



CONFINDUSTRIA

PROMOTING THE ROLE OF THE ITALIAN GAS MARKET IN EUROPE





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ITALIAN GAS MARKET IN EUROPE**



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INDEX

PREFACE	pag	5
ACKNOWLEDGEMENTS	»	7
EXECUTIVE SUMMARY	»	9
1. INTRODUCTION	»	15
1.1 Market context	»	15
1.2 Key question	»	21
1.3 Confindustria solution	»	22
2. HIGH SUPPLY DIVERSITY	»	23
2.1 More than 10 supply sources, potentially	»	23
2.2 Increased domestic production	»	27
3. POSITIVE GAS DEMAND OUTLOOK	»	29
3.1 New areas for gas demand	»	29
3.2 Increased gas fired power generation	»	30
3.3 New uses of natural gas	»	32
4. INTEGRATED MARKET	»	35
4.1 Integrated system with reverse capacity	»	35
4.2 Integrated entry-exit system with European market rules	»	36
4.3 Increasing liquidity at PSV	»	37
5. THIRD LARGEST GAS MARKET IN EUROPE	»	41
5.1 Italy one of the largest gas consuming manufacturing sector	»	41
5.2 Diversified competitive arena	»	42
6. CONFINDUSTRIA POSITION	»	45
6.1 Promote the role of gas as a clean fuel	»	45
6.2 Promote Italy as a hub with high diversification of supply	»	46
6.3 Support Italian market further integration into Europe	»	47

PREFACE

Competitiveness, transition to low carbon economy and security of supply are the three pillars of the new European Energy Policy launched by the Commission on 25th February 2015.

During the last 15 years much has been done in terms of market competitiveness through a common framework of rules, progressively implemented, that provided significant results.

Through the ETS and additional policy measures the transition to low carbon economy is on the right track and European leadership on fighting climate change is globally recognized.

The geopolitical crises that have affected the main suppliers of natural gas to the European continent provided evidence that the issue of security of supply is definitely among the most intriguing and complex to manage as part of the future strategy for the Energy Union.

When Europe calls for more “*Solidarity clause*” in order “... *to reduce the dependence on single suppliers and fully relying on their neighbors, especially when confronted with energy supply disruptions*” Member States should remind what Robert Schuman stated in the famous declaration “*Europe will not be made all at once, or according to a single plan. It will be built through concrete achievements which first create a de facto solidarity.*”

This position paper is a contribution of the Italian Industrial System to the debate concerning European Gas Market, as part of the more ambitious Energy Union project, where enforcing the south-north corridor is crucial to achieve more security of supply and competitiveness to all Member States.

Europe imports more than half of all the energy it consumes and current geopolitical context compels us to do our best in order to conjugate foreign policy choices with security of supply in the energy sector. In particular, Europe’s natural gas import dependency is 66%¹, whilst domestic production is constantly declining. In this framework, Italy is of paramount importance, due to its strategic geographical position and its regional ties with foreign suppliers, both traditional (North Africa and Russia) and potential (e.g. Azerbaijan). In particular, diversifying supply routes by developing a comprehensive LNG strategy and a Mediterranean & Southern Gas Corridor is considered by the European Commission a milestone in order to achieve “*Energy Security, Solidarity and Trust*”². The Gas Target Model, recently updated by ACER, considers as a crucial step the creation of “*a competitive European gas market comprising, entry-exit zones with liquid virtual trading points, where market integration is served by appropriate levels of infrastructure, which is utilized efficiently and enables gas to move freely between market areas to the locations where it is most highly valued by gas market participants*”³. The European Commission, concerning

¹ European Commission Communication on European Security Strategy COM(2014)330
<https://ec.europa.eu/energy/en/topics/energy-strategy/energy-security-strategy>.

² European Commission Communication on Energy Union Package COM(2015)80.

³ European Gas Target Model – Review and Update, ACER 2015.



gas disruptions occurred in 2006 and 2009, points out that EU Energy Strategy has to “*promote resilience to these shocks and disruptions to energy supplies in the short term and to reduce dependency on particular fuels, energy suppliers and routes in the long-term*”⁴.

Besides, the recent tensions at the European eastern borders, together with the troubled situation following the Arab springs, focused the international attention on energy security and economic bilateral relations with exporting countries. Energy Security Stress tests, provided by the European Commission in October 2014, showed that a prolonged supply disruption of Russian gas import would have a substantial impact on Europe, and in particular on Eastern EU countries and Energy Community countries. Adequate decisions in order to stimulate infrastructure investments and cooperation measures among Member States have to be taken in the next few years. This scenario urges us to find new ways of conciliating energy security issues with the market framework where actors actively operate. The end of the “open season” mechanisms and a Gas system oriented towards short-term hub-indexed contracts, instead of long-term Take or Pay oil-indexed ones, have to be considered in future European statements and FID for Projects of Common Interest. In this regard, the Energy Union Package prioritizes the strategic interconnections needed in order to strengthen security of energy supply. Investing in natural gas infrastructure is the key to increase European supply diversification and interconnectivity. As a matter of fact, developments of new interconnections, LNG and storage facilities, as well as all the investments diversification to the south-north corridor through a strategic vision, will bring major benefits in terms of security of supply to the European Gas Market enhancing industry competitiveness and lower prices for citizens.

Creating a European Energy system implies the integration of different energy sources, both fossils and renewables, balancing internal demand and import dependency issues. Confindustria believes that Natural Gas will be one of the main actors in the future energy production processes, due to the lowest environmental impact among fossil fuels and the enhanced flexibility which makes it the best ally of renewable energy. Natural Gas is a clean fuel for industrial and domestic applications and, according to our expectations, its global demand will progressively increase.

This work could not have been achieved without the substantial support and cooperation provided by Pöyry Management Consulting Italia. We are grateful to Antonio Nodari, Antonio Michelin, Paola Lualdi for their significant inputs and their special facilitation of our workshops and meetings, organized to get essential input to this study.

Special thanks go to Confindustria Associations and Companies that participated and provided a strong professional support in terms of views and analysis. Finally, thanks to Andrea Andreuzzi for his assistance in developing this proposal.

Massimo Beccarello

⁴ European Commission Communication on European Security Strategy COM(2014)330.

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EXECUTIVE SUMMARY

Market context

In recent years, the European gas market has undergone a period of change, both in terms of gas demand and gas supply.

Despite some forecasts, gas demand has declined, most significantly in the power generation sector. This decline has been driven by a combination of lower electricity demand and competition from renewable and coal generation. The intermittent nature of gas demand for power generation, as a result of increased renewables, has resulted not only in a decline in the overall level of gas demand but also in an increase of the volatility of the gas demand.

European gas supply has also been through a period of significant change. Indigenous production has continued to decline and has been replaced by imported gas. The source of the imported gas has varied due to a number of drivers that include the availability of resources, price dynamics and geopolitical reasons. For example, lower oil prices and the convergence of European and Asian spot gas prices have resulted in more LNG cargoes being delivered to Europe in recent months.

The outlook for gas demand in Europe continues to be uncertain, although there are some positive drivers. Eurogas, for instance, expects a 7% increase in European gas demand in 2015 when compared to 2014. This is partly due to the return to economic growth that should support an increase in gas demand for the power generation sector. In addition, when the reform of the ETS takes effect, CO₂ allowance prices will increase and improve the competitiveness of CCGTs as compared to coal plants. Countries relying heavily on coal or lignite, such as Poland, would possibly see increased gas consumption. Gas fired generation will also increase as nuclear power plants are phased out in Germany, and possibly in France. Electricity prices will increase in Central Europe, electricity imports to Italy will decrease and be compensated with additional gas fired generation. New uses of gas, such as CNG and LNG for land and marine transport, will further increase gas demand. The resulting greater consumption will have a positive impact on the entire gas value chain, including the retail activity. However, these positive drivers need to be balanced against ambitious decarbonization policies that are pushing the electrification of the system, to the detriment of natural gas.

The gas supply outlook is based on a higher dependence on imports which has increased concerns over security of supply. Declining volumes of domestic production will be compensated with new sources of gas from the Middle East, the East Mediterranean basin and the U.S. via exported LNG. The new sources of gas supplies will, however, bring greater diversification of supply and increased upstream competition. This will, in turn, deliver security of supply benefits and a more price competitive market.

We have observed that the gas market has become more volatile in terms of demand and price and this has contributed to many players taking a more short term view. There has been an unwillingness to enter into long term commitments and, unlike the start of the gas industry, there has been a reluctance to underpin investments in the upstream and midstream with long term



gas supply contracts. This has led to a significant issue for the industry as long term commitments, or at least long term market signals, are necessary for gas infrastructure to develop.

Key question

There are a number of elements that can be considered in the future configuration of the gas and wider energy market in Europe. Assumptions for demand and supply evolution, new uses of gas, new supply sources and infrastructure development are all elements that, combined together, can define specific market configurations. Different configurations of these elements will deliver different degrees of security of supply, affordability and sustainability, together the pillars or “trilemma” of the European single gas market. Some configurations will include greater diversification of gas supply routes and sources, and deliver a greater degree of resilience to supply shocks, unlike some solutions including the project to double the capacity of the Nord Stream. Other configurations will generate greater environmental benefits, for example by using LNG in marine transportation, and others may make gas prices more affordable, by increasing upstream competition and market integration.

It is crucial, therefore, to select and promote the market configuration that can deliver the optimum combination of security, affordability and sustainability. The question regarding this ideal configuration is even more important in a situation where the market is not yet sufficiently integrated and no longer provides long term signals. The question is also timely, as the European Commission has established its Energy Union strategy in February 2015, with the task of “Making energy more secure, affordable and sustainable”. Ultimately, energy policy will be relied upon to indicate the way forward.

Policy direction shall be given by European and Italian institutions. On the one hand, Europe has to promote the best market configuration to ensure that the “trilemma” is met. On the other hand, the Italian institutions need to assign a role to the Italian gas market and actively support it.

Confindustria solution

Confindustria believes that the optimal market configuration in Europe is the one that assigns a primary role to the Italian gas hub, because this can offer:

- 1) a high supply diversity, with potentially more than 10 sources and increased domestic production,
- 2) a positive gas demand outlook, with new geographies, increased gas fired power generation and new gas uses,
- 3) an integrated market, with sufficient bidirectional capacity, European compliant market rules and market liquidity and,
- 4) the third largest gas market in Europe, with a strong manufacturing sector and a diversified competitive arena.

Details of the key components of our solution are presented in the following paragraphs.

1 High supply diversity, with potentially more than 10 sources and increased domestic production

The Italian gas market is ideally placed to take advantage of existing and new gas supplies from many sources. Italy currently imports pipeline gas from Russia, Algeria, Libya, Norway and The Netherlands and LNG, from Qatar. In the near future, Italy will also take delivery of gas from Azerbaijan and possibly from other sources in the Caspian and Middle East regions. Connected to the TANAP pipeline, the TAP is proceeding according to schedule and should bring 10 Bcm/y of natural gas from the Caspian Sea by 2020. Gas from recent discoveries in the East Mediterranean basin, including the Egyptian Zohr field holding 850 Bcm in place, and gas reserves in Israel, Cyprus and Lebanon, shall also find its way to Europe through the Italian gas system. The resulting supply diversification would be extremely high.

Italian domestic production may increase and, along with biomethane, can reduce import dependence. The National Energy Strategy envisages an increase in Italian indigenous production from the current 7 Bcm/y to 12 Bcm/y, by 2020. In its Ten Year Development Plan, Snam Rete Gas, the Italian gas TSO, expects production volumes of biomethane to reach 5.1 Bcm, in 2024.

2 Positive gas demand outlook, with new geographies, increased gas fired power generation and new gas uses

Italy is ideally positioned to become an aggregating hub to meet the demand from neighboring regions such as Central Europe and the Balkans, which have an increasing gas consumption outlook. Gas from the South transiting through Italy could help to diversify the supply portfolio of countries like Switzerland and Austria, and other European countries further North, including South Germany, with increased gas demand. The Balkan region could be supplied with a combination of reverse flow through TAG, LNG terminals and a system of small scale LNG plants.

Gas demand in Italy is set to increase, supported by sustained economic growth. Gas consumption from the power generation sector, in particular, will increase due to greater overall electricity demand and, in the longer term, by a proper low carbon system and lower imports. The nuclear phase out program in Germany, and possibly France, shall result in an increase of electricity prices in that region, reducing the spread with the Italian market price to zero and hence reducing electricity imports. Even biomethane, through a guarantee of origin system, could promote the use of gas at Italian CCGT plants. As a renewable source, biomethane is not subject to CO₂ allowance prices and can, therefore, become commercially viable.

Gas demand in Italy might also be driven up by new uses, including LNG applications and CNG. LNG can become the fuel of choice for heavy duty trucks and for marine traffic in the Mediterranean area, delivering large environmental benefits. This is supported also by the European directive 2014/97/EU on the deployment of alternative fuels infrastructure. LNG can also be used for off-grid applications in the industrial and civil sectors. CNG can offer further gas potential. With 1 million vehicles on the road, representing 77% of the total European CNG car and truck fleet, Italy is currently the largest market for CNG. If developed, gas consumption in Sardinia will also support total gas demand.



3 Integrated market, with sufficient bidirectional capacity, European compliant market rules and market liquidity

The Italian gas system is becoming well integrated with the rest of the European grid, and when all the bidirectional capacity is completed, it will be possible to flow gas from Italy to the UK. Reverse capacity is already available at Tarvisio (18 Mcm/d) and at Gries Pass (5 Mcm/d). An extension for the interconnection with Switzerland is nearing completion, increasing the reverse flow capacity to 40 Mcm/d. TAG, in Austria, can currently be operated in reverse flow mode whilst Fluxys, the owner and operator of the Transitgas (Switzerland) and TENP (Germany) pipelines, is planning to make its systems bidirectional. Bidirectional capacity will also be developed at the border of Switzerland and France, by GRTgaz. Furthermore, the Adriatica line, with an estimated capacity of 24 Mcm/d, will be capable of transporting gas from TAP and other possible new supply sources from the South of Italy.

