ESIA Italy
Annex 4 Main Legislation on Energy and Gas Sector
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1 INTRODUCTION

As one of the world's largest importers of oil, gas and coal, the European Union (EU) is a major player on the international energy market. Oil remains the most used energy source in the EU while natural gas is the second most used energy source.

Europe currently relies on Russia, Africa and the North Sea for natural gas supplied through several existing pipelines, with Russia being the key provider. However, Europe realises the strategic need to diversify its gas supply and has taken several steps in this direction (European Dialogue, 2011).

The Trans Adriatic Pipeline (TAP) is a proposed natural gas pipeline in the so-called ‘Southern Gas Corridor’ that will bring gas from new reserves in the Caspian region to Southern and Central Europe. The term is used by the European Commission to describe planned infrastructure projects bringing gas from the Caspian and Middle Eastern sources to Europe, aimed at improving security of supply. The TAP Project offers a realistic opportunity in the form of an alternative transportation route that will open the Southern Gas Corridor. It will be the shortest gas transit route of all the European pipeline projects currently being supported by the EU within the Southern Corridor.

The TAP Project will contribute to the security and diversification of Europe’s energy supply by providing the necessary infrastructure to transport gas from the Shah Deniz II field in Azerbaijan via the most direct route to Southern Europe when production begins in early 2018. As more gas becomes available, the pipeline will have the capacity to cater for an additional 10 Billion Cubic Meters (BCM) per annum of new gas, expanding to 20 BCM as required.
2 MAIN LEGISLATION ON ENERGY AND GAS SECTOR

2.1 National Level

The following national regulatory and planning instruments are relevant to the Project:

- **National Energy Plan** approved by the Council of Ministries on 10 August 1988;
- **Carbon Tax** introduced as per Art. 8 of Law n.448/1998;
- **Legislative Decree 164 of 23 May 2000**, implementing Directive 98/30/CE on the liberalization of the internal gas market;
- **Decree of the President of the Republic n. 327 of 8 June 2001, on expropriation for public utility**
- **Law n.443 of 21 December 2001**, on the procedures for assessment and approval of infrastructure and production projects and relevant Deliberation of CIPE n.121 of 21 December 2001;
- **Law n.273 of 12 December 2001**, on the measures to encourage private initiative and the development of competition;
- **Law n.239 dated 23 August 2004**, on reorganisation of the energy sector and delegation to the government for the rehabilitation of the enforced energy regulation;
- **Law n.62 dated 18 April 2005**, on Italian obligation deriving from European Union membership, with particular reference to the national energy policy;
- **Law n.125 dated 3 August 2007**, on the measures to liberalize the gas market;
- National Strategic Framework 2007-2013;
- The Economic and Financial Planning Document (DPEF) 2008-2011; and
- **Ministerial Decree dated 8 March 2013**, approval of the National Energy Strategy.

2.1.1 National Energy Plan

The National Energy Plan (PEN), approved by the Council of Ministries on 10 August 1988, provides a national plan for the rational use of energy and energy saving. The PEN has the following long-term strategic objectives:

- Energy savings, as a measures system able to improve production processes and to replace certain products with similar ones, but characterized by lower consumption, and to ensure the rationalization of end-uses;
Environmental protection through the development of renewable energy, and the reduction of territorial impacts and pollutant emissions, resulting from energy production, processing and utilization.

The PEN addresses and promotes the following:

- Competitiveness of the production system and the development of national resources;
- Reduction of dependence on foreign countries;
- Geographic and political diversification of supply areas;
- Rational use of energy;
- Protection of the environment and human health; and
- Energy saving.

Regarding the natural gas sector, one of the strategic objectives of PEN is "to diversify the use of various imports sources and the geographic and political supply areas.... ".

However, the PEN is now a dated document, so therefore the Italian Government has recently issued a new National Energy Strategy (refer to Section 2.1.13). Although it must be noted that this has not yet been finalized.

2.1.2 National Conference on Energy and Environment

On 25-28 November 1998 the National Conference on Energy and Environment was held, promoted by ENEA ('Ente per le Nuove Tecnologie l'Energia e l'Ambiente') on behalf of the Ministries of Industry, Environment, University and Technological and Scientific Research. This conference represents an important step in defining a new approach to national policy on energy and environment.

Since 1988, with the approval of the National Energy Plan, integrated energy and environmental protection strategies were developed at the national level by considering security of supply sources, development of national natural resources, competitiveness and objectives like environmental protection and the improvement of energy efficiency through the rationalization of energy resources.
The National Conference on Energy and Environment contributed to strengthening the importance of this approach and to change from a command and control energy policy to a policy promoting both individual and collective interests, which is the basis for voluntary agreements and the new instrument of the current energy policy. During the National Conference on Energy and Environment the “Agreement for Energy and Environment” was signed. The Agreement involves central and local administrations, economic and social partners, operators and users. It establishes the rules and general objectives of the new energy policy based around a number of priorities, including:

- International cooperation;
- Opening up of the energy sector to competition;
- Social cohesion;
- Social consensus building;
- Competitiveness, quality, innovation and security; and
- Information and services.

