mm·s^{-1} (likely to cause complaint). Vibration levels of 10 mm·s^{-1} are likely to be intolerable for any more than a brief period of time.

4.4 International lender standards

4.4.1 EBRD standards

No specific EBRD standards with respect to construction or operational noise and vibration have been identified. Basic recommendations for noise and vibration control are provided within the document ‘Sub-sectoral Environmental Guidelines: Pipelines’ (2010) including:

- Ensuring equipment is maintained to manufacturers standards and that noise baffles are fitted
- Reducing exposure times for people working near noisy machinery
- Providing workers with appropriate hearing protection
- Careful control of blasting to reduce noise and vibration.

4.4.2 World Bank standards

4.4.2.1 World Bank standards/IFC General EHS Guidelines (2007), Environmental Noise Management

This guidance document specifies noise level guideline values based on the Guidelines for Community Noise (WHO, 1999). Although not explicitly stated, the levels are normally

considered to be for operational noise rather than temporary noise from construction sites. Table 4-12 presents the guideline values. The IFC guideline is that noise impacts should not exceed these levels or result in a maximum increase in background levels of 3 dB at the nearest receptor location off site. These noise levels refer to noise measured outside a receptor.

Table 4-12 IFC noise level guidelines[16]

Period	*Sound Level (L_{Aeq}) Limits External to Buildings*	
	Industrial and commercial	Residential, institutional and educational
Daytime (07:00–22:00)	70 dBA	55 dBA
Night-time (22:00–07:00)	70 dBA	45 dBA

4.4.2.2 World Bank (1999) Pollution Prevention and Abatement Handbook

The World Bank Group's "Pollution Prevention and Abatement Handbook" (1999) establishes noise limits for new installations, as shown in Table 4-13. The handbook also limits the increase in acceptable background noise levels to 3 dB at receptors outside the property boundary.

Table 4-13 World Bank noise limits

Receptor	*Sound Level (L_{Aeq}) Limits External to Buildings*	
	Day (07:00 – 22:00)	Night (22:00 – 07:00)
Residential, institutional, educational	55 dBA	45 dBA
Industrial, commercial	70 dBA	70 dBA

[16] Source: International Finance Corporation. Environmental, Health and Safety (EHS) Guidelines. General EHS Guidelines: Environmental. Noise Management, April 2007

4.4.3 WHO Guidelines

4.4.3.1 WHO Guidelines for Community Noise (1999)

The WHO guideline values presented in Table 4-14 are organised according to specific environments. When multiple adverse health effects are identified for a given environment, the guideline values are set at the level of the lowest adverse health effect (the critical health effect). An adverse health effect of noise refers to any temporary or long-term deterioration in physical, psychological or social functioning that is associated with noise exposure. The guideline values represent the sound pressure levels that affect the most exposed receiver in the listed environment.

Table 4-14 WHO guideline values for community noise in specific environments[17]

Specific environment	*Critical health effect(s)*	*L_{Aeq} (dBA)*	*Time, T (hours)*	*L_{Amax}, f (dBA)*
Outdoor living area	Serious annoyance, daytime and evening	55	16	-
Outdoor living area	Moderate annoyance, daytime and evening	50	16	-
Dwelling, indoors	Speech intelligibility and moderate annoyance, daytime and evening	35	16	-
Dwelling, indoors, inside bedrooms	Sleep disturbance, night-time	30	8	45
Outside bedrooms	Sleep disturbance, window open (outdoor values)	45	8	60
School, playground outdoor	Annoyance (external source)	55	During play	-
Industrial, commercial, shopping and traffic	Hearing impairment	70	24	110

[17] Sources: World Health Organisation: Guidelines for Community Noise (1999)

Specific environment	*Critical health effect(s)*	*L_{Aeq} (dBA)*	*Time, T (hours)*	*$L_{Amax,}$ f (dBA)*
areas, indoors and outdoors				

4.4.3.2 WHO Night Noise Guidelines for Europe (2009)

In 2009, the WHO produced the Night Noise Guidelines (NNG) for Europe, which extended and updated some of the guidance levels specified in the previous WHO Guidelines for Community Noise. The NNG conclude that after considering the scientific evidence on the thresholds of (outside) night noise exposure the target sound pressure level outside during night ($L_{night,outside}$) should be 40 dB(A) to protect the public, specifically vulnerable groups such as children, the chronically ill and the elderly. An $L_{night,outside}$ value of 55 dB(A) is recommended as an interim target for the countries where the NNG cannot be achieved in the short term for various reasons, and where policy-makers choose to adopt a stepwise approach.

WHO Guidelines for Community Noise and Night Noise Guidelines for Europe consider criteria to protect from the health effects of noise over the long-term. The indicator in the NNG is the $L_{night,outside}$ which relates to the yearly average of night noise. As such, it is considered appropriate to assess operational noise via these criteria. However, they were also referred to for construction noise in order to provide a rationale for the protection of people during sensitive times as there were no alternative international or in-country construction standards

4.5 Project standards for construction noise and vibration

Following consideration of the legislation and standards outlined in Sections 4.2 to 4.4, the following Project Standards shall be applied in order to demonstrate good international industry practice.

4.5.1 Project standards for onshore and coastal noise

4.5.1.1 Construction equipment

As a good practice of controlling noise at-source, the plant and equipment used during the construction phase shall comply with the maximum acceptable sound pressure levels specified in European legislation by Directive 2005/88/EC (amending 2000/14/EC) on the noise emission in the environment by equipment for use outdoors.

4.5.1.2 Semi-permanent noise sources (construction camps)

The noise standards set out in Table 4-15 apply only to construction activities at sensitive receptors in the vicinity of construction camps in Greece and Albania. Although these are temporary facilities, they may generate noise continuously for the duration of their use. For example, power generation equipment may run continuously for the duration of the camp operation. The standards applied are therefore those applicable to permanent operational facilities.

The Project standards noise limits in Table 4-15 correspond with guidelines provided in the WHO Guidelines for Community Noise (1999). Noise limit values specified by the Albanian Directive No 8 “Noise limits in the design environments” correspond with values given in the WHO Guidelines for Community Noise (1999). The WHO values have been selected since they provide health-based guidelines derived from extensive scientific research and have formed basis for a number of international standards for noise (including those for World Bank and IFC) and have shaped EU legislation and policy on assessment and control of noise exposure.

The IFC guideline that noise impacts should not exceed a maximum increase in background levels of 3 dB at the nearest receptor location off site is an additional voluntary commitment.

Table 4-15 Project standards for ambient noise at the closest residential receptor (construction camps only) for Greece and Albania

Noise Limit[1]	GREECE		ALBANIA	
	L_{Aeq} (dB)	Ref.	L_{Aeq} (dB)	Ref.
Residential outdoor living area Free–field rating level ($L_{Ar,Tr}$) in daytime (07:00–23:00)	50	WHO	50	Albania & WHO
Average sound level at residential façade over 8 hours (L_{A-q} *T*) at night-time (23:00–07:00)	45	WHO	45	Albania & WHO
Maximum sound level at residential façade ($L_{Amax,}$ f) at night (23:00–07:00)	60	WHO	60	Albania & WHO
Free–field rating level ($L_{Ar,Tr}$) will not result in a maximum increase in background levels of 3 dB at the nearest receptor location off-site[2].				
Notes: 1. These limits do not apply to emergency or unforeseen events. 2. Source: IFC ‘General EHS Guidelines’, 2007: Environmental, 1.7				

4.5.1.3 Temporary noise sources (construction works)

A two-tier approach is proposed for the levels at which mitigation shall be applied:

Tier 1: Good practice methods shall be applied where time averaged noise levels exceed the Lower Threshold Value at noise sensitive receptors for the averaging times specified in Table 4-16, Table 4-17 and Table 4-18 for each host country respectfully. The averaging time is the period over which noise levels are averaged. For out-of-hours work, an averaging time of one hour is specified instead of the full seven hours for the period (potentially resulting in seven hourly measurements to be considered if the works continue throughout this period). This provides more protection to residences from very temporary works that may last significantly less than the seven hours, but which may be loud enough to cause disturbance during this noise sensitive time period.

Predicted exceedances of this level were identified during the detailed design of the construction schedule. Owing to the varied and intermittent nature of construction works, it is difficult to predict the likely resultant noise levels at this stage. Therefore, a precautionary approach using worst-case scenarios will be used within noise predictions. A list of suitable good practice methods to be applied is presented in Section 4.5.1.4.

Tier 2: The Upper Noise Limits should not be exceeded in 10 or more days in any 15-day period for the averaging times specified in Table 4-16, Table 4-17 and Table 4-18 for each host country respectfully. This rolling period has been taken from BS 5228. An exceedance may occur in any of the four specified time periods (early morning, daytime, evening, out of hours if applicable), but multiple exceedances in a day only count as one day of exceedance for the purposes of the rolling 15-day period. Mitigation measures will be incorporated into the design to minimise the risk of noise exceeding the Upper Noise Limits that are quantifiable and demonstrably show noise reductions based on worst-case scenarios. A list of suitable mitigation measures is presented in Section 4.5.1.4

The values in Table 4-16, 4-17 and 4-18 have been derived from the compilation of the available values from international standards and guidelines as reasonable approach to balancing protection of amenity without unduly constraining temporary construction works.

Where noise is predicted to be within 5 dB of reaching the Upper Noise Limits, suitable locations representative of noise sensitive receptors will be identified for noise monitoring. Where noise measurements identify that a construction phase has, or is likely to, result in exceedances of the Upper Noise Limits for 10 or more days in any 15-day period, mitigation measures will be applied as appropriate to minimise noise levels. Where the Upper Noise Limits continue to be exceeded for 10 or more days in any 15-day period, after all other mitigation options have been implemented, consideration will be given to the provision of temporary rehousing for affected parties for the period of disturbance. TAP will make

temporary rehousing considerations on case by case basis following a noise risk assessment and a consultation with the affected parties.

Table 4-16 Project Threshold values and upper limits for construction noise levels for Greece

Assessment Period	*Early Morning 06:00 to 07:00*	*Daytime 07:00 to 19:00*	*Evening 19:00 to 22:00*	*Out of Hours 22:00 to 06:00*
Lower Threshold Value	45[1] $L_{Aeq,\ 1\ hour^*}$ (dB)	70[4] $L_{Aeq,\ 12\ hours^*}$ (dB)	55[3] $L_{Aeq,\ 3\ hours^*}$ (dB)	45[1] $L_{Aeq,\ 1\ hour^*}$ (dB)
Upper Noise Limit	55[2] $L_{Aeq,\ 1\ hour^*}$ (dB)	75[4] $L_{Aeq,\ 12\ hours^*}$ (dB)	65[4] $L_{Aeq,\ 3\ hours^*}$ (dB)	55[2] $L_{Aeq,\ 1\ hour^*}$ (dB)

Notes:

[1] Based on criteria within WHO Guidelines for Community Noise (1999)

[2] Based on Interim Target within WHO Night Noise Guidelines for Europe (2009) and BS 5228

[3] Based on criteria within WHO Guidelines for Community Noise (1999) and BS 5228

[4] Based on BS 5228

* Averaging time

Table 4-17 Project Threshold values and upper limits for construction noise levels for Albania

Assessment Period	*Early Morning 06:00 to 07:00*	*Daytime 07:00 to 19:00*	*Evening 19:00 to 22:00*	*Out of Hours 22:00 to 06:00*
Lower Threshold Value	45[1] $L_{Aeq,\ 1\ hour^*}$ (dB)	70[4] $L_{Aeq,\ 12\ hours^*}$ (dB)	55[3] $L_{Aeq,\ 3\ hours^*}$ (dB)	45[1] $L_{Aeq,\ 1\ hour^*}$ (dB)
Upper Noise Limit	55[2] $L_{Aeq,\ 1\ hour^*}$ (dB)	75[4] $L_{Aeq,\ 12\ hours^*}$ (dB)	65[4] $L_{Aeq,\ 3\ hours^*}$ (dB)	55[2] $L_{Aeq,\ 1\ hour^*}$ (dB)

Notes:

[1] Based on criteria within WHO Guidelines for Community Noise (1999) and Albanian Directive No 8

[2] Based on Interim Target within WHO Night Noise Guidelines for Europe (2009) and BS 5228

[3] Based on criteria within WHO Guidelines for Community Noise (1999) and BS 5228 and Albanian Directive No 8

[4] Based on BS 5228

* Averaging time

Table 4-18 Project Threshold values and upper limits for construction work noise levels for Italy

Assessment Period	*Early morning: 06:00–07:00*	*Daytime: 07:00–19:00*	*Evening: 19:00–22:00*	*Out of hours: 22:00–06:00*
Lower threshold value	45[1] $L_{Aeq,\ 1\ hour}$* (dB)	70[5] $L_{Aeq,\ 12\ hours}$* (dB)	55[3] $L_{Aeq,\ 3\ hours}$* (dB)	45[1] $L_{Aeq,\ 1\ hour}$* (dB)
Upper noise limit	55[2] $L_{Aeq,\ 1\ hour}$* (dB)	75[6] $L_{Aeq,\ 12\ hours}$* (dB)	65[4] $L_{Aeq,\ 3\ hours}$* (dB)	55[2] $L_{Aeq,\ 1\ hour}$* (dB)

Notes:

[1] Based on criteria within WHO Guidelines for Community Noise (1999). This level relates to 5 dB below the night-time criteria for Zone B in DPCM 91 (as reproduced in Table 4-8)

[2] Based on Interim Target within WHO Night Noise Guidelines for Europe (2009) and BS 5228. This level relates to 5 dB above the night-time criteria for Zone B in DPCM 91 (as reproduced in Table 4-8)

[3] Based on criteria within WHO Guidelines for Community Noise (1999) and BS5228. This level relates to 5 dB below the daytime criteria for Zone B in DPCM 91 (as reproduced in Table 4-8)

[4] Based on BS 5228. This level relates to 5 dB above the daytime criteria for Zone B in DPCM 91 (as reproduced in Table 4-8)

[5] Based on BS 5228 and Puglia Regional Law. This level relates to the daytime criteria for 'All zones' in DPCM 91 (as reproduced in Table 4-8)

[6] Based on BS 5228. This level relates to 5 dB above the daytime criteria for 'All zones' in DPCM 91 (as reproduced in Table 4-8)

* Averaging time

For Italy Currently, neither Melendugno Municipality nor Vernole Municipality (of which the PRT is close to the border) have an approved Acoustic Zoning Plan. As such, the Italian legislation applicable is the noise limits in DPCM 91 (Table 4-6). However, these limits are not considered appropriate in relation to construction, as noise levels will potentially exceed the limits but for such a temporary period of time that the effect would not be considered significant. Therefore, as per Law 447/1995, alternative standards should be agreed by EPC CONTRACTOR with the Municipality based on international and national standards with a focus on protecting residents during noise sensitive times. In the event the agreed alternative standards are less stringent that Project Standards, EPC Contractor shall comply with Project Standards.

4.5.1.4 Recommended mitigation measures

4.5.1.4.1 Lower threshold value exceedance mitigation measures

Where the Lower Threshold Values are predicted to be exceeded, noise on site will be minimised using good industry practice. The following are examples of noise management measures that could be incorporated into the management of the construction works.

EPC CONTRACTOR noise:

- unless carrying out works, persons should return to accommodation and not congregate outside camps for prolonged periods of time
- all staff will receive a site induction and toolbox talks on the effects of noise as a nuisance and way to minimise noise at the source
- EPC Contractors and suppliers will be made aware of the environmental constraints of the site and made to follow the necessary procedures to minimise noise levels
- staff will be supervised to prevent, avoid or minimize unnecessary noise, such as shouting
- signs will be displayed within the site to raise awareness and stress the importance of noise control and its impact on local residents
- nearby residential receptors will be consulted before particularly noisy activities.

Loading and unloading in sensitive areas:

- loading and unloading of trucks and vehicles to be conducted in daytime/evening hours (07:00–19:00) where possible
- restrict loading/unloading of equipment to within hoarding barriers, where these have been erected to minimise noise levels
- shut down vehicle engines when not in use
- use of rubber linings to reduce impact noise and minimise drop heights
- avoid slamming doors
- use of white noise reversing alarms

- design site to reduce the need for reversing (reversing avoided where possible for health and safety purposes).

Equipment and works noise:

- modern, silenced and well-maintained equipment to be used
- equipment and machinery regularly checked and maintained to ensure it is running efficiently with no unnecessary noise
- machinery will not run unnecessarily and be powered down or switched off when not in use.

4.5.1.4.2 Upper Noise Limit mitigation measures

The following mitigation measures are to be considered where it is identified that the Upper Noise Limits will be exceeded for 10 days out of 15 days. Exceedances could be identified during construction scheduling or when monitoring construction works:

- substitution of equipment/machinery with less noisy types
- provision of barriers either moveable or semi-permanent (can range from standard construction hoarding to specialist sound insulated acoustic barriers)
- siting and orientation of semi-static equipment as far as reasonably practicable away from sensitive receptors during relevant activities.

4.5.2 Project standards for marine noise

It should be noted that marine pipeline construction in Albanian and Italian waters does not involve the man-made noise sources of primary concern with regard to disturbance of marine life (i.e. explosions, piling). As a protection measure, trained marine mammal observers (MMOs) will be deployed on vessels during the pipelay and coastal works to look out for presence of mammals within pre-defined noise impact zones.

Reference should also be made to the recently adopted International Maritime Organization (IMO) ‘Guidelines for the Reduction of Underwater Noise from Commercial Shipping to Address Adverse Impacts on Marine Life’ (July, 2014). This document outlines methods for underwater noise measurement and measures to reduce shipping noise through vessel design considerations, onboard machinery control measures, additional technology, and operation and maintenance measures.

4.5.3 Project standards for construction vibration

The Project shall adhere to the principles of UK British Standard 5228-2009 Part 2 for Vibration Control, laid out in Table 4-19. BS 5228-2009 has been selected as the most comprehensive and appropriate standard (not a guideline) providing industry-specific noise and vibration control procedures for construction operations.

Table 4-19 Project standards for construction vibration

Standard	*Receptor*	*Vibration guideline values, mms^{-1} (PPV)*
British Standard 5228, 2009 Code of practice for noise and vibration control on construction and open sites – Part 2: Vibration	Humans in buildings	1.0 mms^{-1}: It is likely that vibration of this magnitude in residential environments will be perceived and could cause complaint, but can be tolerated if warning and explanation has been given to residents. 10 mms^{-1}: Vibration is likely to be intolerable for any more than a very brief exposure to this level.
British Standard 5228, 2009 Code of practice for noise and vibration control on construction and open sites – Part 2: Vibration	Unreinforced or light framed structures Residential or light commercial type buildings	Limits above which cosmetic damage to buildings could be caused: • 0.6 $mm \cdot s^{-1}$ at < 4 Hz • 15 $mm \cdot s^{-1}$ at 4 Hz increasing to • 20 $mm \cdot s^{-1}$ at 15 Hz increasing to • 50 $mm \cdot s^{-1}$ at 40 Hz and above.
Exceptions: Where existing background vibration levels are identified as exceeding the above standards prior to project start-up (caused by non-project sources) then the project may not be able to meet this standard due to factors outside of the project's control. In these circumstances, the project will consider the vibration levels and, taking into account the non-project factors affecting vibration, will take reasonably practicable steps to reduce the project's contribution to vibration (for example by appropriate equipment choice, operational time, routes and locations of work).		

During the design of the construction schedule, predicted exceedances of the vibration guideline values at receptors will be identified. Appropriate mitigation will be applied in order to minimise the effects of vibration. Where there is still the potential for vibration levels at receptor locations to exceed guideline values, monitoring will be undertaken at these locations for the duration of the relevant construction works. In addition, EPC Contractor will undertake building condition surveys immediately before and after works, where there is the potential for damage to buildings or archaeological / historical sites from vibration or the potential for claims against EPC Contractor or the TAP from vibration damage.

Potential vibration mitigation measures to be considered are as follows:

- consulting with nearby residential receptors during activities resulting in elevated vibration levels

- substitution of equipment or methods of working resulting in elevated vibration levels with less intrusive equipment or methods of working
- relocation of semi-static equipment resulting in elevated vibration levels
- isolation of semi-static vibrating equipment using resilient mountings.

4.6 Operational standards for noise and vibration

4.6.1 Operational standards for onshore and coastal noise

4.6.1.1 Compressor stations in Greece

The noise standards set out below apply to the operation of the compressor stations in Greece:

- LAeq ≤ 65 dB(A) at the compressor station fence (measured as hourly averaged noise level)
- compressor noise impacts should not exceed a maximum increase in background levels of 3 dB(A) at the nearest existing sensitive receptor location off-site or a maximum of 45 dB(A), whichever is higher (based on the World Bank Group / IFC criteria).

4.6.1.2 Compressor stations in Albania

The noise standards set out below apply to the operation of the Compressor Stations (ACS02 and ACS03) in Albania:

- LAeq ≤ 65 dB(A) at the compressor station fence (measured as hourly averaged noise level)
- compressor station noise impacts should not exceed a maximum increase in background levels of 3 dB(A) at the nearest receptor location off-site (World Bank Group / IFC criteria).

4.6.1.3 Pipeline receiving terminal in Italy

An increase in the noise level in the area adjacent to the PRT site is expected during the operation phase due to PRT activities. The noise standards set out below apply to the operation of the PRT in Italy:

- PRT noise impacts should not exceed a maximum increase in background levels of 3 dB(A) at the nearest existing sensitive receptor location off-site, or a maximum of 45

dB(A), whichever is higher (based on the World Bank Group/ IFC criteria and DPCM 91).

4.6.2 Operational standards for marine noise and vibration

At present, no standards exist for offshore noise and vibration during operations as there are too many uncertainties concerning how marine life perceives sound and what units are relevant for assessments. It should be noted that marine pipeline operation in Italian waters does not involve the man-made noise sources of primary concern with regard to disturbance of marine life.

Reference should also be made to the recently adopted IMO ‘Guidelines for the Reduction of Underwater Noise from Commercial Shipping to Address Adverse Impacts on Marine Life’ (July 2014). This document outlines methods for underwater noise and vibration measurement and measures to reduce shipping noise and vibration through vessel design considerations, onboard machinery control measures, additional technology, and operation and maintenance measures.

5 Air emissions

5.1 Introduction

This section considers standards relating to air emissions and ambient air quality in relation to onshore and offshore construction activities. This includes emission standards for point source emissions from the compressor stations (GCS00 and GCS01), compressor stations (ACS02 and ACS03) and PRT during the operational phase.

Source emission standards are generally set in terms of maximum concentrations of pollutants at the point of release, e.g. in the exhaust gases of combustion plant.

Ambient air quality standards are designed to protect human health, vegetation and ecosystems. These standards are stipulated in terms of maximum concentrations of air pollutants in ambient air at any given location. Both construction and operational phases of the Project will have some impact on local air quality and this contribution, after accounting for baseline air quality conditions, can be compared with ambient air quality standards to verify compliance.

Construction phase impacts are considered temporary and local to the construction area. Due to this, and the constantly changing nature of the construction activities, compliance with ambient air quality standards is normally targeted by stipulating emission standards for construction equipment and the project dedicated vehicle fleet. Construction dust is considered the key air pollutant of concern during the construction phase and will be controlled by EPC Contractor through mitigation measures and sound environmental management techniques.

The potential impacts resulting from the operational phase are more predictable than those resulting from the construction phase. Operational Emission standards for the Project (e.g. emission standards for gas turbines at compressor stations and for the combustion plant at the PRT) are stipulated.

5.1.1 Construction phase

Construction activities have the potential to impact ambient air quality in relation to:

- onshore and coastal:
    - dust emissions from earthworks, excavations, vehicle movements, stockpiles, unpaved surfaces etc., along the working strip, on work sites and access roads

- exhaust gases and particulate emissions from construction machinery and non-road mobile equipment (e.g. excavators, bulldozers, generators, trucks and cars).
- emissions from mobile diesel generators
- exhaust gases and particulate emissions from engine-driven machinery involved in offshore hydrostatic testing

- marine:
  - emissions of various pollutant gases (e.g. NO_x, CO, CO_2, VOC, PM, SO_x) from vessel operations.

These potential impacts were assessed in the ESIA Greece (see Sections 8.2.1 and 8.2.2), EISA Albania (see Sections 8.1.2 and 8.2.3), and ESIA Italy (see Sections 8.2.3 and 8.5.1).

Among the dust-producing activities, the construction of the compressor stations GCS00 and GCS01 (24 months), ACS02 (20 months), ACS03 (26 months) and PRT (18 months) are considered to be potentially the most critical owing to their duration and their fixed geographical location. Other dust-producing activities during the Project construction phase will not have a permanent geographical location, as they will be moving along the route.

The main source of emissions to the atmosphere during the offshore construction phase of the Project will be the exhaust gases from the construction vessels. The principal releases to air are NO_x, CO, CO_2, VOC, PM and SO_x.

Relevant Project standards for the construction phase are presented in Section 5.5.

5.1.2 Operational phase

Identified operational sources of atmospheric emissions are presented in Sections 5.1.2.1 - 5.1.2.3. Additional sources of emissions may be identified as the Project progresses. Should any additional sources be identified, this section will be revised accordingly. Relevant Project standards for the operational phase are presented in Section 5.6.

5.1.2.1 Air emissions sources in Greece

Sources of atmospheric emissions during the operational and maintenance phase include:

- operation of the compressor stations:

- combustion emissions from the gas turbines, heating boilers, power generation gas engines and other combustion plant
- venting of gas for emergency or maintenance depressurisation
- fugitive losses

- emissions from project dedicated vehicles associated with general pipeline maintenance (considered to be minimal).

These potential impacts were assessed in the ESIA Greece (see Sections 8.2.2 and 8.2.3 of the ESIA Greece). Vehicle movements associated with operations and maintenance were considered minimal, and therefore associated effects on air quality were not seen as key impacts.

GCS00 and GCS01 atmospheric emissions will be primarily produced by turbines fuelled with natural gas, driving the compressors. At the GCS00 compressor station, three 15 MW turbines will be installed (two on duty, one on standby). In the 20 bcm/yr capacity case, an additional three 15-MW gas turbines will be installed at GCS00, giving a total installed capacity of approximately 90 MW. At the GCS01 compressor station, no turbines will be operational for the 10 bcm/yr capacity case. In the 20 bcm/yr capacity case, five 25 MW turbines will be installed (4 duty, 1 standby), giving a total installed capacity of around 125 MW. The ESIA Greece concluded that emissions of CO and NO_X are the key pollutants of concern.

5.1.2.2 Air emission sources in Albania

Sources of onshore atmospheric emissions during the operational and maintenance phase include:

- operation of the compressor stations – the gas turbines (and heating boiler (capacity of 2.25 MWth) and power generation gas engine at ASC03), venting[18] from the tanks and gas analyser, and secondary seal gas from the compressors all constitute stationary emission sources
- fugitive emissions from the block valve stations
- project dedicated vehicle emissions associated with general pipeline maintenance and surveillance.

[18] In addition, once a year natural gas will be vented to the atmosphere for depressurisation of the station.

These potential impacts were assessed in the ESIA Albania (see Section 8.6.3 of the ESIA). Fugitive and exhaust emissions from operation and maintenance traffic were considered to be negligible and therefore were not subjected to a detailed assessment.

ACS02 and ACS03 atmospheric emissions will be produced by turbines fuelled with European Association for the Streamlining of Energy Exchange (EASEE) compliant gas. At the ACS03 compressor station 15 MW turbines will be installed with a thermal input of 45.45 MW. At the ACS02 compressor station no turbines will be operational for the 10 BCM capacity case, in the 20 BCM capacity case 25 MW turbines will be installed with a thermal input of 75.76 MW. The ESIA for Albania concluded that emissions of particulates and SO_2 will be negligible and that CO and NO_X are the key pollutants of concern.

Sources of offshore atmospheric emissions during the operational and maintenance phase will be limited to vessel emissions associated with general marine pipeline maintenance and surveillance.

5.1.2.3 Air emission sources in Italy

Sources of atmospheric emissions during the operational and maintenance phase include

- onshore and coastal:
    - operation of the PRT, including the two gas-fired heating boilers (nominal capacity of 3.5 MW each), emergency cold vents (natural gas emissions) and a diesel-fuelled emergency generator
    - project dedicated vehicle emissions associated with general pipeline maintenance and surveillance
- marine:
    - emissions of various pollutant gases from vessel operations associated with general marine pipeline maintenance and surveillance.

Additional sources of emissions may be identified as the Project progresses. Should any additional sources be identified, this section will be revised accordingly.

These potential impacts were assessed in the ESIA Italy (see Sections 8.2.3 and 8.5.1 of the ESIA Italy). Emissions from emergency cold venting and the emergency generator (associated with the operation of the PRT) will be operative only under emergency conditions, which are anticipated to be very rare and of short duration, and as such are considered to be negligible and therefore were not subjected to a detailed assessment.

Exhaust emissions from operation and maintenance of project dedicated vehicles and vessels were considered negligible and therefore were not subjected to a detailed assessment.

5.2 National Standards

5.2.1 Greek national standards

The relevant Greek legislative instruments are implementations of European directives. Table 5-1 shows the corresponding instruments.

Table 5-1: Convergence of Greek and EU legislation on air emissions and air quality

Greek instrument	*Implements EU directive*	*Subject/outline*	*Specific standards*
JMD 14122/459/E.103 30 March 2011 (Gov. Gaz. 488/B)	2008/50/EC	Ambient air quality – includes limit values for most key pollutants	Table 5-6
JMD 22306/1075/E103 8 June 2007 (Gov. Gaz. 920/B)	2004/107/EC	Ambient air quality – includes target values for arsenic, nickel, cadmium, mercury and polycyclic aromatic hydrocarbons (PAH)	Not considered relevant to the Project's emissions
MD 36060/1155/E.103 14 June 2013 (Gov. Gaz. 1450/B)	2010/75/EU	Industrial emissions – includes emission limit values for large combustion plant	Table 5-4
MD 34062/957/E103 20 August 2015 (Gov. Gaz. 1793/B)	Article 32 of 2010/75/EU	Puts in place national transitional emissions reduction plan	None
JMD 54409/2632 27 December 2004 (Gov. Gaz. 1931/B) as amended by MD 26910/852/E103 25	2003/87/EC as amended by 2004/101/EC, 2008/101/EC and 2009/29/EC	Sets up participation in EU greenhouse gas trading scheme (EU ETS)	No standards classed as environmental for the purposes of this document. There are specific requirements around metering

Greek instrument	*Implements EU directive*	*Subject/outline*	*Specific standards*
April 2013 (Gov. Gaz. 1021/B) and others			uncertainty and other aspects.

An exception is JMD 189533, 9 September 2011 (Gov. Gaz. 2654/B) “Regulation of issues relating to the operation of combustion points for heating buildings and water”. This instrument does not stem from a European directive but sets the limit values in Table 5-2 for flue gases from combustion boilers for buildings and water heating.

Table 5-2 Greek national standards for boilers heating buildings and water

Parameter	*Limit value for diesel*	*Limit value for natural gas fuel*
Maximum allowed heat loss value due to heated flue gases, %	15	15
Maximum allowed value for flue gases content per volume in CO (3% O_2), ppm	90	90
Maximum allowed value for flue gases content per volume in NO_x (3% O_2), ppm	150	125
Maximum allowed value for smoke index, Bacharach scale	1	0
Maximum allowed value for the concentration of O_2 in the flue gases, % by volume (only for compressing burners)	7	7

5.2.2 Albanian National Standards

5.2.2.1 International Agreements

Albania has ratified the Convention of the United Nations Economic Commission for Europe (UNECE) on Long Range Trans-Boundary Air Pollution. In February 2009, the Assembly ratified the first two protocols on reducing respective emissions of SO_2 and NO_x via:

- Law No 10062, 2009, “On control of emissions of nitrogen oxides or their trans-boundary flows”
- Law No 10063, 2009, “On reducing sulphur emissions or their trans-boundary flows’.

5.2.2.2 Emission limit values[19]

Albania has established limit values for NO_x emissions from the emission of various activities (mainly industrial) in DCM no. 435, 2002 "On approval of the emission norms in the Republic of Albania" and Decision no. 248, 2003 "On approval of temporary norms on air emissions and their implementation".

Law No. 8897, 2002 "On air protection from pollution" specifies the classification of pollution sources, based on their capacity, as large (over 5 MW), medium (0.2-5 MW) and small (under 0.2 MW).

Annex 6 of the law "On environmental permitting" 2011, establishes emission limit values for SO_2 and NO_x for large combustion plants. Emission limit values are specified as follows:

- SO2 emission limit values for new plants burning natural gas - 35 mg/Nm3 (at 3% oxygen)
- NOx emission limit values for new turbines burning natural gas with a thermal input greater than 50 MWth input - 50 mg/Nm3 (at 15% oxygen)20.

5.2.2.3 Ambient air quality guidelines

Albanian Decision No. 803/2003 of the Council of Ministers specifies the following ambient air quality guidelines:

Table 5-3 Albanian ambient air quality guidelines

Parameter	*Averaging Period*	*Guideline Value in µg/m³*
Nitrogen dioxide (NO_2)[1]	1 year[p,s]	60
	Maximum daily 4 hr mean concentration[s]	95
	Maximum hourly concentration	250

[19] Information sourced from 'Strategies and Policies of Parties and Signatories to the Convention for the Abatement of Air Pollution, 2010 Questionnaire for Priority Compliance Review, Albania'

[20] For above 70% load.

Parameter	*Averaging Period*	*Guideline Value in µg/m³*
Particulate Matter [2] PM_{10}	1 year (annual average)[p,s] 24 hour (maximum daily)[p,s]	60 150
Particulate Matter [2] $PM_{2.5}$	1 year (annual average)[p,s] 24 hour (maximum daily)[p,s]	15 65
Sulphur dioxide (SO_2)	1-year[s] Maximum hourly concentration[s] 24 hour (maximum daily)[p]	35 360 120
Carbon monoxide	Maximum hourly concentration 8-hour daily maximum 24-hour (maximum daily)	40,000 10,000 2,000

Notes:

1. Limits foreseen for NO_2
2. Maximum ground level concentrations of PM_{10}
3. p: Refers to the limit applied to sensitive groups of population as children, elders etc.
4. s: Refers to the limit aimed at the protection and preservation of public wellbeing, animals, building etc.

5.2.3 Italian national standards

5.2.3.1 International agreements

Italy has ratified the Convention of UNECE on Long Range Transboundary Air Pollution. Italy has also ratified the following protocols by which the convention was extended:

- protocol 1.b on the reduction of sulphur emissions or their transboundary fluxes by at least 30 per cent (1985), ratified 1990
- protocol 1.c concerning the control of emissions of nitrogen oxides or their transboundary fluxes (1988), ratified 1992
- protocol 1.d concerning the emissions of volatile organic compounds of their transboundary fluxes, ratified 1995
- protocol 1.e on further reduction of sulphur emissions (1994), ratified 1998.

5.2.3.2 Environmental authorisation

DPR n. 59/2013 “Regulations concerning a single environmental authorisation (Autorizzazione Unica Ambientale - AUA)” requires installations to apply for an operational authorisation that will specify environmental standards that must not be exceeded. AUA is an integrated environmental authorisation that covers many environmental aspects, such as air emissions, waste, noise emissions and water discharges. An installation needs an AUA if it requires any type of authorisation covered by AUA (e.g. an air emission authorisation). The limits and the requirements within the AUA are based on relevant national and local law as a minimum. For instance, the AUA section regarding air emissions will be based on the limits provided by the legislative decree 152/2006 - part five and s.m.i. However, the competent authority has the power to require more restrictive limits based on a specific environmental context.

D.lgs 152/2006 “environmental regulation” and s.m.i requires that combustion facilities fuelled by natural gas with a rated thermal input of greater than 3 MW require atmospheric emissions authorisation from the relevant competent authority, which is the Province of Lecce for Project activities. For diesel-fired plant, the threshold is 1 MWth. Plant under the thresholds may still be subject to notification via a formal communication to the competent authority.

For gas-fired plant, the decree specifies a limit for the NO_x concentration in dry flue gas (at 3% oxygen) of 350 mg/Nm^3. The SO_2 and dust limits from the same part of the decree are not applicable to plant fired on methane, which is used erroneously as a synonym for natural gas. These limits will not be applied.

If the diesel-fuelled standby generation plant is under the 1 MWth rating threshold it will not be subject to authorisation. If over the threshold, the plant may need to be specified in the authorisation, but no emission limits would be applied.

The relevant parts of this decree will be substantially or entirely superseded when Italy implements the EU medium combustion plant directive (see Section 5.3.2).

5.2.3.3 Ambient air quality

D.lgs 155/2010 “ambient air quality standards” and s.m.i harmonises Italian standards for ambient air quality with directive 2008/50/EC, setting limits for NO_x, SO_2, fine fractions of particulate matter (PM_{10} and $PM_{2.5}$), benzene, lead, ozone and CO. Further information on the ambient air quality limits for pollutants of concern to the Project set out by Directive 2008/50/EC is provided in Section 5.3.3.

5.3 European standards

5.3.1 Directive 2010/75/EU – the Industrial Emissions Directive

The directive on industrial emissions incorporates seven existing directives into one, including the Large Combustion Plant Directive, the Integrated Pollution Prevention and Control Directive and the Waste Incineration Directive. Annex V of the directive sets emission limit values for large combustion plants (with an installed capacity rating greater than 50 MWth). It is assumed that the compressor stations will be captured by this owing to the aggregation rules in article 29 of the directive. Emission limit values relevant to the gas turbines at the compressor stations are shown in Table 5-4. None of the other emission sources associated with the Project are likely to be captured under this directive.

Table 5-4 EU Industrial Emissions Directive – emission limit values for gas turbines

Parameter	*Limit value in mg/Nm^3 (at 15% O_2)*
Oxides of nitrogen (NO_x)	50
Carbon monoxide (CO)	100
Notes: 1. For single cycle gas turbines having an efficiency greater than 35% – determined at ISO base load conditions – the emission limit value for NO_x shall be 50 * η/35 where η is the gas turbine efficiency at ISO base load conditions expressed as a percentage. 2. For gas turbines, the NOx and CO the emission limit values apply only above 70% load.	

5.3.2 Directive 2015/2193 – the Medium Combustion Plant Directive

The medium combustion plant directive (MCPD) entered into force in late 2015 and must be transposed into member state legislation by 19 December 2017.

It applies to combustion plant with a rated thermal input between 1 and 50 MWth. Similar aggregation rules as per the industrial emissions directive (IED) apply – i.e. if individual plant units emit, or could emit[21], through a common stack, their capacities are aggregated.

The directive requires qualifying combustion plant to be registered and permitted, to meet a set of emission limits and to monitor emissions.

If the plant is at an installation covered by a permit issued under the IED, the requirements of the MCPD are deemed to be met.

[21] In the judgement of the competent authority, taking technical and economic factors into account

Member states may exempt plant that does not operate for more than 500 hours per year[22] from the emission limits. Such plant will still need to be registered and permitted.

Table 5-4 presents the relevant emission limits. To define relevance, it has been assumed that the only fuels that will be used for stationary combustion plant are gas oil and natural gas. Relevant limits are set only for one pollutant – NO_x.

Table 5-5 EU Medium Combustion Plant Directive – relevant emission limit values

Plant type	*Fuel*	*NOx limit value in mg/Nm³*	*Reference oxygen conditions (%)*
Boiler [1]	Gas oil	200	3
	Natural gas	100	3
Turbine	Gas oil	75	15
	Natural gas	50	15
Engine	Gas oil	190	15
	Natural gas	95	15

Notes:

1. Or any combustion plant other than engines or turbines
2. Relaxations are available for engines running between 500 and 1500 hours/year (<500 enables probable complete exemption), for dual fuel engines and for certain lower-rated engines. See Table 5-8
3. The turbine limits apply only above 70% load.

5.3.3 Directive 2008/50/EC on Ambient Air Quality and Cleaner Air for Europe

This directive specifies ambient air quality limits for a range of parameters for the protection of human health and the environment. These limit values are set out in Table 5-5. The Directive, together with its counterpart Directive 2004/107/EC, also sets limit values for other pollutants (lead, polycyclic aromatic hydrocarbons, arsenic, cadmium and nickel) that are not included in the table as there is a negligible chance of these pollutants being emitted from Project activities in any material quantity.

[22] As a three-year rolling average

Table 5-6 EU Ambient Air Quality Directive – relevant limit values

Pollutant	*Averaging period*	*Limit value in µg/m³*	*Exceedances permitted per year*
Sulphur dioxide (SO_2)	24 hours 1 hour	125 350	3 24
Nitrogen dioxide (NO_2)	1 year 1 hour	40 200	n/a 18
Particulate matter (PM_{10})	1 year 1 day	40 50	n/a 35
Particulate matter ($PM_{2.5}$)	1 year	25	n/a
Benzene	1 year	5	n/a
Ozone (O_3)	Maximum daily 8-hour mean	120	25
Carbon monoxide (CO)	Maximum daily 8-hour mean	10,000	0

Notes:

In addition to the above listed standards, the directive also stipulates the following critical levels for the protection of vegetation and ecologically sensitive sites. These have no margin of tolerance:

- nitrogen oxides (NO_x): 30 µg/m³ (calendar annual average)
- sulphur dioxide (SO_2): 20 µg/m³ (averaging period: calendar year and winter, 1 October to 31 March).

5.4 International lender standards

5.4.1 EBRD standards

No specific EBRD standards with respect to air emissions or ambient air quality have been identified.

EBRD Performance Requirement 3: Resource Efficiency and Pollution Prevention and Control includes a general requirement to promote the reduction of project-related greenhouse gas emissions in a manner appropriate to the nature and scale of operations and impacts but does not set emission standards.

5.4.2 IFC standards

5.4.2.1 IFC General EHS Guidelines 2007: Environmental Air Emissions and Ambient Air Quality

This IFC 'General EHS Guidelines 2007: Environmental Air Emissions and Ambient Air Quality' specify that projects with significant sources of air emissions, and potential for significant impacts to ambient air quality, should prevent or minimise impacts by ensuring that they:

- "…do not result in pollutant concentrations that reach or exceed relevant ambient quality guidelines and standards by applying national legislated standards, or in their absence, the current WHO Air Quality Guidelines (see Section 5.4.3) or other internationally recognised sources"

- "…do not contribute a significant portion to the attainment of relevant ambient air quality guidelines or standards. As a general rule, this guideline suggests 25% of the applicable air quality standards to allow additional, future sustainable development in the same air shed".

Guideline emission limit values for small combustion facilities are set out in Table 5-7.

These guidelines are not considered applicable to the turbines at the compressor stations (which exceed the 50 MWth upper limit and therefore fall under the thermal power guidelines discussed in Section 5.4.2.2[23]). However, these guidelines should be applied to qualifying smaller combustion plant at the compressor stations. There is also the possibility that some stationary combustion plant used for construction may exceed 3 MWth, in which case these guidelines would be applicable.

These guidelines are not considered strictly applicable to the PRT. Although the boilers at the PRT will exceed the lower limit (3 MWth) of the rating range that defines applicability, the guideline values apply to facilities operating more than 500 hours per year with an annual capacity utilisation factor of more than 30%, neither of which will be the case at the PRT where the boilers are only expected to be used for 2% of the time. There is a possibility that some stationary combustion plant used for construction may exceed 3 MWth, in which case these

[23] In fact, the aggregation rules for adding the ratings of individual items of plant for comparison with the capacity threshold are rather unclear, but it is largely irrelevant since the pertinent emission standard for gas turbines is the same in both the general EHS and the thermal power guidelines.

guidelines may be applicable. It is assumed that such equipment would only be engines, rather than boilers or turbines, and therefore the standards for engines are included in the table in addition to the boiler standards (for reference, in case boiler operation is greater than predicted and the standards are deemed to apply).

Table 5-7 IFC small combustion facilities emissions guidelines (3 MWth – 50 MWth)

Combustion technology/fuel	*Particulate matter (PM) mg/Nm^3*	*Sulphur dioxide (SO_2) mg/Nm^3*	*Nitrogen oxides (NO_x) mg/Nm^3, unless ppm stated*	*Dry gas, excess O_2 content (%)*
Engine				
Gas	N/A	N/A	200 (spark ignition) 400 (dual fuel) 1600 (compression ignition)	15
Liquid	50 or up to 100 if justified by project-specific considerations	1.5% sulphur in the fuel or up to 3.0% sulphur if justified by project specific considerations	If bore size diameter [mm] < 400: 1460 (or up to 1600 if justified to maintain high energy efficiency) If bore size diameter [mm] ≥400: 1850	15
Turbine				
Natural gas 3 MWth to 15 MWth	N/A	N/A	42 ppm (electric generation) 100 ppm (mechanical drive)	15
Natural gas 15 MWth to 50 MWth	N/A	N/A	25 ppm	15
Fuels other than natural gas 3 MWth to 15 MWth	N/A	0.5% sulphur or lower (e.g. 0.2%) if commercially available without significant excess fuel cost	96 ppm (electric generation) 150 ppm (mechanical drive)	15
Fuels other than natural gas 15 MWth to 50 MWth	N/A	0.5% sulphur or lower (e.g. 0.2%) if commercially available without significant excess fuel cost	74 ppm	15
Boiler				
Gas	N/A	N/A	320	3

Combustion technology/fuel	*Particulate matter (PM) mg/Nm³*	*Sulphur dioxide (SO_2) mg/Nm³*	*Nitrogen oxides (NO_x) mg/Nm³, unless ppm stated*	*Dry gas, excess O_2 content (%)*
Liquid	50 or up to 150 if justified by environmental assessment	2000	460	3
Solid	50 or up to 150 if justified by environmental assessment	2,000	650	6

The IFC guidelines specify that emissions from point sources should be avoided[24] and controlled according to good international industry practice applicable to the relevant industry sector, through the combined application of process modifications and emissions controls.

5.4.2.2 IFC EHS Guidelines 2008: Thermal Power Plants

The guidelines values are outlined in Table 5-8.

Table 5-8 IFC combustion facilities emissions guidelines (>50MWth)

Combustion Technology / Fuel	*Particulate Matter (PM) mg/Nm³*	*Sulphur Dioxide (SO_2) mg/Nm³*	*Nitrogen Oxides (NOx) mg/Nm³*	*Dry Gas, Excess O_2 Content (%)*
Engine				
Natural Gas	N/A	N/A	200 (spark ignition) 400 (dual fuel)	15
Liquid (plant > 50 MWth to < 300 MWth)	NDA 50 DA 30	NDA 1,170 or use of 2% or less S fuel DA 0.5% S fuel	NDA If bore size diameter [mm] < 400: 1460. If bore size diameter [mm] > or = 400: 1,850. 2000 (dual fuel) DA 400	15
Turbine				

[24] By which the guidelines are interpreted to mean “avoided to as great an extent as practicable“ or “minimised“

Combustion Technology / Fuel	*Particulate Matter (PM) mg/Nm³*	*Sulphur Dioxide (SO_2) mg/Nm³*	*Nitrogen Oxides (NOx) mg/Nm³*	*Dry Gas, Excess O_2 Content (%)*
Natural Gas (all turbine types of Unit > 50 MWth)	N/A	N/A	51 (25ppm)	15
Fuels other than Natural Gas (Unit > 50 MWth)	NDA 50 DA 30	NDA use of 1% of less S fuel DA use of 0.5% or less S fuel	152 (74ppm)	15
Boiler				
Natural Gas	N/A	N/A	240	3
Liquid (plant > 50 MWth to < 600 MWth)	NDA 50 DA 30	NDA 900 – 1500 DA 400	NDA 400 DA 200	3
Solid (plant > 50 MWth to < 600 MWth)	NDA 50 DA 30	NDA 900 – 1500 DA 400	NDA 510 (or up to 1100 if volatile matter of fuel <10%) DA 200	6
NDA - Non-degraded air-shed DA - Degraded air-shed (poor air quality)				

Greece: the IFC guidelines' intention with regards to the aggregation of individual combustion plants' capacity ratings for comparison with thresholds that define standards' applicability is rather unclear. It is considered appropriate, however, to apply the thermal power plant guidelines to the compressor turbines at GCS00 and GCS01. The only relevant specific emission standard is the same as per the general EHS guidelines, i.e. NO_x emissions from gas turbines to be limited to 25 ppm (at 15% O_2). Some of the narrative guidelines are, however, more comprehensive and/or more prescriptive (e.g. those related to emissions monitoring).

Albania: For the TAP 20 BCM capacity case, 25MW turbines will be installed at the ASC02 compressor station with a thermal input of 75.76 MW. As a result, the IFC Environmental, Health & Safety Guidelines for Thermal Power Plants (December 2008) will apply, see Table 5-8.

5.4.3 World Bank and WHO Standards

World Bank requirements for ambient air quality are to apply national legislative standards or, in their absence, the current WHO guidelines or other internationally recognised sources.

The WHO air quality guidelines are designed to offer guidance in reducing the health impacts of air pollution and are intended for use worldwide. The WHO air quality guidelines were updated most recently in the 2005 global update. Where pollutants were not included in the 2005 global update, the WHO Air Quality Guidelines for Europe (2000) remain in effect. The ambient air quality guideline values are presented in Table 5-9.

Table 5-9 WHO ambient air quality guidelines

Parameter	Averaging period	Guideline value in µg/m^3
Sulphur dioxide (SO_2)	24-hour 10-minute	20 500
Nitrogen dioxide (NO_2)	1 year 1 hour	40 200
Particulate matter **PM_{10}**	1 year 24-hour	20 50
Particulate matter **$PM_{2.5}$**	1 year 24-hour	10 25
Ozone	8-hour daily maximum	100
Carbon monoxide	15 minutes 30 minutes 1 hour 8 hours	100,000 60,000 30,000 10,000

Notes:

CO guideline value from the WHO air quality guidelines for Europe (2000) guidelines; the remainder from the WHO air quality guidelines 2005 global update.

Interim targets for SO_2, PM and ozone are provided in the 2005 global update document in recognition of the need for a staged approach to achieving the recommended guidelines.

WHO guidelines also include the following for the protection of forests and natural vegetation:

- sulphur dioxide (SO_2): 20 µg/m^3 as annual and winter mean
- nitrogen oxides (NO_x): 30 µg/m^3 as annual mean.

5.4.4 International maritime agreements

5.4.4.1 Protocol of 1997 (International Convention for the Prevention of Pollution from Ships (MARPOL) Annex VI)

MARPOL 73/78 Annex VI sets limits on sulphur oxide and nitrogen oxide emissions from ship exhausts and prohibits deliberate emissions of ozone-depleting substances. The annex was revised in 2008.

Under the revised MARPOL annex VI, the global sulphur limit for marine fuel is 3.5%. From 1 January 2020, it is proposed that this will be progressively reduced to 0.5%, subject to a feasibility study.

Annex VI contains provisions allowing for special sulphur emission control areas (SECAs) to be established with more stringent controls on sulphur emissions. The Adriatic Sea is not designated as a SECA.

The protocol prohibits deliberate emissions of ozone-depleting substances, which include halons and chlorofluorocarbons (CFCs). New installations containing ozone-depleting substances are prohibited on all ships, although new installations containing hydro-chlorofluorocarbons (HCFCs) are permitted until 1 January 2020.

Annex VI also sets limits on emissions of NO_x from diesel engines. A mandatory NO_x technical code came into force on 1 July 2010. For further details see Section 5.4.4.2 below.

Annex VI regulation 16 describes the requirements for incinerators on marine vessels and includes specifications on what can be incinerated. This includes the need for an IMO type approval certificate for each incinerator. Appendix IV of the Annex 13 sets out the requirements that the incinerator must meet into order to gain a certificate.

5.4.4.2 MARPOL NOx controls – regulation 13

The NOx control requirements of MARPOL annex VI apply to all marine diesel engines over 130 kW output power, other than those used solely for emergency purposes. These requirements are set out in

Table 5-10. Tiers of control apply, based on the ship construction date. Within each tier, the actual limit value is determined from the engine's rated speed.

Table 5-10 MARPOL NO_x control requirements

Tier	*Ship construction date (on or after)*	*Total weighted cycle emission limit (g/kWh) n = engine's rated speed (rpm)*		
		n < 130	*n = 130 -1999*	*n ≥ 2000*
I	1 January 2000	17.0	$45n^{-0.2}$ e.g. 720 rpm – 12.1	9.8
II	1 January 2011	14.4	$44n^{-0.23}$ e.g. 720 rpm – 9.7	7.7
III	1 January 2016	3.4	$9n^{-0.2}$ e.g. 720 rpm – 2.4	2.0

The tier III controls apply only to ships operating in emission control areas (ECAs). This does not apply to the Adriatic Sea. Outside such areas, tier II controls apply.

The control of diesel engine NO_x emissions is achieved through survey and certification requirements, leading to the issue of an engine international air pollution prevention (EIAPP) certificate and the subsequent demonstration of in-service compliance. Most tier I engines have been certified to the earlier (1997) version of the NO_x technical code, which remains valid over the service life of such engines.

5.5 Project standards for construction air emissions

Relevant Project standards are presented below. They are derived from the most stringent of the national, EU and international lender standards. It should be noted that where practicable and feasible, every effort shall be made to use ultra-low sulphur both for project dedicated vehicles and stationary plant.

5.5.1 Project Standards for onshore air emissions

5.5.1.1 Construction combustion equipment - Greece and Italy

Emission standards for lower-rated combustion plant (1 to 50 MWth) are as presented in Table 5-11. Here, only the NOx limits will have legal force, as they are from the EU medium combustion plant directive. The other standards are from the IFC guidelines. Plant operating less than 500 hours per year is likely to be exempt from the limits, depending on the host country implementation of the directive, and the IFC guidelines also no not apply to such plant.

Table 5-11 Project Standards for emissions from medium combustion facilities (1-50 MWth)

Combustion technology/fuel	*Particulate matter (PM) mg/Nm³*	*Sulphur dioxide (SO_2) mg/Nm³*	*Nitrogen oxides (NO_x) mg/Nm³*	*Dry gas, excess O_2 content (%)*
Engine				
Gas	N/A	N/A	95 190 (dual fuel engine in gas mode)	15
Liquid	50 or up to 100 if justified by project-specific considerations	1.5% sulphur in the fuel or up to 3.0% sulphur if justified by project specific considerations	190 225 (dual fuel engine in gas mode or diesel engine <20 MWth and <1200 rpm)	15
Turbine				
Natural gas	N/A	N/A	50	15
Liquid	N/A	0.5% sulphur or lower (e.g. 0.2%) if commercially available without significant excess fuel cost	75 (above 70% load)	15
Boiler				
Gas	N/A	N/A	100	3
Liquid	50 or up to 150 if justified by environmental assessment	2000	200 (gas oil)	3

5.5.1.2 Construction combustion equipment - Albania

Combustion equipment to be used during the construction stage will be limited to low number of equipment with a rating rarely exceeding 1MWth. Combustion equipment used for pipeline construction activities is generally far less than 3 MWth (portable diesel generators generally having a rating of up to 1 MWth, for example, and mobile construction plant far less than this).

Any equipment to be used having a total, rated heat input capacity of <3 MWth that is likely to run more than 500 hours per year shall meet the Project Standards for emissions from medium combustion facilities (Table 5-11). Any equipment to be used having a total, rated heat input capacity of between 3 MWth and 50 MWth shall meet the relevant standards for small combustion processes within IFC General EHS Guidelines (2007), Environmental Air Emissions and Ambient Air Quality. These are set out in Table 5-7 of this document.

5.5.1.3 Construction Project dedicated Vehicle and non-road mobile machinery – Greece and Italy

Although there are comprehensive legislative requirements on emissions from both road-going vehicles dedicated to the Project and non-road mobile machinery, generally set at EU level and implemented into national law in the usual way, the onus is almost entirely on manufacturers to demonstrate that their products meet the required standards before they are first placed on the market.

5.5.1.4 Construction emissions from Project dedicated vehicles - Albania

In line with Albanian Instruction No. 6527, dated 24.12.2004, "On the limits of the emissions and noise levels due to the transport activities and their control ways" the following Table 5-12 summarizes the emission limits for combustion engine driven vehicles. Every effort shall be made for Project-dedicated vehicles to meet Euro-6 vehicle standard.

Table 5-12 Albanian Standard: Vehicle emission limits for vehicles

Emissions limits for vehicles in use in Albania								
Nr.	**Year of production**	**Fuel**	**RPM**	**Emissions**		**λ**	**Vehicle category**	
				CO (% volume)	**HC (ppm)**			
Vehicles with forced flashing								
Without catalytic converter								
1	Before 01.10.1986	Gasoline	800 – 1000 unleaded	5,5	800		M1	N1
2	01.10.1986 – 30.12.1995			4,5	600			
With catalytic converter								
3	After 01.01.1996	Gasoline	800 – 1000 unleaded	2	300		M1	N1
			2000 – 5000 load	1,5	250	0.97 – 1.03	M1	N1
Combustible vehicles								
Nr.	**Year of production**	**Fuel**	**Engine type**		**Absorption coefficient K m-1**		**Vehicle category**	
1	Before 1988	Diesel	Natural suction		4		All categories M, N	
			Turbo compressors		4,5			
2	1989 - 1996	Diesel	Natural suction		3,5		All categories M, N	
			Turbo compressors		4			
3	After 1996	Diesel	Natural suction		2			

Emissions limits for vehicles in use in Albania					
			Turbo compressors		All categories M, N

5.5.2 Project Standards for offshore air emissions

All construction vessels are to comply with the following:

- marine fuel is to comply with the global sulphur limit of 3.5%, specified under MARPOL Annex VI
- diesel engines are to hold a valid EIAPP certificate, in accordance with MARPOL regulation 13 'requirements for the control of NO_x emissions'
- any onboard incinerator must hold a valid IMO type approval certificate (required for each incinerator) and comply with the restrictions on what can be incinerated as required by MARPOL regulation 16.

5.6 Operational standards for air emissions

5.6.1 Operational standards for onshore air emissions

5.6.1.1 Operational combustion equipment – Greece

Emission standards for large combustion plant (where rated thermal input exceeds 50 MWth, and assessment against this threshold is subject to aggregation rules for individual items of plant) are assumed to apply to the gas turbines at the compressor stations. The relevant standards are as presented in Table 5-4 and have legal force.

There will be no power generators routinely operated at the compressor stations.

5.6.1.2 Operational combustion equipment – Albania

Emissions from the natural gas fired turbines at the two compressor stations (ACS02 and ACS03) will be subject to the emission limit values set out within the EU Directive on Industrial Emissions (2010/75/EU) namely as set out in Table 5-4. There will be no power generators routinely operated at the compressor stations.

5.6.1.3 Operational combustion equipment - Italy

The applicable standards for stationary source emissions relevant to the Project are those specified in Sections 5.2.3.2, **Error! Reference source not found.**5.3.2 (Table 5-5) and 5.4.2 (Table 5-7). The only limits likely to be relevant for the operational phase are for NO_x emissions

from the intermittent use of the boilers at the PRT. IFC specifies 320 mg/Nm^3, the EU medium combustion plant directive (MCPD) specifies 100mg/Nm^3, and the Italian legislative decree 350 mg/Nm^3 (all at 3% O_2). Although the EU directive limit is unlikely to be strictly applicable (owing to the low running hours of the boilers), it is adopted as the Project Standard to ensure compliance even if Italy does not choose to exempt plant operating less than 500 hours per year when it implements the MCPD.

5.6.1.4 Operational Vehicle and non-road mobile machinery

As described in Sections 5.5.1.3 it is not necessary or appropriate to set Project Standards for vehicle and non-road mobile machinery emissions for Greece and Italy.

In Albania with respect to other pollutants, only a vehicle fleet compliant with the emission limits identified in Table 5-12 will be deployed for construction activities. Furthermore, low sulphur diesel will be used wherever practicable in all vehicles utilised during the construction phase to reduce SO_2 emissions. Therefore, compliance with ambient air quality standards is ensured by stipulating vehicle emission standards and fuel quality and no ambient air quality monitoring is required during the construction phase.

Where practicable and feasible, every effort shall be made to use ultra-low sulphur both for vehicles and stationary plant.

5.6.2 Operational Standards for offshore air emissions

For any vessels and onboard equipment used for operation and maintenance the same standards apply as for the construction phase, as described in Section 5.5.2.

5.7 Project Standards for Ambient Air Quality

As discussed in Section 5.1.1, although the release of different air pollutants to the atmosphere is anticipated during the construction activities, the key pollutant of concern is dust. Apart from causing nuisance, some of the dust or particulate fractions may affect human health, vegetation and ecosystems. PM_{10} standards are generally applied. The Project Standards to be applied for ambient air quality at receptor locations are set out in Table 5-13 and are the most stringent of the host country / EU and international ambient air quality standards.

Table 5-13 Project Standards for ambient air quality

Parameter	*Project Standard*	*Source*
NO_2	40 μg/m^3 – annual average 200 μg/m^3 – hourly average	EU/WHO WHO
CO	10,000 μg/m^3 – maximum daily 8-hour mean	EU/WHO

Parameter	*Project Standard*	*Source*
SO_2	125 μg/m^3 – 24-hour mean, not to be exceeded more than 3 times per year.	EU
	350 μg/m^3 – hourly limit (not to be exceeded more than 24 times per year)	EU
	500 μg/m^3 – 10-minute mean	WHO
	20 μg/m^3 – 24-hour mean (treated as an aspirational, 'stretch' target, in line with the philosophy of the WHO guidelines, 2005 global update)	WHO
	20 μg/m^3 – annual limit (applies only to the protection of vegetation and ecologically sensitive sites)	EU/WHO
NO_x	30 μg/m^3 – annual limit (applies only to the protection of vegetation and ecologically sensitive sites)	EU/WHO
PM_{10}	20 μg/m^3 – annual mean	WHO
	50 μg/m^3 – daily mean	WHO
$PM_{2.5}$	10 μg/m^3 – annual mean	WHO
	25 μg/m^3 – 24-hour mean	WHO
Benzene	5 μg/m^3 - annual mean	EU

Notes:

1. Project emissions should not contribute more than 25% of the relevant ambient air quality standard in accordance with IFC General EHS Guidelines 2007 recommendations.
2. Where existing ambient air quality levels are identified as exceeding the above standards prior to project start-up then the project may not be able to meet these standards owing to factors outside of the project's control. In these circumstances, the project will consider the ambient air quality levels and, taking into account the non-project factors affecting air quality, will take reasonably practicable steps to reduce the project's contribution to air emissions. The interim targets of the WHO guidelines should be considered in such cases.
3. The shorter averaging period WHO guidelines for CO (which are not duplicated in EU limits) are not included, as CO is unlikely to be a critical pollutant for project activities.
4. Standards for ozone are not adopted as Project standards as ozone is not emitted directly from Project activities but rather formed through complex environmental interactions. The assessment and control of ozone needs to take place at a regional or national level. The expectations on a project such as TAP can only be to minimise its emissions of ozone precursor pollutants (notably NOx and VOCs). Other Project standards control this.

6 Discharges to water and protection of the surface water environment

6.1 Introduction

Potential impacts on surface water quality during the construction and operational phases were assessed in the ESIA for each host country.

Sections 6.2 - 6.7 consider available standards relating to the surface water environment and set out the relevant Project Standards for the construction and operational phases.

6.1.1 Greece

The ESIA Greece identifies the following key impacts to surface water during the construction and operational phases of the Project:

- modification of watercourse morphology increasing flooding and causing disturbance to drainage networks (construction phase)
- watercourse crossings/trenching altering surface water quality (specifically by way of sediment plumes) (construction phase)
- consumption of freshwater resources (construction and operational phases) and restriction of future irrigation networks (operational phase)
- accidental pollution of freshwater resources by soil and liquid wastes and hydrocarbon/fuels (construction and operational phases)
- erosion (construction phase).

Wastewater services and sanitation services for construction sites will be purchased from local suppliers, provided that they are established close enough to the site(s) of intended use, and that there are sufficient services available. Where local capacity is insufficient, EPC CONTRACTOR will establish its own site facilities. All construction camps will have facilities for appropriate wastewater storage or treatment. Following treatment, wastewater from construction camps will be analysed to ensure it is acceptable to be discharged into local drainage works or soak away.

