

# Spain's Gas Industry Faces Oversupply Risks

Interconnections and Government Policies Can Limit Damage

Special Report

**Gas Demand Stagnated:** As the Spanish gas market matured over the past decade, gas use increased in the residential and industrial segments, with strong growth in electricity generation through investment in combined cycle gas turbine (CCGT) plants. Gas demand peaked in 2008, with present consumption similar to 2006 due to the economic downturn. In 2010, total demand for gas decreased 0.3% yoy as 10% consumption growth in the domestic, commercial and industrial segments failed to offset the 15.7% fall in the electricity generation market.

**Gas Oversupply Risk:** Fitch Ratings does not expect oversupply issues will abate in the next few years. Utilisation rates for CCGT plants are likely to remain low as they are increasingly used as back-up capacity for renewable energy generation rather than as base-load. This represents challenges for utilities that have invested in gas-fired capacity and those that have entered into long-term take-or-pay gas procurement contracts.

**Reliance on Imported Gas:** Spain produces just 1% of its gas needs, with the rest imported from a range of countries, exposing companies to risks related to international sourcing strategies. While Algeria remains the main source of gas for Spain (30% of the total in 2010), its contribution has fallen (58% of total supply in 2003). Fitch views the degree of concentration as a concern, but notes the progress made in diversification, especially compared with some European peers.

**Low Gas Storage:** Spain still has a low gas storage capacity compared with other European countries. Efforts underway should bolster security of supply, which remains a key concern for most European countries, evidenced in 2009 with the Russian and Ukrainian gas conflict or more recently with the unrest in the Middle East.

**Medgaz Pipeline Pivotal:** Liquefied natural gas (LNG) supply has increased in the past decade and dominates the market (75%) compared with gas sourced through pipelines (25%). In the short and medium term, Fitch expects that LNG supply will decrease as the Medgaz pipeline started operations in 2011 and will mainly reduce Algerian LNG imports (see Fitch's comment from May 2011: "[Medgaz: Small Credit Impact but with Implications for Spain](#)").

**Sovereign Exposure:** Spain's current sovereign rating ('AA-/Negative) is still one notch above the highest rated utility (Enagas S.A.; 'A+/Stable). While utilities in the eurozone can be rated above their respective sovereign rating, a sustained deterioration of the sovereign's creditworthiness could affect utility ratings directly and also indirectly. Also, a one-notch sovereign downgrade would result in a downgrade of Enagas' 'AA-' senior unsecured rating.

**Regulation Exposure:** Gas sourcing and supply is fully liberalised but remuneration of the infrastructure part of the gas chain is regulated. Negative regulatory intervention, although not currently foreseen by Fitch, may put pressure on ratings. Spanish gas market remuneration is more transparent than in the electricity sector, which is still facing a sizeable tariff deficit burden.

**Potential Game Changers:** Fitch identifies a number of factors that have the potential to change the fortunes of the Spanish gas sector. These include the reinforcement of international connections between Spain and France that would support the flow of gas to Europe through Spain, potentially mitigating the oversupply risk. Also, the introduction of capacity payments, or a similar mechanism, for CCGT plants may be a prerequisite to justify related investments.

## Related Research

Euro-Zone Sovereign Pressures and Corporates (April 2011)  
Scenario: Euro-zone Default Stress for Corporates (July 2011)  
2011 Outlook: Iberian Energy & Utilities (December 2010)  
[Medgaz: Small Credit Impact but with Implications for Spain \(May 2011\)](#)

## Analysts

Borja Monforte  
+ 34 93 467 87 47  
[borja.monforte@fitchratings.com](mailto:borja.monforte@fitchratings.com)

Erwin van Lümich  
+ 34 93 323 84 03  
[erwin.vanlumich@fitchratings.com](mailto:erwin.vanlumich@fitchratings.com)

**Contents**

**Summary**

Who is Who in the Spanish Gas Industry	Page 2
Spanish Gas Demand	Page 3
Spanish Gas Sourcing	Page 4
Gas & Electricity: Robust Relationship	Page 5
Current Gas Infrastructure and New Projects	Page 6
Key Issues for the Spanish Gas Industry in the Future	Page 7

**Who is Who in the Spanish Gas Industry?**

Under the current Spanish gas system, transport, regasification, storage and distribution are regulated activities. The remaining activities, such as sourcing and supply, are liberalised and as such are exposed to market risk.