2.1.3 Carbon Tax

The Carbon Tax was introduced in Italy by Art. 8 of Law n.448/1998 "Public finance measures for stabilization and development", in accordance with the conclusions of the Kyoto Conference held between 01 and 11 December 1997.

This is a tax on energy production that releases carbon dioxide into the atmosphere, and provides for a differentiated tax level on fossil fuels in relation to the equivalent carbon dioxide (or greenhouse effect gases) released during the combustion process.

The logic for the new tax is to promote the use of energy products with low greenhouse gas content or equivalent carbon dioxide emission, such as the combustion of natural gas, as opposed to those with high content, such as carbon combustion, consistently with the commitment taken on by the Italian government in Kyoto to reduce greenhouse gas emissions.

The objectives of the Carbon Tax, in addition to the aforementioned promotion of the use of fuels that reduce greenhouse gas emissions, are the promotion of initiatives aimed at increasing energy efficiency and the implementation of renewable energy sources.

The Carbon Tax represents an innovative approach in comparison to the traditional taxation system, in that it sets differentiated rates for excise duties on mineral oils, in accordance with the energy product and of the sector use of the same (therefore, more penalising for products with higher CO₂ equivalent emission).
2.1.4 Legislative Decree n.164 May 23, 2000

Il D.Lgs. n.164/2000 ‘Implementation of Directive 98/30/CE setting common rules on the internal gas market, in accordance with Art. 41 of Law n.144/1999’ in Art. 1, point 1, establishes that import, export, transport, dispatching and sale of natural gas is a free market and does not modifying existing regulation on exploitation and storage of natural gas (Art. 1, point 2). In particular the Decree sets regulation on the liberalization of the internal market concerning the following phases:

- Supply (Title II, Arts. 3 to 7);
- Transport and dispatching (Title III, Arts. 8 to 10);
- Storage (Title IV, Arts. 11 to 13); and
- Distribution and sale (Title V, Arts. 14 to 18).

With reference to the energy supply sources, the Decree differentiates between natural gas importations, which are liberalized according to criteria addressed in Art. 3, and natural gas exploitation, which is regulated by permit (concession). In Art. 4 and Art. 5 the Decree sets forth regulation on the increment of national gas reserves and on the exploitation of existing marginal fields.

Importation from countries outside the European Union is subject to authorization, according to the following criteria:

- Technical and financial capacity (Art. 3);
- Guarantee of the origin of the gas supply (Art. 4);
- Reliability of supply, exploration plant and transport system (Art. 5);
- Availability of strategic storage (Art. 6); and
- Investment plans (Art. 7), in order to contribute to the security of the national gas system, with particular reference to supply security, through creation or enhancement of supply infrastructure (pipelines or LNG terminals), transport, distribution, and storage of natural gas in the national territory.

With regard to the Declaration of Public Utilities (Art. 30), the Decree states that projects for natural gas importation, transport, storage and distribution (including pipelines and LNG regasification plants), are declared to be public utilities.
2.1.5 Decree of the President of the Republic n. 327 June 8, 2001.

Decree 327/2001 of 8 June 2011 “Unique Text on legislative Regulation on Expropriation for public utilities” establishes the regulation that must be implemented for expropriation procedure in case of projects/infrastructures of public utilities.

Art. 8, Point b, states that the expropriation Decree can be issued after the emanation of the Declaration of Public Utilities. For private projects, the Authority, which has the power of expropriation, is the one that issues the Declaration of Public Utilities (Art.6).

In the Single Authorization Procedure the Proponent can ask for the institution of “Provisional Constraint for Subsequent Expropriation”.

In particular, in Art. 52 specific prescriptions for linear energetic infrastructures (gas and oil pipelines), identified in the national energy plan, are reported.

A conference of services, joined by all the subjects involved and affected by the project, verifies the compliance of the project with the Urban Plans and issues the Provisional Constraint for Subsequent Expropriation and the Declaration of Public Utilities (Art. 52-quarter, Point 1).

Art. 52-quinques, Point 2 states that the authorization, issued at the end of the procedure, includes:

- The Declaration of Public Utilities of the infrastructure;
- The Environmental Impact Assessment
- The Environmental Appropriate Assessment
- Provisional Constraint for Subsequent Expropriation of goods included in the project area
- The changes of the urban plans.

