

Greece

Key Issues

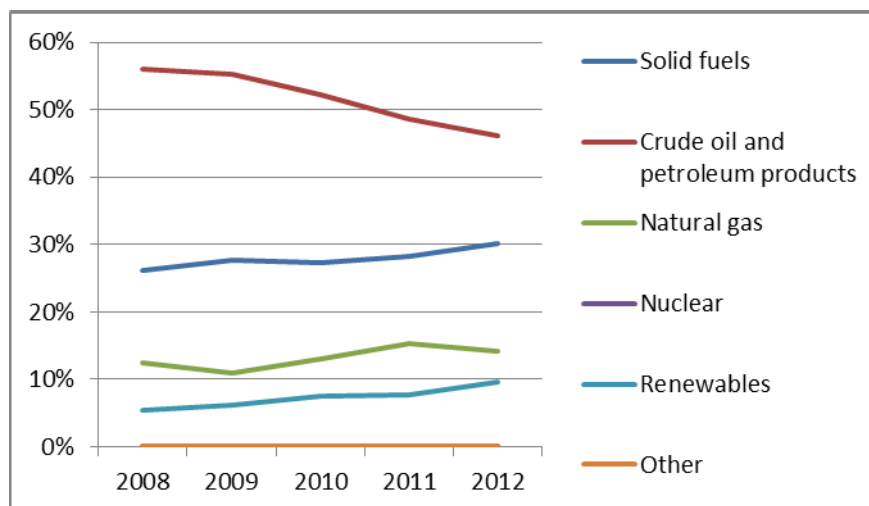
Electricity prices were fully liberalised in July 2013 but no effective entry into the market has taken place and the incumbent electricity company remains the dominant supplier as a result. Electricity prices should be cost-reflective and appropriate steps should be taken towards the creation of an investment-friendly framework in order to attract new potential suppliers and effectively open up the retail market to competition while ensuring a smooth transition for consumers.

In gas, the continued independent operation of gas TSO DESFA after its privatization needs to be ensured by the national regulatory authority. Greece should furthermore draw a timeline and an action plan for facilitating the transition to a more mature gas market model, fostering competition also on the retail level, ending the exclusivity rights of regional gas suppliers and thus allowing consumers to switch suppliers and reap benefits from the liberalised market.

1. General overview

The gross inland energy consumption in 2012 was 27.04 Mtoe, a decrease of 2.9% compared to 2011. Crude oil and petroleum products account for 46.2%. Solid fuels represent 30.1%, natural gas represents 14.1% and renewable energies provide 9.6% of gross inland energy consumption. In 2012, the renewables share in gross final energy consumption reached 15,1%²³⁰, and thus Greece is showing good progress towards achieving its 2020 RES target of 18%²³¹.

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



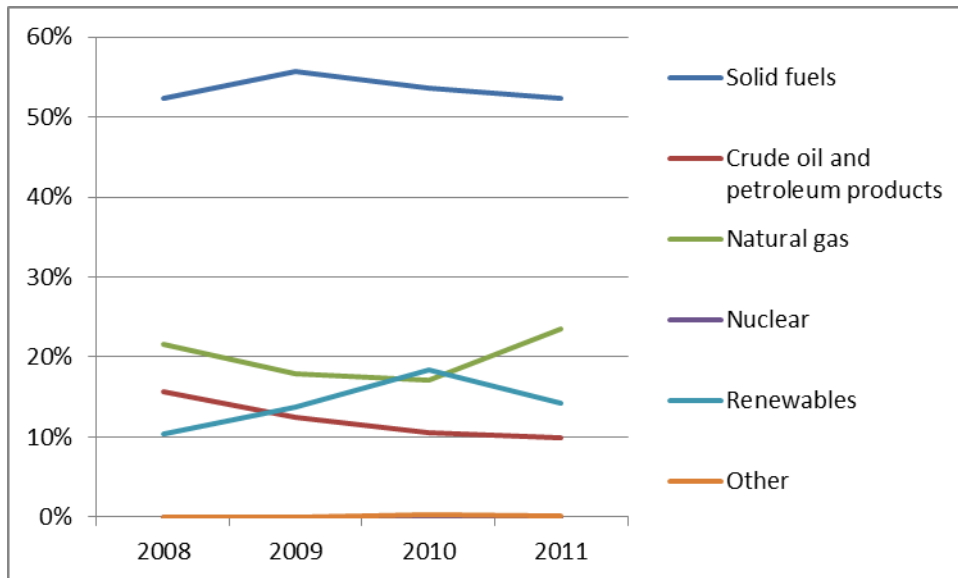
The gross electricity generation in 2011 was 59.4 TWh. Electricity is generated mainly by indigenous lignite, which represents 51% of the total electricity production, followed by natural gas (23.5%), renewable energies (14%) and crude oil and petroleum products (10%). The increase of electricity

²³⁰ Eurostat.