Since July 2008, the gas distribution activity is limited to the management of the gas distribution networks. Prior to that date, distribution companies had to supply gas to regulated tariff consumers. Currently, this duty is undertaken by gas supply companies. In December 2010, the regulator established the initial remuneration amount for the gas distribution sector.

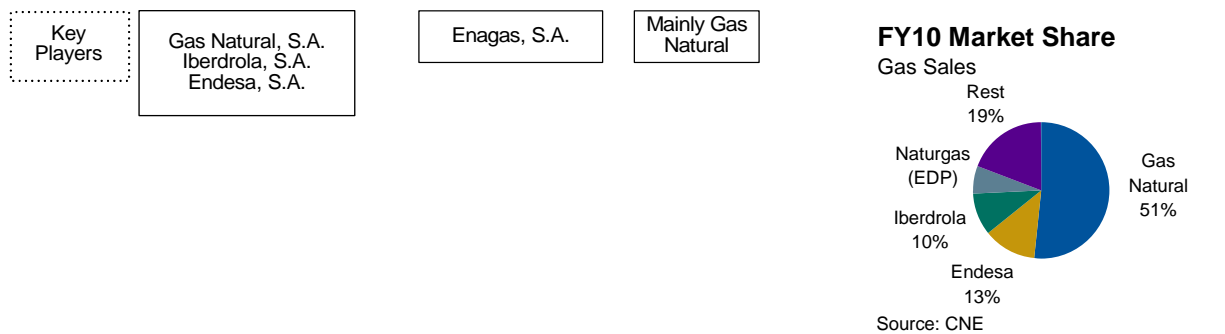
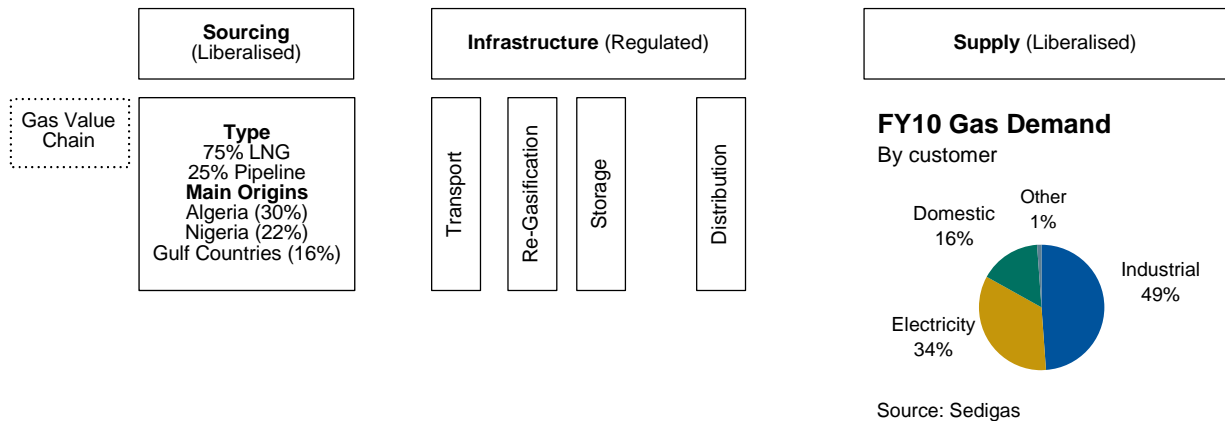


Figure 1  
**Peer Group Analysis as of 2010**

	Enagas A+/Stable	Gas Natural A-/Stable	Iberdrola A-/Stable	Endesa A-/Stable	EDP BBB+/RWN
Operating EBITDAR (EURm)	782	4,742	7,667	7,114	3,863
Adjusted net debt/EBITDAR (x)	4.2	4.3	4.0	2.3	4.8
FFO interest coverage (x)	7.3	4.0	2.8	5.6	2.1
EBITDAR margin (%)	78.1	24.2	25.2	22.8	27.3

Source: Fitch, companies

**Related Criteria**

Corporate Rating Methodology (August 2011)

