

The following member country profile is an excerpt from Chapter 4 of the publication Energy Supply Security 2014 and is not intended as a stand-alone publication.

CHAPTER 4: Emergency response systems of individual IEA countries

The ability of the International Energy Agency (IEA) to co-ordinate a swift and effective international response to an oil supply disruption stems from the strategic efforts of member countries to maintain a state of preparedness at the national level. Energy security is more than just oil, as the role of natural gas continues to increase in the energy balances of IEA countries. The most recently completed cycle of Emergency Response Reviews (ERRs) reflected this change by assessing, for the first time, the member countries' exposure to gas disruptions and their ability to respond to such crises. This chapter provides general profiles of the oil and natural gas infrastructure and emergency response mechanisms for 29 IEA member countries.

Each country profile is set out in the following sequence:

Key data

Key oil data, 1990-2018

Key natural gas data, 1990-2018

Total primary energy source (TPES) trend, 1973-2012

Infrastructure map

Country overview

OIL

Market features and key issues

Domestic oil production

Oil demand

Imports/exports and import dependency

Oil company operations

Oil supply infrastructure

Refining

Ports and pipelines

Storage capacity

Decision-making structure

Stocks

Stockholding structure

Crude or products

Location and availability

Monitoring and non-compliance

Stock drawdown and timeframe

Financing and fees

Other measures

Demand restraint

Fuel switching

Other

GAS

Market features and key issues

Gas production and reserves

Gas demand

Gas import dependency

Gas company operations

Gas supply infrastructure

Ports and pipelines

Storage

Emergency policy

Emergency response measures

Spain

Key data

Table 4.24.1 Key oil data

	1990	2000	2005	2010	2011	2012	2018*
Production (kb/d)	27.3	4.7	3.3	3.2	3.0	4.1	8.7
Demand (kb/d)	1 009.9	1 433.2	1 607.3	1 441.0	1 385.3	1 289.0	1 156.1
<i>Motor gasoline</i>	188.6	196.8	172.2	131.3	122.5	113.5	-
<i>Gas/diesel oil</i>	316.1	529.2	705.0	677.6	635.8	591.3	-
<i>Residual fuel oil</i>	190.6	246.6	247.4	189.3	189.4	175.4	-
<i>Others</i>	314.7	460.7	482.7	442.8	437.5	408.7	-
Net imports (kb/d)	982.6	1 428.5	1 604.0	1 437.8	1 382.3	1 284.9	1 147.4
Import dependency (%)	97.3	99.7	99.8	99.8	99.8	99.7	99
Refining capacity (kb/d)	1 293.0	1 315.5	1 271.5	1 497.6	1 497.6	1 497.6	-
Oil in TPES** (%)	50	51	48	45	44	41	-

* Forecast.

** TPES data for 2012 are estimates.

Table 4.24.2 Key natural gas data

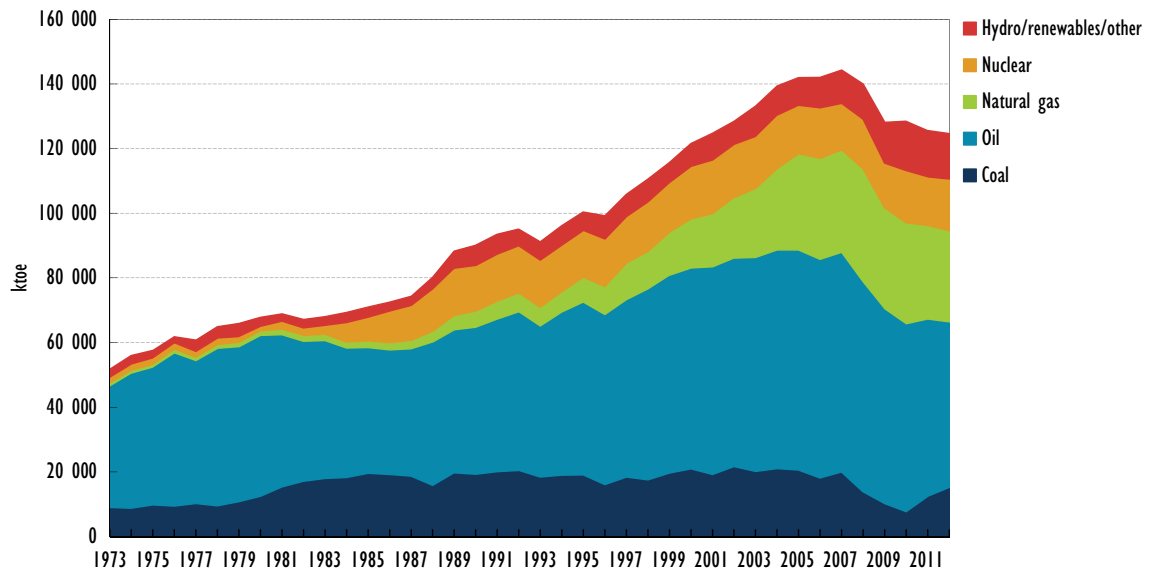
	1990	2000	2005	2010	2011	2012*	2018**
Production (mcm/y)	1 471	171	167	51	52	61	30
Demand (mcm/y)	5 742	17 578	33 634	35 824	33 276	32 496	35 549
<i>Transformation</i>	605	3 101	12 472	16 869	14 597	0	-
<i>Industry</i>	4 357	11 116	15 900	9 464	9 334	0	-
<i>Residential</i>	448	2 278	3 651	4 889	4 808	0	-
<i>Others</i>	332	1 083	1 611	4 602	4 537	0	-
Net imports (mcm/y)	4 271	17 407	33 467	35 773	33 224	32 435	35 519
Import dependency (%)	74.4	99.0	99.5	99.9	99.8	99.8	100
Natural gas in TPES (%)	6	13	21	24	23	23	-

* 2012 data are estimates.

