The Spanish Gas Industry 2014

WOC 4 IGU March 5th 2014

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Summary

1. ***Natural Gas in Spain. Figures 2013***
2. ***Power Generation***
3. ***Natural Gas Supply - Security of Supply***
4. ***Infrastructures***
5. ***Present Key Issues for the Spanish Gas Industry***

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2. *Liberalization of the Spanish Gas Market*
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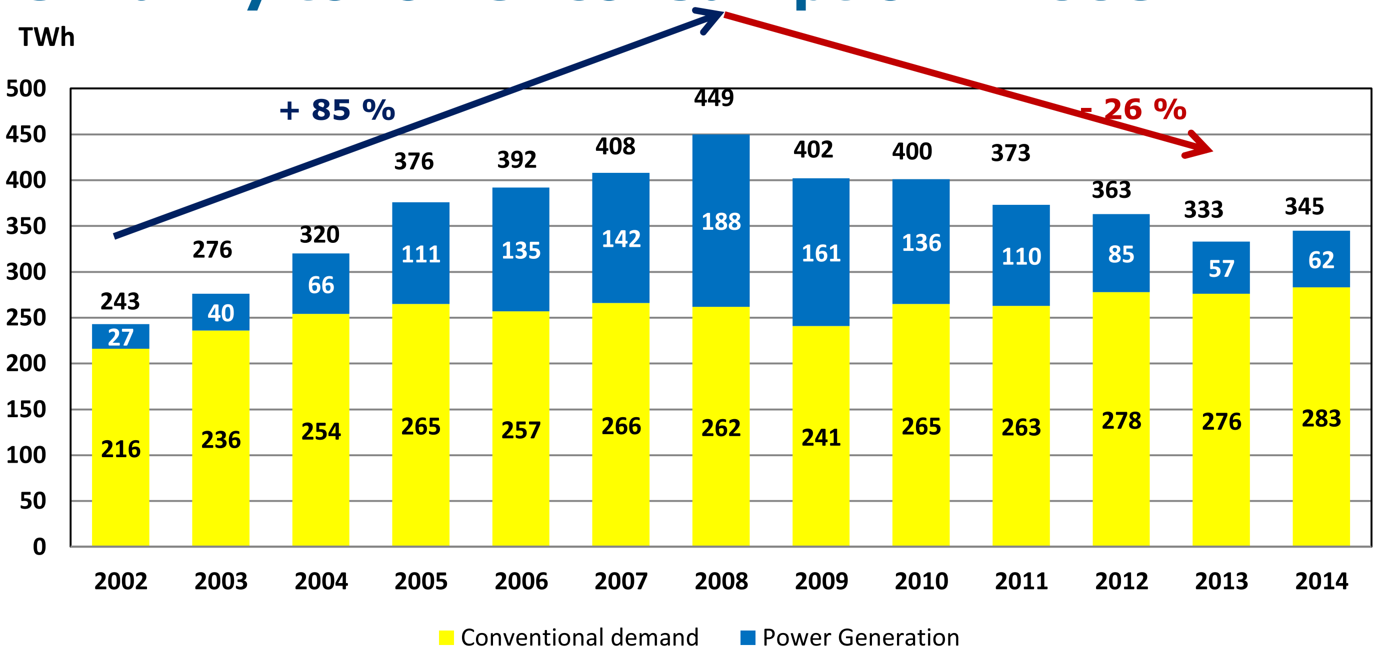
In 2013 natural gas demand in Spain decreased by 8,1 % due mainly to lower consumption in CCGT



Source: Actual data Enagás GTS and forecast 2014 Enagás GTS January 2014

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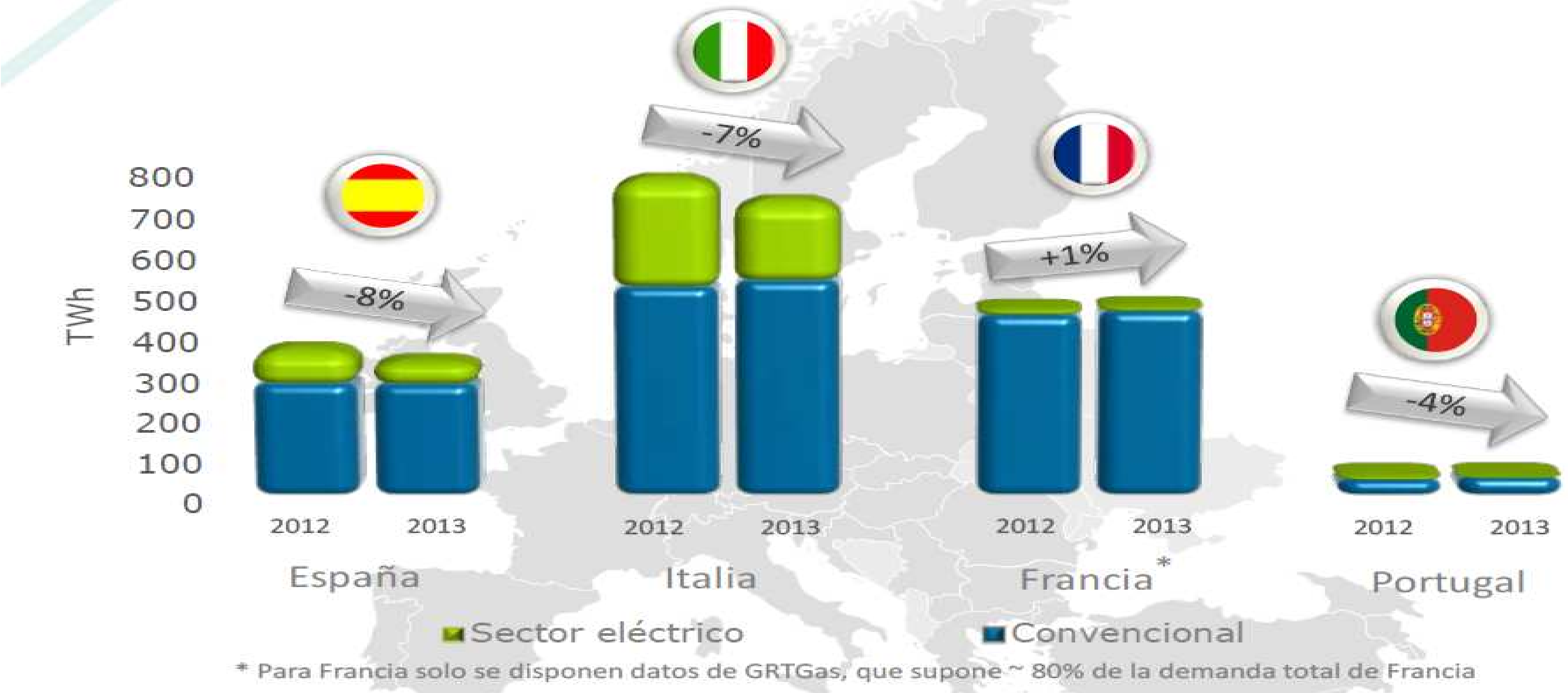
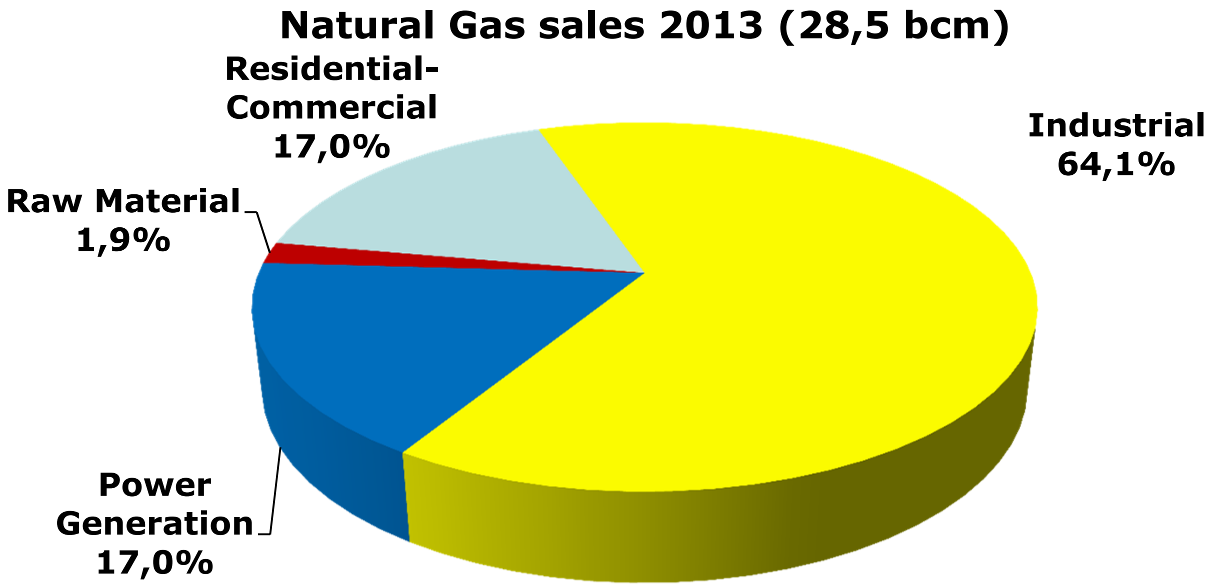
Natural Gas demand in other European Countries