²³¹ Greek Ministry of Environment, Energy & Climatic Change, National Renewable Energy Action Plan, http://ec.europa.eu/energy/renewables/action_plan_en.htm.

generation in 2012 came mainly from renewables, which increased its share by 23% compared to 2011 levels. This was due to the additional solar photovoltaics installed in the year.

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



Cogeneration²³² of heat and power represents 4.5% of gross electricity generation in 2011²³³.

2. Regulatory framework

General

The Third Energy Package was implemented in Greek legislation in August 2011. In the gas sector a decoupled entry-exit tariff model was introduced in 2013 by the Regulatory Authority.

National Energy Regulator

The Regulatory Authority for Energy (RAE), which was established in July 2000, is an independent administrative authority. The Board of Commissioners of RAE is comprised of 7 members²³⁴. The budget of RAE was EUR 7.3 million in 2012, a decrease of 11% compared to 2011²³⁵.

Since the transposition of the Third Energy Package, the Regulator has been influenced by severe budget and salary cuts and, most importantly, a hiring freeze, that has limited its ability to carry out the increased powers and duties assigned to it by the Third energy package.

Unbundling

Following the Energy Law 4001/2011, the Public Power Corporation (PPC), which is the state owned vertically integrated electricity company, established a 100% subsidiary, ADMIE SA, which owns and operates the transmission system, according to the Independent Transmission operator (ITO) model.

²³² The share of electricity produced in combined heat and power plants (CHP).

²³³ Eurostat.

²³⁴ www.rae.gr.

²³⁵ RAE's Balance Sheet 2012, <http://www.rae.gr/site/file/system/docs/ActionReports/balance2012>.

In 2012, the Regulatory Authority for Energy (RAE) certified ADMIE SA as the independent power transmission system operator. The government decided to fully separate ADMIE from PPC, which should be completed still during 2014²³⁶. The distribution network ownership remained with PPC, although its operation was assigned to another 100% subsidiary of PPC, DEDDIE SA.

In the gas sector, the TSO of the national grid is DESFA SA. It is currently controlled by Hellenic Petroleum ("HP", 35%) and the Hellenic Republic Assets Development Fund ("HRADF", 65%). In 2012, HP and HRADF signed an agreement with the Azeri State-owned company SOCAR for the sale of 66% of the shares in DESFA. The certification of DESFA as controlled by SOCAR is currently pending.

3. Wholesale Markets

Electricity

In May 2013, the government decided to establish a new vertically integrated electricity company, which will be formed from the transfer of approximately 30% of the assets of PPC. The new company should be fully operational in the first quarter of 2015. 17% of the PPC's shares owned by the Hellenic Republic Assets Development Fund (HRADF) are foreseen to be sold by the first quarter of 2016.

In July 2013 RAE decided to reform aspects of the market design, which, due to the technical nature of the plant dispatch algorithm, creating stronger incentives for gas-fired power plants to follow the fluctuations of the demand curve and wholesale prices to better reflect marginal costs. Further reforms of the capacity mechanism are planned to be introduced in 2014.

The Greek electricity sector was hit in 2012 by a liquidity crisis. Several factors, such as unpaid electricity bills, liquidity tensions in the Greek banking system and structural deficiencies of the Greek energy market have tightened the cash position of PPC. In parallel, the market operator, LAGIE SA, had accumulated unsustainable debts due to the renewable energy support schemes, given the level of revenues from the market which was insufficient to cover the payments to RES generators. As a result, the main actors in the Greek electricity system have significant arrears²³⁷.

The Hellenic Parliament adopted a temporary tax on revenues from renewable energy installations in 2012²³⁸. Following an increase in the renewables levy in July 2013, the authorities committed to further adjustments every six months in order to eliminate the debt in the renewables account by the end of 2014²³⁹.