The Italian gas system functions as a perfect entry-exit system. There is no internal congestion, in any flow scenario, and this allows gas to be transported from any entry point to any exit point of the national gas network. There is a single gas balancing zone and a single gas quality type, unlike in other countries where multiple zones or separate systems for H-gas and L-gas make gas management more complex. Gas in the Italian system can be traded at the PSV that has been established since 2003. The CAM (Capacity Allocation Mechanism) Network Code has been implemented ahead of the European timetable, whilst the Balancing Network Code, already transposed into the Italian framework, will be fully effective in 2016. The market-based balancing regime will further facilitate the development of the liquidity in the gas market. Other codes include Interoperability and Data Exchange Rules, and Harmonised Transmission Tariff Structures. The latter, in particular, can contribute to the fair allocation of infrastructure cost to entry and exit capacity.

With nominated trades of 84 Bcm in 2014, the PSV is one of the fastest developing gas trading hubs in the region. The PSV bid-ask spread, an indicator of liquidity, has come down to approximately 0.05 €/MWh in 2015, and is now in line with the spread at the TTF. The introduction of the new balancing regime should further increase liquidity as should the activities of exchanges, such as GME, Powernext, ICE Endex and the Chicago Mercantile Exchange. These exchanges are offering spot and futures products with physical delivery at the PSV. Increased liquidity at the PSV should lead to the convergence of gas prices and the alignment of PSV indexes to the main European ones.

4 The third largest gas market in Europe, with a strong manufacturing sector and a diversified competitive arena

With 62 Bcm consumed in 2014, Italy is the third largest gas market in Europe, after Germany (80 Bcm) and the UK (73 Bcm). In fact, Italy is the largest European market for gas fired power generation, with some 35 GW of installed capacity, and is the second largest market for industrial sector gas consumption, driven by the economic activity of the second largest manufacturing industry in Europe. The manufacturing industry is a pillar of the Industrial Compact for Europe, where it is expected to contribute 20% of GDP. With almost 290 thousand kilometres of gas networks, including a pervasive system of distribution grids, almost 17 Bcm of gas storage and

three operating LNG terminals, Italy is also one of the largest markets in Europe for infrastructure. In addition, as mentioned above, Italy is the largest market for CNG vehicles. Italy has also a key economic role in the Mediterranean region and could be the platform for the development of the regional energy market, within the OME framework.

The Italian market is competitive and features a high number of major players in the import, wholesale and retail segments. These players have economic significance on an international, national and regional basis, thereby contributing to the diversity of the competitive arena.

Confindustria position

With diverse and secure supply sources, a positive gas demand outlook, an integrated market and the third largest gas market in Europe, Italy has the capacity and the ambition to become one of the main gas hubs in Europe. Confindustria hopes that European and national institutions will promote the role of the Italian gas market in Europe and support it with legislative and financial measures.

Confindustria urges both national and European institutions, including the Ministry for the Economic Development, the European Commission, ACER and the Italian Energy Authority, to take action and:

- 1) acknowledge the central role of natural gas as a clean fuel for a decarbonized economy;
- 2) pursue a strategy of diversification of supply routes and sources, by acknowledging and supporting the central role of the Mediterranean region and Italy in the energy policies;
- 3) support the further integration of the Italian system into the European one, both in terms of rules, infrastructure and hub liquidity.

All these actions, taken together, shall promote the role of the Italian gas market in Europe. This would allow Italian and European businesses and citizens to benefit from higher security of supply, increased upstream competition leading to lower energy prices, and a sustainable energy mix.

1. INTRODUCTION

In recent years, the European gas market has undergone a period of change. Gas demand has declined, most significantly in the power generation sector. Indigenous production has continued to decline and has been replaced by imported gas.

The outlook for gas demand in Europe is uncertain, although positive. The return of economic growth should support an increase in gas demand, primarily in the power generation sector. However, gas demand will be confronted with ambitious decarbonization policies.

The gas supply outlook is based on a higher dependence on imports, with declining volumes of domestic production compensated with new sources of gas. The new sources will bring greater diversification of supply and increased upstream competition.

Assumptions for demand and supply evolution and other drivers, when combined together, can define specific market configurations. It is crucial to select and promote the market configuration that can deliver the optimum combination of security, affordability and sustainability.

Confidustria believes that the optimal market configuration in Europe is the one that assigns a primary role to the Italian gas hub, because this can offer gas supplies from more than 10 sources, potentially, a positive gas demand outlook, an integrated market, and the third largest gas market in Europe.

1.1 Market context

Historical demand and supply

EU27 demand in 2014 was 419 Bcm⁵, 22% less than the level of 2008. Consumption declined in all Member States, although following different patterns. Both the power generation and the non-power generation consumption segments declined.

The major drop is attributed to the power generation sector. Its consumption is driven by a combination of parameters, including reduced electricity demand, the competition from renewables and the price competitiveness of coal.

The renewable capacity built in Europe between 2008 and 2014 is 145 GW and contributed to the total generation output by 268 TWh. During the same period, electricity demand has grown by only 145 TWh.

Gas to power has been at a competitive disadvantage to coal. US increased the export of the fuel by 80%⁶ on average, during the period 2008-2014. The trend has been triggered by shale gas and tight oil, which have been used as cheaper substitute fuels in the US. Even though coal emissions are much higher than gas, the low CO₂ price means that coal is more competitive than gas. The levels of coal/lignite generation are high as the plants fed with those fuels are better positioned in the electricity economic merit order.

⁵ Eurostat.

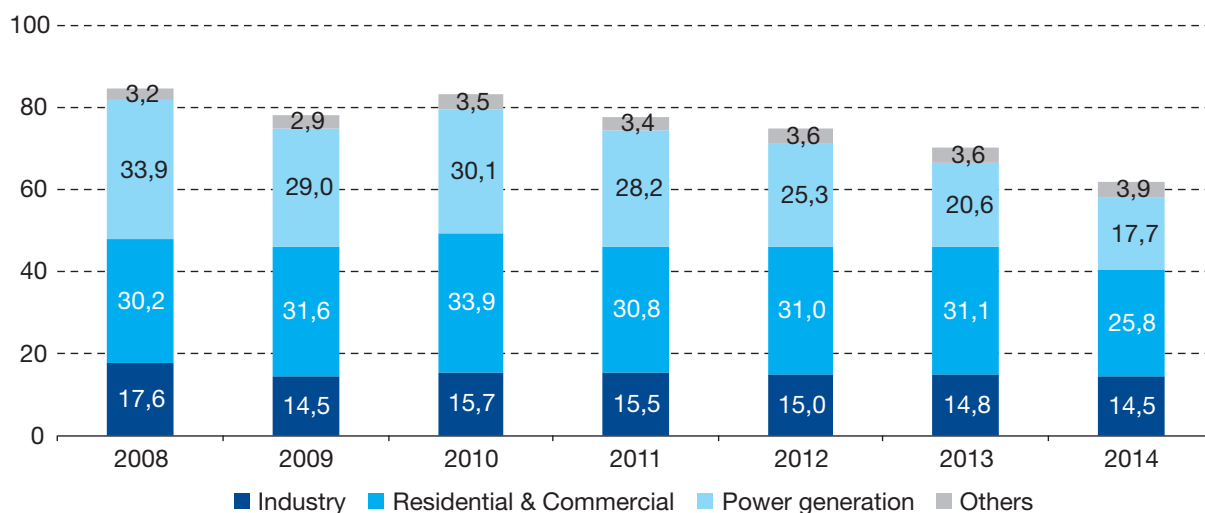
⁶ U.S. Department of Commerce, Bureau of the Census.



The Italian gas market faced the same declining trend as seen in Europe (see Figure 1). The gas consumption in 2014 was 61.9 Bcm, and declined by 27% compared to 2008. This major drop is attributed to the power generation sector, with a decrease of 48%. Its consumption is driven by a combination of parameters, including reduced electricity demand and competition from renewables and coal.

RES development in Italy has seen solar capacity increase by 18 GW, reaching a market share in the generation mix of 18%, compared to the 0.4% level of 2008. The high penetration of RES has reduced the contestable market share of gas fired power plants, leading to a dramatic decrease of their load factor by 50%.

FIGURE 1
Italian gas consumption (Bcm/y)



Source: Italian Ministry for the Economic Development and Snam Rete Gas (for 2014)

Europe has witnessed a general decline in indigenous gas production and a higher variability of supply flows over recent years (see Figure 2 below). The Netherlands, which is the biggest producer of natural gas in Europe, registered a 18% production decline over the period 2008-2014. Over the same period, UK, the second largest natural gas producer, experienced a 48% decline.

Russian imports have exhibited a declining trend since mid-2014. The decline was concentrated along the Ukraine/Slovakia route, driven by oil indexed price dynamics. The decline of Russian imports was compensated by increased imports from Norway and LNG.

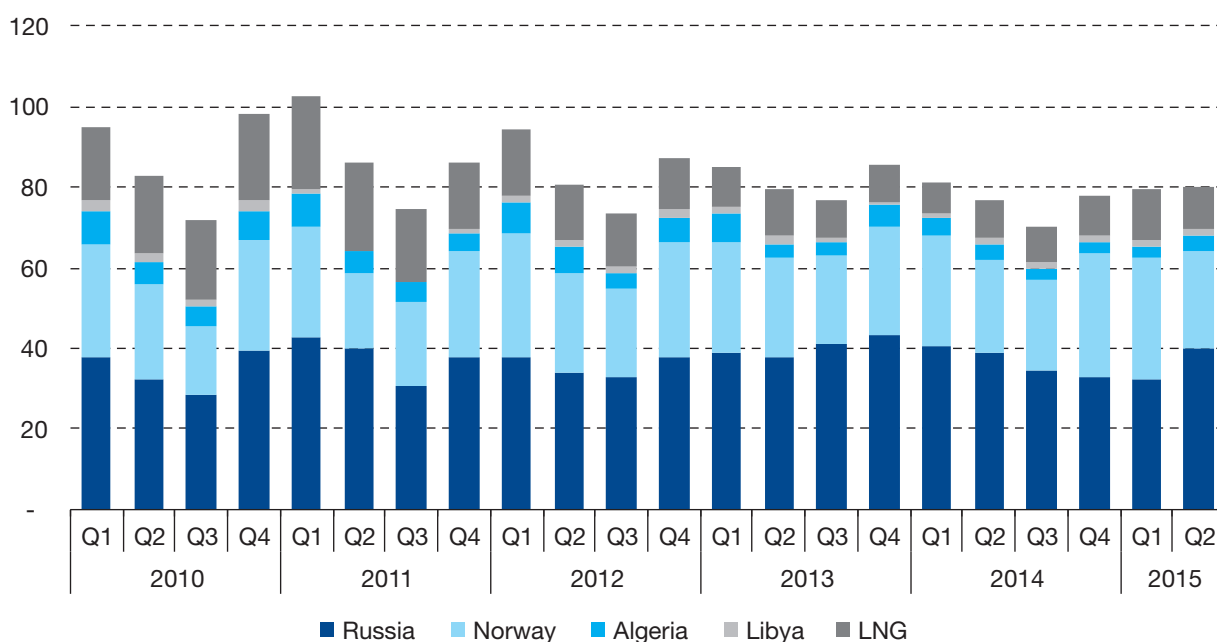
European LNG imports started to rise in the last quarter of 2014, facilitated by excess supply in the global market. Subdued demand in Asia and Latin America lead to a situation with gas surplus and spot cargoes diverted to Europe, as the Asian market lost its attractiveness. The LNG trend observed at the end of 2014 and at the beginning of 2015 will probably continue in future

years as Asian markets are unlikely to absorb the significant additional LNG volumes from all new liquefaction trains coming on stream in the next decade.

In 2015 Russian flows were re-established at pre-2014 levels, with a corresponding decline of Norwegian supplies.

FIGURE 2

Supply sources to EU28 (Bcm/y)



Source: International Energy Agency

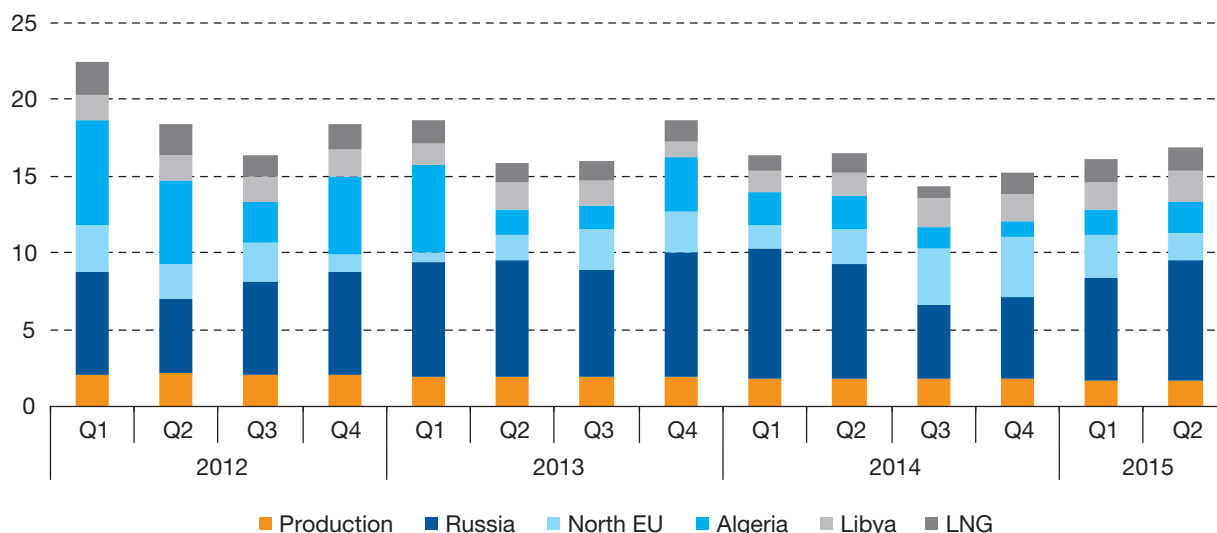
The import pattern witnessed in Europe is mirrored in the Italian gas market. This is being driven by the decline in domestic production that covers up to 10% of national gas demand.