Source: Enagás GTS

Breakdown of natural gas consumption by markets (GWh)



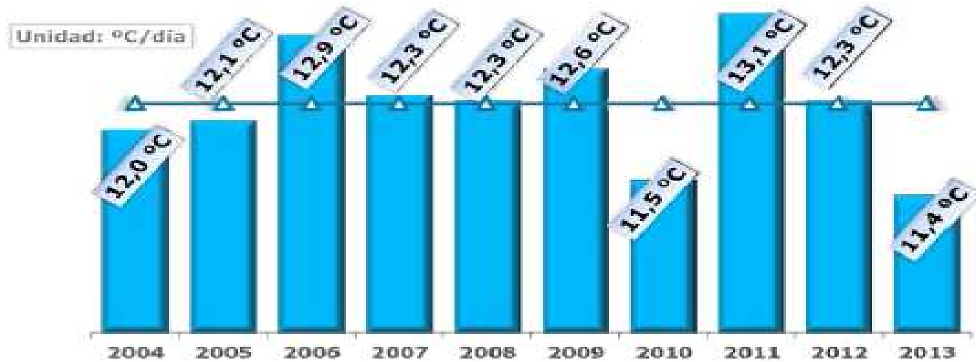
Natural gas accounts for 21,6 % of the primary energy mix in Spain

Breakdown of natural gas consumption by markets (GWh)

Market	2008	2009	2010	2011	2012	2013	Variation 2013-2012
Residential & Commercial	59.617	55.945	64.328	52.433	56.776	56.597	- 0,3 %
Industry	197.256	180.264	194.089	203.626	216.923	212.733	- 1,5 %
Power Generation	256.300	160.888	135.625	109.875	84.600	56.844	-32,8 %
Raw material	5.033	4.874	6.131	6.319	4.339	6.260	+44,3 %
Total (bcm)	38,4	34,3	34,2	31,8	31,0	28,5	-8,1 %

Residential market consumption most affected by climate conditions

- **Coldest year in wintertime: 2010**
- **2013: similar temperatures than 2012 in winter but colder in April, May and June**