The authorization replaces any other authorizations/concessions/approvals/permissions, established by the applicable laws.
2.1.6  Law n.443 December 21, 2001

Law n.443/2001 ‘Delegation to the Government to provide rules for the realization of infrastructure and strategic production installations, and other interventions for revitalising production activities’, in Art. 1, point 1, establishes that the Government shall identify public and private infrastructure and strategic production installations of priority national interest to be realised for the modernization and development of the country.

The Government is therefore delegated to (Art. 1, point 2) “issue, within 12 month from the date of enforcement of the law, one or more Decrees defining a regulatory framework for the realisation of the infrastructures and installation identified in accordance with Art. 1, point 1, and providing regulation for the Environmental Impact Assessment and the Environmental Integrated Permit (IPPC) to be applied to infrastructures and installation identified in accordance with Art. 1, point 1”.

D.Lgs. n. 190/2002 ‘Implementation of Law 21 December 2001, n. 443 for the realization of infrastructures and strategic production installations of national priority’ reforms the procedures for the Environmental Impact Assessment and the Integrated Environmental Permit to be applied to such infrastructure and installation, and sets a special derogation regime on the legislative framework for such public works.

D.Lgs. 190/2002 was abrogated by Art. 256 of Legislative Decree n. 163 of 12 April 2006 (Code of public procurements).

The plan for identification of the public and private infrastructures and strategic production installations of priority national interest (Art.1, point 1) is proposed by the competent ministries, upon consultation with the competent regions, CIPE advice and agreement with the ‘Conferenza Unificata’ (Unified Conference) and it must be included as part of the economic and financial planning document, with indication of the relevant budget appropriation.

With reference to the energy sector, and in particular to strategic infrastructure, the first ‘Strategic Infrastructure Plan’ was approved with CIPE Deliberation n. 121 of 21 December 2001. The plan considers the strategic development of Italian upstream hydrocarbon exploration and exploitation, the upgrading of the National Gas Pipeline Network and the construction of new LNG regasification terminals, in order to enhance the security of the national supply.

2.1.7  Law n.273 December 12, 2002

Law n.273/2002 ‘Measures to promote private initiative and competition development’ also provided provisions on the matter of energy policy and particularly on the “strengthening of international natural gas supply infrastructures” (Section II, Art. 27).

In order to ensure the development of the natural gas system through the strengthening of international infrastructures, the safekeeping of supply and the growth of the energy market, this Law grants contributions for the strengthening and realisation of supply, transport, storage infrastructures for natural gas from foreign countries and regasification terminals.
2.1.8 Law n.239 August 23, 2004

Law n.239/2004 regulates and re-organizes the energy sector through further development (in addition to the National Energy Plan of 1988 and to the National Conference on Energy and the Environment of 1998) of Italian energy policy and overall renewal of energy sector management. The Law provides the general objectives of the national energy policy, defines the role and functions of the state and sets forth the general criteria to implement national energy policy at the territorial level based on principles of subsidiarity, differentiation, adequacy and fair cooperation among the State, the Electricity and Gas Authority, the Regions and local Authorities.

The main intervention strategies set by Law n.239/2004 are as follows:

- Diversification of energy sources;
- Increase of the efficiency of the internal market through simplified procedures and re-organization of the energy sector;
- Completion of the process of liberalization of the energy market with the aim of promoting competitiveness and reduce prices; and
- Share the competencies between State and the Regions and address the fundamental principles of Regional sector legislation.

The Law includes a single Article with 121 items (points). The main general objectives of the energy policy (addressed in Art. 1, point 3) are the following:

- Guarantee security, flexibility and continuity of energy supply, in amounts proportional to the needs, through diversification of primary energy sources, geographic areas and transport methods (clause a);
- Improve the environmental sustainability of energy, also in terms of rational use of territorial resources, of health protection and respect of the international commitments, particularly on greenhouse emissions, and develop renewable resources utilization (clause e); and
- Protect production activities with constant extraction rates and high-energy use factors sensitive to the energy cost (clause m).

Extracts of the Law are given below which make specific reference to hydrocarbon storage:

- Point 4: the State and the regions guarantee: the adequacy of strategic actions for energy production, transport and storage in order to ensure adequate safety and quality standards for national energy service and distribution;
- Point 5: the regions and the local authorities affected by the location of new energy infrastructure or the revamping of existing infrastructure shall be involved in agreements with the proponents in order to identify compensation measures and environmental balance, consistent with the overall objectives of national energy policy.
• Point 7: the following tasks and administrative functions shall be performed by the State, (including through the Electricity and Gas Authority): the determination of construction and technical standards for the production, transportation, storage and distribution of energy facilities;

• Point 8: the State shall perform the following duty and function with special reference to the natural gas sector (including through the Authority for Electricity and Gas): the adoption of guidelines for the preservation of supply security, the coordinated operation of the storage system and the reduction of national natural gas vulnerability;

• Point 17: Individuals who invest directly or indirectly in the construction of new natural gas transportation infrastructure, regasification terminals and storage facilities or in significant upgrading of existing infrastructure capacity may require an exemption from the regulation that provides for the right of third party access.

