

France

Key issues

Both wholesale and retail electricity and gas markets continue to be highly concentrated. Despite improvements, especially for gas, regulated tariffs continue to prevent alternative suppliers from entering the retail and wholesale markets. France would benefit from further liberalising the wholesale electricity market which remains one of the most concentrated in the EU. The renewal of hydroconcessions appears as an opportunity to foster a more competitive landscape for electricity generation in France.

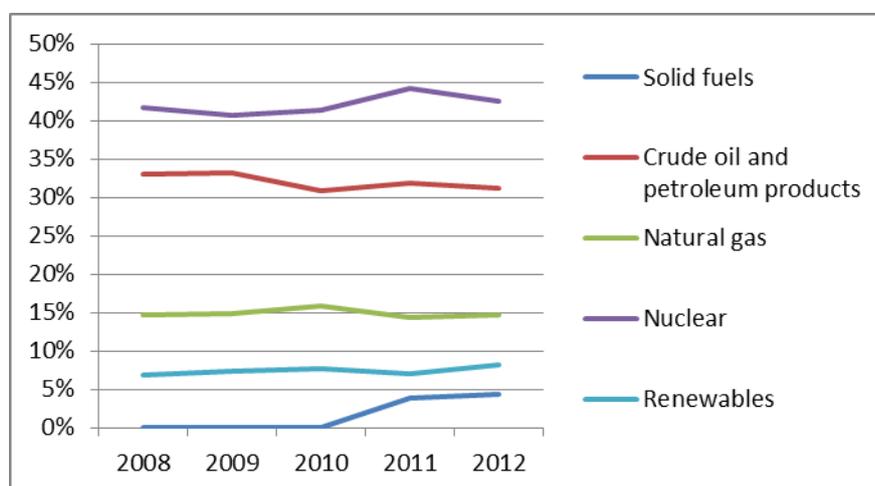
Despite a good degree of market integration, limited electricity interconnection capacity with neighbouring countries (especially with Spain) continues to inhibit the development of competition and constrain the security of supply.

Gas infrastructure should also be developed to alleviate internal congestion between balancing zones and increase cross-border flows.

1. General overview

The structure of the national energy mix has remained relatively stable. Nuclear energy continues to hold the highest market share (approximately 43%), followed by oil products (32%) and natural gas (14%).

Figure 1: Gross inland consumption mix 2008 – 2012 (source: Eurostat)



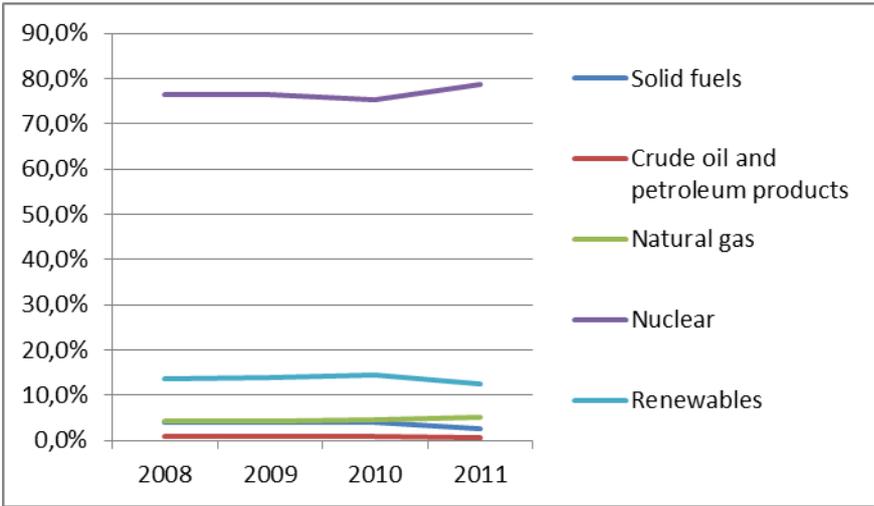
France has an obligation to reach 23% of RES share in gross final energy consumption by 2020. Despite the fact that France has stayed somewhat below its 2011/2012 interim target (12.8%), the share of renewable energy has nevertheless increased from 11.3% (2011) to 13.4% thus showing a positive trend (2012). This positive result is mainly due to contribution from the heating and cooling sector, which increased as a result of improved use of biomass.