Average daily temperature last decade: 12,2 ºC

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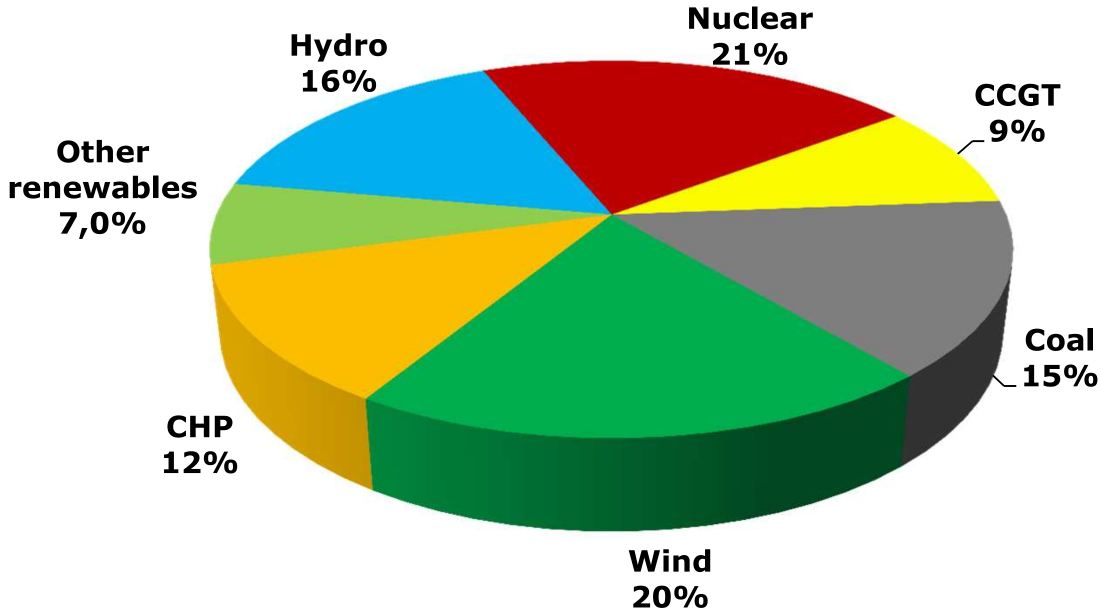
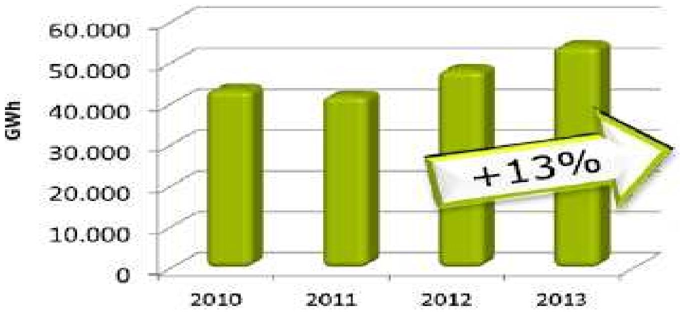
Power generation mix 2013

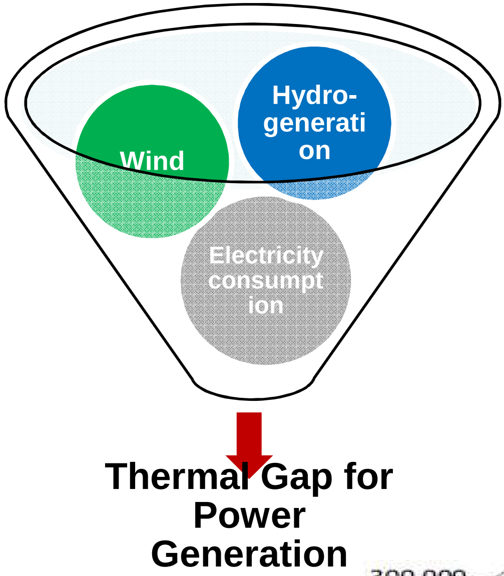


- **In 2008 the contribution of CCGTs to the Power Generation Mix was 32 %**
- **5 % of the coal consumption is regulated to give priority to domestic coal**
- **About 80 % of CHP consumption is supplied with natural gas**

Natural Gas consumption for Power Generation has decreased by 67 % since 2008

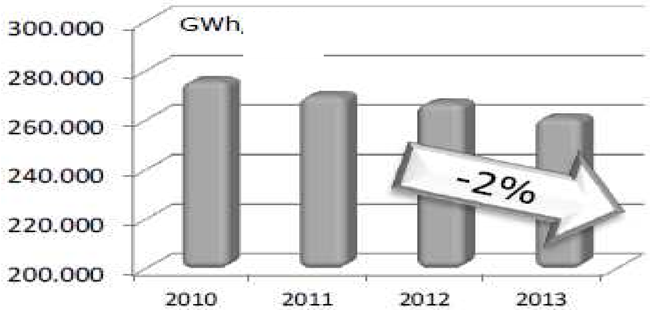
Wind generation
+ 6.350 GWh





Hydro-generation
+ 14.518 GWh

Electricity consumption
- 5.646 GWh



Source: REE

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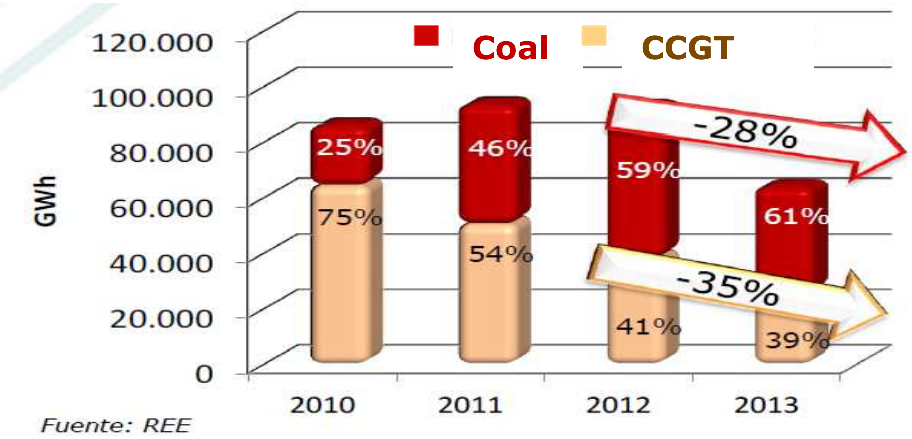
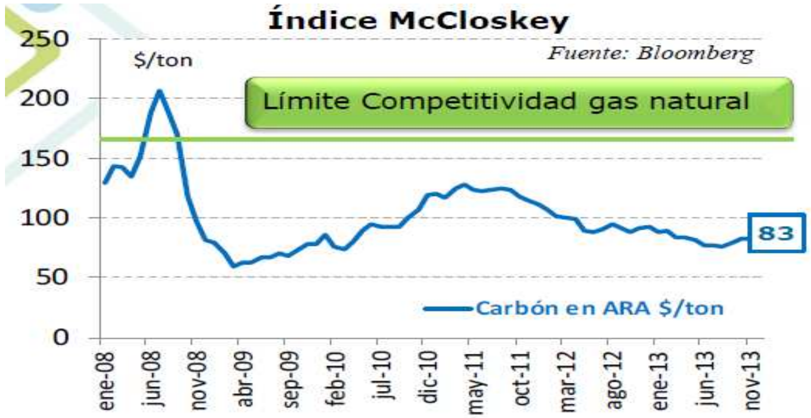
Thermal gap for power generation. Coal and Gas Shares





Lower natural gas consumption:

- Priority is given to domestic coal;
- Low coal prices;
- Low cost of CO_2 emissions.