2.1.9 Law n.62 April 18, 2005

Law n.62/2005 provides “regulation on obligations deriving from Italian membership to the European Union”.

In particular, Art. 16, point 1 establishes that “in order to complete the liberalization of the internal natural gas market the Government shall adopt, within one year from the date of enforcement of the law, one or more legislative decrees implementing Directive 2003/55/CE of 26 June 2003, setting common rules for the internal natural gas market and abrogating Directive 98/30/CE, and to integrate and update enforced regulation concerning all relevant components of natural gas”.

With reference to the proposed Project, Law n.62/2005 highlights the importance of increasing the security of energy supply that may be obtained by promoting the realization of new infrastructures for supply, the improvement of the existing ones and the diversification of energy supply sources.

In addition, Art. 17, point 1 of Law n.62/2005 establishes that “in order to guarantee a high security level of natural gas supply, the Government shall adopt, within one year from the date of enforcement of the law, one or more legislative decrees implementing Directive 2004/67/CE of 26 April 2004, setting measures to guarantee the security of natural gas supply.”.
2.1.10 Law n.125 August 3, 2007

Law n.125/2007, converted into law, with amendments, Decree n.73/2007, containing "Urgent measures for the implementation of EU provisions on energy market deregulation".

In brief, the Law sets forth the following:

- Starting from 1 July:
  - for companies that supply through their network at least 100,000 end customers, distribution of electric energy is to be performed separately from the sales activity through corporate separation; and
  - domestic end customers have the right to withdraw from the existing electrical energy supply agreement as bound customers, in accordance with the procedures defined by the Authority for Electric Energy and Gas, and to choose a supplier other than their own distributor.

- Protection service. The Authority for Electric Energy and Gas (AEEG) will advise standard supply conditions and reference prices for the supply of electric energy and gas;

- Guarantee service. Guaranteed supply according to the current situation for domestic customers and small and medium enterprises that do not select a new supplier on the open market. These two types of customers will continue to enjoy current service conditions and, therefore, the economies of scale originating from purchasing through a Single Buyer;

- Safeguard service. The other non-domestic customers (companies with over 50 employees that have not actually left the regulated market yet) that do not select a new electric energy supplier and those who are left temporarily without a supplier are guaranteed a safeguard service, to protect the continuity of supply. The Ministry for Economic Development will identify suppliers as soon as possible through a call for bids;

- Transparency Rules to start up the market for domestic customers. Through the obligation for corporate separation of the electric energy sales and distribution activities, the functional separation of the management of electricity and natural gas system infrastructures and the other activities, the full market opening on the demand side will be matched by a full opening on the supply side. This will support the development of full competition to the benefit of consumers and ensure neutrality in the management of the network infrastructures; and

- Transparent information on electricity mix. Electric energy suppliers are required to inform their end customers about the mix of energy sources used to produce the electricity supplied and to advise the information sources available on the environmental impact of production, in accordance with the procedures to be defined by the Ministry, upon proposal by AEEG.
It also provides for:

- The promotion of the establishment of civil users’ associations; and

- Reference to a future Ministerial Decree for the protection of disadvantaged users; the issuance of regulations to simplify access for public administrations to financing through third parties in order to promote the use of energy efficiency services.

2.1.11 Strategic National Plan 2007-2013

The Strategic National Plan, drawn up in accordance with Art. 25 of the draft General Regulation on European Structural Funds, has the objective of putting into effect the priorities addressed (taking as a starting point local, regional and community policy, the innovation carried out in the period 2000 – 2006, the strategic priorities emerging from the analysis carried out in accordance with the Preliminary Strategic Documents drawn up in 2005 and 2006 by the different institutional entities) and the strategic and operating indication.

The Strategic National Plan was prepared based on preliminary strategic documents, consultation among different institutional entities (Central administration, Regions, Local Entities and economical and social partnership) and comparison with the European Commission. It was officially completed and approved by the CIPE on 22 December 2006, upon opinion of the Unified Conference (‘Conferenza Unificata’).

The Italian Strategic National Plan relating to regional development policies in the period 2007-2013, drawn up upon conclusion of the Bruxelles negotiations, was approved by the European Commission with Decision of 13 July 2007. The macro-objectives and the priorities related to the proposed Project, identified in the partnership trend for the preparation of the Strategic National Plan are as follows:

- Enhance life quality, security and social inclusion in the territories: the reference priority is the sustainable and efficient use of resources (Priority 3); and

- Develop the production chain, the services and competition: the reference priorities are the valorisation of natural and cultural resources for attractiveness and development (Priority 5), competitiveness of production systems and employment (Priority 7), competitiveness and attractiveness of cities and urban systems (Priority 8).