## Overview of Companies

Enagas S.A. (Enagas, 'A+' / Stable) – is the gas-transmission operator in Spain, with additional activities in gas storage and regasification. Most of its revenue (more than 95% in 2010) is regulated. Enagas benefits from a limited exposure to volume and commodity risks. Enagas' senior unsecured rating ('AA-') is not currently constrained by the sovereign 'AA-' rating and benefits from the one-notch uplift above the IDR, which Fitch typically accords to senior unsecured debt of regulated utilities, to reflect the higher than expected recoveries in a default scenario. However, if the sovereign rating is downgraded by a further notch, Enagas' senior unsecured rating will be downgraded by one notch to the level of its Long-Term IDR. Fitch understands that in the context of utilities with nominally higher standalone creditworthiness than its sovereign, free market liquidity in core network assets might be less predictable under a default related to the sovereign's weakness than if the utility defaulted for reasons unrelated to sovereign financial distress.

Gas Natural SDG, S.A. (Gas Natural, 'A-' / Stable) – acquired 95.22% of Union Fenosa, S.A. in 2009, following which it became the third largest integrated utility in Spain. It holds leading positions in its core natural gas markets in Spain and Latin America, where it benefits from strong control of basic gas infrastructure. The rating outlook was changed to Stable from Negative in June 2011 after resolving the litigation with Sonatrach regarding its dispute over the gas price paid between 2007 and May 2011. Fitch notes that the agreement reached between both parties was more favourable than forecast by Fitch under its conservative Fitch Ratings case.

Iberdrola, S.A. (Iberdrola, 'A-' / Stable) – ratings reflect its solid business model and a good degree of business diversification. Some 51% of its EBITDA (earnings before interest, taxes, depreciation and amortisation) is generated from regulated businesses, and an additional 19% comes from its quasi-regulated businesses (i.e., renewables), providing high earnings stability. Iberdrola has a strong clean electricity generation portfolio, with 87% of power generated by "emission-free/light" energy sources. Iberdrola ranks third in terms of market share (10%) in gas supply in Spain behind Gas Natural (51%) and Endesa (13%).

Endesa, S.A. (Endesa, 'A-' / Stable) – has been 92% owned by Enel ('A-' / Stable) since June 2009. It is the leading power generator and supplier in the Iberian Peninsula and the second largest gas supplier. Endesa's rating is aligned with that of Enel. However, on a standalone basis, Endesa's credit profile is strong for the current rating level.

Energias de Portugal, S.A. (EDP, 'BBB+' / RWN) – generates a higher percentage of EBITDA (89% of H111 EBITDA) from regulated or quasi-regulated businesses and under long term power purchase agreements than its integrated utility peers. The RWN reflects the possibility of a downgrade in the near term as a result of a potential downgrade of Portugal's sovereign rating ('BBB-' / RWN). However, the agency acknowledges that the notching difference between EDP and the sovereign is likely to widen beyond the current two notches in the case of a further sovereign downgrade.

## Spanish Gas Demand

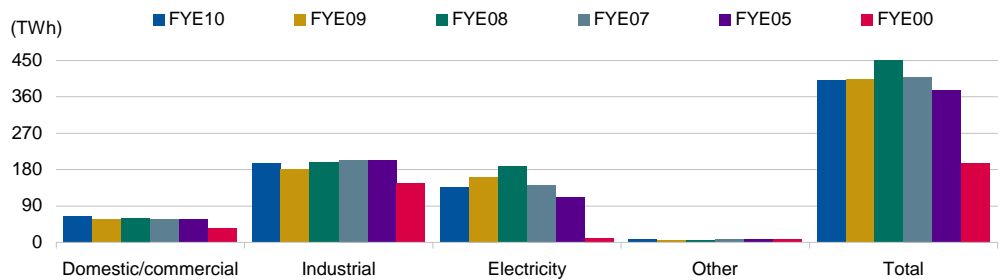
### 10-Year Evolution

Gas demand in 2010 (400TWh) doubled 2000s figure (196TWh). This increase in demand is partially explained by the ratification of the Kyoto protocol by the EU in the late 90s which led to a focus on the reduction of carbon emissions in electricity generation, and hence a shift in the generation mix towards gas-fired and renewables capacity. Since 2000 Spain invested heavily in CCGT plants and LNG regasification capacity. Growth in the conventional residential, commercial and industrial sectors has also been strong, albeit more gradual, especially as gas distribution infrastructures have been rolled out in new areas and as gas has replaced other energy sources (i.e., fuel, oil and coal) in existing areas.