In 2013, the average quarterly gas supply flows of Russian gas to Italy were 7.5 Bcm per quarter. From April 2014, Russian supply steadily reduced⁷ to reach 4.8 Bcm, in Q3 2014. Since then, the flows have increased. This trend can be observed in Figure 3. The decline of Russian imports was compensated with imports from the Northern Europe area, including Norway and The Netherlands. In March 2015, once the oil price drop was factored into gas prices allowing for pricing formulas time lag, Russian imports were re-established and imports from North Europe diminished.

⁷ Reductions in Russian flows were due to commercial reasons, rather than any political willingness.



FIGURE 3
Supply sources to Italy (Bcm)



Source: Italian Ministry for the Economic Development

Gas imports from Algeria declined from 2012 to 2015, primarily driven by the (estimated) higher prices of Algerian gas compared to other supplies. Before the decline, lower imports from Russia were compensated by greater imports from Algeria.

The Algerian case shows that with upstream competition, i.e. availability of resources greater than demand, and price differentials, importers can choose to nominate flows from cheaper sources⁸. Upstream competition can therefore put downward pressure on gas prices.

The evolution of supply flows is clearly reflected in the utilization of the import infrastructure. Figure 4 shows the maximum daily utilization, in a given quarter, of the import capacity at Tarvisio (Russian gas), Gries Pass (North European gas), Mazara del Vallo (Algerian gas) and Gela (Libyan gas). The utilization of import capacity at Tarvisio went down in the second half of 2014, and up in 2015. At the same time, the utilization at Gries Pass went up, to compensate for lower utilization at Tarvisio, i.e. for lower Russian supplies.

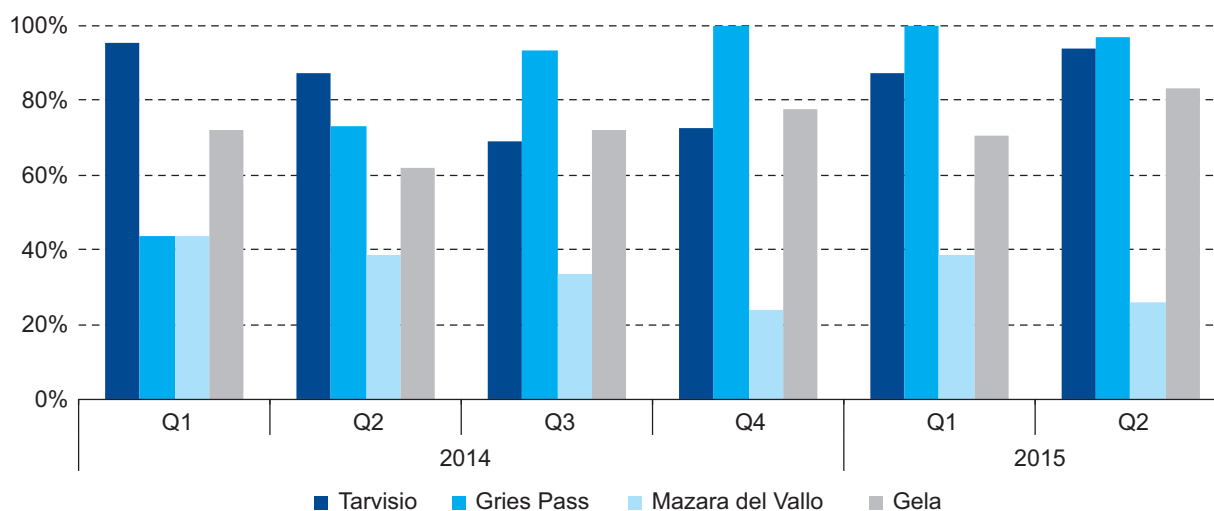
Gas imports from Libya have been steady even with the unrest in the country.

LNG deliveries to Italy increased in the first half of 2015 (3.9 Bcm) when compared to the first half of 2014 (2.3 Bcm). This represents a 33% increase. Cargoes were mainly unloaded at the Adriatic LNG terminal, under the long term contract with Qatar, with the other two terminals seeing very low utilization.

⁸ Permitted by flexible clauses in the long term contracts.

FIGURE 4

Max quarterly utilization of import capacity in Italy (%)



Utilization is max daily flow divided by assigned capacity. Monthly values are averaged over a quarter

Source: Snam Rete Gas

Demand and supply outlook

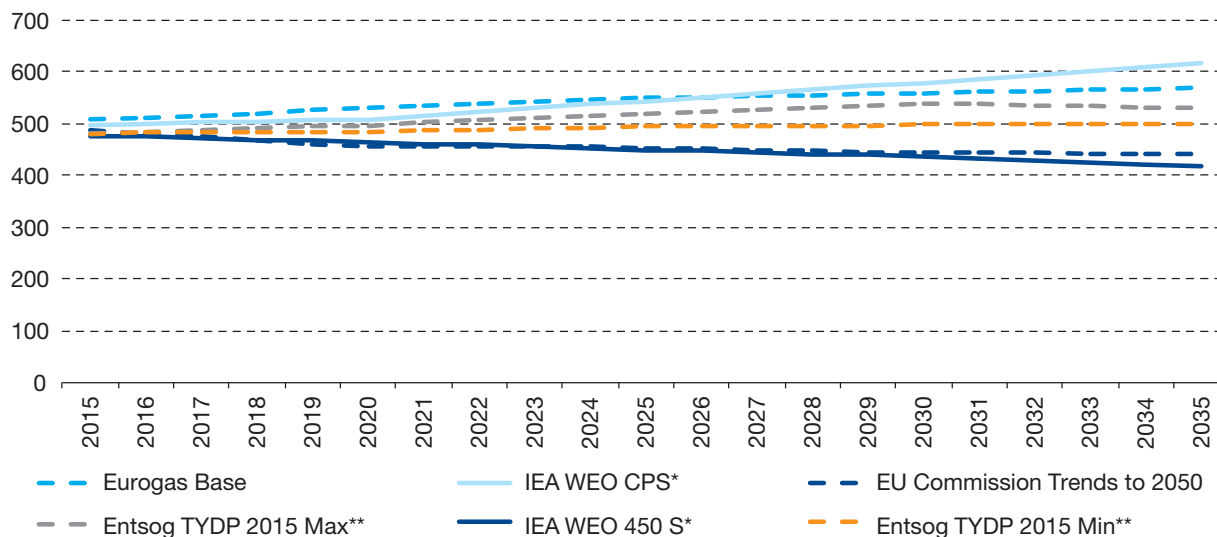
The demand outlook in Europe is uncertain, although there are some positive signals. Eurogas, for instance, in a press release dated 23 October 2015, reports that “Gas demand across the European Union is expected to increase by 7% in 2015 compared with 2014”.

Figure 5 shows the projections for the long term evolution of gas demand. Demand depends on factors such as targets set by energy and environmental policies, macroeconomic parameters and energy commodity costs including CO₂ costs. The difference in gas volumes between the extreme scenarios, provided by reputable parties, is high and reaches approximately 94 Bcm in 2025 and 189 Bcm in 2035.

One of the main drivers to gas demand evolution is the decarbonization policy that is pushing the electrification of the energy system. The measures identified to achieve the decarbonization goal include energy efficiency and the development of low/zero carbon resources, including nuclear. There is also a policy commitment to further develop the emission trading system (ETS), to maintain a non-distorted carbon price signal. The low carbon economy will be delivered through large scale power network developments, to support the new generation mix.



FIGURE 5
EU28 gas demand outlook (Bcm)



* IEA WEO = International Energy Agency World Energy Outlook; CPS = Current Policies Scenario; 450 S = 450 parts of CO₂ per million Scenario

** TYDP = Ten Year Network Development Plan; Max = Scenario A - Vision 3 max; Min = Scenario B - Vision 1 min

Source: EntsoG TYDP 2015

A system development based on new technologies, large scale deployments and nuclear might be expensive and complex, though. Natural gas, instead of being set apart from the future energy mix of the European decarbonized economy, should be assigned and acknowledged a central role, as a clean fuel.

When the ETS system is reformed, CO₂ prices will increase and will make gas more competitive than coal. Countries relying heavily on coal or lignite, like Poland for example, will likely switch to natural gas. The Polish gas demand is expected to reach 20 Bcm in 2030, according to the Polish Ministry of Economy, from the current level of 15 Bcm (2014 data).

The phase out of nuclear power plants in Germany will also bring about increased gas demand. Germany’s strategy is to switch the coal CHP into gas CHP, using also ultra-supercritical lignite fired plants to cover the nuclear deficit. The move to gas will generate increased demand. In general, the new technology mix of the electricity market in Germany will possibly increase the electricity prices in Central Europe taking them to the level of Italian market prices. This will result in lower imports of electricity to Italy, compensated by greater CCGT output, resulting in additional gas demand. Nuclear capacity evolution⁹ and coal to gas power generation shift in France could also bring about increase gas consumption, though in the longer term.

⁹ French Energy bill on the transition énergétique, adopted on July 2015, stated a reduction of nuclear share in the electricity mix, by 2025, down to 50% (actual nuclear share is 75%).

Finally, using natural gas in transportation (CNG and LNG), as provided for by the European Directive 2014/97/EU on the deployment of alternative fuels infrastructure, would generate great environmental benefits. Increased gas demand would also support the retail activity.

The supply outlook is also uncertain as it depends on availability of new import infrastructure, the pace of indigenous production decline, the pricing of LNG in the global market and its availability. Domestic production is clearly expected to decline, to be only partially compensated with non-conventional production and biomethane. Russian supplies are expected to be steady, together with Algerian and Libyan gas flows. LNG imports are forecast to increase, with the highest share of LNG coming from the Atlantic basin. New sources of gas from the Middle East and the East Mediterranean basin to Europe will also play an important role. The latter are discussed in the following chapters.

The demand and supply outlook picture would not be complete without mentioning the possible future of long term contracts (LTCs). LTCs have been the backbone of European gas industry development and have contributed much to security of supply.

In the recent years we have observed intense renegotiation activity concerning LTCs, as market conditions have changed. Some regulatory measures also drove renegotiations that regarded primarily pricing and volume flexibility terms. Gas shippers entered into long term agreements for gas transmission and storage capacity, too. Some European and Italian shippers are asking to modify the terms of such long term capacity contracts in a way similar to that used in the supply contract renegotiation, and call for proper regulatory measures, in combination and coherence with capacity assignments rules.

Many of the LTCs will expire in the next years and gas suppliers, influenced by the current market conditions characterized by variability, lower and uncertain demand and availability of gas at the spot markets, are unlikely to renew the supply contracts for very long durations.

The market is probably going to deviate from the long term schemes that have characterized it so far, thereby enhancing the differences in risk profiles and durations of the supply and the infrastructure businesses. The market might no longer provide long term signals to the infrastructure developer and operators thereby creating an unfavorable environment for new investments.

1.2 Key question

A number of elements can be considered in the future configuration of the gas and wider energy market in Europe. Assumptions for demand and supply evolution, including gas demand for power generation; new uses of gas, including LNG and CNG for land and marine transport; new supply sources, including new reserves in the East Mediterranean Sea and LNG; and infrastructure development, like reverse capacity and infrastructure needed for new supply routes; all these elements, combined together, can define specific market configurations.

Different configurations will deliver different degrees of security of supply, affordability and sustainability, together the pillars or “trilemma” of the European single gas market. Some configurations will include greater diversification of gas supply routes and sources, and deliver a greater



degree of resilience to supply shocks. Unlike solutions such as the one including the project to double the capacity of the Nord Stream, optimal configurations shall include supply from hubs with multiple sources (Russia, Mediterranean Sea, Middle East, Qatar) and multiple routes (pipelines and terminals). Where there is a multitude of supply sources and producers, increased upstream competition and market integration, then gas prices are more affordable. Other configurations will generate greater environmental benefits, for example by using LNG in marine transportation, or by using gas fired power plant also to balance the intermittency of clean renewable sources.

It is crucial, therefore to select and support the market configuration that can deliver the optimum combination of security, affordability and sustainability. The question regarding this ideal configuration is even more important in a situation where the market is not yet sufficiently integrated and no longer provides long term signals. To integrate the market, infrastructure development is needed but if the market does not provide signals, then operators and investors are unwilling to finance capacity extensions. The recently established Energy Union strategy, that will ensure that Europe has secure, affordable and climate-friendly energy, is the ideal framework where the selection and the support of the best market framework is to be provided. Ultimately, energy policy will be relied upon to indicate the way forward.

Policy direction shall be given by European and Italian institutions. On the one hand, Europe has to promote the best market configuration to ensure that the "trilemma" is met. Financial and legislative support must be directed to those arrangements that can maximize European profile along security, affordability and sustainability. On the other hand, the Italian institutions need to assign a role to the Italian gas market and actively support it, again with financial and legislative measures, and with active participation in all venues where important decisions are taken.

1.3 Confindustria solution

Confindustria believes that, considering the gas market "trilemma", the optimal market configuration for Europe is the one that assigns a primary role to the Italian gas hub, because this can offer:

- 1) gas supplies from potentially more than 10 sources, delivering increased production capability and significant diversity and security of supply,
- 2) a positive gas demand outlook, driven by increased gas fired power generation, new uses of gas and new gas markets,
- 3) an integrated market, with sufficient bidirectional capacity, European compliant market rules and market liquidity and,
- 4) the third largest gas market in Europe, with a strong manufacturing sector and a diversified competitive arena.

All the above topics are developed in detail in the following chapters. A conclusive chapter is also added, where Confindustria requests are presented to the European and Italian institutions.

2. HIGH SUPPLY DIVERSITY

The Italian gas market is ideally placed to take advantage of existing and new gas supplies from many sources. Gas from recent discoveries in the East Mediterranean basin, including the Egyptian Zohr field, and gas in Israel, Cyprus and Lebanon, shall find its way to Europe through the Italian gas system. This, added to the existing sources and gas from the Caspian Sea, would make supply diversification of the Mediterranean hub extremely high.