During the commissioning phase, hydrostatic test water will be sourced from and discharged into local catchment areas and will not be discharged directly into surface water bodies.

Surface water sources with higher flow rates have been considered for hydrostatic test water abstraction and discharge (see Annex 3.6 of the ESIA Greece for the locations of proposed hydrostatic test water abstraction and discharge locations). Water reservoirs will not be used as a source of hydrostatic testing water without authorization. When discharging hydrostatic test water it will first pass through a sedimentation pool or diffused to reduce erosion concerns and allow for the separation of any solids.

Operational waste water drainage systems at the compressor stations will be developed to manage the following types of waste water:

- storm water (rain water and surface water run-off from buildings, roads, green and gravel areas)
- potentially polluted surface water - originating from locations where any of the following are located:
    - generators or fuel storage tanks
    - oil coolers
    - condensate tank.
- sanitary waste water (including black and grey water) (from buildings).

Storm water will be collected in a storm water network which will include underground perforated drainage pipes installed under green and gravel areas.

The potentially contaminated surface water originating from the above locations will be discharged via coalescence separators to the storm water drainage system. The coalescence separators are a protection system that will retain any light liquids (oil, etc.) that may be present in the surface water. In normal plant operation, no oily water is anticipated to occur; the separators are installed to deal with non-routine or emergency events.

The water collected in the storm water network will be discharged into nearby surface waters.

Sanitary waste water from permanent facilities will be collected in a separate sewer network and temporarily stored in on-site storage tanks. The sanitary waste water will be disposed at a public wastewater treatment plant as required.

6.1.2 Albania

The ESIA considered the impact of the following construction activities:

- offshore dredging of the seabed causing disturbance and a temporary increase in turbidity
- routine and non-routine discharges from support and installation vessels/barges to the marine environment; including sewage, grey water and bilge water
- onshore watercourse crossings causing disturbance and temporary increases in turbidity
- discharges of treated sanitary waste water from construction camps and offices
- hydrotest of the pipeline and associated discharge of test water
- surface water run-off from work areas and construction camps.

With respect to the operational phase, the ESIA considered that solid and liquid wastes to be generated from onshore activities have the potential to contaminate water resources if not handled properly. Operational and maintenance activities at the compressor stations and block valve station facilities will generate sewage, rain water and potentially contaminated runoff from fuel, chemical storage or waste handling facilities in case of unplanned events.

The ESIA considered potential offshore impacts on sea water quality during the operational phase to be limited to the transfer of heat that is generated by the movement of natural gas within the pipeline and the release of ions from anti-corrosion anodes in place on the pipeline. No routine water discharges are expected during the offshore operational and maintenance phase.

6.1.3 Italy

The ESIA Italy identified the following key impacts for the construction and operational phases:

- onshore:
    - effects on water resources by sediment plumes (construction phase)
    - potential contamination from solid and liquid waste associated with the PRT (construction and operational phases)
    - potential contamination from fuels, lubricant oils and chemicals (construction phase)
    - potential effects on hydrological and hydraulic regime in endorheic areas (construction phase)

- consumption of water resources (construction phase)

- offshore:
  - temporary re-suspension of sediments with associated effects on the water column (construction phase)
  - potential temporary decreasing of seawater quality by liquid effluents (construction phase)
  - release of pollutants (operational phase).

During commissioning phase hydrostatic testing, offshore hydrostatic test water will be obtained using seawater from the Italian side of the pipeline, which will be discharged in Albanian waters. Onshore hydrostatic test water will be obtained by water tanker. The final source of the water for the tankers has not yet been identified. The discharge location for onshore hydrostatic test water has not yet been determined.

Onshore waste water discharges at the PRT during the operation phase will be managed using two separate drainage systems: one for process areas and one for other areas (utilities, buildings etc.). Both systems will discharge waste water to the public sewage network. Surface water from potential polluted areas will be discharged via an oil separator into the sewage system. The public sewage system will also be used for the discharge of sanitary waste water from buildings. The surface run off from potential polluted areas and sanitary waste waters will be treated in a small waste sewage works and will be discharged into the public waste water network.

No routine water discharges are expected during the offshore operation phase.

6.2 National Standards

6.2.1 Greek national standards

6.2.1.1 MD 51354/2641/E103, 8 December 2010 (Gov. Gaz. 1909/B), “Definition of Environmental Quality Standards (EQS) for Priority Substances and certain other pollutants in surface waters, according to Directive 2008/105/EC”

MD 51354/264/E103 transfers the requirements of Directive 2008/105/EC, which include limits for ambient surface water quality, into national law. For more detail of the applicable surface water standards of this Directive, see Section 6.3.2.

6.2.1.2 MD E1b/221, 24 February 1965 (Gov. Gaz. 138/B), "(Sanitary Provision) on municipal and industrial liquid wastes disposal"

MD E1b/221, 24 February 1965 (Gov. Gaz. 138/B) "(Sanitary Provision) on municipal and industrial liquid wastes disposal" requires regional authorities to characterise surface waters that are likely to receive treated waste water in order to determine the appropriate treated water discharge standards for that surface water. The characterisation process is dependent on the surface water use (freshwater, marine waters, irrigation etc.). Once characterised the regional authority will issue a decision on whether the environmental limit values provided in MD E1b/221/1965 or stricter ones if necessary shall be applied. For some receptors, this has already been done and the decisions can be sourced at the regional authorities. In cases where a surface water receptor has not had a characterisation and discharge standards assigned to it by the regional authority, it is the interested party's responsibility to apply for receptor characterisation.

6.2.1.3 JMD 5673/400, 14 March 1997 (Gov. Gaz. 192/B), "Measures and Terms for the Management of Municipal Liquid Waste"

JMD 5673/400, 14 March 1997 (Gov. Gaz. 192/B), outlines measures and terms for the management of industrial waste and sewage and establishes parameters and corresponding limit values for discharge of industrial waste and sewage. This incorporates into Greek national law the provisions of the Urban Wastewater Treatment Directive 91/271/EEC. For more detail of the applicable standards of this Directive see Section 6.3.3.

6.2.2 Albanian national standards

At the national level, Decision No. 177 "On the norms allowed for liquid discharge and zoning criteria of the aquatic environment" issued March 2005, regulates the pollution of receiving water environments from dangerous substances (List I and II of Annex 1) by establishing the limit levels for a list of substances (Annexes 2 and 3) and the criteria for identification of sensitive and less sensitive zones to which different provisions shall apply (Annex 5). National guideline values are shown in Table 6-1.

Table 6-1 Albanian national guideline values for wastewater

Parameter	*Industrial Liquid Waste from Power Facilities*	*Sanitary Sewage*
pH	6 – 9	-
Biological oxygen demand (BOD) (mg/l)	50	25
Chemical oxygen demand (COD) (mg/l)	150	125
Chromium (mg/l)	0.5	-

Parameter	*Industrial Liquid Waste from Power Facilities*	*Sanitary Sewage*
Copper (mg/l)	0.5	-
Iron (mg/l)	1.0	-
Zinc (mg/l)	1.0	-
Total nitrogen (mg/l)	-	15 (10,000 – 100,000 equivalent population) 10 (>100,000 equivalent population)
Total phosphorus (mg/l)	-	2 (10,000 – 100,000 equivalent population) 1 (>100,000 equivalent population)
Total suspended solids (TSS) (mg/l)	50	60 (2,000 – 10,000 equivalent population) 35 (>10,000 equivalent population)
Temperature	No increase greater than 3°C of ambient temperature at the edge of a scientifically established mixing zone	-

6.2.3 Italian national standards

6.2.3.1 D.P.R. n. 59/2013 “Regulation about Environmental Unique Authorisation (Autorizzazione Unica Ambientale - AUA)”

D.P.R n. 59/2013 “Regulation about Environmental Unique Authorisation (Autorizzazione Unica Ambientale - AUA)” requires installations to apply for an operational authorisation that will specify environmental standards that must not be exceeded. AUA is an integrated environmental authorisation that covers many environmental aspects, such as air emissions, wastes, noise emissions and water discharges. An installation needs an AUA if it requires just one authorisation covered by AUA (e.g. a water discharge authorisation). The limits and the requirements within the AUA are based on relevant national and local law as a minimum. For instance, the AUA section regarding water discharges will be based on the limits provided by the D.lgs 152/2006 - Part III and s.m.i. However, the competent authority has the power to require more restrictive limits based on a specific environmental context.

6.2.3.2 D.lgs 152/2006 “Environmental Regulation” and s.m.i

D.lgs 152/2006 “Environmental Regulation, Part III and s.m.i (Ministerial Decree 260/2010) are concerned with ambient water quality and effluent limits, and transpose the EU Directives

2000/60/CE (i.e. “the Water Framework Directive) (see Section 6.3.1) and 2008/105/EC (i.e. Environmental Quality Standards) (see Section 6.3.2).

6.2.3.2.1 Ambient water quality limits

The ambient water quality limits in Table 6-1 below are established by D.lgs 152/2006 and s.m.i, as identified within the ESIA Italy and directly from D.lgs 152/2006 Annex 1. Table 6-2 includes limits for what are considered the key parameters only as identified in either the ESIA or PMA. It is not inclusive of all ambient surface water quality limits contained within D.lgs 152/2006.

Table 6-2 Italian standard: threshold contamination concentrations for surface water[25]

Parameter	*EQS-MA* for internal surface water***
Metals	
Arsenic	10 µg/l
Cadmium and its compounds	0.8 µg/l Maximum allowable concentration ≤ 0.45 µg/l
Mercury	0.03 µg/l Maximum allowable concentration 0.06 µg/l
Nickel and its compounds	20 µg/l
Lead and lead compounds	7.2 µg/l
Volatile halogenated compounds	
Hexachlorobutadiene	0.05 µg/l Maximum allowable concentration 0.05 µg/l
Tetrachloroethylene	10 µg/l
Nitrogenous pesticides	
Atrazine	0.6 µg/l

[25] Source: D.lgs 152/2006 and s.m.i, Part III, Annex 1

Parameter	*EQS-MA* for internal surface water***
	Maximum allowable concentration 2.0 µg/l

* EQS expressed as an annual average value

** Inland surface waters encompass rivers or lakes and artificial or heavily modified water bodies

6.2.3.2.2 Water discharge limits

D.lgs 152/2006 establishes separate water discharge limits for discharges into surface waters and for discharges into sewers. These limits are presented in Table 6-3 below.

It should be noted that Table 6-3 includes limits for what are considered to be the key parameters only. It is not inclusive of all water discharge limits contained within D.lgs 152/2006, which, however, are fully applicable to the Project water discharges.

Table 6-3 Italian standard: quality of water discharge into surface waters and sewers

Parameter	*Limit value for discharge into surface waters*	*Limit value for discharge into sewers*
pH	5.5−9.5	-
Total suspended solids (TSS)	≤ 35 mg/l	≤ 200 mg/l
Biological oxygen demand (BOD_5) (as O_2)	≤ 25 mg/l	≤ 250 mg/l
Chemical oxygen demand (COD) (as O_2)	≤ 125 mg/l	≤ 500 mg/l
Arsenic	≤ 0.5 mg/l	≤0.5 mg/l
Cadmium	≤ 0.02 mg/l	≤ 0.02 mg/l
Mercury	≤ 0.005 mg/l	≤ 0.005 mg/l
Nickel	≤ 2 mg/l	≤ 4 mg/l
Lead	≤ 0.2 mg/l	≤ 0.3 mg/l
Copper	≤ 0.1 mg/l	≤ 0.4 mg/l
Zinc	≤ 0.5 mg/l	≤ 1 mg/l

Parameter	*Limit value for discharge into surface waters*	*Limit value for discharge into sewers*
Free active chlorine	≤ 0.2 mg/l	≤ 0.3 mg/l
Sulphides (as H_2S)	≤ 1 mg/l	≤ 2 mg/l
Chlorides	≤ 1,200 mg/l	≤ 1,200 mg/l
Ammonia nitrogen (as NH_4)	≤ 15 mg/l	≤ 30 mg/l
Total hydrocarbons	≤ 5 mg/l	≤ 10 mg/l
Phenols	≤ 0.5 mg/l	≤ 1 mg/l

D.lgs. 152/2006 also includes the following temperature limit for both discharge into surface waters and discharge into sewers: "*For water streams the maximum temperature variation between the average water temperature in any section of the stream upstream and downstream of the discharge point must not be greater than 3°C. For at least half of any section downstream of the discharge point such variation must not exceed 1°*C".

6.3 European standards

6.3.1 Directive 2000/60/EC – Water Framework Directive

The Water Framework Directive (WFD) forms the key legislation for the protection of European water quality. The aim is to achieve long-term sustainable water management based on a high level of protection of the aquatic environment.

The Directive implements a general requirement for ecological protection and a general minimum chemical standard to cover all surface waters. The overall aim is for surface water bodies to achieve 'good' chemical and ecological status by 2015. 'Good ecological status' is defined in Annex V, in terms of the quality of the biological community, the hydrological characteristics and the chemical characteristics.

6.3.2 Directive 2008/105/EC – Environmental Quality Standards

Annex I of this Directive establishes limits on concentrations in surface waters for 33 priority substances and eight other pollutants. The priority substances include biocides, metals (e.g. cadmium, lead, mercury) and other groups like polycyclic aromatic hydrocarbons that are mainly incineration by-products and are also associated with asphalt run-off.

Table 6-4 identifies the ambient surface water quality limits for what are considered the key water quality parameters, taken from Directive 2008/105/EC. It should be noted that this table is not inclusive of all water discharge limits contained within Directive 2008/105/ EC.

Table 6-4 EU EQS Directive - ambient onshore surface water quality standards[26]

Parameter	*AA-EQS for inland surface water* (µg/l)*	*MAC-EQS for inland surface waters** (µg/l)*
Alachlor	0.3	0.7
Aldrin	Σ = 0,01	Not applicable
Atrazine	0.6	2
Cadmium and its compounds (depending on water hardness class)***	≤ 0.08 (Class 1) 0.08 (Class 2) 0.09 (Class 3) 0.15 (Class 4) 0.25 (Class 5)	≤ 0.45 (Class 1) 0.45 (Class 2) 0.6 (Class 3) 0.9 (Class 4) 1.5 (Class 5)
Total DDT	0.025	Not applicable
Para-para DDT	0.01	Not applicable
1,2 – Dichloroethane	10	Not applicable
Dieldrin	Σ = 0,01	Not applicable
Endrin	Σ = 0,01	Not applicable
Hexachlorobutadiene	0.1	0.6
Lead and its compounds	7.2	n/a
Mercury and its compounds	0.05	0.07
Nickel and its compounds	20	n/a
Tetrachloroethylene	10	n/a
Trichloroethylene	10	n/a

[26] Source: Directive 2008/105/EC, Annex A 1, Part A

Parameter	*AA-EQS for inland surface water* (µg/l)*	*MAC-EQS for inland surface waters** (µg/l)*
* EQS expressed as an annual average ** EQS expressed as a maximum allowable concentration ***For cadmium and its compounds, the EQS values vary depending on the hardness of the water as specified in five class categories (Class 1: < 40 mg $CaCO_3$/l, Class 2: 40 to < 50 mg $CaCO_3$/l, Class 3: 50 to < 100 mg $CaCO_3$/l, Class 4: 100 to < 200 mg $CaCO_3$/l and Class 5: ≥ 200 mg $CaCO_3$/l).		

6.3.3 Directive 91/271/EEC – Urban Wastewater Treatment

The objective of Directive 91/271/EEC is to protect the environment from the adverse effects of urban waste water discharges and discharges from certain industrial sectors. It includes requirements for the collection, treatment and discharge of domestic waste water, mixed (domestic and industrial) waste water and waste water from certain industrial sectors.

Directive 91/271/EEC provides mandatory minimum design rules for sewage treatment plants. The minimum secondary treatment performance standards prior to discharge to receiving waters (i.e. surface waters) are:

- biological oxygen demand (BOD) - 25 mg/l
- chemical oxygen demand (COD) - 125 mg/l
- total suspended solids (TSS) for a 2,000–10,000 population equivalent (p.e.) – 60 mg/l (optional requirement).

Further standards are included for discharge of waste water to sensitive areas, which are defined by the Directive as follows:

1. water bodies at risk of eutrophication
2. surface waters for drinking containing more than 50 mg/litre of nitrates, and
3. areas where further treatment is needed to comply with EU legislation on, for example, water, bathing water, shellfish waters and the conservation of habitats and birds.

As the Project will not discharge waste water to sensitive areas, these standards have not been listed.

6.3.4 Directive 2006/44/EC – Freshwater Fish Directive

Table 6-5 below presents the ambient surface water limit values contained within the Freshwater Fish Directive for a number of key parameters for surface water. These standards have been developed for the protection of fresh waters capable of supporting fish life.

To ensure conformance with this Directive, samples should be taken at the minimum frequency specified by the Directive over a period of 12 months. It should be noted that conformance with this Directive is still possible, even if a certain percentage of samples taken do not comply with the specified limits (see Table 6-5). It should also be noted that derogations from the standards for maximum temperature, pH and TSS are possible if, for example, exceptional weather or natural enrichment occurs or the baseline water quality in the receiving water exceeds these standards.

Table 6-5 EU Freshwater Fish Directive - ambient surface water quality standards

Parameter	*Project Standard*	*Reference*
pH[1]	6–9	EU EQS[2]
Temperature	Temperature measured downstream of a point of thermal discharge (at the edge of the mixing zone) must not exceed the unaffected temperature by more than:[3] 1.5°C (salmonid waters) 3°C (cyprinid waters)	EU EQS salmonid waters EU EQS cyprinid waters
	Thermal discharges must not cause the temperature downstream of the point of thermal discharge (at the edge of the mixing zone) to exceed the following:[4] 21.5°C (salmonid waters) 28°C (cyprinid waters) A 10°C temperature limit also applies to breeding periods for species that need cold water to reproduce and to waters that may contain such species.[4]	EU EQS salmonid waters EU EQS cyprinid waters
Biological oxygen demand (BOD) (mg/l)[1]	≤ 3 ≤ 6	EU EQS salmonid waters EU EQS cyprinid waters

Parameter	*Project Standard*	*Reference*
Phenolic compounds	Phenolic compounds must not be present in such concentrations that they adversely affect fish flavour.	EU statutory
Total hydrocarbon content	Petroleum products must not be present in water in such quantities that they: form a visible film on the surface of the water or form coatings on the beds of watercourses and lakes; impart a detectable hydrocarbon taste to fish; and produce harmful effects in fish.	EU EQS
Total suspended solids (TSS) (mg/l)[5]	≤25 (annual mean)	EU EQS
Nitrites (mg/l NO_2)[1]	≤0.01 ≤0.03	EU EQS salmonid waters EU EQS cyprinid waters
Dissolved copper (mg/l)[1]	≤0.04	EU EQS
Zinc (mg/l)[1]	≤ 0.3 ≤ 1.0	EU EQS salmonid waters EU EQS cyprinid waters
Non-ionised ammonia (mg/l NH_3)[1]	≤ 0.025	EU EQS
Total ammonium (mg/l NH_4)	≤ 1	EU EQS
Dissolved oxygen (mg/l O_2)	50% of the time ≥ 9 100% of the time ≥ 7 50% of the time ≥ 8 100% of the time ≥ 5	EU EQS salmonid waters EU EQS salmonid waters EU EQS cyprinid waters EU EQS cyprinid waters
Total residual chlorine (mg/l HOCl)	≤ 0.005	EU EQS

Notes:

1. 95% of all samples taken for this parameter should conform to the values provided in this table. Should sampling frequency be lower than one sample per month, all samples must conform to the values provided in this table
2. EU EQS – refers to Environmental Quality Standards set by the Freshwater Fish Directive (78/659/EEC consolidated with 2006/44/EC) for freshwaters that require protection in order to support salmonid and cyprinid fish

Parameter	*Project Standard*	*Reference*
	3. derogations limited in geographical scope may be decided by Member States in particular conditions if the competent authority can prove that there are no harmful consequences for the balanced development of the fish population 4. temperature limits may be exceeded for 2% of the time 5. the value for TSS is a 12-month average. 6. there is no derogation within the EQS standards for weather/seasonal conditions. However, the value for TSS is a 12-month average. 7. the Water Framework Directive (2000/60/EC) replaced the Freshwater Fish Directive in December 2013. However, it offers the same level of protection for such protected areas.	

6.4 International lender standards

6.4.1 EBRD standards

No specific EBRD standards with respect to surface water quality have been identified. However, EBRD Performance Requirement 3 'Resource Efficiency and Pollution Prevention and Control' specifies that projects should be designed to comply with applicable national law, and will be maintained and operated in accordance with national laws and regulatory requirements. It also states that when host country regulations differ from the levels and measures presented in EU environmental requirements or other identified appropriate environmental standards, projects will be expected to meet whichever is more stringent.

6.4.2 World Bank standards

World Bank standards for surface water quality are to apply national legislative standards or, in their absence, the current WHO guidelines or other internationally recognised sources.

6.4.3 IFC standards

6.4.3.1 General EHS Guidelines: Environmental Wastewater and Ambient Water Quality (2007)

This guidance document applies to projects that have either direct or indirect discharges of process waste water, waste water from utility operations, or storm water to the environment.

Discharges into surface water should not result in contaminant concentrations in excess of local ambient water quality criteria or, in the absence of local criteria, other appropriate sources

of ambient water quality criteria[27]. Receiving water use and assimilative capacity, taking other sources of discharge into the receiving water into consideration, will also influence the acceptable pollution loadings and effluent discharge quality parameters.

Additional considerations that are to be included in the setting of Project-specific performance levels for waste water effluents include:

- process waste water treatment standards are to be based on local regulatory requirements, and consistent with applicable industry sector EHS Guidelines (in this case, the IFC Environmental Health and Safety Guidelines for Onshore Oil and Gas Development (2007) (see Section 6.4.3.3)). Projects for which there are no industry-specific guidelines shall reference the effluent quality guidelines of an industry sector with comparable processes

- compliance with national or local standards for sanitary wastewater discharge to surface water or, in their absence, the indicative guideline values applicable to sanitary wastewater discharge shown in Table 6-6

- septic systems for sanitary waste water should be properly designed and installed in accordance with local regulations and guidance to prevent any hazard to public health or contamination of land, surface water or groundwater

- the temperature of waste water prior to discharge shall not result in an increase of more than 3°C of ambient temperature at the edge of a scientifically established mixing zone that takes into account ambient water quality, receiving water use and assimilative capacity among other considerations.

Table 6-6 IFC indicative values for treated sanitary sewage discharges to surface water

Parameter	*Guideline value*
pH	6–9
BOD_5 (mg/l)	30
COD (mg/l)	125
Total nitrogen (mg/l)	10
Total phosphorous (mg/l)	2
Oil and grease (mg/l)	10

[27] Other appropriate sources of ambient water quality criteria could include the US EPA National Recommended Water Quality Criteria.

Parameter	*Guideline value*
TSS (mg/l)	50
Coliform bacteria (Most Probable Number (MPN))/100 ml[28]	400
Notes: BOD_5: the amount of dissolved oxygen consumed in five days by biological processes breaking down organic matter	

6.4.3.2 IFC EHS Guidelines for Offshore Oil and Gas Development (2015)

This IFC document provides general standards for waste water management, discharges, water conservation and reuse. The following guidance contained in this document is applicable to construction and maintenance activities offshore.

6.4.3.2.1 Hydrostatic test water

The IFC EHS Guidelines for Offshore Oil and Gas Development (2015) states that: "*Hydrostatic testing of offshore equipment and marine pipelines involves pressure testing with water (typically filtered seawater, unless equipment specifications do not allow it) to verify equipment and pipeline integrity. Chemical additives (corrosion inhibitors, oxygen scavengers, biocides and dyes) may be added to the water to prevent internal corrosion or to identify leaks.*"

In managing hydrostatic test waters, the guidelines require that following pollution prevention and control measures should be considered:

- minimising the volume of hydrostatic test water offshore by testing equipment at an onshore site before the equipment is loaded onto the offshore facilities
- using the same water for multiple tests within the same water catchment area
- reducing the need for chemicals by minimising the time that test water remains in the equipment or pipeline
- careful selection of chemical additives in terms of dose concentration, toxicity, biodegradability, bioavailability, and bioaccumulation potential

[28] MPN is not defined in the IFC EHS guidelines but is a standard unit of measurement for quantitative data for discrete items, often used for micro-organisms, and derived from successive dilution of a sample to estimate the level of items, in this case coliforms. The term 'most probable' derives from the fact that it is an estimated number.

- sending offshore pipeline hydrostatic test water to shore facilities for treatment and disposal, where practical.

If the discharge of hydrostatic test waters to the sea is the only feasible alternative for disposal, a Hydrostatic Test Water Disposal Plan should be prepared that considers points of discharge, rate of discharge, chemical use and dispersion, environmental risk, and monitoring.

TAP hydrostatic test water used for testing the offshore section of the pipeline will be discharged into a cofferdam in Albania in line with the report "Environmental Assessment of Discharge for Pre-Commissioning" (OPL00-RAM-150-S-TRS-0001).

6.4.3.2.2 Sewage disposal

Regarding sewage disposal, the IFC EHS Guidelines for Offshore Oil and Gas Development (2015) states that: "*Grey and black water from showers, toilets, and kitchen facilities should be treated in an appropriate on-site marine sanitary treatment unit in compliance with International Convention for the Prevention of Pollution from Ships (MARPOL) 73/78 requirements*."

MARPOL requirements are described in Section 6.4.4.1.

6.4.3.2.3 Food waste

The IFC EHS Guidelines for Offshore Oil and Gas Development (2015) requires that organic food waste from kitchens should "*at a minimum, be macerated to acceptable levels and discharged to sea*" in compliance with MARPOL 73/78 requirements (see Section 6.4.4.1)

6.4.3.2.4 Ballast and storage displacement water

The IFC EHS Guidelines for Offshore Oil and Gas Development (2015) requires that water pumped into and out of storage during loading and off-loading operations should be contained and treated before discharge to meet the guidelines provided in MARPOL 73/78 (see Section 6.4.4.1). If discharging in nearshore waters, the discharge location should be selected based on environmental sensitivities and the assimilative capacity of the receiving water.

6.4.3.2.5 Bilge waters

The IFC EHS Guidelines for Offshore Oil and Gas Development (2015) requires that bilge waters from machinery spaces in offshore vessels should be routed to the facility closed drainage system, or contained and treated before discharge to meet the guidelines provided in MARPOL 73/78 (see Section 6.4.4.1). If treatment to this standard is not possible, these waters should be contained and shipped to shore for disposal. If discharging in nearshore

waters, the discharge location should be selected based on environmental sensitivities and the assimilative capacity of the receiving water.

6.4.3.2.6 Deck drainage water

The IFC EHS Guidelines for Offshore Oil and Gas Development (2015) requires that drainage water created by rain, sea spray, fire drills and cleaning on offshore facilities should be routed to a separate drainage system. This includes drainage water from:

- process areas that could be contaminated with oil – bunded to ensure water flows into the closed drainage system
- non-process areas – where water flows into an open drainage system.

Drip trays should be used to collect runoff from equipment that is not contained within a bunded area and the contents routed to the closed drainage system. Contaminated drainage waters should be treated before discharge to meet the guidelines provided in MARPOL 73/78 (see Section 6.4.4.1). If discharging in nearshore waters, the discharge location should be selected based on environmental sensitivities and the assimilative capacity of the receiving water.

6.4.3.3 IFC Environmental, Health and Safety Guidelines for Onshore Oil and Gas Development (2007)

The following guidance contained within this IFC document is applicable to construction activities onshore.

6.4.3.3.1 Hydrostatic test water

Water sourcing for hydrostatic test purposes should not adversely affect the water level or flow rate of a natural water body, and the test water withdrawal rate (or volume) should not exceed 10% of the stream flow (or volume) of the water source. Erosion control measures and fish-screening controls[29] should be implemented as necessary during water withdrawals at the intake locations.

[29] The use of screens on hydrostatic test water intakes are used to prevent the entry of fish, or the potential losses of fish due to entrainment. There are guidelines and calculations that deal with the sizing and design of fixed screens (dependent on the species and size of fish requiring protection) that are placed at the end of the pipeline used to extract water.

The disposal alternatives for water following hydrostatic test include injection into a disposal well, if one is available, or indirect discharge to surface waters or land surface. If a disposal well is unavailable and discharge to surface waters or land surface is necessary, the following pollution prevention and control measures should be considered:

- use the same hydrostatic test water for multiple tests within the same water catchment area
- hydrostatic test water quality should be monitored before use and discharge and should be treated to meet the discharge limits (in Table 6-7) before disposal to surface water or land.

The Project currently plans that no additives (including biocides, oxygen scavengers and corrosion inhibitors) or chemicals will be present in hydrostatic test water. However, in the eventuality that chemical additives may be necessary, the following requirements shall apply:

- reduce the need for chemicals by minimising the time that test water remains in the equipment or pipeline
- if chemical use is necessary, carefully select chemical additives in terms of dose concentration, toxicity, biodegradability, bioavailability and bioaccumulation potential
- conduct toxicity testing as necessary using recognised test methodologies (a holding pond may be necessary to provide time for the toxicity of the water to decrease/the water to be re-oxygenated)
- if significant quantities of chemically treated hydrostatic test waters are required to be discharged to a surface water body, water receptors both upstream and downstream of the discharge should be monitored. Post-discharge chemical analysis of receiving water bodies may be necessary to demonstrate that no degradation of environmental quality has occurred
- if discharged to water, the volume and composition of the test water, as well as the stream flow or volume of the receiving water body, should be considered in selecting an appropriate discharge site to ensure that water quality will not be adversely affected outside of the defined mixing zone
- use break tanks or energy dissipaters (e.g. protective riprap, sheeting, tarpaulins) for the discharge flow to reduce erosion potential

- use sediment control methods (e.g. holding/settlement ponds, silt fences, sandbags or hay bales) to protect aquatic biota, water quality and water users from the potential effect of discharge
- if discharged to land, the discharge site should be selected to prevent flooding, erosion, or lowered agriculture capability of the receiving land. Direct discharge on cultivated land and land immediately upstream of community/public water intakes should be avoided
- water discharge during cleaning pig runs and pre-test water should be collected and should be discharged only after water-quality testing to ensure that it meets the discharge criteria set out in Table 6-7.

Table 6-7 IFC guideline values for hydrostatic test water[30]

Parameter	*Guideline value*
pH	6–9
BOD_5 (mg/l)	25
COD (mg/l)	125
Sulphides (mg/l)	1
Total heavy metals[1] (mg/l)	5
Total hydrocarbon content (mg/l)	10
TSS (mg/l)	35
Phenols (mg/l)	0.5
Chlorides (mg/l)	600 (average) 1200 (maximum)
Notes: Heavy metals include arsenic, cadmium, chromium, copper, lead, mercury, nickel, silver, vanadium and zinc.	

6.4.3.3.2 Stormwater drainage

Stormwater runoff from facilities, camps, PRT or potentially contaminated work sites should be treated through an oil/water separation system able to achieve a maximum oil and grease concentration of 10 mg/l.

[30] It should be noted that the quality of hydrostatic test discharge water is dependent on the quality of the test water source.

6.4.4 International maritime agreements

6.4.4.1 International Convention for the Prevention of Pollution from ships, 1973 as modified by the Protocol of 1978 - MARPOL 73/78 Annex IV

Under Annex IV, the discharge of untreated sewage into the sea is prohibited. Treated sewage may be discharged under the following circumstances: when the ship has in operation an approved sewage treatment plant or when the ship is discharging comminuted (physically broken up and fragmented) and disinfected sewage using an approved system at a distance of more than three nautical miles from the nearest land. Sewage that is not comminuted or disinfected has to be discharged at a distance of more than 12 nautical miles from the nearest land.

Under MARPOL 73/78 Annex IV, governments are required to ensure the provision of adequate reception facilities at ports and terminals for the reception of sewage.

Both Italy and Albania are signatories to MARPOL 73/78 Annex IV. Therefore, these requirements shall be adopted by the TAP offshore pipelay spread.

6.4.4.2 MARPOL 73/78 – Annex I

Annex I of MARPOL 73/78 (Regulations for the Prevention of Pollution by Oil) covers the prevention of oil pollution arising from routine operations as well as from accidental discharges. The regulations require that bilge waters from machinery spaces is routed to a closed drainage system, or contained and treated by oily-water separating equipment prior to discharge to meet the following standard:

- < 15 mg/l (ppm) oil in water.

If treatment to this standard is not possible, these waters should be contained and shipped to shore for disposal.

Both Italy and Albania are signatories to MARPOL 73/78 Annex I. Therefore, these requirements shall be adopted by the TAP offshore pipelay spread.

6.4.4.3 International Convention for the Control and Management of Ship's Ballast Water and Sediments (2004)

Invasive aquatic species present a major threat to marine ecosystems, and shipping has been identified as a major pathway for introducing species to new environments. The Ballast Water Management Convention aims to prevent the spread of harmful aquatic organisms from one

region to another, by establishing standards and procedures for the management and control of ships' ballast water and sediments.

The International Convention for the Control and Management of Ship's Ballast Water and Sediments states that under the Convention, all ships in international traffic are required to manage their ballast water and sediments to a certain standard. Ships are required to have onboard and implement:

- an IMO approved Ballast Water Management Plan that is specific to the ship and includes a detailed description of the actions to be taken to implement the Ballast Water Management requirements and supplemental Ballast Water Management practices

- a Ballast Water Record Book to record when ballast water is taken on board; circulated or treated for Ballast Water Management purposes; and discharged into the sea. It should also record when Ballast Water is discharged to a reception facility and any accidental or other exceptional discharges of Ballast Water.

The International Convention for the Control and Management of Ship's Ballast Water and Sediments also requires that all ships using ballast water exchange should:

- whenever possible, conduct ballast water exchange at least 200 nautical miles from the nearest land and in water at least 200 metres in depth, taking into account Guidelines developed by IMO

- in cases where the ship is unable to conduct ballast water exchange as above, this should be as far from the nearest land as possible, and in all cases at least 50 nautical miles from the nearest land and in water at least 200 metres in depth.

When these requirements cannot be met, areas may be designated where ships can conduct ballast water exchange. All ships shall remove and dispose of sediments from spaces designated to carry ballast water in accordance with the provisions of the ships' ballast water management plan.

Although Italy has not yet ratified the Ballast Water Convention, it is considered an appropriate standard for the TAP offshore pipelay spread to adopt, especially considering that the Convention has been ratified by Albania.

6.4.4.4 International Convention on the Control of Harmful Anti-Fouling Systems on Ships (Anti-Fouling System (AFS) Convention) (2001)

The AFS Convention prohibits the use of harmful organotins in anti-fouling paints used on ships and establishes a mechanism to prevent the potential future use of other harmful substances in anti-fouling systems.

Parties to the Convention are required to prohibit and/or restrict the use of harmful anti-fouling systems on ships flying their flag, ships not entitled to fly their flag but which operate under their authority and all ships that enter a port, shipyard or offshore terminal of a Party.

Annex I states that by 1 January 2003, all ships shall not apply or re-apply organotin compounds which act as biocides in anti-fouling systems, and by 1 January 2008, ships either:

- shall not bear such compounds on their hulls or external parts or surfaces; or
- shall bear a coating that forms a barrier to such compounds leaching from the underlying non-compliant anti-fouling systems.

Ships of 400 gross tonnage and above engaged in international voyages will be required to undergo an initial survey before the ship is put into service or before the International Anti-Fouling System Certificate is issued for the first time; and a survey when the anti-fouling systems are changed or replaced.

Ships of 24 metres or more in length but less than 400 gross tonnage engaged in international voyages will have to carry a Declaration on Anti-Fouling Systems signed by the owner or authorised agent. The Declaration will have to be accompanied by appropriate documentation such as a paint receipt or EPC Contractor invoice.

Anti-fouling systems to be prohibited or controlled are listed in Annex 1 to the Convention.

Although Albania has not yet signed/ratified the AFS Convention, it is considered an appropriate standard for the TAP offshore pipelay spread to adopt, especially considering that the Convention has been ratified by Italy.

6.4.4.5 London Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter, 1972 and the London Protocol (1996)

The London Convention was one of the first international conventions for the protection of the marine environment from human activities. In 1996, Parties adopted a Protocol to the Convention (known as the London Protocol) which entered into force in 2006.

The Protocol, which is meant to eventually replace the 1972 Convention, represents a major change of approach to the question of how to regulate the use of the sea as a depository for waste materials. Rather than stating which materials may not be dumped, it prohibits all dumping, except for a permitted list (which still require permits).

The permitted substances are:

- dredged material
- sewage sludge
- fish waste, or material resulting from industrial fish processing operations
- vessels and platforms or other man-made structures at sea
- inert, inorganic geological material
- organic material of natural origin
- bulky items primarily comprising iron, steel, concrete and similar non-harmful materials for which the concern is physical impact and limited to those circumstances, where such wastes are generated at locations, such as small islands with isolated communities, having no practicable access to disposal options other than dumping
- CO_2 streams from CO_2 capture processes.

Although Albania has not yet signed/ratified the London Convention or the London Protocol, it is considered an appropriate standard for the TAP offshore pipelay spread to adopt. especially considering that both the Convention and the Protocol have been ratified by Italy.

While the disposal at sea of dredged material and rock is allowed under the Convention, a permit may be required under the local legislative regime in Italy.

6.5 Project Standards for construction water discharges

The Project Standards detailed in this section are derived from the guidance and regulations discussed in preceding sections of this report and represent good international industry practice.

6.5.1 Onshore Standards for construction water discharges

6.5.1.1 Project Standards for the discharge of sanitary wastewater

6.5.1.1.1 Greece

Sanitary waste water (including black and grey water) will be created during three distinct construction activities:

- the construction of the pipeline, which will move geographically as construction progresses
- the construction of the compressor stations, block valve stations, micro-tunnels and long HDD which will remain in fixed locations for a number of months
- the operation of construction camps associated with the construction of the pipeline, and compressor stations.

All sanitary waste water created at pipeline construction camps will be either be disposed of through the public sewerage system or treated according to national requirements prior to being discharged into a drainage or soakaway.

The Project Standards for treated sanitary waste water discharged to surface water have been developed from a combination of IFC standards (i.e. the IFC limit values for treated sanitary sewage discharges as specified in the IFC EHS Guidelines for Wastewater and Ambient Water Quality, 2007 (see Section 6.4.3.1) and European legislation (i.e. the minimum secondary performance standards prior to discharge to receiving waters as specified by Directive 91/271/EEC (the "Urban Wastewater Treatment Directive") (see Section 6.3.3), and are shown in Table 6-8.

Table 6-8 Project Standards for discharge of sanitary wastewater to surface water receptors in Greece

Parameter	*Limit value*	*Source*
pH	6–9	IFC[1]
BOD_5	25 mg/l	Directive 91/271/EEC[2]
COD	125 mg/l	IFC and Directive 91/271/EEC
Total nitrogen	10 mg/l	IFC
Total phosphorus	2 mg/l	IFC
Oil and grease	10 mg/l	IFC

Parameter	*Limit value*	*Source*
Temperature	The temperature of waste water prior to discharge shall not result in an increase of more than 3°C of ambient temperature at the edge of a scientifically established mixing zone that takes into account ambient water quality, receiving water use and assimilative capacity among other considerations.	IFC
TSS	50 mg/l	IFC
Coliform bacteria	400 MPN/100 ml^3	IFC

Notes:

1. IFC EHS Guidelines for Wastewater and Ambient Water Quality, 2007
2. Directive 91/271/EEC, the "Urban Wastewater Treatment Directive"
3. MPN is not defined in the IFC EHS guidelines but is a standard unit of measurement for quantitative data for discrete items, often used for micro-organisms, and derived from successive dilution of a sample to estimate the level of items, in this case coliforms. The term 'most probable' derives from the fact that it is an estimated number.

It should be noted that additional, more stringent standards may exist within Prefectural Decisions for surface water bodies that will be used by the Project for the discharge of sanitary waste water (as required by MD E1b/221, 24 February 1965 (Gov. Gaz. 138/B), see Section 6.2.2). This document does not identify the characterisation or standards established by the Prefectural Decision for each surface water body; it is the responsibility of EPC Contractor to identify and ensure compliance with any applicable standards contained within Prefectural Decisions that apply to surface water bodies used by EPC Contractor for the discharge of sanitary waste water. In cases where a surface water receptor has not had a characterisation and discharge standards assigned to it by the regional authority, it is the responsibility of EPC Contractor to apply for characterisation of the receptor.

In the event, that standards imposed by Prefectural Decisions differ from Project Standards, EPC Contractor shall implement more stringent standards.

6.5.1.1.2 Albania

Where possible, discharges of sanitary wastewater should connect into the public wastewater sewer, providing that the treatment systems have adequate capacity to meet local regulatory requirements for the treatment of wastewater. If local treatment standards are poor and/or sanitary wastewater is to be discharged to a surface water body, the wastewater shall be

treated to comply with the standards set out in Table 6-9 at an installed treatment plant close to the point of discharge.

These standards have been chosen to comply with the requirements of the Albanian Decision No. 177 "On the norms allowed for liquid discharge and zoning criteria of aquatic environment" for BOD, COD and suspended solids. These standards are also equivalent to those set out in European Directive 91/271/EEC on Urban Wastewater Treatment. The additional parameters have been chosen to comply with the guidelines set out in the IFC General Environmental, Health, and Safety (EHS) Guidelines for Wastewater and Ambient Water Quality, 2007.

Table 6-9 Project standards for the discharge of sanitary wastewater onshore in Albania

Parameter	*Project Standard*	*Reference*
pH	6 – 9	IFC
Biological oxygen demand (BOD_5) (mg/l)	25	Albania/EU
Chemical oxygen demand (COD) (mg/l)	125	Albania/EU
Total nitrogen (mg/l)	10*	IFC
Total phosphorous (mg/l)	2*	IFC
Oil and grease (mg/l)	10	IFC
Total suspended solids (TSS) (mg/l)	50	IFC
Temperature	The temperature of waste water prior to discharge shall not result in an increase of more than 3°C of ambient temperature at the edge of a scientifically established mixing zone that takes into account ambient water quality, receiving water use and assimilative capacity among other considerations	IFC
Coliform bacteria (Most probable number)/100 ml	400	IFC

Notes:

BOD_5 - the amount of dissolved oxygen consumed in five days by biological processes breaking down organic matter.

EU – Refers to Urban Wastewater Treatment Directive (1991)

IFC – Refers to General Environmental, Health, and Safety (EHS) Guidelines for Wastewater and Ambient Water Quality, 2007

Parameter	*Project Standard*	*Reference*
*Phosphorous and Nitrogen standards to be applied based on the results of a risk assessment to identify if the receiving environment is vulnerable to eutrophication and critical levels could be exceeded		

For Albania, it is anticipated that the camps will use septic tanks to collect wastewater, which will then be transported to municipal sewage treatment plants. Checks will be carried out to ensure municipal facilities meet the requirements in Table 6-9.

6.5.1.1.3 Italy

Sanitary wastewater will be created during two distinct construction activities:

- the construction of the pipeline, which will move geographically as construction progresses
- the construction of the PRT, which will remain in one location.

The Project is committed to not discharging sanitary water (meaning water from showers, toilets, and kitchen facilities) directly into surface water receptors and/or into soil and sub-soil.

Sanitary waste water created during the pipeline construction will be temporarily stored on site and collected regularly by an appropriate waste water disposal EPC Contractor. EPC Contractor shall meet regulatory requirement relating to licensing and shall dispose of the waste water in accordance with applicable laws.

At the PRT, sanitary waste will be treated to the required standard before disposal into the public waste water sewer or surface water (in case public waste water system is not available).

All discharges of sanitary waste water to the public waste water sewer shall comply with the D.lgs 152/2006 and s.m.i limit values for discharge into sewers (see Table 6-3).

In the event that it is not possible to discharge the waste water to the public sewer, the waste water will be discharged into surface waters after treatment to meet requirements of D.lgs 152/2006 and s.m.i limit values for discharge into surface waters (see Table 6-3).

It shall also be ensured that for water streams the maximum temperature variation between the average water temperature in any section of the stream upstream and downstream of the discharge point must not be greater than 3°C. For at least half of any section downstream of the discharge point such variation must not exceed 1°C. This is in accordance with D.lgs 152/2006 (see Section 6.2.3.2.2).

6.5.1.2 Project Standards for the discharge of industrial wastewater

6.5.1.2.1 Hydrostatic test water discharge - Greece

Following use, hydrostatic test water will be slowly passed through a sedimentation pool, before being discharged to surface water receptors. No suitable Greek or European standards have been identified for the discharge of hydrostatic test water. Therefore, the IFC limits presented in Table 6-7 (sourced from the IFC Environmental, Health, and Safety Guidelines for Onshore Oil and Gas Development, 2007) will be applied as the Project Standards.

In addition, the temperature limits specified in the IFC EHS Guidelines for Wastewater and Ambient Water Quality, 2007 (see Section 6.4.3.1) shall also be applied to hydrostatic test water discharged to surface water. This standard requires that the temperature of waste water prior to discharge shall not result in an increase of more than 3°C of ambient temperature at the edge of a scientifically established mixing zone that takes into account ambient water quality, receiving water use and assimilative capacity among other considerations.

The Project currently plans that no additives (including corrosion inhibitors) or chemicals will be present in the hydrostatic test water. In the unanticipated eventuality that chemical additives may be necessary, the use of chemicals (including the type of chemicals to be used) for hydrotesting will be stipulated in the EPC Contractor Hydrostatic Test Water Disposal Plan and shall be subject to prior TAP approval.

It should be noted that additional, more stringent standards may exist within Prefectural Decisions for surface water bodies that will be used by the Project for hydrostatic test water discharge (as required by MD E1b/221, 24 February 1965 (Gov. Gaz. 138/B), see Section 6.2.1.2)). EPC Contractor responsibilities to ensure compliance with this legislation are as described in Section 6.5.1.1, but applicable to hydrostatic test water discharges.

6.5.1.2.2 Hydrostatic test water discharge – Albania

No suitable Albanian or European standards have been identified for the discharge of hydrotest water. The standards in Table 6-7 have therefore been sourced from the IFC Environmental, Health, and Safety Guidelines for Onshore Oil and Gas Development, April 2007. These standards apply at the point of discharge to a surface water body (the TAP Hydrostatic Test Concept Document states parameters will be agreed with Albanian authorities therefore further research into Albanian discharge standards may be required.)

In addition, the temperature limits specified in the IFC EHS Guidelines for Wastewater and Ambient Water Quality, 2007 (see Section 6.4.3.1) shall also be applied to hydrostatic test water discharged to surface water. This standard requires that the temperature of waste water prior to discharge shall not result in an increase of more than 3°C of ambient temperature at

the edge of a scientifically established mixing zone that takes into account ambient water quality, receiving water use and assimilative capacity among other considerations.

6.5.1.2.3 Hydrostatic test water discharge – Italy

The discharge location for onshore hydrostatic test water has not yet been established. Determination of the location will be made on case-by-case basis. In the eventuality that the onshore hydrostatic test water will be disposed of into an onshore surface water receptor, the standards detailed in Table 6-10 (based on the most stringent of IFC Environmental, Health, and Safety Guidelines for Onshore Oil and Gas Development (2007) standards for hydrostatic test water discharge (Section 6.4.3.2.1) and D.lgs 152/2006 quality standards for discharge into surface waters (see Table 6-3) shall be used as the Project Standards. In addition, the temperature limits specified in the IFC EHS Guidelines for Wastewater and Ambient Water Quality, 2007 (see Section 6.4.3.1) shall also be applied to hydrostatic test water discharged to surface water. This standard requires that the discharged hydrostatic test water shall not result in a temperature variation of more than 3°C of ambient temperature of the surface water receptor.

Table 6-10 Project Standards for the discharge of onshore hydrostatic test water to surface water receptors in Italy

Parameter	*Limit value*	*Source*
pH	6 - 9	IFC*
Total suspended solids (TSS)	35 mg/l	IFC
Biological oxygen demand (BOD_5) (as O_2)	25 mg/l	IFC
Chemical oxygen demand (COD) (as O_2)	125 mg/l	IFC
Arsenic	≤ 0.5 mg/l	D.lgs 152/2006**
Cadmium	≤ 0.02 mg/l	D.lgs 152/2006
Mercury	≤ 0.005 mg/l	D.lgs 152/2006
Nickel	≤ 2 mg/l	D.lgs 152/2006
Lead	≤ 0.2 mg/l	D.lgs 152/2006
Copper	≤ 0.1 mg/l	D.lgs 152/2006
Zinc	≤ 0.5 mg/l	D.lgs 152/2006
Total heavy metals***		IFC
Free active chlorine	≤ 0.2 mg/l	D.lgs 152/2006

Parameter	*Limit value*	*Source*
Sulphides (as H_2S)	≤ 1 mg/l	D.lgs 152/2006 and IFC
Chlorides	600 mg/l (average) ≤ 1,200 mg/l (maximum)	IFC D.lgs 152/2006 and IFC
Ammonia nitrogen (as NH_4)	≤ 15 mg/l	D.lgs 152/2006
Total hydrocarbons	≤ 5 mg/l	D.lgs 152/2006
Phenols	≤ 0.5 mg/l	D.lgs 152/2006 and IFC
Temperature	The temperature of waste water prior to discharge shall not result in an increase of more than 3°C of ambient temperature at the edge of a scientifically established mixing zone that takes into account ambient water quality, receiving water use and assimilative capacity among other considerations/ For water streams the maximum temperature variation between the average water temperature in any section of the stream upstream and downstream of the discharge point must not be greater than 3°C. For at least half of any section downstream of the discharge point such variation must not exceed 1°C	IFC EHS Guidelines for Wastewater and Ambient Water Quality / D.lgs 152/2006

Parameter	*Limit value*	*Source*
* the IFC Environmental, Health, and Safety Guidelines for Onshore Oil and Gas Development (2007) ** D.lgs 152/2006 “Environmental Regulation” and s.m.i *** Heavy metals include: Arsenic, cadmium, chromium, copper, lead, mercury, nickel, silver, vanadium and zinc.		

If the onshore hydrostatic test water is removed by tanker for treatment by a third party, TAP will ensure that the resulting treated water would meet the requirements specified above.

6.5.2 Offshore standards for construction water discharges

6.5.2.1 Project Standards for the discharge of sanitary waste water

The discharge of sanitary waste water (including black and grey water) to the sea shall be compliant with Annex IV of MARPOL 73/78 (Regulations for the Prevention of Pollution by Sewage from Ships) namely:

- the discharge of sewage into the sea is prohibited, except when the ship has in operation an approved sewage treatment plant or when the ship is discharging comminuted and disinfected sewage using an approved system at a distance of more than 3 nautical miles from the nearest land.
- vessels to be used during the construction phase shall hold an International Sewage Pollution Prevention Certificate, validating that the vessel is equipped with a sewage treatment plant/comminutor/holding tank and a discharge pipeline in compliance with regulation 3(1)(a)(i) to (iv) of Annex IV of the 1973 Convention.
- sewage that is not comminuted or disinfected shall be discharged at a distance of more than 12 nautical miles from the nearest land.

6.5.2.2 Project Standards for the discharge of industrial wastewater

6.5.2.2.1 Hydrostatic test water disposal

Offshore hydrostatic test water will be discharged into a cofferdam in the Albanian coastal section, in line with the report ‘Environmental Assessment of Discharge for Pre-Commissioning’ (OPL00-RAM-150-S-TRS-0001).

In accordance with IFC guidelines and the requirements of the TAP ESCH MS, an Offshore Hydrostatic Test Water Sourcing and Disposal Plan should be prepared that considers points of discharge, rate of discharge, chemical use and dispersion, environmental risk, and monitoring.

It is currently proposed that chemical additives will not be used in the hydrostatic test water, if the situation changes the use of chemicals (including the type of chemicals to be used) for hydrotesting will be stipulated in the EPC Contractor Hydrostatic Test Water Sourcing and Disposal Plan and shall be subject to prior TAP approval. The IFC Environmental, Health and Safety Guidelines for Offshore Oil and Gas Development (2015) applicable to hydrostatic test water (see Section 6.4.3.2) shall be followed, as this represents internationally accepted good industry practice in the management and control of hydrostatic test waters offshore. The IFC Environment Health and Safety Guidelines for Onshore Oil and Gas Development (2007) standard that Hydrostatic test water withdrawal rate should not exceed 10% of the stream flow of the water source, shall also apply as a Project Standard.

6.5.2.2.2 Bilge water disposal

Bilge waters from machinery spaces in offshore construction and support vessels shall be routed to a closed drainage system, or contained and treated before discharge to meet the guidelines provided in MARPOL 73/78. If treatment to this standard is not possible, these waters should be contained and shipped to shore for disposal. Waste water shall be treated to achieve the following standard:

- < 15 mg/l oil in water (in accordance with MARPOL 73/78 Annex I).

6.5.2.2.3 Project Standards for ballast water exchange

Ballast water exchange will be conducted in line with the requirements of the Ballast Water Management Convention (see Section 6.4.4.3). All ships using ballast water exchange will:

- conduct ballast water exchange at least 200 nm from the nearest land and in water at least 200 metres in depth

- in cases where the ship is unable to conduct ballast water exchange as above, this should be as far from the nearest land as possible, and in all cases at least 50 nm from the nearest land and in water at least 200 metres in depth.

The lay barge and major supply and support vessels will have an approved Ballast Water Management Plan and Ballast Water Record Book.

6.5.2.2.4 Project Standards for anti-fouling systems

All ships in the offshore pipelay spread will ensure that their antifouling systems are in line with the requirements of the Antifouling System Convention (see Section 6.4.4.4). No organotin compounds to be used on hulls or external surfaces, and survey and certification to be carried out in line with the Convention requirements.

6.5.2.2.5 Project Standards for disposal of dredged material

Under the London Protocol dumping of dredged material to sea is permitted (see Section 6.4.4.5). It should be noted that a permit for this activity is required under the local regime.

6.6 Operational Standards for water discharges

6.6.1 Onshore standards for operational water discharges

6.6.1.1 Project Standards for the discharge of sanitary wastewater

6.6.1.1.1 Greece

Project sanitary waste water (including black and grey water) from the compressor stations will be collected in a separate sewer network, which will be temporarily stored in on-site storage tanks. The sanitary waste water will be disposed of at a public wastewater treatment plant as required.

TAP must ensure that the public wastewater treatment plant will have adequate capacity to meet local regulatory requirements for the treatment and subsequent discharge of waste water. In the unlikely event that public wastewater treatment plant does not have such capacity TAP will consider and provide contingency disposal arrangements.

6.6.1.1.2 Albania

Where possible, discharges of sanitary wastewater should connect into the public wastewater sewer, providing that the treatment systems have adequate capacity to meet local regulatory requirements for the treatment of wastewater. If sanitary wastewater is to be discharged to a surface water body, the wastewater shall be treated to comply with the standards detailed in Table 6-9 at the point of discharge.

6.6.1.1.3 Italy

Discharges of Project sanitary waste water (black and grey water) from the PRT will connect into the public waste water sewer, if available. It is expected that any public sewer will have adequate capacity to meet any local regulatory requirements for the treatment of the very minor volume of waste water and subsequent discharge of the waste water.

All discharges of sanitary waste water to the public waste water sewer shall comply with the D.lgs 152/2006 and s.m.i limit values for discharge into sewers (see Table 6-3) or the AUA (see Section 6.2.3.1) if these are more stringent. Sewage discharge limits will be agreed with Italian authorities.

In the event that it is not possible to discharge the waste water to the public sewer, the waste water will be discharged into surface waters after treatment to meet requirements of D.lgs 152/2006 and s.m.i limit values for discharge into surface waters (see Table 6-3). or the AUA (see Section 6.2.3.1) if these are more stringent. Sewage discharge limits will be agreed with Italian authorities.

6.6.1.2 Project Standards for the discharge of stormwater

6.6.1.2.1 Greece

The collection and discharge of storm water runoff and protection system for potentially polluted surface water is described in Section 6.1.1.

All storm water discharged to surface water will:

- have a maximum total hydrocarbon content of 10 mg/l, as required by the IFC's General EHS Guidelines for Onshore Oil and Gas Development (2007) (see Section 6.4.3.3)
- the temperature of waste water prior to discharge shall not result in an increase of more than 3°C of ambient temperature at the edge of a scientifically established mixing zone that takes into account ambient water quality, receiving water use and assimilative capacity among other considerations, as required by the IFC EHS Guidelines for Wastewater and Ambient Water Quality, 2007 (see Section 6.4.3.1).

It should be noted that additional, more stringent standards may exist within Prefectural Decisions for surface water bodies that will be used by the Project for the discharge of storm water (as required by MD E1b/221, 24 February 1965 (Gov. Gaz, 138/B), see Section 6.2.1.2). EPC Contractor responsibilities to ensure compliance with this legislation are as described in Section 6.5.1.1, but applicable to operational storm water and/or oily water discharges.

6.6.1.2.2 Albania

Storm water runoff from the compressor station sites shall be collected and directed via sediment traps. In areas where there is a risk of fuel or oil spillages, surface water will be directed via oil water separators prior to discharge.

All storm water discharged to surface water will:

- have a maximum total hydrocarbon content of 10 mg/l, as required by the IFC's General EHS Guidelines for Onshore Oil and Gas Development (2007) (see Section 6.4.3.3)

- the temperature of waste water prior to discharge shall not result in an increase of more than 3°C of ambient temperature at the edge of a scientifically established mixing zone that takes into account ambient water quality, receiving water use and assimilative capacity among other considerations, as required by the IFC EHS Guidelines for Wastewater and Ambient Water Quality, 2007 (see Section 6.4.3.1).

6.6.1.2.3 Italy

Waste water discharges at the PRT during the operation phase will be managed using two separate drainage systems: one for process areas and one for other areas (utilities, buildings etc.). Both systems will discharge waste water to the public sewage network. Surface water (including storm water) from potential polluted areas will be discharged via an oil separator into the sewage system, and will be treated in a small waste sewage works before being discharged into the public waste water network. The discharged stormwater will have a maximum total hydrocarbon content of 10 mg/l, as required by the IFC's General Environmental, Health, and Safety Guidelines for Onshore Oil and Gas Development (2007). All discharges of storm water to the public waste water sewer shall comply with D.lgs 152/2006 and s.m.i limit values for discharge into sewers (see Table 6-3).

In the event that it is not possible to discharge the storm water to the public sewer, the storm water, treated as required as described in the previous paragraph, may be discharged to the surrounding ground or into a surface water receptor. If discharged to a surface water body, it shall be ensured that:

- this does not result in an increase of more than 3°C of ambient temperature, in accordance with the IFC EHS Guidelines for Wastewater and Ambient Water Quality (2007) (see Section 6.4.3.1)

- discharges are compliant with D.lgs 152/2006 and s.m.i limit values for discharge into surface waters (see Table 6-3).

Additional or more stringent standards for stormwater discharges may be specified within the AUA for the PRT (see Section 6.2.3.1). In the event, that most stringent standards are specified within the AUA, these will be adopted by the Project.

6.6.2 Offshore standards for operational water discharges

Vessels to be used in maintenance operations shall comply with MARPOL 73/78 for the management of sanitary waste water and bilge water (see Section 6.5.2). They will also comply with the requirements of the Ballast Water Management Convention and Antifouling Systems Convention.

The ESIA Italy and ESIA Albania considers other potential impacts on water quality during the operational phase to be limited to the transfer of heat that is generated by the movement of natural gas within the pipeline and the release of ions from anti-corrosion anodes in place on the pipeline. Both impacts are considered insignificant (see Section 8.2.2.3.1 of the ESIA Italy and Section 8.2.2.2 of the ESIA Albania) and thus no Project Standards have been set for this aspect.

6.7 Project Standards for ambient surface water quality – construction and operation

Ambient water quality Project Standards will be applied to surface waters that receive routine controlled waste water discharge (treated sewage effluent, hydrostatic test water, storm water etc.). Compliance with ambient surface water quality standards detailed in this section only relates to impacts upon surface water quality resulting from project activities. The receiving surface water characterisation will be conducted on case-by-case basis in the event, that discharge of construction or operational waters into surface water is planned. Surface water characterisation will be undertaken prior to discharge and is the responsibility of the discharging party, i.e. EPC Contractor during construction and TAP during operational phase.

Project standards for ambient surface water quality are presented in Table 6-11, Table 6-12 and Table 6-13. Host country specific sources are provided where these are applicable. In the event, ambient surface water quality for a receiving surface water body exceeds project standards, a risk assessment will be undertaken in consultation with the competent authority regulating the quality of the receiving water body.

6.7.1 Greece

The Project Standards have been developed from a combination of European legislation, such as Directive 2008/105/EC (the Environmental Quality Standards Directive) and Directive 2006/44/EC (the Freshwater Fish Directives), and Greek legislation (i.e. MD 51354/264/E103, 8 December 2010 (Gov. Gaz. 1909/B), which transposes the requirements of Directive 2008/105/EC into law (see Section 6.2.1)). The Standards are shown in Table 6-11 below.