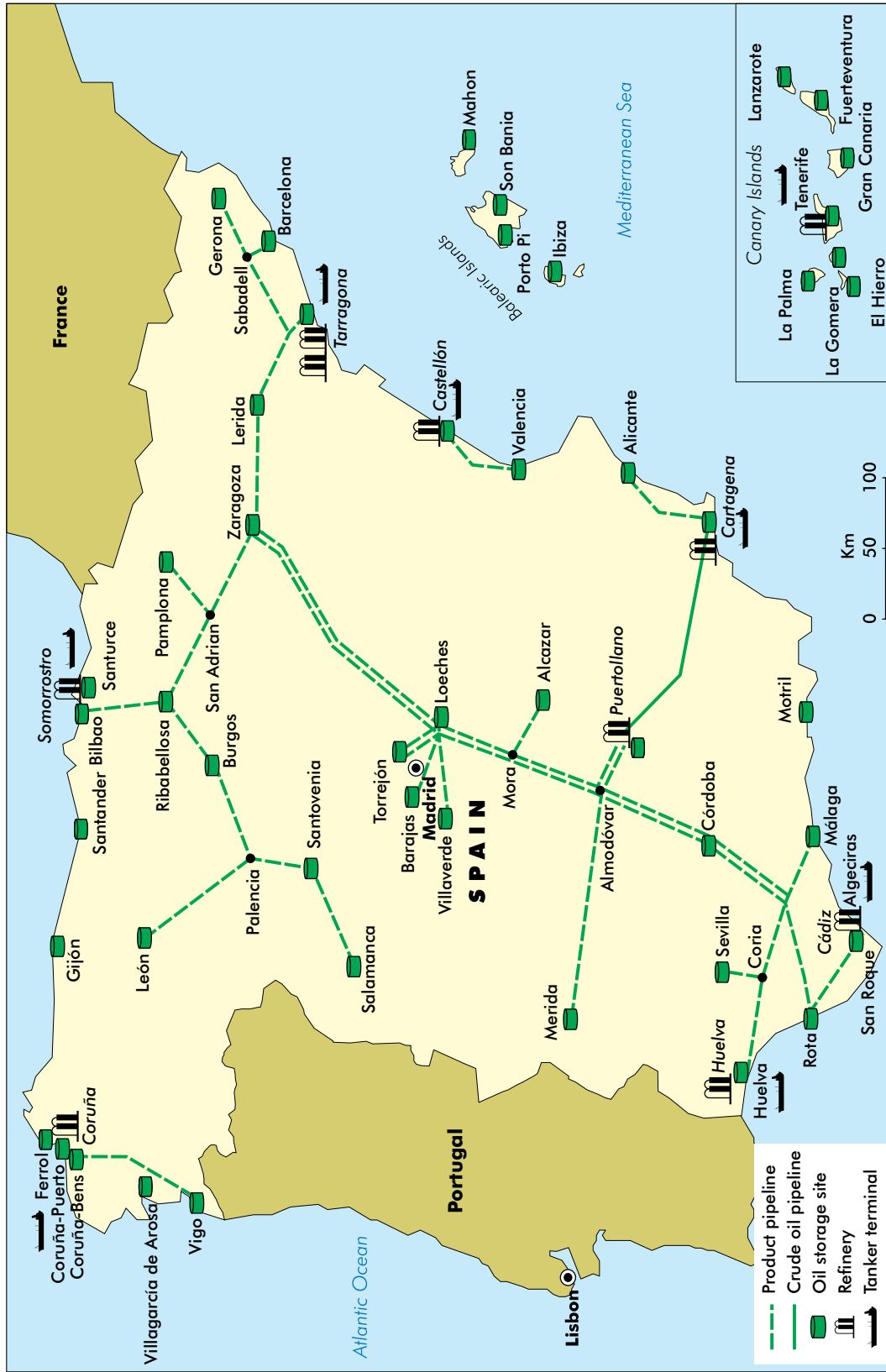
** Forecast.

Note: This section on the emergency response systems of individual member countries was written by the IEA. All countries provided valuable information and comments. All opinions, errors and omissions are solely the responsibility of the IEA.

Figure 4.24.1 Total primary energy source (TPES) trend, 1973-2012



Map 4.24.1 Oil infrastructure of Spain



This map is without prejudice to the status of or sovereignty over any territory, to the delimitation of international frontiers and boundaries and to the name of any territory, city or area.

Map 4.24.2 Gas infrastructure of Spain



Country overview

Spain has very little domestic oil and gas production and relies heavily on imports, the sources of which are well distributed among Africa, the Middle East, countries of the former Soviet Union (FSU) and OECD member countries.