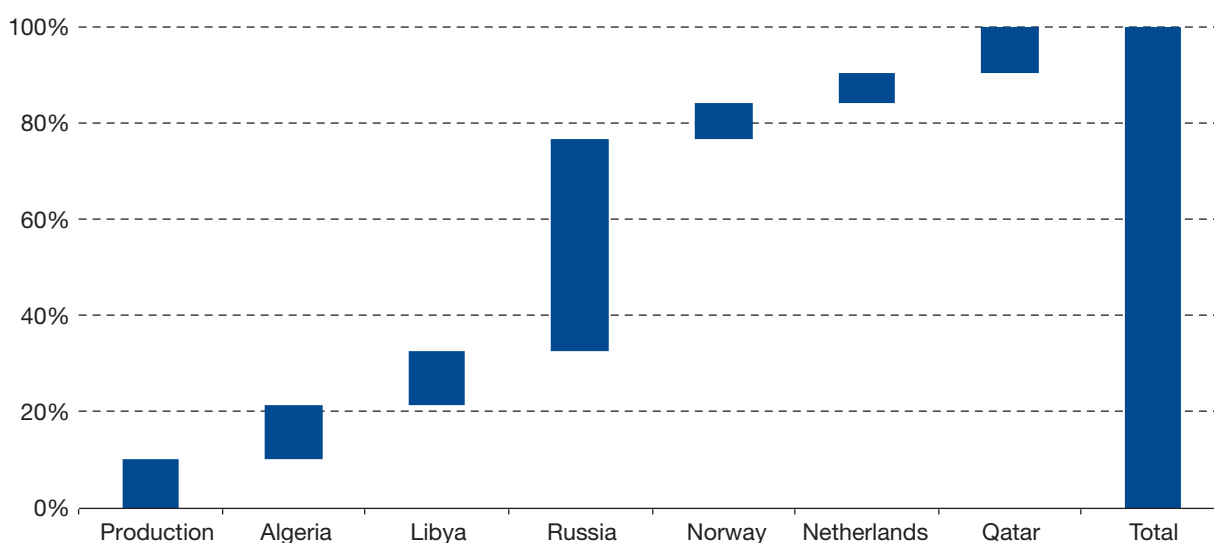
Italian domestic production may also increase, and along with biomethane, can reduce import dependence.

2.1 More than 10 supply sources, potentially

The Italian gas market is supplied by a high number of different supply sources, including domestic production, Algeria, Libya, Russia, Norway, The Netherlands and Qatar, through LNG delivered at the Adriatic regasification terminal. The Figure 6 below shows the high diversification of supply sources to Italy and refers to the first half of 2015 (with total deliveries of 33 Bcm).

FIGURE 6

Supply sources to Italy in H1 2015 (%)



Source: Elaboration on data from Italian Ministry for the Economic Development

Russian supplies to Europe are expected to be steady, or only slightly declining, at around 150 Bcm/y¹⁰. New gas fields exploitation are absorbed by China and, to some extent, Japan. We do not envisage a decline in Russia flows to Italy, considering the long and well established commercial relationship with Italy.

¹⁰ EntsoG 2015 TYDP. The number describes the supply availability.

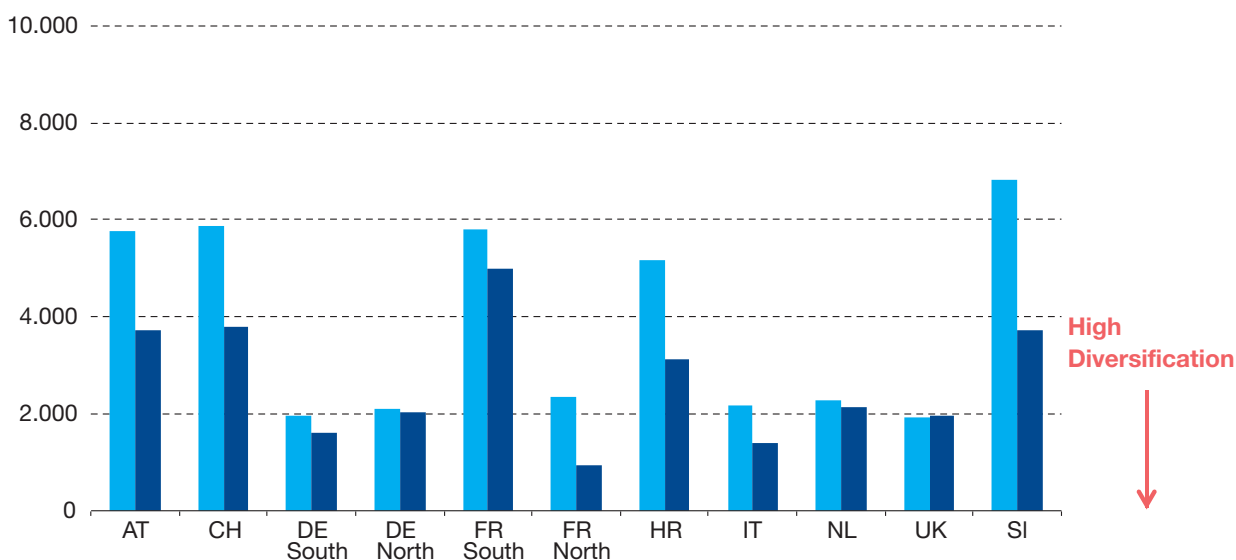


Algerian gas flows to Europe are expected in the long run to be flat at around 35 Bcm/y¹¹. Libyan gas flows are also expected to be constant at around 9 Bcm/y, supported possibly by a political stabilization of the country.

At the European level, LNG is forecast to increase. The highest share of LNG will come from the Atlantic basin¹². The US is expected to be the biggest contributor of LNG to Europe, though permits to export energy from the region are not easy to obtain and, with the new Panama Canal, some of the big cargoes might be diverted to Asian markets. LNG to Italy will also increase, supported by the development of new LNG terminals and the commitment of the Government to define a long term LNG strategy.

In addition to all sources above, Italy will receive gas from the regions of the Caspian Sea and Middle East area. The Trans-Adriatic Pipeline (TAP), connected to the TANAP, will allow imports of 10 Bcm/y¹³ from Azerbaijan to Italy, through Greece and Albania, from 2020 onwards. Furthermore, the Poseidon pipeline, which would connect Greece to Italy, could transport other gas from the Middle East, to Europe.

FIGURE 7
Import Route Diversification Index



Source: EntsoG TYDP 2015, 2025 high

¹¹ EntsoG 2015 TYDP. The number describes the supply availability.

¹² EntsoG 2015 TYDP. The number describes the supply availability.

¹³ EntsoG 2015 TYDP. The number describes the supply availability.

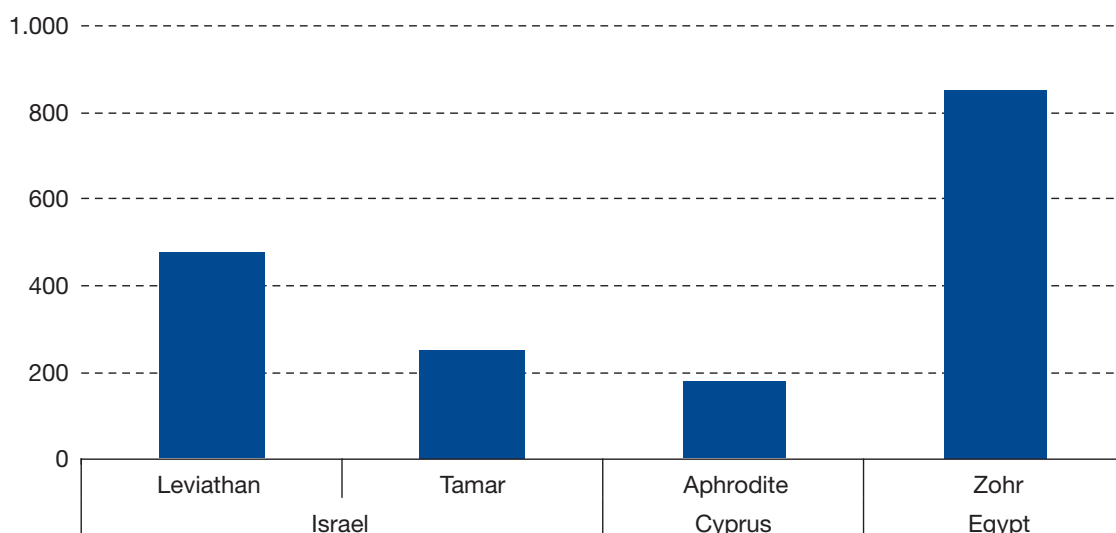
The new supply routes and the new supply sources will contribute to the security of supply of Europe and help to offset declining production in UK, the Netherlands and Norway. The decline in production is due to a number of factors including field depletion (in UK and later Norway) and low exploitation of reserves due to environmental concerns (Groningen in the Netherlands). The decrease of the indigenous production will be only partially compensated with non-conventional production and biomethane.

The Import Diversification Route Index (IRDI) is a key measure of supply diversification and hence security of supply. The IRDI values for 2015 and 2025 are given in Figure 7 above. The index is based on Herfindahl-Hirschman market concentration metric, and provides a measure of diversification of both routes and sources of gas. The lower the index is, the more diversified the market is. As can be observed from the picture, the diversification in Italy would be one of the highest within the considered country panel. It is to be noted that the high diversification of the South of Germany is more a question of routes, i.e. transmission capacity, than sources, since Germany has only three, i.e. Russia, the Netherlands and Norway.

A further potential source of supply diversification is the East Mediterranean basin. ENI has recently discovered a huge gas field, Zohr, in the Egyptian Mediterranean Sea, holding approximately 850 Bcm in place. ENI and the Egyptian government are discussing a development plan for the deployment of the Zohr field and the establishment of a Mediterranean gas hub, leveraging on the existing Egyptian transport and export infrastructure and, on the other hand, on the Italian gas infrastructure.

FIGURE 8

Natural gas volumes, resources (Bcm)



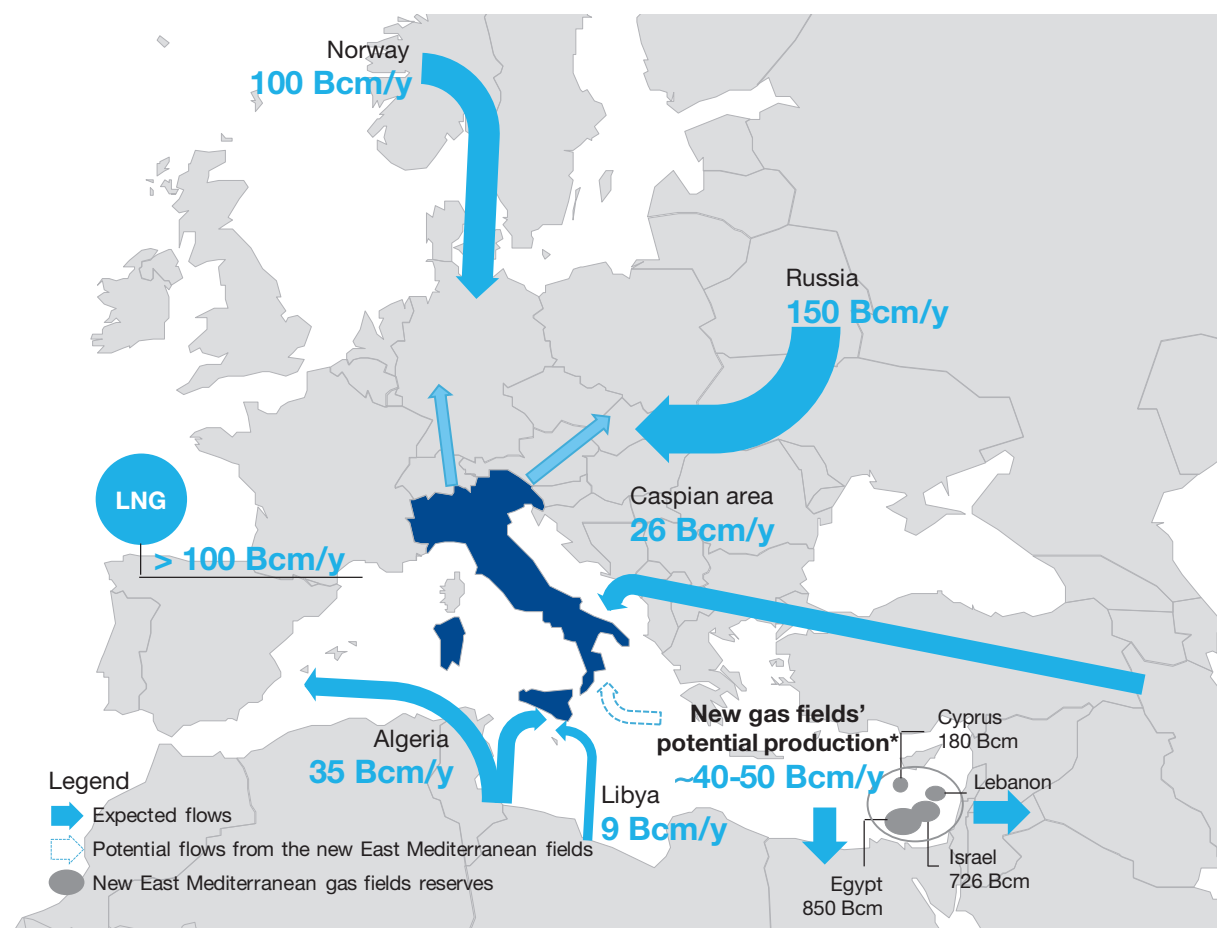
Source: Publicly available information



There exist opportunities to create synergies with the recent discoveries in Israel, Cyprus and the potential in Lebanon. The Leviathan gas field, close to the Israeli coast, has been the largest discover in the Mediterranean Sea, before the Zohr field, and together with Aphrodite gas field, in Cyprus, represents a significant new source of gas for the local and the European market.

Recent gas fields discovery are turning Israel into a potential gas exporter. Given the total volume of the proven reserves, and taking into account the Israeli Government’s decision to export more than 40% of the reserve, gas available for export could amount to around 410 Bcm¹⁴. The Israeli Government has not yet decided whether to export to Europe or to Asia. The creation of partnership with neighboring countries will have a significant impact on whether the gas flows will be directed eastward or westward. It is hence important to give a strong signal in Europe to attract the Israel flows.