Table 6-11 Project Standards for ambient surface water quality standards

Parameter	*Limit value*	*Source*
pH[1]	6–9	Directive 2006/44/EC[2]
Temperature	Temperature measured downstream of a point of thermal discharge (at the edge of the mixing zone)	Directive 2006/44/EC

Parameter	*Limit value*		*Source*
	must not exceed the unaffected temperature by more than:[3] 1.5°C (salmonid waters) 3°C (cyprinid waters)		
	Thermal discharges must not cause the temperature downstream of the point of thermal discharge (at the edge of the mixing zone) to exceed the following:[4] 21.5°C (salmonid waters) 28°C (cyprinid waters) A 10°C temperature limit also applies to breeding periods for species that need cold water to reproduce and to waters that may contain such species.[4]		Directive 2006/44/EC
BOD[1]	≤ 3 mg/l (salmonid waters) ≤ 6 mg/l (cyprinid waters)		Directive 2006/44/EC
Dissolved oxygen	50% of the time ≥ 9 mg/l O_2 (salmonid waters) 100% of the time ≥7 mg/l O_2 (salmonid waters) 50% of the time ≥ 8 mg/l O_2 (cyprinid waters) 100% of the time ≥ 5 mg/l O_2 (cyprinid waters)		Directive 2006/44/EC
TSS	≤ 25 mg/l (annual average)		Directive 2006/44/EC
Cadmium and its compounds	Annual Average	Maximum Allowable Concentration	Directive 2008/105/EC[5] & MD51354/2641/E103[6]
	≤ 0.08 µg/l (Class 1)	≤ 0.45 µg/l (Class 1)	
	0.08 µg/l (Class 2)	0.45 µg/l (Class 2)	
	0.09 µg/l (Class 3)	0.6 µg/l (Class 3)	
	0.15 µg/l (Class 4)	0.9 µg/l (Class 4)	
	0.25 µg/l (Class 5)	1.5 µg/l (Class 5)	
Dissolved copper:[1]	0.005 mg/l for water hardness of 10 mg/l $CaCO_3$ 0.022 mg/l for water hardness of 50 mg/l $CaCO_3$ 0.04 mg/l for water hardness of 100 mg/l $CaCO_3$		Directive 2006/44/EC

Parameter	*Limit value*	*Source*
	0.112 mg/l for water hardness of 300 mg/l $CaCO_3$	
Mercury	0.05 µg/l (annual average) 0.07 µg/l (maximum allowable concentration)	Directive 2008/105/EC & MD51354/2641/E103
Nickel and its compounds	20 µg/l (annual average)	Directive 2008/105/EC & MD 51354/2641/E103
Lead and its compounds	7.2 µg/l (annual average)	Directive 2008/105/EC & MD 51354/2641/E103
Zinc	Salmonid waters: 0.03 mg/l for water hardness of 10 mg/l $CaCO_3$ 0.2 mg/l for water hardness of 50 mg/l $CaCO_3$ 0.3 mg/l for water hardness of 100 mg/l $CaCO_3$ 0.5mg/l for water hardness of 500 mg/l $CaCO_3$ Cyprinid waters 0.3 mg/l for water hardness 10 mg/l $CaCO_3$ 0.7 mg/l for water hardness 50 mg/l $CaCO_3$ 1.0 mg/l for water hardness of 100 mg/l $CaCO_3$ 2.0 mg/l for water hardness of 500 mg/l $CaCO_3$	Directive 2006/44/EC
Total residual chlorine	≤ 0.005 mg/l HOCl	Directive 2006/44/EC
Total hydrocarbon content	Petroleum products must not be present in water in such quantities that they form a visible film on the surface of the water or form coatings on the beds of watercourses and lakes; impart a detectable hydrocarbon taste to fish; or produce harmful effects in fish.	Directive 2006/44/EC
Nitrites[1]	≤ 0.01 mg/l NO_2 (salmonid waters) ≤ 0.03 mg/l NO_2 (cyprinid waters)	Directive 2006/44/EC
Non-ionised ammonia[1]	≤ 0.025 mg/l NH_3	Directive 2006/44/EC

Parameter	*Limit value*	*Source*
Total ammonium	≤1 mg/l NH_4	Directive 2006/44/EC
Phenolic compounds	Phenolic compounds must not be present in such concentrations that they adversely affect fish flavour.	EU Statutory
Hexachloro-butadiene	0.1 µg/l (annual average) 0.6 µg/l (maximum allowable concentration)	Directive 2008/105/EC & MD 51354/2641/E103
Tetrachloro-ethylene	10 µg/l (annual average)	Directive 2008/105/EC & MD 51354/2641/E103
Atrazine	0.6 µg/l (annual average) 2 µg/l (maximum allowable concentration)	Directive 2008/105/EC & MD 51354/2641/E103

Notes:

1. Ninety-five percent of all samples taken for this parameter should conform to the values provided in this table. Should sampling frequency be lower than one sample per month, all samples must conform to the values provided in this table.
2. Directive 2006/44/EC, the Freshwater Fish Directive: To ensure conformance with this Directive, samples should be taken at the minimum frequency specified by the Directive over a period of 12 months.
3. Derogations limited in geographical scope may be decided by Member States in particular conditions if the competent authority can prove that there are no harmful consequences for the balanced development of the fish population.
4. Temperature limits may be exceeded for 2% of the time.
5. Directive 2008/105/EC “the Environmental Quality Standards Directive”
6. MD 51354/2641/E103, 8 December 2010 (Gov. Gaz. 1909/B), “Definition of Environmental Quality Standards (EQS) for Priority Substances and certain other pollutants in surface waters, according to Directive 2008/105/EC”

6.7.2 Albania

No Albanian ambient water quality standards have been identified. The Project Standards have been developed from Directive 2008/105/EC (the Environmental Quality Standards Directive) and Directive 2006/44/EC (the Freshwater Fish Directive). These are set out in Table 6-12. It should be noted that these standards are not statutory values but are used for the protection of fisheries and aquatic life. Derogations from these standards are possible, if for example exceptional weather or natural enrichment occurs, or if the baseline water quality in the receiving water exceeds the Project standards.

Table 6-12 Project ambient onshore surface water quality standards

Parameter	*Limit value*	*Source*
pH[1]	6–9	Directive 2006/44/EC[2]
Temperature	Temperature measured downstream of a point of thermal discharge (at the edge of the mixing zone) must not exceed the unaffected temperature by more than:[3] 1.5°C (salmonid waters) 3°C (cyprinid waters)	Directive 2006/44/EC
	Thermal discharges must not cause the temperature downstream of the point of thermal discharge (at the edge of the mixing zone) to exceed the following:[4] 21.5°C (salmonid waters) 28°C (cyprinid waters) A 10°C temperature limit also applies to breeding periods for species that need cold water to reproduce and to waters that may contain such species.[4]	Directive 2006/44/EC
BOD[1]	≤ 3 mg/l (salmonid waters) ≤ 6 mg/l (cyprinid waters)	Directive 2006/44/EC
Phenolic compounds	Phenolic compounds must not be present in such concentrations that they adversely affect fish flavour.	EU Statutory
Total hydrocarbon content	Petroleum products must not be present in water in such quantities that they form a visible film on the surface of the water or form coatings on the beds of watercourses and lakes; impart a detectable hydrocarbon taste to fish; or produce harmful effects in fish.	Directive 2006/44/EC
TSS	≤ 25 mg/l (annual average)	Directive 2006/44/EC
Nitrites[1]	≤ 0.01 mg/l NO_2 (salmonid waters) ≤ 0.03 mg/l NO_2 (cyprinid waters)	Directive 2006/44/EC

Parameter	*Limit value*	*Source*
Dissolved copper[1]	0.005 mg/l for water hardness of 10 mg/l $CaCO_3$ 0.022 mg/l for water hardness of 50 mg/l $CaCO_3$ ≤ 0.04 mg/l for water hardness of 100 mg/l $CaCO_3$ 0.112 mg/l for water hardness of 300 mg/l $CaCO_3$	Directive 2006/44/EC
Zinc	Salmonid waters: 0.03 mg/l for water hardness of 10 mg/l $CaCO_3$ 0.2 mg/l for water hardness of 50 mg/l $CaCO_3$ 0.3 mg/l for water hardness of 100 mg/l $CaCO_3$ 0.5mg/l for water hardness of 500 mg/l $CaCO_3$ Cyprinid waters 0.3 mg/l for water hardness 10 mg/l $CaCO_3$ 0.7 mg/l for water hardness 50 mg/l $CaCO_3$ 1.0 mg/l for water hardness of 100 mg/l $CaCO_3$ 2.0 mg/l for water hardness of 500 mg/l $CaCO_3$	Directive 2006/44/EC
Non-ionised ammonia[1]	≤ 0.025 mg/l NH_3	Directive 2006/44/EC
Total ammonium	≤1 mg/l NH_4	Directive 2006/44/EC
Dissolved oxygen	50% of the time ≥ 9 mg/l O_2 (salmonid waters) 100% of the time ≥7 mg/l O_2 (salmonid waters) 50% of the time ≥ 8 mg/l O_2 (cyprinid waters) 100% of the time ≥ 5 mg/l O_2 (cyprinid waters)	Directive 2006/44/EC
Total residual chlorine	≤ 0.005 mg/l HOCl	Directive 2006/44/EC

Notes:

1. 95% of all samples taken for this parameter should conform to the values provided in this table. Should sampling frequency be lower than one sample per month, all samples must conform to the values provided in this table
2. EU EQS – refers to Environmental Quality Standards set by the Freshwater Fish Directive (78/659/EEC consolidated with 2006/44/EC) for freshwaters that require protection in order to support salmonid and cyprinid fish

Parameter	Limit value	Source
	3. derogations limited in geographical scope may be decided by Member States in particular conditions if the competent authority can prove that there are no harmful consequences for the balanced development of the fish population 4. temperature limits may be exceeded for 2% of the time 5. the value for TSS is a 12-month average. 6. there is no derogation within the EQS standards for weather/seasonal conditions. However, the value for TSS is a 12-month average. 7. the Water Framework Directive (2000/60/EC) replaced the Freshwater Fish Directive in December 2013. However, it offers the same level of protection for such protected areas.	

6.7.3 Italy

Applicable ambient water quality standards are provided by both national legislation (i.e. Legislative Decree 152/2006 “Environmental Regulation”, Part III, and s.m.i.) and European legislation (i.e. the Directive 2008/105/EC - Environment Quality Standards Directive and Directive 2006/44/EC - the “Freshwater Fish Directive”). The most stringent of these standards have been incorporated into the Project Standards for ambient surface water quality, as shown in Table 6-13 below.

Table 6-13 Project Standards for onshore ambient surface water quality

Parameter	Limit value	Source
pH[1]	6-9	Directive 2006/44/EC[2]
Temperature	Temperature measured downstream of a point of thermal discharge (at the edge of the mixing zone) must not exceed the unaffected temperature by more than:[3] 1.5°C (salmonid waters) 3°C (cyprinid waters)	Directive 2006/44/EC
	Thermal discharges must not cause the temperature downstream of the point of thermal discharge (at the edge of the mixing zone) to exceed the following:[4] 21.5°C (salmonid waters) 28°C (cyprinid waters	Directive 2006/44/EC

Parameter	*Limit value*	*Source*
Biological oxygen demand (BOD)[1]	≤ 3 mg/l (salmonid waters) ≤ 6 mg/l (cyprinid waters)	
Dissolved oxygen	50% of the time ≥ 9 mg/l O_2 (salmonid waters) 100% of the time ≥7 mg/l O_2 (salmonid waters) 50% of the time ≥ 8 mg/l O_2 (cyprinid waters) 100% of the time ≥ 5 mg/l O_2 (cyprinid waters	Directive 2006/44/EC
Total suspended solids (TSS)	≤ 25 mg/l (annual average)	Directive 2006/44/EC
Arsenic	10 µg/l (annual average)	D.lgs 152/2006[5]
Cadmium and its compounds	0.8 µg/l (annual average) ≤ 0.45 µg/l (maximum allowable concentration)	D.lgs 152/2006
Dissolved copper[1]	0.005 mg/l for water hardness of 10 mg/l $CaCO_3$ 0.022 mg/l for water hardness of 50 mg/l $CaCO_3$ ≤ 0.04 mg/l for water hardness of 100 mg/l $CaCO_3$ 0.112 mg/l for water hardness of 300 mg/l $CaCO_3$3	Directive 2006/44/EC
Mercury	0.03 µg/l (annual average) 0.06 µg/l (maximum allowable concentration)	D.lgs 152/2006
Nickel and its compounds	20 µg/l (annual average)	D.lgs 152/2006 & Directive 2008/105/EC[6]
Lead and its compounds	7.2 µg/l (annual average)	D.lgs 152/2006 & Directive 2008/105/EC
Zinc[1]	Salmonid waters: 0.03 mg/l for water hardness of 10 mg/l $CaCO_3$ 0.2 mg/l for water hardness of 50 mg/l $CaCO_3$ 0.3 mg/l for water hardness of 100 mg/l $CaCO_3$ 0.5mg/l for water hardness of 500 mg/l $CaCO_3$ Cyprinid waters	Directive 2006/44/EC

Parameter	*Limit value*	*Source*
	0.3 mg/l for water hardness 10 mg/l $CaCO_3$ 0.7 mg/l for water hardness 50 mg/l $CaCO_3$ 1.0 mg/l for water hardness of 100 mg/l $CaCO_3$ 2.0 mg/l for water hardness of 500 mg/l $CaCO_3$	
Total residual chlorine[1]	≤ 0.005 mg/l HOCl	Directive 2006/44/EC
Total hydrocarbon content	Petroleum products must not be present in water in such quantities that they: form a visible film on the surface of the water or form coatings on the beds of watercourses and lakes, impact a detectable “hydrocarbon” taste to fish, and produce harmful effects in fish	Directive 2006/44/EC
Nitrites[1]	≤ 0.01 mg/l NO_2 (salmonid waters) ≤ 0.03 mg/l NO_2 (cyprinid waters)	Directive 2006/44/EC
Non-ionised ammonia[1]	≤ 0.025 mg/l NH_3	Directive 2006/44/EC
Total ammonium[1]	≤ 1 mg/l NH_4	Directive 2006/44/EC
Phenolic compounds	Phenolic compounds must not be present in such concentrations that they adversely affect fish flavour	Directive 2006/44/EC
Hexachlorobutadiene	0.01 µg/l (annual average) 0.05 µg/l (maximum allowable concentration)	Directive 2008/105/EC D.lgs 152/2006
Tetrachloroethylene	10 µg/l (annual average)	D.lgs 152/2006 & Directive 2008/105/EC
Atrazine	0.6 µg/l (annual average) 2 µg/l (maximum allowable concentration)	D.lgs 152/2006 & Directive 2008/105/EC

Parameter	*Limit value*	*Source*

Notes:

1. 95% of all samples taken for this parameter should conform to the values provided in this table. Should sampling frequency be lower than one samples per month, all samples must conform to the values provided in this table
2. Directive 2006/44/EC “the Freshwater Fish Directive” (To ensure conformance with this Directive, samples should be taken at the minimum frequency specified by the Directive over a period of 12 months.)
3. derogations limited in geographical scope may be decided by Member States in particular conditions if the competent authority can prove that there are no harmful consequences for the balanced development of the fish population
4. temperature limits may be exceeded for 2% of the time
5. D.lgs 152/2006 “Environmental Regulation” and s.m.i
6. Directive 2008/105/EC “the Environmental Quality Standards Directive”

7 Groundwater and soils

7.1 Introduction

Potential impacts on groundwater, soils and sediments during the construction and operational phases were assessed in the ESIAs for each host country. This section considers standards relevant to the protection of soils and groundwater and sets out Project Standards for the construction and operational phases of the Project.

7.1.1 Greece

The ESIA Greece identified the following key impacts:

- consumption of groundwater resources (construction and operation phases)
- accidental pollution of soil and groundwater (e.g. by soil/liquid wastes or hydrocarbons/fuels) (construction and operational/maintenance phase)
- erosion (construction and operation phases)
- disturbance and degradation of soil due to erosion, compaction, removal, modification of morphology, collapse and sinkhole formation process (construction phase)
- potential disturbance of contaminated soils in areas already contaminated from former activities (construction phase)
- land take and surface sealing (construction and operational phase).

7.1.2 Albania

The ESIA considered the following key impacts:

- accidental pollution of soil and groundwater (construction and operational/maintenance phase)
- disturbance and degradation of soil due to erosion, compaction, storage and replacement, modification of morphology (construction phase)
- temporary lowering of groundwater table during dewatering of trenches/excavations (construction phase)

- disturbance of contaminated soils and groundwater in areas known to be contaminated from former industrial use e.g. the Marinez oil fields (construction phase)
- land take and surface sealing (construction and operational/maintenance phase).

7.1.3 Italy

The ESIA considered the following key impacts:

- potential contamination of groundwater from fuels, lubricant oils, chemicals etc. (construction phase)
- potential effect on hydrological and hydraulic regime in endorheic areas (construction phase)
- potential soil and/or sediment contamination, for example, by hazardous and non-hazardous spill (construction phase only), by hazardous and non-hazardous waste (construction phase) or by solid and liquid wastes (operational phase)
- potential disturbance and degradation of soil and/or sediment, for example, due to erosion, soil compaction, soil removal, seabed interventions, anchor handling, modification of morphology, collapse and sinkhole formation (construction phase)
- land take of soil (construction and operation phases).

7.2 National Standards

7.2.1 Greek national standards

7.2.1.1 Groundwater

7.2.1.1.1 MD 1811, 30 December 2011 (Gov. Gaz. 3322/B), “setting threshold values for concentrations of certain pollutants, pollutant groups or pollutant indicators in groundwaters”

MD 1811, 30 December 2011 (Gov. Gaz. 3322/B), defines the quality standards and threshold values at a national level for concentrations of certain pollutants, pollutant groups or pollution indicators in groundwater, pursuant to paragraph 2 of Article 3 of JMD 39626/2208/E130/2009 (Gov. Gaz. 2075/B). These threshold values have been defined according to the guidelines provided in Annex II Part A of the Groundwater Directive (GWD) 2000/60/EC (see Section 7.3.1.2) and have been outlined in Table 7-1.

Table 7-1 Greek Quality standards and upper limit values for selected pollutants in groundwater according to MD 1811/2011 (Gov. Gaz. 3322/B)

Groundwater parameter	*Limit value*
pH	6.5–9.5
Conductivity EC (μs/cm)	2500
Cl (mg/l)	250
SO_4 (mg/l)	250
NO_2 (mg/l)	0.5
NH_4 (mg/l)	0.5
Al (μg/l)	200
Pb (μg/l)	25
Cd (μg/l)	5
Ni (μg/l)	20
Cr (μg/l)	50
As (μg/l)	10
Hg (μg/l)	1

7.2.1.1.2 JMD 5673/400, 14 March 1997 (Gov. Gaz. 192/B), “Measures and Terms for the Management of Municipal Liquid Waste”

JMD 5673/400, 14 March 1997 (Gov. Gaz. 192/B), outlines measures and terms for the management of industrial waste and sewage and establishes parameters and corresponding limit values for discharge of industrial waste and sewage to groundwater. This incorporates into Greek national law the provisions of the Urban Wastewater Treatment Directive 91/271/EEC (see Section 7.3.1.3).

7.2.1.1.3 JMD 145116/2011, 8 March 2011 (Gov. Gaz. 54/A), “Definition of Measures, Terms and Conditions for the Reuse of Treated Wastewater “

JMD 145116 specifies measures, conditions and procedures for the reuse of urban liquid waste and industrial wastewater as defined in JMD 5673/400/1997 (including discharge to

underground reservoirs). Table 7-2 lists the limit values for different parameters outlined in JMD 5673/400 and JMD 145116/2011.

Table 7-2 Greek standard: Wastewater discharge limit values according to JMD 5673/400/1997 and JMD 145116/2011[31]

Groundwater parameter	*Limit value*
pH	6.5 – 9.5
Conductivity (µs/cm)	2,500
Cl (mg/l)	250
P (mg/l, P_2O_2)	1
PO_4 (mg/l)	1
SO_4 (mg/l)	250
NH_4 (mg/l)	1.5
Na (mg/l)	200
NO_2 (mg/l)	0.5
PAH (ng/l)	300
TOC (mg/l)	10
Total coliforms (Cfu/100 ml)	≤200

7.2.1.2 Soil and sediments

7.2.1.2.1 JMD 80568/4225, 7 August 1991 (Gov. Gaz. 641/B) “Methods, terms and limitations for the use of sewage sludge in agriculture”

The Greek legal framework relating to sewage sludge management is set by JMD 80568/4225 specifies methods, terms and procedures for the exploitation of sewage sludge in agriculture, forestry and soil restoration. This JMD was introduced in order to ensure compliance with EU

[31] Source: ESIA Greece, Tables 6-13, 6-14, 6-15, 6-16, 6-17 and 6-18

Directive 86/278/EC and considers sludge treatment methods i.e. conventional or advanced, as well as limits for metals, organic compounds, including microorganisms.

Table 7-3 lists the limit values for sludge in agriculture areas, in accordance with JMD 80568/4225/1991.

Table 7-3 Greek standard: Limit values for sludge in agriculture areas, in accordance with JMD 80568/4225/1991.

Location	*Parameter*	*Limit value*
Concentration in sludge (mg/kg dry substance)	Cadmium	20-40
	Chromium	Cr(III): 500, Cr(IV): 10
	Copper	1000-1750
	Mercury	16-25
	Nickel	300-400
	Lead	750-1200
	Zinc	2500-4000
Concentration in soil (mg/kg dry substance of representative soil sample with pH 6 to 7)	Cadmium	1-3
	Chromium	-
	Copper	50-140
	Mercury	1-1.5
	Nickel	30-75
	Lead	50-300
	Zinc	150-300
	Cadmium	0.15
	Copper	12

Location	*Parameter*	*Limit value*
Concentration that may be allowed on agricultural land on the basis of a mean value over 10 years (kg/ha/year)	Nickel	3
	Lead	15
	Zinc	30
	Mercury	0.1
	Chromium	5

JMD 80568/4225 also states that use of sludge is prohibited in the following circumstances:

- on grassland used as pasture or for feed crops due to be cultivated within a 3-week period.
- on fruit and vegetable crops (excluding orchards) during the growing season.
- within a minimum of ten months prior to harvest on land intended for fruit and vegetable crops that are in direct contact with the soil and normally eaten raw.

7.2.1.2.2 JMD 114218, 17 November 1997 (Gov. Gaz. 1016/B) “Specifications framework and general solid waste management plans drafting”

JMD 114218 outlines technical specifications for the management of sludge by treatment plants.

7.2.2 Albanian national standards

There are no groundwater quality standards within Albanian legislation.

There is no Albanian legislation dealing with soil quality.

7.2.3 Italian National Standards

7.2.3.1 Groundwater

7.2.3.1.1 D.lgs 152/2006 “Environmental Regulation” and s.m.i

D.lgs 152/2006 “Environmental Regulation”, Part IV and s.m.i requires that where there has been an event with the potential to contaminate a site, or when there is a suspicion of possible

contamination, the responsible entity must enact emergency measures to mitigate the effects of the event (e.g. preventive measures to avoid the imminent threat to the environment and emergency measures to eliminate or reduce the spread of the ongoing contamination).

The responsible entity must also initiate a preliminary investigation plan (an investigative survey) on pollution parameters. The results of the survey should be compared to a set of screening thresholds for both sediment / soil (see Table 7-5 / Table 7-6 below) and groundwater (see Table 7-4). If the screening limits are met the site is not considered contaminated and the process ends.

Where the above-mentioned limits are not met, the site is defined “potentially contaminated” and an administrative process must be undertaken which involves the design and execution of a soil/groundwater characterization plan (according to Annex 2 to the Decree). A site-specific risk analysis (health risk assessment) must be undertaken to define the (normally higher) risk threshold limits. The risk analysis must be approved by the competent authorities in a formal administrative procedure.

If the concentrations measured in the soil/groundwater at the site are less than the levels specified by the site-specific risk analysis, there is no obligation to remediation. However, the responsible party must agree a monitoring plan with the competent authorities.

If the concentrations measured in the soil/groundwater at the site are higher than the levels specified by the site-specific risk analysis, the site is defined "contaminated”. The levels specified by the site-specific risk analysis become the new target limits of a remediation process. The remediation process must be approved by the competent authorities through a formal administrative procedure.

Table 7-4 below contains the threshold contamination concentrations for groundwater and transposes EU Directive 2000/60/EC (Water Framework Directive) (see Section 7.3.1.1).

Table 7-4 Italian standard: Groundwater threshold values[32]

Parameter	*Threshold value (µg/l)*
Anions	
Nitrites	500
Sulphates	250,000
Metals	
Silver	10
Aluminium	200
Antimony	5
Arsenic	10
Beryllium	4
Cadmium	5
Cobalt	50
Total chromium	50
Iron	200
Manganese	50
Mercury	1
Nickel	20
Lead	10
Copper	1000
Selenium	10
Thallium	2
Zinc	3000
Chromium VI	5
Boron	1000
Hydrocarbon compounds	
Total hydrocarbon (n-esano)	350
Volatile halogenated compounds	
1.2-dichloroethylene (cis+trans)	60
Total Halogenated compounds (DLgs 152/06 and s.m.i - All 5 Tab2)	10
1.1.2.2-tetrachloroethane	0.05

32 Source: ESIA Italy, Table 6-48 (information originally taken from D.lgs 152/2006, Table 2. Annex 5. Part IV. Title 5 and s.m.i. which also contains details of analytical methods).

Parameter	*Threshold value (µg/l)*
1.1.2-trichloroethane	0.2
1.1-dichloroethane	810
1.1-dichloroethylene	0.05
1.2.3-trichloropropane	0.001
1.2-dibromoethane	0.001
1.2-dichloroethane	3
1.2-dichloropropane	0.15
Bromodichloromethane	0.17
Bromoform	0.3
Chloroform	0.15
Chloromethane	1.5
Vynil chloride	0.5
Dibromochloromethane	0.13
Hexachlorobutadiene	0.15
Tetrachloroethylene	1.1
Trichloroethylene	1.5
Aromatic compounds	
Benzene	1
Ethylbenzene	50
M. p-xilene	10
Styirene	25
Toluene	15
Polycyclic aromatic hydrocarbons	
Total polycyclic aromatic hydrocarbons	0.1
Benzo(a)athracene	0.1
Benzo(a)pyrene	0.01
Benzo(b)fluoranthene	0.1
Benzo(g.h.i)perylene	0.01
Benzo(k)fluoranthene	0.05
Chrysene	5
Dibenzo(a.h)anthracene	0.01
Indo(1.2.3-cd)pyrene	0.1
Pyrene	50
Nitrogenous pesticides	
Atrazine	0.3

Parameter	*Threshold value (µg/l)*
Chlorinated pesticides	
DDD (sum isomers 2.4' and 4.4')	0.1
DDE (sum isomers 2.4' and 4.4')	0.1
DDT (sum isomers 2.4' and 4.4')	0.1
a-HCH	0.1
Alachlor	0.1
Aldrin	0.03
b-HCH	0.1
Dieldrin	0.03
Endrin	0.1
g-HCH lindano	0.1
Chlordane (cis+trans)	0.1

7.2.3.1.2 Apulia Region Water Protection Plan (PTA), 2007 and s.m.i

The Water Protection Plan (PTA), 2007 and s.m.i is the primary regional planning instrument identified by Section II of D.lgs 152/2006 and s.m.i to achieve and maintain the environmental quality objectives for significant underground water bodies, quality objectives for specific destinations and the qualitative and quantitative protection of the water system (including underground waters).

The Apulia Region PTA, 2007 and s.m.i is the main regional planning instrument for Apulia Region. It analyses environmental quality levels and sets corresponding objectives for waters (including underground waters) in the Apulia region. Quality objectives set are to be achieved by 2015.

In addition to the above, the Apulia Region PTA and s.m.i also provides interventions and measures to be implemented for water bodies, where the water quality is considered to be in a critical situation. It also provides protective measures aimed at preventing deterioration of environmental quality status of waters and guaranteeing the protection of resources that possess good characteristics and/or are used for primary purposes (e.g. human consumption).

7.2.3.2 Soils and sediments

7.2.3.2.1 D.lgs 152/2006 "Environmental Regulation" and s.m.i

A description of the content of D/lgs 152/2006 and its application to soil and ground water pollution can be found in Section 7.2.3.1.1 above. The following sections provide details of the threshold values for sediment and soil.

D.lgs 152/2006, "Environmental Regulation" and s.m.i, Annex 1

D.lgs 152/2006 "Environmental Regulation" and s.m.i, Annex 1 and amendments establish threshold chemical compound contamination concentrations for sediments, shown in Table 7-5 below.

Table 7-5 Italian standard: Sediment threshold values[33]

Parameter	*Threshold value (ug/kg)[34], [35]*
Arsenic	12000
Cadmium	300
Total chromium	50000
Chromium VI	2000
Nickel	30000
Lead	30000
Tributyltin	5
Total PAH	800
Total PCB	8
Benzo(a)pyrene	30
Benzo(b)fluoranthene	40
Benzo(g.h.i)perylene	55
Benzo(k)fluoranthene	20
Indenopyrene	70
Anthracene	45
Fluoranthene	110
Naphthalene	35
Hexachlorobenzene	0.4
DDD (sum isomers 2.4' e 4.4')	0.8
DDE (sum isomers 2.4' e 4.4')	1.8
DDT (sum isomers 2.4' e 4.4')	1
a-HCH	0.2

[33] Source: D.lgs 152/2006 and s.m.i, Part III, Annex 1 Tables 2-A and 3-B

[34] Environmental quality standards expressed as annual average value (EQS-MA)

[35] Given the complexity of the sediment matrix, deviation equal to 20% of the value in the table is justifiable

Parameter	*Threshold value (ug/kg)*[34], [35]
Aldrin	0.2
b-HCH	0.2
Dieldrin	0.2
g-HCH lindane	0.2

D.lgs 152/2006 "Environmental Regulation" and s.m.i, Part IV, Annex 5

D.lgs 152/2006 "Environmental Regulation" and s.m.i, Part IV, Annex 5 and amendments establish threshold contamination concentrations for soil at green public, private and residential sites and at commercial and industrial sites, shown in Table 7-6 below.

Table 7-6 Italian standard: Soil threshold values[36]

Parameter	*Threshold value (mg/kg)*	
	Green public, private and residential sites	*Commercial and industrial sites*
Asbestos	1000	1000
Antimony	10	30
Arsenic	20	50
Beryllium	2	10
Cadmium	2	15
Cobalt	20	250
Total chromium	150	800
Mercury	1	5
Nickel	120	500
Lead	100	1000
Copper	120	600
Selenium	3	15
Tin	1	350
Thallium	1	10
Vanadium	90	250
Zinc	150	1500

[36] Source: ESIA Italy, Table 6-52 and Table 6-53 (information originally taken from D.lgs 152/2006 and s.m.i Annex 5 Table 1-A)

Parameter	*Threshold value (mg/kg)*	
	Green public, private and residential sites	*Commercial and industrial sites*
Hexavalent chromium	2	2
Benzene	2	2
Ethylbenzene	50	50
Styrene	50	50
Toluene	50	50
Xylene	50	50
Sum polycyclic aromatic hydrocarbons	10	100
Benzo(a)anthracene	0.5	10
Benzo(a)pyrene	0.1	10
Benzo(b)fluoranthene	0.5	10
Benzo(g.h.i)perylene	0.1	10
Benzo(k)fluoranthene	0.5	10
Chrysene	5	50
Dibenzo(a.e)pyrene	0.1	10
Dibenzo(a.h)anthracene	0.1	10
Dibenzo(a.h)pyrene	0.1	10
Dibenzo(a.i)pyrene	0.1	10
Dibenzo(a.l)pyrene	0.1	10
Indeno(1.2.3-cd)pyrene	0.1	5
Pyrene	5	50
Atrazine	0.01	1
DDD (sum isomers 2.4' e 4.4')	0.01	0.1
DDE (sum isomers 2.4' e 4.4')	0.01	0.1
DDT (sum isomers 2.4' e 4.4')	0.01	0.1
a-HCH	0.01	0.1
Alachlor	0.01	1
Aldrin	0.01	0.1
b-HCH	0.01	0.5
Dieldrin	0.01	0.1
Endrin	0.01	2
g-HCH lindane	0.01	0.5
Chlordane (cis+trans)	0.01	0.1

7.3 European standards

7.3.1 Groundwater

7.3.1.1 Directive 2000/60/EC - Water Framework Directive

The WFD forms the key legislation for the protection of groundwater quality in Europe. The Directive sets objectives for groundwater quality, including an objective to meet "good chemical status" by 2015, an objective on pollution trends and an objective to prevent or limit the input of pollutants to groundwater. Clarification of the objectives, however, is left to the Groundwater Directive (see Section 7.3.1.2)

7.3.1.2 Directive 2006/118/EC - Groundwater Directive

The GWD complements the WFD. It establishes a regime that sets groundwater quality standards and introduces measures to prevent or limit inputs of pollutants into groundwater. It requires:

- pollution trends to be reversed so that environmental objectives are achieved by 2015 by using the measures set out in the WFD
- measures to prevent or limit inputs of pollutants into groundwater so that WFD environmental objectives can be achieved by 2015
- compliance with good chemical status criteria (based on EU standards of nitrates and pesticides and on threshold values established by Member States).

Groundwater is considered to have a good chemical status when:

- measured or predicted levels nitrate levels do not exceed 50 mg/l, while those of active pesticide ingredients, their metabolites and reaction products do not exceed 0.1 µg/l (a total of 0.5 µg/l for all pesticides measured)
- the levels of certain high-risk substances are below the threshold values set by Member States. The list of substances, ions or indicators for which member states must consider setting threshold values are ammonium, arsenic, cadmium, chloride, lead, mercury, sulphate, trichloroethylene, tetrachloroethylene and conductivity
- the concentration of any other pollutants conforms to the definition of good chemical status as set out in Annex V to the WFD and therefore complies with the environmental quality standards for all priority substances and other pollutants listed in Annex 1 of the Directive on Environmental Quality Standards (Directive 2008/105/EC)

- if a value set as a quality standard or a threshold value is exceeded, an investigation confirms that this does not pose a significant environmental risk.

Annex II of the Directive requires member states to establish threshold values for indicator pollutants to characterise the chemical status of groundwater bodies.

7.3.1.3 Directive 91/271/EEC - Urban Waste Water Treatment

The objective of Directive 91/271/EEC is to protect the environment from the adverse effects of urban waste water and discharges and discharges from certain industrial sectors. It includes requirements for the collection, discharge and treatment of domestic waste water, mixed (domestic and industrial) waste water and waste water from certain industrial sectors.

Directive 91/271/EEC provides mandatory minimum design rules for sewerage treatment plants. The minimum secondary treatment performance standards prior to discharge to receiving waters (i.e. groundwater) are:

- BOD, 25 mg/l
- COD, 125 mg/l
- TSS for a 2,000–10,000 p.e., 60 mg/l (optional requirement).

7.3.2 Contaminated Soils and sediments

There are no European Directives dealing specifically with the issue of land contamination. The overall approach in dealing with contaminated land is one of risk management. Many EU countries use soil screening values to regulate land contamination. Soil screening values are generic quality standards that are used to set long-term quality objectives or to enforce remedial actions. Screening values and site-specific values derived using risk assessment tools are used for managing the risks at contaminated sites and are often used in combination. Regulators prescribe how to use them in national frameworks. In some countries screening values are incorporated into soil and groundwater protection laws. However, in others, the use of screening values is only advised and not obligatory.

The UK risk assessment methodology for contaminated land assessment has therefore been proposed for the Project standards as it is:

- a risk-based approach that takes into account the soil/groundwater under consideration rather than specifying values for all circumstances
- accepted as good practice by contaminated land assessment specialists.

7.3.2.1 UK Contaminated Land Regime

The UK is an industrial society with a considerable legacy of land affected by contamination, has developed a legal and technical framework for applying a risk management process to assess land affected by contamination. Part 2A of the Environmental Protection Act 1990 defines contaminated land as any land that is deemed, by the local authority, "to be in such a condition, by reason of substances in, on or under the land that – (a) significant harm is being caused or there is a significant possibility of such harm being caused; or (b) significant pollution of controlled waters is being caused, or there is a significant possibility of such pollution being caused."

A number of technical guidance documents are available on the assessment of contaminated land, however key documents include:

- Model Procedures for the Management of Land Contamination, CLR 11 (2004). This guidance document issued by the UK government and the Environment Agency provides a technical framework for applying a risk management process to land affected by contamination

- Remedial Targets Methodology (RTM): Hydrogeological Risk Assessment for Land Contamination (Environment Agency, 2006). This document presents a recommended methodology for deriving site-specific remedial objectives for contaminated soils and/or groundwater to protect the aquatic environment. The methodology applies to soils and groundwater that are already contaminated, where the original source of the contamination has ceased.

The content of these two key documents is provided in more detail below.

Model Procedures for the Management of Land Contamination, CLR 11, 2004

The Environment Agency is the principal regulatory body for contaminated land issues in the UK and works with local authorities in considering and assessing the extent and severity of contamination. These regulators have overseen the production of a framework of guidance to the assessment and management of contaminated land, which is provided by CLR11.

The model procedures have been developed to provide the technical framework for applying a risk management process when dealing with land affected by contamination. The process involves identifying, making decisions on and taking appropriate action to deal with land contamination in a way that is consistent with government policies and legislation within the UK and the EU.

The technical approach presented in the model procedures is designed to be applicable to:

- the development or redevelopment of land under the planning regime
- regulatory intervention under Part IIA of the Environment Protection Act 1990 or Part III of the Waste & Contaminated Land (Northern Ireland) Order 1997
- voluntary investigation and remediation
- managing potential liabilities of those responsible for individual sites or a portfolio of sites.

The model procedures consist of three parts: procedures, supporting information and the information map. These provide a hierarchy of information in which part 1 sets out the framework of the risk management process, part 2 provides further technical detail to support the process, and part 3 contains sources of further information and guidance. The model procedures are intended to assist all those involved in dealing with land contamination, including landowners, developers, professional advisors, regulatory bodies and financial providers.

RTM: Hydrogeological Risk Assessment for Land Contamination, Environment Agency, 2006

The RTM has been prepared by the Environment Agency to provide hydrogeological risk assessment guidance. This document was written as a tool to support the CLR11 approach to contaminated land assessment and it supersedes previous guidance (R&D Publication 20, Environment Agency, 1999).

The RTM guidance is written to comply with the EU WFD. The RTM provides a guidance document together with a Microsoft Excel worksheet and manual that can be used to derive site-specific remedial targets.

The methodology is based on a staged approach (referred to as levels) to determine risk-based remedial targets for soil and groundwater. A remedial target is derived at each level, but this target is likely to be less stringent at the next level, as additional processes (e.g. dilution and attenuation) that affect contaminant concentrations along the pathway from the source to the receptor are taken into account.

With successive levels, the data requirements and the sophistication of the analysis increase, but the confidence in the predicted impact also increases. Therefore, moving up successive levels, the remedial target is increased.

This approach enables:

- low risk sites to be rapidly screened out

- attention to be focused on those sites where the risks and information needs are greatest.

7.4 International lender standards

7.4.1 EBRD standards

No specific EBRD standards with respect to soil or groundwater quality have been identified. However, EBRD Performance Requirement 3: “Resource Efficiency and Pollution Prevention & Control” specifies that as a signatory to the European Principles for the Environment, the EBRD is committed to requiring compliance with relevant EU environmental standards, including those related to water management and soil pollution.

7.4.2 World Bank standards

No specific World Bank standards with respect to soil or groundwater quality have been identified. However, typically the World Bank’s requirement is to apply national legislative standards or, in their absence, the current WHO guidelines or other internationally recognised sources.

7.4.3 IFC standards

7.4.3.1 IFC EHS Guidelines for Contaminated Land (2007)

This guidance document states that, “contamination of land should be avoided by preventing or controlling the release of hazardous materials, hazardous wastes, or oil to the environment. When contamination of land is suspected or confirmed during any project phase, the cause of the uncontrolled release should be identified and corrected to avoid further releases and associated adverse impacts”.

There is a requirement for projects to manage contaminated land to avoid risk to human health and ecological receptors. The preferred strategy for land decontamination is to reduce the level of contamination at the project site, while preventing human exposure to contamination.

To determine whether risk management actions are warranted, the guidance sets out an assessment approach to be applied to establish whether the three risk factors of ‘contaminants’, ‘receptors’ and ‘exposure pathways’ co-exist, or are likely to co-exist, at the project site under current or possible future land use. Where there is potential evidence of contamination at a site, the following steps are recommended to assess whether there is an unacceptable level of risk that needs to be managed:

- sampling and testing of the contaminated media (soils or groundwater) according to established technical methods applicable to suspected contaminants

- evaluation of the analytical results against the local and national contaminated sites regulations. In the absence of such regulations or environmental standards, other sources of risk-based standards or guidelines should be consulted to obtain comprehensive criteria for screening soil concentrations of pollutants

- verification of the potential human and/or ecological receptors and exposure pathways relevant to the site.

The guidance states that as an alternative to screening against numerical standards, depending on the local regulatory regime, a detailed site-specific quantitative risk assessment may be carried out to assess risks to receptors.

7.4.3.2 IFC EHS Guidelines for Wastewater and Ambient Water Quality (2007)

This guidance document contains the following advice with respect to soils and groundwater:

- the quality of treated process waste water, waste water from utility operations or stormwater discharged on land should be established based on local regulatory requirements

- septic systems for sanitary waste water should be properly designed and installed in accordance with local regulations and guidance to prevent any hazard to public health or contamination of land, surface or groundwater.

7.4.3.3 IFC EHS Guidelines for Onshore Oil and Gas Development (2007)

This IFC document contains guidance on the management and disposal of hydrostatic test water. The disposal alternatives for hydrostatic test water includes injection into a disposal well if one is available, or discharge to surface waters or land surface. If a disposal well is unavailable and discharge to surface waters or land surface is necessary, the following pollution prevention and control measures are recommended:

- if discharged to land, the discharge site should be selected to prevent flooding, erosion, or lowered agriculture capability of the receiving land. Direct discharge on cultivated land and land immediately upstream of community/public water intakes should be avoided.

7.4.3.3.1 Hydrostatic test water

If hydrostatic test water is discharged to land, the standards specified in Table 6-7 are applicable.

7.4.4 WHO standards

7.4.4.1 WHO Guidelines for Drinking-Water Quality, Fourth Edition (2011)

The WHO has established guideline values for chemicals that are of health significance in drinking-water, whether this be sourced from groundwater or surface water resources. These standards are conservative, but are of relevance where groundwater is abstracted for drinking water supply. These standards are shown in Table 7-7 (Table 7-7 includes limits for what are considered the key parameters for groundwater only as identified in the ESIAs. It is not inclusive of all ambient surface water quality limits contained within the WHO Guidelines for Drinking Water Quality, Fourth Edition (2011)).

Table 7-7 WHO guidelines values for chemicals that are of health significance in drinking water[37]

Drinking water parameter	*Limit Value*
Cl mg/l	5[3]
NO_2^- (mg/l)	3
NO_3^- (mg/l)	50
As (mg/l)	0.01[1, 2]
Cd (mg/l)	0.003
Cr (mg/l)	0.05[4]
Hg (mg/l)	0.006
Ni (mg/l)	0.07
Pb (mg/l)	0.01[1, 2]
Notes:	

[37] Source: WHO Guidelines for Drinking Water Quality, Fourth Edition, 2011

Drinking water parameter	*Limit Value*
1. Provisional guideline value because calculated guideline value is below the achievable quantification level 2. Provisional guideline values because calculated guideline value is below the level that can be achieved through practical treatment methods, source protection, etc. 3. Concentrations of the substance at or below the health-based guideline value may affect the appearance, taste or odour of the water 4. Provisional guideline value because of uncertainties in the health database.	

Water from the aquifers identified in the Project area is not used for drinking. Therefore, these standards do not apply. However, it should be noted that the aquifer water is used for agricultural purposes.

7.5 Project Standards for soils and groundwater during construction

7.5.1 Project clean-up standards

The RoW avoids known areas of contamination. In the case of temporary sites (camps, yards, temporary soil/materials storage sites) the EPC Contractor is required to perform due diligence following a risk-based approach which may include soil sampling and analysis for contamination as needed. Prior to leaving the sites (including ROW area) the EPC Contractor is required to perform clean-up of any contamination caused by Project activities as part of the reinstatement (see details in following sections).

7.5.1.1 Greece

Taking into consideration any pre-existing contamination, and in consultation with Greek regulators, the Project approach is to apply the most stringent standard from international, World Bank, European and Greek standards identified in this review. Greek statutory standards prescribe limit values for concentration of certain pollutants in groundwater. As opposed to the Greek quality standards, good international practice, as advocated by the IFC and developed by various nations, has adopted a risk-based approach for contamination management. This automatically implies that there are no generic defined clean-up standards, as the clean-up standards are dependent on the use of the land and pathway to potential receptors.

Owing to this critical difference between Greek and international approaches to groundwater quality, the Project will apply a risk-based approach while making sure that Greek statutory minimum groundwater quality standards (see Section 7.2.1.1) are also adhered to. No Greek statutory standards have been prescribed for limit values for concentration of pollutants in soil and, as such, the Project will apply a risk-based approach only.

This risk assessment methodology to be used for the Project should be based on the UK Environment Agency's risk approach as defined in:

- Model Procedures for the Management of Contaminated Land (CR11) (Environment Agency, 2004)
- 'Remedial Targets Methodology: Hydrogeological Risk Assessment for Land Contamination' (Environment Agency, 2006).

If the risk assessment demonstrates that risk to health or the environment exists, a Remediation Plan will be developed. This may include the development of remedial targets based on water quality standards from a variety of sources, which may include Greek standards, WHO guidelines, EU or UK standards and guidelines or other national standards and guidelines as appropriate.

EPC Contractor will produce a Contaminated Lands Crossing Plan (see TAP Greece Onshore Pollution Prevention CCP GAL00-ENT-601-Y-TTM-0002) to be agreed with the TAP, to be applied in all areas where existing contamination is known or encountered.

Where excavated, contaminated soil should be segregated from uncontaminated soil and appropriately stockpiled to minimise impacts to surface water and groundwater. Dewatered groundwater[38], if contaminated, may need to be treated by mobile treatment units prior to discharge to achieve the relevant water quality standards.

7.5.1.2 Albania

No prescriptive project standards will be applied to soils and groundwater. A risk assessment approach to contaminated land management will be used to evaluate the potential impact of soil or groundwater contamination on local receptors.

This risk assessment methodology to be used for the Project should be based on the UK Environment Agency's risk approach as defined in:

- Model Procedures for the Management of Contaminated Land (CR11) (Environment Agency, 2004)

[38] Construction dewatering is the term used to describe removal of groundwater by pumping or evaporation. This dewatering may be implemented before subsurface excavation to lower the water table. This frequently involves the use of submersible dewatering pumps.

- 'Remedial Targets Methodology: Hydrogeological Risk Assessment for Land Contamination' (Environment Agency, 2006).

If the risk assessment demonstrates that risk to health or the environment exists, a Remediation Plan will be developed. This may include the development of remedial targets that can be based on information from a variety of sources which may include WHO guidelines, EU or UK standards and guidelines or other national standards and guidelines as appropriate.

A Contaminated Lands Crossing Plan will be produced by EPC Contractor, to be agreed with the TAP, to be applied in all areas where existing contamination is known or encountered. Particular attention will be paid to measures required for the section of the pipeline crossing the Patos-Marinez oil fields (around KPs 184.4 – 186.4).

Where excavated, contaminated soil should be segregated from uncontaminated soil and appropriately stockpiled so as to minimise impacts to surface water and groundwater. Dewatered groundwater[39]; if contaminated, may need to be treated by mobile treatment units prior to discharge.

7.5.1.3 Italy

The project clean-up standard shall be the Italian statutory standard - a combined approach of both screening values and site-specific values derived from risk assessment process - as described in Sections 7.2.3.1.1 and 7.2.3.2.1 above.

This risk assessment methodology to be used for the Project should be based on the Italian national standards and guidelines:

- "Criteri metodologici per l'applicazione dell'analisi assoluta di rischio ai siti contaminati" (revisione 2, marzo 2008); ISPRA (The technical Institute supporting the Ministry of the Environment, Land and Sea)

- Banca dati ISS-INAIL per Analisi di Rischio Sanitario Ambientale (Italian National Health Agency – Risk assesment Database)

- Manuale per le indagini ambientali nei siti contaminati – ISPRA (Environmental assessment guidelines) ISBN 88-448-0234-1.

[39] Construction dewatering is the term used to describe removal of groundwater by pumping or evaporation. This dewatering may be implemented before subsurface excavation to lower the water table. This frequently involves the use of submersible dewatering pumps.

If the concentration of pollutants at the site are higher than those considered acceptable, as determined by the site-specific risk assessment, a remediation plan will be developed. This may include the development of remedial targets based on soil and water quality standards from a variety of sources, which may include Italian standards, WHO guidelines, EU or other national standards and guidelines as appropriate.

EPC Contractor will produce a Contaminated Lands Crossing Plan (see TAP Italy Onshore Pollution Prevention CCP IAL00-RSK-601-Y-TTM-0002), to be agreed with the TAP, to be applied in all areas where existing contamination is known or encountered.

Where excavated, contaminated soil should be segregated from uncontaminated soil and appropriately stockpiled to minimise impacts to surface water and groundwater. Dewatered groundwater[40], if contaminated, may need to be treated by mobile treatment units prior to discharge to achieve the relevant water quality standards.

7.5.2 Groundwater abstraction

In the event groundwater is extracted for Project technical use other than potable water supply, from either new or existing boreholes at permanent or temporary facilities, such extraction will be subject to permitting in line with applicable local regulations. In the event the extracted groundwater is used for potable water supply, the extracted groundwater will be monitored for compliance to WHO Drinking Water Quality guidelines and applicable local standards.

Soakaways shall only be used for treated sanitary, stormwater or acceptable hydrostatic test water discharges. Potential impacts on soil, groundwater and surface water shall be evaluated against the most stringent of the applicable (i.e. depending on the type of wastewater being discharged) discharge and groundwater quality standards set out in Sections 7.2 - 7.4, in all situations where effluent and sludge is discharged to land.

These values will be quite conservative, as they do not take into account the attenuation and dispersion properties of the unsaturated soil and aquifer. Therefore, in line with the UK risk-based approach described in Section 7.3.2.1, less conservative site-specific standards may be derived for each soakaway, while still making sure that applicable national statutory minimum discharge and groundwater quality standards (see Section 7.2) are also adhered to.

[40] Construction dewatering is the term used to describe removal of groundwater by pumping or evaporation. This dewatering may be implemented before subsurface excavation to lower the water table. This frequently involves the use of submersible dewatering pumps.

7.6 Operational Standards for groundwater, soils and sediments

No prescriptive Project Standards are considered necessary for soils, sediments and groundwater during the operational phase. If potential soil, sediment or groundwater contamination is considered likely as a result of spills or leaks arising from operational activities, a risk-based approach will be used to evaluate the potential impacts on local receptors, while making sure that applicable national statutory minimum sediment, soil and groundwater quality standards are also adhered to, as described in Section 7.5.1 for the construction phase.

8 References

Aarhus Convention – Convention on Access to Information, Public Participation in Decision Making and Access to Justice in Environmental Matters, 1998.

Albanian Directive No.8, pursuant to Law 9774 (2007), 'On the evaluation and management of environmental noise'.

Albanian Law No 10062 (2009), 'On control of emissions of nitrogen oxides or their trans-boundary flows'.

Albanian Law No 10063 (2009), 'On reducing sulphur emissions or their trans-boundary flows'.

Albanian National level, Decision No. 177 (2005)"On the norms allowed for liquid discharge and zoning criteria of aquatic environment" .

Banca dati ISS-INAIL per Analisi di Rischio Sanitario Ambientale (Italian National Health Agency – Risk assesment Database).

Barcelona Convention for the Protection of the Mediterranean Sea against Pollution, 1976.

Barcelona Convention: Integrated Coastal Zone Management (ICZM) Protocol, 2008.

Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal, 1989.

Bern Convention - Conservation of European Wildlife and Natural Habitats, 1976.

Bonn Convention - Convention on the Conservation of Migratory Species of Wild Animals, 1979.

CITES - Convention on Trade in Endangered Species of Wild Flora and Fauna, 1975.

Convention on Biological Diversity, 1992.

Convention on the Transboundary Impacts from Industrial Accidents, 1992.

Criteri metodologici per l'applicazione dell'analisi assoluta di rischio ai siti contaminati (revisione 2, marzo 2008) ISPRA.

Directive 78/659/EEC 18 July 1978 on the quality of fresh waters needing protection or improvement in order to support fish life.

Directive 91/271/EEC 21 May 1991 European Parliament and the Council Directive Concerning urban waste water treatment.

Directive 92/43/EEC 21 May 1992 Council Directive on the Conservation of natural habitats and of wild fauna and flora.

Directive 2000/14/EC 8 May 2000 European Parliament and the Council Directive on the approximation of the laws of the Member States relating to the noise emission in the environment by equipment for use outdoors.

Directive 2000/60/EC 23 October 2000 European Parliament and the Council Directive establishing a framework for Community action in the field of water policy (The Water Framework Directive).

Directive 2001/80/EC 23 October 2001 European Parliament and the Council Directive on the limitation of emissions of certain pollutants into the air from large combustion plants.

Directive 2002/49/EC 25 June 2002 European Parliament and Council Directive relating to the assessment and management of environmental noise.

Directive 2003/10/EC 6 February 2003 European Parliament and the Council Directive on the minimum health requirements regarding the exposure of workers to the risks arising from physical agents (noise).

Directive 2004/107/EC 15 December 2004 European Parliament and the Council Directive relating to arsenic, cadmium, mercury, nickel, and polycyclic aromatic hydrocarbons in ambient air.

Directive 2005/88/EC 14 December 2005 European Parliament and the Council Directive amending Directive 2000/14/EC on the approximation of the laws of the Member States relating to the noise emission in the environment by equipment for use outdoors.

Directive 2006/118/EC 12 December 2006 European Parliament and the Council Directive on the protection of groundwater against pollution and deterioration.

Directive 2008/50/EC 21 May 2008 European Parliament and the Council Directive on ambient air quality and cleaner air for Europe.

Directive 2008/98/EC 19 November 2008 European Parliament and the Council Directive on waste (Waste Framework Directive).

Directive 2008/105/EC 16 December 2008 European Parliament and the Council Directive on environmental quality standards in the field of water policy.

Directive 2009/147/EC 30 November 2009 European Parliament and the Council Directive on the conservation of wild birds.

Directive 2010/75/EU 24 November 2010 European Parliament and the Council Directive on industrial emissions (integrated pollution prevention and control).

Directive 2011/92/EU 25 November 2015 European Parliament and the Council Directive on the limitation of emissions of certain pollutants into the air from medium combustion plants.

DPCM 1/3/1991 “Maximum noise levels allowable indoor and outdoor” and s.m.i.

DPCM 14/11/1997 “Definition of noise limits for noise sources” and s.m.i.

D.lgs 152/2006 “Environmental Regulation” and s.m.i.

D.lgs 155/2010 “Ambient air quality standards - Directive 2008/50/EC” and s.m.i.

EBRD 2010 Sub-sectoral Environmental and Social Guidelines: Pipelines.

EBRD Environmental and Social Policy 2014.

EBRD Public Information Policy 2014.

EBRD Performance Requirements.

Environment Agency (2006) The Remedial Targets Methodology (RTM): Hydrogeological Risk Assessment for Land Contamination.

Espoo Convention on Environmental Impact Assessment in a Transboundary Context together with amendment and Protocols, 1991.

European Landscape Convention, 2000.

European Commission Questionnaire for Priority Compliance Review, Albania (2010), 'Strategies and Policies of Parties and Signatories to the Convention for the Abatement of Air Pollution'.

General Administrative Regulation to Protect Against Construction Noise, 1970.

IFC Environmental, Health and Safety (EHS) General Guidelines (2007).

IFC EHS Guidelines for Contaminated Land (2007).

IFC General EHS Guidelines: Air Emissions and Ambient Air Quality (2007).

IFC General EHS Guidelines: Environmental Noise Management (2007).

IFC General EHS Guidelines: Guidelines for Wastewater and Ambient Water Quality (2007).

IFC EHS Guidelines for Onshore Oil and Gas Development (2007).

IFC Performance Standards (2012).

International Maritime Organization. 1972. London Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter.

International Maritime Organization. 1996. Protocol to the Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter.

International Maritime Organization. 1973. International Convention for the Prevention of Pollution from Ships (MARPOL 72/78).

International Maritime Organization. 2001. International Convention on the Control of Harmful Anti-Fouling Systems on Ships.

International Maritime Organization. 2004. International Convention for the Control and Management of Ship's Ballast Water and Sediments.

JMD 80568/4225, 7 August 1991 (Gov. Gaz. 641/B) “Methods, terms and limitations for the use of sewage sludge in agriculture”.

JMD 114218, 17 November 1997 (Gov. Gaz. 1016/B) “Specifications framework and general solid waste management plans drafting”.

JMD 36060/1155.E.103, 14 June 2003 (Gov. Gaz. 1450/B), “Determination of measures and procedures framework for the integrated prevention and pollution control from industrial activities in compliance with the provisions of Directive 2010/75/EC "on industrial emissions (integrated pollution prevention and control)" of the European Parliament and the Council of November 24, 2010”.

Joint Ministerial Decision 14122/549/E.103, 30 March 2011 (Gov. Gaz. 488/B), “Measures to improve air quality, in compliance with the provisions of Directive 2008/50/EC "on the air quality and cleaner air for Europe" of the European Parliament and the Council of the European Union of 21 May 2008".

Joint Ministerial Decision 145116, 8 March 2011 (Gov. Gaz. 54/A), “Definition of measures and procedures for integrated protection and management of water in compliance with the provisions of Directive 2000/60/EC "establishing a framework for Community action in the field of water policy" of the European Parliament and the Council of October 23, 2000”.

Joint Ministerial Decision 9272/471, 2 March 2007 (Gov. Gaz 286/B), “On the amendment of Article 8 of JMD 37393/2028 1 October 2003 (Gov. Gaz.1418/B) in compliance to the provisions of Directive 2005/88/EC "for the amendment of Directive 2000/14/EC on the approximation of MS legislation on noise emissions to the environment from equipment used in open spaces" of the Council of December 14, 2005”.

JMD 22306/1075/E10, 8 June 2007 (Gov. Gaz. 220/B), “Determination of target values and assessment limits for the concentrations of arsenic, cadmium, mercury, nickel and polycyclic aromatic hydrocarbons in ambient air, in compliance with the provisions of Directive 2004/107/EC "on arsenic, cadmium, mercury, nickel and polycyclic aromatic hydrocarbons in ambient air" of the Council of December 15, 2004 of the European Communities”.

Joint Ministerial Decision 29457 1511, 4 July 2005 (Gov. Gaz. 3654/B), “Determination of measures and conditions for the limitation of emissions of certain pollutants from large

combustion plants, in compliance with the provisions of Directive 2001/80/EC "on the limitation of emissions of certain pollutants from large installations" of the Council of October 23, 2001".

Joint Ministerial Decision 69269/5387, 25 October 1990, "Classification of projects and activities into categories, content of Environmental Impact Assessment (EIA), content determination of specific environmental studies (SES) and other related provisions, in accordance with Law 1650/1986" transfers the standards of Directive 84/360/EC "on the combating of air pollution from industrial plants".

Joint Ministerial Decision 5673/400, 4 March 1997 (Gov. Gaz. 192/B), "Measures and terms for the management of municipal liquid waste".

Joint Ministerial Decision 189533, 9 September 2011 (Gov. Gaz. 2654/B) "Regulation of issues relating to the operation of combustion points for heating buildings and water".

Kyoto Protocol to the United Nations Framework Convention on Climate Change, 1997.

London Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter. Adoption 1972; Entry into force 1975. 1996 Protocol. Adoption 1996. Entry into force 2006.

Kyoto Protocol to the United Nations Framework Convention on Climate Change, 1997.

Law n. 447/1995 "Law on acoustic pollution" and s.m.i.

Manuale per le indagini ambientali nei siti contaminati – ISPRA (Environmental assessment guidelines) ISBN: 88-448-0234-1.

MD 1811, 30 December 2011, (Gov. Gaz. 3322/B), "setting threshold values for concentrations of certain pollutants, pollutant groups or pollution indicators in groundwaters, pursuant to paragraph 2 of Article 3 of JMD 39626/2208/E130/2009 (Gov. Gaz. 2075/B)".

MD 51354/264/E103, 8 December 2010, (Gov. Gaz. 1909/B), "Definition of Environmental Quality Standards (EQS) for Priority Substances and certain other pollutants in surface waters, according to Directive 2008/105/EC of the European Parliament and of the Council of 16 December 2008 on "Environmental Quality Standards (EQS) in water policy and on the modification and subsequent repealing of Directives of the Council 82/176/EEC, 83/513/EEC, 84/156/EEC, 84/491/EEC and 86/280/EEC and amending Directive 2000/60/EC of the

European Parliament and the Council " as well as for the concentration of specific pollutants in inland surface waters and other provisions".

Ministerial Decision 13586/724, 28 March 2006 (Gov. Gaz. 384/B), "Determination of measures, terms and methods for assessing and managing environmental noise, in compliance with the provisions of Directive 2002/49/EC "relating to the assessment and management of environmental noise" of the Council of June 25, 2002".

MD E1b/221, 24 February 1965 (Gov. Gaz. 138/B), "(Sanitary Provision) on municipal and industrial liquid wastes disposal".

Model Procedures for the Management of Land Contamination, CLR 11, 2004.

Noise Control Study GCS00 (GCS00-WGP-000-S-TRS-0001).

Noise Control Study GCS01 (GCS01-WGP-000-S-TRS-0002).

Pollutant Release and Transfer Register (PRTR) Protocol, 2009.

Presidential Decree 1180, 6 October 1981 (Gov. Gaz 283/A), "On regulation of matters relating to the kinds of establishment and operation of industries, manufacturing of all kinds, machine installations and warehouses and the protection of the environment in general from the foregoing".

Ramsar Convention on Wetlands of International Importance, especially as Waterfowl Habitat, 1971.

TAP Battery Limits Onshore – Offshore Sections document (CPL00-ENT-100-F-DFO-0002).

UNECE. 1979. UN Economic Commission for Europe (UNECE) on Long Range Transboundary Air Pollution.

United Nations. 1992. UN Framework Convention on Climate Change.

United Nations. 1982. UN Convention on the Law of the Sea.

UK BS 5228-1 .2009+A1: 2014. Code of Practice for Noise and Vibration Control on Construction and Open Sites.

UK BS 4142:1997 - Method for Rating Industrial Noise Affecting Mixed Residential and Industrial Areas.

UK Environment Agency (2004), 'Model Procedures for the Management of Land Contamination, CLR 11'.

UK Environment Agency (2006), 'Remedial Targets Methodology: Hydrogeological Risk Assessment for Land Contamination, Environment Agency'.

Water Protection Plan, approved through the Deliberation of the Regional Council n. 677 of 20th October 2009.

WHO Guidelines for Community Noise (1999).

WHO Air quality guidelines for particulate matter, ozone, nitrogen dioxide and sulphur dioxide (2005).

WHO Night Noise Guidelines for Europe (2009).

WHO Guidelines for Drinking-Water Quality, Fourth Edition (2001).

World Bank Pollution Prevention and Abatement Handbook (1999).