Gas

DEPA is the incumbent natural gas importer and supplier. Pending the privatisation process of DEPA the state owns 65% of DEPA while the remaining shares are held by Hellenic Petroleum SA.

Since 2010 other companies than DEPA a total of six companies have started importing natural gas. In 2012, from the total natural gas imports 48.1 TWh in Greece, 90% were imported by DEPA SA, and

²³⁶ Greek Ministry of Environment, Energy & Climatic Change.

²³⁷ The EC, The Second Economic Adjustment Programme for Greece First Review, December 2012.

²³⁸ The EC, The Second Economic Adjustment Programme for Greece First Review, December 2012

²³⁹ The EC, The Second Economic Adjustment Programme for Greece Third Review, July 2013.

ten percent (10%) by two other market players. However a sharp decline was observed in the year of 2013 in the percentage share of gas imports by the other parties. This is mainly attributable to the increased price of LNG worldwide as most of the competition in the market stemmed from third party access to the Revythoussa LNG Terminal. In March 2014, DEPA and GAZPROM EXPORT agreed to the decrease of the price of the imported natural gas by 15%, approaching the respective average EU price²⁴⁰.

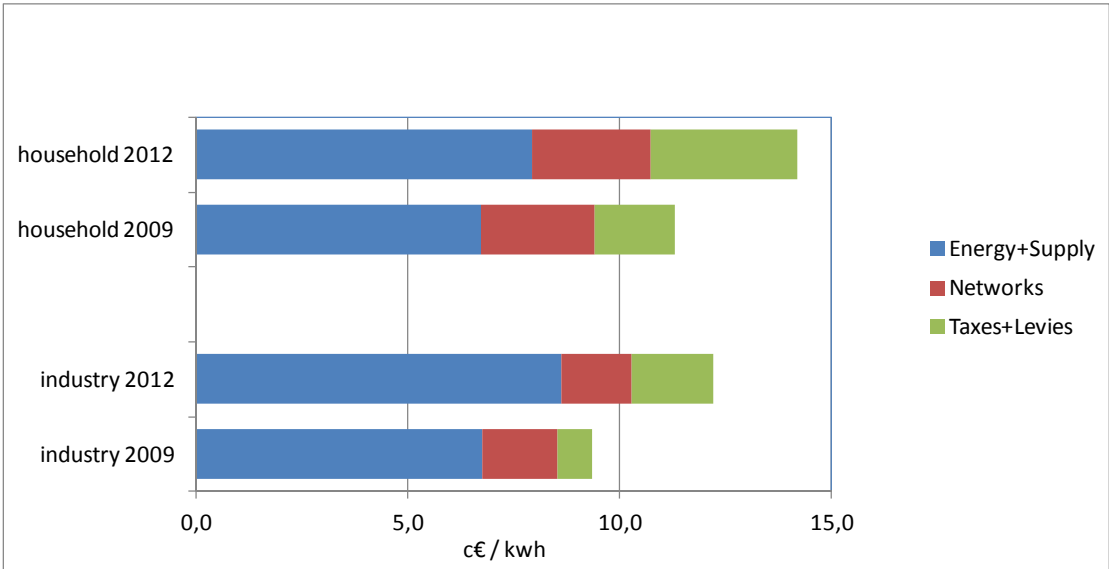
4. Retail Markets

Electricity

Electricity prices for both industrial and domestic consumers increased significantly in 2012 (29% and 37.3% respectively), although in both cases they remained below the EU average. In part these increases were due to the introduction of non-recoverable tax rates²⁴¹, but also due to the gradual move towards cost recovery and removal of cross subsidies. Retail prices in Greece also include a public service obligation levy to recover the higher cost of power generation in the non-interconnected islands. Low-voltage end user prices have been completely liberalised since 1 July 2013.

In 2012, domestic tariffs (competitive elements only) of the incumbent (PPC) increased by around 11-34%, depending on the consumption category. The evolution of retail prices in households and industrial consumers is presented in the following figures.

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



Electricity demand in 2012 declined by 0.2% compared to 2011. This decline was very close to the average EU27 rate²⁴². The concentration on the retail electricity market remains high. The switching

²⁴⁰ DEPA.

²⁴¹ The EC, Energy Prices and Costs report, 2014.