In general the Strategic National Plan implements the community strategies, by defining as a priority, the harmonization of the social-economic context of the national territory, protection and safeguarding of the environment and promotion of sustainable development.
2.1.12 Economic and Financial Planning Document (DPEF) 2008-2011

The Economic and Financial Planning Document 2008-2011 (approved by the Council of Ministers on 28 June 2007) stresses the importance of a financially, socially and environmentally sustainable growth model.

The Government undertakes to support the sustainable use of biomass and bio fuels and to ensure the operation of flexible mechanisms (development mechanism and joint implementation) and the register of forest carbon reservoirs.

From an energy viewpoint, energy infrastructures will be strengthened, particularly for natural gas, as will policies aimed at reconciling energy consumption with environmental protection. In particular, the document states that “the realisation of new LNG regasification terminals and pipelines for import from abroad, the strengthening of existing pipelines and the rapid establishment of new underground gas storage as strategic reserve and for market requirements, represent fundamental conditions to avoid continuous and dangerous supply crises and to satisfy requirements of primary national importance, both short and long term”.

2.1.13 Ministerial Decree 8 March 2013 - National Energy Strategy

The National Energy Strategy or ‘Strategia Nazionale Energetica’ (SEN) has been issued with the Ministerial Decree 8 March 2013. The SEN was developed to define the main objectives to be reached by Italy in the short, medium and long terms, up to the year 2050, as follows:

- Reduce the cost gaps between the Italian market and the European market, increasing Italian companies’ competitiveness;
- Gain and exceed the 20-20-20 target by 2020 in terms of decarbonisation;
- Achieve diversification of energy and power supply, mainly for the gas sector, and therefore enhance security of supply; and
- Promote the sustainable economic growth of the country through the development of the energy sector.

To achieve the above objectives by 2020 the SEN also defines 7 priorities, each with specific actions already defined or to be defined:

- Increase of energy efficiency;
- Improve gas market competitiveness and south Europe hub;
- Sustainable development of the renewable energy;
- Develop energy infrastructures and the energy market;
- Improve the refinery and distribution network;
- Sustainable production of national hydrocarbons; and
Modernisation of the governance systems.

Considering the point ‘Improve gas market competiveness and south Europe hub’ the following action is defined by the SEN:

Facilitate the implementation of other import infrastructure and storage pursuant to an exemption from third party access, with investment costs incurred by proponents, without the revenue guarantee or financial contributions of a public nature. [omissis] promote the opening of the Southern Corridor for the import of natural gas from the Caspian and other countries to Italy, in particular the proposed TAP Project.

2.2 Local and Regional Level Regulation

2.2.1 Apulia Region Energy Environmental Plan (PEAR)

The Apulia Region Energy Environmental Plan (PEAR) was adopted through Resolution by Regional Council n. 827 of 8 June 2007. The Plan objectives concerning energy supply and demand overlap with the objectives/emergencies of the national and international energy-environmental policy. On the one side, compliance with the Kyoto commitments, and on the other, the need to establish a highly diversified pool of energy resources, understood both as sources and as derivations.

The PEAR is structured in three parts: (a) – the regional energy context and its development (b) – objectives and instruments and (c) – strategic environmental evaluation. The first section includes the analysis of the Apulia Region energy system, based on the reconstruction, for the period 1990-2004, of the regional balance sheet for energy. The second part outlines the guidelines that the Region intends to follow to define a government policy on energy, both for demand and supply. The third section includes the Plan’s strategic environmental impact evaluation to the purpose of assessing the level of environmental protection associated with it.

The Plan contains energy directions and strategic objectives over a period of ten years and aims at representing the reference framework for public and private subjects taking on initiatives in this field in the Apulia Region.

In relation to natural gas, the Region stresses the need to increase supply capacity in terms of quantity and, concurrently, in terms of diversification of the places of origin.

The environmental, social and financial consequences of these choices highlight the likewise real need to consider the high value to be attributed to energy sources, reaffirming the need to carry out an overall energy assessment with the primary objective of reducing requirements and rationalising use.
Different options are presented at the regional level to develop new supplies, both in terms of the realization of structures for the regasification of natural gas coming from the sea, and in terms of the realization of pipeline connections. In particular, the Plan states that “with regard to the choice for pipelines to connect the two sides of the Adriatic basin, there are no conditions hindering the development of current initiatives, given that the same are part of both the initiative for the rebalancing of fossil sources and of the unquestionable role of the Apulia region as distribution node in the Mediterranean area.”