TAP AG Project Title / Facility Name:

Trans Adriatic Pipeline Project

Document Title:

Consolidated ESMS Project Standards

Appendix 1 - Legislation, Standards and Project Commitments Greece

CAL00-PMT-601-Y-TTM-0001

Title	Date enacted	Last amended	Ratification Date (Conventions)	Application	Comments	Source
NOISE						
National Legislation						
Law 1650 16 October 1986 (Gov.Gaz. 60/A) on environmental protection	1985	2014		Article 14 of Law 1650/1986 refers to protection from noise, setting the overall relevant legislative framework	Environmental Protection Act 1985 is not identified. The basic environmental protection legislation is Law 1650/1986 (Gov.Gaz. 60/A).	Noise Control Study GCS00 Noise Control Study GCS01
Presidential Decree 1180 6 October 1981 (Gov. Gaz. 293/A) on the regulation of matters relating to the establishment and operation of industries, manufacturing of all kinds, mechanical installations and warehouses and the protection of the environment in general from the foregoing	1981	1990		Table I of article 2 par. 5 presents upper limit values for noise emission at the borders of the facility in relation to surrounding land uses. In particular the limit for urban areas is 50 dBA, for mixed industrial and urban areas 55 dBA and for mainly industrial areas 65 dBA.	PD abbreviation stands for Presidential Decree not Prefectural Decision. The referred limit of 55 dBA or 65 dBA is not clearly identified. This PD applies as enacted in relation to noise and its amendments regard the overall process of environmental permitting.	ESIA Section 8: Assessment of Impacts and Mitigation Measures ESIA Annex 2: Greek National Legislative Framework Noise Control Study GCS00 Noise Control Study GCS01 Commitments Register Greece
JMD 3137/191/Φ.15 4 April 2012 (Gov. Gaz. 1048/B) on the classification of industrial and manufacturing installations and power generation activities in respect to the nuisance grades referred in the urban decrees	2012	2014		Reference of the nuisance level and classification in relation to the type of the installation	Assigns activities to nuisance grades (low, intermediate, high) as referred in urban decrees. Nuisance grades are related to impacts on the environmental and human health (noise, air emissions etc.). Natural gas transmission activities are not included however in the tables of this JMD. It also repeals JMD 13727/724 (Gov. Gaz. 1087/B)	ESIA Annex 2: Greek National Legislative Framework
JMD 9272/471 2 March 2007 (Gov. Gaz. 286/B) on the amendment of Article 8 of JMD 37393/2028 1 October 2003 (Gov. Gaz.1418/B) in compliance to the provisions of Directive 2005/88/EC "for the amendment of Directive 2000/14/EC on the approximation of MS legislation on noise emissions to the environment from equipment used in open spaces" of the Council of December 14, 2005	2007	n/a		Refers to noise limits for construction equipment as compression equipment, dozers, excavators, tower cranes etc.	Amends the table of Article 8 of JMD 37393/2028/2003	ESIA Annex 2: Greek National Legislative Framework Commitments Register Greece
JMD 37393/2028 1 October 2003 (Gov. Gaz. 1418/B) on terms and conditions for noise emissions to the environment from equipment used in open spaces	2003	2007		Refers to the construction equipment subject to noise emission limits that are set in relation to the equipment's installed power and electric power, mass and cutting length. Such equipment indicatively includes elevators, rollers, air compressors, dumpers, excavators, loaders, mobile cranes, generators, finishers etc. that are anticipated to be used during the project construction phase. This Decision sets the conditions for labelling, EC conformity and placing of such equipment into the market.	Amended by MD 9272/471/2007. Article 8 in particular is amended in accordance with the provisions of Directive 2005/88/EC amending Directive 2000/14/EC on MS legislation approximation on noise emissions to the environment from equipment used in open spaces of the Council of December 14, 2005	Commitments Register Greece
JMD 13727/724 5 August 2003 (Gov. Gaz. 1087/B) Classification of industrial and manufacturing installations regarding nuisance grades as referred in the urban decrees	2003	2012		Reference of the nuisance level and classification in relation to the type of the installation	Repealed by MD 3137/191/Φ.15 April 4 2012 (Gov. Gaz. 1048/B) on the classification of industrial and manufacturing installations and power generation activities in respect to the nuisance grades referred in the urban decrees	ESIA Annex 2: Greek National Legislative Framework
MD 13586/724 28 March 2006 (Gov. Gaz. 384/B) Determination of measures, terms and methods for assessing and managing environmental noise, in compliance with the provisions of Directive 2002/49/EC "relating to the assessment and management of environmental noise" of the Council of June 25, 2002	2006	n/a		Applies to environmental noise to which man is exposed in urban and residential areas, quiet rural areas and other sensitive areas and set the requirements for strategic noise mapping. It also determines noise indicators, assessment methods and requirements for drafting relevant action plans.	Indicatively referred that for the assessment of industrial noise the following methods are suggested ISO 9613−2: "Acoustics − Attenuation of sound propagation outdoors, Part 2· General method of calculation", ISO 8297:1994 "Acoustics − Determination of sound power levels of multisource industrial plants for evaluation of sound pressure levels in the environment − Engineering method", ISO 3744: 1995 "Acoustics − Determination of sound power levels of noise using sound pressure − Engineering method in an essentially free field over a reflecting plane", ISO 3746: 1995 "Acoustics − Determination of sound power levels of noise sources using an enveloping measurement surface over a reflecting plane".	ESIA Annex 2: Greek National Legislative Framework
MD 10432/1115/Φ.15 30 September 2014 (Gov. Gaz. 2604/B) Supplement − amendment of JMD 3137/191/Φ.15/2012 (1048/B) "Classification of industrial and manufacturing installations and power generation activities in respect to the nuisance grades referred in the urban decrees"	2014	n/a			Supplements with some installation categories to JMD 3137/2012, not relevant to natural gas transmission activities however.	Identified when writing the Project Standards

Title	Date enacted	Last amended	Ratification Date (Conventions)	Application	Comments	Source
MD Φ15/48/5 13 January 2014 (Gov.Gaz. 27/B) Supplement – amendment of JMD 3137/191/Φ.15/2012 (1048/B)	2014	n/a			Supplements with some installation categories to JMD 3137/2012, not relevant to natural gas transmission activities however.	Identified when writing the Project Standards
MD 13234/800/Φ.15/ 6 December 2012 (Gov. Gaz. 3251/B) Supplement – amendment of JMD 3137/191/Φ.15/2012 (1048/B)	2012	n/a			Supplements with some installation categories to JMD 3137/2012, not relevant to natural gas transmission activities however.	Identified when writing the Project Standards
MD 14016/953/Φ.15 23 September 2009 (Gov. Gaz. 2044/B) Supplement of JMD 13727/724/2003 (Gov. Gaz. 1087/B)	2009	n/a			JMD 13727/724 has been repealed by JMD 3137/191/Φ.15/2012	Identified when writing the Project Standards
European Legislation						
Directive 2010/75/EU of the European Parliament and Council 24 November 2010 On industrial emissions (integrated pollution prevention and control) [Industrial Emissions Directive]	2010					ESIA Section 4: Project Description
Directive 2003/10/EC European Parliament and Council Directive 6 February 2003 On the minimum health and safety requirements regarding the exposure of workers to the risks arising from physical agents (noise)	2003					Identified when writing the Project Standards
Directive 2002/49/EC of the European Parliament and of the Council 25 June 2002 Relating to the assessment and management of environmental noise	2002					ESIA Annex 2: Greek National Legislative Framework
Directive 2000/14/EC of the European Parliament and the Council 8 May 2000 On the approximation of the laws of the Member States relating to the noise emission in the environment by equipment for use outdoors [Noise Directive]	2000					Identified when writing the Project Standards
International Conventions						
No relevant international conventions were identified.						
Other international Guidelines and Standards						
IFC General EHS Guidelines: Environmental noise management	2014					Identified when writing the Project Standards
WHO Night Noise Guidelines for Europe	2009					Identified when writing the Project Standards
UK BS5228-1 Code of practice for noise and vibration control on construction and open sites – Part 1: Noise	2009					Identified when writing the Project Standards
UK BS5228-1 Code of practice for noise and vibration control on construction and open sites – Part 2: Vibration	2009					Identified when writing the Project Standards
DIV EN 12354-4 April 2001 Building Acoustics - Estimation of acoustic performance of buildings from the performance of products Part 4: Transmission of indoor sound to the outside	2001					Noise Control Study GCS00 Noise Control Study GCS01
World Bank Group "Pollution Prevention and Abatement Handbook"	1999					Noise Control Study GCS00 Noise Control Study GCS01
DIN ISO 9613 Part 2 October 1999 Attenuation of sound during propagation outdoors, Part 2: General method of calculation	1999					Noise Control Study GCS00 Noise Control Study GCS01
UK BS 4142:1997 Method for Rating Industrial Noise Affecting Mixed Residential and Industrial Areas	1997					Included in Italy & Albania Project Standards Appendix A - suggest applicable to the Greek Project Standards also
VDI 3734 Part 1 February 1981 Characteristic noise emission values of technical sound sources; air coolers	1981					Noise Control Study GCS00 Noise Control Study GCS01
VDI 3733 July 1996 Noise at pipes	1996					Noise Control Study GCS00 Noise Control Study GCS01
WHO Guidelines for Community Noise	1999					ESIA Section 8: Assessment of Impacts and Mitigation Measures Noise Control Study GCS00 Noise Control Study GCS01
General Administrative Regulation to Protect Against Construction Noise	1970					Included in Italy & Albania Project Standards Appendix A - suggest applicable to the Greek Project Standards also
German Noise Guideline (TA Lärm)						ESIA Section 8: Assessment of Impacts and Mitigation Measures

Title	Date enacted	Last amended	Ratification Date (Conventions)	Application	Comments	Source
EEMUA Pub. 140 Noise Procedure Specification (formally OCMA Spec. NWG1, Rev 2., 1980)	1980					ESIA Section 4: Project Description
AIR						
National Legislation						
Law 3017 30 May 2002 (Gov. Gaz. 117/A) Ratification of the Kyoto Protocol to the United Nations Framework Convention on Climate Change	2002	n/a		Ratifies the Kyoto Protocol		ESIA Section 3: Legislative and Policy Framework
Law 2205 15 April 1994 (Gov. Gaz. 60/A) Ratification of the Framework Convention of United Nations on Climate Change	1994	n/a		Ratifies the UN Climate Change Convention		ESIA Section 3: Legislative and Policy Framework
JMD 3137/191/Φ.15 4 April 2012 (Gov. Gaz. 1048/B) on the classification of industrial and manufacturing installations and power generation activities in respect to the nuisance grades referred in the urban decrees	2012	2014		Reference of the nuisance level and classification in relation to the type of the installation.	Assigns activities to nuisance grades (low, intermediate, high) as referred in urban decrees. Nuisance grades are related to impacts on the environmental and human health (noise, air emissions etc.). Amended/ supplemented by MD Φ15/48/5 13 January 2014 (Gov. Gaz. 27/B), MD 10432/1115/Φ.15 30 September 2014 (Gov. Gaz. 2604/B) and MD 13234/800/Φ.15 6 December 2012 (Gov. Gaz. 3251/B). Natural gas transmission activities are not included however in the supplemented tables of this JMD. Repeals JMD 13727/724 (Gov. Gaz. 1087/B)	ESIA Annex 2: Greek National Legislative Framework
JMD 14122/459/E. 103 30 March 2011 (Gov. Gaz. 488/B) Measures to improve air quality, in compliance with the provisions of Directive 2008/50/EC "on the air quality and cleaner air for Europe" of the European Parliament and the Council of the European Union of 21 May 2008"	2011	n/a		Sets target values for ambient air quality for the protection of human health and the environment, methods for air quality assessment, requirements for public information and action plans etc. Air quality assessment regards SO2, NO2 and NOX, PM10, PM2.5, Benzolium, Pb, CO concentrations	Introduction of Directive 2008/50/EC "on the air quality and cleaner air for Europe	ESIA Annex 2: Greek National Legislative Framework ESIA Annex 6.6.5: Ambient Air Quality ESIA Annex 8.1: Air Dispersion Modelling Commitments Register Greece
JMD 22306/1075/E103 8 June 2007 (Gov. Gaz. 920/B) Determination of target values and assessment limits for the concentrations of arsenic, cadmium, mercury, nickel and polycyclic aromatic hydrocarbons in ambient air, in compliance with the provisions of Directive 2004/107/ EC "on arsenic, cadmium, mercury, nickel and polycyclic aromatic hydrocarbons in ambient air" of the Council of December 15, 2004 of the European Communities	2007	2011		Sets target values for the protection of human health and the environment, methods for air quality assessment, requirements for public information etc. regarding arsenic, cadmium, mercury, nickel and polycyclic aromatic hydrocarbons concentrations in ambient air	Introduction of 2004/107/EC. Amended by JMD 14122/459/E. 103 as above mentioned. JMD 22306/1075/E103 applies as enacted with the exception of competent authorities that apply as defined in JMD 14122/459/E. 103.	Commitments Register Greece
JMD 189533 9 September 2011 (Gov. Gaz. 2654/B) Regulation of issues relating to the operation of combustion points for heating buildings and water				Applies to point combustion points for buildings and water heating		Identified when writing the Project Standards
JMD 29457/1511 14 July 2005 (Gov. Gaz. 992/B) Determination of measures and conditions for the limitation of emissions of certain pollutants from large combustion plants, in compliance with the provisions of Directive 2001/80/EC "on the limitation of emissions of certain pollutants from large installations" of the Council of October 23, 2001	2005	2013		Applies until 1 January 2016 when the relevant provisions of MD 36060/1155/E.103 14 June 2013 come into force (Gov. Gaz. 1450/B)	Introduction of Directive 2001/80/EC "on the limitation of emissions of certain pollutants from large installations"	ESIA Section 8: Assessment of Impacts and Mitigation Measures ESIA Annex 2: Greek National Legislative Framework Commitments Register Greece
MD 36060/1155/E.103 14 June 2013 (Gov. Gaz. 1450/B) Determination of measures and procedures framework for the integrated prevention and pollution control from industrial activities in compliance with the provisions of Directive 2010/75/EC" on industrial emissions (integrated pollution prevention and control)" of the European Parliament and the Council of November 24, 2010	2013	2015		Applies to fuel combustion installations with thermal power equal or greater than 50 KW (Annex I) and poses emission limit values (Annex V)	Introduction of Directive 2010/75/EC" on industrial emissions (integrated pollution prevention and control)"	Identified when writing the Project Standards
MD 34062/957/E103 20 August 2015 (Gov. Gaz. 1793/B) Approval of the Transitional National Emission Reduction Plan in accordance with Article 28 of JMD 36060/1155/2013, as applicable and modification of JMD 36060/1155/2013 (Gov.Gaz.1450/B).	2015	n/a		Application of Article 28 of JMD 36060/1155/2013 and of Article 32 of Directive 2010/75/EU of the European Parliament and of the Council of November 24, 2010 of the European Union "On industrial emissions (Integrated Pollution Prevention and Control). Approval of the Transitional National Emission Reduction Plan for SO2, NOx and dust.	Article 5 amends JMD 36060/1155/2013	Identified when writing the Project Standards

Title	Date enacted	Last amended	Ratification Date (Conventions)	Application	Comments	Source
MD 44105/1398/E.103 1 August 2013 (Gov. Gaz. 1890/B) amending JMD 29459/1510/2005 on "national emission ceilings for certain atmospheric pollutants ..." (Gov. Gaz. 9920/B) and (Gov. Gaz. 1131/B), as amended by JMD 14849/853/2008 JMD (Gov. Gaz. 645/B) and 33318/3028/1998 "Establishment of measures and procedures for the conservation of natural habitats and of wild fauna and flora" (Gov. Gaz. 1289/B), as amended by JMD 14849/853/2008 (Gov. Gaz. 645/B), in compliance with the provisions of Directive 2013/17/EU of 13 May 2013 of the European Union and other provisions"	2013	n/a		Sets temporary national emission limit values for SO2, NOx and VOC until review in accordance with Directive 2001/81/EC		Identified when writing the Project Standards
JMD 54409/2632 27 December 2004 (Gov. Gaz. 1931/B) Greenhouse gas emission allowance trading scheme in compliance with the provisions of Directive 2003/87/EC "Establishing a scheme for greenhouse gas emission allowance trading within the Community and amending Council Directive 96/61/EC" of the Council of October 13, 2003 and other regulations	2004	2013		Greenhouse gas allowance trading	Applies amended by MD 26910/852/E103/2013 (GG 1021/B). According to article 21 SO2 limit values or energy efficiency requirements are not posed to the installation	ESIA Annex 2: Greek National Legislative Framework
MD 26910/852/E103 25 April 2013 (Gov. Gaz. 1021/B) amending JMD 54409/2632/2004 for "greenhouse gas emission allowances trading scheme in compliance with the provisions of Directive 2003/87/EC ... etc." (Gov. Gaz. 1931/B), as applies, in compliance with the provisions of Directive 2008/101/EC amending Directive 2009/29/EC "amending Directive 2003/87/EC so as to improve and extend the greenhouse gas emission allowance trading scheme" of the European Parliament and of Council of April 23, 2009""	2013	n/a		Greenhouse gas allowance trading	Amends the above mentioned JMD 54409/2632/2004 aiming at full compliance with the provisions of Directive 2009/29/EC of the European Parliament and of the Council of 23 April 2009 'amending Directive 2003/87/EC in order to improve and extend the emissions trading scheme of greenhouse gases in the Community"	Identified when writing the Project Standards
MD 9267/468 2 March 2007 (Gov. Gaz. 286/B) amending JMD 54409/2632/2004 (Gov. Gaz. 1931/B), in compliance with the provisions of Directive 2004/101/EC "amending Directive 203/87/EC on the establishment of greenhouse gas emission trading scheme within the Community, regarding project mechanisms of Kyoto Protocol" of the Council of October 27, 2004»	2007	n/a		Greenhouse gas allowance trading	Amends the above mentioned JMD 54409/2632/2004 aiming at compliance with the provisions of Directive 2004/101/EC of the Council of October 27, 2004, amending Directive 2003/87/EC on the establishment of greenhouse gas emission trading scheme within the Community, regarding project mechanisms of Kyoto Protocol"	Identified when writing the Project Standards
JMD 13727/724 5 August 2003 (Gov. Gaz. 1087/B) Classification of industrial and manufacturing installations regarding nuisance grades as referred in the urban decrees	2003	2012		Reference of the nuisance level and classification in relation to the type of the installation	Repealed by MD 3137/191/Φ.15 April 4 2012 (Gov. Gaz. 1048/B) on the classification of industrial and manufacturing installations and power generation activities in respect to the nuisance grades referred in the urban decrees	ESIA Annex 2: Greek National Legislative Framework
JMD 15393/2332 5 August 2002 (Gov. Gaz. 1022/B) Classification of public and private projects and activities into categories according to Article 3 of Law 1650/1986 as replaced by Article 1 of Law 3010/2002 "harmonization of Law 1650/1986 with Directives 97/11/EU and 96/61/EU etc. (Gov. Gaz. 91/A)"	2002	2012		Repealed by MD 1958 13 January 2012 (Gov. Gaz. 21/B) "Classification of public and private projects and activities into categories and subcategories in accordance with Article 1, par. 4 of Law 4014/ 2011 (Gov. Gaz. 209/A)" as amended	Decision 15383 is not identified. JMD 15393/2332/2002 aimed at the introduction of IPPC Directive (96/61). See also Law 3010/2002 on the harmonisation with Directive 96/61 as amended.	ESIA Annex 2: Greek National Legislative Framework
JMD 69269/5387 25 October 1990 (Gov. Gaz. 678/B) Classification of projects and activities into categories, content of Environmental Impact Assessment (EIA), content determination of specific environmental studies (SEP) and other related provisions, in accordance with Law 1650/1986	1990	2002		Repealed by MD 1958 13 January 2012 (Gov. Gaz. 21/B) "Classification of public and private projects and activities into categories and subcategories in accordance with Article 1, par. 4 of Law 4014/ 2011 (Gov. Gaz. 209/A)" as amended	Introduced Directive 84/360/EEC of the European Communities of June 28, 1984 on air pollution from industrial plants	ESIA Section 3: Legislative and Policy Framework
JMD 14122/459/E. 103 30 March 2011 (Gov. Gaz. 488/B) Measures to improve air quality, in compliance with the provisions of Directive 2008/50/EC "on the air quality and cleaner air for Europe" of the European Parliament and the Council of the European Union of 21 May 2008"	2011	n/a				ESIA Annex 8.1: Air Dispersion Modelling
European Legislation						
Directive 2010/75/EU of the European Parliament and Council 24 November 2010 On industrial emissions (integrated pollution prevention and control) [Industrial Emissions Directive]	2010				Relevant to emissions from compressor stations	ESIA Annex 2: Greek National Legislative Framework

Title	Date enacted	Last amended	Ratification Date (Conventions)	Application	Comments	Source
Directive 2008/50/EC of the European Parliament and of the Council 21 May 2008 On ambient air quality and cleaner air for Europe	2008					ESIA Section 8: Assessment of Impacts and Mitigation Measures ESIA Annex 2: Greek National Legislative Framework ESIA Annex 8.1: Air Dispersion Modelling ESIA Annex 6.6.5: Ambient Air Quality Commitments Register Greece
Directive 2008/1/EC of the European Parliament and of the Council 15 January 2008 Concerning integrated pollution prevention and control (IPPC)	2008					Identified when writing the Project Standards
Directive 2004/107/EC of the European Parliament and of the Council 15 December 2004 Relating to arsenic, cadmium, mercury, nickel and polycyclic aromatic hydrocarbons in ambient air	2004					Commitments Register Greece
Directive 2003/87/EC of the European Parliament and of the Council 13 October 2013 Establishing a scheme for greenhouse gas emission allowance trading within the Community and amending Council Directive 96/61/EC	2003					ESIA Annex 2: Greek National Legislative Framework
Directive 2001/80/EC of the European Parliament and of the Council 23 October 2001 on the limitation of emissions of certain pollutants into the air from large combustion plants	2001					Identified when writing the Project Standards
Directive 1996/61/EC 24 September 1996 Concerning integrated pollution prevention and control (IPPC)	1996					ESIA Annex 2: Greek National Legislative Framework
Directive 1984/360/EEC 28 June 1984 On air pollution from industrial plants	1984					ESIA Section 3: Legislative and Policy Framework
International Conventions						
Pollutant Release and Transfer Register (PRTR) Protocol	2009		Signed 2003, pending ratification			ESIA Section 3: Legislative and Policy Framework
Kyoto Protocol on Climate Change	1997		2002			ESIA Section 3: Legislative and Policy Framework
UN Framework Convention on Climate Change Convention (UNFCCC)	1992		1994			ESIA Section 3: Legislative and Policy Framework
United Nations Economic Commission for Europe (UNECE) on Long Range Transboundary Air Pollution	1979		1983			Identified when writing the Project Standards
Other international Guidelines, Standards and Conventions						
IFC General EHS Guidelines: Environmental Air Emissions and Ambient Air Quality	2007					Identified when writing the Project Standards
WHO air quality guidelines for particulate matter, ozone, nitrogen dioxide and sulphur dioxide. Global update 2005	2005					Identified when writing the Project Standards
EBDR PR 3: Resource Efficiency and Pollution Prevention and Control	1991	2014				Identified when writing the Project Standards
SURFACE WATER						
National Legislation						
Presidential Decree 51 8 March 2007 (Gov. Gaz. 54/A) Definition of measures and procedures for integrated protection and management of water in compliance with the provisions of Directive 2000/60/EC "establishing a framework for Community action in the field of water policy" of the European Parliament and the Council of October 23, 2000	2007	2011		Water resources management according to Water Framework Directive	Protection Status to be taken into consideration during Project Development. Water Use Permit might be required at a later stage. There is a possibility of emission limits being imposed on surface waters or other constraints to the Project.	ESIA Annex 2: Greek National Legislative Framework
Law 4014 21 September 2011 (Gov. Gaz. 209/A) Environmental licensing of projects and activities	2011	2013		General legal framework for environmental procedures		ESIA Annex 2: Greek National Legislative Framework
Legislative Decree 191 20 November 1974 (Gov. Gaz. 203/A) on Ramsar Convention ratification	1974	1991		Ratification of Ramsar convention as amended with Law 1950/1991 (Gov. Gaz. 84/A)	Protection Status to be taken into account during Project development	ESIA Annex 2: Greek National Legislative Framework
JMD 145116 8 March 2011 (Gov. Gaz. 354/B) Definition of measures, terms and conditions for the reuse of Treated Wastewater	2011	2015		Treated wastewater reuse	Relevance depending on compressor station technology	ESIA Annex 2: Greek National Legislative Framework

Title	Date enacted	Last amended	Ratification Date (Conventions)	Application	Comments	Source
MD 100079 2 January 2015 (Gov. Gaz. 135/B) Amendment of JMD 20488/2010 (Gov. Gaz. 749/ B) on the definition of Environmental Quality Standards in Asopos River and emission limit values for industrial wastewater in the Basin of Asopos River and related provisions	2015	n/a		Amends JMD 145116/2011 – Definition of measures, terms and procedures for the reuse of treated liquid waste and other provisions regarding compliance deadline for treated wastewater providers, users or management bodies		Identified when writing the Project Standards
MD 191002 9 September 2013 (Gov. Gaz. 2220/B) Amendment of JMD 145116/2011 on the definition of measures, terms and conditions for the reuse of Treated Wastewater (Gov. Gaz. 354/B) and relevant provisions	2013	n/a		Treated wastewater reuse permit is replaced by the environmental terms approval decision when the producer coincides with the user.		Identified when writing the Project Standards
Law 4042 13 February 2012 (Gov. Gaz. 24/A) "Criminal environmental protection - Harmonisation with Directive 2008/99/EC - Framework for waste generation and management - Regulation of the Ministry of Environment, Energy and Climate Change issues	2012	2014		Repeals the requirement for treated wastewater disposal permission foreseen in MD E1b/221 which is replaced by the Environmental Terms Approval Decision		Identified when writing the Project Standards
MD E1b/221 24 February 1965 (Gov. Gaz. 138/B) (Sanitary Provision) on municipal and industrial liquid wastes disposal	1965	2012		Definition of surface water uses and special conditions for municipal wastewater disposal	Protection Status to be taken into consideration during Project Development.	ESIA Annex 2: Greek National Legislative Framework
MD 5673/400 14 March 1997 (Gov. Gaz. 192/B) Measures and terms for the management of municipal liquid waste	1997	2002		Harmonisation with the provisions of Directive 91/271/EEC. Amended with list of sensitive areas		Commitments Register Greece
MD 51354/2641/E103 8 December 2010 (Gov. Gaz 1909/B) Definition of Environmental Quality Standards (EQS) for Priority Substances and certain other pollutants in surface waters, according to Directive 2008/105/EC of the European Parliament and of the Council of 16 December 2008 on "Environmental Quality Standards (EQS) in water policy and on the modification and subsequent repealing of Directives of the Council 82/176/EEC, 83/513/EEC, 84/156/EEC, 84/491/EEC and 86/280/EEC and amending Directive 2000/60/EC of the European Parliament and the Council " as well as for the concentration of specific pollutants in inland surface waters and other provisions.	2010	n/a		Harmonisation with the provisions of Directive 2008/105/EC. Sets standards for the concentration of priority substances and other pollutants in surface waters in terms of average annual and maximum allowed values (μg/l)		ESIA Annex 2: Greek National Legislative Framework
Sanitary Provision E1β/221 24 February 1965 on municipal and industrial liquid wastes disposal	1965	2012			Refers to MD E1b/221/1965 (Sanitary Provision) presented above	Commitments Register Greece
Circular 191645 3 December 2013 (ΑΔΑ: ΒΛ0Χ0-9ΝΥ) Clarifications on liquid waste disposal in surface aqueous receptors following publication of Law 4042/2012	2013	n/a		Clarifies that the Sanitary Provision E1b/221/1965 continues to apply as far as it regards surface receptors definition procedure by the competent prefectural authorities		Commitments Register Greece
Ministry of Health Letter ΔΥΓ2/Γ.Ρ. 22601 7 April 2014 (ΑΔΑ: ΒΙΗΥΘ-79Ξ) on the application of Sanitary Provision E1β/221/65 following publication of Law 4042/2012	2014	n/a		Clarifies that the Sanitary Provision E1b/221/1965 continues to apply as far as it regards municipal waste disposal		Identified when writing the Project Standards
Circular 205998 14 December 2011 (ΑΔΑ: 45Ψ40-5ΒΙ) Clarifications regarding Article 12 of Law 4014/2011 regarding wastewater and industrial wastes management	2011	n/a		Clarifies that liquid waste disposal permits foreseen by E1b/221/1965 are replaced by the Environmental Terms Approval Decision		ESIA Annex 2: Greek National Legislative Framework
Circular 4095.82 10 November 2011 Clarifications regarding abolishment of waste management permits according to Article 12 of Law 4014/2011	2011	n/a		Clarifies application of the relevant provision to all waste falling under the scope of Directive 2008/98		ESIA Annex 2: Greek National Legislative Framework
Circular 1589 3 November 2011 Clarifications regarding the correct implementation of JMD 45116 2 February 2011 (Gov. Gaz. 354B) "Definition of measures, terms and procedures for treated wastewater reuse and other provisions")	2011	n/a		Clarifies that JMD 45116/2011 continues to apply following publication of Law 4014/2011		ESIA Annex 2: Greek National Legislative Framework
European Legislation						
Directive 2008/105/EC of the European Parliament and of the Council 16 December 2008 On environmental quality standards in the field of water policy, amending and subsequently repealing Council Directives 81/176/EEC, 83/513/EEC, 84/156/EEC, 84/491/EEC, 86/280/EEC and amending Directive 2000/60/EC of the European Parliament and of the Council	2008					ESIA Annex 2: Greek National Legislative Framework
Directive 2000/60/EC of the European Parliament and of the Council 23 October 2000 Establishing a framework for Community action in the field of water policy [the Water Framework Directive]	2000					Commitments Register Greece

Title	Date enacted	Last amended	Ratification Date (Conventions)	Application	Comments	Source
Directive 91/271/EEC 21 May 1991 concerning urban waste-water treatment	1991					Identified when writing the Project Standards
Directive 78/659/EEC 18 July 1978 on the quality of fresh waters needing protection or improvement in order to support fish life	1978					Identified when writing the Project Standards
International Conventions						
Pollutant Release and Transfer Register (PRTR) Protocol	2009		Signed 2003, pending ratification			ESIA Section 3: Legislative and Policy Framework
Ramsar Convention on Wetlands	1971		1975			ESIA Section 3: Legislative and Policy Framework ESIA Annex 2: Greek National Legislative Framework
International guidelines and standards						
IFC General EHS Guidelines: Guidelines for Wastewater and Ambient Water Quality	2007					Identified when writing the Project Standards
IFC Environmental, Health, and Safety Guidelines for Onshore Oil and Gas Development	2007					Identified when writing the Project Standards
SOIL AND GROUNDWATER						
National Legislation						
Presidential Decree 51 8 March 2007 (Gov. Gaz. 54/A) Definition of measures and procedures for integrated protection and management of water in compliance with the provisions of Directive 2000/60/EC "establishing a framework for Community action in the field of water policy" of the European Parliament and the Council of October 23, 2000	2007	2011		Water resources management according to Water Framework Directive	Protection Status to be taken into consideration during Project Development. Water Use Permit might be required at a later stage. There is a possibility of emission limits being imposed on underground waters or other constraints to the Project.	ESIA Annex 2: Greek National Legislative Framework
JMD 145116 8 March 2011 (Gov. Gaz. 354/B) Definition of measures, terms and conditions for the reuse of Treated Wastewater	2011	2015		Treated wastewater reuse		ESIA Annex 6.6.2: Groundwater Baseline Study ESIA Section 6: Environmental, Socioeconomic and Cultural Heritage Baseline
MD 1811 30 December 2011 (Gov. Gaz. 3322/B) setting threshold values for concentrations of certain pollutants, pollutant groups or pollution indicators in groundwaters, pursuant to paragraph 2 of Article 3 of JMD 39626/2208/E130/2009 (Gov. Gaz. 2075/B)	2011	n/a		Aims at the assessment of the chemical status of groundwater bodies and sets quality standards and threshold values for groundwater pollutants		ESIA Annex 6.6.2: Groundwater Baseline Study
MD 5673/400 14 March 1997 (Gov. Gaz. 192/B) Measures and terms for the management of municipal liquid waste	1997	2002		Harmonisation with the provisions of Directive 91/271/EEC. Amended with list of sensitive areas		ESIA Section 6: Environmental, Socioeconomic and Cultural Heritage Baseline
MD 1811 30 December 2011 (Gov. Gaz. 3322/B) setting threshold values for concentrations of certain pollutants, pollutant groups or pollution indicators in groundwaters, pursuant to paragraph 2 of Article 3 of JMD 39626/2208/E130/2009 (Gov. Gaz. 2075/B)	2011	n/a				ESIA Annex 2: Greek National Legislative Framework
MD 5673/400 14 March 1997 (Gov. Gaz. 192/B) Measures and terms for the management of municipal liquid waste	1997	2002				Commitments Register Greece
Gov. Gaz 192/B 14 March 1997 Measures and terms for the management of municipal liquid waste	1997	2002				Commitments Register Greece
Gov. Gaz 138/B 24 February 1965 on municipal and industrial liquid wastes disposal	1965	2012			Refers to MD E1b/221/1965 (Sanitary Provision) presented below	Commitments Register Greece
Gov. Gaz. 3322/B 30 December 2011 setting threshold values for concentrations of certain pollutants, pollutant groups or pollution indicators in groundwaters, pursuant to paragraph 2 of Article 3 of JMD 39626/2208/E130/2009 (Gov. Gaz. 2075/B)	2011	n/a			Refers to MD 1811/2011 presented above	ESIA Annex 6.6.2: Groundwater Baseline Study
Gov. Gaz. 354/B 8 March 2011 Definition of measures, terms and conditions for the reuse of Treated Wastewater	2011	2013			Refers to JMD 145116/2011 presented above	ESIA Annex 6.6.2: Groundwater Baseline Study, Socioeconomic and Cultural Heritage Baseline ESIA Section 6: Environmental
Gov. Gaz. 192/B 14 March 1997 Measures and terms for the management of municipal liquid waste	1997	2002			Refers to MD 5673/400/1997 presented above	ESIA Section 6: Environmental, Socioeconomic and Cultural Heritage Baseline

Title	Date enacted	Last amended	Ratification Date (Conventions)	Application	Comments	Source
Sanitary Provision E1β/221 24 February 1965 on municipal and industrial liquid wastes disposalλ	1965	2012		Definition of surface water uses and special conditions for municipal wastewater disposal	Protection Status to be taken into consideration during Project Development.	Commitments Register Greece
Circular 191645 3 December 2013 (ΑΔΑ: ΒΛ0Χ0-9ΝΥ) Clarifications on liquid waste disposal in surface aqueous receptors following publication of Law 4042/2012	2013	n/a		Clarifies that the Sanitary Provision E1b/221/1965 continues to apply as far as it regards surface receptors definition procedure by the competent prefectural authorities	It refers to surface waters	Commitments Register Greece
MD 39626/2208/E130 25 September 2009 (Gov. Gaz. 2075/B) Definition of measures for the protection of groundwater from pollution and degradation in accordance with the provisions of Directive 2006/118/ΕΚ of the European Parliament and Council of December 12, 2006	2009	n/a				Identified when writing the Project Standards
Law 3199 9 December 2003 (Gov. Gaz. 280/A) Water protection and management - Harmonisation with Directive 2000/60/EC τοf the European Parliament and Council of October 23, 2000	2003	n/a				Identified when writing the Project Standards
European Legislation						
Directive 2008/105/EC of the European Parliament and of the Council 16 December 2008 On environmental quality standards in the field of water policy, amending and subsequently repealing Council Directives 81/176/EEC, 83/513/EEC, 84/156/EEC, 84/491/EEC, 86/280/EEC and amending Directive 2000/60/EC of the European Parliament and of the Council	2008					ESIA Section 8: Assessment of Impacts and Mitigation Measures
2006/118/EC of the European Parliament and of the Council 12 December 2006 On the protection of groundwater against pollution and deterioration [Groundwater Directive]	2006					ESIA Annex 6.6.2: Groundwater Baseline Study ESIA Section 6: Environmental, Socioeconomic and Cultural Heritage Baseline
Directive 2000/60/EC of the European Parliament and of the Council 23 October 2000 Establishing a framework for Community action in the field of water policy [the Water Framework Directive]	2000	2008				ESIA Section 8: Assessment of Impacts and Mitigation Measures ESIA Section 6: Environmental, Socioeconomic and Cultural Heritage Baseline
91/271/EEC of 21 May 1991 Concerning urban waste-water treatment	1991					ESIA Section 6: Environmental, Socioeconomic and Cultural Heritage Baseline
International Conventions						
Pollutant Release and Transfer Register (PRTR) Protocol	2009		Signed 2003, pending ratification			ESIA Section 3: Legislative and Policy Framework
International Guidelines and Standards						
WHO Guidelines for Drinking Water Quality, Fourth Edition	2011			The WHO has established guideline values for chemicals that are of health significance in drinking-water, whether this be sourced from groundwater or surface water resources. These standards are of relevance where groundwater/surface water is abstracted for drinking water supply.		Identified when writing the Project Standards
Soil Remediation Circular (Dutch Standard)	2009					Identified when writing the Project Standards
IFC General EHS Guidelines: Guidelines for Wastewater and Ambient Water Quality	2007			Specifies compliance with national or local standards for sanitary wastewater discharge or, in their absence, the following indicative guideline values applicable to sanitary wastewater discharge.		Identified when writing the Project Standards
IFC Environmental, Health and Safety (EHS) Guidelines for Contaminated Land	2007			There is a requirement for IFC Projects to manage contaminated land to avoid risk to human health and ecological receptors. The preferred strategy for land decontamination is to reduce the level of contamination at the Project site, while preventing human exposure to contamination.		Identified when writing the Project Standards

Title	Date enacted	Last amended	Ratification Date (Conventions)	Application	Comments	Source
Dutch Target and Intervention Values 4 February 2000 The New Dutch List	2000					ESIA Section 6: Environmental, Socioeconomic and Cultural Heritage Baseline ESIA Section 8: Assessment of Impacts and Mitigation Measures ESIA Annex 6.6.2: Groundwater Baseline Study
UK Contaminated Land Guidance	Various			Key technical guidance documents include; Model Procedures for the Management of Land Contamination, CLR 11, 2004. This guidance document issued by the UK government and the Environment Agency provides a technical framework for applying a risk management process to land affected by contamination; and Remedial Targets Methodology: Hydrogeological Risk Assessment for Land Contamination, Environment Agency, 2006. This document presents a recommended methodology for deriving site-specific remedial objectives for contaminated soils and/or groundwater to protect the aquatic environment. Methodology applies to soils and groundwater that are already contaminated, where the original surface source of the contamination has ceased.		Identified when writing the Project Standards
OTHER LEGISLATION AND CONVENTIONS						
National Legislation						
Constitution of the Hellenic Republic	1975	2001			Governs the Greek legal system vesting legislative power in Parliament and the President of the Republic. It is noted that international law and conventions ratified by statute form an integral part of domestic Greek law	ESIA Section 3: Legislative and Policy Framework
The Civil Code 23 February 1946	1946	2003			Regards transactions and contracts, family and succession issues, principles governing the legal relationships and responsibilities of individuals from harmful actions towards others	ESIA Section 3: Legislative and Policy Framework
Pres. Dec. 61 30 January 1981 (Gov. Gaz. 23/A) on the protection of indigenous flora and wild fauna and the coordination and supervision of procedures for its research	1981	1987		Application of CITES convection requirements for indigenous flora and wild fauna (endemic species, equivocal endemic, non-endemic - rare and endangered species)	Protection Status to be taken into consideration during Project development	ESIA Annex 2: Greek National Legislative Framework
Pres. Dec. 82 2 March 2004 (Gov. Gaz. 64/A) Replacement of JMD 98012/2001/1996 setting measures and terms for the management of used lubricants (Gov. Gaz. 40/B) "measures , terms and program for the alternative management of Lubricant Oil Waste"	2004	n/a			Relevant notice: MD 105135/2004 (Gov. Gaz. 905/B) approved the collective alternative management system for Lubricant Oil Waste "GREEK ENVIRONMENTAL TECHNOLOGY SA" (ELTEPE SA)	ESIA Annex 2: Greek National Legislative Framework Commitments Register Greece
Pres. Dec. 109 5 March 2004 (Gov. Gaz. 75/A) Measures and terms for the alternative management of used vehicle tyres. Program for their alternative management	2004	n/a			Relevant notice: MD 106157/2004 (Gov. Gaz. 1145/B) approved the collective alternative management system for used tyres "ECO ELASTIKA"	ESIA Annex 2: Greek National Legislative Framework
PD 117 5 March 2004 (Gov. Gaz. 82/A) Measures, terms and program for the alternative management of waste electrical and electronic equipment, in compliance with the provisions of Directives 2002/95 "on the restriction of use of certain hazardous substances in electrical and electronic equipment" and 2002/96 "on electrical and electronic equipment waste"	2004	2014		Waste electrical and electronic equipment management	Repealed by MD 23615/651/E.103/2014 (Gov. Gaz. 1184/B) Relevant Notice: MD 105134/2004 (Gov. Gaz. 905/B) approved the collective alternative WEEE management system "APPLIANCES RECYCLING SA"	ESIA Annex 2: Greek National Legislative Framework
PD 148 29 September 2009 (Gov. Gaz. 190/A) - Environmental responsibility for the prevention and remediation of damage to the environment – Harmonisation with Directive 2004/35/EC	2009	2011		Amended by MD 48416/2037/E.103 7 November 2011, (Gov. Gaz. 2516/B)		Identified when writing the Project Standards
Approval 11508 13 April 2009 (Gov. Gaz. 151/ Compulsory Expropriations) of the Sustainable Spatial Planning for Industry and the relevant strategic environmental impact assessment	2009	n/a				Identified when writing the Project Standards

Title	Date enacted	Last amended	Ratification Date (Conventions)	Application	Comments	Source
Law 4280 8 August 2014 (Gov. Gaz.159/A) Environmental upgrade and private urbanization – Sustainable development of settlements, settings and other provisions on forest legislation and other provisions	2014	n/a		Comprises the new Forest Law and amends Law 998/1979 on the protection of forests and forest land. Amends the allowed uses within forest areas and sets specific protection measures taking into account public interest and sustainable development	Protection Status to be taken into consideration during Project development	ESIA Amendment Greece Section 4: Legislative and Policy Framework
Law 4217 10 December 2013 (Gov. Gaz. 267/A) Ratification of the Host Government Agreement (HGA) between the Hellenic Republic and Trans Adriatic Pipeline A.G.	2013	n/a		Enacts in the form of law the relevant agreement of 26 June 2013.		ESIA Amendment Greece Section 4: Legislative and Policy Framework Commitments Register Greece
Law 4145 18 April 2013 (Gov. Gaz. 89/A) Ratification of the Inter-Governmental Agreement (IGA) between the Republic of Albania, the Hellenic Republic and the Italian Republic, relating to Trans Adriatic Pipeline Project	2013	n/a		Enacts in the form of law the Intergovernmental agreement between the Republic of Albania, the Hellenic Republic and the Italian Republic, relating to the TAP Project signed in Albania on 12 February 2013	Requires all Parties to facilitate, enable and support the implementation of TAP Project and to co-operate and co-ordinate with each other in that respect.	ESIA Section 3: Legislative and Policy Framework ESIA Annex 2: Greek National Legislative Framework
Law 4072 11 April 2012 (Gov. Gaz. 86/A) Improvement of investment environment - New corporate structure - Sighs - Real Estate Brokers - regulation of shipping, ports and fishing issues and other provisions	2012	2015			In Chapter C of this law, the procedures , the Owner is obliged to follow in co-operation with the Central Archaeological Authority for signing a MoU for Archaeological Surveys is defined.	ESIA Annex 2: Greek National Legislative Framework
Law 4042 13 February 2012 (Gov. Gaz. 24/A) Protection of the environment through criminal law - Compliance with Directive 2008/99/EC - Waste generation and management framework - settlement of issues pertinent to the Ministry of Environment, Energy and Climate Change	2012	2014		General framework for the protection of the environment		ESIA Annex 2: Greek National Legislative Framework
Law 4316 24 December 2014 (Gov. Gaz. 270/A) Establishment of dementia observatory, improvement of perinatal care, regulation of issues falling under the responsibility of the Ministry of Health and other provisions	2014	n/a			Amends Law 4042/2012	Identified when writing the Project Standards
Law 4277 1 August 2014 (Gov. Gaz.156/A) New Master Plan of Athens - Attica and other provisions	2014	n/a			Amends Law 4042/2012	Identified when writing the Project Standards
Law 4014 21 September 2011 (Gov. Gaz. 209/A) Environmental licensing of projects and activities	2011	2013		General legal framework for environmental procedures Inc. environmental permitting procedure	Sets the new framework for the environmental permitting procedure. Also amends existing procedures and legislative documents governing the environmental permitting processes. Amendments include environmental permitting procedure, classification of projects, contents of ESIA related reports, including Scoping Report, public consultation and disclosure. *Note: came into force on 13 January 2012. A number of Ministerial Decisions relevant to its full implementation have been published, repealing most elements of the old legal framework*	ESIA Section 3: Legislative and Policy Framework ESIA Annex 2: Greek National Legislative Framework ESIA Amendment Greece Section 4: Legislative and Policy Framework Commitments Register Greece
Law 4001 22 August 2011 (Gov. Gaz. 179/A) Operation of Electricity and Natural Gas Market, Research, Production and transportation networks of Hydrocarbons and other provisions	2011	2015		Legal framework for projects of national importance.	The law shapes the frame for the Independent Natural Gas systems.	ESIA Section 3: Legislative and Policy Framework ESIA Annex 2: Greek National Legislative Framework
Law 4203 1 November 2013 (Gov. Gaz. 235/A) Settlement of RES issues and other provisions	2013			Amends Law 4001/2011in harmonisation with the European Regulation 994/2010 on supply safety		Identified when writing the Project Standards
Law 4336 14 August 2015 (Gov. Gaz. 94/A) Pension provisions - Ratification of the Financial Assistance Draft Contract from the European Stability Mechanism and arrangements for implementation of the Financing Agreement	2015	n/a		Amends Law 4001/2011in harmonisation with the European Regulation 994/2010 on supply safety		Identified when writing the Project Standards
Law 3937 31 March 2011 (Gov. Gaz. 60/A) Biodiversity Conservation and other provisions	2011			This law covers all Protected Areas and Protected Species	Protection Status to be taken into consideration during Project development. More specifically: i) All Natura/SCI are classified now as Natura/SAC and Management Plans would be elaborated ii) The destruction of natural vegetation, hedgerows and the waste disposal, are not allowed in Wildlife Refuges	ESIA Annex 2: Greek National Legislative Framework
Law 3850 2 June 2010 (Gov. Gaz. 84/A) Ratification of legislative code for employees health and safety	2010	2013		Amended by Laws 4144/2013 (Gov. Gaz. 88/A) and 3996/2011 (Gov. Gaz. 170/A)		Commitments Register Greece
Law 3827 25 February 2010 (Gov. Gaz. 30/A) Ratification of European Landscape Convention	2010	n/a		Landscape protection		ESIA Annex 2: Greek National Legislative Framework

Title	Date enacted	Last amended	Ratification Date (Conventions)	Application	Comments	Source
Law 3614 3 December 2007 (Gov. Gaz. 267/A) Management, auditing and application of development interventions for the Programme Period 2007–2013	2007	2010		Amended by Law 3840 31 March 2010 (Gov. Gaz. 53/A) "Decentralisation, simplification and enforcement of the effectiveness of 2007-2013 National Strategic Reference Framework (NRSF) procedures and other provisions.		Commitments Register Greece
Law 3521 22 December 2006 (Gov. Gaz. 275/A) Ratification of the Convention for the Protection of Intangible Cultural Heritage	2006	n/a		Ratifies the Convention on the Protection of Intangible Cultural Heritage coming into force from 3 April 2007		ESIA Section 3: legislative and Policy Framework
Law 2205 15 April 1994 (Gov. Gaz. 60/A) Ratification of the Framework Convention of United Nations on Climate Change	1994	n/a		Ratifies UN Climate Change Convention		Identified when writing the Project Standards
Law 3422 13 December 2005 (Gov. Gaz. 303/A) Ratification of the Convention regarding access to information, public participation in decision making and access to justice for environmental issues (Aarhus Convention)	2005	n/a		Public Consultation and Disclosure	Regards Aarhus Convention ratification. Directive 2003/35/EC is introduced by MD 3711/2021/2003 as amended and applies	ESIA Annex 2: Greek National Legislative Framework
Law 3386 23 August 2005 (Gov. Gaz. 21/A) Entry, residence and social integration of third country nationals in the Greek Territory	2005	2015		Amended by Law 4332/2015 (Gov. Gaz. 76/A)		Commitments Register Greece
Law 3378 19 August 2005 (Gov. Gaz. 203/A) Ratification of the European Convention for the Protection of Archaeological Heritage (Valletta Convention) (reviewed)	2005	n/a		Ratifies the revised European Convention on the Protection of Archaeological Heritage It is clarified that Law 3028/2002 on archaeological heritage protection - as above presented - has been amended by Law 3378/2005 ratifying the reviewed Valletta Convention		ESIA Section 3: legislative and Policy Framework ESIA Annex 2: Greek National Legislative Framework
Law 3368 6 July 2005 (Gov. Gaz. 170/A) Ratification of the memorandum of understanding (MoU) and co-operation between the Ministries of Environment of Greece and Albania on Environmental protection	2005	n/a		Ratifies the relevant MoU between Greece and Albania signed on April 3, 2003		ESIA Annex 2: Greek National Legislative Framework
Law 3335 20 April 2005 (Gov. Gaz. 95/A) on the control of the distribution and storage of oil products - resolving issues of the Ministry of Development	2005	2006		Amends Law 3054/2002 (Gov. Gaz. 230/A). Is amended by Law 3498/2006 (Gov. Gaz. 230/A)	Forestry issues for pipeline crossings	ESIA Annex 2: Greek National Legislative Framework
Law 3028 28 June 2002 (Gov. Gaz. 153/A) Protection of antiquities and cultural heritage in general	2002	2005		Protection of Antiquities and Cultural Heritage	Requires Archaeological Authorities to be consulted during the Environmental License process. Also includes specific technical issues with respect to Monuments, Antiquities etc during construction and operation that are covered by separate Permitting procedures, after the Decision of Approval of Environmental Terms.	ESIA Section 3: Legislative and Policy Framework ESIA Annex 2: Greek National Legislative Framework Commitments Register Greece
Law 3208 24 December 2003 (Gov.Gaz. 303/A) on protection of forest ecosystems, forest registry drafting, regulation of property rights in forests and forest land in general and other provisions amending Law 998/1979	2003	2014		Forestry legislation is currently regulated mainly by Law 4280/2014 (Gov. Gaz. 159/A)	Permits required to cross forested areas	ESIA Annex 2: Greek National Legislative Framework
Law 3010 25 April 2002 (Gov. Gaz. 91/A) Amendment of Law 1650/1986 for the Protection of the Environment in accordance with the Directives 97/11/EC and 96/61/EC, procedure for definition of limits and settlement of issues regarding water streams and their provisions	2002	2010		PEIA and ESIA elaboration and licensing procedures		ESIA Annex 2: Greek National Legislative Framework
Law 2939 6 August 2001 (Gov. Gaz. 179/A) Packaging and alternative management of packaging and other products - Establishment of a National Organisation for the Alternative Management of Packaging and other products and other provisions	2001	2010		Management of used packaging	Obligation for recycling of packaging	ESIA Annex 2: Greek National Legislative Framework
Law 3854 23 June 2010 (Gov. Gaz. 94/A) amending the legislation for alternative management of packaging and other products and the relevant National Organisation	2010	2014				Identified when writing the Project Standards
Law 4315 29 December 2014 (Gov. Gaz. 269/A) Contribution acts in terms of land and money − Expropriations and other provisions	2014	n/a				Identified when writing the Project Standards
MD 54461/1779/E.103 4 October 2013 (Gov. Gaz. 2500/B) Replacement of annex I of article 4 of JMD 9268/469/2007 (Gov. Gaz. 286/B) in accordance with Directive 2013/2/EC	2013	n/a		Packaging nag packaging waste management		Identified when writing the Project Standards
Law 2882 6 February 2001 (Gov. Gaz. 17/A) Compulsory property expropriations code	2001	2011		Land purchases	Guides the expropriating of land as well as the involuntary establishment of easement rights on private lands	ESIA Section 3: legislative and Policy Framework
Law 4024 27 October 2011 (Gov. Gaz. 226/A) Settlement of issues of the Ministry of Economics amending Law 2882/2001 on compulsory expropriations	2011	n/a		Land purchases		Identified when writing the Project Standards

Title	Date enacted	Last amended	Ratification Date (Conventions)	Application	Comments	Source
Law 2719 26 May 1999 (Gov. Gaz. 106/A) Ratification of the International Convention on the Conservation of Migratory Species of Wild Animals and other provisions (Bonn Convention)	1999	n/a		Ratifies the Bonn Convention		ESIA Section 3: legislative and Policy Framework
Law 2546 12 December 1997 (Gov. Gaz. 256/A) Ratification of the Convention on the Transboundary Impacts from Industrial Accidents (Elsiki Convention)	1997	n/a		Ratifies the Convention on the Transboundary Impacts from Industrial Accidents		ESIA Section 3: legislative and Policy Framework
Law 2540 15 December 1997 (Gov. Gaz. 249/A) Ratification of the Convention on the assessment to environmental impacts in transboundary frameworks (Espoo Convention)	1997	n/a		Ratifies the Convention on the protection of environment in transboundary projects		ESIA Annex 2: Greek National Legislative Framework
Law 2204 15 April 1994 (Gov. Gaz. 59/A) Ratification of the Convention on Biodiversity (Biological Diversity) (Rio Convention)	1994	n/a		Ratifies the Convention on Biodiversity (Biological Diversity)		ESIA Section 3: legislative and Policy Framework
Law 2055 30 June 1992 (Gov. Gaz. 105/A) Ratification of the Convention on international trade of Endangered Species of Wild Flora and Fauna including Annexes I and II	1992	n/a		Ratifies the CITES convention		ESIA Section 3: legislative and Policy Framework
Law 3017 30 May 2002 (Gov. Gaz. 117/A) Ratification of the Kyoto Protocol to the United Nations Framework Convention on Climate Change	2002	n/a		Ratifies Kyoto Protocol on Climate Change		Identified when writing the Project Standards
Law 1650 16 October 1986 (Gov.Gaz. 60/A) on environmental protection	1986	2014		Environmental protection	Main legal provision for the Protection of the environment in Greece. Article 4 defines the process for approval of environmental terms) and Article 5 defines the contents and the disclosure of the EIA.	ESIA Section 3: Legislative and Policy Framework
Law 1335 13 March 1983 (Gov. Gaz. 32/A) Ratification of the International Convention on conservation of wild life and natural environment of Europe (Bern Convention)	1983			Ratifies the Convention on conservation of wild life and natural environment of Europe	Protection Status to be taken into consideration during Project development	ESIA Annex 2: Greek National Legislative Framework
Law 1127 10 February 1981 (Gov. Gaz. 32/A) Ratification of the European Convention on the Protection of Archaeological Heritage (London Convention)	1981			Ratifies the European Convention on the Protection of Archaeological Heritage		ESIA Section 3: Legislative and Policy Framework
Law 1126 10 February 1981 (Gov. Gaz. 32/A) Ratification of the International Convention on the Global Cultural and Natural Heritage (Paris Convention)	1981			Ratifies the International Convention on the Protection of the World Cultural and Natural Heritage		ESIA Section 3: Legislative and Policy Framework
Law 998 29 December 1979 (Gov. Gaz. 289/A) on the protection of forest and forest areas in general of the country	1979	2014				Commitments Register Greece
Law 3789 12 October 1957 (Gov. Gaz. 210/A) Amendment and supplement of labour legislation	1957	n/a				ESIA Section 3: Legislative and Policy Framework
JMD 8353/276/E103 23 February 2012 (Gov. Gaz. 415/B) Amendment of JMD 37338/1807/2010	2012			Compliance with Directive 79/409/EEC (Birds Directive as codified by Directive 2009/147/EC	Protection Status to be taken into consideration during Project development	ESIA Annex 2: Greek National Legislative Framework
JMD 1958 13 January 2012 (Gov. Gaz. 21/B) Classification of public and private works into categories	2012			ESIA elaboration and licensing procedures		ESIA Annex 2: Greek National Legislative Framework
JMD 37338/1870/E.103 6 September 2010 (Gov. Gaz.1495/B) Definition of measures and procedure for the conservation of wild avifauna and its habitats in accordance with the provisions of Directive 79/409/EEC on wild birds protection as amended by Directive 2009/147/EC	2010	n/a			Protection Status to be taken into consideration during Project development	ESIA Annex 2: Greek National Legislative Framework
JMD 36259/1757/E103 24 August 2010 (Gov. Gaz. 1312/B) Measures, terms and programs for the alternative management of waste from excavations, constructions and demolitions	2010	2011		Management of construction and excavation waste. Amended by Law 4030/2011 (Gov. Gaz. 249/A)	Requirement for Building Construction License	ESIA Annex 2: Greek National Legislative Framework
JMD 12966 14 May 2009 (Gov. Gaz. 220/Compulsory Expropriations Series) Characterization of land, aquatic and marine areas of the estuary of the rivers Gallikos, Axios, Loudias and Aliakmonas, Alyki Kitros and Kalochori lake as National Park region and setting of uses, terms and building restrictions	2009			Classifications of Axios - Loudias - Aliakmonas as a National Park and determination of permitted Use	Routing outside of National Park	ESIA Annex 2: Greek National Legislative Framework
JMD 39542 9 October 2008 (Gov. Gaz. 441/Compulsory Expropriations Series) Amendment of JMD 6919/2004 on the characterisation of Volvi-Koronia lakes and Macedonian Tempi as National Park region and setting of uses, terms and building restrictions	2008					ESIA Annex 2: Greek National Legislative Framework
JMD 14849/853/E 103 11 April 2008 (Gov. Gaz. 645/B) Amendment of JMD 3318/3028/1998 and 29459/1510/2005 in compliance with the provisions of Directive 2006/105	2008				Protection Status to be taken into consideration during Project development	ESIA Annex 2: Greek National Legislative Framework

Title	Date enacted	Last amended	Ratification Date (Conventions)	Application	Comments	Source
Approval 6876/4871 3 July 2008 (Gov. Gaz.128/A) of the National Plan for Sustainable Development	2008			Notes the importance of Natural Gas networks and infrastructure for the strategic enhancement of Greece in the wider Southeast Europe.	specifically: Art. 6 (spatial conformation of strategic importance for infrastructure, transportation, communication and energy networks): - Par. B.1(δ): Enhancement of the international role of Greece, as a centre for power, natural gas, oil transfer. - Par. B.2(γ): Integration of High Pressure Natural Gas system and branches to Italy, FYROM, Albania etc. and other relevant infrastructure	ESIA Section 3: Legislative and Policy Framework ESIA Annex 2: Greek National Legislative Framework
JMD 12044/613 19 March 2007 (Gov. Gaz. 376/B) Adopting Directive 2003/105/EC amending Seveso II Directive and repealing JMD 5697/590/2000	2007					ESIA Annex 2: Greek National Legislative Framework
JMD 8668 2 March 2007 (Gov. Gaz. 287/B) Hazardous wastes management, amending JMD 13588/725/2006 and JMD 14944/1159/206 on hazardous waste management plan guidelines	2007					ESIA Annex 2: Greek National Legislative Framework
JMD 9269/470 2 March 2007 (Gov. Gaz. 286/B) Judicial process to protect the public against administrative acts or omissions regarding the disclosure of information and participation during the ESIA process	2007			Public Consultation and Disclosure		ESIA Annex 2: Greek National Legislative Framework
JMD 24944/1159/206 30 June 2006 (Gov. Gaz. 791/B) approving the General Technical Specifications for the management of hazardous wastes pursuant to Article 5 (par. b) of JMD 13588/725 on measures conditions and restrictions for hazardous waste management, etc. (Gov. Gaz. 383.B) and in compliance with the provisions of Article 7 (par. 1) Directive 91/156/EC of 18 March 1991	2006	2012				ESIA Annex 2: Greek National Legislative Framework
JMD 13588/725 28 March 2006 (Gov. Gaz. 383/B) on measures conditions and restrictions for hazardous waste management replacing JMD19396/1546/1997	2006	2012				ESIA Annex 2: Greek National Legislative Framework
JMD 26295 9 October 2003 (Gov. Gaz. 1472/B) Regional Plan for Dytiki Macedonia (West Macedonia)	2003			Land use issues, compatibility with Regional Planning	Art. 3 Par. 3.7.1 (energy): Directions for interconnection to international energy networks	ESIA Section 3: Legislative and Policy Framework ESIA Annex 2: Greek National Legislative Framework
JMD 50910/2727 22 December 2003 (Gov. Gaz. 1909/B) Measures and terms for solid waste management - National and regional management planning	2003	2012		Waste Management Policy		ESIA Annex 2: Greek National Legislative Framework
JMD 37111/2021 29 September 2003 (Gov. Gaz. 1391/B) Means of information and public participation in the procedure of approval of environmental terms	2003	2014		Public Consultation and Disclosure	Sets out the procedure of the public information and the participation in the framework of the environmental permitting system	ESIA Section 3: Legislative and Policy Framework ESIA Annex 2: Greek National Legislative Framework
JMD 11014/703/Φ104 20 March 2003 (Gov. Gaz. 332/B) Procedures of Preliminary Environmental Assessment and Evaluation and Approval of Environmental Terms	2003			PEIA of West Section elaboration and licensing procedures		ESIA Annex 2: Greek National Legislative Framework
JMD 15393/2332 5 August 2002 (Gov. Gaz. 1022/B) Classification of public and private projects and activities into categories according to Article 3 of Law 1650/1986 as replaced by Article 1 of Law 3010/2002 "harmonization of Law 1650/1986 with Directives 97/11/EU and 96/61/EU etc. (Gov. Gaz. 91/A)"	2002	2012		PEIA of West Section elaboration and licensing procedures		ESIA Annex 2: Greek National Legislative Framework
JMD 5679/590 29 March 2000 (Gov. Gaz. 405/B) Establishment of measures and conditions addressing the risks of major accidents in establishments or plants due to the presence of hazardous substances	2000	2007		Repealed by JMD12044/613/2007		ESIA Annex 2: Greek National Legislative Framework
JMD 294283 4 February1998 (Gov. Gaz. 68/A) Amendment of Joint Ministerial Decision 414985/1985 on wild avifauna management	1998			PEIA of West Section elaboration and licensing procedures		ESIA Annex 2: Greek National Legislative Framework
JMD 33318/3082 11 December 1998 (Gov. Gaz. 1289/B) Conservation of natural habitats and of wild fauna and flora (Habitats Directive)	1998				Protection Status to be taken into consideration during Project development	ESIA Annex 2: Greek National Legislative Framework
JMD 114218 17 November 1997 (Gov. Gaz. 1016/B) Framework on requirements and general waste management plans	1997	2014				ESIA Annex 2: Greek National Legislative Framework

Title	Date enacted	Last amended	Ratification Date (Conventions)	Application	Comments	Source
MD 56366/4351 12 December 2014 (Gov. Gaz. 3339/B) Definition of the requirements (specifications) for processing works in the context of mechanical – biological treatment of mixed municipal waste and definition of features for the produced materials in accordance with their use following field b of paragraph 1 of Article 38 of Law 4042/2012 (Gov Gaz. 24/A)	2014			Amends Law 4042/2012 regarding waste management		Identified when writing the Project Standards
MD 23615/651/E.103 9 May 2014 (Gov. Gaz. 1184/B) Regulations, terms and conditions for the alternative management of waste electrical and electronic equipment (WEEE), in compliance with the provisions of Directive 2012/19/ EC "on waste electrical and electronic equipment (WEEE)" of the European Parliament and the Council of July 4, 2012 and other provisions"	2014	n/a		Waste electrical and electronic equipment management. Applies at 2 stages (i) 13 August 2012 - 14 August 2018 (transitional period) to WEEE of Annex I and (ii) form 15 august 2018 to all WEEE	Aims among others at the application of the extended WEEE producer responsibility according to article 25 of Law 4042/2012	Identified when writing the Project Standards
MD 52983/1952 27 September 2013 (Gov. Gaz. 2436/B) on specifications of Appropriate Assessments for Category B projects and activities of Article 10 of Law 4014/2011	2013					Identified when writing the Project Standards
MD 173829 25 July 2014 (Gov. Gaz. 2036/B) amending MD 1958/2012	2014					Identified when writing the Project Standards
MD 65150/1780 4 December 2013 (Gov. Gaz. 3089/B) completing MD 1958/2012 and setting the content of Approval of Environmental Terms for Projects of Category A	2013					Identified when writing the Project Standards
JMD 366599 31 December 1996 (Gov. Gaz. 1188/B) Amendment of Joint Ministerial Decision 414/985/1985	1996			Management of wild avifauna	Protection Status to be taken into consideration during Project development	ESIA Annex 2: Greek National Legislative Framework
JMD 69269/5387 25 October 1990 (Gov. Gaz. 678/B) Classification of projects and activities in terms of environmental permitting	1990	2002		Project Classification and EIS content. Replaced by MD 1958/2012	Describes the specific content of the environmental impact assessment studies, according to the category of the activity to be implemented.	ESIA Section 3: Legislative and Policy Framework
JMD 414985 29 September1985 (Gov. Gaz. 757/B) Measures for the management of wild avifauna	1985			Conservation of wild birds (Birds Directive)	Protection Status to be taken into consideration during Project development	ESIA Annex 2: Greek National Legislative Framework
Legislative Decree 191 20 November 1974 (Gov. Gaz. 350/A) on Ramsar Convention ratification	1974	1991				Identified when writing the Project Standards
MD 170225 27 January 2014 (Gov. Gaz. 135/B) Specifications for the contents of environmental permitting dossiers for projects and activities of A category	2014					ESIA Amendment Greece Section 4: Legislative and Policy Framework
MD 1649 14 January 2014 (Gov. Gaz. 45/B) Specifications for the official review by the authorities and stakeholder engagement and participation during the environmental permitting of Category A projects foreseen in MD 1958/2012 (Gov. Gaz. 21/A) in accordance with the provisions of article 19 par. 9 of Law 4014/2011 (Gov. Gaz. 209/A) as well as for any other detail	2014	n/a		Public Consultation and Disclosure	Amends MD 3711/2021/2003	ESIA Amendment Greece Section 4: Legislative and Policy Framework
MD 167563 19 April 2013 (Gov. Gaz. 964/B) Procedures for Environmental Permitting according to Law 4014/11	2013			ESIA licensing procedure		ESIA Annex 2: Greek National Legislative Framework ESIA Amendment Greece Section 4: Legislative and Policy Framework
MD 48963 5 October 2012 (Gov. Gaz. 2703/B) Contents of the Environmental Terms Approval for projects and activities of A' class of MD 1958/13-01-2012, according to ar. 2 of L. 4014/2011	2012	2013		Obligation for meeting environmental legislation requirements by the project owner		ESIA Annex 2: Greek National Legislative Framework
MD 21398 3 May 2012 (Gov. Gaz. 1470/B) Establishment and operation of dedicated website for uploading environmental terms approval decisions and amendments/ extensions (according to article 19a of Law 4014/2011	2012	n/a				Identified when writing the Project Standards
MD 15277 9 April 2012 (Gov. Gaz. 1077/B) Clarification on procedures of incorporating Forest Legislation provisions in the Environmental Terms Approval of Standard Environmental Requirements, for projects of A and B class of MD 1958/2012, according to ar. 12 of L. 4014/2011	2012			Forestry legislation Procedure for the Approval of Environmental Terms	Permits required to cross forested areas	ESIA Section 3:Legislative and Policy Framework ESIA Annex 2: Greek National Legislative Framework Commitments Register Greece
MD 20741 8 May 2012 (Gov. Gaz. 1565/B) Amendment of MD1958/2012	2012			Project Classification	According to this MD, the TAP project, as a whole in Greece is characterized as class A1 project (Group 11 'Transportation of energy, fuels and chemical substances', s/n 1 'Fuel pipelines of national importance or under European or International networks and associating facilities').	ESIA Section 3:Legislative and Policy Framework ESIA Annex 2: Greek National Legislative Framework