On 18th June 2014, the French Energy Minister presented to the Council of Minister a draft law on Energy Transition. It will be debated in the French Parliament this autumn and adopted early 2015. It sets ambitious targets such as a 40% reduction in greenhouse gas emissions in 2030 and a target of 32% of renewables in the total final energy consumption by 2030, 30% reduction in fossil fuels consumption by 2030 and final energy consumption to be divided by 2 at horizon 2050. It also foresees the public tendering of hydroconcessions,

According to the electricity TSO RTE¹⁸⁷, gross electricity demand, peaked in 2010 (513 TWh) and later returned to near 2008 levels (495 TWh in 2013), with a record day consumption level registered in February 2012 (102.1 GWh). Trends show that demand is becoming more sensitive to daily temperatures, as a result of the increased use from the residential sector.

The market share of nuclear generation is stable at around 74% of market supply, whilst the contribution of renewables has progressively increased, reaching 19% in 2013 (in comparison to 14% in 2010), with a decline in oil and gas generation. However, there has been a slowdown in the growth rate of both wind and photovoltaic productions, reflecting both the financial crisis and a reduction in incentives.

Figure 2: Gross electricity generation mix 2008 – 2011 (source: EU Energy in Figures – Pocketbook 2012 and 2013)



2. Regulatory framework

General

France has notified full transposition of the Third Energy Package Directives.

National Energy Regulator

Despite the new duties and powers attributed to the French National Regulatory Authority (*Commission de Régulation de l'énergie - CRE*)¹⁸⁸ with the adoption of the NOME Law in 2010 (new

¹⁸⁷ http://www.rte-france.com/uploads/Mediatheque_docs/vie_systeme/annuelles/Bilan_electrique/bilan_electrique_2013.PDF.

¹⁸⁸ The new competences regard mainly four activity fields: network tariffs definition, investments in network infrastructure development, TSOs' certification and regulation of the access to nuclear power generation of the incumbent.

organisation of the electricity market)¹⁸⁹ and with the adoption of the law of 15 April 2013¹⁹⁰, its resources have further decreased reaching 18.9 million euros¹⁹¹ in 2014. The staff limit will decrease in 2014 to 130, thus reinforcing the pressure on the resources of the regulator. CRE has expressed once more serious concerns about the situation as this puts at risk the fulfilment of its tasks.

Unbundling

Réseau de Transport d'Électricité (RTE) is entirely owned by EDF, the historical national utility company. RTE owns and manages the electricity transmission network. The high pressure gas network is owned by two operators. The first operator is GRTgaz, who is jointly owned by GDF SUEZ (75%) and by *Caisse des Dépôts et des Consignations* and CNP Assurances (25%). The second operator is TIGF, which since July 2013 is owned by a consortium of Snam (Italian utility, 45%), GIC Private Limited (Singapore utility, 35%), and EDF (20%). All three operators were certified in January 2012 as TSOs under the ITO model. Further to a change in its shareholders, TIGF has been recertified in 2014 under the full ownership unbundling model.

There are three DSOs operating in the natural gas sector that serve more than 100,000 customers. In the electricity sector, one DSO (ERDF, a 100% subsidiary of EDF) serves over 95% of French consumers. DSOs compliance with the rules of independence remains mixed. If for some DSOs the situation has improved, the NRA noticed that some of its annual requests and recommendations have remained unanswered and several breaches of DSOs independence rules were discovered in 2012 and early 2013.¹⁹²

3. Wholesale markets

Electricity

The power generation market is highly concentrated. The HHI index as regards installed capacity is still above 8 000 for electricity generation. Next to EDF who still exploits 91.5% of installed capacity, GDF Suez exploits 5,1% of the installed capacity and E.On France 2.6%¹⁹³. Efforts are being made to reduce market concentration through measures such as the ARENH price, which secures access to a limited volume of nuclear generation (maximum of 100 TWh/year) under regulated tariffs for alternative suppliers¹⁹⁴, or Virtual Power Plants. These measures should be further improved to continue to promote market access for alternative suppliers. France plans to start tenders for hydroelectric concessions in the first half of next year to bring competitors into the market. The vast majority of France's hydro plants, the nation's biggest source of power after nuclear reactors, are run by EDF (more than 80%), the remaining being operated by GDF Suez. Under the latest plan, the government may group them by valley into concessions and adjust the expiry dates for current

¹⁸⁹ Nouvelle Organisation du Marché de l'Électricité, 7 December 2010.