2.2.2 Provincial Energy Environmental Plan (PEAP)

Legislative Decree n.112/98 transferred significant powers in the energy sector to provincial administration. Among them is the “preparation and implementation of intervention programs to promote renewable sources and energy saving” to the purpose of promoting correct management of local energy sources.

In this context, the Province of Lecce, through Resolution by Regional Council n. 36 of 23 April 2004, approved the ‘Intervention Plan for the Promotion of Renewable Sources and Energy Saving and for the Installation and Operation of Energy Production Plants’. The Plan aims at providing a brief profile of the energy sector in the Province of Lecce, both on the demand and on the supply side, as well as at outlining possible scenarios for the development of renewable sources. The document also presents the operational instruments made available by the various authorities and bodies operating on the territory to implement the planned interventions. It is noted that the document does not provide directions concerning the actions to be taken, but rather outlines a reference framework for the choices to be implemented through the drawing up of the Plan. In particular, the document presents:

- The international, European, national and regional energy policies;
- The financial instruments for intervention in the energy sector;
- The reference context of renewal sources;
- The balance sheet for energy of the Lecce Province; and
- The potential of the energy system of the Lecce Province.
3 NATURAL GAS MARKET

3.1 European Natural Gas Market

This Section presents the current situation and the future development of the European natural gas market. The analysis has been conducted with reference to the following documents:

- ‘Natural Gas Consumption in EU27 in 2010’, Eurogas, Bruxel March 2011; and

3.1.1 Current Situation

According to estimates from Eurogas, total natural gas consumption in the 27 Member States of the European Union (EU27)\(^1\) has increased by 7.2% in 2010 in comparison to 2009. The initial estimate for 2010 natural gas consumption in the EU27 is 5,655 terawatt hours (TWh Gross Calorific Value), equivalent to 522 billion cubic metres (BCM), or 438 Million Tons of Oil Equivalent (MTOE Net Calorific Value). This represents an increase of 7.2% compared to 2009.

At the end of 2010, the total number of gas customers connected to the EU27 natural gas grid rose by approximately 1% in comparison to 2009, to reach 115.4 million customers.

\(^1\) Croatia joined the EU on 01 July 2013, bringing the total number of Member States to 28.
Figure 3-1  Natural Gas Consumption in 2009 and 2010

Source: Eurogas (March 2011)
The economic downturn in Europe significantly affected natural gas consumption in 2009, which registered its lowest levels since 2002. Although natural gas markets vary significantly across Europe, in almost all EU countries, natural gas demand between 2009 and 2010 increased by 7.2%. The gas demand growth in the EU27 was explained by a combination of the severe weather conditions and the economic recovery (1.8% real GDP growth). Some general trends can be distinguished for most of the EU countries.

Due to cold weather conditions in 2010, natural gas demand increased strongly in the residential sector. An important driver of gas sales growth was the industrial sector that registered a strong recovery in 2010 compared to 2009. This trend is illustrated by a 6.7% increase in the EU27 average production index for 2010, compared to 2009. Alongside the industrial sector, the power sector played a large part in the total consumption growth. Higher electricity demand due to the economic recovery and switching to gas from other fuels has significantly increased the volume of gas used for power generation. Indigenous gas production in the EU27 decreased by 4% to 1,904 TWh (176 BCM) over the period, mainly because of an on-going decline in the mature production basins.

The largest source of gas supplied to the EU27 comes from indigenous production, making up 34% of the total net supplies in 2010. Main external sources of supply were Russia at 23%, Norway at 19%, Algeria at 10% and Qatar at 6%, which illustrated the increasing role of liquefied natural gas (LNG) in the EU gas supply.

3.1.2 Forecast of Natural Gas Demand

Natural gas demand until 2030 is expected to increase. The factors determining future energy demand in the EU27 include:

- Continued economic growth of more than 2%;
- Hardly any rise in population;
- Oil prices remaining at a high level;
- Gas prices determined by market forces;
- Increased environmental awareness in politics and among consumers;
- Growing trend to save energy and to improve energy efficiency; and
- National level considerations to expand the use of renewables.
Because of its ‘green properties’ and highly efficient application technologies, natural gas will remain the fuel of choice and will continue to make a growing contribution to energy supply in the EU27. Natural gas can play an important role as a bridging fuel to a sustainable energy future over the coming decades. Natural gas consumption in EU member states is expected to increase from 438 MTOE in 2005 to 625 MTOE in 2030, which is an increase of 43%. The share of natural gas in the European primary energy demand will rise from 24% in 2005 to 30% in 2030 (18% in 1990). At 60% of the total demand increase, most of the growth will come from power generation.
While gas demand in Europe will rise by 43% by 2030, domestic production will decrease. Today European production (including Norway) accounts for 59% of supplies to EU gas markets and is expected to drop to a third by 2020 and to a quarter by 2030. Against this background, the European gas industry has already contracted gas deliveries from regions outside Europe that fully cover the foreseeable demand in the medium term. It is not until 2015 that a substantial gap emerges between demand and the supplies coming from European production or imported from outside Europe.