Gas demand in Spain has doubled in the past 10 years

Figure 2

**Natural Gas Sales**  
(2000-2010) by market



Source: Sedigas

Recent Evolution

Total gas demand in Spain decreased significantly between 2008 and 2010 (-10.9%). Several factors have driven this decrease, including the economic downturn and the related reduction in the utilisation rate of CCGT plants (reflected by the yellow bar in the graph below). The latter is a reflection of gas-fired plants' position in the merit curve where it competes head-to-head with coal-fired capacity, which has remained competitive in the absence of full carbon emissions auctioning.

Gas Demand and Economic Growth

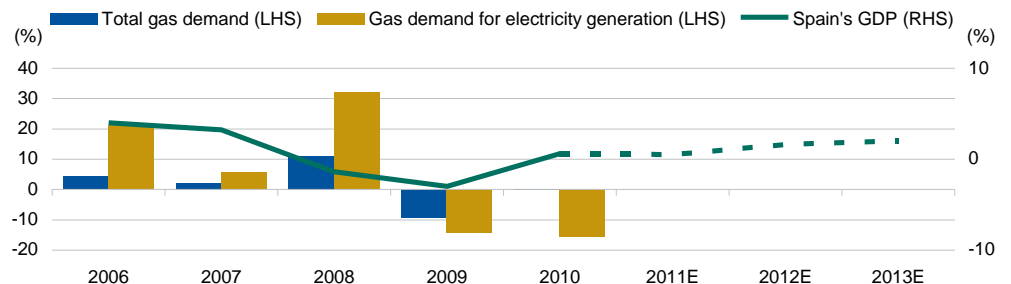
Gas demand is not fully correlated to Spanish GDP growth. As shown in Figure 3, electricity demand and the way this demand is covered by competing generation technologies has an impact on total gas demand. For instance, in 2010 total gas demand remained flat (-0.1%) compared with 2009 but gas demand for electricity generation was hit hard (-15.7% yoy). Total electricity generation volumes in 2010 increased around 4%, but this growth was mainly covered with higher hydro (+65%) and wind (+16%) resources, underlining the importance of weather conditions and installed renewable generation capacity on the generation mix.

Fitch therefore concludes that the gas demand trend is more driven by weather conditions and regulation related to renewables than the Spanish economy. However, a prolonged economic downturn in Spain would cause gas demand to decrease across segments.

Figure 3

**Gas Demand**

Past, present & future



Source: INE (2006-2010 GDP)/Enagas (2006-2010 gas demand)/Fitch (2011-2013 GDP)

**Spanish Gas Sourcing**

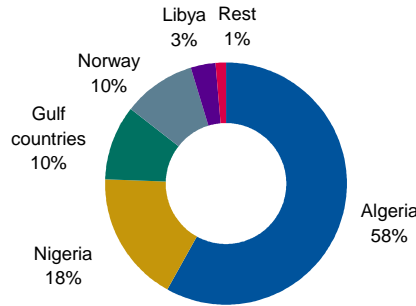
Seven-Year Evolution

Gas sourcing diversification in the Spanish system has improved significantly in the past seven years due to the introduction of new supplier countries, particularly through shipments from new liquefaction plants. In 2003, Spain received natural gas from only five different countries, while gas supply in 2010 was sourced from 14 countries.

Weather conditions and renewables affect gas demand more than Spanish GDP

Figure 4

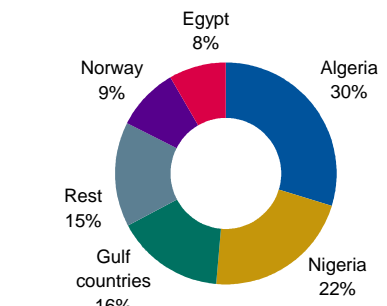
**Gas Supply by Source (FYE03)**



Source: Sedigas

Figure 5

**Gas Supply by Source (FYE10)**



Source: Sedigas

Less exposure to Algeria

**Lower Exposure to Algeria**

Algeria remains the main gas supplier to Spain but with a lower presence in the mix than in 2003. At that time, Algeria exported 161.6TWh of gas (54% as LNG) to Spain. In 2010, the total amount of Algerian gas imported reached 123TWh (35% as LNG). Imported piped gas levels have remained stable during this period with a total volume between 74.5 TWh in 2003 and 79.4TWh in 2010.