FIGURE 9
Gas supply availability to Europe in 2025 (Bcm/y)



* Main assumptions: For Israel export potential as estimated by EU Parliament¹⁵ assuming 35 years of gas field depletion. For Egypt, Cyprus and Lebanon, gas fields potential as depicted in Figure 8, with 35 years depletion
 Source: Entosg TYDP 2015 and elaboration on European Parliament, OME

¹⁴ European Parliament “The prospect of Eastern Mediterranean gas production: An alternative energy supplier for the EU?”.

¹⁵ In the study “The prospect of Eastern Mediterranean gas production: An alternative energy supplier for the EU?”.

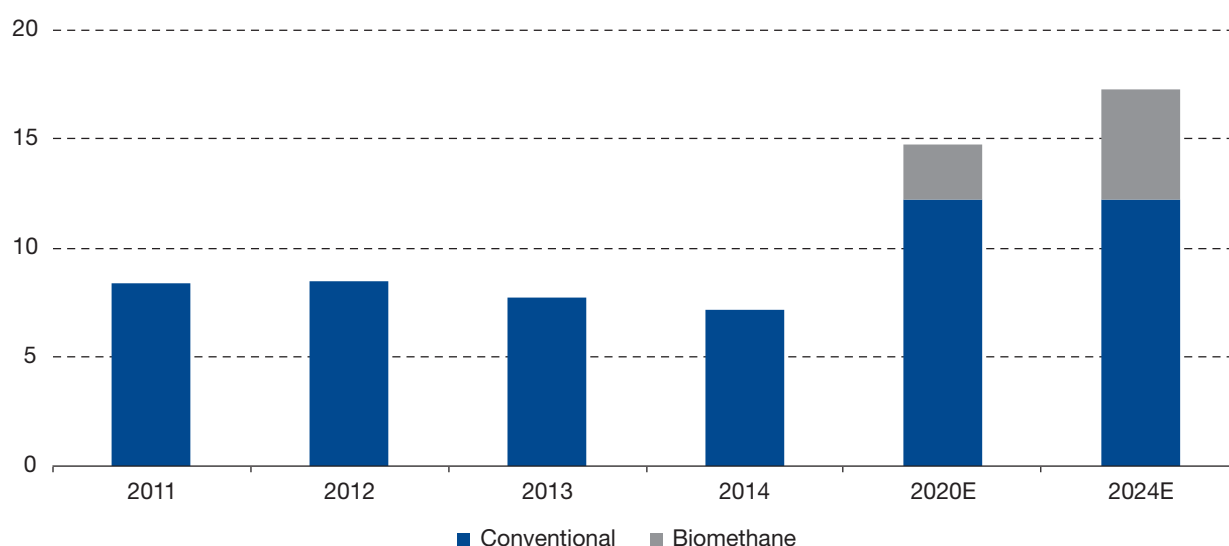
Figure 9 shows a possible vision for 2025 supply to Europe. With existing imports, new gas from Middle East and the recent discoveries of the East Mediterranean area, the supply diversification of the Italian gas hub would be extremely high.

2.2 Increased domestic production

Italian gas and oil reserves are the largest in Continental Europe, after the Dutch ones. Italy production is expected to increase from the current 7 Bcm to 12 Bcm by 2020, as envisaged by the Italian National Energy Strategy (Strategia Energetica Nazionale, SEN). A major contributor to the increase is the offshore gas production site, connected to the national grid at Gela in Sicily, with expected output of 2 Bcm/y.

FIGURE 10

Domestic production evolution in Italy (Bcm/y)



Source: Italian Ministry for the Economic Development, National Energy Strategy and Snam Rete Gas TYDP 2015

According to Assomineraria¹⁶, the exploitation of the national oil and gas reserves could attract investments for €15 billion, create 25,000 new job positions and bring about annual savings of €5 billion, thanks to lower fossil fuel imports.

The Figure 10 above displays the potential development of domestic production in Italy. Increased production will decrease import dependence and so increase security of supply that,

¹⁶ Assomineraria is part of Confindustria and represents the interest of the Italian mining and oil companies. The information is taken from the Parliament hearing on the National Energy Strategy (Strategia Energetica Nazionale, SEN).



as seen in the above paragraphs, is already high given the current and expected diversification of sources.

Biomethane shall also increase domestic production. In its 2015 Ten Year Development Plan, Snam Rete Gas expects the production of biomethane to be 5.1 Bcm/y by 2024. This ambitious plan must be sustained by promoting measures.

Biomethane is a renewable energy source. It is injected into the gas distribution networks but, through a rapid establishment of a certificate of origin system, it can be virtually burned at the power generation plants. It is also a non-intermittent source, so it does not create issues for balancing and integration with the electricity system.

3. POSITIVE GAS DEMAND OUTLOOK

Italy is ideally positioned to become an aggregating hub to meet the demand from neighboring regions.

In addition, gas demand in Italy is set to increase, supported by sustained economic growth, greater electricity demand, a low carbon system and lower imports. Biomethane, through a guarantee of origin system, could also promote the use of gas at Italian CCGT plants.

Gas demand in Italy might also be driven up by new uses, including LNG applications and CNG, as envisaged by the European directive 2014/97/EU on the deployment of alternative fuels infrastructure.

3.1 New areas for gas demand

Security of supply is becoming of primary importance in Switzerland and Austria. Flows from the Netherlands to Switzerland are expected to decline due to production fields depletion and the significant dependence upon Russian imports (71%¹⁷) is raising concern in Austria. Gas transiting through Italy could supply these countries, with benefits on diversification and security.

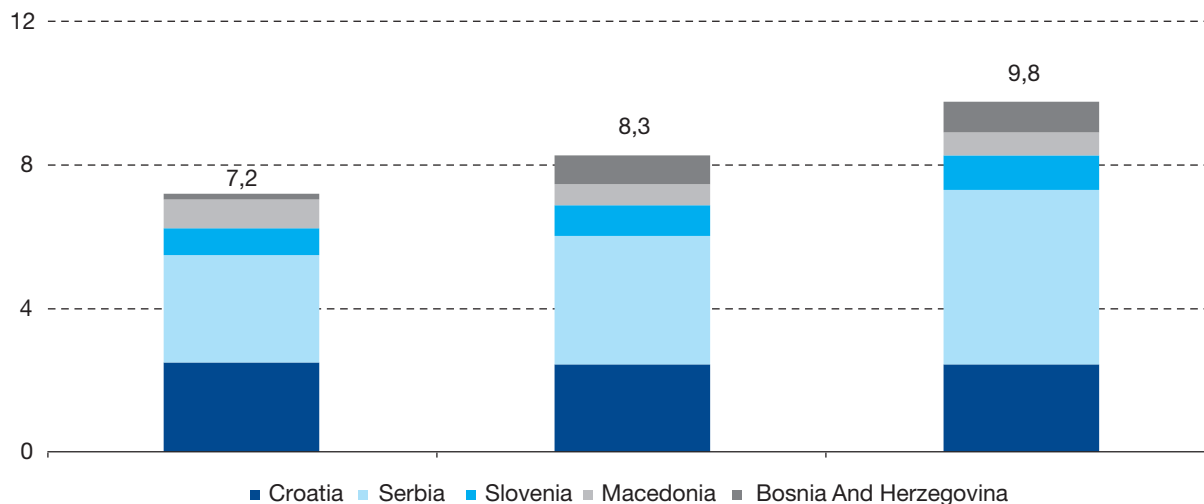
Gas demand in Germany is expected to increase. The main driver will be the transformation of existing coal-fired CHP to gas-fired CHP units¹⁸, supported by the Government. The BMWi (the Federal Ministry for Economic Affairs and Energy) views that 3 to 4 GW of additional capacity will be required. The demand could be satisfied, at least in part, with gas transiting through Italy.

The gas demand of the Balkan regions (i.e. Bosnia and Herzegovina, Serbia, Croatia, Slovenia and Macedonia) is expected to grow from current 7.2 Bcm up to 9.8 Bcm in 2025.

The region could be supplied with reverse flow through TAG, and connected through a system of LNG terminals and small scale LNG plants. The Balkan region might be also supplied with the gas from TAP, through the Ionian Adriatic Gas Transmission Pipeline, and local domestic production.

¹⁷ IEA 2012.

¹⁸ The White Paper (Ein Strommarkt für die Energiewende, Ergebnispapier des Bundesministeriums für Wirtschaft und Energie - Weißbuch - BMWi, July 2015) identifies measures to support for the transformation of existing coal fired CHP to gas fired CHP units.

**FIGURE 11****Gas demand outlook in the Balkans (Bcm/y)**

Source: Elaboration on data from TYDP 2015 Entsog, Scenario B - Vision 1

3.2 Increased gas fired power generation

The Italian gas demand outlook, taken from the TYDP 2015 of Snam Rete Gas, is given in the Figure 12 below. Demand increases most prominently in the power generation sector. It is expected to rise thanks to the return to economic growth and electricity import reduction. The significant increase of gas demand from the non-power sector is explained primarily by weather effects (2014 winter has been particularly mild).

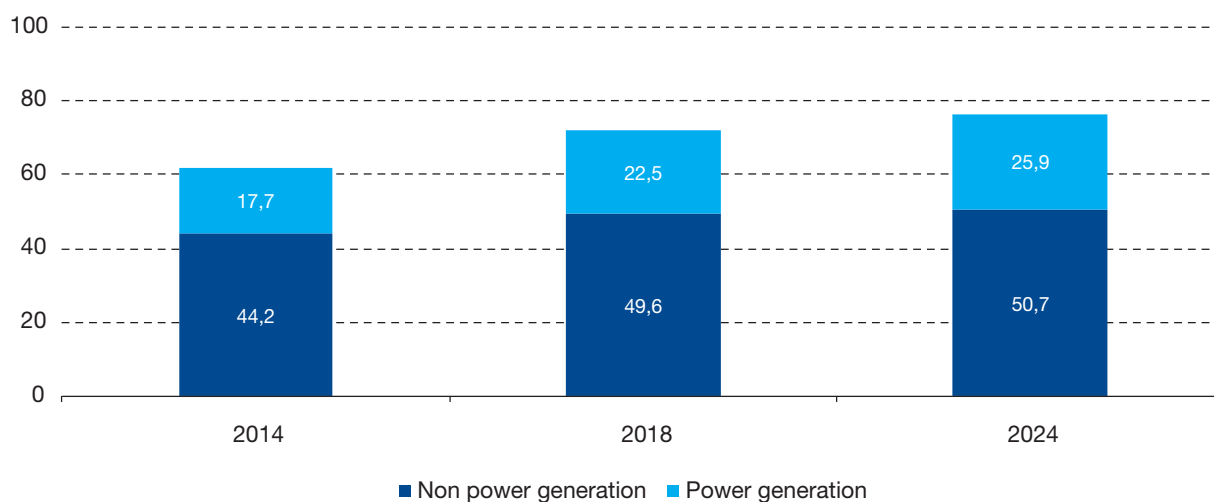
The nuclear phase out in Germany, where nuclear output will be substituted with gas fired plants and ultra-supercritical hard coal plants, will generate an electricity price increase that will take the spread with the Italian electricity market price down to zero. This will result in lower electricity imports to Italy compensated with increased gas fired power generation. French decrease of nuclear output, planned after 2025, could also support demand and exports.

In addition, when the ETS reform will take effect, after 2020, CO₂ prices will presumably increase and make gas fired generation more competitive than coal fired generation, resulting in increased gas demand from CCGTs.

The development of biomethane could further promote the use of fossil gas at the Italian CCGT plants. Through a system of certificate of origin, biomethane, which will be delivered and consumed in the gas distribution grid, can be virtually burned at the power generation sites. The resolution of the Italian Energy Authority 210/2015/R/gas, defining a virtual injection point in the transmission network for biomethane and dedicated withdrawal rules, is a step toward higher biomethane use and integration.

FIGURE 12

Demand outlook for Italy (Bcm/y)



Source: Snam Rete Gas TYDP 2015

Biomethane is a renewable energy source and hence is not hit by CO₂ expenses. The CO₂ avoided cost can make the biomethane commercially viable. Overall, biomethane will displace fossil gas in the distribution grids but, if priced competitive, will support the demand for power generation, resulting in a general increased gas consumption.

Power generation demand is expected to increase by 8.2 Bcm, from 17.7 Bcm to 25.9 Bcm, in the period 2015-2024, as forecasted in the 2015 TYDP of Snam Rete Gas. The increasing power generation demand will have immediate benefits for the system. Gas in power generation is a flexible and necessary source to reduce CO₂ emissions, to back up intermittent RES.

With higher CO₂ prices, even CCS might become a viable solution for CCGTs. Costs of CCS for gas are half of those for coal. CCGTs would reduce dramatically their emission, thereby becoming environmental competitive with RES.

Gas demand from the non-power segment, including industry, residential and commercial, will remain stable, net of the weather effect, because of energy efficiency measures. The industry, in particular, has registered a decrease of energy intensity by 31,5% in the period 2003-2013¹⁹.

Gas demand in the residential sector is also forecasted steady. Heating and cooling represent the main uses of natural gas in the segment which, according to Eurogas²⁰, provides an affordable, reliable, efficient and flexible solution when compared to alternative fuels.

¹⁹ Enea, Rapporto Annuale Efficienza Energetica 2015.

²⁰ Eurogas "Eurogas' contribution towards the EU strategy for heating and cooling", July 2015.