**Figure 3-4 Natural Gas Demand Outlook**

Source: Eurogas (April 2010)

The proportion of required additional supplies will gradually widen from 10% in 2015 to 22% in 2020 and to approx. 39% in 2030. Fundamentally this is not a new phenomenon, but reflects the long-term supply situation. Consequently, the European gas industry is now focusing its gas procurement especially on the period after 2015.

Today, it can basically be assumed that for the European gas industry, which is becoming ever more dependent on imports, there are sufficient long-term gas reserves available in countries that are accessible (i.e. concerning transmission distances). These include Russia, countries on the Gulf and in North and West Africa. Of the world's proven recoverable gas reserves totalling 181.46 trillion m³ with a static life of 63 years, 75% are located in such countries situated at a favourable distance from Europe. Nevertheless, new additional gas will come from more distant regions and from fields that are increasingly difficult to develop with the consequence of rising production and transport costs.

Taking into account the growing gas demand worldwide and the decreasing indigenous production in Europe, it will require a huge effort and substantial investments of the suppliers to mobilize this gas in time.

In addition, when assessing supply options, it must be kept in mind that competition for supplies will become far stiffer on international procurement markets. Other regions like South-East Asia, with its emerging economies, will increasingly compete for gas on the world market.
Figure 3-5  Natural Gas Import Outlook

Source: Eurogas (April 2010)

3.2  Italian Natural Gas Market

3.2.1  Current Situation

In 2009, Italy’s Total Primary Energy Supply (TPES) amounted to 162.71 MTOE, a 7.5% decrease as compared to 2008. Oil accounted for 66.96 MTOE while coal and gas accounted for 12.24 MTOE and respectively 63.91 MTOE. Other sectors accounted for 19.61 MTOE.
In 2009 Italy consumed a total of 78,051 Million Cubic Meters (MCM) of natural gas, a decrease of 8% compared to the consumption in the previous year. In 2008, Italy consumed a total of 84,883 MCM of natural gas, which is almost equal to 2007.
Of the total consumption of natural gas in 2008, 37,821 MCM were used for transformation and 13,798 MCM for industry while 30,251 MCM was consumed by other sectors. Transformation includes the generation of electricity, while the demand from 'Industry' refers to gas used for the chemical, iron and steel, and machinery industries.
Despite the above data, natural gas demand is increasing, due to its comparative low cost and clean-burning attributes, as well as its growing accessibility through pipeline and LNG trade. Both mature and fast growing economies are looking to natural gas to reduce carbon dioxide emissions and diversify away from unpredictably priced oil, driving global and Italian demand.

The indigenous gas resources of Italy are very limited. It hosts approximately 0.04% of the world’s total reserves. The reserves-to-production ratio for Italy at the end of 2009 is 8.6 years, down from 14.2 years at the end of 2008. Italy’s gas production peaked in the late 1990s at 17.4 BCM and has been decreasing ever since to 8.4 BCM in 2008.

Gas imports account for almost 89% of the total volumes of consumed gas making Italy the 4th largest gas importer in the world after the US, Japan and Germany. Almost all of Italy’s gas imports are being accomplished via pipeline, only 4% is imported via LNG. Most of the gas pipeline imports originate mainly from Algeria, Russia and the Netherlands. The share of Russia and the Netherlands in Italy’s gas imports increased in 2009 to 32.8% and respectively 10.3% while the share of Algerian gas in Italy’s imports decreased to 32.6%, almost 1.3% less than 2008.
3.2.2 Italian Natural Gas Infrastructures

3.2.2.1 Pipeline

At the end of 2008, the whole transportation system of Italy amounted to a length of more than 33,000 km. The main natural gas transport company is Snam Rete Gas, the network of which consists of 8,779 km of national grid and 22,695 km of regional grid. Presently, the national grid is interconnected with foreign import pipelines through 5 entry points: - Gorizia (Slovenia) - Passo Gries (Switzerland) - Tarvisio (Austria) - Mazara del Vallo (Tunisia) - Gela (Lybia). Furthermore, two entry points are interconnected to LNG terminals, Panigaglia and Porto Levante. In addition, there are 59 entry points interconnected with domestic production fields. The storage facilities are interconnected to the national network through two virtual entry and exit points. The transport capacity on the national network at the beginning of 2009 amounted to:

- 346.4 million Nm$^3$/d at entry points interconnected with foreign import pipelines and LNG terminals (including interruptible capacity);
- 33.4 Nm$^3$/d at national productions entry points;
- 214.1 Nm$^3$/d at Storage entry points and 144.3 Nm$^3$/d at storage exit points; and
- 19.1 million Nm$^3$/d at exit points interconnected with foreign pipelines.