Oil consumption as a whole has dropped from its peak in 2007 of 1.61 million barrels per day (mbd) to 1.29 mb/d in 2012, although demand for middle distillates has remained relatively strong. The share of oil in total energy consumption as a whole is gradually declining. Spain imports virtually all its crude oil. In 2012 it imported 1.2 mb/d, with its largest volumes coming from Mexico (15%), Nigeria (14%), the Russian Federation (14%) and Saudi Arabia 13 (%).

Although Spain still imports some products, in 2012 Spanish exports of refined products increased by 31.2% compared to 2011. In fact, Spain has become a net exporter of petroleum products since July 2012.

Spain has a large and relatively complex refining industry, with nine refineries and a total nameplate capacity of 76.530 kilotonnes (approximately 1.5 mb/d).

Natural gas demand stood at 32.5 billion cubic metres (bcm) in 2012, below 2005 figures and far from 2008 data, when demand reached 40.3 bcm.

Spain imposes a stockholding obligation on both its oil and gas operators, and as such has emergency reserves of both oil and natural gas. Until 1995, Spain's emergency oil reserves were held only by industry, after which an agency was created for holding public stocks – the Corporación de Reservas Estratégicas de Productos Petrolíferos (CORES). The stockholding obligation in Spain is distributed between industry and CORES, with each holding approximately 50%. This provides the Spanish system with flexibility at the time of releasing stocks.

In the event of a gas emergency, Spain obliges natural gas shippers to maintain strategic stocks equivalent to 20 days of consumption in accordance with what the regulations define as “firm sales” during the preceding calendar year. The stocks must be maintained by traders and self-supplied consumers at any moment, and must be kept in underground storage only. The government assumes control of the strategic stocks in emergency situations.

Oil

Market features and key issues

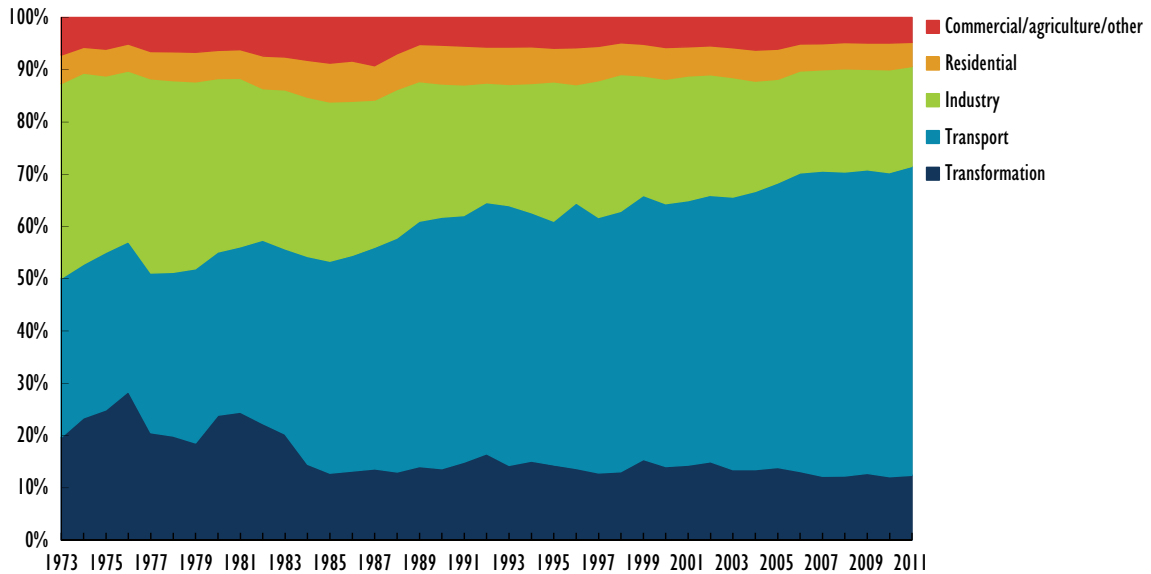
Domestic oil production

Spain has very limited oil production, which stood at 4.1 thousand barrels per day (kb/d) in 2012 and is expected to reach 8.7 kb/d in 2018. Spain is thus highly reliant on imports of both crude and products, which it imports from a variety of different sources. All oil imports arrive by sea.

An estimated 50% of Spain's supplies are sourced on the spot market, thereby providing Spain with a high degree of flexibility.

Of note, Spain has a biofuel blending target of 4.1%, split in two sub-targets of 4.1% for diesel and 3.9% for gasoline.