¹⁹⁰ This law implements the REMIT regulation n°1227/2011 according to which national regulators shall ensure that the prohibitions and the obligation set out in this regulation are applied.

¹⁹¹ <http://www.assemblee-nationale.fr/14/budget/plf2014/b1428-tIII-a19.asp>.

¹⁹² CRE, Respect des codes de bonne conduite et indépendance des gestionnaires de réseaux d'électricité et de gaz naturel, September 2013.

¹⁹³ CRE, Annual Report to the European Commission, July 2014.

¹⁹⁴ Alternative suppliers are defined as non-incumbent suppliers. Incumbent suppliers are EDF, Local Distribution Companies and their subsidiaries.

operating contracts. The renewal of these concessions appears as a unique opportunity to reshape the French electricity market in a more competitive way.

The wholesale market in France has low liquidity; with the majority (87% in 2012) of trading taking place over-the-counter (OTC). In February 2014 the Northwest European coupling of the day-ahead markets from the Nordic region, Great Britain and the Central Western Europe region (with which France was already coupled) went live. It was further extended to Spain and Portugal in May and should extend to Italy and Slovenia at the end of 2014. Intraday market integration of the Northwest Europe region is on-going. A project for coupling with spot markets is also under consideration.

Baseload spot price decreased by 7.8% in 2013, with respect to 2012, assuming an average value of EUR 43.24/MWh. Production costs have decreased due to low coal prices as well as low CO₂ emissions prices. Furthermore, the high production of renewables in Germany influences the French wholesale prices. The decline of the day-ahead price also continued into the first quarter of 2014 with temperatures above normal.

Gas

France imports almost all its natural gas. The majority of imports (40.4%) came from Norway. LNG market share, reflecting the low competitiveness of LNG prices, decreased from 35% (2011) to 18% (2013). The market has traditionally been dominated by long-term import contracts linked to oil product prices. Despite historical dominance, these contracts decreased from 92% of overall imports (2010) to 85% (2013). In addition, renegotiation efforts of French gas importers resulted in more hub indexation within the price formula of long-term contracts.

In France there are three virtual trading points (PEG Nord, PEG Sud and PEG TIGF). The PEGAS project was launched in 2013 as a cooperation agreement between Powernext and European Energy Exchange (EEX). It combines both companies' natural gas market activities, increasing the liquidity. PEG *Nord* and PEG *Sud* day-ahead gas price increased in 2013 by 8% and 12% respectively. PEG *Nord* evolution reflects the trend of the adjacent continental hubs whereas PEG *Sud* suffers from the physical congestion at the North-to-South link of GRTgaz's transmission system. Despite a still sluggish industrial demand, total consumption increased by 1.4% in 2013, mainly due to the cold weather conditions during winters 2011-2012 and 2012-2013.

4. Retail markets

Electricity

Market concentration at retail level remained high in 2012 as only 8%¹⁹⁵ of consumers were served by alternative suppliers. Since 2007, consumers have had the choice between opting for free market prices and regulated tariffs which can only be offered by incumbents¹⁹⁶. However by the end of 2013, 92% of residential customers and 86% of non-residential customers remained under regulated tariffs.