Fitch is positive about this gas sourcing diversification process carried out by Spain during these years. This is especially relevant in the context of country-specific risks related to Algeria, including social unrest seen last spring and militant attacks, which could potentially affect the supply of gas. The risk inherent in sourcing concentration was also underlined by Gas Natural's dispute with Sonatrach.

**Flexible Supply**

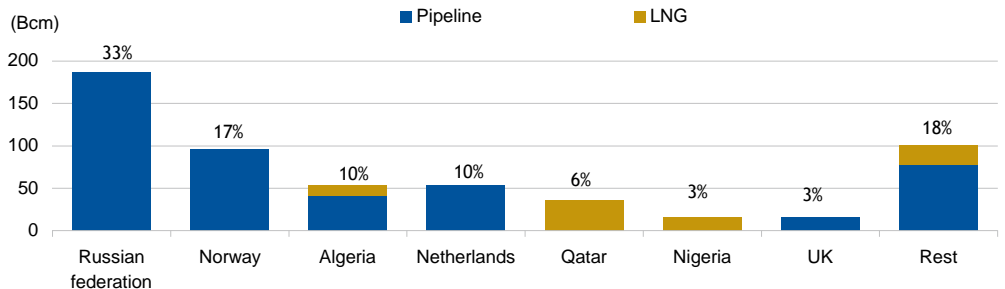
Spanish gas supply is considered to be one of the most flexible and diversified in Europe. In the European market, 84% of total gas in 2010 was supplied by pipelines compared with only 25% in Spain. The Russian Federation remains the principal importer for Europe (33%) followed by Norway (17%), both through pipelines. LNG is considered to be more flexible as it allows rerouting and diversification of gas sources.

75% of Spanish gas is supplied by LNG compared with 16% of total European gas

Figure 6

**Natural Gas Supply in Europe (2010)**

Total imports



Source: BP statistical review of world energy (2011)

**Medgaz Pipeline**

Fitch expects meaningful changes in the overall Spanish gas market to result from the Medgaz pipeline, linking Algeria to Spain, coming into operation that may, to some extent, affect its structure. Gas flow through this pipeline commenced in 2011 and is expected to ramp up to 8 billion cubic meters. In the short term, Fitch expects some positive consequences for end-users but the net impact in the longer term is yet unknown and difficult to forecast at this stage. Fitch does not envisage a significant credit impact for Spanish utilities, most of which are part of the

Medgaz consortium. However, there is a risk that this pipeline will further widen the supply-demand imbalance, although this will likely be partially offset by a reduction in LNG supplies from Algeria in the absence of increased interconnection capacity with France.

Gas has become a highly relevant fuel source for Spanish electricity generation in the last five years

Spain has significantly diversified its electricity generation sources

### Gas and Electricity: Robust Relationship

Electricity generation patterns have changed significantly over the last 15 years in Spain. In 1996, the core generation technologies were nuclear (35%), coal (32%) and hydro (23%). In 2005, electricity demand was 62% (around 100,000 Gwh) higher than in 1996, and half of that increase was assumed by CCGTs, which use gas to produce electricity.

Since 2008, CCGTs have been the highest contributor to electricity generation. Nevertheless, peak utilisation levels for these plants were reached in 2008 and in the last two years there has been a 29.7% decrease in electricity volumes generated by CCGTs. This decrease was sparked by what are termed special regime electricity generation sources (mainly renewables and cogeneration). Fitch notes that there has been a significant increase in the use of wind as an electricity generation source in the last two years. In 2010, wind energy was the third main source used (16%) following CCGT (23%) and nuclear (22%). Spain has been able to diversify its sources of electricity generation in these 15 years; in 1996, the top three generation technologies accounted for 90% of total gross generation and, in 2010, this had been reduced to 61%.