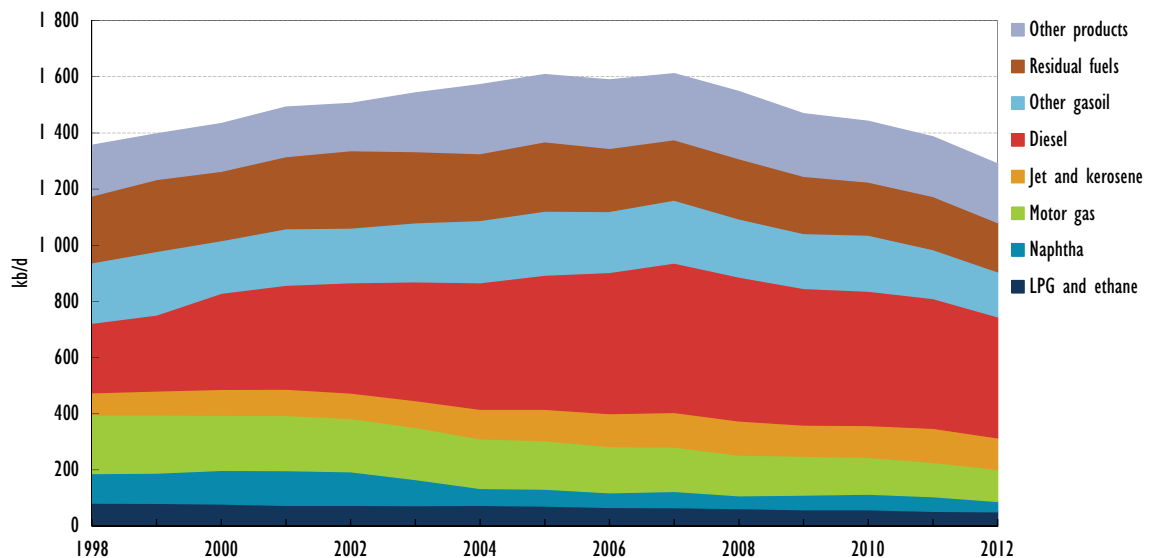
Figure 4.24.2 Oil consumption by sector, 1973–2011



Oil demand

In 2012, oil demand stood at 1.29 mb/d, down from 1.60 mb/d in 2005, and still down from 1.43 mb/d in 2000. Although overall product demand has decreased slightly over the last decade, middle distillate demand has still grown by 12% year on year.

Figure 4.24.3 Oil demand by product, 1998–2012



Oil is primarily used in the transport sector, which accounted for 59% of total consumption in 2011 and according to Spanish statistics for 63.4% of oil consumption in 2012. By contrast, the industrial sector's share was 19% in 2011 and, according to Spanish figures, 17.9% in 2012.

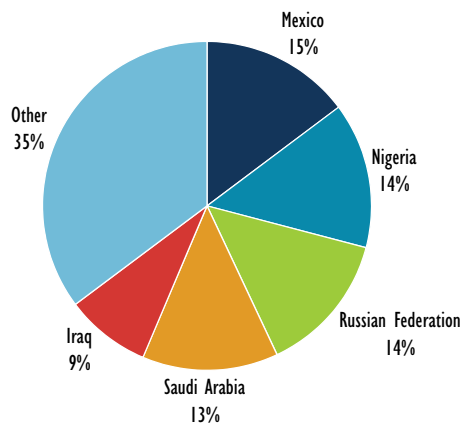
Imports/exports and import dependency

Spain imports virtually all its crude oil. In 2012 it imported 1.2 mb/d, with its largest volumes coming from Mexico (15%), Nigeria (14%), Russian (14%) and Saudi Arabia 13 (%). As for oil products, as is the case in many European countries, Spain carried out a “dieselisation” of vehicle fleet since 1999, when, for the first time, Spain registered more diesel cars than gasoline. As other European countries, traditionally Spain has been a net importer of middle distillates. Nevertheless, the situation has changed dramatically owing to the increase in refining capacity (an increase of 9% in 2012 from 2011) and weak domestic demand caused by the economic downturn. In 2012, exports of petroleum products increased 31.2% compared to 2011, reducing imports by 28%. In fact, Spain has become a net exporter of petroleum products since July 2012, and is also a net exporter of gasoil.

Oil company operations

The Spanish oil retail market is fully open to competition. Imports, exports, trade and prices are free. The government intervenes only to protect competition and to avoid abuse of dominant positions. At the end of 2012, there were around 10 400 filling stations. Spain’s retail network is highly concentrated, in spite of the number of operators in the country. More than 60% of the market is covered by companies such as Repsol (35%), Cepsa (15%), BP (6%) and GALP (6%). Law 11/2013 of 26 July, implementing measures to support entrepreneurs and to foster growth and job creation, adopted urgent measures to reinforce market competition in the retail market by regulating clauses in exclusive contracts between retailers and major operators, by simplifying administrative procedures to set up new filling stations and by capping market share of operators accounting for 30% or more of total points-of-sale.