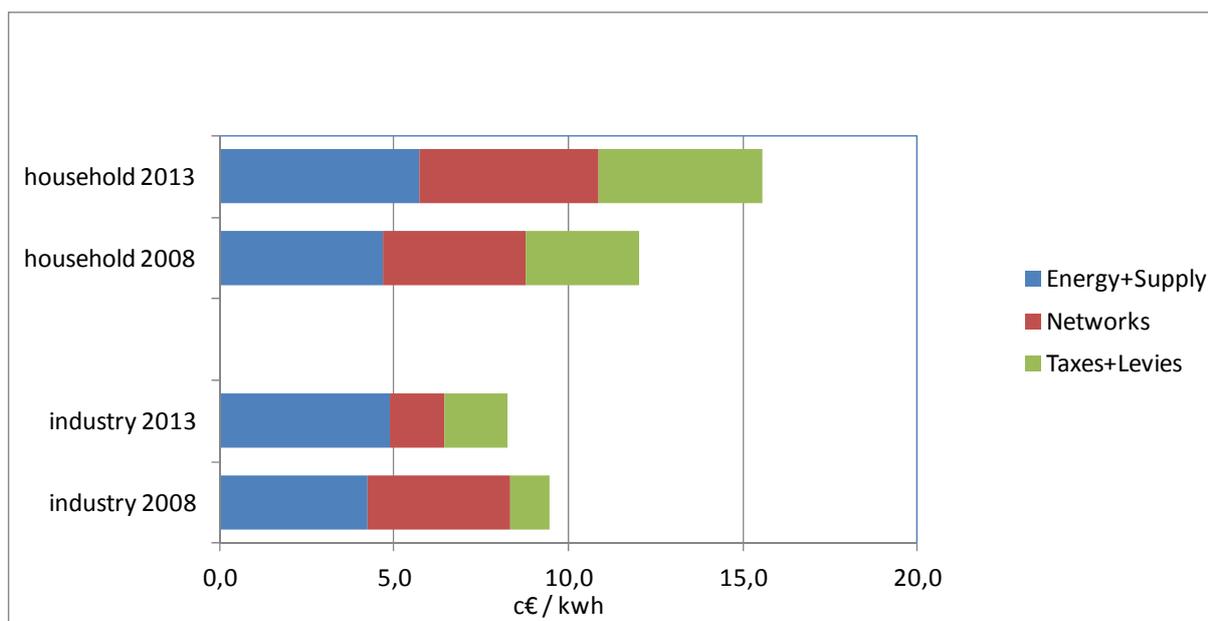
¹⁹⁵ CRE, Annual Report to the European Commission, July 2014.

¹⁹⁶ Return to the regulated tariff is possible for consumers under certain conditions.

Switching rates in the retail electricity market decreased in 2012 to 3.4 % in number of sites (a decrease of 0.3 points compared to 2011). It should be noted that there was also a registered increase in market opportunities awareness¹⁹⁷.

Regulated tariffs were raised significantly in July 2013¹⁹⁸ and are expected to increase again in 2014¹⁹⁹. This is mainly due to the financing needs of EDF and especially to the modernisation of its nuclear fleet²⁰⁰. These increases still do not cover totally EDF costs. Nevertheless, they slightly improved the competitiveness of free market priced offers.

Figure 3: Electricity price change by component 2008 – 2013 (source: Eurostat, energy statistics)



Gas

Competition increased during the past few years. On the segment of industrial consumers, in 2013, 99% of consumption was on market offers in volume, including 51% from non-incumbents. On the other segments, similarly to electricity, concentration in gas at retail level remained high in 2012 with approximately 12% of the final consumers supplied by alternative suppliers. Consumers have the choice between opting for regulated or non-regulated prices. However in 2013, 77% of residential sites and 50% of non-residential sites, remained under regulated tariffs²⁰¹. The principal gas supplier, GDF-Suez, which is the exclusive provider of the regulated gas tariffs set by the government²⁰², still

¹⁹⁷ <http://www.cre.fr/documents/publications/rapports-thematiques/le-fonctionnement-des-marches-de-detail-francais-2012-2013>.

¹⁹⁸ <http://legifrance.gouv.fr/affichTexte.do?cidTexte=JORFTEXT000027778284&categorieLien=id>.

¹⁹⁹ <http://www.cre.fr/operateurs/service-public-de-l-electricite-cspe/montant>.