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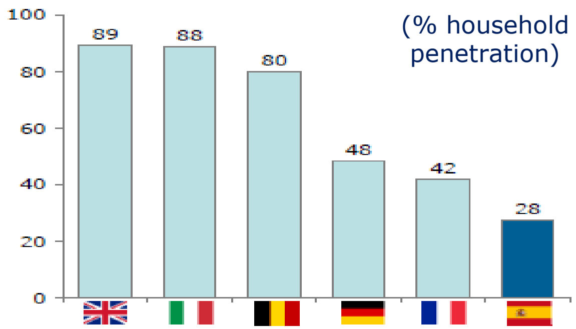
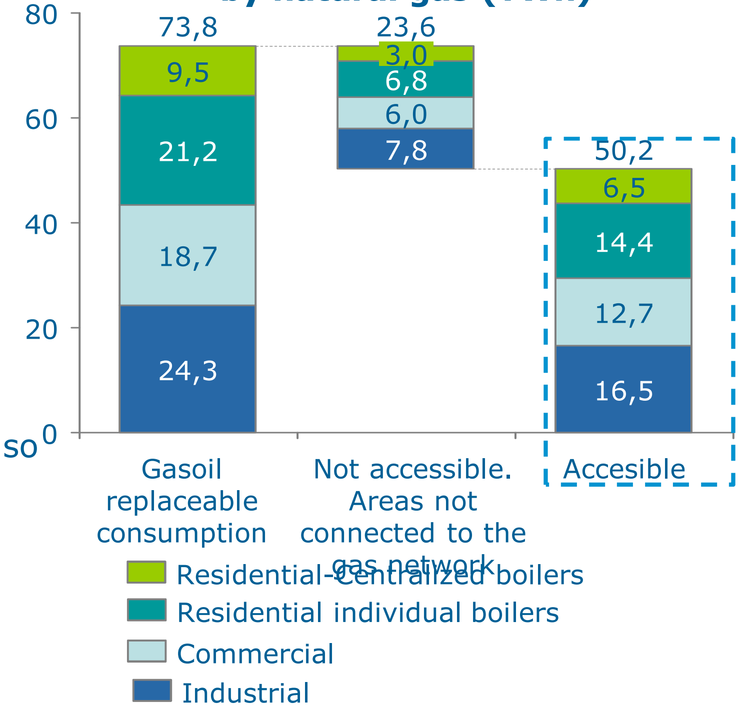
Current key issues regarding natural gas consumption

- There is still room for natural gas to replace more pollutant energies like gasoil for heating use;
- But not available yet for all Spanish citizens



Source: BCG

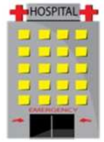
Estimation of gasoil replaceable by natural gas (TWh)



- Natural gas is a cost competitive energy which also contributes to reduce carbon emissions:
  - Backup of intermittent renewables;
  - High security of supply in Spain;

Advantages for companies and families

The use of gas would allow up to 50 % savings on the non-electric energy bill

	Single-family home	50-family home	Small Industry	Hospital
				
Energy consumption	15 MWh/year	500 MWh/year	2.000 MWh/year	10.000 MWh/year
Energy costs using gasoil[1]	1.714 €/year	48.570 €/year	196.000 €/year	980.000 €/year
Energy costs using natural gas[1]	1.089 €/year	33.619 €/year	100.000 €/year	490.000 €/year
Savings[1]	625 €/year (36 %)	14.951 €/year (31%)	96.000 €/year (49%)	490.000 €/year (50%)

The replacement plan would allow estimated savings of 17 M€ in 2017 on the State's bill[2]

1Including taxes 2. Assumes that the State's energy bill is concentrated on the commercial sector and that the energy consumption in this sector is proportional to the employment. Assumes a 17% of public employment over total employment
1Source: GNF, OIT, Analysis BCG

Other figures of the Spanish Gas Industry

	1995	2000	2011	2012	2013
Connection points	2.776.000	4.203.000	7.297.090	7.393.816	7.473.451
Network (km) Transmission + Distribution	21.200	37.000	76.108	79.041	81.188
Towns	544	948	1.549	1.579	1.600
Consumption (bcm)	12,2	16,7	31,8	31,0	28,5

Source: Sedigas

About 70% of the population lives in cities with available supply of natural gas, but natural gas is only used by 30% of Spanish households.

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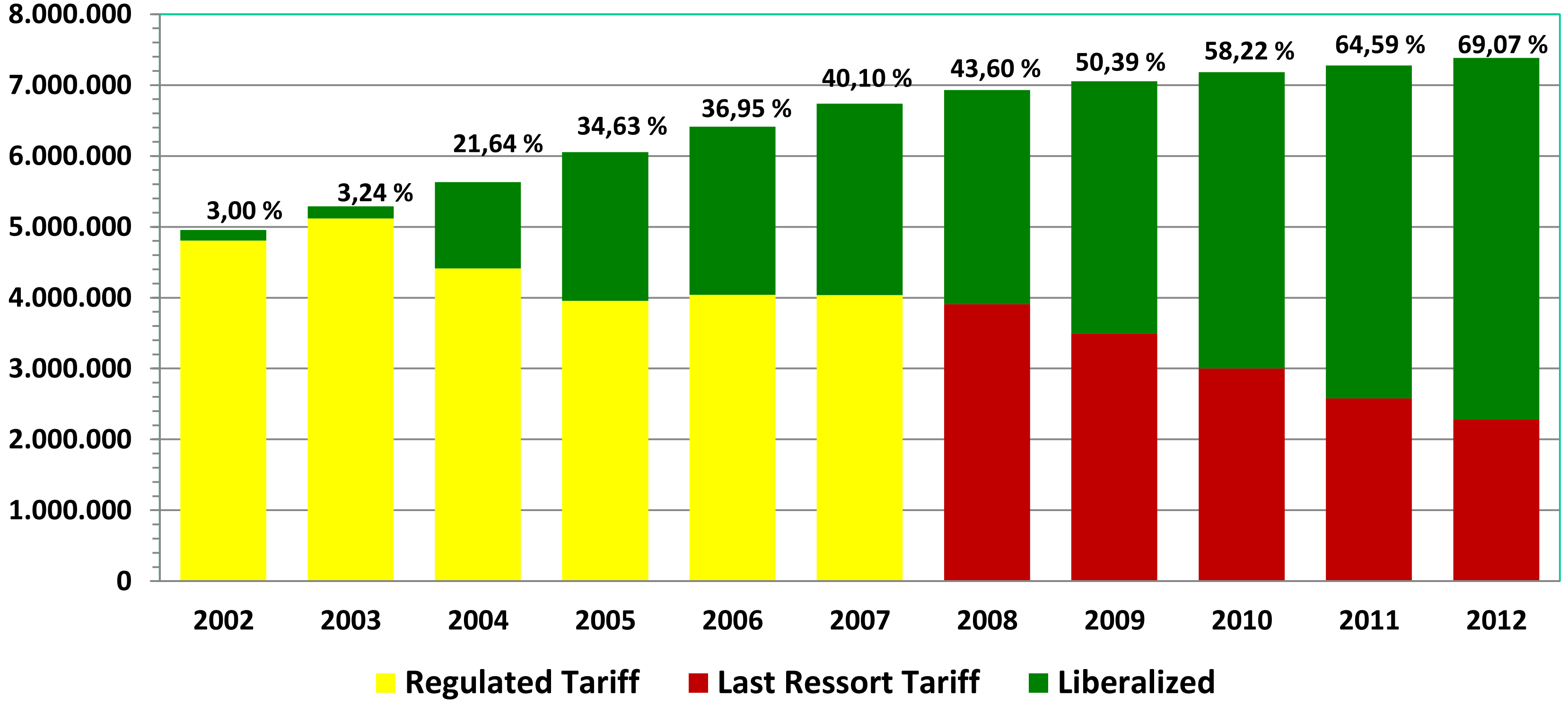
Liberalization - Customers