Figure 4.24.4 Crude oil imports by origin, 2012



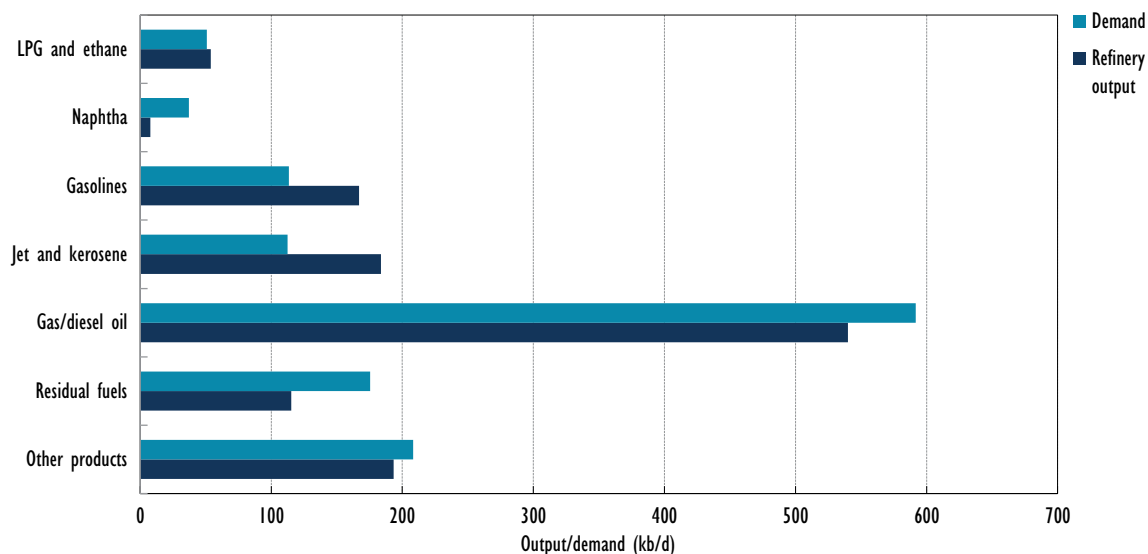
Oil supply infrastructure

Refining

Spain has a large and relatively complex refining industry, with nine refineries and a total nameplate capacity of 76.530 kt (approximately 1.5 mb/d), distributed among three companies: Repsol (52% of total capacity), Cepsa (38%) and BP (10%). Average utilisation rates in 2012 stood at 84%. Eight of the nine refineries are located on the coast. Only Repsol’s Puertollano refinery is located inland, and is supplied via a 358-km-long pipeline linked to the port and refinery of Cartagena.

Recent refining investments aimed to redress the supply shortfall of middle distillate products, notably diesel and jet fuel, as well as to reinforce international competitiveness. BP completed a coker unit at its Castellón refinery in early 2009. Cepsa has upgraded the two refineries at Algeciras and particularly Huelva. Repsol YPF has invested over EUR 3 billion in Cartagena and has built a delayed coker unit at its Bilbao refinery.

Figure 4.24.5 Refining output vs. demand, 2012



Ports and pipelines

Spain enjoys a flexible and efficient system, thanks to its wide geographic and interconnecting coverage, including an extensive network of pipelines and storage capacity connected to refineries. It has an efficient and flexible system, where transport and storage services are integrated, making products available in any of its storage facilities.

The CLH (Compañía Logística de Hidrocarburos) oil pipeline network is over 4 000 km long. It links the main eight peninsular refineries and the main import ports with 39 storage plants of the company which serve the mainland, and with 28 storage plants which supply the main airports. The network has a central dispatching unit at Torrejón, close to Madrid, which supports, manages and supervises the automatic systems in all the installations, and from which it is possible to operate directly over any of their systems and resolve any possible incidents.

In addition to the CLH pipeline network, Repsol owns two parallel pipelines transporting crude oil and products between the Cartagena and Puertollano refineries.

The oil pipeline network is an integrated network, owned 100% by CLH (except for Repsol's pipelines, mentioned above) but third-party access (TPA) is guaranteed to both logistic and storage facilities by means of a negotiated procedure which has non-discriminatory, transparent and objective technical and economic conditions; in addition, the prices charged must be made public.

Storage capacity

The Spanish logistic system is a competitive market with growing storage capacity and many players.

There are 41 companies offering storage service in Spain at 138 sites (including airports), some of which are subsidiary companies of oil operators. Most of the storage sites, including the largest ones, are connected to Spain's CLH pipeline network.

Total storage capacity in 2010 was some 28.3 million cubic metres (MCM), or 178.6 million barrels (mb). The coastal refineries are the main sites for crude imports and storage. These refineries also import a substantial share of refined products through the nearby ports. Total on-site storage capacity at the country's refineries amounts to 8.1 mcm (around 50 mb). The remaining volumes of refined products are imported directly to storage facilities, located mainly in Barcelona and Bilbao.

CLH is the main storage capacity holder, with a storage capacity of 7.9 mcm distributed in 39 storage facilities and 28 airport facilities. The breakdown by product is as follows:

- unleaded petrol: 1.1 million m³
- diesel: 5.3 million m³
- aviation kerosene: 1.2 million m³
- fuel and IFOs: 0.3 million m³.

Decision-making structure

The Spanish national emergency strategy organisation (NESO) is part of a rather complex structure of emergency organisations in Spain.

On the ministerial level, the Government Delegate Commission for Crisis Situations (CDGSC) holds ultimate responsibility for handling crises. This ministerial commission is supported on a tactical level by the National Civil Emergency Planning Committee (CNPCE). On the operational level, nine sector working committees are placed under the CNPCE, including the National Energy and Mining Resources Committee (CSREM), which forms the basis for NESO. A decision by the Council of Ministers of January 1988 constitutes the legal basis for the operation of both CSREM and CNPCE. The main functions of these committees are supply/demand analysis, demand restraint plans and preparation of rationing schemes.

The CNPCE is the body that must propose to the CDGSC the measures to be adopted in response to a supply disruption, following consultation with committees in the affected sector. Members of the CSREM include: the General Directorate of Energy and Mines from the Ministry of Industry, Energy and Tourism; CORES and, eventually, the National Competition Commission (CNMC). The CSREM also includes various operators and logistics and storage companies. To ensure the effectiveness of the CSREM, representatives from the Ministry of Industry, Energy and Tourism, the CNMC and CORES, and from reporting companies that are members of the CSREM, participate in various training seminars and workshops.