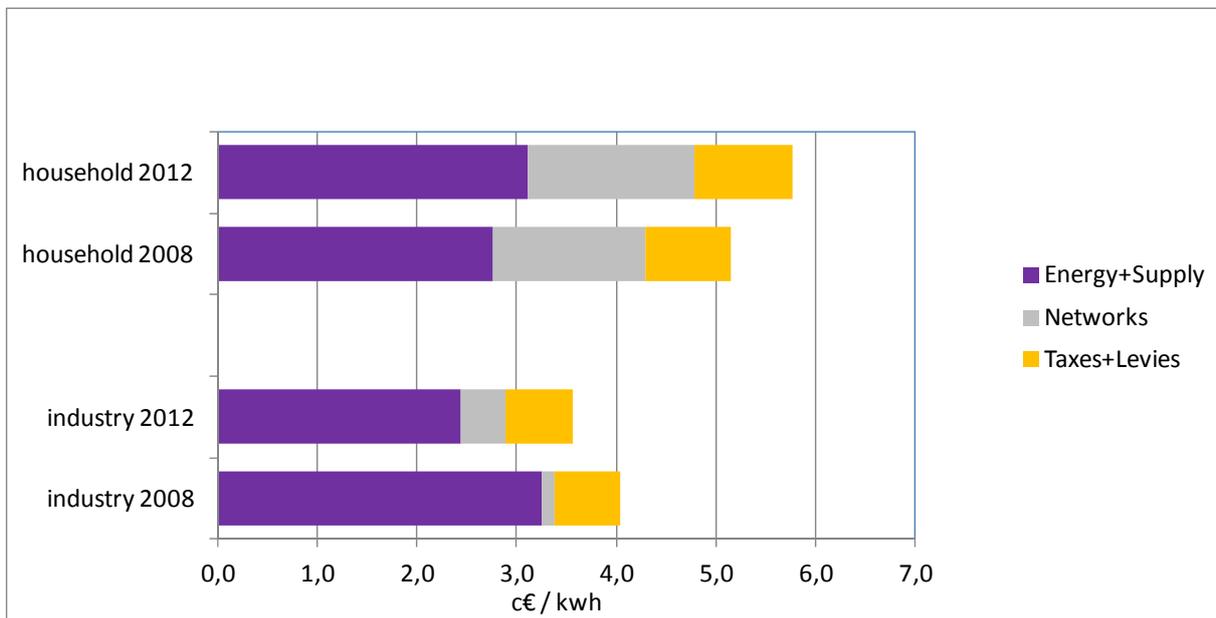
²⁰⁰ For more details, <http://www.cre.fr/documents/publications/rapports-thematiques/analyse-des-couts-de-production-et-de-commercialisation-d-edf>.

²⁰¹ CRE, Annual Report to the European Commission, July 2014.

²⁰² GDF is the only provider of regulated gas tariffs for customers connected to the distribution network (GrDF).

dominates the market for households and small businesses. Switching rates retail market increased slightly, from 3.5% in 2010 to 4.0% in 2011, and reached 5.0% in 2012.²⁰³

Figure 4: Natural gas price change by component 2008 – 2012 (source: EC, EPCR metadata)



A formal decision to proceed with the roll-out of smart-meters has been taken for both the electricity and natural gas sector, after the cost-benefit analysis returned a positive outcome. There are currently two pilot projects on smart metering going ahead:

- Linky: started in 2010, the project conducted by ErDF involves 300,000 customers connected to the low-voltage grid. The project is at an early stage of intelligent network construction and aims for a final installation target of 35 million smart meters.
- Gazpar: the mass roll-out of gas smart meters was officially launched in the summer of 2013. The project is on behalf of GrDF and will start with a pilot project of 150 000 smart meters by 2016, to be extended to 11 million meters between 2017 and 2022²⁰⁴.

5. Consumers

French consumers rate the performance of their retail electricity market well above the EU average (79.2 points vs. 72.0, corresponding to 4th place) as well as above the average of all domestic services markets (12th place out of 31). The market has the third lowest percentage of complaints and second highest assessment of trust in the EU. However, switching remains low in this market. This component is in fact the only component evaluated below the EU average. The assessment of the retail gas market is above the EU average (77.6 points compared to 74.1), which corresponds to 7th place in the EU ranking. The market is evaluated above EU average for all its components except for switching, which remains low in France. The proportion of consumers complaining for having

²⁰³ <http://www.cre.fr/documents/publications/rapports-thematiques/le-fonctionnement-des-marches-de-detail-francais-2012-2013>.