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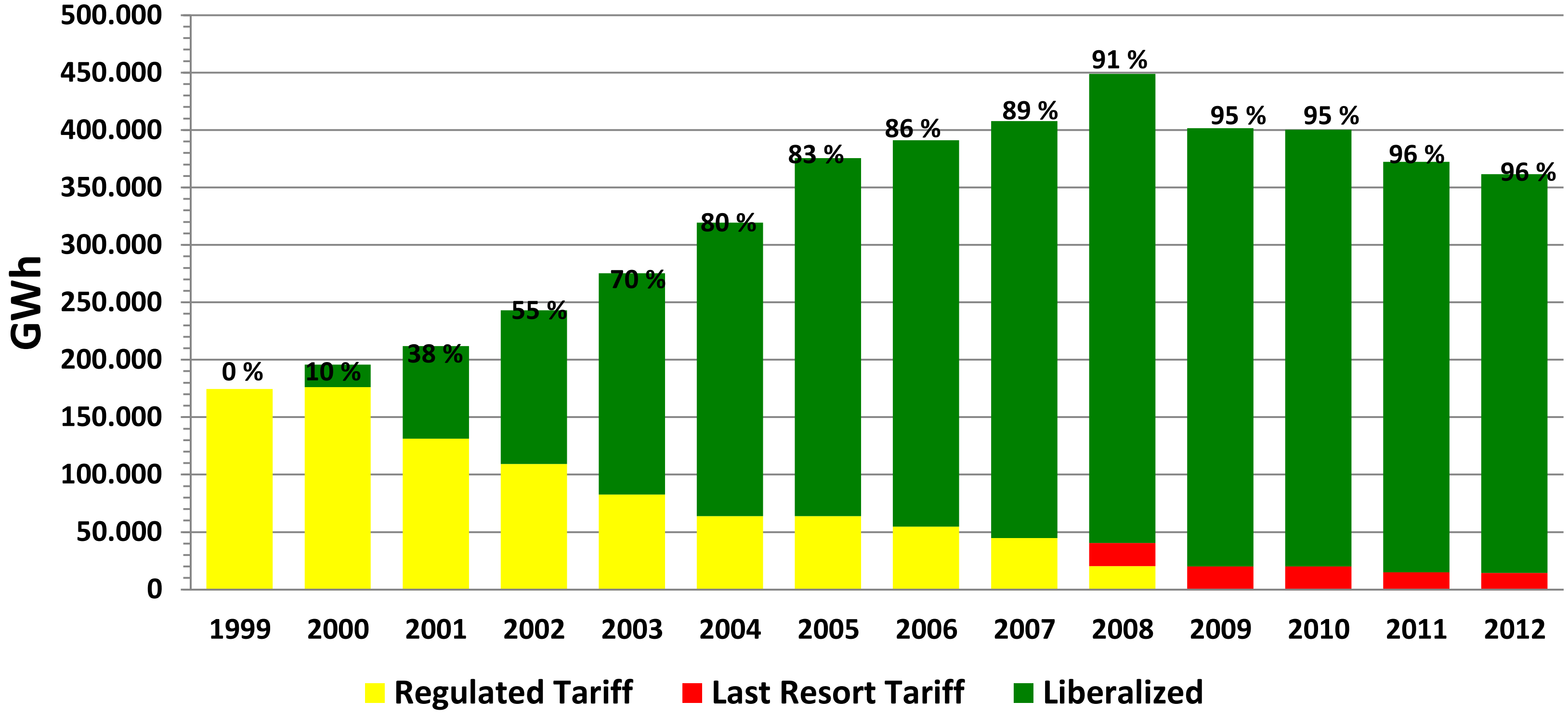
Last Resort Tariff for clients P up to 4 bar with consumption up to 50 MWh/year, not interested in the offers of the liberalized market

Liberalization - Consumption



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Last Resort Tariff for clients P up to 4 bar with consumption up to 50 MWh/year, not interested in the offers of the liberalized market

Liberalization – Figures of the Spanish Retail Market (2012)

Indicator		Variation 2012-2011
Active Suppliers	**37**	**+ 5**
Suppliers with sales > 5 %	**6**	**+ 1**
Suppliers with clients > 5 %	**4**	**=**
Switching Rate	**18,5 %**	**- 0,3 %**
% Customers LRTariff	**31 %**	**- 4,4 %**
HHI (Sales)	**2.250**	**+ 278**
HHI (Clients)	**3.793**	- **253**
Number of offers in the liberalized market (2012.12)	**101**	- **-7**