Title	Date enacted	Last amended	Ratification Date (Conventions)	Application	Comments	Source
MD 1958 13 January 2012 (Gov. Gaz. 21/B) Classification of pubic and private projects according to N.4014/2011	2012	2014		Amended by MD 10432/1115/Φ.15/2014		ESIA Section 3:Legislative and Policy Framework
MD 41624/2057/E103/2010 (Gov. Gaz. 1625/B) Measures, terms and conditions for the alternative management of batteries and accumulators waste in accordance with Directive 2006/66/EK	2010	2015		Amended by MD 39200 18 September 2015 (Gov. Gaz. 2057/B) in compliance with Directive 2013/56/EE		Identified when writing the Project Standards
MD Δ1/A/5815 19 April 2010 (Gov. Gaz. 464/B) Natural Gas Licensing Regulation	2010			Regulatory framework for the independent Natural Gas System Permit	Defines the specific requirements and procedures for obtaining: - Independent Natural Gas (NG) System Permit - Independent NG System Management Permit	ESIA Section 3: Legislative and Policy Framework
MD 1958 13 January 2012 (Gov. Gaz. 21/B) Classification of pubic and private projects according to N.4014/2011	2012	2014		Project Classification		ESIA Section 3:Legislative and Policy Framework ESIA Annex 2: Greek National Legislative Framework
JMD 6919 5 March 2004 (Gov. Gaz 248/D) Characteristics of National Park of Lakes Koronia and Volvi and determination of permitted Use	2004				The corridor crosses the peripheral zone of the National Park As amended by JMD 39542/2008	ESIA Annex 2: Greek National Legislative Framework
MD 674 6 February 2004 (Gov. Gaz. 218/B) Regional Plan for Kentriki Macedonia (Central Macedonia)	2004			Land use issues, compatibility with Regional Planning	Natural gas as a basic development infrastructure for Salonic/Thessalonki area	ESIA Section 3: Legislative and Policy Framework ESIA Annex 2: Greek National Legislative Framework
MD 29310 9 October 2008 (Gov. Gaz 1471/B) Regional Plan for Eastern Macedonia and Thrace	2003			Land use issues, compatibility with Regional Planning	The only reference relevant to the Project is Art 3, Par. 2.2.1.2 (energy): Direction for interconnection to international energy networks	ESIA Annex 2: Greek National Legislative Framework
Reg. Dec. 1866 3 July 2001 (Gov. Gaz 841/B) Characterization of Wildlife Refuge of Pylaia-Kavisos-Ferres	2001				Project engagement/proximity with Wildlife Refuge	ESIA Annex 2: Greek National Legislative Framework
Reg. Dec. 2701 3 July 2001 (Gov. Gaz 842/B) Characterization of Wildlife Refuge of Kompsatos	2001				Project engagement/proximity with Wildlife Refuge	ESIA Annex 2: Greek National Legislative Framework
Reg. Dec. 1883 3 July 2001 (Gov. Gaz 841/B) Characterization of Wildlife Refuge of Kirki	2001				Project engagement/proximity with Wildlife Refuge	ESIA Annex 2: Greek National Legislative Framework
Reg. Dec. 4819 13 July 1999 (Gov. Gaz 1434/B) Characterization of Wildlife Refuge of Dimitritsion-Triantafyllias	1999				Project engagement/proximity with Wildlife Refuge	ESIA Annex 2: Greek National Legislative Framework
Reg. Dec. 1759 27 August 1996 (Gov. Gaz 754/B) Amendment of the limits of wildlife Refuge of Alistrati-Petroto (Petroto-Faraggi-Almyra)	1996				Project engagement/proximity with Wildlife Refuge	ESIA Annex 2: Greek National Legislative Framework
Pref. Dec. 11634. 31 December 1987 (Gov. Gaz 1259/D) General Town Planning of Mitroussi Municipality	1987				Land use issues, compatibility with town planning	ESIA Annex 2: Greek National Legislative Framework
MD 191929 27 March 1986 (Gov. Gaz 132/B) Amendment of the limits of Wildlife Refuge of Kotza-Oman	1986				Project engagement/proximity with Wildlife Refuge	ESIA Annex 2: Greek National Legislative Framework
Pres. Dec. (not numbered) 28 October 1979 (Gov. Gaz 606/D) Characterization of Aesthetic Forest of Kavala-Amygdaleona	1979				Project engagement/proximity with Wildlife Refuge	ESIA Annex 2: Greek National Legislative Framework
MD 30337/1574 30 April 1976 (Gov. Gaz 601/B) Characterization of Wildlife Refuge of Chatoisio	1976				Project engagement/proximity with Wildlife Refuge	ESIA Annex 2: Greek National Legislative Framework
MD 38082/2179 2 June 1976 (Gov. Gaz 733/B) Characterization on Wildlife Refuge of Agios Timotheos-Kioupia	1976				Project engagement/proximity with Wildlife Refuge	ESIA Annex 2: Greek National Legislative Framework
Circular 134050 28 December 2010 Formal Permit Requirements for extension of validity period of Preliminary Environmental Assessment and Evaluation Decision (PEIA Approval) (ΑΔΑ: 4ΙΙΚ0-Ι).	2010			Procedures for extending the validity of approved PEIA	Extension of PEIA of West Section	Annex 2: Greek National Legislative Framework
Circular 122859 2 February 2004 Dossier contents for the application of article 13 of JMD 11014/7033 14 March 2003 (Gov. Gaz. 332/B)	2004			Procedures for Renewal of Environmental Licensing and Deviations		Annex 2: Greek National Legislative Framework
Host Government Agreement (HGA) between the Hellenic Republic and Trans Adriatic Pipeline A.G.26 June 2013	2013	n/a			Enacted by Law 4217/2013 (Gov. Gaz. 267/A) presented above	ESIA Section 3: Legislative and Policy Framework
Law 1197 3 September 1981 (Gov. Gaz. 240/A) on Animal Protection	1981	2003				Commitments Register Greece
Approval of environmental terms for construction and operation of the project: "Trans Adriatic High-Pressure Natural Gas Pipeline (TAP) & Accompanying Installations – Greek Section" Decision 174848/12 September 2014	2014					Commitments Register Greece
MD Δ3/Α/οικ. 4303 ΠΕ 26010 5 March 2012 (Gov. Gaz. 603/B) "Technical Regulation: Natural Gas supply systems - Pipelines for maximum operating pressure over 16 bar"	2012			Requirements for the design, construction, materials, preventive measures during routing, testing and commissioning of a natural gas transmission system		ESIA Section 4: Project Description
European Legislation and standards						

Title	Date enacted	Last amended	Ratification Date (Conventions)	Application	Comments	Source
Directive 2011/92/EU of the European Parliament and of the Council 13 December 2011 On the assessment of the effects of certain public and private projects on the environment	2011					ESIA Section 3: Legislative and Policy Framework
Directive 2009/147/EC of the European Parliament and of the Council 30 November 2009 On the conservation of wild birds [Birds Directive]	2009					Identified when writing the Project Standards
Directive 2008/99/EC of the European Parliament and of the Council 19 November 2008 On the protection of the environment through criminal law	2008					ESIA Annex 2: Greek National Legislative Framework
Directive 2008/98/EC of the European Parliament and of the Council 19 November 2008 On waste and repealing certain Directives (Waste Management Directive)	2008					Identified when writing the Project Standards
Directive 2008/1/EC of the European Parliament and of the Council 15 January 2008 Concerning integrated pollution prevention and control (IPPC)	2008					Identified when writing the Project Standards
Energy and Climate Change Package 20-20-20	2008					Identified when writing the Project Standards
A European Strategy for Sustainable, Competitive and Secure Energy (Green Paper)	2006					Identified when writing the Project Standards
Directive 2003/55/EC of the European Parliament and of the Council 26 June 2003 Concerning the common rules for the internal market in natural gas and repealing Directive 98/30/EC	2003					Identified when writing the Project Standards
Decision No 1229/2003/EC of the European Parliament and of the Council 26 June 2003 Laying down a series of guidelines for trans-European energy networks and repealing Decision No 1254/96/EC	2003					Identified when writing the Project Standards
European Directive 2003/35/EC of the European Parliament and of the Council 26 May 2003 Providing for public participation in respect of drawing up of certain plans and programmes relating to the environment and amending with regard to public participation and access to justice Council Directives 85/337/EEC and 96/61/EC - Statement by the Commission (Aarhus Convention)	2003					ESIA Section 3: Legislative and Policy Framework ESIA Annex 2: Greek National Legislative Framework
Directive 98/30/EC of the European Parliament and of the Council 22 June 1998 Concerning common rules for the internal market in natural gas	1998					Identified when writing the Project Standards
Directive 1997/23/EC of the European Parliament and of the Council May 1997 regarding the design, manufacture, testing and conformity assessment of pressure equipment and assemblies of pressure equipment	1997					ESIA Section 4: Project Description
Directive 97/11/EC 3 March 1997 On the assessment of the effects of certain public and private projects on the environment	1997					ESIA Section 3: Legislative and Policy Framework
Directive 92/43/EEC 21 May 1992 On the conservation of natural habitats and of wild fauna and flora [the Habitats Directive]	1992					Identified when writing the Project Standards
Directive 85/337/EEC 27 June 1985 On the assessment of the effects of certain public projects and private projects on the environment	1985					ESIA Section 3: Legislative and Policy Framework
Energy for the Future: Renewable Sources of Energy (White Paper for a Community Strategy and Action Plan)	1997					Identified when writing the Project Standards
An Energy Policy for the European Union (White Paper)	1995					Identified when writing the Project Standards
"Intelligent Energy - Europe Program" for the period 2007 - 2013	?					Identified when writing the Project Standards
International Conventions						
Kiev Protocol on Strategic Environmental Assessment	2003		Signed 2003, pending ratification			ESIA Section 3: Legislative and Policy Framework
UNESCO Convention for the Safeguarding of the Intangible Cultural Heritage	2003		2007			ESIA Section 3: Legislative and Policy Framework
European Landscape Convention	2000		2010			ESIA Annex 2: Greek National Legislative Framework
ILO Convention 182 Worst Forms of Child Labour	1999		2001			Identified when writing the Project Standards
Aarhus Convention (Convention on Access to Information, Public Participation in Decision Making and Access to Justice in Environmental Matters)	1998		2006			ESIA Section 3: Legislative and Policy Framework

Title	Date enacted	Last amended	Ratification Date (Conventions)	Application	Comments	Source
Convention on Biodiversity (Biological Diversity)	1992		1994			ESIA Section 3: Legislative and Policy Framework
Convention on the Transboundary Impacts from Industrial Accidents	1992		1998			ESIA Section 3: Legislative and Policy Framework
Espoo Convention: Convention on Environmental Impact Assessment in Transboundary Context	1991		1998			ESIA Section 3: Legislative and Policy Framework
Basel Convention on the Control of Transboundary Movement of Hazardous Wastes and their Disposal	1989	1998	1994			Commitments Register Greece
Bonn Convention or CMS: Convention on the Conservation of Migratory Species of Wild Animals	1979		1999		Protection Status to be taken into consideration during Project development	ESIA Section 3: Legislative and Policy Framework ESIA Annex 2: Greek National Legislative Framework
Bern Convention: Conservation of European Wildlife and Natural Habitats	1976		1920			ESIA Section 3: Legislative and Policy Framework ESIA Annex 2: Greek National Legislative Framework
CITES: Convention on Trade in Endangered Species of Wild Flora and Fauna - Albania	1975		1992			ESIA Section 3: Legislative and Policy Framework
ILO Convention No 141, For Rural Workers' Organizations	1975		1989			Identified when writing the Project Standards
ILO Convention 138 Minimum Age	1973		1986			Identified when writing the Project Standards
UNESCO Convention Concerning the Protection of the World Cultural and Natural Heritage	1972		1981			ESIA Section 3: Legislative and Policy Framework
Ramsar Convention on Wetlands	1971		1974			
ILO Convention No. 135, For the representatives of Employees	1971		1988			Identified when writing the Project Standards
European Convention on the Protection of the Archaeological Heritage (Valletta Convention)	1969	1992	2006			ESIA Section 3: Legislative and Policy Framework ESIA Annex 2: Greek National Legislative Framework
ILO Convention 122, Convention on Employment Policy	1964		1984			Identified when writing the Project Standards
ILO Convention 111 Discrimination Employment and Occupation	1958		1984			Identified when writing the Project Standards
ILO Convention 105 Abolition of Forced Labour	1957		1962			Identified when writing the Project Standards
ILO Convention 100 Equal Remuneration Convention	1951		1975			Identified when writing the Project Standards
ILO Convention 98 Right to Organize and Collective Bargaining	1949		1962			Identified when writing the Project Standards
ILO Convention 87 Freedom of Association and Production of the Right to Organize	1948		1962			Identified when writing the Project Standards
ILO Convention No 81, For the Inspection Work, in Industry and Commerce	1947		1955			Identified when writing the Project Standards
ILO Convention 29 Forced Labour Convention	1930		1952			Identified when writing the Project Standards
International Guidelines and standards						
European bank for Reconstruction and Development (EBRD) Environmental and Social Policy	1991	2014				Identified when writing the Project Standards
EBRD PR 1: Assessment and Management of Environmental and Social Impacts and Issues	1991	2014				ESIA Section 3: Legislative and Policy Framework Commitments Register Greece
EBRD PR 2: Labour and Working Conditions	1991	2014				ESIA Section 3: Legislative and Policy Framework Commitments Register Greece
EBRD PR 3: Resource Efficiency and Pollution Prevention and Control	1991	2014				ESIA Section 3: Legislative and Policy Framework Commitments Register Greece

Title	Date enacted	Last amended	Ratification Date (Conventions)	Application	Comments	Source
EBRD PR 4: Health and Safety	1991	2014				ESIA Section 3: Legislative and Policy Framework Commitments Register Greece
EBRD PR 5: Land Acquisition, Involuntary Resettlement and Economic Displacement	1991	2014				ESIA Section 3: Legislative and Policy Framework Commitments Register Greece
EBRD PR 6: Biodiversity Conservation and Sustainable Management of Living Resources	1991	2014				ESIA Section 3: Legislative and Policy Framework Commitments Register Greece
EBRD PR 7: Indigenous Peoples	1991	2014				ESIA Section 3: Legislative and Policy Framework Commitments Register Greece
EBRD PR 8: Cultural Heritage	1991	2008				ESIA Section 3: Legislative and Policy Framework Commitments Register Greece
EBRD PR 9: Financial Intermediaries	1991	2008				ESIA Section 3: Legislative and Policy Framework Commitments Register Greece
EBRD PR 10: Information Disclosure and Stakeholder Engagement	1991	2008				ESIA Section 3: Legislative and Policy Framework Commitments Register Greece
EBRD Public Information Policy	2008	2014				Commitments Register Greece
IFC PS 1: Assessment and Management of Environmental and Social Risks and Impacts	2006	2012				Commitments Register Greece
IFC PS 2: Labour and Working Conditions	2006	2012				Commitments Register Greece
IFC PS 3: Resource Efficiency and Pollution Prevention	2006	2012				Commitments Register Greece
IFC PS 4: Community Health, Safety and Security	2006	2012				Commitments Register Greece
IFC PS 5: Land Acquisition and Involuntary Resettlement	2006	2012				Commitments Register Greece
IFC PS 6: Biodiversity Conservation and Sustainable Management of Living Natural Resources	2006	2012				Commitments Register Greece
IFC PS 8: Cultural Heritage	2006	2012				Commitments Register Greece
IFC Environment, Health and Safety (EHS) General Guidelines	2006	2012				Commitments Register Greece
Worker's Accommodation: Processes and Standards, a guidance note by IFC and the EBRD	2009	2012				Commitments Register Greece
UN Voluntary Principles for Security and Human Rights	2000	2012				Commitments Register Greece

Commitment no.	Commitment text	Legislation/standard(s) referenced
NOISE		
GR0647	Noise generated by the project construction equipment will be subject to the provisions of Joint Ministerial Decision 37393/2028/29.3.2003, which sets out measures and limits for noise emissions in the environment from equipment for use in outdoor areas (Gov. Gaz. B΄ 1418), as amended by Joint Ministerial Decision 9272/471/2.3.2007 (Gov. Gaz. B΄ 286)	Joint Ministerial Decision 37393/2028/29.3.2003 Gov. Gaz.B' 1418 Joint Ministerial Decision 9272/471/2.3.2007 (Gov. Gaz B' 286)
GR0648	Noise generated during the operation phase shall be subject to the provisions of Presidential Decree 1180/1981 (Gov. Gaz. A΄ 293) 'On regulation of matters relating to the establishment and operation of industries, manufacturing of all kinds, machine installations and warehouses and the protection of the environment in general from the foregoing', as amended and currently in force.	Presidential Decree 1180/1981 (Gov. Gaz. A' 293) "On regulation of matters relating to the establishment and operation of industries, manufacturing of all kinds, machine installations and warehouses and the protection of the environment in general from the foregoing"
AIR		
GR0009	However, it must be noted that according to JMD 29457/2005 (harmonization of Dir 2008/50) operational measurements for NOX, CO, CO2 will need to be monitored and sent to the relevant Greek authority for consideration. The monitoring system will be determined after GCS00 and GCS01 detailed design.	Directive 2008/50 JMD 29457/2005
GR0642	Limit values and critical atmospheric quality levels: Joint Ministerial Decision 14122/549/E103/24.3.2011 (Gov. Gaz. B΄ 488), setting out measures to improve atmospheric quality in compliance with the provisions of Directive 2008/50/EC	JMD 14122/549/E103/24.3.2011 (Gov. Gaz. B' 488) Directive 2008/50/EC
GR0643	Limit values and critical atmospheric quality levels: Joint Ministerial Decision 22306/1075/E103/29.5.2007 (Gov. Gaz. B΄ 920), setting target values and limits for assessment of concentrations of arsenic, cadmium, mercury, nickel and polycyclic aromatic hydrocarbons in atmospheric gases, in compliance with the provisions of Directive 2004/107/EC	JMD 22306/1075/E103/29.5.2007 (Gov. Gaz. B' 920) Directive 2004/107/EC
SURFACE WATER		
GR0470	All wastewater to meet the defined standard (e.g. WFD standard), EU and Greek legislation and requirement prior to disposal to a water course.	WFD [Water Framework Directive] EU legislation (unspecified) Greek legislation (unspecified)
GR0512	Water quality will be monitored prior to discharge to comply with local regulations.	Local regulations (unspecified)
GR0644	liquid waste: Ministerial Decision 5673/400/1997 (Gov. Gaz. B΄ 192), setting out measures and limits for processing of urban waste, as amended and currently in force	MD 5673/400/1997 (Gov. Gaz. B' 192)
GR0645	liquid waste: Sanitary Provision E1β/221/1965 (Gov. Gaz. B΄ 138) on disposal of sewage and industrial waste, as amended and currently in force, on the basis of Circular 191645/3.12.2013 (ΑΔΑ: ΒΛ0Χ0-9ΝΥ)	Sanitary Provision E1β/221/1965 (Gov. Gaz. B΄ 138) Circular 191645/3.12.2013 (ΑΔΑ: ΒΛ0Χ0-9ΝΥ)
SOIL AND GROUNDWATER		
GR0644	liquid waste: Ministerial Decision 5673/400/1997 (Gov. Gaz. B΄ 192), setting out measures and limits for processing of urban waste, as amended and currently in force	MD 5673/400/1997 (Gov. Gaz. B' 192)
GR0645	liquid waste: Public Health Order E1β/221/1965 (Gov. Gaz. B΄ 138) on disposal of sewage and industrial waste, as amended and currently in force, on the basis of Circular 191645/3.12.2013 (ΑΔΑ: ΒΛ0Χ0-9ΝΥ)	Public Health Order E1β/221/1965 (Gov. Gaz. B΄ 138) Circular 191645/3.12.2013 (ΑΔΑ: ΒΛ0Χ0-9ΝΥ)
OTHER		
GR0205	Compensation for permanent and temporary land take will be carried out according to Greek regulations and EBRD's PR5. TAP AG will set-up an LRF and details about compensation will be communicated with private and public landowners/users and agreements on land purchase and easement rights will be made well in advance of construction commencing.	EBRD PR 5 Greek regulations (unspecified)
GR0242	TAP AG will provide as part of their induction, training on worker rights in line with Greek legislation. TAP AG will also require contractors and subcontractors to provide training on workers rights to its employees.	Greek legislation (unspecified)

Commitment no.	Commitment text	Legislation/standard(s) referenced
GR0243	In all contractor contracts the Project will make explicit reference to the need to abide by Greek law, international standards and TAP AG's policies in relation to health and safety, labour and welfare standards.	Greek law (unspecified) International standards (unspecified)
GR0245	TAP AG will develop a Human Resources Policy which will outline worker rights to be included in all contracts including restrictions on working hours in line with Albanian and international law, compensation including consideration of overtime, holidays etc. TAP AG will require its contractors and subcontractors to put in place policies in line with national legislation.	Greek law (unspecified) International law (unspecified) National [Greek] legislation (unspecified)
GR0250	As part of the contractor and supplier selection process TAP AG will take into consideration performance with regard to worker health and safety as outlined in Greek law, international standards and TAP AG's policies.	Greek law (unspecified) International standards (unspecified)
GR0251	TAP AG will provide support to contractors and subcontractors to ensure that labour and working conditions are in line with Greek law through gap analysis, awareness raising and information provision, as required.	Greek law (unspecified)
GR0255	During construction employees will be accommodated in camps. As outlined in the Project Description these will be constructed and managed in line with the IFC / EBRD guidance note (Workers Accommodation Processes and Standards). As such, living conditions during construction should conform to international best practice.	IFC/EBRD Workers Accommodation Processes and Standards
GR0265	TAP AG will adopt IFC/ EBRD guidelines regarding the provisions of medical facilities at worker accommodation.	IFC/EBRD Guidelines (unspecified)
GR0269	Adoption of IFC/ EBRD guidelines regarding the construction and management of worker construction camps	IFC/EBRD Guidelines (unspecified)
GR0272	Additionally, TAP AG will ensure that regular health screening will be provided to all workers in compliance with Greek laws.	Greek laws(unspecified)
GR0275	All employees of the TAP Project including employees of contractors and subcontractors will undergo employment screening after employment contracts are signed and the consent of the employee is provided, all according with Greek regulations and in compliance with provisions made in Greek laws 3850/210 and 3386/2005. No worker will be denied employment on the basis of the testing (as long as they are fit to work), but in the case of any infectious disease treatment will need to commence and the worker will need to be non-infectious before taking up their post. TAP AG will identify and approve clinics where employment screening can be undertaken. These clinics will be of an international standard. TAP AG will pay for the screening to be undertaken and the results will be confidential	Greek regulations (unspecified) Greek Law 3850/2010 Greek Law 3386/2005
GR0279	Security arrangements will be based on the UN Voluntary Principles for Security and Human Rights which represents international best practice. This involves e.g. selection based on a careful background screening of security forces, their training with regards to Human Rights and careful monitoring of their services. TAP AG will make security arrangements transparent to the local communities and consult with them regularly about the impact of arrangements on communities.	UN Voluntary Principles for Security and Human Rights
GR0338	If archaeological rescue is required at a chance find, the rescue will be conducted according to international and Greek standards and with oversight and involvement of the appropriate government institutions	International standards (unspecified) Greek standards (unspecified)
GR0346	The Project will implement a Chance Finds Procedure that details the process to be followed in case an archaeological find is made during construction. The management of any finds will be handled in accordance with Greek national requirements and EBRD PR8 requirements.	EBRD PR8 Greek national requirements (unspecified)
GR0406	TAP AG will develop an ERP that will specify the actions required in case of an incident. The ERP will be developed according to Greek and EU requirements and international industry standards and best practice. The ERP will classify incidents in levels (e.g. Level 1, 2 and 3 incidents) and define criteria for action.	Greek requirements (unspecified) EU requirements (unspecified) International industry standards (unspecified)

Commitment no.	Commitment text	Legislation/standard(s) referenced
GR0447	European ground squirrel (Spermophilus citellus) A pre-construction survey will be carried out to identify any Spermophilus citellus colonies and potential colony sites, especially in the vicinity of current identified colonies. If colonies are present within the working strip then the temporary displacement procedures presented in Hertweck (2012) (as described in document CP200–ILF–642–X–TRS–001) should be adopted prior to construction, together with the following considerations: • Capture, handling and transport of the animals must be in accordance with the Animal Protection Act. • Supplementary feeding of the animals is required. • Composition of vegetation cover (forage plants) as well as height of vegetation 15-30 cm shall be suitable for the animals • The new habitat and ground-squirrel-friendly management shall be secured on a long-term basis (5 years until the end of the monitoring) • Connectivity with other colonies must be ensured – the location and size of neighbouring colonies must be known • Small groups of animals (less than 180 individual animals and/or 30 adults) should be added to an existing colony. Care has to be taken that the habitat provides sufficient resources for all animals. • Protection against predators. If there are signs of an increased appearance of predators, special protection measures have to be taken (fencing in of partial areas, placement of nets against birds of prey). • Monitoring of diseases and/or parasite infestation. • A Biodiversity Action Plan (BAP) will be implemented as part of the ESMMP.	Animal Protection Act
GR0570	Transboundary Impacts Mitigation measures for potential impacts to other resources (construction phase): • Management of wastes in country of origin by certified contractors or operators and in compliance with Basel Convention.	Basel Convention
GR0571	Transboundary Impacts Mitigation measures for potential impacts during operation phase: • Monitoring of air emissions at source and proper maintenance of air pollutants sources • Management of wastes in country of origin by certified contractors or operators and in compliance with Basel Convention. • Leak Detection System and Emergency Response Plan in case of a gas leak	Basel Convention
GR0578	Adopt and implement a worker accommodation policy and plan based on international best practice standards including EBRD/IFC standards and guidance.	IFC/EBRD standards and guidance (unspecified)
GR0584	Implement the Voluntary Principles for Security and Human Rights, to which TAP has already committed	UN Voluntary Principles for Security and Human Rights
GR0616	In all contractor contracts the Project will make explicit reference to the need to abide by Greek law and policies.	Greek law (unspecified) Greek policies (unspecified)
GR0646	Management of used mineral oils will be subject to Presidential Decree 82/2004 (Gov. Gaz. A΄ 64)	Presidential Decree 82/2004 (Gov. Gaz. A' 62)
GR0653	During the process of concluding agreements between the project implementation agency and third parties, and the latter between themselves, provision must be made for requirements of compliance with the obligation to abide by the environmental terms of Approval of environmental terms for construction and operation of the project: "Trans Adriatic High-Pressure Natural Gas Pipeline (TAP) & Accompanying Installations – Greek Section". [construction phase]	The environmental terms of Approval of environmental terms for construction and operation of the project: "Trans Adriatic High-Pressure Natural Gas Pipeline (TAP) & Accompanying Installations – Greek Section"
GR0654	During the process of concluding agreements between the project operation agency and third parties, and the latter between themselves, provision must be made for requirements of compliance with the obligation to abide by the environmental terms of Approval of environmental terms for construction and operation of the project: "Trans Adriatic High-Pressure Natural Gas Pipeline (TAP) & Accompanying Installations – Greek Section". [operation phase]	The environmental terms of Approval of environmental terms for construction and operation of the project: "Trans Adriatic High-Pressure Natural Gas Pipeline (TAP) & Accompanying Installations – Greek Section"

Commitment no.	Commitment text	Legislation/standard(s) referenced
GR0655	The project implementation agency shall appoint an officer or operational team to be responsible for monitoring compliance with the environmental terms of Approval of environmental terms for construction and operation of the project: "Trans Adriatic High-Pressure Natural Gas Pipeline (TAP) & Accompanying Installations – Greek Section" and for submitting the required environmental monitoring reports [construction phase]	The environmental terms of Approval of environmental terms for construction and operation of the project: "Trans Adriatic High-Pressure Natural Gas Pipeline (TAP) & Accompanying Installations – Greek Section"
GR0656	The project operation agency shall appoint an officer or operational team to be responsible for monitoring compliance with the environmental terms of Approval of environmental terms for construction and operation of the project: "Trans Adriatic High-Pressure Natural Gas Pipeline (TAP) & Accompanying Installations – Greek Section" and for submitting the required environmental monitoring reports [operation phase]	The environmental terms of Approval of environmental terms for construction and operation of the project: "Trans Adriatic High-Pressure Natural Gas Pipeline (TAP) & Accompanying Installations – Greek Section"
GR0657	In securing financial resources for construction of the project, priority must be given to resources earmarked for environmental protection and rehabilitation work needed to ensure full compliance with the terms and restrictions of Approval of environmental terms for construction and operation of the project: "Trans Adriatic High-Pressure Natural Gas Pipeline (TAP) & Accompanying Installations – Greek Section". [construction phase]	The environmental terms of Approval of environmental terms for construction and operation of the project: "Trans Adriatic High-Pressure Natural Gas Pipeline (TAP) & Accompanying Installations – Greek Section"
GR0658	In securing financial resources for operation of the project, priority must be given to resources earmarked for environmental protection and rehabilitation work needed to ensure full compliance with the terms and restrictions of Approval of environmental terms for construction and operation of the project: "Trans Adriatic High-Pressure Natural Gas Pipeline (TAP) & Accompanying Installations – Greek Section". [operation phase]	The environmental terms of Approval of environmental terms for construction and operation of the project: "Trans Adriatic High-Pressure Natural Gas Pipeline (TAP) & Accompanying Installations – Greek Section"
GR0659	Individual items of work and activities involving construction work or operational activities, apart from those described in the EIA and therefore included in the scope of Approval of environmental terms for construction and operation of the project: "Trans Adriatic High-Pressure Natural Gas Pipeline (TAP) & Accompanying Installations – Greek Section", are to secure environmental licensing in line with the provisions of Articles 6 & 7 of Law 4014/2011.	Law 4014/2011 (Articles 6 & 7) The environmental terms of Approval of environmental terms for construction and operation of the project: "Trans Adriatic High-Pressure Natural Gas Pipeline (TAP) & Accompanying Installations – Greek Section"
GR0660	In the case of installations for which the general impact assessment is included in the EIA and where Approval of environmental terms for construction and operation of the project: "Trans Adriatic High-Pressure Natural Gas Pipeline (TAP) & Accompanying Installations – Greek Section" lays down general or specific terms and restrictions for installations and works of the type in question, the project implementation agency may submit a Technical Environmental Assessment, which is to be evaluated and approved by the environmental authority competent for the project, on the basis of its classification under Ministerial Decision 1958/2012 (Gov. Gaz. B' 21)	Ministerial Decree 1958/2012 (Gov. Gaz. B' 21) The environmental terms of Approval of environmental terms for construction and operation of the project: "Trans Adriatic High-Pressure Natural Gas Pipeline (TAP) & Accompanying Installations – Greek Section"
GR0663	Materials to be used in the project, such as aggregate or soil, concrete and asphalt, must be supplied from existing units operating lawfully and complying with the requirements of environmental regulations.	Environmental regulations (unspecified)
GR0670	The waste management plan will be drawn up at the responsibility of the project implementation agency, either independently or in association with the third parties. Amendments or updates of the plan will be prepared in the same way, ensuring always that the requirements set out in the Approval of environmental terms for construction and operation of the project: "Trans Adriatic High-Pressure Natural Gas Pipeline (TAP) & Accompanying Installations – Greek Section" are fully met	The environmental terms of Approval of environmental terms for construction and operation of the project: "Trans Adriatic High-Pressure Natural Gas Pipeline (TAP) & Accompanying Installations – Greek Section"
GR0691	By reason of the project's large scale and in order to avoid delays a line of credit must be provided for by the implementation agency to carry out archaeological excavation and other work, including, pursuant to current legislation (Article 36 of Law 3028/2002, Article 25 of Law 3614/2007, as currently in force) monitoring of all excavation work carried out in the course of the project.	Law 3028/2002 (Article 36) Law 3614/2007 (Article 25)
GR0692	Pursuant to Law 4217/2013, before this work can be carried out a Memorandum of Cooperation will be signed by the project implementation agency and the relevant, jointly competent Ephorates of Antiquities.	Law 4217/2013
GR0712	intervention in forests and forest land: Before commencement of work on implementing the project, the conditions of Ministerial Decision 15277 (Gov. Gaz. B' 1077) must be satisfied, relating to the characterization of the intervention area (in accordance with Article 14 of Law 998/79) and its ownership status	Ministerial Decree 15277 (Gov. Gaz. B' 1077) Law 998/79 (Article 14)

Commitment no.	Commitment text	Legislation/standard(s) referenced
GR0719	Before project construction begins in forests and forest land, a specialist preliminary study, as provided for in Ministerial Decision 15277/2012 (Gov. Gaz. B' 1077), on restoration of forest vegetation and improvement of the appearance of the landscape following construction of the project will be submitted for approval to the competent Forest Authority.	Ministerial Decision 15277/2012 (Gov. Gaz. B' 1077)
GR0728	Monitoring and implementation of the terms of the Approval of environmental terms for construction and operation of the project: "Trans Adriatic High-Pressure Natural Gas Pipeline (TAP) & Accompanying Installations – Greek Section" to be issued, in respect of implementation of the provisions of forestry legislation, shall be assigned to the local Forestry Service	The environmental terms of Approval of environmental terms for construction and operation of the project: "Trans Adriatic High-Pressure Natural Gas Pipeline (TAP) & Accompanying Installations – Greek Section"
GR0740	Before the expiry of this ten-year period (The environmental terms shall remain in force for ten years from the date on which the decision is issued), the project implementation agency must initiate the process of renewal of the environmental terms, pursuant to the provisions of Article 5 of Law 4014/2011. In accordance with the same Article, if the renewal file is submitted in good time (at least two months before the decision expires) the original environmental terms shall remain in force until the completion of the renewal process.	Law 4014/2011 (Article 5)
GR0741	In respect of the modernization, improvement, expansion or modification of the project, and implemented in accordance with the environmental terms, Article 6 of Law 4014/2011 must be complied with.	Law 4014/2011 (Article 6)
GR0742	Should regular or unscheduled environmental inspections uncover serious problems of environmental degradation, or should impacts on the environment be observed not envisaged in the EIA or Approval of environmental terms for construction and operation of the project: "Trans Adriatic High-Pressure Natural Gas Pipeline (TAP) & Accompanying Installations – Greek Section", then additional environmental terms shall be imposed or the terms of Approval of environmental terms for construction and operation of the project: "Trans Adriatic High-Pressure Natural Gas Pipeline (TAP) & Accompanying Installations – Greek Section" shall be amended, as provided for in para. 9 of Article 2 of Law 4014/2011, in combination with Article 6 of the same law.	Law 4014/2011 (Article 2 (para. 9) & Article 6) The environmental terms of Approval of environmental terms for construction and operation of the project: "Trans Adriatic High-Pressure Natural Gas Pipeline (TAP) & Accompanying Installations – Greek Section"
GR0743	Approval of environmental terms for construction and operation of the project: "Trans Adriatic High-Pressure Natural Gas Pipeline (TAP) & Accompanying Installations – Greek Section" does not dispense the project implementation agency from the obligation to secure any other licenses, approvals or regulatory instruments provided for in current legislation relating to the project.	Current legislation relating to the project (unspecified) The environmental terms of Approval of environmental terms for construction and operation of the project: "Trans Adriatic High-Pressure Natural Gas Pipeline (TAP) & Accompanying Installations – Greek Section"
GR0744	Approval of environmental terms for construction and operation of the project: "Trans Adriatic High-Pressure Natural Gas Pipeline (TAP) & Accompanying Installations – Greek Section", the approved EIA and supplementary volume accompanying it, as well as any subsequent renewal or amendment files, technical environmental studies and their related decisions, must be available on site during the implementation phase. This material must be available for presentation by the responsible agency to any inspecting authority competent under the relevant legislation.	The environmental terms of Approval of environmental terms for construction and operation of the project: "Trans Adriatic High-Pressure Natural Gas Pipeline (TAP) & Accompanying Installations – Greek Section"
GR0745	Approval of environmental terms for construction and operation of the project: "Trans Adriatic High-Pressure Natural Gas Pipeline (TAP) & Accompanying Installations – Greek Section", the approved EIA and supplementary volume accompanying it, as well as any subsequent renewal or amendment files, technical environmental studies and their related decisions, must be available at the headquarters of the operating agency thereafter. This material must be available for presentation by the responsible agency to any inspecting authority competent under the relevant legislation	Relevant legislation (unspecified) The environmental terms of Approval of environmental terms for construction and operation of the project: "Trans Adriatic High-Pressure Natural Gas Pipeline (TAP) & Accompanying Installations – Greek Section"

TAP AG Project Title / Facility Name:

Trans Adriatic Pipeline Project

Document Title:

Consolidated ESMS Project Standards

Appendix 2 - Legislation, Standards and Project Commitments

Albania

CAL00-PMT-601-Y-TTM-0001

Title	Date enacted	Last amended	Applicable to onshore	Applicable to offshore (including coastal)	Application	Comments	Reference
NOISE							
National Legislation							
Law No. 7643, On State Sanitary Inspectorate *(amended by Laws No. 9635 and 9863)*	1992	2006, 2008	✓	✓	Relates to occupational noise exposure	This law regarding the State Sanitary Inspectorate aims to protect workers from the impact of adverse working conditions, including unworkable noise, and controls the level of occupational diseases and accidents as a result of the mentioned adverse conditions.	ESIA Section 3 Legal Framework
Law No. 7961, Labour Code of the Republic of Albania *(amended by Laws No. 8085, 9125 and 10053)*	1995	1996, 2003, 2008	✓	✓	This Law relates to occupational health and regulated relations between employers and employees.	Safety and health protection are the responsibility of employers. These include requirements regarding: • the intensity of noise and vibrations bearable for the employee must be kept at a level that suits his/her health through the absorption or reduction of noises and vibrations at their source and isolation of environment by appropriate measures.	ESIA Section 3 Legal Framework
Law No. 9095, For the Assessment and Administration of Noise in the Environment	2003		✓	✓		No information available in ESIA	ESIA Appendix 2 Legal Framework
Law No. 9774, On the Evaluation and Management of Environmental Noise	2007		✓	✓		No information available in ESIA	ESIA Section 3 Legal Framework
Albanian Directive No. 8, Noise Limits in the Design Environment *(pursuant to Law No. 9774)*	2007		✓	✓	Provides guideline values for community noise	Defines day time and night time noise limits for residential areas (areas "outside the house"). The noise limits in this Directive correspond with the noise limits set out by the World Health Organisation (WHO). See Table 4.2 in Project Standards Document.	ESIA Assessment of Impacts & Mitigation Measures Sections 8.5.3.1 & 8.7.1
European Legislation							
Directive 2000/14/CE	2000		✓	✓		Provides maximum acceptable sound pressure levels from a range of equipment types. This directive applies to the manufacturers of plant and equipment.	ESIA Annex 8.1 Impact Assessment Data Section 8.2-2
Directive 2002/49/CE	2002		✓	✓		Defines a common approach to avoid, prevent or reduce harmful effects as a result of exposure to environmental noise, including monitoring, public consultation, action plans and long-term strategy. Relates to a strategic approach to noise and therefore is not directly applicable to the project.	Not referenced in ESIA
Directive 2003/10/EC	2003		✓	✓		On the minimum health requirements regarding the exposure of workers to the risks of physical agents (noise).	Not referenced in ESIA
Other international Guidelines and Standards							
IFC standards	2007		✓		Community noise levels	Defines day time and night time noise limits for residential areas. ICF noise limit applicable for construction phase during day time at sensitive receptors (all receptors monitored) is 70 dB(A). See Table 4.6 in Project Standards document.	ESIA Assessment of Impacts & Mitigation Measures Sections 8.5.3.1 & 8.7.1 Annex 8.1 Impact Assessment Data Table 8.2-7
WHO Night Noise Guidelines for Europe	2009		✓	✓	Night time noise	The guidelines set a target sound pressure level outside during night.	Not referenced in ESIA
WHO Guidelines for Community Noise	1999		✓	✓	Community noise levels	The guideline values represent the sound pressure levels that affect the most exposed receiver in the listed environment. See Table 4.7 of Project Standards document.	Annex 8.2 - CS02 Noise Study ESIA, Table 2
UK BS 4142:1997 Method for Rating Industrial Noise Affecting Mixed Residential and Industrial Areas	1997		✓	✓	Noise	Provides an assessment method which compares the rating noise level and existing background noise levels to produce an indication of the likelihood the assessed noise source would lead to complaints from residents.	Not referenced in ESIA
UK BS5228-1 Code of practice for noise and vibration control on construction and open sites – Part 1: Noise	2009		✓	✓	Construction noise	Provides recommendations for basic methods of noise control relating to construction and open sites where work activities/operations generate significant noise levels, including industry-specific guidance concerning methods of predicting and measuring noise and assessing its impact on those exposed to it. See Table 4.3 of Project Standards document.	Not referenced in ESIA
UK BS5228-1 Code of practice for noise and vibration control on construction and open sites – Part 2: Vibration	2009		✓	✓	Construction vibration	Provides recommendations for basic methods of vibration control relating to construction and open sites where work activities/operations generate significant noise levels, including industry-specific guidance concerning methods of predicting and measuring noise and assessing its impact on those exposed to it. See Table 4.4 of Project Standards document.	Not referenced in ESIA
Project commitments relating to Noise							
Marine ecology	2014			✓	Noise and vibration	Laying of the pipeline and seabed intervention affecting marine mammals and reptiles Marine mammals observation - as a protective measure, trained Marine Mammals Observers will be included during pipelaying and coastal works.	Commitment No. AL0018
Onshore & Coastal Acoustic Environment	2014		✓		Acoustic environment	On noise sources/equipment: • Switch off equipments when not in use • Promote the use of low nuisance vehicles/equipments.	Commitment No.AL0037

Title	Date enacted	Last amended	Applicable to onshore	Applicable to offshore (including coastal)	Application	Comments	Reference
Onshore & Coastal Acoustic Environment	2014		✓		Acoustic environment	Whenever feasible, schedule different noisy activities to occur concurrently, since the combined noise levels produced may not be significantly greater than the level produced if the operations were performed separately.	Commitment No.AL0038
Onshore & Coastal Acoustic Environment	2014		✓		Acoustic environment	Locate stationary equipment (e.g. compressors) as far as practicable from nearby receptors.	Commitment No.AL0039
Onshore & Coastal Acoustic Environment	2014		✓		Acoustic environment	In addition to the general mitigation measures applied for the TAP Project, the noise impact on receptors during the construction phase will be specifically reduced using the following measures: -If piling activities are needed during the construction of the compressor stations, the technology used will be vibropiling (if technically feasible).	Commitment No.AL0040
Coastal Acoustic Environment	2014			✓	Coastal noise	In addition to the general mitigation measures applied for the TAP Project, the noise impact on receptors during the construction phase will be specifically reduced using the following measures: - In application of the precautionary principle, a lower noise producing piling technology, such as vibropiling should be preferentially chosen, if technically feasible. If not, or if considered more appropriate, depending of the expected final noise output of the piling technique, consideration will be given to installation of appropriate noise screening between the cofferdam location and the Gjemia Lagoon.	Commitment No.AL0041
Onshore Acoustic Environment	2014		✓		Acoustic environment	The noise levels generated by the different Project phases have been compared with IFC standards. Project operation contribution always in compliance with IFC standards.	Commitment No.AL0057
Onshore Acoustic Environment	2013		✓		Acoustic environment - Blasting	Blasting activities during the construction phase will be brief in nature, they will take place only during the working time (daytime), not at night, and the potentially exposed population will be aware of the activities based on prior communication in the villages.	Commitment No.AL0058
Onshore Acoustic Environment	2013		✓		Acoustic environment - compressor stations	The planned one-time per year depressurisation of the stations will create a few days of elevated noise levels. This may be perceived as a nuisance by the population in the nearest settlements, but regular once a year venting is unavoidable. The local population will be pre-informed about relevant construction activities and the station venting events.	Commitment No.AL00059
Terrestrial Ecology	2014		✓		Onshore noise	Residual impact/risk: Species loss Mitigation measures: Implement Bear/Large Mammal Interaction Plan including..... noise abatement as part of overarching Project Health and Safety Management Plan for construction workers or Biodiversity Action Plan (along sections where large mammals species likely to be present).	Commitment No. AL0206
Onshore Acoustic Environment	2014		✓		Acoustic environment - terrestrial ecology	• Use screens around work area as buffer to visual/light/noise sources; • Night working should be limited, especially near wildlife habitats (i.e. forests, water bodies)	Commitment No. AL0222
Onshore Acoustic Environment	2014		✓		Acoustic environment - terrestrial ecology	All noise sources expected to comply with applicable noise limit values.	Commitment No. AL0240
Onshore Acoustic Environment	2014		✓		Community health, safety and security	TAP AG will undertake stakeholder engagement with affected communities and other stakeholders on a range of issues including noise. TAP AG will undertake stakeholder engagement around the long term impacts of the compressor station and ridge modifications.	Commitment No. AL0351
Onshore Acoustic Environment	2014		✓		Cultural heritage and archaeology	Project will be designed to mitigate negative aesthetic and auditory impacts of facilities. Aesthetic techniques to be considered will include noise-reducing barriers, low-profile constructions, proper sighting and location to maximize the use of topography and vegetation screening.	Commitment No. AL0451
Onshore Acoustic Environment	2014		✓		Cultural heritage and archaeology	Noise and vibration will be periodically monitored at cultural heritage sites that receive visitors within the area of influence.	Commitment No. AL0453
Onshore & Coastal Acoustic Environment	2014		✓	✓	Acoustic environment	In addition to the general mitigation measures applied for the TAP Project, the noise impact on receptors during the construction phase will be specifically reduced using the following measures: On noise sources/equipment: Promote the use of low nuisance vehicles /equipments.	Commitment No.AL0554
Onshore Acoustic Environment	2014		✓		Project specification (CS02)	Until further notice, the noise limits within this project will be set to LAeq ≤ 65 dB(A) at the station fence measured as hourly averaged noise level.	Annex 8.2 - CS02 Noise Study ESIA Section 1.3.4
AIR							
National Legislation							
Law No. 8897, On air Protection *(amended by Law No. 10266)*	2002	2010	✓	✓		No information available in ESIA	ESIA Section 3 Legal Framework

Title	Date enacted	Last amended	Applicable to onshore	Applicable to offshore (including coastal)	Application	Comments	Reference
Law No. 10063, On the Accession of the Republic of Albania to the Protocol on the Control of Emissions of Sulphur Oxide of Their Transboundary Flows, of 1979 Convention on Transboundary Air Pollution in Long Distance	2009		✓	✓	Sulphur dioxide emissions	Ratifies the Convention of the United Nations Economic Commission for Europe (UNECE) on Long Range Trans-boundary Air Pollution	ESIA Section 3 Legal Framework
Law No. 10062, On the Accession of the Republic of Albania to the Protocol on the Control of Emissions of Nitrogen Oxide of Their Transboundary Flows, of 1979 Convention on Transboundary Air Pollution in Long Distance	2009		✓	✓	Nitrogen oxide emissions	Ratifies the Convention of the United Nations Economic Commission for Europe (UNECE) on Long Range Trans-boundary Air Pollution	ESIA Section 3 Legal Framework
Law No. 10448 on Environmental Permitting	2011		✓		Emission limits for large combustion plants	Establishes emission limit values for SO_2 and NO_x for large combustion plants. See Section 5.2 of Project Standards document.	Not referenced in ESIA
Albanian Decision No. 803/2003	2003		✓	✓	Ambient air quality guidelines	Specifies ambient air quality guidelines for nitrogen dioxide, particulate matter (PM10 and PM2.5), sulphur dioxide and carbon monoxide. See Table 5.1 in Project Standards document.	ESIA Assessment of Impacts & Mitigation Measures, Table 8.6.2
Albanian Instruction Nr. 6527, On the Limits of the Emissions and Noise Level Due to the Transport Activities and their Control Ways	2004		✓	✓	Emissions - vehicles		Not referenced in ESIA
DCM No. 432, On Approval of the Emission Norms in the Republic of Albania	2002		✓	✓	Emissions		Not referenced in ESIA
DCM No. 248, On Approval of Temporary Norms on Air Emissions and their Implementation	2003		✓	✓	Emissions		Not referenced in ESIA
European Legislation							
Directive 2001/80/EC	2001		✓			On the limitation of emissions of certain pollutants to the air from large combustion plants.	Not referenced in ESIA
Directive 2008/1/EC	2008		✓	✓		Concerning integrated pollution prevention and control (the IPPC Directive).	Not referenced in ESIA
2008/50/EC	2008		✓	✓	Ambient air quality	Specifies ambient air quality limits for a range of parameters for the protection of human health and the environment. These limit values are set out in Table 5.2 of the Project Standards document.	ESIA Assessment of Impacts & Mitigation Measures Section 8.6 Annex 8.1 Impact Assessment Data
2010/75/EU	2010		✓		Industrial Emissions Directive	Incorporates seven existing directives into one, including the Large Combustion Plant directive, the Integrated Pollution Prevention and Control directive and the Waste Incineration directive. Annex V of the Directive sets emission limit values for combustion plant. See Table 5.3 of the Project Standards document.	Not referenced in ESIA
Other international Guidelines, Standards and Conventions							
EBDR PR 3: Pollution Prevention and Abatement	1991	2008	✓	✓	Greenhouse gas emissions	Includes a general requirement to promote the reduction of project-related greenhouse gas emissions in a manner appropriate to the nature and scale of project operations and impacts but does set emission standards.	ESIA Section 3 Legal Framework
World Health Organisation (WHO) air quality guidelines for particulate matter, ozone, nitrogen dioxide and sulphur dioxide. Global update 2005	2005		✓	✓	Ambient air quality	These guidelines are designed to offer guidance in reducing the health impacts of air pollution and are intended for use worldwide. See Table 5.4 of the Project Standards document.	Not referenced in ESIA
IFC General EHS Guidelines: Environmental Air Emissions and Ambient Air Quality	2007		✓		Air emissions	Specifies that projects with significant sources of air emissions should ensure that: • "emissions do not result in pollutant concentrations that reach or exceed relevant ambient quality guidelines and standards by applying national legislated standards, or in their absence, the current WHO Air Quality Guidelines or other internationally recognised sources; and • emissions do not contribute a significant portion to the attainment of relevant ambient air quality guidelines or standards. As a general rule, this Guideline suggests 25% of the applicable air quality standards to allow additional, future sustainable development in the same air shed". Also provides emissions guidelines for small combustion processes. See Table 5.5 in Project Standards document.	ESIA Assessment of Impacts & Mitigation Measures Sections 8.5 and 8.6 Annex 8.1 Impact Assessment Data
United Nations Economic Commission for Europe (UNECE) on Long Range Transboundary Air Pollution	1979		✓	✓	Transboundary air pollution		Not referenced in ESIA
MARPOL 73/78 Annex VI	1997	2008		✓	Air emissions from marine vessels	Sets a global sulphur limit for marine fuel of 3.5%. From the 1st January 2020 it is proposed that this will be progressively reduced to 0.5%, subject to a feasibility study. The Protocol prohibits deliberate emissions of ozone depleting substances, which include halons and chlorofluorocarbons (CFCs) and also sets limits on emissions of nitrogen oxides (NOx) from diesel engines.	ESIA Section 8 - Assessment of Impacts & Mitigation Measures

Title	Date enacted	Last amended	Applicable to onshore	Applicable to offshore (including coastal)	Application	Comments	Reference
MARPOL 73/78 Annex VI - Regulation 13	1997	2008		✓	Air emissions from marine vessels	The NOx control requirements of Annex VI apply to all marine diesel engines of over 130 kW output power, other than those used solely for emergency purposes. These requirements are set out in Table 5.6 of the Project Standards document.	ESIA Section 8 - Assessment of Impacts & Mitigation Measures
Project Commitments							
Offshore Climate and Air Quality	2014			✓	Emissions from marine vessels	Emission gases from marine vessels will be reduced where possible, by using state-of-the-art equipment.	Commitment No. AL0003
Onshore & coastal climate & air quality	2014		✓		Vehicle emissions	Maintenance of equipment and vehicles.	Commitment AL0030
Onshore & coastal climate & air quality	2014		✓		Vehicle emissions	A traffic management plan will be developed. Routing traffic away from sensitive areas and avoiding traffic passing through densely populated areas.	Commitment AL0031
Onshore & coastal climate & air quality	2014		✓		Air emissions	Monitoring of the main emission sources (generators and compressors) in accordance with the Environmental Monitoring Plan.	Commitment AL0032
Onshore & coastal climate & air quality	2014		✓		Dust emissions	The following good construction site management practices will be adopted: o Wet suppression (as needed, depending on soil type) in dry seasons at working strip and at unpaved roads located at <200 m from settlements o Limiting vehicle speed o Sheeting trucks	Commitment AL0033
Onshore climate and air quality	2014		✓		Dust emissions	The construction works will be carried out in strict compliance with construction procedures and schedule	Commitment No.AL0034
Onshore climate and air quality	2014		✓		Dust emissions	Prenotification to the local municipalities of critical dust producing activities	Commitment No.AL0035
Onshore - Traffic and Transport	2014		✓		Vehicle emissions	All Project vehicles will be regularly maintained and drivers will be trained in driving methods designed to avoid unnecessary emissions.....(e.g. switching engines off when waiting to enter site or stationary on site)	Commitment No.AL0030 and AL0036
Onshore Climate Impacts - Greenhouse Gas (GHG) Emissions	2014		✓	✓	GHG	In order to track GHG emissions, TAP AG will have to submit to the Ministry of Environment an annual Carbon Emission Report for CS02 and CS03 and make this report available to project lenders as required.	Commitment No.AL0063
Onshore Climate Impacts - Greenhouse Gas (GHG) Emissions	2014		✓		GHG Compressor Stations	TAP will undertake further investigations about the feasibility [of the installation of a combination of gas turbine and steam turbine driven turbo compressors to increase energy efficiency] for the 20 BCM stage.	Commitment No.AL0064
Terrestrial Ecology	2014		✓	✓	Dust emissions	Best construction site practices should be adopted to minimise the risks of adverse effects on neighbouring habitats/ species from construction activities (dust, noise, waste disposal etc). This will include appropriate toilet and litter collection facilities as inspected by the ECoW	Commitment No.AL0224
Onshore climate & air quality	2014		✓		Compressor Stations	CS02 (for the 20 bcm/yr case) and CS03 will fall under the EU IPPC Directive and LCP Directive because the installations will have total thermal inputs exceeding the 50 MW threshold. BREF technology has been applied to the CS design.	Commitment No.AL0060
Onshore climate & air quality	2014		✓		Compressor Stations	Location of compressor station is located away from sensitive receptors.	Commitment No.AL0061
Onshore climate & air quality	2014		✓		Compressor Stations	Periodical air quality monitoring in the area of the CS during a period of 1-2 years after start of operations to verify no affection	Commitment No.AL0062
Onshore climate & air quality	2014		✓		Dust emissions	All sites will be maintained in tidy condition. Construction areas will be watered to damp down dust and minimise visibility of same.	Commitment No. AL0140
Onshore climate & air quality	2014		✓		Air emissions - cultural heritage & archaeology	Some forms of pollution can be damaging to stone architecture. If structural assessment indicates a risk of impacts from pollution, a site will be covered or otherwise protected from potential impacts. If dust from earthworks is the issue, dust-minimizing strategies, such as water spraying, may be used around the at-risk site. In the case that a site of cultural value is damaged due to Project-related pollution, the site will be cleaned by professional conservators and protected from further damage	Commitment No. AL0448
SURFACE WATER							
National Legislation							
Law No. 8093, On Water Reserves *(amended by Laws No. 8375, 8605, 8736, 9837 and 10137)*	1996	1998, 2000, 2001, 2007, 2009 and 2011	✓	✓		No information available in ESIA	ESIA Section 3 Legal Framework
Law No. 8905, On Protection of Marine Environment from Pollution and Harm *(amended by Law No. 10137)*	2002	2009		✓	Marine pollution	Section 1c: *The following activities are forbidden in the sea environment:* *the discharge…..polluted waters.*	ESIA Section 3 Legal Framework

Title	Date enacted	Last amended	Applicable to onshore	Applicable to offshore (including coastal)	Application	Comments	Reference
Law No. 9115, On Environmental Treatment of Polluted Waters *(amended by Law No. 10448/11)*	2003	2011	✓	✓		No information available in ESIA	ESIA Section 3 Legal Framework
Law No. 9548, For the Accession of the Republic of Albania to the Protocol "On the Records of Discharge and Transfer of Contaminants"	2006		✓	✓		No information available in ESIA	ESIA Section 3 Legal Framework
Law No. 10448 On Environmental Permits	2011		✓	✓		No information available in ESIA	ESIA Section 3 Legal Framework
Decision No. 177 "On the norms allowed for liquid discharge and zoning criteria of aquatic environment"	2005		✓		Wastewater discharges	Regulates the pollution of receiving water environments from dangerous substances (List I and II of Annex No. 1) by establishing the limit levels for a list of substances (Annexes 2 and 3) and the criteria for identification of sensitive and less sensitive zones to which different provisions shall apply. See Table 6.1 of Project Standards document for guideline values for wastewater discharges.	ESIA Section 3 Legal Framework
European Legislation							
Directive 91/271/EEC - Urban Wastewater Treatment	1991		✓		Sanitary wastewater	Directive requires the collection and treatment of wastewater in all agglomerations of >2000 population equivalents (p.e.); secondary treatment of all discharges from agglomerations of >2000 p.e., and more advanced treatment for agglomerations >10 000 population equivalents in designated sensitive areas and their catchments. provides for mandatory minimum design rules for sewerage treatment plants. The minimum secondary treatment performance standards are: • Biological Oxygen Demand BOD – 25mg/l • Chemical oxygen demand – 125mg/l • Total suspended solids – 35mg/l	Not referenced in ESIA
EU Water Framework Directive (Directive 2000/60/EC)	2000		✓	✓	Surface water quality	The Directive implements a general requirement for ecological protection and a general minimum chemical standard to cover all surface waters. The overall aim is for surface water bodies to achieve 'good' chemical and ecological and status by 2015.	ESIA Assessment of Impacts & Mitigation Measures Table 8.12-5
Directive 2008/105/EC - Environmental Quality Standards	2008		✓	✓	Surface water quality	Annex I of the Directive establishes limits on concentrations in surface waters for 33 priority substances and 8 other pollutants.	Not referenced in ESIA
International Conventions							
International Convention for the Prevention of Pollution from Ships (MARPOL 73/78)	1973	1997		✓	Wastewater discharges from vessels	Annex IV regulates the discharge of sewage into the sea. Annex I (Regulations for the Prevention of Pollution by Oil) covers the prevention of oil pollution arising from routine operations as well as from accidental discharges. Oily water must be treated to a discharge standard of < 15 mg/l (ppm) oil in water.	ESIA Section 8 - Assessment of Impacts & Mitigation Measures
IFC Environmental, Health, and Safety Guidelines for Offshore Oil and Gas Development	2007			✓	Offshore wastewater disposal	Provides guidance on the management of hydrostatic test waters, bilge water and sewage.	ESIA Section 8 - Assessment of Impacts & Mitigation Measures
IFC Environmental, Health, and Safety Guidelines for Onshore Oil and Gas Development	2007		✓		Onshore wastewater disposal	Provides guidance on the management of hydrostatic test waters, sewage and stormwater. See Table 6.3 of the Project Standards document for guidelines on hydrostatic test water discharges.	ESIA Section 8 - Assessment of Impacts & Mitigation Measures
IFC Environmental, Health, and Safety Guidelines for Wastewater and Ambient Water Quality	2007		✓		Wastewater discharges	Specifies compliance with national or local standards for sanitary wastewater discharge or, in their absence, the following indicative guideline values applicable to sanitary wastewater discharge. See Table 6.2 of Project Standards document.	ESIA Section 8 - Assessment of Impacts & Mitigation Measures
Other commitments in the ESIA							
Oceanography and Seawater Quality	2014			✓	Sedimentation	Silt screens to be used during the dredging and backfilling of the flotation channel to limit the spread of suspended sediment.	Commitment AL0001

Title	Date enacted	Last amended	Applicable to onshore	Applicable to offshore (including coastal)	Application	Comments	Reference
Oceanography and Water Quality	2014			✓	Vessel discharges	Black and grey water produced on the vessels will be collected and transported to the support port and then sent to disposal. However, during construction, occasional and limited discharges (related to disposal of effluent) from support and installation vessels/barges to the marine environment may locally affect water quality: • Treated sewage, grey water and kitchen waste; and • Open drainage systems and bilge water potentially containing traces of hydrocarbons. In this case, water discharge will be conducted according to MARPOL requirements, as detailed below. Sewage, Grey Water and Kitchen Waste All discharges will be carried out in accordance with MARPOL requirements and provisions specified in its Annex IV – Sewage – and Annex V – Garbage. Drainage and Bilge Water The drainage systems will collect water generated from washing and the storage areas. These with bilge water will enter a drainage system where the effluent will be treated to be discharged with less than 15 ppm oil in water, (in accordance with MARPOL Annex I).	Commitment No. AL002
Onshore Surface Water Quality	2014		✓		Sedimentation	Intervention works are to be mitigated through the use of appropriate silt screening	Commitment No. AL006
Offshore Biological Environment - Phytoplankton	2014			✓	Ballast water	To prevent the transport of nonindigenous species via ballast waters TAP have planned to adhere to the following mitigation measures: • adhere to the Mediterranean region voluntary ballast water management regulations 2012 • avoid the discharge of any water into the Mediterranean Sea picked up outside of the Mediterranean Sea • discharge ballast waters of Mediterranean seawater only in to the Mediterranean Sea • Compliance with MARPOL protocols. The above mitigation measures also apply to the residual impact/risk of potential introduction of alien and invasive species.	Commitment No. AL0012 and AL0013
Onshore and coastal surface water quality	2014		✓		Waste management	General Mitigation Measures to avoid accidental contamination of soil and water resources: A Waste Management Plan will be developed as part of the ESMP in order to minimize waste impact into the environment. The Waste Management Plan developed in compliance with international standards and Albanian legislation will be periodically monitored to ensure compliance with TAP AG's policies and procedures in this regard.	Commitment No. AL0043 and AL0044
Freshwater ecology	2014		✓		General mitigation	General mitigation measures will include: • Operating under a Watercourse Crossing Plan (see Section 9.2.5). • Operating under an Erosion and Sediment Control Plan (see Section 9.2.20).	Commitment No. AL0067
Onshore Surface Water	2014		✓		Watercourse Crossings	If the HDD crossing technique is found to be technically feasible at any of the Kp previously indicated, the following measures will be required: o Drilling mud, such as bentonite clay, will be an inert and non-toxic substance. o Muds will be properly managed to avoid discharges to the watercourse. o HDD cooling water will be discharged free of any chemicals and with a similar temperature to the water in the watercourse.	Commitment No. AL0068

Title	Date enacted	Last amended	Applicable to onshore	Applicable to offshore (including coastal)	Application	Comments	Reference
Onshore Surface Water	2014		✓		Watercourse Crossings	Crossing of the majority of watercourses will be undertaken by open-cut techniques, for which the following measures will be undertaken: o Flume pipes (as appropriate) to allow continual flow. o Using closed buckets for backhoe dredgers and silt screens. o Materials will be carefully removed so that they may be reinstated at the same location. If additional reinstatement materials are required, this will be locally sourced. o Silt screens must be constructed such that any run off water is retained, settled and filtered. Silt fencing shall be installed on both banks of the watercourse. Silt fencing on the banks around the crossing areas shall be left in place until bank vegetation is established, and effectiveness will be monitored periodically or after heavy rain periods. o All erosion and sediment control structures are to be regularly inspected and maintained.	Commitment No. AL0069
Onshore Surface Water	2014		✓		Sedimentation	Vehicles will be prohibited from driving through watercourses and movement of vehicles within the pipeline lane will be limited to 20 km/h.	Commitment No. AL0070
Onshore Surface Water	2014		✓		Sedimentation	Measures will be employed to intercept run-off from the working corridor, by using sandbags and settlement tanks or lagoons, to reduce the suspended sediment load of the water prior to its discharge into watercourses. Alternatively, the water may be filtered through a suitable membrane such as a geotextile material to clean the water prior to discharge. In order to trap any sediment that is released into the watercourse, filters such as straw bales or 'sedimats'will be positioned downstream to act as a filter.	Commitment No. AL0080
Onshore Surface Water	2014		✓		Sedimentation	Interception of run-off from the working corridor. No surface water is to run-off into the water resources.	Commitment No. AL0081
Onshore Surface Water	2014		✓		Sedimentation	Discharged waters from dewatering activities, if returned to streams or rivers, will be discharged in a way that will minimise physical impacts to channel morphology, i.e. without causing turbulence.	Commitment No. AL0084
Onshore Surface Water	2014		✓		Water discharges	Discharges of water will not be made without prior agreement and appropriate consents and approvals from the authorities.	Commitment No. AL0085
Onshore Surface Water	2014		✓		Water Consumption	General mitigation measures will include: • Minimize water consumption as much as possible, by training the workers in personal minimization and recycling practices (such as not allowing water to flow whilst not in use, not throwing water away but where possible storing it for re-use, etc.) • Minimize water consumption related to construction activities • A Water Management Plan (see Section 9.2.4) will be developed in order to detail measures to be applied that minimize the consumption of water along the construction and precommissioning phase • Water spillages through valves, joints or pipes will be prevented as much as possible • Periodic checks will be undertaken and an immediate response provided if spills or leaks are detected.	Commitment Nos AL0092-AL0095
Onshore Surface Water	2014		✓		Onshore Hydrotesting	The discharge of hydrotest waters will be designed (in consultation with local authorities) to ensure that water catchment balances are maintained (i.e. water is discharged into the same system it is abstracted from) and mechanical damage to the receiving water body does not occur. No additives will be used for the hydrotest water and discharges will not be made without prior agreement and appropriate consents and approvals from the authorities. A separate Hydrotest Water Sourcing and Disposal Plan will be produced to ensure appropriate measures are taken at all times.	Commitment No.s AL0099-AL0102
Seawater Quality & Marine Ecology	2014			✓	Offshore Hydrotesting	Seawater intake will take place at the Italian landfall, and thereafter the seawater will be filtered; no treatment chemicals of any nature will be added.	Commitment No.AL103
Seawater Quality & Marine Ecology	2014			✓	Offshore Hydrotesting	Sea water for hydrotesting Inhibitors will be added only in the remote possibility the pipeline should be exposed to raw seawater for more than 60 days (see Section 8.21.1.1.1 Contingency Addition of Chemicals to test water)	Commitment No.AL0104

Title	Date enacted	Last amended	Applicable to onshore	Applicable to offshore (including coastal)	Application	Comments	Reference
Freshwater Quality & Ecology	2014		✓		Accidental Pollution	Specific mitigation measures at construction camps will include: • All areas for which there is a risk of leaks or spills during plant and vehicle storage, maintenance or refuelling, and areas where materials with polluting potential will be stored will be placed on an impermeable surface and bunded. Bunded areas will have a minimum capacity of 110% of the storage tank. • At fixed construction installations, surfaces at storage or handling sites for water endangering substances will be temporary sealed to protect groundwater from pollution by accidental spills. • In any areas with vulnerable groundwater resources hard core will be upgraded to hardstanding for use at temporary facilities to prevent contamination of groundwater.	Commitment No.AL0105-AL0107
Freshwater Quality & Ecology	2014		✓		Accidental Pollution	General mitigation measures: • Implementation of the ESMP and topical sub-plans according to international best practice • Development of a Waste Management Plan to avoid solid or liquid waste discharges to water bodies • Development of a Hazardous Materials Management Procedure in order to detail procedures for working with chemical products. • Develop a Pollution Prevention Plan to avoid and react on any pollution of water bodies that may accidently occur	Commitment No.AL0108
Freshwater Quality & Ecology	2014		✓		Accidental Pollution	Implementation of Pollution Prevention Plan and a Erosion and Sediments Management Plan (see Sections 9.2.8 and 9.2.20) as to be included within the ESMP , including removal of contaminated sediments, control of river flow, use of booms	Commitment No. AL0264
Freshwater Quality & Ecology	2014		✓		Freshwater Quality & Ecology	Restoration of habitat following works to acceptable levels in terms of contamination in the water column	Commitment No. AL0265
Freshwater Quality & Ecology			✓		Accidental Pollution	Implementation of emergency spill response plan.	Commitment No. AL0266
Freshwater Quality & Ecology	2014		✓		Freshwater Quality & Ecology	Develop a Watercourse Crossing Plan for each river crossing.	Commitment No. AL0503
Offshore Water Quality	2014			✓	Accidental Pollution	The operation must be managed through detailed vessel specific procedures for bunkering at sea which are designed to minimise the risk of a spillage of fuel during bunkering from other vessels.	Commitment No. AL0512
Offshore Water Quality	2014			✓	Accidental Pollution	All vessels will have to have the necessary SOPEP (vessels specific Oil Spill Contingency Plan (OSCP), according to MARPOL. A project specific Oils Spill Contingency Plan (OSCP), including An Emergency Response Plan (ERP) will also be developed	Commitment No. AL0513
Offshore Water Quality	2014			✓	Accidental Pollution	Refuelling to take place preferentially in port, if not in a location within the survey area away from the coastline	Commitment No. AL0514
Onshore & Offshore Water Quality	2014		✓	✓	Accidental Pollution	General Mitigation Measures to avoid accidental contamination of soil and water resources: • A Chemical Management Plan will be developed as part of the ESMP in order to detail procedures for working with chemical products	Commitment No. AL0549
Onshore & Offshore Water Quality	2014		✓	✓	Accidental Pollution	General Mitigation Measures to avoid accidental contamination of soil and water resources: • A Spill Response Plan will detail actions to clean up any accidental spills or pollution	Commitment No. AL0550
SOIL AND GROUNDWATER							
National Legislation							
No Albanian legislation relating to soil or groundwater quality has been identified.							
European Legislation							
EU Water Framework Directive (Directive 2000/60/EC)	2000		✓	✓		Directive sets objectives for groundwater quality, including an objective to meet "good chemical status" by 2015	ESIA Section 8 - Assessment of Impacts & Mitigation Measures
Directive 2006/118/EC - The Groundwater Directive	2006		✓	✓		Requires member states to establish measures to prevent or limit inputs of pollutants into groundwater so that WFD environmental objectives can be achieved by 2015. Also requires compliance with 'good' chemical status criteria (based on EU standards of nitrates and pesticides and on threshold values established by Member States).	
International Guidelines and Standards							
WHO Guidelines for Drinking Water Quality, Fourth edition	2011		✓			The WHO has established guideline values for chemicals that are of health significance in drinking-water, whether this be sourced from groundwater or surface water resources. These standards are of relevance where groundwater is abstracted for drinking water supply.	