²⁰⁴ http://www.developpement-durable.gouv.fr/spip.php?page=article&id_article=37166.

encountered a problem is the lowest in the EU, but consumers tend to complain more towards third-parties (5th highest proportion in the EU). Both markets have seen a considerable increase in score since 2012 (4 points in the case of electricity market and 4.6 points in the case of electricity).²⁰⁵

CRE and the Energy Ombudsman (MNE) jointly manage an information website on energy issues which provides information on the opening-up of energy markets and a comparison tool for electricity and gas retail prices. In 2012, 371,000 consumers received information through the *energie-info* platform. An online tool for network tariff calculation is also available on CRE's website²⁰⁶.

Special tariffs are reserved for households with an income below or equal to a threshold of entitlement to supplementary universal health cover. These tariffs are available for both electricity and natural gas consumers. From the end of 2013²⁰⁷, these social tariffs were further extended to cover all households with an annual reference fiscal income per unit (*revenu fiscal de référence*) lower than EUR 2,175. The number of households benefitting from the social tariff is expected to increase from 1.9 million to 4.2 million, equivalent to 8 million people²⁰⁸.

6. Infrastructure

The French authorities should ensure a proper and timely adoption of the measures stemming from the TEN-E Regulation, including the establishment of the one-stop-shop for Projects of Common Interest (PCIs) (due by 16 November 2013), and other measures foreseen for 2014 and 2015, including the publication of the manual on the permit granting process for project promoters, and the adoption of legislative and non-legislative measures streamlining the environmental assessment procedures.

Electricity

The French electricity network is interconnected with all neighbouring countries through export capacities totalling 12 GW and import capacities of 8 GW. This export/import percentage represents between 8% and 10% of the French maximum consumption²⁰⁹. France is the largest exporter of electricity in the world according to the IEA (47.6 TWh in 2013). The use of import capacity from Germany²¹⁰ reached its maximum limit during 50% of the hours in 2013. The 2013 RTE's ten-year network development plan, foresees investments of 3 billion euros in infrastructure before 2017. The first direct current underground trans-European link should be commissioned between France and Spain in 2015, for a total investment of EUR 700 million, including EUR 225 million from the European Energy Programme for Recovery (EEPR).

²⁰⁵ 10th Consumer Markets Scoreboard,

http://ec.europa.eu/consumers/consumer_evidence/consumer_scoreboards/10_edition/index_en.htm

²⁰⁶ <http://www.cre.fr/reseaux/reseaux-publics-d-electricite/calculatrices-des-tarifs>.

²⁰⁷ Décret no 2013-1031 du 15 novembre 2013 portant extension à de nouveaux bénéficiaires des tarifs sociaux de l'électricité et du gaz naturel,
<http://www.legifrance.gouv.fr/affichTexte.do?cidTexte=JORFTEXT000028200044&dateTexte=&categorieLien=i>

d.

²⁰⁸ Based on CRE estimations.

²⁰⁹ CRE estimates on average Net Transmission Capacities in 2012,

<http://www.cre.fr/documents/publications/rapports-thematiques/rapport-interconnexions-2012>.

²¹⁰ Germany is the only net exporter of electricity to France.

In the context of the TEN-E Regulation, France has 9 PCIs that will help increase interconnection levels with the United Kingdom, Ireland, Belgium, Italy and Spain, remove bottlenecks and integrate RES to the network. Furthermore, these PCIS will contribute to reach the 10% Barcelona target by 2020 with all the neighbouring countries with the exception of Spain.

Gas

Natural gas infrastructure in France consists of 6 entry/exit points, 15 storage facilities and 3 LNG terminals²¹¹. Market development has been facilitated by the implementation of a full entry-exit system. The number of market zones has progressively been reduced. However, market development is limited by a division in three market zones. The creation of a single French hub by 2018, which requires important investments to eliminate internal congestions, is under study. In this respect, the commissioning by CRE of a cost-benefit analysis to evaluate the creation of a single French hub by 2018 was an important step forward. The interconnection capacity between France and Spain (doubling the size of the Larrau interconnection) was successfully upgraded in both directions in 2013, which further reinforces the North-South interconnections. Interconnection with Belgium and the reinforcement of the French network in the North of France by GRTgaz are ongoing, while a fourth LNG terminal in Dunkirk is being developed by EDF.