HHI: Herfindahl and Hirschman Index

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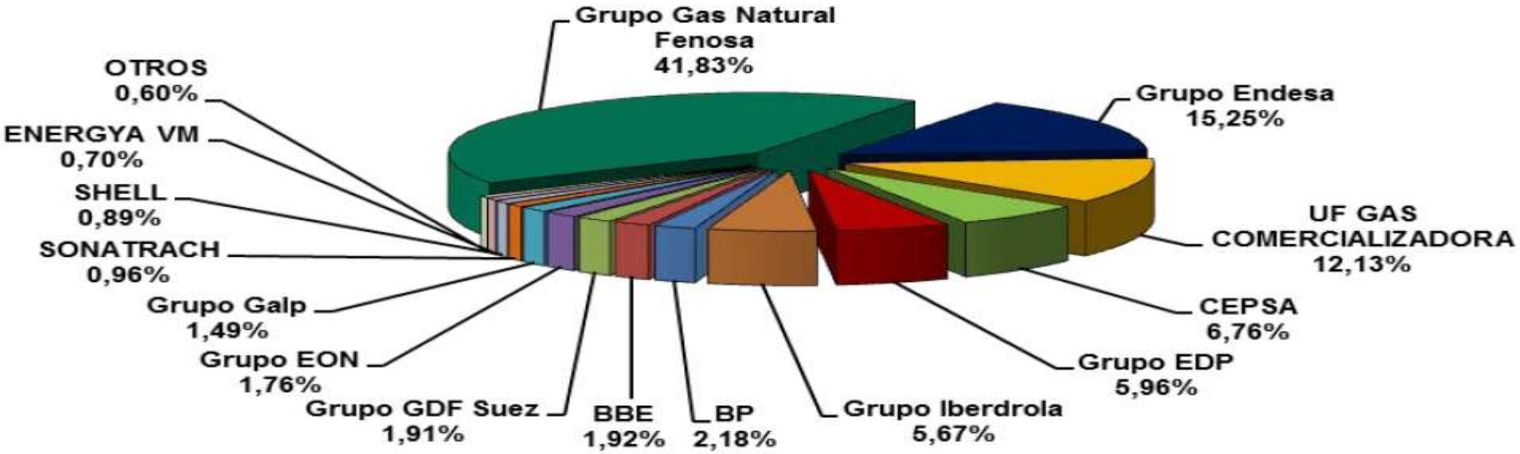
Liberalization – Share of retail market (Sales 2012)



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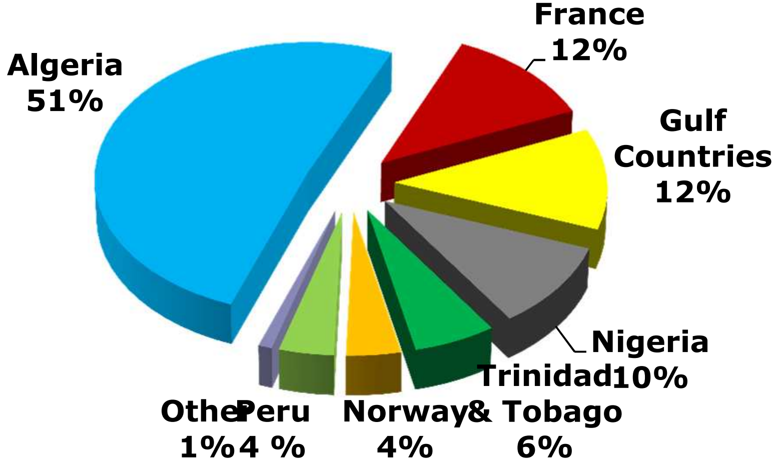
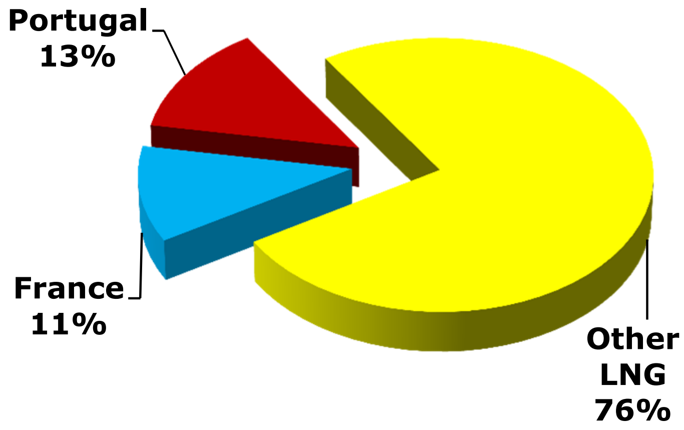
Natural Gas Imports 12 origins (32 bcm 2013)
Natural Gas Exports (3,6 bcm 2013)