Figure 7

#### Electricity Demand Cover in Spain (1996-2010)

(GWh)	1996	2000	2005	2008	2009	2010
Hydro	37,692	27,842	19,170	21,428	23,862	38,653
Nuclear	56,329	62,206	57,539	58,973	52,761	61,990
Coal	52,395	76,374	77,393	46,275	33,862	22,097
Fuel/gas	2,149	10,249	10,013	2,378	2,082	1,825
CCGT	-	-	48,840	91,286	78,279	64,604
<b>Ordinary regime</b>	<b>148,565</b>	<b>176,671</b>	<b>212,955</b>	<b>220,341</b>	<b>190,846</b>	<b>189,169</b>
<b>Special regime</b>	<b>13,659</b>	<b>26,526</b>	<b>50,365</b>	<b>68,045</b>	<b>80,353</b>	<b>90,903</b>
Hydro			3,650	4,638	5,474	6,811
Wind			20,377	31,758	37,401	43,355
Solar PV			-	2,406	5,896	6,027
Thermo solar			-	15	103	692
Other renewables			4,005	4,463	4,689	4,981
Non-renewables			22,332	24,764	26,788	29,036
<b>Gross generation</b>	<b>162,224</b>	<b>203,197</b>	<b>263,320</b>	<b>288,386</b>	<b>271,199</b>	<b>280,072</b>
Generation losses	-5,511	-7,827	-9,080	-8,338	-7,117	-6,673
<b>Net generation</b>	<b>156,713</b>	<b>195,370</b>	<b>254,240</b>	<b>280,048</b>	<b>264,082</b>	<b>273,399</b>
<b>% generation by source</b>						
Hydro	23.2	13.7	7.2	7.4	8.8	13.8
Nuclear	34.7	30.6	21.9	20.4	19.5	22.1
Coal	32.3	37.6	29.4	16.0	12.5	7.9
Fuel/gas	1.3	5.0	3.8	0.8	0.8	0.7
CCGT	0	0	18.5	31.7	28.9	23.1
<b>Ordinary regime</b>	<b>91.6</b>	<b>86.9</b>	<b>80.9</b>	<b>76.4</b>	<b>70.4</b>	<b>67.5</b>
<b>Special regime</b>	<b>8.4</b>	<b>13.1</b>	<b>19.1</b>	<b>23.6</b>	<b>29.6</b>	<b>32.5</b>
Hydro			1.4	1.6	2.0	2.4
Wind			7.7	11.0	13.8	15.5
Solar PV			0	0.8	2.2	2.2
Thermo solar			0	0	0.0	0.2
Other renewables			1.5	1.5	1.7	1.8
Non-renewables			8.5	8.6	9.9	10.4

Source: Red Electrica, S.A.

Despite the marked decline in the utilisation of CCGTs in the last two years, Fitch expects that gas will continue to be an important fuel source, also due to the backup role that CCGT plants offer. It's also possible that the pace of renewable generation capacity growth will reduce in the current downturn. Further investment in gas-fired capacity will be hard to achieve in the absence of remuneration mechanisms that mitigate utilisation risk and a capacity payment-type solution would benefit utilities with a generation portfolio that is biased towards CCGTs, such as Gas Natural. The political willingness to introduce such a solution remains to be seen.

## Current Gas Infrastructure and New Projects

### Pipelines

Spain has around 10,000km of high pressure pipelines. At the end of June 2011, Enagas' gas pipeline network was 9,417km long, composed of pipes designed with maximum operating pressures of 72 bar and 80 bar.

Figure 8

### Storage Facilities

Facilities	Operator	Capacity (bcm)	Max output
Serrablo	Enagas	1.1	6.8cm/day
Gaviota	Enagas	2.5	5.7cm/day
<b>Current total</b>		<b>3.6</b>	
<b>Projects under construction</b>			
Yela	Enagas	1.9	15cm/day
Castor	Enagas-ACS	+1.3	
<b>Total</b>		<b>6.8</b>	

Source: Enagas, S.A.

### Limited Underground Storage

In Spain, seasonality and import delivery risks are partly offset by underground and LNG storage volumes. Current storage capacity is limited at 3.6 bcm though, which roughly covers 40 days of average gas demand (34bcm a year). There are two main projects under construction which should extend storage capacity up to 6.8bcm (i.e., 73 days of average demand).