7. Security of supply

Electricity

System's adequacy is measured through the capacity margin/shortfall indicator²¹² addressed in the national adequacy assessment report elaborated by RTE. RTE considers it guaranteed until 2015²¹³. However from 2016 onwards, the risk of failure of the system is expected to increase. Despite a drop in total electricity demand, the hourly peak load of France has recorded a drastic growth rate over the past few years, increasing by 18% between 2006 and 2012. At the end of 2012 a decree introducing a decentralised capacity obligation mechanism, involving both the demand and the supply side, was approved. In 2013 RTE launched a consultation on the design and rules governing this new mechanism. The Minister of Energy approved the findings in November 2013. The expected first delivery year for the capacity market is anticipated between around 2017.

In addition, the modalities of several reserve procurement mechanisms to ensure short term operational security reserves (ancillary services, replacement) were adapted to foster competition, economic efficiency and to facilitate wider involvement of balance service providers.

Gas

In terms of infrastructures, the French system has good capacity levels at entry points, LNG terminals and storages. Recent market developments have, however, led to a decrease in LNG imports, due mainly to the rerouting of cargoes towards the Asian market where prices have been much higher than in Europe. As a result, the French market has suffered from higher prices in the Southern region

²¹¹ http://www.developpement-durable.gouv.fr/IMG/pdf/Panorama-energies-climat_E2013.pdf.

²¹³ Based on RTE indications on system adequacy, http://www.rte-france.com/uploads/Mediatheque_docs/vie_systeme/annuelles/bilan_previsionnel/bilan_actualisation_2013_v2.pdf.

which is heavily dependent on LNG. At the same time, the volume of gas in storages has been tightening up, raising some concerns about security of supply in case of cold winter. Consequently, through a governmental decree adopted in March 2014, the French authorities have decided to increase the level of mandatory storage that must be booked by all gas suppliers operating on the French market.

Irrespective of levels of interconnection capacities at the borders, it should be noted that France is constrained on its internal interconnection between the North and the South of the country. This constraint has not prevented gas flows to Spain to grow significantly after the commissioning of new interconnection capacity in 2013 at Larrau. Some interoperability limitations with other countries in north-western Europe can be mentioned, affecting the potential capacity of France to contribute to the security of supply of Germany and Belgium. Two projects are under discussion which could benefit security of supply. The doubling of the Burgundy artery between the PEG North and PEG South zones of GRTgaz and the de-odorisation of natural gas and the implementation of reverse flows at the border with Germany which would allow flows from France to Germany of about 100 GWh per day.

8. Key indicators

Electricity ²¹⁴		Gas	
Number of companies representing at least 95% of net power generation	>5	Number of entities bringing natural gas into country	20
Number of main power-generation companies	1	Number of main gas entities	4
Market share of the largest power-generation company	86%	Market share of the largest entity bringing natural gas	59%
Number of electricity retailers	183	Number of retailers selling natural gas to final customers	77
Number of main electricity retailers	1	Number of main natural gas retailers	3
Switching rates (entire electricity retail market)	5.7%	Switching rates for gas (entire retail market, 2011)	4.5%
Regulated prices for households – electricity	Yes	Regulated prices for households – gas	Yes
Regulated prices for non-households – electricity	Yes	Regulated prices for non-households – gas	Yes
HHI in power-generation market	>8,500	HHI in gas supply market	4,000-5,300

²¹⁴ Table contains 2012 data unless stated otherwise. Peak demand is taken from ENTSOE, Yearly Statistics & Adequacy Retrospective 2012. HHI in power-generation market is in terms of power generation. HHI in gas supply market is in terms of gross import of natural gas.

HHI in electricity retail market	>4,500	HHI in gas retail market	>3,000
Electricity market value ²¹⁵ (bn€)	34.259	Gas market value ²⁸ (bn€)	14.422
Installed generation capacity (MW, 2011)	131,353		
Peak demand (MW)	102,098		
Number of smart meters installed	270,000		

²¹⁵ Market value is an estimation of the size of the retail electricity and gas markets. It is calculated using data on electricity and gas consumption in the household and non-household sectors (average bands) and annual average retail prices.