The National Security Department (NSD) is a body directly linked to the President's Cabinet, and would also play a role in a supply shortage. It is in charge of the proper functioning of the National Crisis Situation Management System, including the study and proposal of the legal framework.

Preventive actions are developed through scenario planning at the sectorial level. In the case of the energy sector, the CSREM draws up a range of reports and crisis scenarios associated with electricity, fuel and gas supplies, as well as necessary response measures at the national level.

Stockholding structure

Law 34/1998 on the Hydrocarbons Sector establishes the government's power to oblige all operators to hold emergency stocks up to a maximum of 120 days of sales or consumption and several measures that the government can implement during a supply disruption to reduce oil demand.

Recently, Royal Decree of Law 15/2013, dated 13 December, on the restructuring of the business public entity named Operator of the Railway Network (ADIF) and implementing other urgent measures on economic affairs, aligned Law 34/1998 to the terminology and general framework of European Commission Council Directive 2009/119/EC of 14 September 2009, imposing an obligation on member states to maintain minimum stocks of crude oil or petroleum products, namely appointing CORES as the national central stockholding agency. Royal Decree 1716/2004 which regulates the stockholding obligation of minimum security stocks, the natural gas diversification of supplies and the stockholding agency, establishes the stockholding agency (CORES) to be in charge of creating and maintaining the strategic stocks and monitoring compliance with the minimum emergency stock obligation. The royal decree specifies the obligation for operators to hold a minimum of 92 days of stocks as emergency stocks, and stipulates that the government can regulate the use of emergency stocks during a supply disruption.

Crude or products

At the end of 2012, Spanish public stocks were made up of 54% middle distillates, 35% crude oil, 8% motor gasoline and 3% residual fuel oil.

Location and availability

CORES gives some consideration to geographical criteria in deciding where to maintain stocks, in order to maximise flexibility in the event of a domestic oil supply disruption.

Monitoring and non-compliance

Stockholding compliance is controlled annually by CORES, and any breach by a company can be punished by the Ministry of Industry, Energy and Tourism. Spanish law distinguishes between three different levels of infringement and stipulates that penalties can range from EUR 600 000 for minor violations up to EUR 30 million (and a one-year activity ban) for very serious violations.

Stock drawdown and timeframe

In the event of an IEA collective action, the decision to release either industry or CORES stocks is made by the government in accordance with various criteria. In the past, industry stocks releases have been chosen over those of CORES because of cost efficiency and agility. The procedure of putting industry stocks on the market usually consists of a reduction of the obligation. This method has been applied in the last co-ordinated actions.

The Spanish government also has the option of releasing public stocks. In the event of a CORES stock release, it would make additional barrels of oil available to operators, based on their market share on the Spanish market. The purchase of stocks by companies is carried out through a tender offered to all Spanish operators. CORES has vast experience

in carrying out this type of operation, as the same procedure has been followed each time that CORES has acquired or sold product.

CORES maintains its strategic reserves mainly within the oil and logistic operators' facilities (either segregated or commingled, according to storage agreements), and at its own facilities in Puertollano and Cartagena. All crude stocks (both industry and public) are located in refineries.

Financing and fees

CORES finances its activities by collecting a monthly fee from the operators, distributors and consumers obliged to keep security stocks. CORES calculates the fee on an annual basis based on a budget, which is then approved (or modified) and published by order of the Ministry of Industry, Energy and Tourism. CORES is not state-funded and stock purchases are financed through bilateral loan agreements or public issues in the financial markets.

Other measures

Demand restraint

The transport sector makes up the majority of oil consumption in Spain, representing 59% in 2011. Thus the likely, most effective demand restraint measures would be targeted at the use of transport fuels.

Article 49 of Law 34/1998 of 7 October and Article 39 of Royal Decree 1716/2004 of 23 July establish that in situations of supply shortage, the Council of Ministers has the legal ability to take numerous measures to restrain demand, such as carpooling, driving bans according to odd/even licence plates, speed limits, public transport fare reduction and an increase in public transport services. The legal prescription of these measures gives the Spanish government both power and flexibility in the case of a supply disruption.

Certain demand restraint measures were put in place in March 2011 as a result of the Libyan crisis, such as speed reductions, but there has been no calculation of volumetric savings.

Fuel switching

In the case of an emergency, some diesel-fuelled power stations can switch to heavy fuel oil. However, since less than 1% of electricity consumed in Spain is produced by oil-fuelled power plants, the impact of an eventual oil crisis on the power supply on consumers would be negligible.

Other

As a result of previous incidents at the national level, such as the Puertollano refinery accident in 2005, relocating emergency reserves has proved to be a useful and effective way to deal with regional supply disruptions. The CLH infrastructure has a major role in enhancing flexibility so that CORES and the Ministry of Industry, Energy and Tourism can put in place measures to relocate emergency reserves quickly. As a result, demand can be met with the existing resources without any need to implement additional measures or restrictions to consumption.