Title	Date enacted	Last amended	Applicable to onshore	Applicable to offshore (including coastal)	Application	Comments	Reference
IFC Environmental, Health, and Safety (EHS) Guidelines for Contaminated Land	2007		✓			There is a requirement for IFC Projects to manage contaminated land to avoid risk to human health and ecological receptors. The preferred strategy for land decontamination is to reduce the level of contamination at the Project site, while preventing human exposure to contamination.	
UK Contaminated Land Guidance	Various		✓			Key technical guidance documents include; Model Procedures for the Management of Land Contamination, CLR 11, 2004. This guidance document issued by the UK government and the Environment Agency provides a technical framework for applying a risk management process to land affected by contamination; and Remedial Targets Methodology: Hydrogeological Risk Assessment for Land Contamination, Environment Agency, 2006. This document presents a recommended methodology for deriving site-specific remedial objectives for contaminated soils and/or groundwater to protect the aquatic environment. Methodology applies to soils and groundwater that are already contaminated, where the original surface source of the contamination has ceased.	
Other commitments in the ESIA							
Geology, Geomorphology, Soils and Sediments	2014		✓		Minimise risk of soil and groundwater contamination	General mitigation measures: • Operate under international standards	Commitment No.AL0042
Geology, Geomorphology, Soils and Sediments	2014		✓		Accidental contamination of soil by solid and liquid wastes	General Mitigation Measures to avoid accidental contamination of soil and water resources: • A Waste Management Plan will be developed as part of the ESMP in order to minimize waste impact into the environment. The Waste Management Plan developed in compliance with international standards and Albanian legislation will be periodically monitored to ensure compliance with TAP AG's policies and procedures in this regard.	Commitment No.AL0043
Freshwater Ecology	2014		✓		Dewatering of groundwater	Careful management and control of the groundwater table via monitoring holes will be implemented in cases where dewatering is necessary to ensure the required water reduction level is achieved. The discharge of the water will be undertaken in full cognisance of permits and notifications by water authorities/land owners.	Commitment No.AL0083
Freshwater Ecology	2014		✓		Dewatering of groundwater	A Water Management Plan (see Section 9.2.4) will be developed in order to detail measures to be applied that minimize the consumption of water along the construction and precommissioning phase; this will include the management of groundwater pumping needs.	Commitment No.AL0094
Freshwater Ecology	2014		✓		Soil & Water Quality - Accidental Pollution	Specific mitigation measures at construction camps will include: • All areas for which there is a risk of leaks or spills during plant and vehicle storage, maintenance or refuelling, and areas where materials with polluting potential will be storedwill be placed on an impermeable surface and bunded. Bunded areas will have a minimum capacity of 110% of the storage tank. • At fixed construction installations, surfaces at storage or handling sites for water endangering substances will be temporary sealed to protect groundwater from pollution by accidental spills. • In any areas with vulnerable groundwater resources hard core will be upgraded to hardstanding for use at temporary facilities to prevent contamination of groundwater.	Commitment No.AL0105-AL0107
Freshwater Ecology	2014		✓		Soil & Water Quality - Accidental Pollution	General mitigation measures: • Implementation of the ESMP and topical sub-plans according to international best practice • Development of a Waste Management Plan to avoid solid or liquid waste discharges to water bodies • Development of a Hazardous Materials Management Procedure in order to detail procedures for working with chemical products. • Develop a Pollution Prevention Plan to avoid and react on any pollution of water bodies that may accidently occur.	Commitment No.AL0108
Freshwater Ecology	2014		✓		Contaminated lands	Special measures will be required where the pipeline crosses potentially contaminated lands (hydrocarbon contamination from previous crude oil production Marinez oil fields around Kp 184.4-186.4). Any contaminated soil will need to be properly disposed as hazardous waste and pumped groundwater; if contaminated, will need to be treated by mobile treatment units before discharge. For this section a Contaminated Lands Crossing Plan will be set-up by TAP AG during the pre-construction planning phase.	Commitment No.AL0115

Title	Date enacted	Last amended	Applicable to onshore	Applicable to offshore (including coastal)	Application	Comments	Reference
Geology, Geomorphology, Soils and Sediments	2014		✓		Contaminated lands	Specific mitigation measures to be applied in areas in which contaminated soils have been detected (Kp 184.4-186.4) are included below: • Further research to determine best options, including stakeholders engagement with authorities, O&G companies in the area, etc, may be considered.	Commitment No.AL0133
Freshwater Ecology	2014		✓		Sediment contamination	Detailed examination of contaminant levels within sediments for all crossing points	Commitment No.AL0263
Freshwater Ecology	2014		✓		Sediment contamination	Assumed use of Wet Open-cut technique employed • Mitigation as presented above for wet open-cut techniques will be employed • Mitigation also as presented for crossings in the Fier district regarding contamination and timings of works(to avoid Eel migration in Autumn and Spring) will also be specifically employed • Sediment removal will be advisable to reduce potential contamination	Commitment No.AL0269
Water Resources	2014		✓	✓	Soil & Water Quality - Accidental Pollution	General Mitigation Measures to avoid accidental contamination of soil and water resources: • A Chemical Management Plan will be developed as part of the ESMP in order to detail procedures for working with chemical products	Commitment No.AL0549
Water Resources	2014		✓	✓	Soil & Water Quality - Accidental Pollution	General Mitigation Measures to avoid accidental contamination of soil and water resources: • A Spill Response Plan will detail actions to clean up any accidental spills or pollution	Commitment No.AL0550 and AL0552
Geology, Geomorphology, Soils and Sediments	2014		✓	✓	Soil & Water Quality - Accidental Pollution	General Mitigation Measures to avoid accidental contamination of soil and water resources: • A Chemical Management Plan will be developed as part of the ESMP in order to detail procedures for working with chemical products	Commitment No.AL0551

Title	Date enacted	Last amended	Ratification date (Conventions)	Type	Applicable to onshore	Applicable to offshore (including coastal)	Summary notes	Section(s) of particular relevance	Section of ESIA taken from
National Legislation									
Constitution of the Republic of Albania	1998	2007		Constitution	✓	✓		Requirement of institutions to maintain *"a healthy and ecologically adequate environment for the present and future generations"*. Regarding labour and H&S, Article 49 states: *Everyone has the right to earn the means of living by lawful work that has chosen or accepted him. he is free to choose his profession, workplace and system of professional qualification. Employees have the right to social protection of labour).*	Section 3 Legal Framework
Law No. 7643, On State Sanitary Inspectorate *(amended by Laws No. 9635 and 9863)*	1992	2006, 2008		Labour	✓	✓	This law regarding the State Sanitary Inspectorate aims to protect workers from the impact of adverse working conditions, such as exposure to toxic substances, radiation, unworkable noise, vibrations, unfavourable microclimate, and controls the level of occupational diseases and accidents as a result of the mentioned adverse conditions.		Section 3 Legal Framework
Law No. 7703, On Social Insurance in the Republic of Albania *(amended by Laws No. 9600, 9708, 9768, 10070 and 10447 "On environmental Permits (not yet in force)"*	2006, 2007, 2007, 2009, 2011			Social	✓	✓			Section 3 Legal Framework
Law No. 7875, On the Protection of Wild Fauna and Hunting *(amended by Law No. 9219)*	1994	2004		Ecology	✓	✓			Annex 2 Legal Framework
Law No. 7961, Labour Code of the Republic of Albania *(amended by Laws No. 8085, 9125 and 10053)*	1995	1996, 2003, 2008		Labour	✓	✓	This Law regulated relations between employers and employees. It provides for basic rights regarding the prohibition of compulsory labour, prohibition of discrimination, the freedom to join a trade union and collective bargaining. It provides rules for the employee's obligations and responsibilities, as well as the prohibition of competition after the termination of labour relationship. The employer's general obligations are specified in accordance with article 32-38 of this law. Safety and health protection are the responsibility of employers. These include requirements regarding: • accidents and occupational disease • hygiene and availability of a first aid kit • obtainment of required permits • informing employees of the hazards connected with work and H&S and hygiene training • avoiding temperatures harmful to the employee's health • the intensity of noise and vibrations • maintenance of machinery, vehicles and equipment • manual or mechanical means to lighten the weight carried by employees • accessible shelter. The Labour Code also stipulates the duration of work and breaks, including daily and night work and extra payment; the weekly working time and holidays, the maximum duration of extra hours and compensation. It provides for special protection for juveniles and women, provisions on payment and minimum wage and rules for the termination of the work relationship. Also, general consideration is provided on the protection of the right to work and to strike.		Section 3 Legal Framework
Law No. 7995, On Employment Promotion *(amended by Laws No. 8444, 8862 and 9570)*	1995	1999, 2002, 2006		Labour/ Human Rights	✓	✓	This law sets a number of obligations, incentives, and fines with the objective of promoting the employment of disabled persons. Obligations are also established for employers to provide periodic reports on their performance, and regular inspections by the State Labour Inspectorate are defined.		Section 3 Legal Framework

Title	Date enacted	Last amended	Ratification date (Conventions)	Type	Applicable to onshore	Applicable to offshore (including coastal)	Summary notes	Section(s) of particular relevance	Section of ESIA taken from
Law No. 8185, On the Accession of the Republic of Albania to the Conventions of International Labour Organization No. 81 "For the Inspection Work, In Industry and Commerce", No. 135 "For the Representatives of Employees" and No. 142 "For Rural Workers' Organizations"	1997	1		Human rights/ labour	✓	✓			Section 3 Legal Framework
Law No. 8450, On the Development, Transportation and Trade of Oil, Gas and their By-Products *(amended by Laws No. 9218, 9674, 9595 and 10137)*	1999	2004, 2006, 2006, 2009		Natural gas	✓	✓	This law sets the regulatory framework in relation to transportation pipelines and associated infrastructure.		Section 3 Legal Framework
Law No. 8672, On Ratification of Aarhus Convention "On the Public Right for Environmental Information, its Participation in Decision Making and to Address the Court on Environmental Issues"	2000			Stakeholder engagement	✓	✓			Section 3 Legal Framework
Law No. 8734, For the Guarantee of the Safety of Electrical Equipment and Installations *(amended by Laws No. 8962 and 9595)*	2001	2002, 2006		H&S	✓	✓			Section 3 Legal Framework
Law No. 8739, For the Guarantee of the Safety of Equipment Under Pressure *(amended by Laws No. 8970 and 9595)*	2001	2002, 2006		H&S	✓	✓			Section 3 Legal Framework
Law No. 8752, On the Establishment and Functioning of the Structures for Land Administration and Protection *(amended by Law No. 10257)*	2001	2010		Land	✓	✓			Section 3 Legal Framework
Law No. 8756, On Civil Emergencies *(amended by Law No. 10173)*	2001	2009		Emergencies	✓	✓			Section 3 Legal Framework
Law No. 8905, On Protection of Marine Environment from Pollution and Harm *(amended by Law No. 10137)*	2002	2009		Pollution		✓			Section 3 Legal Framework
Law No. 8906, On Protected Areas *(amended by Law No. 9868)*	2002	2008		Protected areas	✓	✓			Section 3 Legal Framework
Law No. 8921, for the Ratification of Convention 174 of the International Labour Organization "On the Prevention of Serious Accident in Industry, 1993"	2002			Human rights/ labour	✓	✓			Section 3 Legal Framework
Law No. 8934, For the Protection of the Environment *(repealed by Law No. 10431)*	2002			Environment	✓	✓	Defines "activities affecting the environment" as any economic and social activity that uses the environment or part of it, of that discharges materials and energy by changing its characteristics.		Section 3 Legal Framework
Law No. 8990, For the Evaluation of Environmental Impact *(amended by Law No. 10050)*	2003	2008		ESIA			Specifies the necessity for the ESIA to consider "the possible influence of variations in environment and health, the risks of accidents with significant impact on the environment and health and the respective measures to prevent them". Regulated the ESIA approval process.		Section 3 Legal Framework
Law No. 9010, For Environmental Administration of Solid Wastes *(amended by Law No. 10137)*	2003	2009		Waste	✓	✓			Section 3 Legal Framework
Law No. 9048, On Cultural Heritage *(amended by Laws No. 9592, 9882 and 10137)*	2003	2006, 2008, 2009		Cultural heritage	✓	✓			Section 3 Legal Framework
Law No. 9055, On the Accession of the Republic of Albania to the United Nations Convention on the Law of the Sea (UNCLOS)	2003			Marine		✓			Section 3 Legal Framework
Law No. 9136, On Collection and Compulsory Social Insurance and Health Insurance Contributions in the Republic of Albania *(amended by Law No. 9457)*	2003	2005		Social	✓	✓	This law regulates the collection of compulsory social and health insurance contributions.		Section 3 Legal Framework

Title	Date enacted	Last amended	Ratification date (Conventions)	Type	Applicable to onshore	Applicable to offshore (including coastal)	Summary notes	Section(s) of particular relevance	Section of ESIA taken from
Law No. 9148, For the Ratification of the Protocol of the Year 2002 to Convention No. 155 of the International Labour Organization "For Safety, Health and Working Environment, 1981"	2003			Human rights/ labour	✓	✓			Section 3 Legal Framework
Law No. 9198, On Equal Gender Society *(amended by Laws No. 9534 and 9970)*	2004	2006, 2008		Social	✓	✓	The purpose of this law is to: • ensure equal rights to women and men • set out measures aimed at eliminating direct and indirect discrimination on the grounds of gender in public life • set out the relevant responsibilities of central and local administration		Section 3 Legal Framework
Law No. 9219, On Some Additions and Amendments to Law No. 7875, Dated 23.11.1994	2004			Ecology	✓	✓			Annex 2 Legal Framework
Law No. 9244, On Protection of Agricultural Land	2004			Land	✓	✓			Section 3 Legal Framework
Law No. 9251, Marine Code of the Republic of Albania	2004			Marine		✓			Section 3 Legal Framework
Law No. 9379, On Energy Efficiency	2005			Energy	✓	✓	This Law sets out plans to improve energy efficiency by significantly reducing transmission and system losses, enhanced enforcement of the energy provisions of the Building Code, greater use of solar hot water, improved insulation, use of decentralised heating and hot water systems, increased efficiency of boilers and use of new boilers, use of incandescent lighting and promotion of public transport and use of rail for freight are priorities for action		Section 3 Legal Framework
Law No. 9385, On Forests and Forest Service *(amended by Laws No. 9533, 9791, 9989 and 10137)*	2005	2006, 2007, 2008 and 2009		Forests	✓				Section 3 Legal Framework
Law No. 9478, On the Accession of the Republic of Albania to Decisions II/14 and III/7, Amendments of Espoo for Environmental Impact Assessment in the Transboundary Context	2006			Transboundary impacts	✓	✓			Section 3 Legal Framework
Law No. 9537, On the Management of Hazardous Waste *(amended by Laws No. 9890 and 10137)*	2006	2008, 2009		Waste	✓	✓			Section 3 Legal Framework
Law No. 9548, For the Accession of the Republic of Albania to the Protocol "On the Records of Discharge and Transfer of Contaminants"	2006			Waste	✓	✓			Section 3 Legal Framework
Law No. 9587, On Biodiversity Protection	2006			Biodiversity	✓	✓			Section 3 Legal Framework
Law No. 9592, On Some Changes on the Law No. 9049, dated 07.04.2003 "On Cultural Heritage"	2003			Cultural heritage	✓	✓	Amends Law No. 9048. Amendments included 1) the introduction of the National Committee of National Heritage as an advisory body and 2) the creation of the National Committee for Intangible Heritage (NCIH).		Section 3 Legal Framework
Law no. 9595, On Establishment of the Central Technical Inspectorate	2006			Labour/ H&S	✓	✓			Section 3 Legal Framework
Law No. 9693, On the Pasture Fund *(amended by Law No. 9996)*	2007	2008		Land	✓	✓			Annex 2 Legal Framework
Law No. 9868, On Protected Areas	2008			Protected areas	✓	✓			Annex 2 Legal Framework
Law No. 9875, On Metrology *(amended by Law No. 10127)*	2008	2010		Labour	✓	✓			Section 3 Legal Framework

Title	Date enacted	Last amended	Ratification date (Conventions)	Type	Applicable to onshore	Applicable to offshore (including coastal)	Summary notes	Section(s) of particular relevance	Section of ESIA taken from
Law No. 9882, On Some Changes and Appendixes on the Law No. 9048 dated 07.04.2003 "On Cultural Heritage"	2008			Cultural heritage	✓	✓	Incorporates articles reconstructing the network of specialized cultural heritage institutions and dealing with the creation of the National Council of Archaeology and specialized institutions such as the Albanian Archaeological Service. This law must be viewed in light of implementation of Law No. 10119 (on Land Use Planning)		Section 3 Legal Framework
Law No. 9700, On Environmental Protection from Transboundary Impacts	2007			Transboundary impacts	✓	✓			Section 3 Legal Framework
Law No. 9946, On the Natural Gas Sector	2008			Natural gas	✓	✓	Regulates activities relating to the gas sector in general terms. NOTE: This law is out-dated and temporary Minister Order 666 requires the gas system to be developed in accordance with Greek design and safety standards (see Greek Technical Regulation 4303)		Section 3 Legal Framework
Law No. 9959, On Foreigners	2008			Labour	✓	✓	This law regulates the entrance, residence, employment, treatment and exit of foreigners to / from the Republic of Albania. The law defines the functions and powers of state authorities and other entities, public and private, Albanian or foreign, which have to do with foreigners.		Section 3 Legal Framework
Law No. 9979, On General Safety, essential Requirements and Conformity Assessments of Non-Food Products	2007			H&S	✓	✓			Section 3 Legal Framework
Law No. 9996, On Some Additions and Amendments to Law No. 9693 "On the Pasture Fund"	2008			Land	✓				Annex 2 Legal Framework
Law No. 10119, On Land Use Planning *(amended by Laws no. 10258 and 10315)*	2009	2010, 2010		Land	✓	✓	The main legislative tool in Albania relating to urban planning. It aims to integrate the urban planning legislative framework into a single law. The main purpose of this law is to provide a sustainable development of the territory through the rational use of land and natural resources. This law includes the concepts of natural and cultural heritage protection and of the community's health and safety protection	This law establishes that the Minister has the right to reject any application that has considerable impact on any forest area. Under legislation currently in force, permits for cutting forest and/or crossing the forest are released after EIA approval during the application for the construction permit.	Section 3 Legal Framework
Law No. 10137, On Some Changes in Legislation in Force for Licenses, Permits and Authorisations in the Republic of Albania	2009			Permitting	✓	✓			Section 3 Legal Framework
Law No. 10234, on the Ratification of the ICZM Protocol	2010			Coastal Management		✓			
Law No. 10237, On Safety and Health at work	2010			H&S	✓	✓	This law ensures the security and protection of health through prevention of professional risks, eliminating the factors that constitute risk and accident, inform, advice, balanced participation in accordance with the law. The present law applies the following: • The Directive of the European Council 89/391/EEC, 1989 "On the introduction of measures to encourage improvements in the safety and health of workers at work" • The Directive of the European Council 94/33 EEC 1994 "On the protection of young people at work" • The Directive of the European Council 92/85 EEC "On the introduction of measures to encourage improvements in the safety and health at work of pregnant workers and workers who have recently given birth or are breastfeeding."		Section 3 Legal Framework

Title	Date enacted	Last amended	Ratification date (Conventions)	Type	Applicable to onshore	Applicable to offshore (including coastal)	Summary notes	Section(s) of particular relevance	Section of ESIA taken from
Law No. 10257, On Some Changes of Law No. 8752 Dated 26 March 2001 "On the Establishment and Functioning of the Structures for Land Administration and Protection"	2010			Land	✓	✓		it is provided that change of land use from agricultural (categories I, II, III and IV) to urban is done by the DCM for the cases specified by article 11/1 of this law. The change of land use from irrigated agricultural land (categories V and X) into urban land is done by the DCM for areas smaller than 30 ha and by law for areas greater than 30 ha	Section 3 Legal Framework
Law No. 10383, On Compulsory Insurance for Healthcare in the Republic of Albania	2011			Health/ Labour	✓	✓	Compulsory health insurance is based on the contributions of employees and employers of the state and from other sources for other persons, as provided for in this law, based on the principle of solidarity; Professional health care includes preventive measures and security, advising employers, employees and their representatives to demand the creation and preservation of a safe and healthy environment, in-service work and work adjustment skills of employees, taking into account their physical and mental state of health. It also includes the identification and evaluation of workplace hazards, monitoring of work environment factors and work practices that may affect employee health;		Section 3 Legal Framework
Law No. 10431, On the Environmental Protection	2011			Environment	✓	✓	This law sets out principles, requirements, responsibilities, rules and procedures to ensure a higher level of environmental protection and includes dispositions for EIA as a tool for environmental protection, aiming to identify and define the possible direct and indirect effects on the environment mainly to prevent these effects and to make changes to the National Environmental Agency		Section 3 Legal Framework
Law No. 10440, On Environmental Impact Assessment *(amended by Law No. 10050)*	2003	2008		EIA			This law aims to protect the environment through prevention, minimisation and compensation of damages from proposed projects which may cause direct or indirect significant adverse impacts on the environment due to their size, nature or location before the projects are approved. It defines the guidelines for the EIA, the parties that must be involved and the obligation of environmental authorities to make all existing information for the compilation of EIA reports available to project developers. A special provision has been anticipated for Specially Protected Areas where development of projects will not be allowed, with exemptions for some particular cases. Provisions for transboundary impacts are also part of this new law.		Section 3 Legal Framework
Law No. 10448 On Environmental Permits	2011			Permitting	✓	✓	This law applies the regulatory provisions of Directive 2008/1/EC "on integrated pollution prevention and control" and the provisions of Directive No. 80/2001 "on some restrictions on air emissions of certain pollutants from large combustion plants".		Section 3 Legal Framework
Law No. 10463, On Integrated Waste Management	2011			Waste	✓	✓	This law provides classification of wastes, waste management procedures including monitoring and control measures. It also describes the conditions that shall be included in environmental permits.		Section 3 Legal Framework
Law No. [UNKNOWN], On Forestry	unknown			Forests	✓		Anticipated new law, to be drafted by Ministry of Environment, Forests and Water Administration (MEFWA).		Section 3 Legal Framework

Title	Date enacted	Last amended	Ratification date (Conventions)	Type	Applicable to onshore	Applicable to offshore (including coastal)	Summary notes	Section(s) of particular relevance	Section of ESIA taken from
UNKNOWN	unknown			Energy	✓	✓	There is a new draft law on energy efficiency being prepared by METE to establish the legislative framework on the promotion of energy efficiency so that it is consistent with relevant EU legislation. It is expected to introduce minimum energy efficiency standards and to regulate areas such as product labelling, services and infrastructures, and energy audits. The draft law particularly implements the EU policy principles and legislative framework on energy efficiency as regulated by EC Directives 2006/32, 2009/125, 2010/30 and 2010/31.		Section 3 Legal Framework
DCM No. 459, On the Adoption of Common Surveying Standards and GIS	2010			Urban and Regional Planning	✓	✓			Section 3 Legal Framework
DCM No 460, On Organization and Functioning of the Territorial Planning Register	2010			Urban and Regional Planning	✓	✓			Section 3 Legal Framework
DCM No. 480, On the Adoption of the Model Planning Regulation	2011			Urban and Regional Planning	✓	✓			Section 3 Legal Framework
DCM No. 481, On the Adoption of Uniform Rules for Planning Instruments	2011			Urban and Regional Planning	✓	✓			Section 3 Legal Framework
DCM No. 502, On the Approval of the Regulation for Development Control of the Territory	2011			Urban and Regional Planning	✓	✓			Section 3 Legal Framework
DCM No. 676, On Declaring the Albanian Nature Monuments as Protected Zones	2002			Cultural heritage	✓	✓			Section 3 Legal Framework
DCM No. 713, On Defining the Rules on the Terms and Conditions for Granting Permits to Construct and Operate Natural Gas System Pipeline and Infrastructure	2010			Natural gas	✓	✓	This DCM sets out the rules, procedures and criteria for the application, assessment and granting of permits for the construction and use of pipelines and the respective infrastructure for the transmission and distribution of natural gas. The construction and operation of natural gas pipeline infrastructure for the transmission and distribution of natural gas, natural gas storage facilities, direct lines and interconnection lines with neighbouring systems is subject to a permit approved by DCM. This permit is granted for a period of thirty years, renewable upon agreement of the parties		Section 3 Legal Framework
DCM No. 1290, On the Ways of Organizing and Functioning of the National Territorial Planning Agency	2009			Urban and Regional Planning	✓	✓			Section 3 Legal Framework
Code of Transmission Grid (approved by ERE Decision No. 123)	2008			Natural gas	✓	✓			Section 3 Legal Framework
ERE Decision No. 9, Natural Gas Sector Rules and Procedures on Licensing Modification, Partial/Full Transfer, Revocation and Renewal of Licences	2011			Natural gas	✓	✓			Section 3 Legal Framework
Coastal Zone Management Plan	2004			Coastal management	✓	✓			Section 3 Legal Framework
Greek Technical Regulation 4303, On Safety Zones				Natural gas	✓	✓	Albanian Gas Law 9946 is out-dated and temporary Minister Order 666 requires the gas system to be developed in accordance with Greek design and safety standards.		Section 3 Legal Framework
International Conventions									
ILO Convention 29, Forced Labour Convention	1930		1957	Human rights/ Labour	✓	✓			Section 3 Legal Framework
ILO Convention No. 81, For the Inspection Work, in Industry and Commerce	1947		1997	Human rights/ Labour	✓	✓			Section 3 Legal Framework

Title	Date enacted	Last amended	Ratification date (Conventions)	Type	Applicable to onshore	Applicable to offshore (including coastal)	Summary notes	Section(s) of particular relevance	Section of ESIA taken from
ILO Convention No. 87, Freedom of Association and Protection of the Right to Organize Convention	1948		1957	Human rights/ Labour	✓	✓			Assessment of Impacts & Mitigation Measures Section 8.16.2.1.2
ILO Convention 98, Right to Organise and Collective Bargaining	1949		1957	Human rights/ Labour	✓	✓			Section 3 Legal Framework
ILO Convention 100, Equal Remuneration Convention	1951		1957	Human rights/ Labour	✓	✓			Section 3 Legal Framework
ILO Convention 105, Prohibition of Forced Labour	1957		1997	Human rights/ Labour	✓	✓			Section 3 Legal Framework
ILO Convention 111, Discrimination Employment and Occupation	1958		1997	Human rights/ Labour	✓	✓			Section 3 Legal Framework
ILO Convention No. 135, For the representatives of Employees	1971		1997	Human rights/ Labour	✓	✓			Section 3 Legal Framework
ILO Convention No. 142, For Rural Workers' Organizations	1975		1997	Human rights/ Labour	✓	✓			Section 3 Legal Framework
ILO Convention No. 155, For Safety , health and Working Environment	1981		2003	Human rights/ Labour	✓	✓	This law aims to reinforce the responsibility of employers on: • The registration of occupational accidents, occupational disease and, as appropriate, dangerous occurrences, commuting accidents and suspected cases of occupational disease • Providing appropriate information to workers and their representatives in connection with the registration system • Ensuring adequate maintenance of the data and use of preventive measures • Refraining from retaliatory or disciplinary measures against a worker for reporting an accident at work, occupational disease, dangerous occurrences, commuting accident or suspected case of occupational disease • Recording and keeping information during a holding period • Implementing measures to ensure confidentiality of personal and medical data in the possession of		Section 3 Legal Framework
ILO Convention 174, On the Prevention of Serious Accident in Industry	1993		2002	Human rights/ Labour	✓	✓	The purpose of this Convention is to prevent serious accidents from hazardous substances and minimise the consequences of such accidents. This Convention applies to major hazardous installations, and stipulates that all employees must be notified of identified high risk at any particular time for existing installations and before beginning their employment for new installations.		Section 3 Legal Framework
ILO Convention 122, Convention on Employment Policy	1964		2009	Human rights/ Labour	✓	✓			Section 3 Legal Framework
ILO Convention 131, On Determining the Minimum Salary Particularly for Developing Countries	1970		2004	Human rights/ Labour	✓	✓			Section 3 Legal Framework
ILO Convention 138, Minimum Age	1973		1998	Human rights/ Labour	✓	✓			Section 3 Legal Framework
ILO Convention 155, Protecting Health and Safety at Work	1981		2004	Human rights/ Labour	✓	✓			Section 3 Legal Framework
ILO Convention 182, Worst Forms of Child Labour	1999		2001	Human rights/ Labour	✓	✓			Section 3 Legal Framework
United Nations Convention on the Law of the Sea	1982		2003	Marine		✓			
UNESCO Convention Concerning the Protection of the World Cultural and Natural Heritage	1972		1989	Cultural heritage	✓	✓			Section 3 Legal Framework

Title	Date enacted	Last amended	Ratification date (Conventions)	Type	Applicable to onshore	Applicable to offshore (including coastal)	Summary notes	Section(s) of particular relevance	Section of ESIA taken from
New York Convention on Economic, Social and Cultural Rights	1966		1991	Human rights	✓	✓			Section 3 Legal Framework
Bern Convention: Conservation of European Wildlife and Natural Habitats	1976		1994	Ecology	✓	✓			Section 3 Legal Framework
Convention on Biodiversity (Biological Diversity)	1992		1994 (convention), 2005 (protocol)	Biodiversity	✓	✓			Section 3 Legal Framework
Ramsar Convention on Wetlands	1971		1996	Ecology	✓	✓			Section 3 Legal Framework
United Nations Economic Commission for Europe (UNECE) on Long Range Transboundary Air Pollution	1979		2009	Air	✓	✓			
Aarhus Convention (Convention on Access to Information, Public Participation in Decision Making and Access to Justice in Environmental Matters)	1998		2001	Stakeholder engagement	✓	✓			Section 3 Legal Framework
Bonn Convention or CMS; Convention on the Conservation of Migratory Species of Wild Animals	1999		2001	Ecology	✓	✓			Section 3 Legal Framework
CITES: Convention on Trade in Endangered Species of Wild Flora and Fauna	1975		2003	Ecology	✓	✓			Section 3 Legal Framework
Barcelona Convention, Convention for the Protection of the Mediterranean Sea against Pollution	1976	1995	2004	Pollution		✓			Section 3 Legal Framework
Barcelona Convention: Integrated Coastal Zone Management (ICZM) Protocol 10/	2008		2010	Coastal management		✓			
Kyoto Protocol	1997		2005	Climate change	✓	✓			Section 3 Legal Framework
UNESCO Convention for Safeguarding the Intangible Cultural Heritage	2003		2006	Cultural heritage	✓	✓			Section 3 Legal Framework
Convention on the Protection of Underwater Cultural Heritage	2001		2009	Cultural heritage		✓			Section 3 Legal Framework
European Legislation									
Directive 92/43/EEC	1992			Habitats and biodiversity	✓	✓		On the conservation of natural habitats and wild fauna and flora.	Not referenced in ESIA
Directive 2008/98/EC	2008			Waste	✓	✓		On waste (Waste Framework Directive)	Not referenced in ESIA
Directive 2009/147/EC	2009			Birdlife	✓	✓		On the conservation of wild birds	Not referenced in ESIA
Other International Guidelines and Standards									
EBRD Public Information Policy	2008	2014		Stakeholder engagement	✓	✓			
EBRD Environmental and Social Policy	1991	2014		Environmental/ Social	✓	✓		Includes Performance Requirements (PRs) 1 - 10 (see below)	
EBRD PR 1: Assessment and Management of Environmental and Social Impacts and Issues	1991	2014		ESIA/ ESMP	✓	✓			
EBRD PR 2: Labour and working conditions	1991	2014		Labour	✓	✓			
EBRD PR 3: Resource Efficiency and Pollution Prevention and Control	1991	2014		Pollution	✓	✓			
EBRD PR 4: Health and Safety	1991	2014		H&S	✓	✓			
EBRD PR 5: Land Acquisition, Involuntary Resettlement and Economic Displacement	1991	2014		Land	✓	✓			
EBRD PR 6: Biodiversity Conservation and Sustainable Management of Living Resources	1991	2014		Biodiversity	✓	✓			
EBRD PR 7: Indigenous Peoples	1991	2014		Indigenous peoples	✓	✓			

Title	Date enacted	Last amended	Ratification date (Conventions)	Type	Applicable to onshore	Applicable to offshore (including coastal)	Summary notes	Section(s) of particular relevance	Section of ESIA taken from
PR 8: Cultural Heritage	1991	2008		Cultural Heritage	✓	✓			
PR 9: Financial Intermediaries	1991	2008		Financial intermediaries					
PR 10: Information Disclosure and Stakeholder Engagement	1991	2008		Stakeholder engagement	✓	✓			
IFC Performance Standards	2006			General EHS	✓	✓		See below	
IFC Performance Standard 1: Social and Environmental Assessment and Management Systems	2006			ESMS	✓	✓			
IFC Performance Standard 2: Labour and Working Conditions	2006			Labour	✓	✓			
IFC Performance Standard 3: Resource Efficiency and Pollution Prevention	2006			Resources/ Pollution	✓	✓			
IFC Performance Standard 4: Community Health, Safety and Security	2006			Community	✓	✓			
IFC Performance Standard 5: Land Acquisition and Involuntary Resettlement	2006			Land	✓	✓			
IFC Performance Standard 6: Biodiversity Conservation and Sustainable Management of Living Natural Resources	2006			Biodiversity/ Ecology	✓	✓			
IFC Performance Standard 8: Cultural Heritage	2006			Cultural Heritage	✓	✓	Recognises the importance of cultural heritage for present and future generations.	Key requirements are: • to use the "best available method" when rescue or removal of heritage is required to avoid impacts • to employ a Chance Finds Protocol for projects that can expect to encounter archaeological resources during construction.	
IFC Environment, Health and Safety General Guidelines	2007			General EHS	✓	✓			

TAP AG Project Title / Facility Name:

Trans Adriatic Pipeline Project

Document Title:

Consolidated ESMS Project Standards

Appendix 3 - Legislation, Standards and Project Commitments

Italy

CAL00-PMT-601-Y-TTM-0001

Title	Date enacted	Last amended	Ratified (International Conventions)	Applicable to onshore area/ Project activities	Applicable to coastal area/Project activities	Applicable to marine area/Project activities	Application	Comments	Reference
NOISE									
National Legislation									
Law n. 447, 26 October 1995 Law on acoustic pollution	1995	2013		✓	✓	✓		Established a common framework for noise, defining acoustic limits.	Section 3: Legislative Framework Section 6: Environmental, Socioeconomic and Cultural Heritage Baseline
D.P.R n. 59, 13 March 2013 Regulation about Environmental Unique Authorization (Autorizzazione Unica Ambientale - AUA)	2013	-		✓	-	-	Applicable to PRT noise emission during operation	Introduces the Environmental Unique Authorization (Autorizzazione Unica Ambientale - AUA)	Identified when writing the Project Standards
DPCM 8 May 2015 AUA Application form	2015	-		✓	-	-	Applicable to PRT noise emission during operation	Application of D.P.R. n.59, 13 March 2013	Identified when writing the Project Standards
Regional Law n. 3, 12 February 2002 Guideline for the containment and reduction of noise emissions	2002	-		✓	✓	✓		Aimed to protect the external environment of civil buildings and to safeguard public health	Section 3: Legislative Framework
D.Lgs 262, 4 September 2002 Endorsement of European Directive 2000/14 / EC on the approximation of the laws of the Member States relating to the noise emission in the environment by equipment for use outdoors	2002	-		✓	✓	✓	Applicable to the noise emission in the environment by all equipments for use outdoors, as listed in the D.Lgs.262/2002	Endorsement of European Directive 2000/14 / EC on noise emissions from outdoor equipments	Commitments Register
D.Lgs 194, 19 August 2005 Application of Directive 2002/49/EC relating to the assessment and management of environmental noise	2005	-		✓	✓	✓		Defines the duty and the responsibilities of the several authorities (Regional/local, etc..) on noise regulation	Identified when writing the Project Standards
DPCM 14 November 1997 Definition of noise limits for noise sources	1997	2013		✓	✓	✓		The DPCM provides the noise limits for noise sources	Section 6: Environmental, Socioeconomic and Cultural Heritage Baseline
DM 11 December 1996 Application of the differential criteria for systems in continuous operation	1996	-		✓	✓	-		Applicable to eventual systems in continuous operation	Identified when writing the Project Standards
DPCM 1 March 1991 Maximum noise levels allowable indoor and outdoor	1991	1997		✓	✓	✓		The DPCM provides the noise levels allowable indoor and outdoor	Section 6: Environmental, Socioeconomic and Cultural Heritage Baseline
DM 16 March 1998 Measurement techniques for noise pollution	1998	-		✓	✓	✓		The DPCM provides the measurement techniques for noise pollution	Section 6: Environmental, Socioeconomic and Cultural Heritage Baseline
European Legislation									
Directive 2000/14/EC European Parliament and the Council Directive on the approximation of the laws of the Member States relating to the noise emission in the environment by equipment for use outdoors (Noise Directive)	2000			✓	✓	✓		European Parliament and the Council Directive on the approximation of the laws of the Member States relating to the noise emission in the environment by equipment for use outdoors Provides maximum acceptable sound pressure levels from a range of equipment types. This directive applies to the manufacturers of plant and equipment.	Section 3: Legislative Framework
Directive 2002/49/EC European Parliament and Council Directive relating to the assessment and management of environmental noise	2002	2015		✓	✓	✓		Defines a common approach to avoid, prevent or reduce harmful effects as a result of exposure to environmental noise, including monitoring, public consultation, action plans and long-term strategy. Relates to a strategic approach to noise and therefore is not directly applicable to the project.	Not referenced in ESIA
Directive 2003/10/EC European Parliament and Council Directive on the minimum health and safety requirements regarding the exposure of workers to the risks arising from physical agents (noise)	2003			✓	✓	✓		On the minimum health requirements regarding the exposure of workers to the risks of physical agents (noise).	Not referenced in ESIA
International Conventions									
No relevant international conventions were identified									
Other international Guidelines and Standards									
International Maritime Organization (IMO) . 2014. Guidelines for the Reduction of Underwater Noise from Commercial Shipping to Address Adverse Impacts on Marine Life	2014					✓			Not referenced in ESIA
IFC General EHS Guidelines: Environmental noise Management	2014			✓	✓			Defines day time and night time noise limits for residential areas. ICF noise limit applicable for construction phase during day time at sensitive receptors (all receptors monitored) is 70 dB(A).	Not referenced in ESIA
WHO Night Noise Guidelines for Europe	2009			✓	✓	✓		The guidelines set a target sound pressure level outside during night.	Not referenced in ESIA
WHO Guidelines for Community Noise	1999			✓	✓			The guideline values represent the sound pressure levels that affect the most exposed receiver in the listed environment.	Not referenced in ESIA
UK BS 4142:1997 Method for Rating Industrial Noise Affecting Mixed Residential and Industrial Areas	1997			✓	✓			Provides an assessment method which compares the rating noise level and existing background noise levels to produce an indication of the likelihood the assessed noise source would lead to complaints from residents.	Not referenced in ESIA
UK BS5228-1 Code of practice for noise and vibration control on construction and open sites – Part 1: Noise	2009			✓	✓	✓		Provides recommendations for basic methods of noise control relating to construction and open sites where work activities/operations generate significant noise levels, including industry-specific guidance concerning methods of predicting and measuring noise and assessing its impact on those exposed to it	Not referenced in ESIA
UK BS5228-1 Code of practice for noise and vibration control on construction and open sites – Part 2: Vibration	2009			✓	✓	✓			Not referenced in ESIA

Title	Date enacted	Last amended	Ratified (International Conventions)	Applicable to onshore area/ Project activities	Applicable to coastal area/Project activities	Applicable to marine area/Project activities	Application	Comments	Reference
General Administrative Regulation to Protect Against Construction Noise	1970			✓	✓	?			Not referenced in ESIA
AIR									
National Legislation									
D.lgs 155, 13 August 2010 Ambient air quality standards - Directive 2008/50/EC	2010	2013		✓	✓	✓		Establishes a common framework for air quality, defining air quality standards.	Section 3: Legislative Framework
DM 5 May 2015 Application of Art 6 of Legislative D.Lgs.155, 13 August 2010 on measuring stations of air quality	2015	-		✓	✓	✓		Disposition about measuring stations of air quality.	Identified when writing the Project Standards
D.lgs 152, 3 April 2006 Environmental Regulation - Part V	2006	2015		✓	✓	-	Applicable to all air emissions (e.g.: PRT heaters fuelled with natural gas with a nominal capacity of 3,5 MW) Derogation to the D.Lgs for diesel generators with thermal power < 1 MW, other natural gas combustion facilities with thermal power < 3 MW	Concerning emission authorization for combustion facilities. All the emission sources (to be authorized and in derogation) will be included into the Environmental Unique Authorization (Autorizzazione Unica Ambientale - AUA).	Section 3: Legislative Framework
D.P.R n. 59, 13 March 2013 Regulation about Environmental Unique Authorization (Autorizzazione Unica Ambientale - AUA)	2013	-		✓	-	-	Applicable to PRT emissions	Introduces the Environmental Unique Authorization (Autorizzazione Unica Ambientale - AUA)	Section 3: Legislative Framework
DPCM 8 May 2015 AUA Application form	2015	-		✓	-	-		Application of D.P.R. n.59, 13 March 2013	Identified when writing the Project Standards
DPR n.412, 26 August 1993 Standards for the design, installation and maintenance of heating systems in buildings	1993	2014		✓	-	-		Standards for the design, installation and maintenance of heating systems in buildings	Identified when writing the Project Standards
D.Lgs.192, 19 August 2005 Implementation of Directive 2002/91 / EC on the energy efficiency of buildings	2005	-		✓	-	-	Applicable to heating and air conditioning systems of buildings	Implementation of Directive 2002/91 / EC on the energy efficiency of buildings	Identified when writing the Project Standards
DPR n.74, 16 April 2013 General criteria relating to exercise, run control and maintenance of the heating and air conditioning systems of buildings	2013	-		✓	-	-	Applicable to heating and air conditioning systems of buildings	General criteria relating to exercise, run control and maintenance of the heating and conditioning systems of buildings	Identified when writing the Project Standards
DM 10 February 2014 Models of plant handbook for air conditioning	2014	-		✓	-	-	Applicable air conditioning systems of buildings	Models of plant handbook for air conditioning	Identified when writing the Project Standards
D.Lgs.n.112, 16 July 2014 Sulphur content in marine fuels	2014	-		-	-	✓	Applicable to marine activities.	States the amount of sulphur contained in the fuel for marine vessels	Identified when writing the Project Standards
DGR n.2613, 28 December 2009 Communications of air emission	2009	-		✓	-	-		Submission of air emission data	Identified when writing the Project Standards
European Legislation									
Directive 2008/50/EC European Parliament and the Council Directive on ambient air quality and cleaner air for Europe (Air Emissions Quality Directive)	2008			✓	✓	✓		Specifies ambient air quality limits for a range of parameters for the protection of human health and the environment.	Section 3: Legislative Framework
Directive 2003/87/EC (Greenhouse Gas Emissions Directive)	2003	2009		✓	✓	✓		European Parliament and the Council Directive establishing a scheme for greenhouse gas emission allowance trading within the Community and amending Council Directive 96/61/EC	Section 3: Legislative Framework
Directive 2010/75/EU	2010			✓	✓	✓		Incorporates seven existing directives into one, including the Integrated Pollution Prevention and Control directive and the Waste Incineration directive.	Not referenced in ESIA
International Conventions									
UN Framework Convention on Climate Change	1992		1994	✓	✓	✓			Not referenced in ESIA
United Nations Economic Commission for Europe (UNECE) on Long Range Transboundary Air Pollution	1979		1982	✓	✓	✓			Not referenced in ESIA
Barcelona Convention; Convention for the Protection of the Mediterranean Sea against Pollution	1976	1995	1979		✓	✓			Section 3: Legislative Framework
International Convention for the Prevention of Pollution from Ships (MARPOL 73/78)	1973	2015	1982			✓			Not referenced in ESIA
Other international Guidelines, Standards and Conventions									
EBDR PR 3: Resource Efficiency and Pollution Prevention and Control	1991	2014		✓	✓	✓		Includes a general requirement to promote the reduction of project-related greenhouse gas emissions in a manner appropriate to the nature and scale of project operations and impacts.	Not referenced in ESIA
World Health Organisation (WHO) air quality guidelines for particulate matter, ozone, nitrogen dioxide and sulphur dioxide. Global update 2005	2005			✓	✓	✓		These guidelines are designed to offer guidance in reducing the health impacts of air pollution and are intended for use worldwide.	Not referenced in ESIA

Title	Date enacted	Last amended	Ratified (International Conventions)	Applicable to onshore area/ Project activities	Applicable to coastal area/Project activities	Applicable to marine area/Project activities	Application	Comments	Reference
IFC General EHS Guidelines: Environmental Air Emissions and Ambient Air Quality	2007			✓				Specifies that projects with significant sources of air emissions should ensure that: • "emissions do not result in pollutant concentrations that reach or exceed relevant ambient quality guidelines and standards by applying national legislated standards, or in their absence, the current WHO Air Quality Guidelines or other internationally recognised sources; and • emissions do not contribute a significant portion to the attainment of relevant ambient air quality guidelines or standards. As a general rule, this Guideline suggests 25% of the applicable air quality standards to allow additional, future sustainable development in the same air shed". Also provides emissions guidelines for small combustion processes.	Not referenced in ESIA
MARPOL 73/78 Annex VI	1997	2008				✓		Sets a global sulphur limit for marine fuel of 3.5%. From the 1st January 2020 it is proposed that this will be progressively reduced to 0.5%, subject to a feasibility study. The Protocol prohibits deliberate emissions of ozone depleting substances, which include halons and chlorofluorocarbons (CFCs) and also sets limits on emissions of nitrogen oxides (NOx) from diesel engines.	Not referenced in ESIA
MARPOL 73/78 Annex VI - Regulation 13	1997	2008				✓		The NOx control requirements of Annex VI apply to all marine diesel engines of over 130 kW output power, other than those used solely for emergency purposes.	Not referenced in ESIA
SURFACE WATER									
Urban/Regional Planning Instruments									
Apulia Region Water Protection Plan (PTA) (approved through Deliberation of the Regional Council n.883 del 19 June 2007)	2007	2009	-	✓	✓	✓		the primary instrument identified by Part Three, Section II of Legislative D.lgs 152/2006, to achieve and maintain the environmental quality objectives for significant surface and underground water bodies and the quality objectives for specific destination, as well as the qualitative and quantitative protection of the water system (surface, marine coastal and underground waters).	Section 3: Legislative Framework
National/Local Legislation									
D.lgs 152, 3 April 2006 Environmental Regulation Part III	2006	2015	-	✓	✓	✓		covers different objectives, such as water quality, water discharge limits, preventing and reducing pollution, promoting sustainable water usage, environmental protection, and improving aquatic ecosystems	Section 3: Legislative Framework
Regional Regulation n. 26, 12 December 2011 Regulation on discharge of civil waters produced by facilities whose capacity is up to 2000 equivalent inhabitants, which are not directed to public sewage.	2011	-	-	✓	✓	-	Since all the sewages produced by the Project will be discharged into public sewer, this Regulation is not applicable. In case of design changes (e.g.Hydrotest discharge in surface water) the Regulation 26/2011 will be applied.	Provides limits and prescriptions for the discharge of civil waters produced by facilities whose capacity is up to 2000 equivalent inhabitants, which are not directed to public sewage (not covered by D.Lgs 152/2006 Part III).	Section 3: Legislative Framework
REGIONAL REGULATION n. 26, 9 December 2013 Regulation of rainwater runoff	2013	-	-	✓	-	-	Possible application to PRT depending on the final layout	Regulation of rainwater runoff management	Identified when writing the Project Standards
D.P.R n. 59, 13 March 2013 Regulation about Environmental Unique Authorization (Autorizzazione Unica Ambientale - AUA)	2013	-	-	✓	-	-	Applicable to PRT water discharges	Introduces the Environmental Unique Authorization (Autorizzazione Unica Ambientale - AUA)	Section 3: Legislative Framework
DPCM 8 May 2015 AUA Application form	2015	-		✓	-	-		Application of D.P.R. n.59, 13 March 2013	Identified when writing the Project Standards
European Legislation									
Directive 2000/60/EC European Parliament and the Council Directive establishing a framework for Community action in the field of water policy (Water Framework Directive)	2000			✓	✓	✓		The Directive implements a general requirement for ecological protection and a general minimum chemical standard to cover all surface waters. The overall aim is for surface water bodies to achieve 'good' chemical and ecological and status by 2015.	Section 3: Legislative Framework
Directive 2008/105/EC - Environmental Quality Standards	2008			✓	✓			Annex I of the Directive establishes limits on concentrations in surface waters for 33 priority substances and 8 other pollutants.	Not referenced in ESIA
International Conventions									
International Convention for the Prevention of Pollution from Ships (MARPOL 73/78)	1973	2015	1982			✓		Annex IV regulates the discharge of sewage into the sea. Annex I (Regulations for the Prevention of Pollution by Oil) covers the prevention of oil pollution arising from routine operations as well as from accidental discharges. Oily water must be treated to a discharge standard of < 15 mg/l (ppm) oil in water.	Not referenced in ESIA
International Convention for the Control and management of Ship's Ballast Water and Sediments	2004		Not ratified by Italy - deemed applicable as Albania has ratified			✓			Not referenced in ESIA
International Convention on the Control of Harmful Anti-Fouling Systems on Ships	2001		TBC			✓			Not referenced in ESIA

Title	Date enacted	Last amended	Ratified (International Conventions)	Applicable to onshore area/ Project activities	Applicable to coastal area/Project activities	Applicable to marine area/Project activities	Application	Comments	Reference
London Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter, replaced by the London Protocol	1972 (London Convention) 1996 (London Protocol)	2013	TBC			✓			Not referenced in ESIA
International guidelines and standards									
IFC Environmental, Health, and Safety Guidelines for Offshore Oil and Gas Development	2007					✓		Provides guidance on the management of hydrostatic test waters, bilge water and sewage.	Not referenced in ESIA
IFC Environmental, Health, and Safety Guidelines for Onshore Oil and Gas Development	2007			✓	✓			Provides guidance on the management of hydrostatic test waters, sewage and stormwater.	Not referenced in ESIA
IFC General EHS Guidelines: Guidelines for Wastewater and Ambient Water Quality	2007			✓	✓			Specifies compliance with national or local standards for sanitary wastewater discharge or, in their absence, the following indicative guideline values applicable to sanitary wastewater discharge.	Not referenced in ESIA
SOIL AND GROUND WATER									
Urban/Regional Planning Instruments									
Apulia Region Water Protection Plan (PTA) (approved through Deliberation of the Regional Council n.883 del 19 June 2007)	2007	2009		✓	✓	✓		the primary instrument identified by Part Three, Section II of Legislative D.lgs 152/2006, to achieve and maintain the environmental quality objectives for significant surface and underground water bodies and the quality objectives for specific destination, as well as the qualitative and quantitative protection of the water system (surface, marine coastal and underground waters).	Section 3: Legislative Framework
Apulia Region Hydrogeological Planning (PAI) (approved through Deliberation of the Institutional Committee n. 39, 30 November 2005)	2006	2015		✓	✓	-		Plans and programs actions and regulations for use aimed at the conservation, protection and valorisation of land and at the correct use of the waters, based on the physical and environmental characteristics of the affected territory.	Section 3: Legislative Framework
National/Local Legislation									
D.lgs. n. 152, 3 April 2006 Environmental Regulation Part III	2006	2015		✓	✓	-		covers different objectives, such as water quality, water discharge limits, preventing and reducing pollution, promoting sustainable water usage, environmental protection, and improving aquatic ecosystems	Section 3: Legislative Framework
Legislative Decree 161, 10 August 2012 Regulations on excavated soil management	2012			✓	✓	-	Application on the management of excavated soil	Regulations on excavated soil management	Commitments register
R.D n. 3267, 30 December 1923 Reordering and reform of forest and mountain areas	1923	1999		✓	✓	-		Defines hydrogeological constraints, aimed at preserving the physical environment and to prevent erosion, loss of stability or disturbance of the water system	Section 3: Legislative Framework
D.M. 56 14 April 2009 Regulation on water bodies monitoring	2009	-		✓	✓	✓		Relevant standards: the Standards of Environmental Quality (SQA)	D.M. 233 11/09/2014
European Legislation									
EU Water Framework Directive (Directive 2000/60/EC)	2000			✓	✓			Directive sets objectives for groundwater quality, including an objective to meet "good chemical status" by 2015	Not referenced in ESIA
Directive 2006/118/EC - The Groundwater Directive	2006			✓	✓			Requires member states to establish measures to prevent or limit inputs of pollutants into groundwater so that WFD environmental objectives can be achieved by 2015. Also requires compliance with 'good' chemical status criteria (based on EU standards of nitrates and pesticides and on threshold values established by Member States)	Not referenced in ESIA
International Conventions									
No relevant international conventions identified									
International Guidelines and Standards									
WHO Guidelines for Drinking Water Quality, Fourth edition	2011			✓	✓			The WHO has established guideline values for chemicals that are of health significance in drinking-water, whether this be sourced from groundwater or surface water resources. These standards are of relevance where groundwater/surface water is abstracted for drinking water supply.	Not referenced in ESIA
IFC Environmental, Health, and Safety (EHS) Guidelines for Contaminated Land	2007			✓	✓			There is a requirement for IFC Projects to manage contaminated land to avoid risk to human health and ecological receptors. The preferred strategy for land decontamination is to reduce the level of contamination at the Project site, while preventing human exposure to contamination.	Not referenced in ESIA
UK Contaminated Land Guidance	Various			✓	✓			Key technical guidance documents include; Model Procedures for the Management of Land Contamination, CLR 11, 2004. This guidance document issued by the UK government and the Environment Agency provides a technical framework for applying a risk management process to land affected by contamination; and Remedial Targets Methodology: Hydrogeological Risk Assessment for Land Contamination, Environment Agency, 2006. This document presents a recommended methodology for deriving site-specific remedial objectives for contaminated soils and/or groundwater to protect the aquatic environment. Methodology applies to soils and groundwater that are already contaminated, where the original surface source of the contamination has ceased.	Not referenced in ESIA
IFC General EHS Guidelines: Guidelines for Wastewater and Ambient Water Quality	2007				✓	✓		Specifies compliance with national or local standards for sanitary wastewater discharge or, in their absence, the following indicative guideline values applicable to sanitary wastewater discharge.	Not referenced in ESIA
Soil Remediation Circular (Dutch Standard)	2009			✓	✓				Not referenced in ESIA