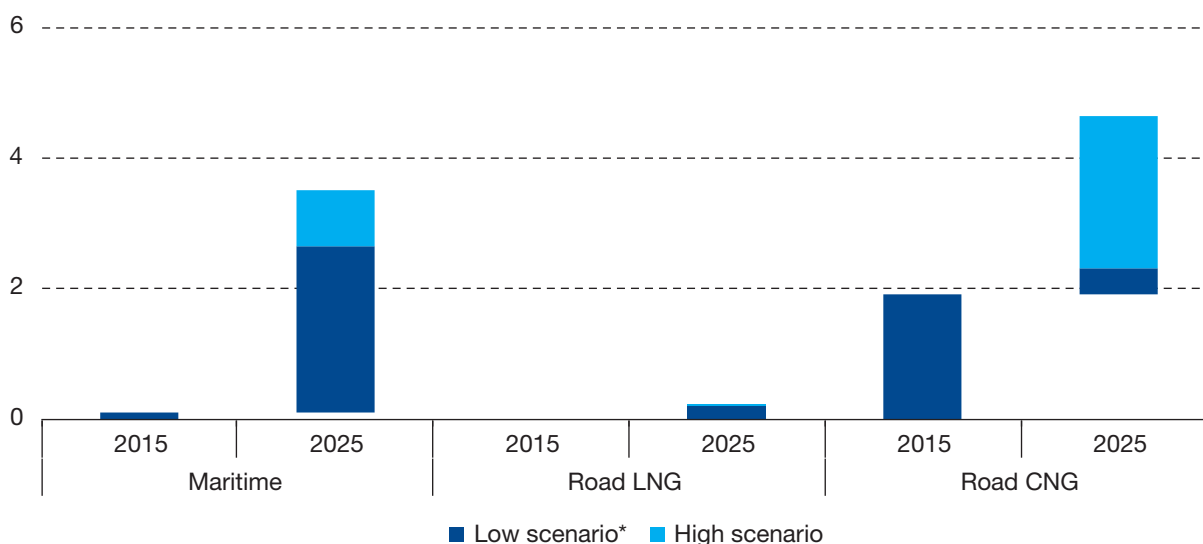
3.3 New uses of natural gas

The role of natural gas in achieving decarbonization targets should be acknowledged and promoted. Gas demand could further increase thanks to different uses such as transport and industry.

LNG and CNG for transport

Natural gas can be used in transport, as envisaged in the European directive 2014/97/EU on the deployment of alternative fuels infrastructure.

FIGURE 13
Projected evolution of gas in transport in Europe (Bcm/y)



Source: EntsoG TYDP 2015

Gas in transport can be consumed in compressed (CNG) or liquid (LNG) form. LNG is being used as fuel for vehicles (mainly Heavy Duty Truck, HDT) and ships (sea/ocean and river ships). LNG has significant emission advantages in comparison to the fuel alternatives, i.e. petroleum products (-99.9% of CO reduction, -60% of NOx reduction and -25% of emissions reduction²¹). LNG, when compared with oil fuels in trucks, allows for lower emission of NOx (-7.2%), particulate matter (-26.1%) and CO₂ (-3.9%)²².

Currently, there are 8 L-CNG fuelling stations in operations, located primarily in the North of Italy²³. The maximum theoretical market potential for LNG as a substitute fuel of diesel for HDT is estimated at 15 Bcm/y²⁴. The number represents a theoretical market value, only partially re-

²¹ Gasnaturally.

²² Italian Ministry for the Economic Development 2015 “Documento di consultazione per una Strategia Nazionale sul GNL”.

²³ The ENI station in Piacenza provides also LNG for trucks; 1 additional LNG filling station for truck is planned near Livorno (ENI); 1 L-CNG station in Bologna is only for private consumption of the local city bus fleet.

²⁴ Estimate based on 2013 data of NGVA and Federmetano.

alizable, and is hence much higher than the one reported in Figure 13, based on EntsoG TYDP 2015 scenarios.

With current emissions level allowances, LNG for marine transportation is less competitive than oil fuels. The definition of the Mediterranean region as an Emission Control Areas (ECAs), like the Baltic Sea and part of the North Sea, could support the deployment of this technology, accelerating the switch from oil to low carbon fuel in the marine sector. The maximum theoretical potential value of LNG consumption in marine transportation in Italian ports is 4 Bcm/y²⁵. The number represents a theoretical market value, only partially realizable, and is hence much higher than the one reported in Figure 13, based on EntsoG TYDP 2015 scenarios.

In Italy there is a strong political willingness to develop the LNG market. In 2014 the Government established a technical committee, including key market operators, tasked with the elaboration of the Italian Strategic Plan for the development of LNG market²⁶. The Government launched a consultation process, which has now been concluded, and should deliver shortly the Plan.

Concerning CNG vehicles, gas is compressed and distributed at the fuel stations. Vehicles have low pollutant emissions (-97% of CO reduction, -60% of NOx reduction and -25% of emissions reduction²⁷) and have rapidly gained ground in urban fleets of buses, utility trucks and taxis.

Italy is the most prominent market in Europe with 1,067 fuelling stations and 915,000 cars, representing 77% of total CNG vehicles (including cars and trucks) in EU. The market has developed thanks to highly favourable taxation on methane, compared to other oil fuels, and tax exemptions on vehicles. In addition, the central Government and the Regions passed many support programmes to favour final users, in converting to methane existing vehicles or purchasing new vehicles, and operators, in investing in the distribution network. The maintenance of the current fiscal regime is key to the development of the sector.

CNG can offer a contribution to decarbonisation goal in road transportation in combination, not in opposition, with electrical vehicles (EVs). The decarbonisation of transport roadmap is based on the availability of decarbonised electricity supply (for EVs), which in turn depends on low carbon investments in generation capacity and grid expansions. The required investments are expensive.

The gas sector can contribute to the CNG growth through the pervasive gas distribution system that is already there, reducing the incidence of system costs. Gas consumption in CNG could rise from less than 1 Bcm in 2015 up to 2.8 Bcm in 2025²⁸.

The development of gas consumption and infrastructure in Sardinia, possibly served via a system of small scale LNG plants, could also promote national gas demand.

²⁵ Italian Ministry for the Economic Development, "Documento di consultazione per una strategia nazionale sul GNL".

²⁶ The Commission is focusing on 4 main areas: 1. Authorizations, supply and storage, social acceptance, storage and distribution security; 2. Naval transportation; 3. HDTs, bus and trains; 4. Other usages.

²⁷ Gasnaturally.

²⁸ Elaboration on data from Fondazione per lo sviluppo sostenibile, Assogasliquidi, Consorzio Ecogas.



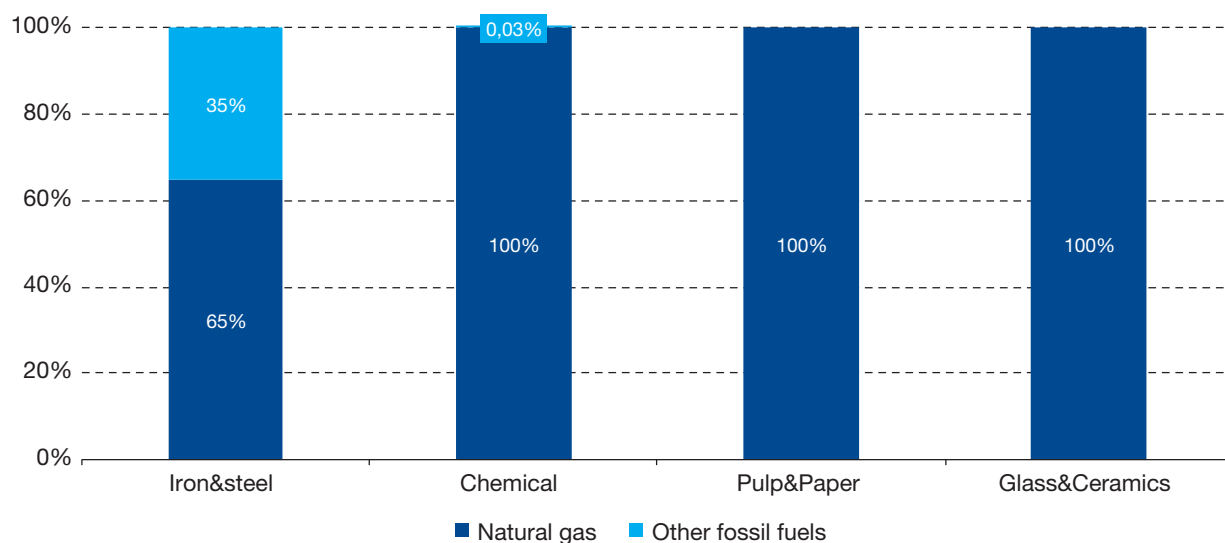
Industry

Natural gas has several uses in industrial sectors.

In the chemical sector, natural gas is used as a feedstock for the production of butane, ethane, and propane that are commonly employed in the production of fertilizers and pharmaceutical products. In the pulp and paper, and in the ceramic industries, it is used often to feed CHP plants for the production of process heat and electricity. In Italy, the chemical, pulp and paper and ceramic industries use almost only gas (6.7 Bcm consumed in 2013).

Gas is used in the iron and steel industry where it can be combined with iron ore to produce Direct Iron Reduction (DRI²⁹). The iron and steel sector, which consumed 2 Bcm in 2013, has still a large carbon foot print (see Figure 14). Switching from coal to gas is an opportunity offered by the DRI process. The switch would generate more than 1 Bcm/y³⁰ additional gas demand.

FIGURE 14
Primary energy consumption of energy intensive industry in Italy



Source: Italian Ministry for the Economic Development 2013

²⁹ DRI is currently being used in blast furnaces in substitution of minerals and petcoke and it is an alternative to scrap metal in electric furnace which is currently unavailable (and deteriorating) in Italy.

³⁰ Elaboration on data from Ministry for the Economic Development 2013.

4. INTEGRATED MARKET

The Italian gas system is becoming well integrated with the rest of the European grid. Reverse flow capacity is already available at Tarvisio and Gries Pass and upstream systems are ready to be operated in reverse flow mode, or soon will be. When all the bidirectional capacity works are completed, it will be possible to flow gas from Italy up to the UK. The large national gas storage capacity will also contribute to the integration of the Italian system into Europe.

The Italian gas system functions as a perfect entry-exit system. The CAM (Capacity Allocation Mechanism) Network Code has been implemented ahead of the European timetable, whilst the Balancing Network Code, already transposed into the Italian framework, will be fully effective in 2016.

Gas in the Italian system can be traded at the PSV. With nominated trades at 84 Bcm in 2014, the PSV is one of the fastest developing gas trading hub in the region.

4.1 Integrated system with reverse capacity

The Italian gas infrastructure includes an extended national and regional network, gas storage sites, three LNG terminals, a pervasive system of local gas distribution networks and several gas production sites.

The infrastructure is flexible, and can transport a low carbon fuel to support the development of intermittent renewable power production and enable the injection of biomethane in the gas distribution networks.

Although the Italian gas system is well connected with the European network and provides sufficient security of supply, some major developments are progressing to achieve higher market integration and security of supply. The major extensions of the Italian gas infrastructure include, primarily, the bidirectional capacity at the border with Austria and Switzerland, the project for the Adriatica line, new LNG Terminals and gas storage capacity extensions.

Reverse capacity is already available at Tarvisio, at the interconnection with Austria. The total capacity is 18 Mcm/d and no further extensions are envisaged. The reverse flow capacity at Gries Pass, at the interconnection with Switzerland, is 5 Mcm/d and is going to be extended up to 40 Mcm/d in 2018.

The integration of the Italian system with the rest of Europe is ensured by the reverse flow capacities of the upstream systems. TAG, in Austria, can be already operated in reverse mode. Fluxys, owner and operator of the Transitgas (Switzerland) and TENP (Germany) pipelines, is planning to make its systems bidirectional. Bidirectional capacity will be developed also at the border of Switzerland and France, by GRTgaz.

The Adriatica line, with expected capacity of 24 Mcm/d and start of operations in 2021, is needed to transport the gas flows coming from the TAP and other possible new supply sources coming from the South of Italy.



When all the bidirectional capacity works are taken to completion, it will be possible to flow gas from Italy up to the UK. This will augment the attractiveness of the Italian market as a transit route, in the eyes of the Northern Africa and Middle East producers, which will consider it not only a final market destination but also an entry point to a much bigger gas market, i.e. the European one.

The capacity developed to better integrate the Italian system into the rest of Europe is a primary channel not only to transport the gas supply but also to deliver gas flexibility of the Italian system, primarily gas storage, into the neighbouring European markets.

The Italian storage capacity is 16 Bcm, including 4.6 Bcm of strategic reserve, and is the second largest in Europe. The capacity will increase with the entry into operation of new plants and the extensions of existing ones. The storage tariff is among the lowest in Europe, with a system based on auctions and under/over recovery mechanism. Storage is particularly useful in a transit system, as it allows to park gas. Moreover, storage flexibility can be exported to the connected regions.

Reverse flow capacity, the Adriatica line, and all other projects mentioned here, have been assigned Project of Common Interest status (PCI), i.e. have been recognized as infrastructure key to integration and security of supply of the European energy market.

However, the timing of the PCIs implementation, the weak economic conditions and the uncertainty of gas demand in Europe might limit the full delivery of all investments. To promote the developments it is important that a clear and certain regulatory and market framework is in place.

4.2 Integrated entry-exit system with European market rules

The Italian gas system functions as a perfect entry-exit system. There is no internal congestion, in any flow scenario, and this allows gas to be transported from any entry point to any exit point of the national gas network.

The Italian gas system is simpler than others in the European system. There is a single gas balancing zone and a single gas quality type, unlike in other countries where multiple zones or separate systems for H-gas and L-gas make gas management more complex. In Italy there is one single balancing zone and there is one single type of gas. Gas used in residential and commercial, industrial and power generation applications has the same quality that is disciplined by the rules of the transmission network code.

Gas in the Italian network can be traded at the Punto di Scambio Virtuale (PSV, or Virtual Trading Point) that was established in 2003. Gas can be traded also at the gas exchange platforms managed by the GME (Gestore dei Mercati Energetici).

The Italian gas market started adopting the rules of the European Network Codes in 2013. In particular, the CAM (Capacity Allocation Mechanism) are in place, and were adopted before the November 2015 deadline. Standardised long-term and short-term capacity products are now

available and auctioned via the PRISMA platform. Bundled capacity is offered and will favour the displacement of traded volumes from the border points to PSV (and VTP in Austria).

Capacity products with different duration are available and better suit the needs for flexibility of the network users in Italy and connected systems. The need for flexibility is also being facilitated at the exit points of the Italian network. The Italian energy regulator has launched a consultation process (resolution 409/2015/R/GAS) to redefine the capacity allocation mechanisms at the network connections to gas-fired power stations. The consultation proposes an option to buy day-ahead and within-day capacity, to be sold via the PRISMA platform and a review of the capacity overrun fees. The reform focuses on power generation needs, with a pilot project approach, but might include in the scope other gas uses. i.e. industrial and commercial. The process is on-going at the time this paper is written.