Table 3-1 shows future projects for the construction of natural gas import pipelines.

<table>
<thead>
<tr>
<th>Project</th>
<th>Company</th>
<th>Entry points</th>
</tr>
</thead>
<tbody>
<tr>
<td>TAP (Greece-Albania-Italy)</td>
<td>TAP</td>
<td>Torre San Foca (Apulia)</td>
</tr>
<tr>
<td>IGI Interconnector (Greece-Albania-Italy)</td>
<td>IGI Poseidon SA</td>
<td>Otranto (Apulia)</td>
</tr>
<tr>
<td>Interconnirol (Italy-Austria)</td>
<td>SEL</td>
<td>Bressanone (Trentino Alto Adige)</td>
</tr>
<tr>
<td>GALSI (Algeria-Italy)</td>
<td>GALSI</td>
<td>Porto Botte (Sardinia)</td>
</tr>
<tr>
<td>TGL (Germany-Austria-Italy)</td>
<td>Tauerngasleitung Studien und Planungsgesellschaft Mbh</td>
<td>Malborghetto (Friuli Venezia Giulia)</td>
</tr>
</tbody>
</table>

Source: Ministry of Economic Development (July 2010)

3.2.2.2 LNG

At the end of 2008 there were two operational LNG terminals in Italy, namely Panigaglia, with a nominal capacity of 3.32 BCM/y, and Rovigo, with a nominal capacity of 8 BCM/y. There is one terminal currently under construction and 10 regasification terminals proposed for the coming years.
## Figure 3-9  Existing LNG Regasification Terminals in Italy

<table>
<thead>
<tr>
<th>Site</th>
<th>Storage</th>
<th>Send out</th>
<th>Owner</th>
<th>Operator</th>
<th>TPA</th>
<th>Start-up</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>Panigaglia</td>
<td>Tanks</td>
<td>Cap.**</td>
<td>Cap**</td>
<td>GNL Italia</td>
<td>GNL Italia</td>
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<td>1969</td>
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<tr>
<td>Rovigo (Atlantic LNG)</td>
<td>-</td>
<td>100</td>
<td>4</td>
<td>3.32</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>-</td>
<td>-</td>
<td>5</td>
<td>8</td>
<td>Atlantic LNG</td>
<td>Yes - 20%</td>
<td>2009</td>
</tr>
</tbody>
</table>

- c = confidential; - = nil; .. = not available
- E = existing; U = under construction; P = proposed
- *capacity in m3 x 1,000
- **nominal capacity in bm3/y.

Source: OECD/IEA (July 2010)
### Figure 3-10 Proposed LNG Regasification Terminals in Italy

<table>
<thead>
<tr>
<th>Site</th>
<th>Storage - Cap.*</th>
<th>Send out - Vaporizers</th>
<th>Owner</th>
<th>Operator</th>
<th>TPA Start-up</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>Toscana Offshore</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>2010+</td>
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<tr>
<td>Brindisi</td>
<td>2 320</td>
<td>8</td>
<td>British Gas Italia</td>
<td>-</td>
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<tr>
<td>Taranto</td>
<td>2 300</td>
<td>8</td>
<td>Gas Natural</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Porto Empledolce</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>2014+</td>
</tr>
<tr>
<td>Rada di Augusta</td>
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<td>-</td>
<td>-</td>
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<td>-</td>
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<tr>
<td>Giola Tauro</td>
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<td>-</td>
<td>-</td>
<td>-</td>
<td>2014-</td>
</tr>
<tr>
<td>Ravenna off.shore</td>
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<td>Atlas LNG</td>
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<tr>
<td>Rosignano off.shore</td>
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<td>Edison/BP/</td>
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<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Zaviole</td>
<td>2 300</td>
<td>8</td>
<td>Gas Natural</td>
<td>-</td>
<td>2014+</td>
<td>-</td>
</tr>
<tr>
<td>Trieste off.shore</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

* = confidential; _ = nil; = not available
E = existing; U = under construction; P = proposed

Source: OECD/IEA (July 2010)
4 CONCLUSION

The TAP Project is aligned with the key objectives of the applicable energy and gas sector legislation as it would contribute to the diversification of European natural gas supplies, increase security and promote competitiveness.

Therefore, considering that natural gas demand is expected to increase until 2030, in both Europe and Italy, the Project will provide the necessary infrastructure to assist meeting this demand, transporting gas from the Shah Deniz II field in Azerbaijan via the most direct route to Southern Europe when production begins in early 2018.