Title	Date enacted	Last amended	Ratified (International Conventions)	Applicable to onshore area/ Project activities	Applicable to coastal area/Project activities	Applicable to marine area/Project activities	Application	Comments	Reference
OTHER									
Urban/Regional Planning Instruments									
Apulia Region Coastal Plan (PRC) (approved by the Regional Committee through the Resolution n.2273 13.10.2011)	2011				✓	✓		Governs the use of the Maritime State Property areas, with the purpose of ensuring a correct balance between the protection of the environment and landscape of the Apulia coastline and the free use and development of tourist and recreational activities.	Section 3: Legislative Framework
Guidelines to mitigate the critical situations of low coasts of Apulia (approved by the Regional Committee through the Resolution n. 410 10/03/2011)	2011				✓	✓		Identifies the interventions aimed at mitigating the most critical situations of low coasts of Apulia	Section 3: Legislative Framework
Integration to the Guidelines to mitigate the critical situation of low coasts of Apulia (approved by the Regional Committee through the Resolution n. 1185 of 31/05/2011)	2011				✓	✓		Identifies the Authority in charge of the issue of the declaration of compliance of possible intervention for the defence of the coasts with the Guidelines, i.e. Ufficio Difesa del Suolo del Servizio Risorse Naturali, after the preliminary technical evaluation of the Authority di Bacino of Apulia	Identified when writing the Project Standards
Thematic Territorial Urban Planning (PUTT/p) (prepared pursuant to Law n. 431 08/08/1985 "Urgent measures for the protection of areas of particular environmental interest" and approved by the Regional Committee through the Resolution n. 1748 of 15/12/2000)	2000			✓	✓			Identifies the main territorial elements of the Apulia Region with the aim of assessing the compatibility of any proposed transformation	Section 3: Legislative Framework
Regional Landscape and Territorial Plan (PPRT) (adopted by Regional Committee with resolution no. 1435 of 02/08/2013 "Adoption of Regional Landscape and Territorial Plan" and approved through Regional Decision n. 176 of 16/02/2015)	2013	2015		✓	✓			This is the main Regional Landscape Regulatory System and includes the mapping of the main values of the Region, defines the rules of their use and transformation and establishes the legal conditions and design rules for the construction of the landscape. It overcomes the regulatory framework of the PPUT	Section 3: Legislative Framework
Waste Management Plan (updated through Regional Council Resolution n. 266, 28 December 2009 Approval of the Update of the Management Plan of special waste in the Apulia Region)	2009			✓	✓			Reference document at Regional level for the management of special waste.	Section 3: Legislative Framework
Regional Hunting Plan 2009 - 2014 (approved by the Regional Council through the Resolution n. 217 of 21/07/2009 re-approved through Regional Council Resolution n. 234 of 21/03/2014 and extended until 21/07/2015 by the Regional Committee Resolution n. 1400 of 27/06/2014) and related Regional Implementation Regulation n. 17 of 30.07.2009	2009	2014		✓	✓			Coordinates Provincial Wildlife Hunting Plans	Section 3: Legislative Framework
Regional Hunting Program 2015/2016 (approved through Regional Committee Resolution n. 1305 of 27/05/2015)	2015			✓	✓			Regional Hunting Program	Identified when writing the Project Standards
Provincial Territorial Coordination Plan (PTCP) of the province of Lecce (approved by the Council of the Province of Lecce through the Resolution n. 75 of 24/10/2008)	2008			✓	✓			Establishes a boundaries framework within which the individual Administrations and Institutions may be defined, possibly also through specific agreements, their policies for the improvement of quality and of the physical, social and cultural services in the provincial territory.	Section 3: Legislative Framework
Urban Planning of the Municipality of Melendugno: Melendugno Piano Regolatore Generale (PRG), (approved by the Regional Committee through the Resolution n. 1691 of 14/11/2001)	2001			✓	✓			Regulates any transformation of the municipal area of Melendugno and the construction activities that can be implemented within this area	Section 3: Legislative Framework
Urban Planning of the Municipality of Vernole: Vernole Piano Urbanistico Generale (PUG) (Preliminarily Assessed through the Regional Committee Resolution n. 5 of 14/01/2014 "Compatibility with the Provincial Territorial Coordination Plan (PTCP)" and approved by the Ad Acta Commissioner with Resolution n.1 of 8/10/2014)	2014			✓	✓			Regulates any transformation of the municipal area of Vernole and the construction activities that can be implemented within this area	Identified when writing the Project Standards
Implementation Plan 2015 - 2019 of the Regional Transport Plan (PRdT) (prepared by the Region Councillorship for Mobility in accordance with the principles set fort by Art. 7 of Regional Law 168 of 31/10/2002 and based on the contents approved by the Regional council with Regional Law 16 of 23/06/2008 concerning the principles, directions and lines of intervention in relation to the Regional Transport Pan)				✓	✓			Defines the infrastructure to be developed over the next few years	Section 3: Legislative Framework
Apulia Regional Energy Environmental Plan (PEAR) (adopted through Resolution by Regional Council n. 827 of 8/06/2007) and its adjustment and updating through the Regional Law 25 of 24/09/2012 concerning the "Regulation of the use of energy from renewable sources"	2007	2012		✓	✓	✓		Strategic document that defines the lines of the government policy of the Apulia region on the issues of supply and demand of energy, providing the administration of information and analytical tools useful to govern the different environmental and territorial emergencies deriving from the localization of industrial plants or from sector politics	Annex 4 Main Legislation on the Energy and Gas Sector
Regional Council Deliberation n.36, 23 April 2004 Programme of Action for the Promotion of Renewable and Energy Saving	2004			✓	✓			Programme of Action for the Promotion of Renewable and Energy Saving and for the Installation and operation of plant production energy	Annex 4 Main Legislation on the Energy and Gas Sector
National/Local Legislation									
National Energy Strategy (issued by the Inter-Ministerial Decree dated 8 March 2013 "National energy strategy: for a more competitive and sustainable energy" - SEN)	2013			✓	✓	✓		The document defines objectives, key policies and priority measures in the energy sector. The SEN identifies specific measures to enhance competitiveness of the gas market, as well as supporting the concept of a South-European hub.	Section 3: Legislative Framework
National Energy Plan (approved by Council of Ministries 10 August 1988 - PEN)	1988			✓	✓	✓		National plan for the rational use of energy and energy saving	Annex 4 Main Legislation on the Energy and Gas Sector

Title	Date enacted	Last amended	Ratified (International Conventions)	Applicable to onshore area/ Project activities	Applicable to coastal area/Project activities	Applicable to marine area/Project activities	Application	Comments	Reference
Partnership Agreement 2014-2020 ("Accordo di Partenariato" approved by European Commission 29/10/2014)	2014			✓	✓	✓		Strategic investment plan for the optimal use of European Structural and Investment Funds to boost growth and jobs creation	Section 3: Legislative Framework Annex 4 Main Legislation on the Energy and Gas Sector
National Conference on Energy and Environment 25 - 28 November 1998	1998			✓	✓	✓		Aimed at sharing the Government strategic lines of action in the field of energy and environmental policy.	Section 3: Legislative Framework Annex 4 Main Legislation on the Energy and Gas Sector
The Economic and Financial Document (DEF) 2015 (approved by Council of Ministers 10/04/2015)	2015			✓	✓	✓		Is the key document for the economic and financial planning of the Italian Government and is made of three sections: (i) Italy's Stability Programme, edited by the Treasury Department; (ii) Public finance analysis and performance; (iii) National Reform Programme	Section 3: Legislative Framework Annex 4 Main Legislation on the Energy and Gas Sector
Strategic Infrastructure Plan 2015 (Deliberation of the Council of Ministers 10/04/15)	2001			✓	✓	✓		Considers the strategic development of Italian upstream hydrocarbon exploration and exploitation, including the upgrading of the National Gas Pipeline Network .	Annex 4 Main Legislation on the Energy and Gas Sector
D.lgs 152, 3 April 2006 Environmental Regulation Part II	2006	2015		✓	✓	✓		Definition of the Environmental Impact Assessment process	Section 3: Legislative Framework
D.lgs 152, 3 April 2006 Environmental Regulation Part IV	2006	2015						Regulation about waste characterization, management and disposal	Identified when writing the Project Standards
D.P.R n. 59, 13 March 2013 Regulation about Environmental Unique Authorization (Autorizzazione Unica Ambientale - AUA)	2013			✓				Introduces the Environmental Unique Authorization (Autorizzazione Unica Ambientale - AUA)	Section 3: Legislative Framework
DPCM 8 May 2015 AUA Application form	2015			✓				Application of D.P.R. n.59, 13 March 2013	Identified when writing the Project Standards
DM n. 148, 1 April 1998 Registers for waste loading / unloading	1998	2006		✓	✓			Instructions for the management of the registers for waste loading / unloading	Identified when writing the Project Standards
DM n. 145, 1 April 1998 Waste transportation form	1998	2002		✓	✓			Instructions for the management of waste transportation form	Identified when writing the Project Standards
DM 17 December 2009 SISTRI	2009	2010		✓	✓			Waste tracking informatics system	Identified when writing the Project Standards
DM n.52, 18 February 2011 Regulation for the management of SISTRI	2011			✓	✓			Regulation for the management of SISTRI	Identified when writing the Project Standards
DM 22 October 2008 Simplifying requirements for specific types of waste (printer cartridges)	2008			✓				Simplifying requirements for specific types of waste (printer cartridges)	Identified when writing the Project Standards
DM 24 June 2015 Waste eligibility criteria for landfill	2015			✓	✓			Eligibility criteria for the disposal of waste in landfill	Identified when writing the Project Standards
D.Lgs 42 22 January 2004 Law on the cultural heritage and landscape	2004	2015		✓	✓	✓		The law identifies the environmental and archaeological constraints and establishes the general dispositions about the protection of landscape and cultural heritage.	Section 3: Legislative Framework
D.Lgs n. 227, 18 May 2001 Orientation and modernization of the forestry sector	2001	2015		✓	✓	-		Concerning woodlands (including reforestation)	Section 3: Legislative Framework
D.M. 56 14 April 2009 Regulation on water bodies monitoring	2009			✓	✓	✓		Relevant standards: the Standards of Environmental Quality (SQA)	D.M. 0000223 11 September 2014 Environmental Compatibility Decree
D.M. 0000223 11 September 2014 Environmental Compatibility Decree	2014			✓	✓	✓		Ministerial decree setting out conditions for the TAP Project	D.M. 0000223 11 September 2014 Environmental Compatibility Decree
R.D n. 3267, 30 December 1923 Reordering and reform of forest and mountain areas	1923			✓	✓	-		Defines hydrogeological constraints, aimed at preserving the physical environment and to prevent erosion, loss of stability or disturbance of the water system	Section 3: Legislative Framework
D.Lgs. 154, 26 May 2004, Modernization of the fisheries and aquaculture sector	2004					✓		Promotes the creation of zones for biological restoration and active repopulation. There is no zone for biological restoration and active repopulation affected by the Project.	Section 3: Legislative Framework
Law n. 62 18 April 2005 On Italian Obligation Deriving from European Union Membership, with Particular Reference to the National Energy Policy	2005			✓	✓	✓		Art. 16. establishes measures to implement the Directive 2003/55 / EC of the European Parliament and of the Council of 26 June 2003 concerning common rules for the internal market of natural gas	Section 3: Legislative Framework Annex 4 Main Legislation on the Energy and Gas Sector
Law n. 109 of 25 June 2005, conversion into law, with amendments, of the Decree-Law 26 April 2005 n. 63, containing "urgent measures for the development and territorial cohesion, as well as for the protection of copyright. Provisions concerning the consolidation of laws related to compulsory pension and supplementary pension"	2005			✓	✓	✓		Establishes preventive examination of potential archaeological interest	Section 3: Legislative Framework
Law n. 120 12 March 2003 Implementation of Habitat Directive 92/43/EEC	2013			✓	✓	✓		Defines the procedure of "Appropriate Assessment" ("Valutazione d'Incidenza")	Section 3: Legislative Framework
Law n. 125 3 August 2007 On the Measures to Liberalize the Energy Market	2007			✓	✓	✓		Contains measures to Liberalize the Energy Market	Section 3: Legislative Framework Appendix 4 Main Legislation on the Energy and Gas Sector
Law n. 144, 14 February 1951 Amendment of Articles 1 and 2 of D.Lgs n. 475, 27 July 1945.	1951			✓	✓			Establish rules about cut and removal of olive trees	Section 3: Legislative Framework

Title	Date enacted	Last amended	Ratified (International Conventions)	Applicable to onshore area/ Project activities	Applicable to coastal area/Project activities	Applicable to marine area/Project activities	Application	Comments	Reference
D.Lgs n. 475, 27 July 1945 Ban on olive trees cut	1945	1951		✓	✓			Establish rules about cut and removal of olive trees	Identified when writing the Project Standards
Law n. 196 of 24/06/1997 on the promotion of employment	1997			✓	✓	✓		Aims at employment promotion though also the introduction of new employment contracts	Annex 3: Labour, Health and Safety Legislation in Italy
Law n.183 10/12/2014 enabling the Italian Government to issue a series of labour law reforms over a period of six months	2014			✓	✓	✓		Establishes the reform of the Italian Labour system	Identified when writing the Project Standards
Law n. 239 of 23/08/2004 On Reorganisation of the Energy Sector and Delegation to the Government for the Rehabilitation of the Enforced Energy Regulation	2004			✓	✓	✓		Allows derogation of aspects of Law n. 144/1951 to be granted by Ufficio Provinciale Agricoltura (UPA - Agriculture Provincial Office) when it is essential for the realization of works of public interest.	Section 3: Legislative Framework Annex 4 Main Legislation on the Energy and Gas Sector
Law n. 273 12 December 2002 On the Measures to Encourage Private Initiative and the Development of Competition	2001			✓	✓	✓		Contains provisions on energy policy. Art. 27 relates to the strengthening of international infrastructure of natural gas supply	Section 3: Legislative Framework Annex 4 Main Legislation on the Energy and Gas Sector
Decree of the President of the Republic n. 357 of 08/09/1997 implementation of the directive 92/43/CEE concerning the conservation of natural habitats and of wild fauna and flora	1997	2013		✓	✓	✓		Modified by several laws included Law n. 120/2003	Section 3: Legislative Framework
Law n. 431 of 08/08/1985 Conversion into law with amendments of Decree Law 27 June 1985 n. 312 concerning urgent measures for the protection of areas of particular environmental interest	1985			✓	✓	✓		Comprehensive law for the protection of natural and environmental assets in Italy	Section 3: Legislative Framework
Law n. 443 21/12/2001 "Delega al Governo in materia di infrastructure ed insediamenti produttivi strategici ed altri interventi per il rilancio delle attività produttive" on the Procedures for Assessment and Approval of Infrastructure and Strategic Production Projects. Deliberation of Approval of CIPE n. 121/2001 of the first program of strategic interventions	2001			✓	✓			Establishes procedures and funding arrangements for the construction of major strategic infrastructure in Italy . The first program of strategic interventions has been approved by CIPE on 2001 (Approval n. 121)	Section 3: Legislative Framework Annex 4 Main Legislation on the Energy and Gas Sector
Law n. 448 23 December 1998 Public Finance Measures for Stabilization and Development (in accordance with the conclusions of the Kyoto Conference held between 01 and 11 December 1997)	1998			✓	✓	✓		Introduces Carbon Tax	Section 3: Legislative Framework Annex 4 Main Legislation on the Energy and Gas Sector
DPR n. 1639, 2 October 1968, Regulations for the implementation of the Law n. 963/1965.	1968	-				✓		Regarding Marine Biological Protection Zones for the protection of marine areas finalized for reproduction or growth of marine species of economic importance. There is no Marine Biological Protection Zone affected by the Project.	Section 3: Legislative Framework
Law n. 963, 14 July 1965 Regulation on marine fishing	1965	-				✓		Regarding Marine Biological Protection Zones for the protection of marine areas finalized for reproduction or growth of marine species of economic importance. There is no Marine Biological Protection Zone affected by the Project.	Section 3: Legislative Framework
Law n. 1497, 29 June 1939 on the "Protection of natural beauty"	1939			✓	✓	✓		the first Italian law on the landscape and to protect of the natural beauties. It has been abrogated by the Legislative Decree 29 October 1999, n. 490 (Consolidated act on cultural and environmental heritage)	Section 3: Legislative Framework
Law n. 349, 8 July 1986 Establishment of the Ministry of environment and regulation on environmental damage	1986			✓	✓	✓		Regulation in case of environmental damage	
Regional Law n. 12, 25 May 2012 Changes and additions to Regional Law n. 18/2000	2012			✓	✓			Concerning woodlands (including authorization of vegetation cutting and earth movement)	Section 3: Legislative Framework
Regional Law n. 18, 30 November 2000 Assignment of functions and administrative tasks in the area of woods and forests, civil protection and forest fire fighting.	2000	2012		✓	✓			Concerning woodlands (including authorization of vegetation cutting and earth movement)	
Regional Law n. 14, 4 June 2007 on Apulia landscape and monumental olive tree safeguards	2007	2011		✓	✓			Protects monumental olive trees, even if isolated, due to their importance for agriculture production and their historic and cultural relevance in regional landscape characteristics Influences associated Technical Commission and landscape constraint.	Section 3: Legislative Framework
Regional Law n. 15 23 November 2005 Urgent measures for the containment of light pollution	2005			✓	✓	✓		Measures for the containment of light pollution	Commitments Register
DM 01 December 1970 Statement of significant public interest of the coastal area of the municipality of Melendugno	1970				✓	✓		Statement of significant public interest of the coastal area of the municipality of Melendugno	Section 3: Legislative Framework
DGR n. 357,7 March 2013 Application of art. 5 of the Regional Law No. 14 of 04 June 2007 - List of Monumental Olives Trees.	2013			✓	✓			Approves "Regional List of Monumental Olive Trees"	Section 3: Legislative Framework
DGR n. 7310, 14 December 1989 Derogation for olive trees cutting	1989			✓	✓			Identifies cases of derogation for cutting of trees.	Section 3: Legislative Framework
DPCM 27 December 1988 "Technical standards for the preparation of environmental impact studies and the formulation of the compatibility"	1988			✓	✓	✓		It contains the Technical Standards for the preparation of environmental impact studies and the formulation of the compatibility. The Technical Standards of 1988, still in force, defines with respect of all categories of works, the contents of the Environmental Impact Studies and their articulation, the documentation, the preliminary investigation and the criteria of formulation of the compatibility.	Section 3: Legislative Framework

Title	Date enacted	Last amended	Ratified (International Conventions)	Applicable to onshore area/ Project activities	Applicable to coastal area/Project activities	Applicable to marine area/Project activities	Application	Comments	Reference
Decree of the President of the Republic n. 327 of 08/06/2001 On Expropriation for Public Utilities, modified by the Decree-Law n. 133 of 12/09/2014 "Sblocca Italia", coordinated by the conversion Law n. 164 of 11/11/2014, on "Urgent measures for the opening of the sites, the construction of public works, Urgent measures for the opening of the sites, the construction of public works, the digitization of the country, the bureaucratic simplification, the emergency of hydrogeological instability and for the resumption of productive activities"	2001	2014		✓	✓	✓		Introduces significant measures on the matter of infrastructures with specific attention to the infrastructures for gas importation and the activities of research and exploitation of hydrocarbons	Section 3: Legislative Framework Annex 4 Main Legislation on the Energy and Gas Sector
Legislative Decree 190, 13 October 2010 Marine Environment - Community Actions	2010					✓		Defines the Competent Authority schedule for the definition of marine quality and monitoring (within 2015).	Section 3: Legislative Framework
Legislative Decree 164 of 23 May 2000 (implementing Directive 98/30/CE) On the Liberalization of the Internal Gas Market updated by the Ministerial Decree 9/4/2014	2000			✓	✓	✓		Sets common rules for the internal gas market. It includes regulations for the gas supply (import activities) and regulates gas transportation and dispatching	Section 3: Legislative Framework Annex 4 Main Legislation on the Energy and Gas Sector
Legislative Decree 230 of 17/03/1995 on radioprotection	1995			✓	✓	✓			Commitments Register
Ministerial Decree of 24 January 1996 Directives on the Preliminary Activities for the Issuance of permits under Article 1 1 of Law n. 319/1976, and subsequent amendment thereto, concerning dumping in the sea or in areas contiguous to it, excavation of materials from the depths of brakish or marine or coastal emerged land, as well as from all other movement of sediment in the marine environment	1996					✓		Defines the investigation necessary to obtain a dredging permit.	Section 3: Legislative Framework Annex 4 Main Legislation on the Energy and Gas Sector
Ministerial Decree dated 8 March 2013 approval of the National Energy Strategy	2013			✓	✓	✓		National Energy Strategy Plan	Annex 4 Main Legislation on the Energy and Gas Sector
Decree of the Ministry of Economic Development of 17 April 2008 Technical regulations for the design, construction, testing, operation and surveillance of structures and plants for the transport of natural gas with density not exceeding 0.8 kg/m3	2008			✓	✓	✓		Technical regulations for the design, construction, testing, operation and surveillance of structures and plants for the transport of natural gas with density not exceeding 0.8 kg/m3	Commitments Register
Decree of the Ministry for Infrastructures of 14 January 2008, "Approval of the new Technical Standards for Buildings"	2008			✓	✓			Regulatory text that collects all the rules governing the design, construction and testing of constructions in order to ensure, for established safety levels , the public safety.	Commitments Register
Law 640 3 November 1994 ratifies the ESPOO Convention	1994			✓	✓	✓		Disposition about Environmental Impact Assessment in a Transboundary Context	Responses to Observations of the Public 23 July 2014 IAL00-ERM-643-Y-TAE-1025 Rev.00
Deliberation of the Regional Council of 2 August 2013, no. 1417 concerning the updating of the provisional list of monumental olive trees	2013			✓	✓			Updates the list of olive trees classified as monumental	Commitments Register
Deliberation of the Regional Council of 3 September 2013, no. 1576 concerning the Guidelines on how to explant, transport and replant monumental olive trees	2013			✓	✓			Guidelines on how to remove, transport and replant olive monumental trees. They apply also to olive trees that have monumental character although not yet included in the list of monumental olive trees	Commitments Register
Decree-Law n.1 of 24/01/2012 Urgent provisions for competition, infrastructure development and competitiveness, as converted with amendments by Law 24 March 2012, n. 27	2012							Art. 14 c.5 establishes that "In order to promote security of supply and reducing the cost of natural gas supply, the Ministry of Economic Development and the Authority for Electricity and Gas, through the major transportation company, monitor the degree of use of foreign gas pipelines to import natural gas, in order to promote their optimal use and the coordinated allocation of capacity along these pipelines and their interconnection points, in coordination with the competent authorities of the European Union and third countries concerned."	Identified when writing the Project Standards
Legislative Decree no. 93, 1 June 2011 related to the implementation of Directives 2009/72 / EC, 2009/73 / EC and 2008/92 / EC concerning common rules for the internal market in electricity and natural gas	2011							Art. 1 confers to the Ministry of Economic Development the competence to provide guidance and set rules on national energy policy with a view to guaranteeing security of supply. The Ministry is also conferred the task of defining ten-year development scenarios for the natural gas market, including the forecasting of demand and for identifying any necessary infrastructure upgrades.	Identified when writing the Project Standards
European Legislation									
An Energy Policy for the European Union (White Paper). 1995	1995			✓	✓	✓			Section 3: Legislative Framework
Energy for the Future: Renewable Sources of Energy (White Paper for a Community Strategy and Action Plan). 1997	1997			✓	✓	✓			Section 3: Legislative Framework
A European Strategy for Sustainable, Competitive and Secure Energy (Green Paper). 2006	2006			✓	✓	✓			Section 3: Legislative Framework
"Intelligent Energy - Europe Program" for the period 2007 - 2013				✓	✓	✓			Section 3: Legislative Framework
Energy and Climate Change Package 20-20-20	2008			✓	✓	✓		On the conservation or wild birds	Section 3: Legislative Framework
Directive 2009/147/EC (Birds Directive)	2009			✓	✓	?			Section 3: Legislative Framework
Directive 2008/98/EC (Waste Management Directive)	2008			✓	✓	✓		On waste (Waste Framework Directive)	Section 3: Legislative Framework

Title	Date enacted	Last amended	Ratified (International Conventions)	Applicable to onshore area/ Project activities	Applicable to coastal area/Project activities	Applicable to marine area/Project activities	Application	Comments	Reference
Directive 2003/55/EC Concerning the common rules for the internal market in natural gas and repealing Directive 98/30/EC	2003			✓	✓	✓			Section 3: Legislative Framework Annex 4 Main Legislation on the Energy and Gas Sector
Directive 92/43/EEC (the Habitat Directive)	1992			✓	✓	✓		On the conservation of natural habitats and wild fauna and flora.	Section 3: Legislative Framework
Directive 85/337/EEC (The Environmental Impact Assessment (EIA) Directive)	1985	2009		✓	✓	✓			Section 3: Legislative Framework
Directive 98/30/EC of the European Parliament and of the Council 22 June 1998 Concerning common rules for the internal market in natural gas	1998			✓	✓	✓		On the liberalization of the internal gas market.	Section 3: Legislative Framework
Decision n. 1229/2003/EC laying down a series of guidelines for trans-European energy networks and repealing Directive n. 1254/96/EC	111			✓	✓	✓			Section 3: Legislative Framework
Directive 2008/1/EC of the European Parliament and of the Council 15 January 2008 Concerning integrated pollution prevention and control	2008			✓	✓	✓		Concerning integrated pollution prevention and control (the IPPC Directive)	Not referenced in ESIA
International Conventions									
International Labour Organization (ILO) Convention 29 Forced Labour Convention (1930)	1930		1934	✓	✓	✓			Section 3: Legislative Framework
ILO Convention No. 81, For the Inspection Work, in Industry and Commerce	1947		1952	✓	✓	✓			Not referenced in ESIA
ILO Convention 87 Freedom of Association and Production of the Right to Organize	1948		1958	✓	✓	✓			Section 3: Legislative Framework
ILO Convention 98 Right to Organize and Collective Bargaining	1949		1958	✓	✓	✓			Section 3: Legislative Framework
ILO Convention 100 Equal Remuneration Convention	1951		1956	✓	✓	✓			Section 3: Legislative Framework
United Nations Educational, Scientific and Cultural Organization (UNESCO) Convention Concerning the Protection of World Cultural and Natural Heritage	1972		2007	✓	✓	?			Section 3: Legislative Framework
Bern Convention: Conservation of European Wildlife and Natural Habitats	1976		1981	✓	✓	✓			Section 3: Legislative Framework
Convention on Biodiversity (Biological Biodiversity)	1992		1994	✓	✓	✓			Section 3: Legislative Framework
RAMSAR Convention on Wetlands	1971		1987	✓	✓				Section 3: Legislative Framework
ILO Convention 105 Abolition of Forced Labour	1957		1968	✓	✓	✓			Section 3: Legislative Framework
ILO Convention 111 Discrimination Employment and Occupation	1958		1963	✓	✓	✓			Section 3: Legislative Framework
ILO Convention 122, Convention on Employment Policy	1964		1964	✓	✓	✓			Not referenced in ESIA
ILO Convention No. 135, For the representatives of Employees	1971		1981	✓	✓	✓			Not referenced in ESIA
ILO Convention 138 Minimum Age	1973		1981	✓	✓	✓			Section 3: Legislative Framework
ILO Convention No. 141, For Rural Workers' Organizations	1975		1979	✓	✓	✓			Not referenced in ESIA
Aarhus Convention (Convention on Access to Information, Public Participation in Decision Making and Access to Justice in Environmental Matters)	1998		2001	✓	✓	✓			Section 3: Legislative Framework
ILO Convention 182 Worst Forms of Child Labour	1999		2000	✓	✓	✓			Section 3: Legislative Framework
Bonn Convention (CMS); Convention on the Conservation of Migratory Species of Wild Animals	1979		1983	✓	✓	✓			Section 3: Legislative Framework
CITES: Convention on Trade in Endangered Species of Wild Flora and Fauna - Italy	1975		1975	✓	✓	✓			Section 3: Legislative Framework
Barcelona Convention: Convention for the Protection of the Mediterranean Sea against Pollution	1976	1995	1979		✓	✓			Section 3: Legislative Framework
Barcelona Convention: Integrated Coastal Zone Management (ICZM) Protocol	2008		2008 (signed)		✓				Section 3: Legislative Framework
UNESCO Convention for the Safeguarding of Intangible Cultural Heritage	2003		2007	✓	✓	?			Section 3: Legislative Framework
Espoo Convention; Convention on Environmental Impact Assessment in a Trans-coundary Context	1991		1994	✓	✓	✓			Section 3: Legislative Framework
United Nations Convention on the Law of the Sea	1982		1995			✓			Not referenced in ESIA
Kyoto Protocol	1997		2002	✓	✓	✓			Not referenced in ESIA
Convention on the Protection of Underwater Cultural Heritage	2001		2010			✓			Not referenced in ESIA
Basel Convention on the Control or Transboundary Movements of Hazardous Wastes and Their Disposal	1989	2011	1994	✓	✓	✓			Not referenced in ESIA
International Guidelines and standards									
European bank for Reconstruction and Development (EBRD) Environmental and Social Policy	1991	2014		✓	✓	✓			Section 3: Legislative Framework

Title	Date enacted	Last amended	Ratified (International Conventions)	Applicable to onshore area/ Project activities	Applicable to coastal area/Project activities	Applicable to marine area/Project activities	Application	Comments	Reference
EBRD Performance Requirement (PR) 1: Assessment and Management of Environmental and Social Impacts and Issues	1991	2014		✓	✓	✓			Section 3: Legislative Framework
EBRD PR 2: Labour and Working Conditions	1991	2014		✓	✓	✓			Section 3: Legislative Framework
EBRD PR 3: Resource Efficiency and Pollution Prevention and Control	1991	2014		✓	✓	✓			Section 3: Legislative Framework
EBRD PR 4: Health and Safety	1991	2014		✓	✓	✓			Section 3: Legislative Framework
EBRD PR 5: Land Acquisition, Involuntary Resettlement and Economic Displacement	1991	2014		✓	✓	✓			Section 3: Legislative Framework
EBRD PR 6: Biodiversity Conservation and Sustainable Management of Living Resources	1991	2014		✓	✓	✓			Section 3: Legislative Framework
EBRD PR 7: Indigenous Peoples	1991	2014		✓	✓	✓			Section 3: Legislative Framework
EBRD PR 8: Cultural Heritage	1991	2008		✓	✓	✓			Section 3: Legislative Framework
EBRD PR 9: Financial Intermediaries	1991	2008		✓	✓	✓			Section 3: Legislative Framework
EBRD PR 10: Information Disclosure and Stakeholder Engagement	1991	2008		✓	✓	✓			Section 3: Legislative Framework
EBRD Public Information Policy	2008	2014		✓	✓	✓			Section 3: Legislative Framework
International Finance Corporation (IFC) Performance Standards (PS) 1: Social and Environmental Assessment and Management Systems	2006			✓	✓	✓			Section 3: Legislative Framework
IFC Performance Standard 2: Labour and Working Conditions	2006			✓	✓	✓			Not referenced in ESIA
IFC Performance Standard 3: Resource Efficiency and Pollution Prevention	2006			✓	✓	✓			Not referenced in ESIA
IFC Performance Standard 4: Community Health, Safety and Security	2006			✓	✓	✓			Not referenced in ESIA
IFC Performance Standard 5: Land Acquisition and Involuntary Resettlement	2006			✓	✓	✓			Not referenced in ESIA
IFC Performance Standard 6: Biodiversity Conservation and Sustainable Management of Living Natural Resources	2006			✓	✓	✓			Not referenced in ESIA
IFC Performance Standard 8: Cultural Heritage	2006			✓	✓	✓			Not referenced in ESIA
IFC Environment, Health and Safety (EHS) General Guidelines	2007			✓	✓	✓			Section 3: Legislative Framework
DnV OS-F101, "Submarine Pipeline Systems"						✓			D.M. 233 11/09/2014

Relevant Project commitments					
Commitment text	**Commitment No**	**Applicable to onshore area/ Project activities**	**Applicable to coastal area/Project activities**	**Applicable to marine area/Project activities**	**Name of legislation referenced**
NOISE					
Each flow control valve of the PRT must be provided with a sound proof enclosure with a minimum noise insertion loss of 39 dB.	IT0183	✓			N/A
Vehicles used will be certified in line with the requirements of Directive 2000/14/EC (on the noise emission in the environment by equipment for use outdoors) and the Italian Legislative Decree 262, 4th Sept 2002 which implements it.	IT0674	✓	✓		Directive 2000/14/EC European Parliament and the Council Directive on the approximation of the laws of the Member States relating to the noise emission in the environment by equipment for use outdoors (Noise Directive) Legislative Decree 262, 4th Sept 2002
The sound power levels of all machinery used for the hydrotesting have to meet the requirements of Directive 2000/14/EC (on the noise emission in the environment by equipment for use outdoors). Air dryers will need to be provided with extra blow-out silencers to guarantee a reduced sound power level.	IT0960	✓	✓	✓	Directive 2000/14/EC European Parliament and the Council Directive on the approximation of the laws of the Member States relating to the noise emission in the environment by equipment for use outdoors (Noise Directive) Legislative Decree 262, 4th Sept 2002
SURFACE WATER					
Seawater abstracted for [offshore] hydrotesting will be filtered to 60 microns	IT0098			✓	N/A
To prevent the transport of non-indigenous species via ballast waters TAP AG will adhere to the harmonized voluntary arrangements for ballast water management in the Mediterranean Region as specified in the IMO Circulation BWM.2/circ.35, 15 August 2011.	IT0224			✓	International Convention for the Control and management of Ship's Ballast Water and Sediments
A detailed description of the process of cleaning, inspection and testing of the offshore and onshore pipeline, including proposals for the analysis of hydrotest water, will be provided to the Ministry of the Environment and Protection of Land and Sea, in compliance with Ministerial Decree D.M. 0000223.	IT0645	✓	✓	✓	D.M. 0000223, 11 September 2014 Environmental Compatibility Decree
The discharge of used hydro test water/wastewater must take place in accordance with the methods set out by D.Lgs 152/2006 and subsequent amendments.	IT0776	✓	✓	✓	D.lgs n.152, 6 April 2006 Environmental Regulation Part III
All wastewater will be tested prior to discharge to ensure that it complies with the requirements of the Water Framework Directive and EU and Italian legislative requirements. If necessary, local treatment (i.e. filtering) will be provided.	IT0819	✓	✓		Directive 2000/60/EC European Parliament and the Council Directive establishing a framework for Community action in the field of water policy (Water Framework Directive) EU legislation (specific legislation not specified) Italian legislation (specific legislation not specified)
All wastewater must meet the requirements of the Water Framework Directive (WFD) and EU and Italian legislative requirements, before it is discharged into a watercourse.	IT0820	✓	✓		Directive 2000/60/EC European Parliament and the Council Directive establishing a framework for Community action in the field of water policy (Water Framework Directive) EU legislation (specific legislation not specified)
The effluent will be treated to be discharged only with less than 15 ppm oil in water in accordance with MARPOL Annex I - Regulations for the Prevention of Pollution by Oil.	IT1024			✓	International Convention for the Prevention of Pollution from Ships (MARPOL 73/78)
SOIL AND GROUND WATER					
Any excess soil material generated during the construction and commissioning process will be removed and managed in accordance with Italian Legislative Decree 152/06 and its subsequent amendments and supplements.	IT0009	✓	✓		D.lgs 152, 3 April 2006 Environmental Regulation Part III
A detailed characterization of soils and marine sediments will be undertaken by TAP AG, in compliance with D.lgs n. 152/06, prior to starting excavation activities. The characterization will be a minimum of 2 weeks prior to excavation activities. The methodology will be in compliance with the Soil Management Plan (Annex 6 of ESIA Integrations).	IT0025	✓	✓	✓	D.lgs 152, 3 April 2006 Environmental Regulation Part III
A plan for the re-use of suitable excess soil and rock will be prepared, including: amount to be re-used; location of any temporary storage area and location of the area where it will be placed permanently. The plan will also cover proposed arrangements for disposal of excess material (quantity, collection and disposal arrangements). The plan will be consistent with the requirements of art. 186 of D.Lgs no. 152/2006 and s.a.s and Italian Legislative Decree 161/2012.	IT0644	✓	✓	✓	D.lgs 152, 3 April 2006 Environmental Regulation Part III Legislative Decree 161, 10 August 2012 Regulations on excavated soil management
TAP's subcontractor(s) shall inspect the excavated material to ensure that all waste, debris and other foreign objects (such as sections of cable, debris of anti-corrosive coatings, etc.) are not incorporated into subsoil placement, re-contouring works or topsoil re-spreading (including backfilling and pipe bedding). The foreign bodies must be removed, collected and disposed of in accordance with current law.	IT0709	✓	✓		Current law (specific legislation not specified)
Gravel for pipeline backfill and mitigation of free spans will be characterised beforehand to demonstrate compatibility with and harmlessness in relation to the environment, in terms of art 109 of D. Lgs. 152/2006 and s.m.i.	IT0996			✓	D.lgs 152, 3 April 2006 Environmental Regulation Part III
TAP's contractor(s) will ensure all wastes are properly contained, labelled and disposed of in accordance with local regulations to a licensed/approved waste disposal site	IT0115				N/A
The construction site will be illuminated in accordance with the recommendations provided by the Region of Apulia in Regional Law n. 15 of 23 November 2005, "Urgent measures for the containment of light pollution and saving energy", art. 5	IT0144	✓	✓	✓	Regional Law n. 15 23 November 2005 Urgent measures for the containment of light pollution
All vessels involved in the Project will have Health, Safety and Environmental management systems in place in accordance with international regulations (MARPOL)	IT0236	✓	✓		International Convention for the Prevention of Pollution from Ships (MARPOL 73/78)

Relevant Project commitments					
Commitment text	**Commitment No**	**Applicable to onshore area/ Project activities**	**Applicable to coastal area/Project activities**	**Applicable to marine area/Project activities**	**Name of legislation referenced**
Pre-construction studies must be undertaken at the site of the microtunnel as described in Article 1, A.5 of document number D.M. 223 11/09/2014	IT0548			✓	D.M. 0000223 11 September 2014 Environmental Compatibility Decree
Define and carry out a programme of monitoring of coral massifs and outcropping areas of "bioconstructions" before, during and after the laying of the pipeline, based upon research previously undertaken as described in Article x, of document number D.M. 223 11/09/2014	IT0567		✓		D.M. 0000223, 11 September 2014 Environmental Compatibility Decree
In the area affected by the corridor for laying the pipeline and the FOC, on the coral massifs and outcropping of "bioconstructions" considered more important, the following pre-construction monitoring must be undertaken: - a programme of explorative investigation of the bentonic populations in rock and sediment samples from the area - qualitative and quantitative characterisation of the bentonic populations must be made by means of visual census and photographic surveys carried out by underwater operators - a programme of explorative investigation of the macro-alga population a, similar to that undertaken for the bentonic population - a programme of investigation for microphytobenthos - a visual census of fish fauna for the purpose of assessing the principal systematic groups and the presence of rare species. The methods of analysis for all the above must include the details described in D.M. 223 11/09/2014 and be developed and agreed with ARPA Puglia.	IT0589			✓	D.M. 0000223, 11 September 2014 Environmental Compatibility Decree
In the area affected by the corridor for laying the pipeline and the FOC, on the coral massifs and outcropping of "bioconstructions" considered more important, the following post-construction monitoring must be undertaken as a comparison with the pre-construction results : - a programme of explorative investigation of the bentonic populations in rock and sediment samples from the area - qualitative and quantitative characterisation of the bentonic populations must be made by means of visual census and photographic surveys carried out by underwater operators - a programme of explorative investigation of the macro-alga population a, similar to that undertaken for the bentonic population - a programme of investigation for microphytobenthos - a visual census of fish fauna for the purpose of assessing the principal systematic groups and the presence of rare species.	IT0593			✓	D.M. 0000223, 11 September 2014 Environmental Compatibility Decree
TAP AG will develop a Construction Operations Manual detailing construction methods and logistics which will be submitted to the Ministry of the Environment and Protection of Land and Sea for approval before construction commences. The manual will contain the details prescribed in Article 11 of D.M. 223 11/09/2014	IT0601			✓	D.M. 0000223, 11 September 2014 Environmental Compatibility Decree
The design and construction of the pipeline will comply with the decree of the Ministry of Economic development of 17 April 2008, "Technical regulations for the design, construction, testing, operation and surveillance of structures and plants for the transport of natural gas with density not exceeding 0.8 kg/m3"	IT0620	✓	✓	✓	Decree of the Ministry of Economic Development of 17 April 2008, "Technical regulations for the design, construction, testing, operation and surveillance of structures and plants for the transport of natural gas with density not exceeding 0.8 kg/m3"
The design and construction of the pipeline and associated structures will comply with the Decree of the Ministry for Infrastructures of 14 January 2008, "Approval of the new Technical Standards for Buildings"	IT0622	✓	✓	✓	Decree of the Ministry for Infrastructures of 14 January 2008, "Approval of the new Technical Standards for Buildings"
The detailed designs must be prepared for the operations for mitigating the landscape impact for the PRT and the line installations (measuring stations) envisaged by the project, in respect of the elements structuring the existing landscape features and considering that the lighting installation of the PRT must be designed in compliance with the provisions of the L.R. (Regional Law) 15/2005 Urgent measures for the containment of light pollution and energy saving, so as to cause as little disturbance as possible to bird wildlife and in general to the bordering anthropic and natural receptors.	IT0653	✓	✓	?	Regional Law n. 15, 23 November 2005 Urgent measures for the containment of light pollution
It is prescribed that for the management of interferences with the olive trees reference must be made to the Deliberation of the Regional Council of 2 August 2013, no. 1417, which updates the provisional, not definitive, list of the monumental olive trees referred to in Art. 5 (List of monumental olive trees and groves) of L.R. 14/2007, made up of 1321 specimens; to the Deliberation of the Regional Council of 3 September 2013, no. 1576, approving the guidelines relating to the manner of explanting, transport and re-planting of monumental olive trees such as the guideline for the correct application of the agronomic procedures envisaged following the application of arts. 11 and 13 of L.R. 14/2007, where there are olive trees presenting	IT0656	✓			Deliberation of the Regional Council n.1417, 2 August 2013 Concerning the updating of the provisional list of monumental olive trees Deliberation of the Regional Council n.1576, 3 September 2013 Concerning the Guidelines on how to explant, transport and replant monumental olive trees
Before beginning the works it is necessary to produce an executive design for the interferences with the olive trees, drafted in compliance with the Deliberation of the Regional Council of 2 August 2013, no. 1417 and the Deliberation of the Regional Council of 3 September 2013, no. 1576 and approved by Puglia Region	IT0657	✓	✓		Deliberation of the Regional Council n.1417, 2 August 2013 Concerning the updating of the provisional list of monumental olive trees Deliberation of the Regional Council n.1576, 3 September 2013 Concerning the Guidelines on how to explant, transport and replant monumental olive trees Regional Law n. 14/2007, on Apulia landscape and monumental olive tree safeguards

Relevant Project commitments					
Commitment text	Commitment No	Applicable to onshore area/ Project activities	Applicable to coastal area/Project activities	Applicable to marine area/Project activities	Name of legislation referenced
When removing and replanting olive trees the requirements of Attachment A of L.R. 4/06/2007 no. 14 will be followed.	IT0663	✓	✓		Regional Law n. 14, 4 June 2007 on Apulia landscape and monumental olive tree safeguards
Radiographic equipment for the testing of the welds should be undertaken in accordance with Legislative Decree 230/1995 and subsequent amendments and supplements	IT0764				Legislative Decree n.230, 17 March 1995 on radioprotection
At all stages of creation and operation of the work disposal of the waste produced must take place in accordance with the provisions set out by Legislative Decree 152/2006 and subsequent amendments and supplements.	IT0778	✓	✓	✓	D.lgs 152, 3 April 2006 Environmental Regulation
If the set-up of the construction site should involve the Fantula area, archaeological digs must be carried out beforehand, pursuant to Art. 28 of Legislative Decree 42/2004, to ascertain whether there are archaeological levels and/or structures referring to the ancient farmland connected with the rural settlement of Fantula.	IT0791	✓	✓	✓	D.Lgs 42, 22 January 2004 Law on the cultural heritage and landscape
If finds of archaeological interest are made (chance finds) the provisions set out by Legislative Decree 42/2004 will be adopted, including technical checks through stratigraphic archaeological digs (onshore)/the recovery, recording and conservation of material recovered offshore (offshore). Such work shall be completed under the authority of the Heritage Office. The Project will implement and fund requirements for protecting cultural heritage chance finds specified by the Heritage Office.	IT0794	✓			D.Lgs 42, 22 January 2004 Law on the cultural heritage and landscape
To reduce the light pollution, in accordance with the recommendations provided by the Apulia Region in Regional Law no. 15 of 23 November 2005 a solutions that can be adopted is (Institute of Lighting Engineers, 2005) dim or switch off lights when the task is finished.	IT0868	✓	✓	✓	Regional Law n. 15, 23 November 2005 Urgent measures for the containment of light pollution
To reduce the light pollution, in accordance with the recommendations provided by the Apulia Region in Regional Law no. 15 of 23 November 2005 a solutions that can be adopted is (Institute of Lighting Engineers, 2005) use specifically designed lighting equipment that minimises the upward spread of light near to and above the horizontal.	IT0869	✓	✓		Regional Law n. 15, 23 November 2005 Urgent measures for the containment of light pollution
To reduce the light pollution, in accordance with the recommendations provided by the Apulia Region in Regional Law no. 15 of 23 November 2005 a solutions that can be adopted is (Institute of Lighting Engineers, 2005) do not "over" light.	IT0903	✓	✓		Regional Law n. 15, 23 November 2005 Urgent measures for the containment of light pollution
To reduce the light pollution, in accordance with the recommendations provided by the Apulia Region in Regional Law no. 15 of 23 November 2005 a solutions that can be adopted is (Institute of Lighting Engineers, 2005) dim or switch off lights when the task is finished.	IT0904	✓	✓		Regional Law n. 15, 23 November 2005 Urgent measures for the containment of light pollution
To reduce the light pollution, in accordance with the recommendations provided by the Apulia Region in Regional Law no. 15 of 23 November 2005 a solutions that can be adopted is (Institute of Lighting Engineers, 2005) use specifically designed lighting equipment that minimises the upward spread of light near to and above the horizontal.	IT0905	✓	✓		Regional Law n. 15, 23 November 2005 Urgent measures for the containment of light pollution
To reduce the light pollution, in accordance with the recommendations provided by the Apulia Region in Regional Law no. 15 of 23 November 2005 a solutions that can be adopted is (Institute of Lighting Engineers, 2005) keep glare to a minimum by ensuring that the main beam angle of all lights directed towards any potential observer is not more than 70°.	IT0906	✓	✓		Regional Law n. 15, 23 November 2005 Urgent measures for the containment of light pollution
Training on the risks associated with plant maintenance and running operations specific activities will be provided to personnel, where relevant, as required by Italian legalisation.	IT0924	✓	✓		Italian legislation (specific legislation not identified).
The construction company will be responsible for drawing up the Operational Safety Plan (risk assessment document) and the emergency plan for construction site activities, in compliance with the provisions of Italian Legislative Decree 81/2008 and the Safety and Coordination Plan (SCP).	IT0975	✓	✓	✓	Legislative Decree n. 81, 09 April 2008 - Consolidated law on health and safety at work. Integrated with the Legislative Decree n. 106/2009

TAP AG Project Title / Facility Name:

Trans Adriatic Pipeline Project

Document Title:

Consolidated ESMS Project Standards

Appendix 4 - Numerical Values Table

CAL00-PMT-601-Y-TTM-0001

	PS Greece		PS Albania		PS Italy	
	Value	Basis / Source	Value	Basis / Source	Value	Basis / Source
CONSTRUCTION PHASE						
Noise and Vibration - Onshore and Coastal Zone						
Construction Equipment						
Maximum acceptable sound pressure levels on the noise	European legislation by Directive 2005/88/EC (amending 2000/14/EC)		European legislation by Directive 2005/88/EC (amending 2000/14/EC)		European legislation by Directive 2005/88/EC (amending 2000/14/EC)	
Semi-permanent noise sources (construction camps)						
Residential outdoor living area Free–field rating level ($L_{Ar,Tr}$) in daytime (07:00–23:00)	50	WHO for Community Noise (1999)	50	WHO for Community Noise (1999) and Albanian Directive No 8 "Noise limits in the design environments"	N/A	N/A
Average sound level at residential façade over 8 hours (L_{Aeq} T) at night-time (23:00–07:00)	45	WHO for Community Noise (1999)	45	WHO for Community Noise (1999) and Albanian Directive No 8 "Noise limits in the design environments"	N/A	N/A
Maximum sound level at residential façade (L_{Amax}, f) at night (23:00–07:00)	60	WHO for Community Noise (1999)	60	WHO for Community Noise (1999) and Albanian Directive No 8 "Noise limits in the design environments"	N/A	N/A
Maximum increase in background levels at the nearest receptor location off-site (Free–field rating level (LAr,Tr)	<3 dB	IFC General EHS Guidelines (2007): Environmental, 1.7	<3 dB	IFC General EHS Guidelines (2007): Environmental, 1.7	N/A	N/A
Temporary noise sources (construction works)						
Lower Threshold Value - Early Morning 06:00 to 07:00	45 $L_{Aeq,\ 1\ hour}$ (dB)	WHO for Community Noise (1999)	45 $L_{Aeq,\ 1\ hour}$ (dB)	WHO Guidelines for Community Noise (1999) and Albanian Directive No 8	45 $L_{Aeq,\ 1\ hour}$ (dB)	WHO Guidelines for Community Noise (1999). This level relates to 5 dB below the night-time criteria for Zone B in DPCM 91
Lower Threshold Value - Daytime 07:00 to 19:00	70 $L_{Aeq,\ 12\ hours}$ (dB)	BS 5228 (2009)	70 $L_{Aeq,\ 12\ hours}$ (dB)	BS 5228 (2009)	70 $L_{Aeq,\ 12\ hours}$ (dB)	BS 5228 (2009) and Puglia Regional Law. This level relates to the daytime criteria for 'All zones' in DPCM 91
Lower Threshold Value - Evening 19:00 to 22:00	55 $L_{Aeq,\ 3\ hours}$ (dB)	WHO Guidelines for Community Noise (1999) and BS 5228 (2009)	55 $L_{Aeq,\ 3\ hours}$ (dB)	WHO Guidelines for Community Noise (1999) and BS 5228 and Albanian Directive No 8	55 $L_{Aeq,\ 3\ hours}$ (dB)	WHO Guidelines for Community Noise (1999) and BS 5228 (2009). This level relates to 5 dB below the daytime criteria for Zone B in DPCM 91
Lower Threshold Value - Out of Hours 22:00 to 06:00	45 $L_{Aeq,\ 1\ hour}$ (dB)	WHO for Community Noise (1999)	45 $L_{Aeq,\ 1\ hour}$ (dB)	WHO Guidelines for Community Noise (1999) and Albanian Directive No 8	45 $L_{Aeq,\ 1\ hour}$ (dB)	WHO Guidelines for Community Noise (1999). This level relates to 5 dB below the night-time criteria for Zone B in DPCM 91
Upper Noise Limit - Early Morning 06:00 to 07:00	55 $L_{Aeq,\ 1\ hour}$ (dB)	Interim Target within WHO Night Noise Guidelines for Europe (2009) and BS 5228	55 $L_{Aeq,\ 1\ hour}$ (dB)	Interim Target within WHO Night Noise Guidelines for Europe (2009) and BS 5228	55 $L_{Aeq,\ 1\ hour}$ (dB)	Interim Target within WHO Night Noise Guidelines for Europe (2009) and BS 5228 (2009). This level relates to 5 dB above the night-time criteria for Zone B in DPCM 91
Upper Noise Limit - Daytime 07:00 to 19:00	75 $L_{Aeq,\ 12\ hours}$ (dB)	BS 5228 (2009)	75 $L_{Aeq,\ 12\ hours}$ (dB)	BS 5228 (2009)	75 $L_{Aeq,\ 12\ hours}$ (dB)	BS 5228 (2009). This level relates to 5 dB above the daytime criteria for 'All zones' in DPCM 91
Upper Noise Limit - Evening 19:00 to 22:00	65 $L_{Aeq,\ 3\ hours}$ (dB)	BS 5228 (2009)	65 $L_{Aeq,\ 3\ hours}$ (dB)	BS 5228 (2009)	65 $L_{Aeq,\ 3\ hours}$ (dB)	BS 5228 (2009). This level relates to 5 dB above the daytime criteria for Zone B in DPCM 91
Upper Noise Limit - Out of Hours 22:00 to 06:00	55 $L_{Aeq,\ 1\ hour}$ (dB)	Interim Target within WHO Night Noise Guidelines for Europe (2009) and BS 5228 (2009)	55 $L_{Aeq,\ 1\ hour}$ (dB)	Interim Target within WHO Night Noise Guidelines for Europe (2009) and BS 5228 (2009)	55 $L_{Aeq,\ 1\ hour}$ (dB)	Interim Target within WHO Night Noise Guidelines for Europe (2009) and BS 5228 (2009). This level relates to 5 dB above the night-time criteria for Zone B in DPCM 91
Project standards for construction vibration						
Receptor: Humans in buildings	1.0 $mm{\cdot}s^{-1}$	BS 5228 (2009)	1.0 $mm{\cdot}s^{-1}$	BS 5228 (2009)	1.0 $mm{\cdot}s^{-1}$	BS 5228 (2009)
Receptor: Unreinforced or light framed structures / Residential or light commercial type buildings	0.6 $mm{\cdot}s^{-1}$ at < 4 Hz 15 $mm{\cdot}s^{-1}$ at 4 Hz increasing to 20 $mm{\cdot}s^{-1}$ at 15 Hz increasing to 50 $mm{\cdot}s^{-1}$ at 40 Hz and above	BS 5228 (2009)	0.6 $mm{\cdot}s^{-1}$ at < 4 Hz 15 $mm{\cdot}s^{-1}$ at 4 Hz increasing to 20 $mm{\cdot}s^{-1}$ at 15 Hz increasing to 50 $mm{\cdot}s^{-1}$ at 40 Hz and above	BS 5228 (2009)	0.6 $mm{\cdot}s^{-1}$ at < 4 Hz 15 $mm{\cdot}s^{-1}$ at 4 Hz increasing to 20 $mm{\cdot}s^{-1}$ at 15 Hz increasing to 50 $mm{\cdot}s^{-1}$ at 40 Hz and above	BS 5228 (2009)
Noise and Vibration - Offshore						
Not applicable. Refer to Section 4.5.2 of Environmental Project	N/A	N/A	N/A	N/A	N/A	N/A
Air emissions - Onshore and Coastal Zone						
Medium combustion facilities (1-50 MWth)						
Engine						
PM [mg/Nm^3]	---	----	---	----	---	----
SO_2 [mg/Nm^3]	---	----	---	----	---	----
Engine - Gas: NO_x [mg/Nm^3]	95 190 (dual fuel engine in gas mode)	Directive 2015/2193 - Medium Combustion Plant Directive	200 (spark ignition) 400 (dual fuel) 1'600 (compression ignition)	IFC General EHS Guidelines (2007): Small combustion facilities emissions guidelines	95 190 (dual fuel engine in gas mode)	Directive 2015/2193 - Medium Combustion Plant Directive

		PS Greece		PS Albania		PS Italy	
		Value	Basis / Source	Value	Basis / Source	Value	Basis / Source
	O_2 [%]	15	IFC General EHS Guidelines (2007): Small combustion facilities emissions guidelines	15	IFC General EHS Guidelines (2007): Small combustion facilities emissions guidelines	15	IFC General EHS Guidelines (2007): Small combustion facilities emissions guidelines
Engine - Liquid	PM [mg/Nm^3]	50 or up to 100 if justified by project-specific considerations	IFC General EHS Guidelines (2007): Small combustion facilities emissions guidelines	50 or up to 100 if justified by project-specific considerations	IFC General EHS Guidelines (2007): Small combustion facilities emissions guidelines	50 or up to 100 if justified by project-specific considerations	IFC General EHS Guidelines (2007): Small combustion facilities emissions guidelines
	SO_2 [mg/Nm^3]	1.5% sulphur in the fuel or up to 3.0% if justified by project-specific considerations	IFC General EHS Guidelines (2007): Small combustion facilities emissions guidelines	1.5% sulphur in the fuel or up to 3.0% if justified by project-specific considerations	IFC General EHS Guidelines (2007): Small combustion facilities emissions guidelines	1.5% sulphur in the fuel or up to 3.0% if justified by project-specific considerations	IFC General EHS Guidelines (2007): Small combustion facilities emissions guidelines
	NO_x [mg/Nm^3]	190 225 (dual fuel engine in gas mode or diesel engine <20 MWth and <1200 rpm)	Directive 2015/2193 - Medium Combustion Plant Directive	If bore size diameter [mm] < 400: 1'460 (or up to 1,600 if justified to maintain high energy efficiency) If bore size diameter [mm] > or = 400: 1'850	IFC General EHS Guidelines (2007): Small combustion facilities emissions guidelines	190 225 (dual fuel engine in gas mode or diesel engine <20 MWth and <1200 rpm)	Directive 2015/2193 - Medium Combustion Plant Directive
	O_2 [%]	15	IFC General EHS Guidelines (2007): Small combustion facilities emissions guidelines	15	IFC General EHS Guidelines (2007): Small combustion facilities emissions guidelines	15	IFC General EHS Guidelines (2007): Small combustion facilities emissions guidelines
Turbine							
Turbine - Natural gas	PM [mg/Nm^3]	---	----	---	----	---	----
	SO_2 [mg/Nm^3]	---	----	---	----	---	----
	NO_x [mg/Nm^3]	50	Directive 2015/2193 - Medium Combustion Plant Directive	3MWth to < 15MWth 42 ppm (electric generation) 100 ppm (mechanical drive)	IFC General EHS Guidelines (2007): Small combustion facilities emissions guidelines	N/A	N/A
				15MWth to < 50 MWth 25 ppm	IFC General EHS Guidelines (2007): Small combustion facilities emissions guidelines	N/A	N/A
	O_2 [%]	15	IFC General EHS Guidelines (2007): Small combustion facilities emissions guidelines	3MWth to < 15MWth 15	IFC General EHS Guidelines (2007): Small combustion facilities emissions guidelines	N/A	N/A
				15MWth to < 50 MWth 15	IFC General EHS Guidelines (2007): Small combustion facilities emissions guidelines	N/A	N/A
Turbine - Liquid	PM [mg/Nm^3]	---	----	---	----	---	----
	SO_2 [mg/Nm^3]	0.5% sulphur or lower if commercially available without significant excess fuel cost	IFC General EHS Guidelines (2007): Small combustion facilities emissions guidelines	0.5% sulphur or lower if commercially available without significant excess fuel cost	IFC General EHS Guidelines (2007): Small combustion facilities emissions guidelines	N/A	N/A
	NO_x [mg/Nm^3]	75 (above 70% load)	Directive 2015/2193 - Medium Combustion Plant Directive	3MWth to < 15MWth 96 ppm (electric generation) 150 ppm (mechanical drive)	IFC General EHS Guidelines (2007): Small combustion facilities emissions guidelines	N/A	N/A
				15MWth to < 50 MWth 74 ppm	IFC General EHS Guidelines (2007): Small combustion facilities emissions guidelines	N/A	N/A
	O_2 [%]	15	IFC General EHS Guidelines (2007): Small combustion facilities emissions guidelines	15	IFC General EHS Guidelines (2007): Small combustion facilities emissions guidelines	N/A	N/A
Boiler							
Boiler - Gas	PM [mg/Nm^3]	---	----	---	----	---	----
	SO_2 [mg/Nm^3]	---	----	---	----	---	----
	NO_x [mg/Nm^3]	100	Directive 2015/2193 - Medium Combustion Plant Directive	320	IFC General EHS Guidelines (2007): Small combustion facilities emissions guidelines	100	Directive 2015/2193 - Medium Combustion Plant Directive
	O_2 [%]	3	IFC General EHS Guidelines (2007): Small combustion facilities emissions guidelines	3	IFC General EHS Guidelines (2007): Small combustion facilities emissions guidelines	3	IFC General EHS Guidelines (2007): Small combustion facilities emissions guidelines
Boiler - Liquid	PM [mg/Nm^3]	50 or up to 150 if justified by environmental assessment	IFC General EHS Guidelines (2007): Small combustion facilities emissions guidelines	50 or up to 150 if justified by environmental assessment	IFC General EHS Guidelines (2007): Small combustion facilities emissions guidelines	50 or up to 150 if justified by environmental assessment	IFC General EHS Guidelines (2007): Small combustion facilities emissions guidelines
	SO_2 [mg/Nm^3]	2,000	IFC General EHS Guidelines (2007): Small combustion facilities emissions guidelines	2,000	IFC General EHS Guidelines (2007): Small combustion facilities emissions guidelines	2,000	IFC General EHS Guidelines (2007): Small combustion facilities emissions guidelines
	NO_x [mg/Nm^3]	200 (gas oil)	Directive 2015/2193 - Medium Combustion Plant Directive	460	IFC General EHS Guidelines (2007): Small combustion facilities emissions guidelines	200 (gas oil)	Directive 2015/2193 - Medium Combustion Plant Directive
	O_2 [%]	3	IFC General EHS Guidelines (2007): Small combustion facilities emissions guidelines	3	IFC General EHS Guidelines (2007): Small combustion facilities emissions guidelines	3	IFC General EHS Guidelines (2007): Small combustion facilities emissions guidelines
	PM [mg/Nm^3]	N/A	N/A	50 or up to 150 if justified by environmental assessment	IFC General EHS Guidelines (2007): Small combustion facilities emissions guidelines	N/A	N/A