The Balancing Network Code has been transposed into the national framework and will be fully effective in 2016, possibly in the first half of the year, to avoid market disruption. The market-based balancing regime will favour the development of the liquidity. It incentivizes gas shippers to balance their position by buying gas, when short, and selling gas, when long, thereby increasing the traded volumes. The TSO will provide information to the market and perform the residual balancing needed to preserve the safety and efficiency of the network operations. The TSO might also trade at the MGAS, the platform where the price of balancing is formed.

Other network codes, including Interoperability and Data Exchange Rules and Harmonised Transmission Tariff Structures, will be implemented. In particular, the Tariffs code will be adopted according to the timetable that is yet to be clarified. A fair allocation of costs to entry and exit capacity provides a signal of transparency which is desirable to encourage market development. The tariffs code, hopefully, will provide rules for a fair cost allocation.

The process of harmonization of gas quality standards in Europe is on-going at the time this paper is written. In particular, the definition of an allowed range for the Wobbe Index is still open. A fair definition of gas standards, considering also costs, is clearly important for the further integration of the Italian and the other European gas markets.

4.3 Increasing liquidity at PSV

The nominated trades³¹ at the PSV have increased dramatically during the period 2012-2014, reaching 84 Bcm at the end of the period (see Figure 15).

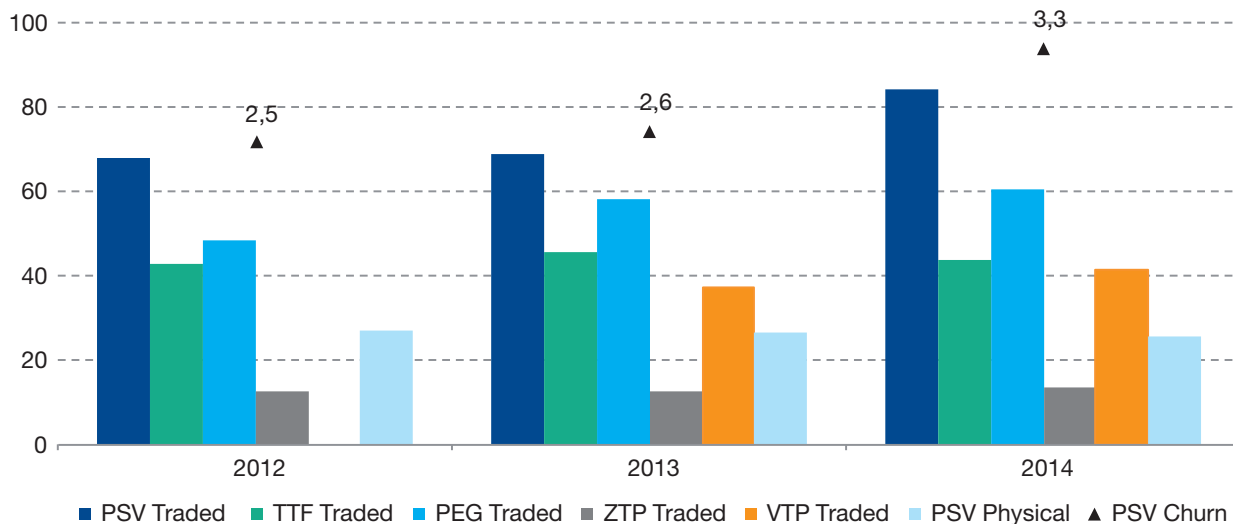
The PSV nominated trades are greater than those at TTF and PEG (all PEGs). Only net trading positions are nominated, though, and the actual trading volumes are generally greater.

Nominated trades are an indicator of liquidity that needs to be read together with others. Figure 16 below shows the physical forward contracts arranged by the OTC brokers including contracts that are registered on clearing platforms. The brokered volumes give an indication of the liquidity of curve markets. The PSV is clearly behind along this dimension when compared to other hubs.

³¹ Nominated trades refer to the nominations that shippers send as part of the transmission programs to the TSO and represent their net trading volume.

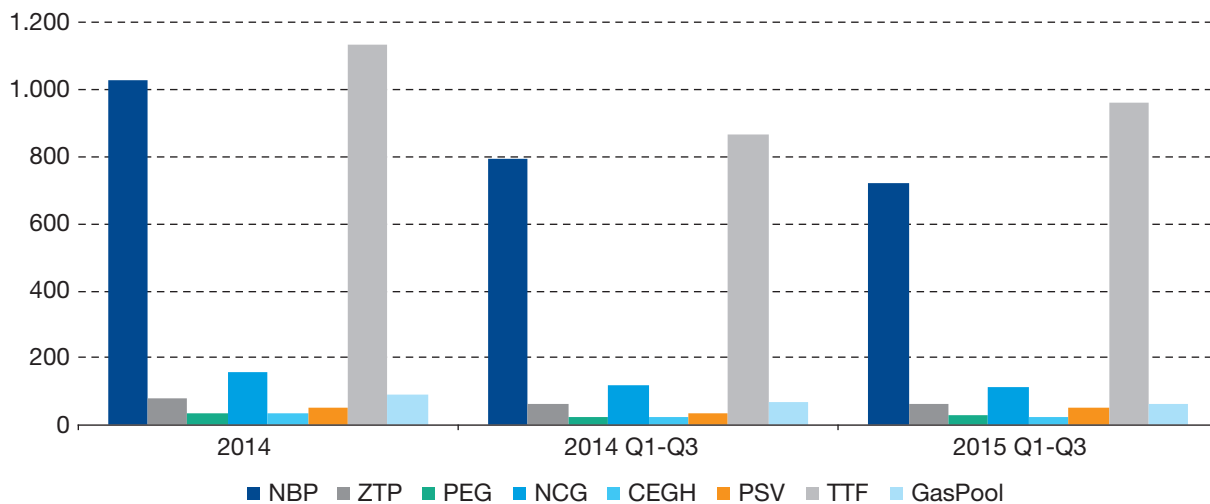


FIGURE 15
Nominated trades at European hubs (Bcm/y)



Source: Snam Rete Gas, GTS, GRTgaz

FIGURE 16
Brokered volumes according to LEBA* (Bcm/y)



* LEBA = London Energy Brokers' Association

Source: LEBA

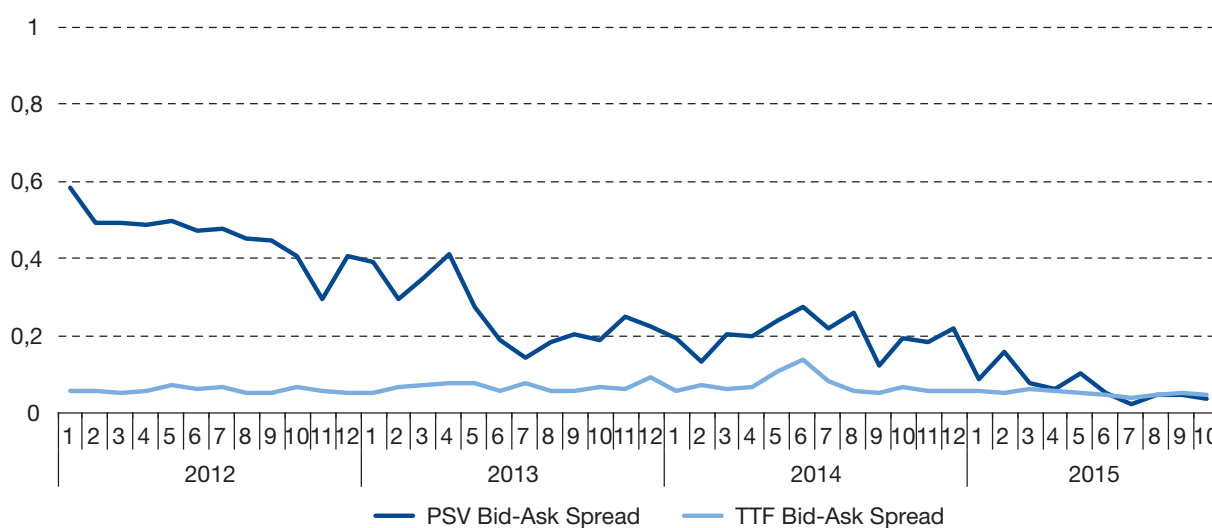
It is difficult to measure the liquidity of a gas hub as most of the trades take place Over the Counter (OTC), at energy exchanges, at broker platforms and hence are not easily captured. However, one of the key metric of liquidity is the bid-ask price spread. Figure 17 below shows the PSV bid-ask spread relative to day-ahead prices. Over time, the spread has been diminishing dramatically, down to 0.05 €/MWh in the second half of 2015, and is now in line with the TTF spread.

The day-ahead prices formed at the major European gas hubs, i.e. NBP in UK, TTF in the Netherlands, ZTP (Zeebrugge) in Belgium, GasPool and NCG in Germany, PEGs in France, CEGH (or VTP) in Austria and PSV in Italy, show a general convergence and correlation, as a result of increased market integration.

The PSV still trades at a premium of 2.3 €/MWh with respect to TTF, as shown in Figure 18. The PSV spread to the other hubs might be explained most probably with cost of logistics and of gas portfolio.

FIGURE 17

Day-ahead bid-ask spread at PSV and TTF (€/MWh)



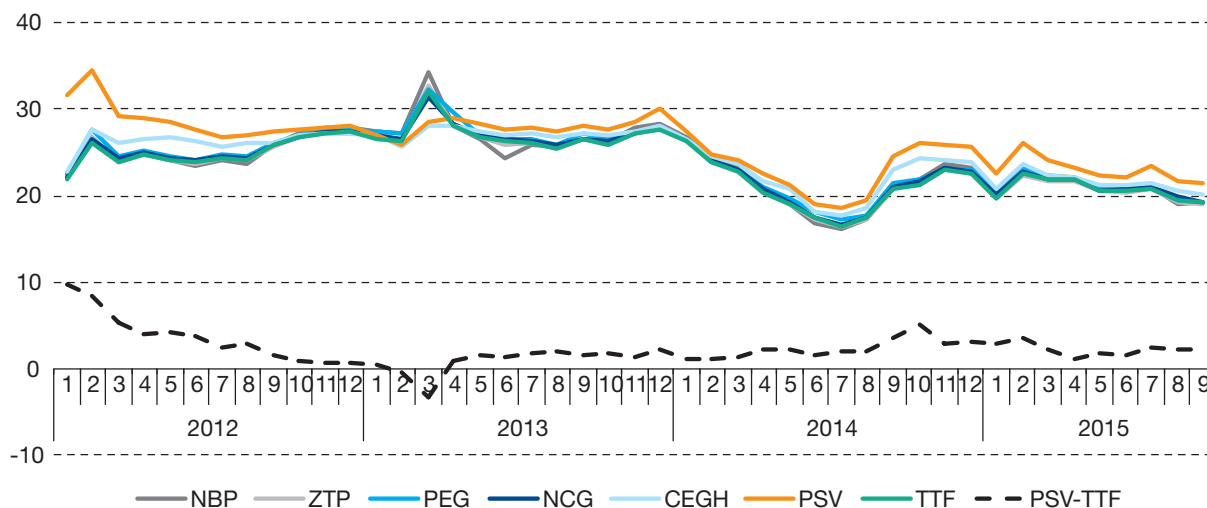
Source: Heren

Bid-ask spread has been calculated as the monthly average of daily average bid-ask spread

The development of PSV and the new balancing regime, to be adopted in 2016, seems to have attracted the interest of energy exchanges, such as Powernext, ICE and the Chicago Mercantile Exchange, that are offering spot and term products with physical delivery.



FIGURE 18
Day-ahead prices at European gas hubs (€/MWh)



Source: Heren

Prices are monthly average of daily prices

The energy platforms seem to be very competitive and customer oriented. The collaterals that a trader needs to pay tend to be cheap, compared to other institutional platforms, and offer multi market trading possibilities. Competition with the platform needs to be evaluated carefully not to lose liquidity in their favour.

Since it was established in 2003, the PSV has gone from being a balancing platform, focussed on spot trades, to being a second sourcing platform. In fact, for some industrial players, PSV is now the first sourcing platform and some supply contracts are indexed to the PSV. Its liquidity has increased thanks to regulatory measures and with the new balancing mechanism it should receive a further boost. Forward curve liquidity is low, however, and pure financial products are not traded. Whilst its development to date has been encouraging, it seems clear that the PSV needs further development to be considered a liquid trading hub similar to the TTF or NBP.

Infrastructure and regulatory integration, coupled with the offer of market oriented trading services, would support the development of liquidity at the PSV.

5. THIRD LARGEST GAS MARKET IN EUROPE

Italy is the third largest gas market in Europe, thanks to the largest European market for gas fired power generation and the second largest market for industrial sector gas consumption. Italy is also the second largest market in Europe for infrastructure.

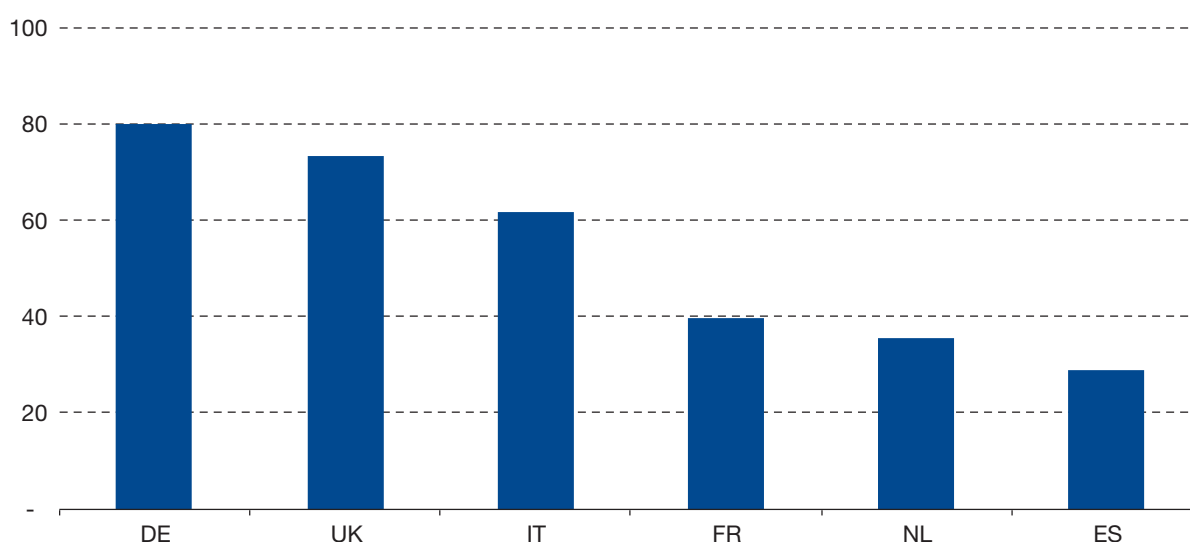
The Italian market is competitive and features major international players in the import, wholesale and retail segments.