Gas

Market features and key issues

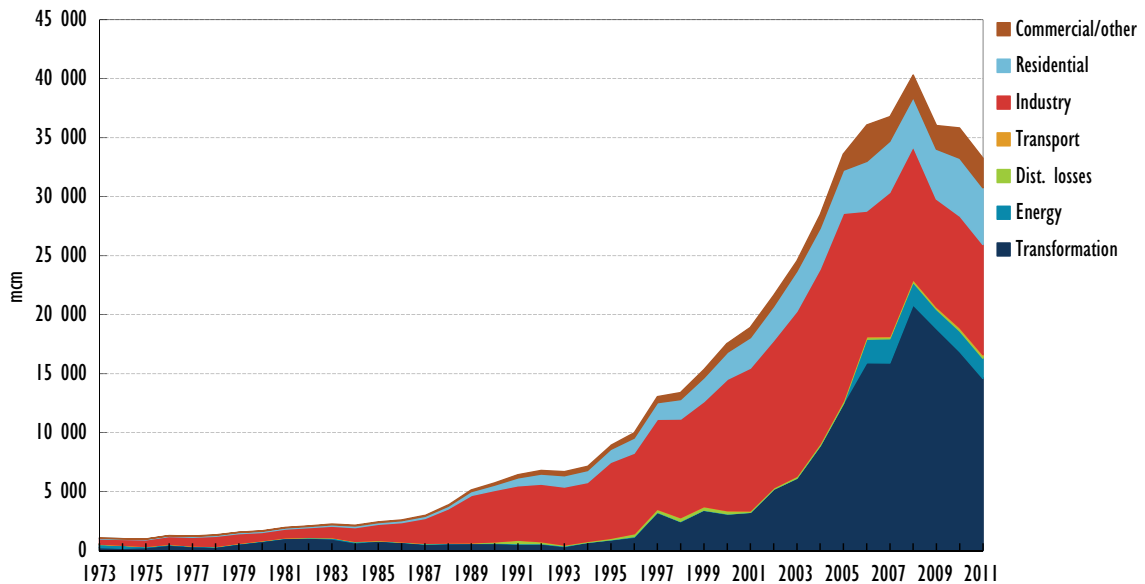
Gas production and reserves

Although domestic production is negligible (only 0.3% of consumption) owing to the resumption of production of the Poseidón gas field, the volume of natural gas extracted from the gas fields has picked up slightly from 2010 onwards, reaching 61 mcm in 2012 (as compared to just 14 mcm in 2009).

Gas demand

Natural gas demand stood at 32.5 bcm in 2012, or 365 351 gigawatt hours (GWh) according to Spanish statistics, below 2005 figures and far below 2008 data, when demand reached 40.3 bcm (or 450 726 GWh).

Figure 4.24.6 Natural gas consumption by sector, 1973-2011



The transformation sector (natural gas used in the process of transformation into another energy form, such as electricity, heat, etc.) is the largest consumer with a 39% share of the total demand, followed by the industry sector (31% share) and the residential sector (12%).

Peak demand stands at around 157 mcm/d. Although the figure is equivalent to 12 times the withdraw rate from underground storages (12.8 mcm/d), supply is widely secured by the withdrawal capacity of liquefied natural gas (LNG) terminals (170 mcm/d) and the entry capacity of international gas pipes (71 mcm/d in winter and 75 mcm/d in summer).

Gas import dependency

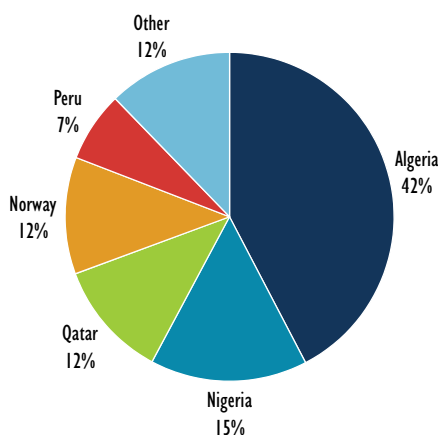
Spain has a regulation on the diversification of natural gas supplies, with a threshold of a maximum of 50% of supplies coming from the same country on a yearly basis. Royal Decree 1766/2007 requires that, in case the total of all natural gas supplies destined

for national consumption sourced from the same country goes beyond the foreseen threshold, shippers supplying more than 7% of the national demand are obliged to diversify their portfolio. In this way they do not to procure more than 50% of their supply from the same country.

In 2012 Spain imported 35 bcm of natural gas – 1.2% less than 2011 figures – from nine different countries: 41.7% of total imports were from Algeria, followed by Nigeria (15.5%), Norway (11.7%) and Qatar (11.6%).

The Spanish gas supply is well diversified with a large number of suppliers and a large proportion of LNG supply. In 2012, 60.2% of Spain's gas imports were LNG deliveries, with the remaining 39.8% being pipeline supplies.

Figure 4.24.7 Natural gas imports by source, 2012



Gas company operations

The Spanish natural gas sector is privately owned and operated; this includes production, distribution, and transmission. Gas Natural Fenosa is the leading shipper in Spain.

Enagás owns and operates most of the Spain's high and medium pressure grid, as well as three of the country's six LNG regasification terminals, at Huelva, Barcelona and Cartagena. Since December 2006, the government has limited individual company ownership of Enagás to a maximum of 5%.

Gas supply infrastructure

Ports and pipelines

The international connections of the Spanish gas system include two gas import pipelines from Algeria and four reversible international connections, two with France – Larrau (Navarra) and Irún (Guipúzcoa) – and two with Portugal – Badajoz and Tuy (Pontevedra).