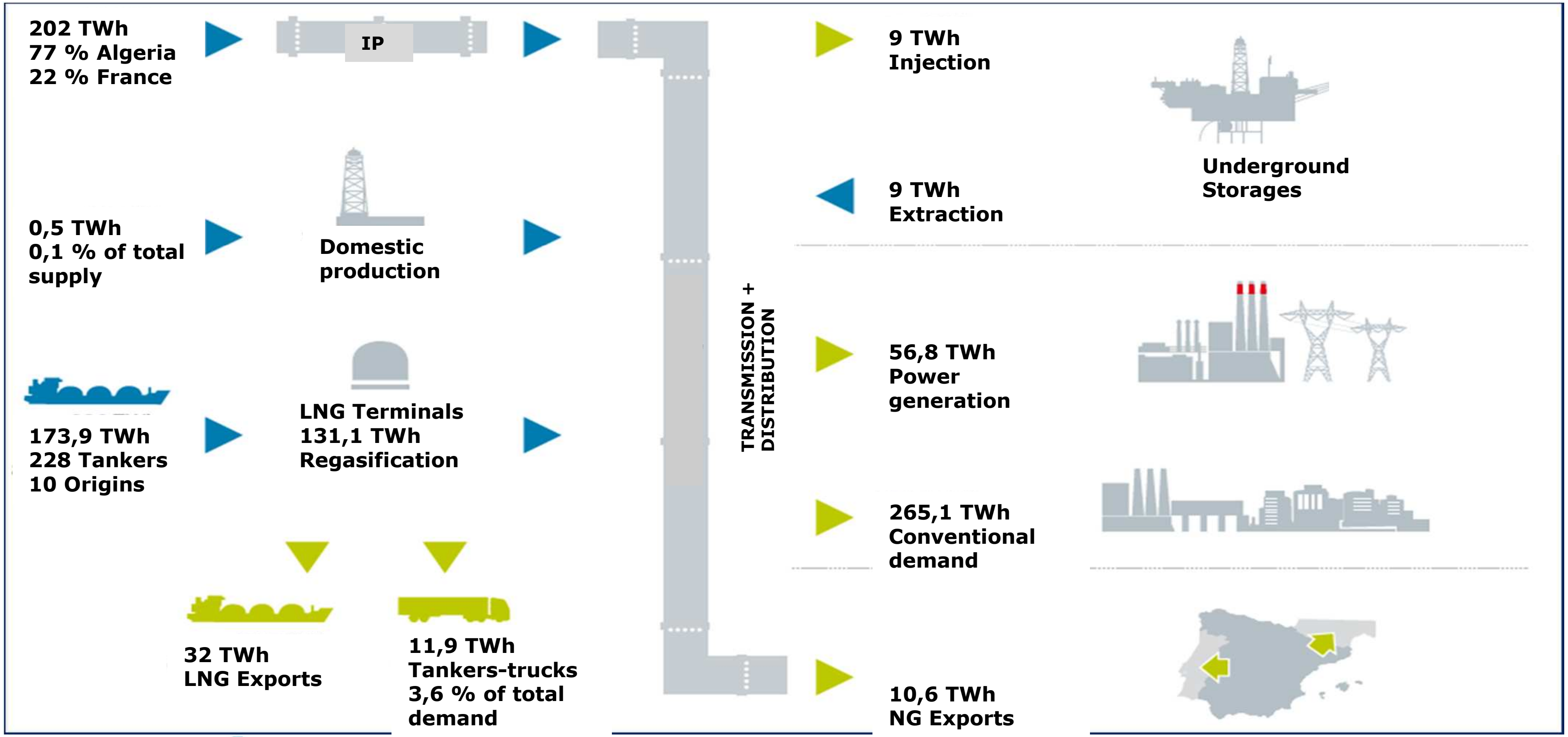
Imports



Exports

46,3 % of the natural gas imported as LNG
2,7 bcm exported as LNG

Gas Flows 2013



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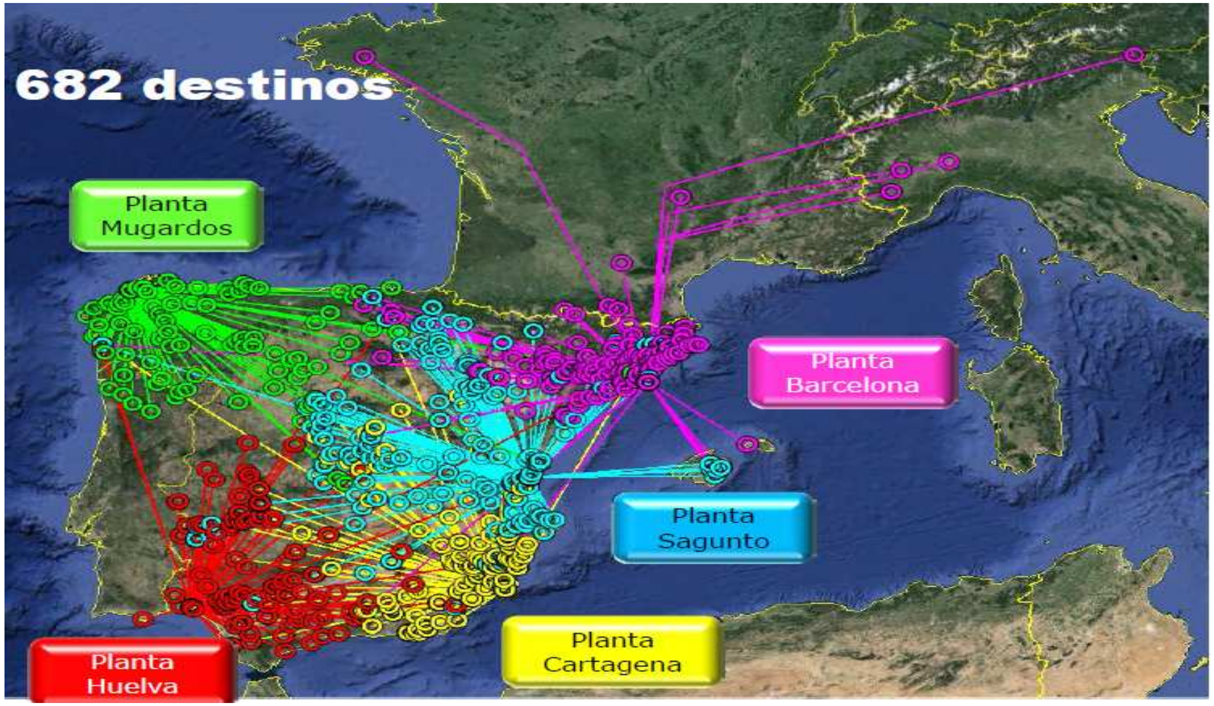
LNG Satellite Plants



- 725 Single-Consumer Plants
- 80 Plants supplying Distribution networks
- 12 TWh in 2013
- Transport by tankers (39.240 in 2013)

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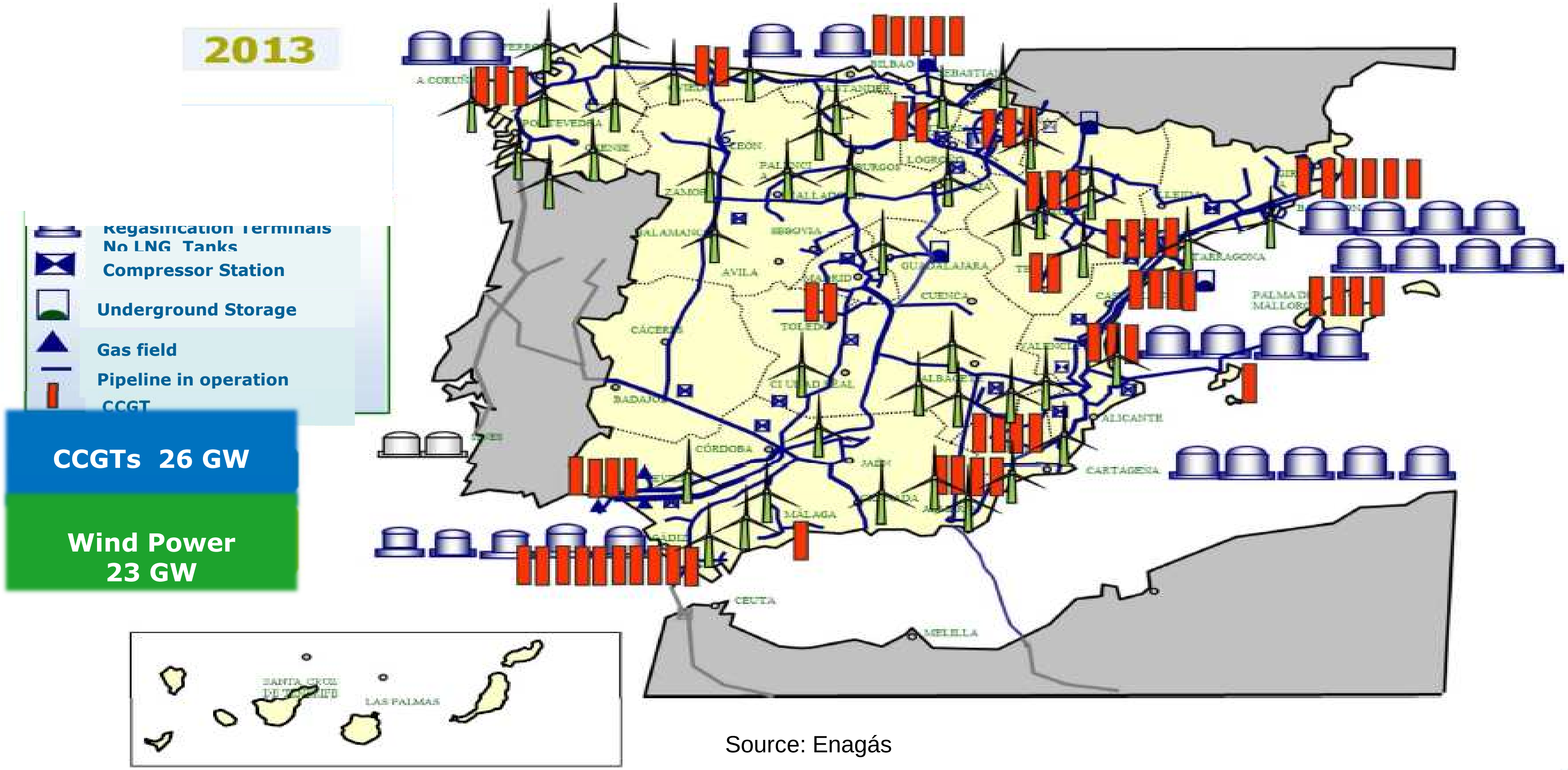
Natural Gas Infrastructures 2013