Despite the efforts carried out in the past decade in the gas storage field, storage capacity in terms of days of demand will remain below that of most other European countries, which represents a risk, especially considering Spain's absence of domestic gas production. Germany and France have a gas storage capacity above 90 days of average gas demand. Italy is in between, with a storage that is able to cover more than 70 days of average gas demand.

### Regasification Plants

The Spanish gas system has six regasification plants and one more coming on stream. Three of these plants are run by Enagas, and the remaining facilities by Iberdrola, BBG and Reganosa. Spain has a sizeable LNG import capacity compared with other European countries due to its supply gas model which is mainly based on LNG imports. Due to the decline in gas demand post 2008, utilisation rates of regasification plants have been low but the impact of this on remuneration for the activity is limited as the volume component was taken out of the regulatory formula in 2008, supporting Enagas' earnings stability.

Figure 9

### Regasification Plants (Dec 2010)

Plants	LNG capacity (m3)	Annual production (GWh)	(%) GNL dispatched
Barcelona	840,000	77,423	25
Huelva	610,000	67,620	22
Cartagena	587,000	41,964	14
Bilbao	300,000	49,933	16
Mugardos	300,000	19,330	5
Sagunto	450,000	56,095	18
<b>Total</b>	<b>3,087,000</b>	<b>312,365</b>	
<b>Projects under construction</b>			
El Musel	300,000	Not known	
<b>Total</b>	<b>3,387,000</b>	<b>312,365</b>	

Source: Enagas, S.A.

#### Interconnections

Spain exported 12,576GWh of gas in 2010 mainly through Larrau (to France) and Badajoz (to Portugal). Limited interconnection capacity has so far constrained more meaningful gas import and export flows, which would be particularly useful in a possible scenario of sustained oversupply, among other factors protecting utilities against shrinking gas supply margins.

In the absence of interconnection bottlenecks, Spain could become an important European gas hub

### Potential Game Changers for the Spanish Gas Industry

#### Reinforcement of International Connections

Spain has more regasification plants than any other European country and has a privileged geographic situation to receive LNG from a range of countries. This makes Spain somewhat less exposed to the risks inherent in long-term take-or-pay arrangements for gas delivered through pipelines that many European utilities are confronted with, albeit that this risk is also a feature in the analysis of the Iberian utilities. It is therefore not surprising that European efforts are underway to diminish Russian gas exposure. Based on Fitch's oil price deck (USD102.5/bbl for 2011), Gazprom's ('BBB'/Positive) price for European gas exports in 2011 is expected to be 24% higher on a year-on-year basis.

Spain could potentially transfer up to 5% of total gas consumption in the European continent. However, current interconnections with France are not developed enough to make this possible and competition for a role to become a gas hub is strong, notably with Italy also developing sizeable infrastructure.

#### Capacity Payments and Other Changes in Regulation

Capacity payments may be a welcome solution for CCGT plants

Fitch notes that CCGT plants play a key role as a back-up source for renewable generation capacity, given the intermittent nature of the latter. In 2011, the utilisation rate of CCGT plants has been around 52%, which is far from optimal. The agency notes that without the introduction of a support mechanism for CCGTs, perhaps in the form of capacity payments, it is hard to envisage how an acceptable rate of return on investment can be achieved.

Significant negative changes in regulation, albeit not currently foreseen by Fitch, would penalise the further development of the gas industry in Spain. In order to be compliant with the EU's 20-20-20 targets, Spain is likely to continue to support renewable generation sources to meet its energy consumption and it remains to be seen to what extent gas will be at the forefront of Spain's energy policy.

ALL FITCH CREDIT RATINGS ARE SUBJECT TO CERTAIN LIMITATIONS AND DISCLAIMERS. PLEASE READ THESE LIMITATIONS AND DISCLAIMERS BY FOLLOWING THIS LINK: [HTTP://FITCHRATINGS.COM/UNDERSTANDINGCREDITRATINGS](http://FITCHRATINGS.COM/UNDERSTANDINGCREDITRATINGS). IN ADDITION, RATING DEFINITIONS AND THE TERMS OF USE OF SUCH RATINGS ARE AVAILABLE ON THE AGENCY'S PUBLIC WEB SITE AT [WWW.FITCHRATINGS.COM](http://WWW.FITCHRATINGS.COM). PUBLISHED RATINGS, CRITERIA, AND METHODOLOGIES ARE AVAILABLE FROM THIS SITE AT ALL TIMES. FITCH'S CODE OF CONDUCT, CONFIDENTIALITY, CONFLICTS OF INTEREST, AFFILIATE FIREWALL, COMPLIANCE, AND OTHER RELEVANT POLICIES AND PROCEDURES ARE ALSO AVAILABLE FROM THE CODE OF CONDUCT SECTION OF THIS SITE.