5.1 Italy one of the largest gas consuming manufacturing sector

With almost 62 Bcm consumed in 2014, Italy is the third largest gas market in Europe, after Germany (80 Bcm) and the UK (73 Bcm).

FIGURE 19

Gas consumption in Europe 2014 (Bcm/y)



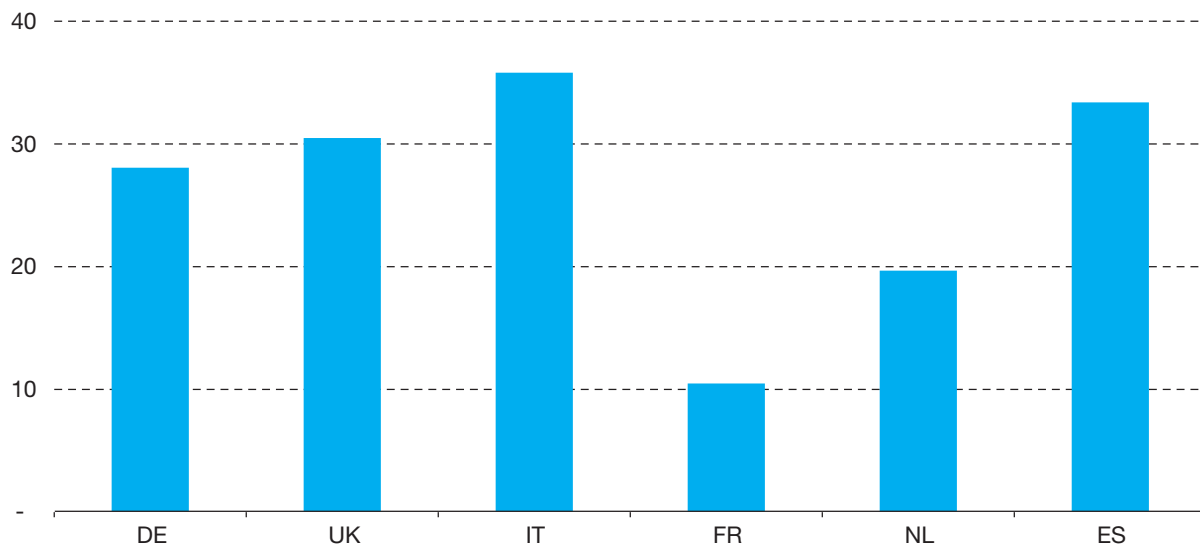
Source: Eurostat

In fact, Italy is the largest European market for gas fired power generation, having installed capacity of 35 GW, followed by Spain, UK and Germany (see Figure 20).

Italy is the second largest market for industrial sector gas consumption, driven by the economic activity of the second largest manufacturing industry in Europe. The manufacturing industry is a pillar of the Industrial Compact for Europe, where it is expected to contribute 20% of GDP. Italian industrial gas demand represents almost 15% of the EU28 total industrial gas consumption. Italian Iron and Steel is ranked second (i.e. for gas consumption). Thanks to the development of new production processes using gas (i.e. Direct Iron Reduction) gas demand from the sector could further increase.



FIGURE 20
Gas fired plants installed capacity (GW)



Source: Entsoe 2014 data

Gas demand for transport represents 52% of EU28 total transport gas consumption, with Italy being the largest market for CNG vehicles in Europe.

Gas infrastructure is adequately well developed. With almost 290 thousand kilometres of gas networks, including both transmission and distribution systems, almost 17 Bcm of gas storage and three operating LNG terminals, Italy is the second largest market in Europe for gas infrastructure.

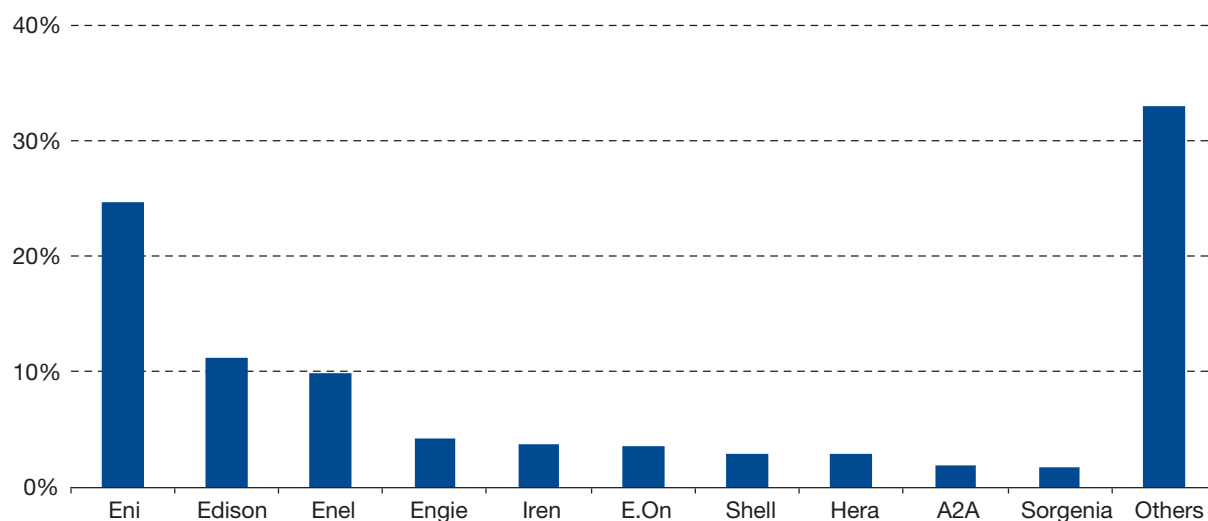
Italy has developed an important and valuable gas distribution system that supplies roughly 23 million delivery points. Thanks to the system, the household gas penetration rate is 82%²³, the second largest in Europe after that of The Netherlands. The distribution grid can have a role to support EU decarbonisation and security of supply goal. The distribution grid, also, allows for the integration on new gas sources, like biomethane, and gas uses, like CNG for vehicles.

5.2 Diversified competitive arena

The Italian market is open to competition. There operate a high number of players in the import, wholesale and retail market segments (see Figure 21). The major operators are either Italian or leading European players.

³² Eurogas, data 2013.

³³ Eurogas “Household gas penetration rates in Europe”, 9 July 2015.

FIGURE 21**Largest gas retailers in Italy (%)**

Source: Elaboration on data from AEEGSI, "Relazione Annuale sullo Stato dei Servizi e sull'Attività Svolta", 31 March 2015

Others players contribute to the large dimension and development of the Italian gas market. They include listed local utilities and regional players. In 2014, there were 340 retailers, 21 of which with gas portfolio greater than 1 Bcm. 180 players, both national and international, operate at the PSV. The high diversity of players is a key element of the Italian competitive arena.

There are more than 230 DSOs. The gas distribution industry is undergoing a consolidation process, though, that is expected to continue in the upcoming years, driven by legislative and regulatory measures. The consolidation process shall allow for higher efficiency of gas distribution operations.

6. CONFINDUSTRIA POSITION

This paper has shown that Italy could become a hub capable of providing a diversified supply portfolio, with gas coming from the current sources and by new areas in the Middle East and the East Mediterranean Sea, and with increased domestic a production. Italy could be a hub in a position to aggregate the demand from neighboring regions, such as the Balkans and Central Europe. It could be a hub with positive internal demand outlook, driven by power generation consumption and new gas uses, including CNG and LNG. Italy is well integrated in the European system, both under an infrastructure and regulatory perspective, with increasing hub liquidity. It is also home to one of the largest gas consuming manufacturing sector in Europe, and there operate major international gas players.

Confindustria hopes that European and national institutions will promote the role of the Italian gas market in Europe and support it, with financial and legislative measures. Confindustria urges both national and European institutions, including the Ministry for the Economic Development, the European Commission, in the framework of its Energy Union strategy, ACER and the Italian Energy Authority, to take in this regard proper actions, as described below. All these actions, taken together, shall promote the role of the Italian gas market in Europe. This would allow Italian and European businesses and citizens to benefit from higher security of supply, increased upstream competition leading to lower energy prices, and a sustainable energy mix.

6.1 Promote the role of gas as a clean fuel

Gas is a clean fuel that can support a decarbonized economy. Gas used in power generation is a flexible and necessary source to reduce CO₂ emissions, to back up intermittent RES. Gas can bring large environmental benefits if used in land and water transport, as CNG and LNG. Bio-methane, as a renewable source of energy, can also contribute to a low carbon economy, not only with respect to overall consumption, but also considering its environmental impact throughout the entire production process, with further contribution to reducing global emissions.

With a pervasive gas infrastructure system already in place, safe and efficient, and with gas technologies already viable from a commercial viewpoint, the use of gas as a fuel for a low carbon economy is an affordable solution.

We place much attention to the European initiative to reinforce the ETS, aimed at the achievement of low carbon objectives, which will possibly result in an increased gas demand. The ETS reform needs to be considered within the wider framework of the economic activity of the Community and its global competitiveness, and shall avoid undue increase of energy costs.

We also place much attention to the design of fiscal regime based on carbon footprint that shall favour the use of gas in transport and other applications. Low carbon fiscal regimes need to be balanced against market measures geared toward the reduction of carbon emissions (i.e. ETS).

We place much attention to the debate around the possibility to make the Mediterranean Sea a low emission area, such as the Baltic Sea and part of the North Sea, thereby promoting the switch from oil to gas products for marine transport.



We highly welcome the financing measures to support the development of the infrastructure for the distribution of gas as a transport fuel, such as bunkering, with instruments like the TEN-T. In particular, we support the definition of a National Strategy for LNG, as declared in our observations of September 2015. We believe that to promote CNG and LNG uses for transport, it is necessary to define a clear regulatory framework, coherent and competitive with other European frameworks, simplify authorization processes, define technical standards and maintain the favourable fiscal regime. We also believe that finance shall be made available for the consolidation of the technology and for the incentivization of the infrastructure development (e.g. fuelling stations and bunkering). European funds shall be made available to harbour and other competent authorities and administrations.

We support the initiatives to favour the diffusion of biomethane, such as the Italian Energy Authority resolution 210/2015/R/gas. An incentive framework at the European level could also be adopted, together with measures aimed at consolidating the production targets and ensuring a stable regulatory framework.

6.2 Promote Italy as a hub with high diversification of supply

With a supply portfolio already well diversified, and with additional supplies coming from the Middle East and the East Mediterranean Sea, Italy can offer high security of supply and upstream competition. The Import Diversification Route index value from EntsoG, in the range of highly diversified markets, confirms the view. Therefore, the promotion of an Italian gas hub will be of paramount importance in terms of contribution to the enhancement of the SOS in the context of the Energy Union.

There are other market configurations in Europe that do not guarantee the same level of diversification, security and competition. One of this is the configuration based on the project to double the Nord Stream capacity.

We urge the European and Italian institutions to provide political support to the Italian gas hub and oppose other, less secure, solutions. We urge the Italian government to promote the role of the Italian gas hub at any level, by facilitating commercial arrangements and proper legislative framework, and by reinforcing the Italian position in the European energy policy making process.

Only a hub with a diversified suppliers' portfolio, like the Italian one, will generate increased upstream competition, with benefits of lower gas prices. This will make not only the Italian but also the European industry more competitive in the global market, and will provide European citizens with affordable fuel for their energy needs.

The Italian gas hub could also play a role in the development of the Mediterranean energy market and more generally the economic collaboration in the region, within the framework of OME (Observatoire Méditerranéen de l'Énergie). This will help also the political stabilization of the area.

6.3 Support Italian market further integration into Europe

The Italian system is already well integrated into the European market but further development steps are needed. Reverse flow capacity works need to be completed along the South North corridor. Market rules need to be defined and implemented.

Financial support, through the instruments of TEN-E, CEF and others, should be awarded to the development of the corridor as it would connect the Italian hub, with extremely high diversification of supply, to the rest of Europe. In particular, the completion of the reverse flow at Gries Pass and the development of the Adriatica shall receive European support, given their strategic role in the European gas market. Also the development of the reverse flow capacity in Switzerland, at the interconnection of Switzerland with the French system in Oltingue, and in Germany along the TENP pipeline shall be also supported.

The selection process of the projects to be financed shall be robust, with clear and straightforward definition of costs allocation. Rules shall be clear, permitting processes short, in order to attract investments.

Switzerland plays a central role in the integration process of the European gas system. We urge the European Commission to spend all possible efforts integrating Switzerland gas infrastructure even within the framework of the European regulatory principles, in particular those regarding capacity access, including Use It Or Lose It mechanism.

The infrastructure integration with Switzerland should be coupled with regulatory integration of the country, in line with the European principles.

The timetable for the entry into effect of the new balancing mechanism shall be defined soon, allowing for a smooth entry into operation and avoiding market disruption. The flexible use of storage deliverability shall be allowed, within the framework of the new balancing regime. Finally, the Italian market elements need to be considered in the completion of the new balancing mechanism implementation.

The other network codes, the one on Interoperability and on Tariffs, shall be quickly defined and implemented. Early adoption in Italy should be supported, to make the market more competitive. Active participation of all players, both on the offer and the demand side, is highly recommended. The implementation path shall consider the existing gap between the Italian set of rules and the European Gas Target Model, to make convergence smooth and avoid market disruptions.

In order to support further and stronger integration of gas markets and enhance operators access to the infrastructure, a possibility to reconsider existing long-term capacity contracts for transport has to be taken into account, evaluating an assessment of all the implications.

Development of trading shall be supported, through market and customers oriented solutions and offers that can compete with all energy platforms.