The development of gas interconnection capacity between France and Spain has been a priority for the European Regulators' Group for Electricity and Gas (ERGEG) South Gas Regional Initiative (SGRI). The investments required were decided on the basis of long-term commitments taken by shippers through the "open seasons" of 2013 and 2015. These market tenders resulted in several agreements:

- The total capacity at Larrau, available from the end of 2013, amounts to 165 GWh/day in both directions.

- The total capacity at Irún, available by 2015, will amount to 60 GWh/d in both directions. Furthermore, the 8 bcm MedGaz deepwater pipeline between Beni Saf, Algeria and Almería became operational in March 2010. This connection reinforced and diversified the supply to Southern Europe, supplying gas directly from Algeria without requiring transit through third countries (namely Morocco).

Spain has six operating regasification plants located at the main entry points of the natural gas system. These plants are an essential element in the security of supply as they have a regasification capacity of 60 bcm per year, compared to a natural gas demand of 32.5 bcm in 2012.

Storage

Spain's LNG terminals have a total LNG storage capacity of 3.2 mcm (equivalent to 1.88 bcm of gas storage), with a maximum emission rate of 6.86 mcm per hour. The most recent upgrades are a third LNG tank in the Sagunto plant and the Barcelona terminal, whose additional send-out capacity now reaches 1.95 mcm per hour.

The regasification plants service will be further reinforced in the future because of increased emission capacity on the transmission system and LNG storage tanks. By 2015, the third LNG tank in the Bilbao plant will be operational and two new regasification plants in the Canary Islands are envisaged for the following two years. Thus, LNG storage will reach 3.7 mcm and the maximum drawdown rate will reach 7.16 mcm/h.

There are currently four operating underground storage (UGS) sites:

- Gaviota (offshore, Basque Country), Serrablo (Huesca) and Marismas (Huelva) are depleted fields with a total working gas capacity of 1.72 bcm (total injection capacity 8.9 mcm/d and withdrawal capacity of 12.8 mcm/d).
- Yela (aquifer, Guadalajara) became operational in 2012. Today, cushion gas and working gas injection is still continuing and withdrawal capacity is currently undergoing testing. Moreover, the new UGS Castor was commissioned in April 2012 and cushion gas injection was started in May 2013. However, in view of the induced seismicity, further studies were commissioned. In the meantime, operations were suspended until results of these studies become available.

Therefore, total UGS capacity is forecast to reach 4.7 bcm in the long term, with injection rates of 30.7 mcm/d and withdrawal capacity rates of 56.6 mcm/d.

The total available capacity of Spanish UGS is managed as a whole by the technical system manager in order to optimise the working of the network and to minimise gas flows from storage to consumers.

Emergency policy

The Spanish Natural Gas System is based on the System Technical Management Rules, which has a procedure to cope with exceptional situations that may affect the normal operation of the system.

The system operator is responsible for putting this procedure into practice, declaring the level of emergency and co-ordinating the actions of the system users – namely traders, infrastructure owners and others. It also must keep the Ministry of Industry, Energy and Tourism, as well as the CNMC, properly informed at all times, and must be co-ordinated with the electricity system operator, as far as gas supply for electricity generation is concerned. An operation group, composed of representatives of the main gas users, gives support to the system operator in making decisions.

Order ITC 3128/2011 obliges natural gas shippers to maintain strategic stocks equivalent to 20 days of consumption in accordance with what the regulations define as “firm sales” (supplies that cannot be interrupted, either for commercial or technical reasons) during the preceding calendar year. Since the entry into force of Law 12/2007, the obligation to maintain “operational stocks” no longer applies. CORES is responsible for controlling the minimum stockholding obligations that correspond to operators in the natural gas and LPG sectors, as well as for verifying the operators’ obligation to diversify their natural gas supplies. However, CORES does not hold “strategic stocks” in the natural gas and LPG sectors.

The stocks must be maintained by shippers and self-supplied consumers at all times and must be kept in underground storage only. The government assumes control of the strategic stocks in emergency situations.

Emergency response measures

Several stakeholders are given specific responsibilities in the event of a gas crisis, notably with regard to making gas stocks available to the market.

ENAGAS, as the technical system manager, would declare one of three levels of exceptionality of the emergency situation, and would co-ordinate the actions of system users. The Ministry of Industry, Energy and Tourism would establish conditions and terms for the use of gas stocks by ENAGAS. CORES is responsible for monitoring the gas stocks, and would be responsible for ensuring that the obligated entities fulfil their responsibilities with regard to stock releases.

The Spanish system is designed to be highly flexible (LNG diversification, etc.), and thus fuel switching is not regarded as a priority tool to face disruptions. Nevertheless, combined-cycle power plants can work with an alternative fuel (mainly diesel) for short periods of time.

Additional measures

Every year, the Spanish government designs a winter action plan, which lays out additional requirements for shippers from 1 November to 31 March. The winter action plan is approved on a yearly basis by the Directorate-General for Energy Policy and Mining at the Ministry of Industry, Energy and Tourism. The plan includes minimum stocks levels, a method to predict the increase of demand in case of a cold spell and a cold spell definition.

Spain’s gas network is based on the N-1 principle, whereby in the event of disruption of any large piece of infrastructure, the remaining infrastructure is capable of meeting total gas demand for the area.