Copyright © 2011 by Fitch, Inc., Fitch Ratings Ltd. and its subsidiaries. One State Street Plaza, NY, NY 10004. Telephone: 1-800-753-4824, (212) 908-0500. Fax: (212) 480-4435. Reproduction or retransmission in whole or in part is prohibited except by permission. All rights reserved. In issuing and maintaining its ratings, Fitch relies on factual information it receives from issuers and underwriters and from other sources Fitch believes to be credible. Fitch conducts a reasonable investigation of the factual information relied upon by it in accordance with its ratings methodology, and obtains reasonable verification of that information from independent sources, to the extent such sources are available for a given security or in a given jurisdiction. The manner of Fitch's factual investigation and the scope of the third-party verification it obtains will vary depending on the nature of the rated security and its issuer, the requirements and practices in the jurisdiction in which the rated security is offered and sold and/or the issuer is located, the availability and nature of relevant public information, access to the management of the issuer and its advisers, the availability of pre-existing third-party verifications such as audit reports, agreed-upon procedures letters, appraisals, actuarial reports, engineering reports, legal opinions and other reports provided by third parties, the availability of independent and competent third-party verification sources with respect to the particular security or in the particular jurisdiction of the issuer, and a variety of other factors. Users of Fitch's ratings should understand that neither an enhanced factual investigation nor any third-party verification can ensure that all of the information Fitch relies on in connection with a rating will be accurate and complete. Ultimately, the issuer and its advisers are responsible for the accuracy of the information they provide to Fitch and to the market in offering documents and other reports. In issuing its ratings Fitch must rely on the work of experts, including independent auditors with respect to financial statements and attorneys with respect to legal and tax matters. Further, ratings are inherently forward-looking and embody assumptions and predictions about future events that by their nature cannot be verified as facts. As a result, despite any verification of current facts, ratings can be affected by future events or conditions that were not anticipated at the time a rating was issued or affirmed.

The information in this report is provided "as is" without any representation or warranty of any kind. A Fitch rating is an opinion as to the creditworthiness of a security. This opinion is based on established criteria and methodologies that Fitch is continuously evaluating and updating. Therefore, ratings are the collective work product of Fitch and no individual, or group of individuals, is solely responsible for a rating. The rating does not address the risk of loss due to risks other than credit risk, unless such risk is specifically mentioned. Fitch is not engaged in the offer or sale of any security. All Fitch reports have shared authorship. Individuals identified in a Fitch report were involved in, but are not solely responsible for, the opinions stated therein. The individuals are named for contact purposes only. A report providing a Fitch rating is neither a prospectus nor a substitute for the information assembled, verified and presented to investors by the issuer and its agents in connection with the sale of the securities. Ratings may be changed or withdrawn at anytime for any reason in the sole discretion of Fitch. Fitch does not provide investment advice of any sort. Ratings are not a recommendation to buy, sell, or hold any security. Ratings do not comment on the adequacy of market price, the suitability of any security for a particular investor, or the tax-exempt nature or taxability of payments made in respect to any security. Fitch receives fees from issuers, insurers, guarantors, other obligors, and underwriters for rating securities. Such fees generally vary from US\$1,000 to US\$750,000 (or the applicable currency equivalent) per issue. In certain cases, Fitch will rate all or a number of issues issued by a particular issuer, or insured or guaranteed by a particular insurer or guarantor, for a single annual fee. Such fees are expected to vary from US\$10,000 to US\$1,500,000 (or the applicable currency equivalent). The assignment, publication, or dissemination of a rating by Fitch shall not constitute a consent by Fitch to use its name as an expert in connection with any registration statement filed under the United States securities laws, the Financial Services and Markets Act of 2000 of Great Britain, or the securities laws of any particular jurisdiction. Due to the relative efficiency of electronic publishing and distribution, Fitch research may be available to electronic subscribers up to three days earlier than to print subscribers.