			PS Greece		PS Albania		PS Italy	
			Value	Basis / Source	Value	Basis / Source	Value	Basis / Source
Boiler - Solid		SO_2 [mg/Nm^3]	N/A	N/A	2,000	IFC General EHS Guidelines (2007): Small combustion facilities emissions guidelines	N/A	N/A
		NO_x [mg/Nm^3]	N/A	N/A	650	IFC General EHS Guidelines (2007): Small combustion facilities emissions guidelines	N/A	N/A
		O_2 [%]	N/A	N/A	6	IFC General EHS Guidelines (2007): Small combustion facilities emissions guidelines	N/A	N/A
Air emissions - Offshore								
Marine fuel sulphur content			N/A	N/A	3.50%	MARPOL Annex VI	0.035	MARPOL Annex VI
Ambient Air Quality								
Air quality at receptor locations								
PM_{10} [µg/m^3]		daily limit (not to be exceeded 35 times in a calendar year) annual average limit	N/A	N/A	50 µg/m^3 40 µg/m^3	Directive 2008/50/EC - Ambient Air Quality Directive	50 µg/m^3 40 µg/m^3	Directive 2008/50/EC - Ambient Air Quality Directive
Ambient air quality								
NO_2 [µg/m^3]		annual average	40	Directive 2008/50/EC - Ambient Air Quality and WHO Air Quality Guidelines (2005)	40	Directive 2008/50/EC - Ambient Air Quality and WHO Air Quality Guidelines (2005)	40	Directive 2008/50/EC - Ambient Air Quality and WHO Air Quality Guidelines (2005)
		hourly average	200	WHO Air Quality Guidelines (2005)	200	WHO Air Quality Guidelines (2005)	200	WHO Air Quality Guidelines (2005)
CO [µg/m^3]		maximum daily 8-hour mean	10,000	Directive 2008/50/EC - Ambient Air Quality and WHO Air Quality Guidelines (2005)	10,000	Directive 2008/50/EC - Ambient Air Quality and WHO Air Quality Guidelines (2005)	10,000	Directive 2008/50/EC - Ambient Air Quality and WHO Air Quality Guidelines (2005)
SO_2 [µg/m^3]		24-hour mean (not to be exceeded more than 3 times per year)	125	Directive 2008/50/EC - Ambient Air Quality	125	Directive 2008/50/EC - Ambient Air Quality	125	Directive 2008/50/EC - Ambient Air Quality
		hourly limit (not to be exceeded more than 24 times per year)	350	Directive 2008/50/EC - Ambient Air Quality	350	Directive 2008/50/EC - Ambient Air Quality	350	Directive 2008/50/EC - Ambient Air Quality
		10-minute mean	500	WHO Air Quality Guidelines (2005)	500	WHO Air Quality Guidelines (2005)	500	WHO Air Quality Guidelines (2005)
		24-hour mean (treated as an aspirational 'stretch' target, in line with the philosophy of the WHO guidelines, 2005 global update)	20	WHO Air Quality Guidelines (2005)	20	WHO Air Quality Guidelines (2005)	20	WHO Air Quality Guidelines (2005)
		annual limit (applies only to protection of vegetation and ecologically sensitive sites - averaging period: calendar year and winter 1 October to 31 March	20	Directive 2008/50/EC - Ambient Air Quality and WHO Air Quality Guidelines (2005)	20	Directive 2008/50/EC - Ambient Air Quality and WHO Air Quality Guidelines (2005)	20	Directive 2008/50/EC - Ambient Air Quality and WHO Air Quality Guidelines (2005)
NO_x [µg/m^3]		annual limit (applies only to protection of vegetation and ecologically sensitive sites)	30	Directive 2008/50/EC - Ambient Air Quality and WHO Air Quality Guidelines (2005)	30	Directive 2008/50/EC - Ambient Air Quality and WHO Air Quality Guidelines (2005)	30	Directive 2008/50/EC - Ambient Air Quality and WHO Air Quality Guidelines (2005)
PM_{10} [µg/m^3]		annual mean	20	WHO Air Quality Guidelines (2005)	20	WHO Air Quality Guidelines (2005)	20	WHO Air Quality Guidelines (2005)
		daily mean	50	WHO Air Quality Guidelines (2005)	50 daily limit not to be exceeded more than 35 times a calendar year	Directive 2008/50/EC - Ambient Air Quality	50	WHO Air Quality Guidelines (2005)
$PM_{2.5}$ [µg/m^3]		annual mean	10	WHO Air Quality Guidelines (2005)	10	WHO Air Quality Guidelines (2005)	10	WHO Air Quality Guidelines (2005)
		24-hour mean	25	WHO Air Quality Guidelines (2005)	25	WHO Air Quality Guidelines (2005)	25	WHO Air Quality Guidelines (2005)
Benzene [µg/m^3]		annual mean	5	Directive 2008/50/EC - Ambient Air Quality	5	Directive 2008/50/EC - Ambient Air Quality	5	Directive 2008/50/EC - Ambient Air Quality
Discharges to Water - Onshore								
Discharge of sanitary wastewater to surface water receptors								
pH			6-9	IFC General EHS Guidelines (2007): Wastewater and Ambient Water	6-9	IFC General EHS Guidelines (2007): Wastewater and Ambient Water	5.5 - 9.5 (into surface waters)	D.lgs 152/2006
Biological oxygen demand BOD_5 [mg/l]			25	Directive 91/271/EEC - Urban Wastewater Treatment	25	Albanian Decision No 177 and Directive 91/271/EEC - Urban Wastewater Treatment	≤25 (into surface waters) ≤250 (into sewers)	D.lgs 152/2006
Chemical oxygen demand COD [mg/l]			125	IFC General EHS Guidelines (2007): Wastewater and Ambient Water and Directive 91/271/EEC - Urban Wastewater Treatment	125	Albanian Decision No 177 and Directive 91/271/EEC - Urban Wastewater Treatment	≤125 (into surface waters) <500 (into sewers)	D.lgs 152/2006
Total nitrogen [mg/l]			10	IFC General EHS Guidelines (2007): Wastewater and Ambient Water	10	IFC General EHS Guidelines (2007): Wastewater and Ambient Water	N/A	N/A
Total phosphorus [mg/l]			2	IFC General EHS Guidelines (2007): Wastewater and Ambient Water	2	IFC General EHS Guidelines (2007): Wastewater and Ambient Water	N/A	N/A
Oil and grease [mg/l]			10	IFC General EHS Guidelines (2007): Wastewater and Ambient Water	10	IFC General EHS Guidelines (2007): Wastewater and Ambient Water	N/A	N/A

	PS Greece		PS Albania		PS Italy	
	Value	Basis / Source	Value	Basis / Source	Value	Basis / Source
Temperature	The temperature of waste water prior to discharge shall not result in an increase of more than 3°C of ambient temperature at the edge of a scientifically established mixing zone that takes into account ambient water quality, receiving water use and assimilative capacity among other considerations	IFC General EHS Guidelines (2007): Wastewater and Ambient Water	The temperature of waste water prior to discharge shall not result in an increase of more than 3°C of ambient temperature at the edge of a scientifically established mixing zone that takes into account ambient water quality, receiving water use and assimilative capacity among other considerations	IFC General EHS Guidelines (2007): Wastewater and Ambient Water	For water streams the maximum temperature variation between the average water temperature in any section of the stream upstream and downstream of the discharge point must not be greater than 3°C. For at least half of any section downstream of the discharge point such variation must not exceed 1°C	D.lgs 152/2006
TSS [mg/l]	50	IFC General EHS Guidelines (2007): Wastewater and Ambient Water	50	IFC General EHS Guidelines (2007): Wastewater and Ambient Water	≤35 (into surface waters) ≤200 (into sewers)	D.lgs 152/2006
Coliform bacteria [Most probable number/100ml]	400	IFC General EHS Guidelines (2007): Wastewater and Ambient Water	400	IFC General EHS Guidelines (2007): Wastewater and Ambient Water	N/A	N/A
Arsenic [mg/]	----	----	----	----	≤0.5 (both)	D.lgs 152/2006
Cadmium [mg/l]	----	----	----	----	≤'0.02 (both)	D.lgs 152/2006
Mercury [mg/l]	----	----	----	----	≤'0.005 (both)	D.lgs 152/2006
Nickel [mg/l]	----	----	----	----	≤2 (into surface waters) ≤4 (into sewers)	D.lgs 152/2006
Lead [mg/l]	----	----	----	----	≤0.2 (into surface waters) ≤0.3 (into sewers)	D.lgs 152/2006
Copper [mg/l]	----	----	----	----	≤'0.1 (into surface waters) ≤0.4 (into sewers)	D.lgs 152/2006
Zinc [mg/l]	----	----	----	----	≤'0.5 (into surface waters) ≤1 (into sewers)	D.lgs 152/2006
Free active chlorine [mg/l]	----	----	----	----	≤0.2 (into surface waters) ≤0.3 (into sewers)	D.lgs 152/2006
Sulphides (as H_2S) [mg/l]	----	----	----	----	≤1 (into surface waters) ≤2 (into sewers)	D.lgs 152/2006
Chlorides [mg/l]	----	----	----	----	≤'1200 (both)	D.lgs 152/2006
Ammonia nitrogen (as NH_4) [mg/l]	----	----	----	----	≤15 (into surface waters) ≤30 (into sewers)	D.lgs 152/2006
Total hydrocarbons [mg/l]	----	----	----	----	≤5 (into surface waters) ≤10 (into sewers)	D.lgs 152/2006
Phenols [mg/l]	----	----	----	----	≤0.5 (into surface waters) ≤1 (into sewers)	D.lgs 152/2006
Discharge of hydrostatic test wastewater						
pH	6-9	IFC EHS Guidelines for Onshore Oil and Gas Development (2007)	6-9	IFC EHS Guidelines for Onshore Oil and Gas Development (2007)	6-9	IFC EHS Guidelines for Onshore Oil and Gas Development (2007)
BOD_5 [mg/l]	25	IFC EHS Guidelines for Onshore Oil and Gas Development (2007)	25	IFC EHS Guidelines for Onshore Oil and Gas Development (2007)	25	IFC EHS Guidelines for Onshore Oil and Gas Development (2007)
COD [mg/l]	125	IFC EHS Guidelines for Onshore Oil and Gas Development (2007)	125	IFC EHS Guidelines for Onshore Oil and Gas Development (2007)	125	IFC EHS Guidelines for Onshore Oil and Gas Development (2007)
Sulphides [mg/l]	1	IFC EHS Guidelines for Onshore Oil and Gas Development (2007)	1	IFC EHS Guidelines for Onshore Oil and Gas Development (2007)	1	IFC EHS Guidelines for Onshore Oil and Gas Development (2007)
Total heavy metals [mg/l] arsenic, cadmium, chromium, copper, lead, mercury, nickel, silver, vanadium, zinc	5	IFC EHS Guidelines for Onshore Oil and Gas Development (2007)	5	IFC EHS Guidelines for Onshore Oil and Gas Development (2007)	N/A	N/A
Arsenic [mg/l	N/A	N/A	N/A	N/A	≤ 0.5	D.lgs 152/2006
Cadmium [mg/l]	N/A	N/A	N/A	N/A	≤ 0.02	D.lgs 152/2006
Mercury [mg/l]	N/A	N/A	N/A	N/A	≤ 0.005	D.lgs 152/2006
Nickel [mg/l]	N/A	N/A	N/A	N/A	≤ 2.0	D.lgs 152/2006
Lead [mg/l]	N/A	N/A	N/A	N/A	≤ 0.2	D.lgs 152/2006
Copper [mg/l]	N/A	N/A	N/A	N/A	≤ 0.1	D.lgs 152/2006
Zinc [mg/l]	N/A	N/A	N/A	N/A	≤ 0.5	D.lgs 152/2006
Total hydrocarbon content [mg/l]	10	IFC EHS Guidelines for Onshore Oil and Gas Development (2007)	10	IFC EHS Guidelines for Onshore Oil and Gas Development (2007)	≤ 5.0	D.lgs 152/2006
TSS [mg/l]	35	IFC EHS Guidelines for Onshore Oil and Gas Development (2007)	35	IFC EHS Guidelines for Onshore Oil and Gas Development (2007)	35	IFC EHS Guidelines for Onshore Oil and Gas Development (2007)
Phenols [mg/l]	0.5	IFC EHS Guidelines for Onshore Oil and Gas Development (2007)	0.5	IFC EHS Guidelines for Onshore Oil and Gas Development (2007)	0.5	IFC EHS Guidelines for Onshore Oil and Gas Development (2007)
Chlorides [mg/l] average maximum	600 1'200	IFC EHS Guidelines for Onshore Oil and Gas Development (2007)	600 1'200	IFC EHS Guidelines for Onshore Oil and Gas Development (2007)	600 1'200	IFC EHS Guidelines for Onshore Oil and Gas Development (2007)
Free active chlorine [mg/l]	N/A	N/A	N/A	N/A	≤ 0.2	D.lgs 152/2006
Sulphides (as H2S) [mg/l]	N/A	N/A	N/A	N/A	≤ 1.0	D.lgs 152/2006
Ammonia nitrogen (as NH4) [mg/l]	N/A	N/A	N/A	N/A	≤ 15	D.lgs 152/2006

		PS Greece		PS Albania		PS Italy	
		Value	Basis / Source	Value	Basis / Source	Value	Basis / Source
Temperature		The temperature of waste water prior to discharge shall not result in an increase of more than 3°C of ambient temperature at the edge of a scientifically established mixing zone that takes into account ambient water quality, receiving water use and assimilative capacity among other considerations	IFC General EHS Guidelines (2007): Wastewater and Ambient Water	The temperature of waste water prior to discharge shall not result in an increase of more than 3°C of ambient temperature at the edge of a scientifically established mixing zone that takes into account ambient water quality, receiving water use and assimilative capacity among other considerations	IFC General EHS Guidelines (2007): Wastewater and Ambient Water	The temperature of waste water prior to discharge shall not result in an increase of more than 3°C of ambient temperature at the edge of a scientifically established mixing zone that takes into account ambient water quality, receiving water use and assimilative capacity among other considerations/ For water streams the maximum temperature variation between the average water temperature in any section of the stream upstream and downstream of the discharge point must not be greater than 3°C. For at least half of any section downstream of the discharge point such variation must not exceed 1°C	IFC EHS Guidelines for Wastewater and Ambient Water Quality / D.lgs 152/2006
Maximum test water withdrawal rate (or volume)		10% of the stream flow (or volume) of the water source	IFC EHS Guidelines for Onshore Oil and Gas Development (2007)	10% of the stream flow (or volume) of the water source	IFC EHS Guidelines for Onshore Oil and Gas Development (2007)	10% of the stream flow (or volume) of the water source	IFC EHS Guidelines for Onshore Oil and Gas Development (2007)
Discharges to Water - Offshore							
Discharge of bilge water							
Oil [mg/l]		N/A	N/A	15	MARPOL Annex I	15	MARPOL Annex I
Discharge of hydrostatic test wastewater							
Pollution prevention and control measures listed in Section		N/A	N/A	IFC EHS Guidelines for Offshore Oil and Gas Development (2015)		IFC EHS Guidelines for Offshore Oil and Gas Development (2015)	
Maximum test water withdrawal rate (or volume)		N/A	N/A	10% of the stream flow (or volume) of the water source	IFC EHS Guidelines for Onshore Oil and Gas Development (2007)	10% of the stream flow (or volume) of the water source	IFC EHS Guidelines for Onshore Oil and Gas Development (2007)
Ballast water exchange							
Ballast water exchange distance and depth		N/A	N/A	at least 200 nm from the nearest land and in water at least 200 metres in depth	Ballast water management convention	at least 200 nm from the nearest land and in water at least 200 metres in depth	Ballast water management convention
		N/A	N/A	if unable as meet above then in all cases at least 50 nm from the nearest land and in water at least 200 metres in depth	Ballast water management convention	if unable as meet above then in all cases at least 50 nm from the nearest land and in water at least 200 metres in depth	Ballast water management convention
Ambient Water Quality							
Project Standards for ambient surface water quality standards							
pH		6-9	Directive 2006/44/EC - Freshwater Fish Directive	6-9	Directive 2006/44/EC - Freshwater Fish Directive	6-9	Directive 2006/44/EC - Freshwater Fish Directive
Temperature							
Temperature measured downstream of a point of thermal discharge (at the edge of the mixing zone) must not	salmonid waters	1.5°C	Directive 2006/44/EC - Freshwater Fish Directive	1.5°C	Directive 2006/44/EC - Freshwater Fish Directive	1.5°C	Directive 2006/44/EC - Freshwater Fish Directive
	cyprinid waters	3°C	Directive 2006/44/EC - Freshwater Fish Directive	3°C	Directive 2006/44/EC - Freshwater Fish Directive	3°C	Directive 2006/44/EC - Freshwater Fish Directive
Thermal discharges must not cause the temperature downstream of the point of thermal discharge (at the edge	salmonid waters	21.5°C	Directive 2006/44/EC - Freshwater Fish Directive	21.5°C	Directive 2006/44/EC - Freshwater Fish Directive	21.5°C	Directive 2006/44/EC - Freshwater Fish Directive
	cyprinid waters	28°C	Directive 2006/44/EC - Freshwater Fish Directive	28°C	Directive 2006/44/EC - Freshwater Fish Directive	28°C	Directive 2006/44/EC - Freshwater Fish Directive
Temperature limit applicable to breeding periods for species that need cold water to reproduce and to waters that may contain such species		10°C	Directive 2006/44/EC - Freshwater Fish Directive	10°C	Directive 2006/44/EC - Freshwater Fish Directive	10°C	Directive 2006/44/EC - Freshwater Fish Directive
BOD [mg/l]	salmonid waters	≤ 3.0	Directive 2006/44/EC - Freshwater Fish Directive	≤ 3.0	Directive 2006/44/EC - Freshwater Fish Directive	≤ 3.0	Directive 2006/44/EC - Freshwater Fish Directive
	cyprinid waters	≤ 6.0	Directive 2006/44/EC - Freshwater Fish Directive	≤ 6.0	Directive 2006/44/EC - Freshwater Fish Directive	≤ 6.0	Directive 2006/44/EC - Freshwater Fish Directive
Dissolved oxygen	salmonid waters	50% of the time ≥ 9 mg/l O_2 100% of the time ≥7 mg/l O_2	Directive 2006/44/EC - Freshwater Fish Directive	50% of the time ≥ 9 mg/l O_2 100% of the time ≥7 mg/l O_2	Directive 2006/44/EC - Freshwater Fish Directive	50% of the time ≥ 9 mg/l O_2 100% of the time ≥7 mg/l O_2	Directive 2006/44/EC - Freshwater Fish Directive
	cyprinid waters	50% of the time ≥ 8 mg/l O2 100% of the time ≥ 5 mg/l O2	Directive 2006/44/EC - Freshwater Fish Directive	50% of the time ≥ 8 mg/l O2 100% of the time ≥ 5 mg/l O2	Directive 2006/44/EC - Freshwater Fish Directive	50% of the time ≥ 8 mg/l O2 100% of the time ≥ 5 mg/l O2	Directive 2006/44/EC - Freshwater Fish Directive
TSS [mg/l]	annual average	25	Directive 2006/44/EC - Freshwater Fish Directive	25	Directive 2006/44/EC - Freshwater Fish Directive	25	Directive 2006/44/EC - Freshwater Fish Directive
Cadmium and its compounds							
Class 1	annual average maximum allowable concentration	≤ 0.08 µg/l ≤ 0.45 µg/l	Directive 2008/105/EC - EQS & MD 51354/2641/E103	≤ 0.08 µg/l ≤ 0.45 µg/l	Directive 2008/105/EC - EQS & MD 51354/2641/E103	0.8 µg/l ≤ 0.45 µg/l	D.lgs 152/2006 D.lgs 152/2006
Class 2	annual average maximum allowable concentration	0.08 µg/l 0.45 µg/l	Directive 2008/105/EC - EQS & MD 51354/2641/E103	0.08 µg/l 0.45 µg/l	Directive 2008/105/EC - EQS & MD 51354/2641/E103	N/A	N/A
Class 3	annual average maximum allowable concentration	0.09 µg/l 0.60 µg/l	Directive 2008/105/EC - EQS & MD 51354/2641/E103	0.09 µg/l 0.60 µg/l	Directive 2008/105/EC - EQS & MD 51354/2641/E103	N/A	N/A

		PS Greece		PS Albania		PS Italy	
		Value	Basis / Source	Value	Basis / Source	Value	Basis / Source
Class 4	annual average maximum allowable concentration	0.15 µg/l 0.90 µg/l	Directive 2008/105/EC - EQS & MD 51354/2641/E103	0.15 µg/l 0.90 µg/l	Directive 2008/105/EC - EQS & MD 51354/2641/E103	N/A	N/A
Class 5	annual average maximum allowable concentration	0.25 µg/l 1.50 µg/l	Directive 2008/105/EC - EQS & MD 51354/2641/E103	0.25 µg/l 1.50 µg/l	Directive 2008/105/EC - EQS & MD 51354/2641/E103	N/A	N/A
Dissolved copper [mg/l]	for water hardness of 10 mg/l $CaCO_3$	0.005	Directive 2006/44/EC - Freshwater Fish Directive	0.005	Directive 2006/44/EC - Freshwater Fish Directive	0.005	Directive 2006/44/EC - Freshwater Fish Directive
	for water hardness of 50 mg/l $CaCO_3$	0.022	Directive 2006/44/EC - Freshwater Fish Directive	0.022	Directive 2006/44/EC - Freshwater Fish Directive	0.022	Directive 2006/44/EC - Freshwater Fish Directive
	for water hardness of 100 mg/l $CaCO_3$	0.04	Directive 2006/44/EC - Freshwater Fish Directive	0.04	Directive 2006/44/EC - Freshwater Fish Directive	0.04	Directive 2006/44/EC - Freshwater Fish Directive
	for water hardness of 300 mg/l $CaCO_3$	0.112	Directive 2006/44/EC - Freshwater Fish Directive	0.112	Directive 2006/44/EC - Freshwater Fish Directive	0.112	Directive 2006/44/EC - Freshwater Fish Directive
Mercury [µg/l]	annual average maximum allowable concentration	0.05 0.07	Directive 2008/105/EC - EQS & MD 51354/2641/E103	0.05 0.07	Directive 2008/105/EC - EQS & MD 51354/2641/E103	0.03 0.06	D.lgs 152/2006 D.lgs 152/2006
Nickel and its compounds [µg/l]	(annual average)	20	Directive 2008/105/EC - EQS & MD 51354/2641/E103	20	Directive 2008/105/EC - EQS & MD 51354/2641/E103	20	Directive 2008/105/EC - EQS and D.lgs 152/2006
Lead and its compounds [µg/l]	(annual average)	7.2	Directive 2008/105/EC - EQS & MD 51354/2641/E103	7.2	Directive 2008/105/EC - EQS & MD 51354/2641/E103	7.2	Directive 2008/105/EC - EQS and D.lgs 152/2007
Zinc [mg/l]	salmonid waters: for water hardness of 10 mg/l $CaCO_3$	0.03	Directive 2006/44/EC - Freshwater Fish Directive	0.03	Directive 2006/44/EC - Freshwater Fish Directive	0.03	Directive 2006/44/EC - Freshwater Fish Directive
	for water hardness of 50 mg/l $CaCO_3$	0.2	Directive 2006/44/EC - Freshwater Fish Directive	0.2	Directive 2006/44/EC - Freshwater Fish Directive	0.2	Directive 2006/44/EC - Freshwater Fish Directive
	for water hardness of 100 mg/l $CaCO_3$	0.3	Directive 2006/44/EC - Freshwater Fish Directive	0.3	Directive 2006/44/EC - Freshwater Fish Directive	0.3	Directive 2006/44/EC - Freshwater Fish Directive
	for water hardness of 500 mg/l CaCO3	0.5	Directive 2006/44/EC - Freshwater Fish Directive	0.5	Directive 2006/44/EC - Freshwater Fish Directive	0.5	Directive 2006/44/EC - Freshwater Fish Directive
	cyprinid waters: for water hardness 10 mg/l $CaCO_3$	0.3	Directive 2006/44/EC - Freshwater Fish Directive	0.3	Directive 2006/44/EC - Freshwater Fish Directive	0.3	Directive 2006/44/EC - Freshwater Fish Directive
	for water hardness 50 mg/l $CaCO_3$	0.7	Directive 2006/44/EC - Freshwater Fish Directive	0.7	Directive 2006/44/EC - Freshwater Fish Directive	0.7	Directive 2006/44/EC - Freshwater Fish Directive
	for water hardness of 100 mg/l $CaCO_3$	1.0	Directive 2006/44/EC - Freshwater Fish Directive	1.0	Directive 2006/44/EC - Freshwater Fish Directive	1.0	Directive 2006/44/EC - Freshwater Fish Directive
	for water hardness of 500 mg/l $CaCO_3$	2.0	Directive 2006/44/EC - Freshwater Fish Directive	2.0	Directive 2006/44/EC - Freshwater Fish Directive	2.0	Directive 2006/44/EC - Freshwater Fish Directive
Arsenic [µg/l]	(annual average)	N/A	N/A	N/A	N/A	10.0	D.lgs 152/2006
Total residual chlorine [mg/l] HOCl		≤ 0.005	Directive 2006/44/EC - Freshwater Fish Directive	< 0.005 mg/l HOCl	EU EQS	≤ 0.005	Directive 2006/44/EC - Freshwater Fish Directive
Total hydrocarbon content		Petroleum products must not be present in water in such quantities that they form a visible film on the surface of the water or form coatings on the beds of watercourses and lakes; impart a detectable hydrocarbon taste to fish; or produce harmful effects in fish	Directive 2006/44/EC - Freshwater Fish Directive	Petroleum products must not be present in water in such quantities that they form a visible film on the surface of the water or form coatings on the beds of watercourses and lakes; impart a detectable hydrocarbon taste to fish; or produce harmful effects in fish	Directive 2006/44/EC - Freshwater Fish Directive	Petroleum products must not be present in water in such quantities that they form a visible film on the surface of the water or form coatings on the beds of watercourses and lakes; impart a detectable hydrocarbon taste to fish; or produce harmful effects in fish	Directive 2006/44/EC - Freshwater Fish Directive
Nitrites [mg/l] NO_2	salmonid waters	≤ 0.01	Directive 2006/44/EC - Freshwater Fish Directive	≤ 0.01	Directive 2006/44/EC - Freshwater Fish Directive	≤ 0.01	Directive 2006/44/EC - Freshwater Fish Directive
	cyprinid waters	≤ 0.03	Directive 2006/44/EC - Freshwater Fish Directive	≤ 0.03	Directive 2006/44/EC - Freshwater Fish Directive	≤ 0.03	Directive 2006/44/EC - Freshwater Fish Directive
Non-ionised ammonia [mg/l] NH_3		≤ 0.025	Directive 2006/44/EC - Freshwater Fish Directive	≤ 0.025	Directive 2006/44/EC - Freshwater Fish Directive	≤ 0.025	Directive 2006/44/EC - Freshwater Fish Directive
Total ammonium [mg/l] NH_4		≤1.0	Directive 2006/44/EC - Freshwater Fish Directive	≤1.0	Directive 2006/44/EC - Freshwater Fish Directive	≤1.0	Directive 2006/44/EC - Freshwater Fish Directive
Phenolic compounds		Phenolic compounds must not be present in such concentrations that they adversely affect fish flavour.	EU Statutory	Phenolic compounds must not be present in such concentrations that they adversely affect fish flavour.	EU Statutory	Phenolic compounds must not be present in such concentrations that they adversely affect fish flavour.	EU Statutory

			PS Greece		PS Albania		PS Italy	
			Value	Basis / Source	Value	Basis / Source	Value	Basis / Source
Hexachlorobutadiene [µg/l]		annual average maximum allowable concentration	0.1 0.6	Directive 2008/105/EC - EQS & MD 51354/2641/E103	0.1 0.6	Directive 2008/105/EC - EQS & MD 51354/2641/E103	0.01 0.05	Directive 2008/105/EC - EQS and D.lgs 152/2006
Tetrachloroethylene [µg/l]		annual average	10	Directive 2008/105/EC - EQS & MD 51354/2641/E103	10	Directive 2008/105/EC - EQS & MD 51354/2641/E103	10	Directive 2008/105/EC - EQS and D.lgs 152/2006
Atrazine [µg/l]		annual average maximum allowable concentration	0.6 2.0	Directive 2008/105/EC - EQS & MD 51354/2641/E103	0.6 2.0	Directive 2008/105/EC - EQS & MD 51354/2641/E103	0.6 2.0	Directive 2008/105/EC - EQS and D.lgs 152/2006
OPERATIONS PHASE								
Noise and Vibration - Onshore and Coastal Zone								
Compressor Stations / PRT								
Maximum increase in background levels at the nearest existing sensitive receptor location off-site			<3 dB(A) or <45 dB(A) whichever is higher	World Bank (1999) and IFC General EHS Guidelines (2007)	<3 dB(A) or <45 dB(A) whichever is higher	World Bank (1999) and IFC General EHS Guidelines (2007)	<3 dB(A) or <45 dB(A) whichever is higher	World Bank (1999) and IFC General EHS Guidelines (2007)
Noise level at the compressor station fence (measured as hourly averaged noise level)			LAeq ≤ 65 dB(A)	Presidential Decree (PD) 1180, 6 October 1981 (Gov. Gaz 283/A)	LAeq ≤ 65 dB(A)	Albanian Directive No.8 "Noise limits in the design environments"	N/A	N/A
Operational Standard for vibration								
Not applicable. Refer to Section 4.6.2 of Environmental Project			N/A	N/A	N/A	N/A	N/A	N/A
Noise and Vibration - Marine								
Not applicable. Refer to Section 4.6.2 of Environmental Project			N/A	N/A	N/A	N/A	N/A	N/A
Air emissions								
Medium combustion facilities (1-50 MWth)								
Engine								
Engine - Gas		PM [mg/Nm^3]	----	----	----	----	----	----
		SO_2 [mg/Nm^3]	----	----	----	----	----	----
		NO_x [mg/Nm^3]	95 190 (dual fuel engine in gas mode)	Directive 2015/2193 - Medium Combustion Plant Directive	200 (spark ignition) 400 (dual fuel) 1'600 (compression ignition)	IFC General EHS Guidelines (2007): Small combustion facilities emissions guidelines	95 190 (dual fuel engine in gas mode)	Directive 2015/2193 - Medium Combustion Plant Directive
		O_2 [%]	15	IFC General EHS Guidelines (2007): Small combustion facilities emissions guidelines	15	IFC General EHS Guidelines (2007): Small combustion facilities emissions guidelines	15	IFC General EHS Guidelines (2007): Small combustion facilities emissions guidelines
Engine - Liquid		PM [mg/Nm^3]	50 or up to 100 if justified by project-specific considerations	IFC General EHS Guidelines (2007): Small combustion facilities emissions guidelines	50 or up to 100 if justified by project-specific considerations	IFC General EHS Guidelines (2007): Small combustion facilities emissions guidelines	N/A	N/A
		SO_2 [mg/Nm^3]	1.5% sulphur in the fuel or up to 3.0% if justified by project-specific considerations	IFC General EHS Guidelines (2007): Small combustion facilities emissions guidelines	1.5% sulphur in the fuel or up to 3.0% if justified by project-specific considerations	IFC General EHS Guidelines (2007): Small combustion facilities emissions guidelines	N/A	N/A
		NO_x [mg/Nm^3]	190 225 (dual fuel engine in gas mode or diesel engine <20 MWth and <1200 rpm)	Directive 2015/2193 - Medium Combustion Plant Directive	If bore size diameter [mm] < 400: 1'460 (or up to 1,600 if justified to maintain high energy efficiency) If bore size diameter [mm] > or = 400: 1'850	IFC General EHS Guidelines (2007): Small combustion facilities emissions guidelines	190 225 (dual fuel engine in gas mode or diesel engine <20 MWth and <1200 rpm)	Directive 2015/2193 - Medium Combustion Plant Directive
		O_2 [%]	15	IFC General EHS Guidelines (2007): Small combustion facilities emissions guidelines	15	IFC General EHS Guidelines (2007): Small combustion facilities emissions guidelines	15	IFC General EHS Guidelines (2007): Small combustion facilities emissions guidelines
Turbine								
Turbine - Natural gas		PM [mg/Nm^3]	----	----	----	----	----	----
		SO_2 [mg/Nm^3]	----	----	----	----	----	----
		NO_x [mg/Nm^3]	50	Directive 2015/2193 - Medium Combustion Plant Directive	3MWth to < 15MWth 42 ppm (electric generation) 100 ppm (mechanical drive)	IFC General EHS Guidelines (2007): Small combustion facilities emissions guidelines	N/A	N/A
					15MWth to < 50 MWth 25 ppm	IFC General EHS Guidelines (2007): Small combustion facilities emissions guidelines		
		O_2 [%]	15	IFC General EHS Guidelines (2007): Small combustion facilities emissions guidelines	3MWth to < 15MWth 15	IFC General EHS Guidelines (2007): Small combustion facilities emissions guidelines	N/A	N/A
					15MWth to < 50 MWth 15	IFC General EHS Guidelines (2007): Small combustion facilities emissions guidelines		
		PM [mg/Nm^3]	----	----	----	----	----	----
		SO_2 [mg/Nm^3]	0.5% sulphur or lower if commercially available without significant excess fuel cost	IFC General EHS Guidelines (2007): Small combustion facilities emissions guidelines	0.5% sulphur or lower if commercially available without significant excess fuel cost	IFC General EHS Guidelines (2007): Small combustion facilities emissions guidelines	N/A	N/A

		PS Greece		PS Albania		PS Italy	
		Value	Basis / Source	Value	Basis / Source	Value	Basis / Source
Turbine - Liquid	NO_x [mg/Nm^3]	75 (above 70% load)	Directive 2015/2193 - Medium Combustion Plant Directive	3MWth to < 15MWth 96 ppm (electric generation) 150 ppm (mechanical drive)	IFC General EHS Guidelines (2007): Small combustion facilities emissions guidelines	N/A	N/A
				15MWth to < 50 MWth 74 ppm	IFC General EHS Guidelines (2007): Small combustion facilities emissions guidelines		
	O_2 [%]	15	IFC General EHS Guidelines (2007): Small combustion facilities emissions guidelines	15	IFC General EHS Guidelines (2007): Small combustion facilities emissions guidelines	N/A	N/A
Boiler							
Boiler - Gas	PM [mg/Nm^3]	----	----	----	----	----	----
	SO_2 [mg/Nm^3]	----	----	----	----	----	----
	NO_x [mg/Nm^3]	100	Directive 2015/2193 - Medium Combustion Plant Directive	320	IFC General EHS Guidelines (2007): Small combustion facilities emissions guidelines	100	Directive 2015/2193 - Medium Combustion Plant Directive
	O_2 [%]	3	IFC General EHS Guidelines (2007): Small combustion facilities emissions guidelines	3	IFC General EHS Guidelines (2007): Small combustion facilities emissions guidelines	3	Directive 2015/2193 - Medium Combustion Plant Directive
Boiler - Liquid	PM [mg/Nm^3]	50 or up to 150 if justified by environmental assessment	IFC General EHS Guidelines (2007): Small combustion facilities emissions guidelines	50 or up to 150 if justified by environmental assessment	IFC General EHS Guidelines (2007): Small combustion facilities emissions guidelines	N/A	N/A
	SO_2 [mg/Nm^3]	2,000	IFC General EHS Guidelines (2007): Small combustion facilities emissions guidelines	2,000	IFC General EHS Guidelines (2007): Small combustion facilities emissions guidelines	N/A	N/A
	NO_x [mg/Nm^3]	200 (gas oil)	Directive 2015/2193 - Medium Combustion Plant Directive	460	IFC General EHS Guidelines (2007): Small combustion facilities emissions guidelines	200 (gas oil)	Directive 2015/2193 - Medium Combustion Plant Directive
	O_2 [%]	3	IFC General EHS Guidelines (2007): Small combustion facilities emissions guidelines	3	IFC General EHS Guidelines (2007): Small combustion facilities emissions guidelines	3	Directive 2015/2193 - Medium Combustion Plant Directive
Boiler - Solid	PM [mg/Nm^3]	N/A	N/A	50 or up to 150 if justified by environmental assessment	IFC General EHS Guidelines (2007): Small combustion facilities emissions guidelines	N/A	N/A
	SO_2 [mg/Nm^3]	N/A	N/A	2,000	IFC General EHS Guidelines (2007): Small combustion facilities emissions guidelines	N/A	N/A
	NO_x [mg/Nm^3]	N/A	N/A	650	IFC General EHS Guidelines (2007): Small combustion facilities emissions guidelines	N/A	N/A
	O_2 [%]	N/A	N/A	6	IFC General EHS Guidelines (2007): Small combustion facilities emissions guidelines	N/A	N/A
Large combustion facilities (>50MWth)							
Engine							
Engine - Gas	PM [mg/Nm^3]	----	----	----	----	----	----
	SO_2 [mg/Nm^3]	----	----	----	----	----	----
	NO_x [mg/Nm^3]	N/A	N/A	200 (spark ignition) 400 (dual fuel)	IFC EHS Guidelines (2008) Thermal Power Plants	N/A	N/A
	O_2 [%]	N/A	N/A	15	IFC EHS Guidelines (2008) Thermal Power Plants	N/A	N/A
Engine - Liquid (plant > 50 MWth to < 300 MWth)	PM [mg/Nm^3]	N/A	N/A	NDA 50 DA 30 (NDA = non-degraded airshed, DA = degraded airshed (poor air quality))	IFC EHS Guidelines (2008) Thermal Power Plants	N/A	N/A
	SO_2 [mg/Nm^3]	N/A	N/A	NDA 1'170 or use of 2% or less S fuel DA 0.5% S fuel	IFC EHS Guidelines (2008) Thermal Power Plants	N/A	N/A
	NO_x [mg/Nm^3]	N/A	N/A	If bore size diameter [mm] < 400: 1'460 (or up to 1,600 if justified to maintain high energy efficiency) If bore size diameter [mm] > or = 400: 1'850	IFC EHS Guidelines (2008) Thermal Power Plants	N/A	N/A
	O_2 [%]	N/A	N/A	15	IFC EHS Guidelines (2008) Thermal Power Plants	N/A	N/A
Turbine							
Turbine - Natural gas	PM [mg/Nm^3]	----	----	----	----	----	----
	SO_2 [mg/Nm^3]	----	----	----	----	----	----
	NO_x [mg/Nm^3]	50 (at 15% O2)	Directive 2010/75/EU - Industrial Emissions	10 bcma case only '50 (at 15% O2)	Directive 2010/75/EU - Industrial Emissions Directive	N/A	N/A

		PS Greece		PS Albania		PS Italy	
		Value	Basis / Source	Value	Basis / Source	Value	Basis / Source
(all turbine types of Unit > 50 MWth)	NO_x [mg/Nm^3]	50 (at 15% O2)	Directive	51 (25ppm)	IFC EHS Guidelines (2008) Thermal Power Plants	N/A	N/A
	CO	100 (at 15% O2)	Directive 2010/75/EU - Industrial Emissions Directive	10 bcma case only) '100 (at 15% O2)	Directive 2010/75/EU - Industrial Emissions Directive	N/A	N/A
	O_2 [%]	N/A	N/A	15	IFC EHS Guidelines (2008) Thermal Power Plants	N/A	N/A
Turbine - Liquid (Unit > 50 MWth)	PM [mg/Nm^3]	N/A	N/A	NDA 50 DA 30	IFC EHS Guidelines (2008) Thermal Power Plants	N/A	N/A
	SO_2 [mg/Nm^3]	N/A	N/A	NDA use of 1% of less S fuel DA use of 0.5% or less S fuel	IFC EHS Guidelines (2008) Thermal Power Plants	N/A	N/A
	NO_x [mg/Nm^3]	N/A	N/A	152 (74ppm)	IFC EHS Guidelines (2008) Thermal Power Plants	N/A	N/A
	O_2 [%]	N/A	N/A	15	IFC EHS Guidelines (2008) Thermal Power Plants	N/A	N/A
Boiler							
Boiler - Gas	PM [mg/Nm^3]	N/A	N/A	N/A	IFC EHS Guidelines (2008) Thermal Power Plants	N/A	N/A
	SO_2 [mg/Nm^3]	N/A	N/A	N/A	IFC EHS Guidelines (2008) Thermal Power Plants	N/A	N/A
	NO_x [mg/Nm^3]	N/A	N/A	240	IFC EHS Guidelines (2008) Thermal Power Plants	N/A	N/A
	O_2 [%]	N/A	N/A	3	IFC EHS Guidelines (2008) Thermal Power Plants	N/A	N/A
Boiler - Liquid (plant > 50 MWth to < 600 MWth)	PM [mg/Nm^3]	N/A	N/A	NDA 50 DA 30	IFC EHS Guidelines (2008) Thermal Power Plants	N/A	N/A
	SO_2 [mg/Nm^3]	N/A	N/A	NDA 900 - 1'500 DA 400	IFC EHS Guidelines (2008) Thermal Power Plants	N/A	N/A
	NO_x [mg/Nm^3]	N/A	N/A	NDA 400 DA 200	IFC EHS Guidelines (2008) Thermal Power Plants	N/A	N/A
	O_2 [%]	N/A	N/A	3	IFC EHS Guidelines (2008) Thermal Power Plants	N/A	N/A
Boiler - Solid (plant > 50 MWth to < 600 MWth)	PM [mg/Nm^3]	N/A	N/A	NDA 50 DA 30	IFC EHS Guidelines (2008) Thermal Power Plants	N/A	N/A
	SO_2 [mg/Nm^3]	N/A	N/A	NDA 900 - 1'500 DA 400	IFC EHS Guidelines (2008) Thermal Power Plants	N/A	N/A
	NO_x [mg/Nm^3]	N/A	N/A	NDA 510 (or up to 1'100 if volatile matter of fuel <10%) DA 200	IFC EHS Guidelines (2008) Thermal Power Plants	N/A	N/A
	O_2 [%]	N/A	N/A	6	IFC EHS Guidelines (2008) Thermal Power Plants	N/A	N/A
Air emissions - Offshore							
Marine fuel sulphur content		N/A	N/A	3.50%	MARPOL Annex VI	3.50%	MARPOL Annex VI
Ambient Air Quality							
NO_2 [µg/m^3]	annual average	40	Directive 2008/50/EC - Ambient Air Quality and WHO Air Quality Guidelines (2005)	40	Directive 2008/50/EC - Ambient Air Quality and WHO Air Quality Guidelines (2005)	40	Directive 2008/50/EC - Ambient Air Quality and WHO Air Quality Guidelines (2005)
	hourly average	200	WHO Air Quality Guidelines (2005)	200	WHO Air Quality Guidelines (2005)	200	WHO Air Quality Guidelines (2005)
CO [µg/m^3]	maximum daily 8-hour mean	10,000	Directive 2008/50/EC - Ambient Air Quality and WHO Air Quality Guidelines (2005)	10,000	Directive 2008/50/EC - Ambient Air Quality and WHO Air Quality Guidelines (2005)	10,000	Directive 2008/50/EC - Ambient Air Quality and WHO Air Quality Guidelines (2005)
SO_2 [µg/m^3]	24-hour mean (not to be exceeded more than 3 times per year)	125	Directive 2008/50/EC - Ambient Air Quality	125	Directive 2008/50/EC - Ambient Air Quality	125	Directive 2008/50/EC - Ambient Air Quality
	hourly limit (not to be exceeded more than 24 times per year)	350	Directive 2008/50/EC - Ambient Air Quality	350	Directive 2008/50/EC - Ambient Air Quality	350	Directive 2008/50/EC - Ambient Air Quality
	10-minute mean	500	WHO Air Quality Guidelines (2005)	500	WHO Air Quality Guidelines (2005)	500	WHO Air Quality Guidelines (2005)
	24-hour mean (treated as an aspirational 'stretch' target, in line with the philosophy of the WHO guidelines, 2005 global update)	20	WHO Air Quality Guidelines (2005)	20	Directive 2008/50/EC - Ambient Air Quality and WHO Air Quality Guidelines (2005)	20	WHO Air Quality Guidelines (2005)
	annual limit (applies only to protection of vegetation and ecologically sensitive sites - averaging period: calendar year and winter 1 October to 31 March	20	Directive 2008/50/EC - Ambient Air Quality and WHO Air Quality Guidelines (2005)	20	Directive 2008/50/EC - Ambient Air Quality and WHO Air Quality Guidelines (2005)	20	Directive 2008/50/EC - Ambient Air Quality and WHO Air Quality Guidelines (2005)
NO_x [µg/m^3]	annual limit (applies only to protection of vegetation and ecologically sensitive sites)	30	Directive 2008/50/EC - Ambient Air Quality and WHO Air Quality Guidelines (2005)	30	Directive 2008/50/EC - Ambient Air Quality and WHO Air Quality Guidelines (2005)	30	Directive 2008/50/EC - Ambient Air Quality and WHO Air Quality Guidelines (2005)
	annual mean	20	WHO Air Quality Guidelines (2005)	20	WHO Air Quality Guidelines (2005)	20	WHO Air Quality Guidelines (2005)

			PS Greece		PS Albania		PS Italy	
			Value	Basis / Source	Value	Basis / Source	Value	Basis / Source
PM_{10} [µg/m^3]		daily mean	50	WHO Air Quality Guidelines (2005)	50 daily limit not to be exceeded more than 35 times a calendar year	Directive 2008/50/EC - Ambient Air Quality	50	WHO Air Quality Guidelines (2005)
$PM_{2.5}$ [µg/m^3]		annual mean	10	WHO Air Quality Guidelines (2005)	10	WHO Air Quality Guidelines (2005)	10	WHO Air Quality Guidelines (2005)
		24-hour mean	25	WHO Air Quality Guidelines (2005)	25	WHO Air Quality Guidelines (2005)	25	WHO Air Quality Guidelines (2005)
Benzene [µg/m^3]		annual mean	5	Directive 2008/50/EC - Ambient Air Quality	5	Directive 2008/50/EC - Ambient Air Quality	5	Directive 2008/50/EC - Ambient Air Quality
Discharges to Water								
Discharge of sanitary wastewater to surface water receptors								
pH			6-9	IFC EHS Guidelines (2007): Wastewater and Ambient Water	6-9	IFC EHS Guidelines (2007): Wastewater and Ambient Water	5.5 - 9.5 (into surface waters)	D.lgs 152/2006
Biological oxygen demand BOD_5 [mg/l]			25	Directive 91/271/EEC - Urban Wastewater Treatment	25	Albanian Decision No 177 and Directive 91/271/EEC - Urban Wastewater Treatment	≤25 (into surface waters) ≤250 (into sewers)	D.lgs 152/2006
Chemical oxygen demand COD [mg/l]			125	IFC EHS Guidelines (2007): Wastewater and Ambient Water and Directive 91/271/EEC - Urban Wastewater Treatment	125	Albanian Decision No 177 and Directive 91/271/EEC - Urban Wastewater Treatment	≤125 (into surface waters) <500 (into sewers)	D.lgs 152/2006
Total nitrogen [mg/l]			10	IFC EHS Guidelines (2007): Wastewater and Ambient Water	10	IFC EHS Guidelines (2007): Wastewater and Ambient Water	N/A	N/A
Total phosphorus [mg/l]			2	IFC EHS Guidelines (2007): Wastewater and Ambient Water	2	IFC EHS Guidelines (2007): Wastewater and Ambient Water	N/A	N/A
Oil and grease [mg/l]			10	IFC EHS Guidelines (2007): Wastewater and Ambient Water	10	IFC EHS Guidelines (2007): Wastewater and Ambient Water	N/A	N/A
Temperature			The temperature of waste water prior to discharge shall not result in an increase of more than 3°C of ambient temperature at the edge of a scientifically established mixing zone that takes into account ambient water quality, receiving water use and assimilative capacity among other considerations	IFC General EHS Guidelines (2007): Wastewater and Ambient Water	The temperature of waste water prior to discharge shall not result in an increase of more than 3°C of ambient temperature at the edge of a scientifically established mixing zone that takes into account ambient water quality, receiving water use and assimilative capacity among other considerations	IFC General EHS Guidelines (2007): Wastewater and Ambient Water	For water streams the maximum temperature variation between the average water temperature in any section of the stream upstream and downstream of the discharge point must not be greater than 3°C. For at least half of any section downstream of the discharge point such variation must not exceed 1°C	D.lgs 152/2006
TSS [mg/l]			50	IFC EHS Guidelines (2007): Wastewater and Ambient Water	50	IFC EHS Guidelines (2007): Wastewater and Ambient Water	≤35 (into surface waters) ≤200 (into sewers)	D.lgs 152/2006
Coliform bacteria [Most probable number/100ml]			400	IFC EHS Guidelines (2007): Wastewater and Ambient Water	400	IFC EHS Guidelines (2007): Wastewater and Ambient Water	N/A	N/A
Arsenic [mg/l]			N/A	N/A	N/A	N/A	≤0.5 (both)	D.lgs 152/2006
Cadmium [mg/l]			N/A	N/A	N/A	N/A	≤'0.02 (both)	D.lgs 152/2006
Mercury [mg/l]			N/A	N/A	N/A	N/A	≤'0.005 (both)	D.lgs 152/2006
Nickel [mg/l]			N/A	N/A	N/A	N/A	≤2 (into surface waters) ≤4 (into sewers)	D.lgs 152/2006
Lead [mg/l]			N/A	N/A	N/A	N/A	≤0.2 (into surface waters) ≤0.3 (into sewers)	D.lgs 152/2006
Copper [mg/l]			N/A	N/A	N/A	N/A	≤'0.1 (into surface waters) ≤0.4 (into sewers)	D.lgs 152/2006
Zinc [mg/l]			N/A	N/A	N/A	N/A	≤'0.5 (into surface waters) ≤1 (into sewers)	D.lgs 152/2006
Free active chlorine [mg/l]			N/A	N/A	N/A	N/A	≤0.2 (into surface waters) ≤0.3 (into sewers)	D.lgs 152/2006
Sulphides (as H_2S) [mg/l]			N/A	N/A	N/A	N/A	≤1 (into surface waters) ≤2 (into sewers)	D.lgs 152/2006
Chlorides [mg/l]			N/A	N/A	N/A	N/A	≤'1200 (both)	D.lgs 152/2006
Ammonia nitrogen (as NH_4) [mg/l]			N/A	N/A	N/A	N/A	≤15 (into surface waters) ≤30 (into sewers)	D.lgs 152/2006
Total hydrocarbons [mg/l]			N/A	N/A	N/A	N/A	≤5 (into surface waters) ≤10 (into sewers)	D.lgs 152/2006
Phenols [mg/l]			N/A	N/A	N/A	N/A	≤0.5 (into surface waters) ≤1 (into sewers)	D.lgs 152/2006
Discharge of stormwater								
Total hydrocarbons [mg/l]			10	IFC EHS Guidelines for Onshore Oil and Gas Development (2007)	10	IFC EHS Guidelines for Onshore Oil and Gas Development (2007)	10	IFC EHS Guidelines for Onshore Oil and Gas Development (2007)

			PS Greece		PS Albania		PS Italy	
			Value	Basis / Source	Value	Basis / Source	Value	Basis / Source
Temperature			The temperature of waste water prior to discharge shall not result in an increase of more than 3°C of ambient temperature at the edge of a scientifically established mixing zone that takes into account ambient water quality, receiving water use and assimilative capacity among other considerations	IFC EHS Guidelines (2007): Wastewater and Ambient Water	The temperature of waste water prior to discharge shall not result in an increase of more than 3°C of ambient temperature at the edge of a scientifically established mixing zone that takes into account ambient water quality, receiving water use and assimilative capacity among other considerations	IFC EHS Guidelines (2007): Wastewater and Ambient Water	The temperature of waste water prior to discharge shall not result in an increase of more than 3°C of ambient temperature at the edge of a scientifically established mixing zone that takes into account ambient water quality, receiving water use and assimilative capacity among other considerations/ For water streams the maximum temperature variation between the average water temperature in any section of the stream upstream and downstream of the discharge point must not be greater than 3°C. For at least half of any section downstream of the discharge point such variation must not exceed 1°C	IFC EHS Guidelines for Wastewater and Ambient Water Quality / D.lgs 152/2006
Biological oxygen demand BOD_5 [mg/l]			N/A	N/A	N/A	N/A	≤250 (into sewers)	D.lgs 152/2006
Chemical oxygen demand COD [mg/l]			N/A	N/A	N/A	N/A	<500 (into sewers)	D.lgs 152/2006
TSS [mg/l]			N/A	N/A	N/A	N/A	≤200 (into sewers)	D.lgs 152/2006
Arsenic [mg/]			N/A	N/A	N/A	N/A	≤0.5 (into sewers)	D.lgs 152/2006
Cadmium [mg/l]			N/A	N/A	N/A	N/A	≤'0.02 (into sewers)	D.lgs 152/2006
Mercury [mg/l]			N/A	N/A	N/A	N/A	≤'0.005 (into sewers)	D.lgs 152/2006
Nickel [mg/l]			N/A	N/A	N/A	N/A	≤4 (into sewers)	D.lgs 152/2006
Lead [mg/l]			N/A	N/A	N/A	N/A	≤0.3 (into sewers)	D.lgs 152/2006
Copper [mg/l]			N/A	N/A	N/A	N/A	≤0.4 (into sewers)	D.lgs 152/2006
Zinc [mg/l]			N/A	N/A	N/A	N/A	≤1 (into sewers)	D.lgs 152/2006
Free active chlorine [mg/l]			N/A	N/A	N/A	N/A	≤0.3 (into sewers)	D.lgs 152/2006
Sulphides (as H_2S) [mg/l]			N/A	N/A	N/A	N/A	≤2 (into sewers)	D.lgs 152/2006
Chlorides [mg/l]			N/A	N/A	N/A	N/A	≤'1200 (into sewers)	D.lgs 152/2006
Ammonia nitrogen (as NH_4) [mg/l]			N/A	N/A	N/A	N/A	≤30 (into sewers)	D.lgs 152/2006
Total hydrocarbons [mg/l]			N/A	N/A	N/A	N/A	≤10 (into sewers)	D.lgs 152/2006
Phenols [mg/l]			N/A	N/A	N/A	N/A	≤1 (into sewers)	D.lgs 152/2006
Discharges to Water - Offshore								
Discharge of bilge water								
Oil [mg/l]			N/A	N/A	15	MARPOL Annex I	15	MARPOL Annex I
Ambient Water Quality								
Project Standards for ambient surface water quality standards								
pH			6-9	Directive 2006/44/EC - Freshwater Fish Directive	6-9	Directive 2006/44/EC - Freshwater Fish Directive	6-9	Directive 2006/44/EC - Freshwater Fish Directive
Temperature								
Temperature measured downstream of a point of thermal discharge (at the edge of the mixing zone)		salmonid waters	1.5°C	Directive 2006/44/EC - Freshwater Fish Directive	1.5°C	Directive 2006/44/EC - Freshwater Fish Directive	1.5°C	Directive 2006/44/EC - Freshwater Fish Directive
		cyprinid waters	3°C	Directive 2006/44/EC - Freshwater Fish Directive	3°C	Directive 2006/44/EC - Freshwater Fish Directive	3°C	Directive 2006/44/EC - Freshwater Fish Directive
Thermal discharges must not cause the temperature downstream of the point of thermal discharge (at the		salmonid waters	21.5°C	Directive 2006/44/EC - Freshwater Fish Directive	21.5°C	Directive 2006/44/EC - Freshwater Fish Directive	21.5°C	Directive 2006/44/EC - Freshwater Fish Directive
		cyprinid waters	28°C	Directive 2006/44/EC - Freshwater Fish Directive	28°C	Directive 2006/44/EC - Freshwater Fish Directive	28°C	Directive 2006/44/EC - Freshwater Fish Directive
Temperature limit applicable to breeding periods for species that need cold water to reproduce and to waters that may contain			10°C	Directive 2006/44/EC - Freshwater Fish Directive	10°C	Directive 2006/44/EC - Freshwater Fish Directive	10°C	Directive 2006/44/EC - Freshwater Fish Directive
BOD [mg/l]		salmonid waters	≤ 3.0	Directive 2006/44/EC - Freshwater Fish Directive	≤ 3.0	Directive 2006/44/EC - Freshwater Fish Directive	≤ 3.0	Directive 2006/44/EC - Freshwater Fish Directive
		cyprinid waters	≤ 6.0	Directive 2006/44/EC - Freshwater Fish Directive	≤ 6.0	Directive 2006/44/EC - Freshwater Fish Directive	≤ 6.0	Directive 2006/44/EC - Freshwater Fish Directive
Dissolved oxygen		salmonid waters	50% of the time ≥ 9 mg/l O_2 100% of the time ≥7 mg/l O_2	Directive 2006/44/EC - Freshwater Fish Directive	50% of the time ≥ 9 mg/l O_2 100% of the time ≥7 mg/l O_2	Directive 2006/44/EC - Freshwater Fish Directive	50% of the time ≥ 9 mg/l O_2 100% of the time ≥7 mg/l O_2	Directive 2006/44/EC - Freshwater Fish Directive
		cyprinid waters	50% of the time ≥ 8 mg/l O_2 100% of the time ≥ 5 mg/l O_2	Directive 2006/44/EC - Freshwater Fish Directive	50% of the time ≥ 8 mg/l O_2 100% of the time ≥ 5 mg/l O_2	Directive 2006/44/EC - Freshwater Fish Directive	50% of the time ≥ 8 mg/l O_2 100% of the time ≥ 5 mg/l O_2	Directive 2006/44/EC - Freshwater Fish Directive
TSS [mg/l]		annual average	25	Directive 2006/44/EC - Freshwater Fish Directive	25	Directive 2006/44/EC - Freshwater Fish Directive	25	Directive 2006/44/EC - Freshwater Fish Directive
Cadmium and its compounds								
Class 1		annual average maximum allowable concentration	≤ 0.08 µg/l ≤ 0.45 µg/l	Directive 2008/105/EC - EQS & MD 51354/2641/E103	≤ 0.08 µg/l ≤ 0.45 µg/l	Directive 2008/105/EC - EQS & MD 51354/2641/E103	0.8 µg/l ≤ 0.45 µg/l	D.lgs 152/2006 D.lgs 152/2006

		PS Greece		PS Albania		PS Italy	
		Value	Basis / Source	Value	Basis / Source	Value	Basis / Source
Class 2	annual average maximum allowable concentration	0.08 µg/l 0.45 µg/l	Directive 2008/105/EC - EQS & MD 51354/2641/E103	0.08 µg/l 0.45 µg/l	Directive 2008/105/EC - EQS & MD 51354/2641/E103	N/A	N/A
Class 3	annual average maximum allowable concentration	0.09 µg/l 0.60 µg/l	Directive 2008/105/EC - EQS & MD 51354/2641/E103	0.09 µg/l 0.60 µg/l	Directive 2008/105/EC - EQS & MD 51354/2641/E103	N/A	N/A
Class 4	annual average maximum allowable concentration	0.15 µg/l 0.90 µg/l	Directive 2008/105/EC - EQS & MD 51354/2641/E103	0.15 µg/l 0.90 µg/l	Directive 2008/105/EC - EQS & MD 51354/2641/E103	N/A	N/A
Class 5	annual average maximum allowable concentration	0.25 µg/l 1.50 µg/l	Directive 2008/105/EC - EQS & MD 51354/2641/E103	0.25 µg/l 1.50 µg/l	Directive 2008/105/EC - EQS & MD 51354/2641/E103	N/A	N/A
Dissolved copper [mg/l]	for water hardness of 10 mg/l $CaCO_3$	0.005	Directive 2006/44/EC - Freshwater Fish Directive	0.005	Directive 2006/44/EC - Freshwater Fish Directive	0.005	Directive 2006/44/EC - Freshwater Fish Directive
	for water hardness of 50 mg/l $CaCO_3$	0.022	Directive 2006/44/EC - Freshwater Fish Directive	0.022	Directive 2006/44/EC - Freshwater Fish Directive	0.022	Directive 2006/44/EC - Freshwater Fish Directive
	for water hardness of 100 mg/l $CaCO_3$	0.04	Directive 2006/44/EC - Freshwater Fish Directive	0.04	Directive 2006/44/EC - Freshwater Fish Directive	0.04	Directive 2006/44/EC - Freshwater Fish Directive
	for water hardness of 300 mg/l $CaCO_3$	0.112	Directive 2006/44/EC - Freshwater Fish Directive	0.112	Directive 2006/44/EC - Freshwater Fish Directive	0.112	Directive 2006/44/EC - Freshwater Fish Directive
Mercury [µg/l]	annual average maximum allowable concentration	0.05 0.07	Directive 2008/105/EC - EQS & MD 51354/2641/E103	0.05 0.07	Directive 2008/105/EC - EQS & MD 51354/2641/E103	0.03 0.06	D.lgs 152/2006
Nickel and its compounds [µg/l]	(annual average)	20	Directive 2008/105/EC - EQS & MD 51354/2641/E103	20	Directive 2008/105/EC - EQS & MD 51354/2641/E103	20	Directive 2008/105/EC - EQS and D.lgs 152/2006
Lead and its compounds [µg/l]	(annual average)	7.2	Directive 2008/105/EC - EQS & MD 51354/2641/E103	7.2	Directive 2008/105/EC - EQS & MD 51354/2641/E103	7.2	Directive 2008/105/EC - EQS and D.lgs 152/2007
Zinc [mg/l]	salmonid waters: for water hardness of 10 mg/l $CaCO_3$	0.03	Directive 2006/44/EC - Freshwater Fish Directive	0.03	Directive 2006/44/EC - Freshwater Fish Directive	0.03	Directive 2006/44/EC - Freshwater Fish Directive
	for water hardness of 50 mg/l $CaCO_3$	0.2	Directive 2006/44/EC - Freshwater Fish Directive	0.2	Directive 2006/44/EC - Freshwater Fish Directive	0.2	Directive 2006/44/EC - Freshwater Fish Directive
	for water hardness of 100 mg/l $CaCO_3$	0.3	Directive 2006/44/EC - Freshwater Fish Directive	0.3	Directive 2006/44/EC - Freshwater Fish Directive	0.3	Directive 2006/44/EC - Freshwater Fish Directive
	for water hardness of 500 mg/l CaCO3	0.5	Directive 2006/44/EC - Freshwater Fish Directive	0.5	Directive 2006/44/EC - Freshwater Fish Directive	0.5	Directive 2006/44/EC - Freshwater Fish Directive
	cyprinid waters: for water hardness 10 mg/l $CaCO_3$	0.3	Directive 2006/44/EC - Freshwater Fish Directive	0.3	Directive 2006/44/EC - Freshwater Fish Directive	0.3	Directive 2006/44/EC - Freshwater Fish Directive
	for water hardness 50 mg/l $CaCO_3$	0.7	Directive 2006/44/EC - Freshwater Fish Directive	0.7	Directive 2006/44/EC - Freshwater Fish Directive	0.7	Directive 2006/44/EC - Freshwater Fish Directive
	for water hardness of 100 mg/l $CaCO_3$	1.0	Directive 2006/44/EC - Freshwater Fish Directive	1.0	Directive 2006/44/EC - Freshwater Fish Directive	1.0	Directive 2006/44/EC - Freshwater Fish Directive
	for water hardness of 500 mg/l $CaCO_3$	2.0	Directive 2006/44/EC - Freshwater Fish Directive	2.0	Directive 2006/44/EC - Freshwater Fish Directive	2.0	Directive 2006/44/EC - Freshwater Fish Directive
Arsenic [µg/l]	(annual average)	N/A	N/A	N/A	N/A	10.0	D.lgs 152/2006
Total residual chlorine [mg/l] HOCl		≤ 0.005	Directive 2006/44/EC - Freshwater Fish Directive	< 0.005 mg/l HOCl	EU EQS	≤ 0.005	Directive 2006/44/EC - Freshwater Fish Directive
Total hydrocarbon content		Petroleum products must not be present in water in such quantities that they form a visible film on the surface of the water or form coatings on the beds of watercourses and lakes; impart a detectable hydrocarbon taste to fish; or produce harmful effects in fish	Directive 2006/44/EC - Freshwater Fish Directive	Petroleum products must not be present in water in such quantities that they form a visible film on the surface of the water or form coatings on the beds of watercourses and lakes; impart a detectable hydrocarbon taste to fish; or produce harmful effects in fish	Directive 2006/44/EC - Freshwater Fish Directive	Petroleum products must not be present in water in such quantities that they form a visible film on the surface of the water or form coatings on the beds of watercourses and lakes; impart a detectable hydrocarbon taste to fish; or produce harmful effects in fish	Directive 2006/44/EC - Freshwater Fish Directive
Nitrites [mg/l] NO_2	salmonid waters	≤ 0.01	Directive 2006/44/EC - Freshwater Fish Directive	≤ 0.01	Directive 2006/44/EC - Freshwater Fish Directive	≤ 0.01	Directive 2006/44/EC - Freshwater Fish Directive
	cyprinid waters	≤ 0.03	Directive 2006/44/EC - Freshwater Fish Directive	≤ 0.03	Directive 2006/44/EC - Freshwater Fish Directive	≤ 0.03	Directive 2006/44/EC - Freshwater Fish Directive
Non-ionised ammonia [mg/l] NH_3		≤ 0.025	Directive 2006/44/EC - Freshwater Fish Directive	≤ 0.025	Directive 2006/44/EC - Freshwater Fish Directive	≤ 0.025	Directive 2006/44/EC - Freshwater Fish Directive
Total ammonium [mg/l] NH_4		≤1.0	Directive 2006/44/EC - Freshwater Fish Directive	≤1.0	Directive 2006/44/EC - Freshwater Fish Directive	≤1.0	Directive 2006/44/EC - Freshwater Fish Directive

		PS Greece		PS Albania		PS Italy	
		Value	Basis / Source	Value	Basis / Source	Value	Basis / Source
Phenolic compounds		Phenolic compounds must not be present in such concentrations that they adversely affect fish flavour.	EU Statutory	Phenolic compounds must not be present in such concentrations that they adversely affect fish flavour.	EU Statutory	Phenolic compounds must not be present in such concentrations that they adversely affect fish flavour.	EU Statutory
Hexachlorobutadiene [µg/l]	annual average maximum allowable concentration	0.1 0.6	Directive 2008/105/EC - EQS & MD 51354/2641/E103	0.1 0.6	Directive 2008/105/EC - EQS & MD 51354/2641/E103	0.01 0.05	Directive 2008/105/EC - EQS and D.lgs 152/2006
Tetrachloroethylene [µg/l]	annual average	10	Directive 2008/105/EC - EQS & MD 51354/2641/E103	10	Directive 2008/105/EC - EQS & MD 51354/2641/E103	10	Directive 2008/105/EC - EQS and D.lgs 152/2006
Atrazine [µg/l]	annual average maximum allowable concentration	0.6 2.0	Directive 2008/105/EC - EQS & MD 51354/2641/E103	0.6 2.0	Directive 2008/105/EC - EQS & MD 51354/2641/E103	0.6 2.0	Directive 2008/105/EC - EQS and D.lgs 152/2006