Source: Enagás

Natural Gas Infrastructures 2013

- **81.000 km of transmission and distribution networks**
- **18 Compressor Stations**
- **6 LNG Terminals in operation**

MOP	T/D	Steel	Polyethylene	Other
More than 16 bar	Transmission	100 %	-	-
Up to 16 bar	Distribution	14 %	84 %	2 %

International Connections

Year	Portugal-Spain	Spain-Portugal	France-Spain	Spain-France
2014	3,7 bcm/year	6 bcm/year	5,2 bcm/year	5,2 bcm/year
2015	3,7 bcm/year	6 bcm/year	7,1 bcm/year	7,1 bcm/year
?	7,7 bcm/year	10 bcm/year	12,7 bcm/year	14,3 bcm/year

Including the 3rd IP with Portugal (4) and the 3rd IP with France (5) (East connection – Midcat) both approved as PCI

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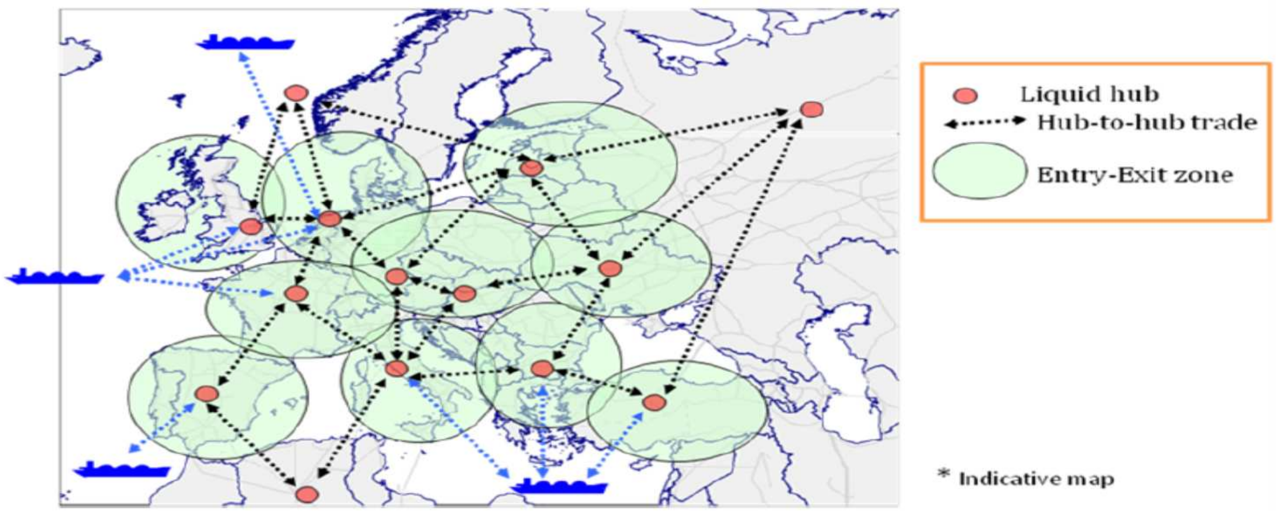
Grid Extension and increase of Natural Gas consumption

- There is still room for natural gas to replace more pollutant energies like gasoil and coal for heating use, but for some renewables local harmful emissions are not taken into account;
- Relatively low penetration of natural gas in households in Spain (30 %);
- EED requires 1,5 %/year of final consumption decrease. Suppliers responsible. Opportunity for natural gas to replace less efficient energies;
- New markets in development: Road and Maritime Transport .

Gas Target Model - Iberian gas Hub

- Spanish and Portuguese markets suppose 37 bcm/year;
- Enough entry points due to LNG supplies;
- Works are in place to prepare the rules of the future Iberian Hub.

GENERAL MODEL: ERGEG VIEW



3rd Energy Package - Effect on Spanish NSOs

- Ownership Unbundling and ISO Models for TSOs
- Legal unbundling requirements complied by all Spanish DSOs;
- Different safety regulations create different activities of DSOs in different MS (i.e: check up of installations for commissioning or periodic check up);
- Common IT platform owned by all Spanish DSOs (SCTD) providing to all suppliers:
  - Information on all Connections (Situation, Supplier, Gas Consumption, etc.);
  - Switching services (switching rate 2012 – 18,8 %);
  - Moving in and moving out services;
  - Nomination and allocation information services;
  - New services designed together with suppliers at the switching office (OCSUM).
- Compliance with 3rd package switching provisions (3 weeks);
- Some requirements arising from different Network Codes like Balancing (Intraday information provisions) will impact the Spanish DSOs activity; other NCs like Interoperability also have a potential impact on the distribution activity.

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Thank you for your attention

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