²⁴² ACER/CEER – Annual Report on the Results of Monitoring the Internal Electricity and Natural Gas Markets in 2012, November 2013.

rate in Greece was 3.6 % (volume-related) in 2012, mainly due to the exit of four suppliers from the market and the temporary (3-month) activation of the supplier of last resort. In 2013, electricity demand declined further by 1.9%, while the switching rate was confined to merely 0.27%.

Greece is proceeding with (and has mandated) a large-scale roll-out of smart meters to 80% of consumers by 2020. A pilot programme involving the replacement of 160,000 old electricity meters with smart metering systems was announced, and is expected to be completed in 2015.

Gas

Distribution and supply of natural gas to retail consumers is done by three companies (called EPAs) for the regions of Attica, Thessaloniki and Thessalia. DEPA supplies natural gas to these three local monopoly distributors. In general, only those customers with an annual consumption of greater than 100 GWh are eligible to select their supplier of gas in Greece. A major reform of the Greek gas retail market is envisaged that seeks to abolish the regional monopolies of the EPAs for gas supply and to progressively extend eligibility to all retail customers. A total of ten natural gas supply authorizations have been issued in the period 2010-2013.

Natural gas price in households was EUR 2.3/GJ in 2012. The total taxes were EUR 4.8/GJ (EUR 3.2/GJ for VAT and EUR 1.6/GJ for other taxes). The tariff for the industrial sector in 2012 was EUR 16.1/GJ, while the non-recoverable taxes were EUR 1.6/GJ²⁴³. The Pre-Tax Total Price (PTP) for gas in Greece was the highest among EU-27.

Gas demand in 2012 decreased by 7.7% compared to 2011. DESFA forecasts that gas demand will almost double by 2019, compared to 2009 levels. This increase will mainly come from electricity generation.

5. Consumers

Despite considerable improvement since 2012 (of 4.9 points), the retail electricity market is assessed fourth lowest in the EU, with a score which is almost 7 points below the EU average (65.2 compared to 72.0). In addition, the market is considered to be the worst of all 31 domestic services markets. Overall consumer satisfaction is the 2nd lowest in the EU and the incidence of consumer complaints is the 2nd highest²⁴⁴.

The assessment is more favourable for the gas market for which Greece is more than 4 points above the EU average (78.5 vs. 74.1), which corresponds to 6th position in EU and 16th position in the ranking of 31 domestic services markets. Greek consumers show the 3rd highest level of trust in providers. However, the percentage of Greek consumers who have switched their provider or tariff plan with the existing provider in the past 12 months is the lowest in the EU (less than 1% against an average of almost 10% in the EU).

²⁴³ Eurostat.

²⁴⁴ 10th Consumer Markets Scoreboard,

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

A total of 9.8% of all residential customers benefit from a social tariff, to a total of 560,126 in February 2014²⁴⁵. In 2013, the Electricity Supply Code was published, which also includes provisions for consumer protection measures and a Ministerial decision was issued defining criteria, conditions and the procedure for a consumer to be classified as vulnerable electricity consumer and to be included in the registry.

The provisions of the definition of vulnerable gas consumers of Law 4001/2011 have not been fully adopted by the EPAs. Compliance with the categories of vulnerable groups and economic protection schemes and the Supply Code is not yet available. The distribution license of the EPAs, operating under a regime of exclusive right for both the activities of distribution and supply of gas in their areas, include some non-economic provisions for domestic customers “with special needs”²⁴⁶.

6. Infrastructure

As required by the TEN-E Regulation, Greece has established a one-stop-shop for the permitting of Projects of Common Interest (PCIs).

Electricity

In 2012, the total installed generating capacity was 18.879 MW²⁴⁷. Thermal power plants accounted for 9.624 MW, hydroelectric power plants were 3.017 MW, wind power farms were 1.466 MW and solar photovoltaic power generating units were 1.126 MW. The electricity generation capacity of wind farms increased by 23%, while the electricity generation capacity of photovoltaic parks more than tripled, compared to 2010 levels²⁴⁸.

The Greek network has a central position in South-East Europe with the existing and future connections to Italy, Bulgaria, Turkey and the Western Balkans. Therefore, Greece could play the role of an electricity hub in the region. Greece is investing in the connection of islands to the grid and the integration of RES.

In October 2013, two electricity interconnections were labeled PCIs by the European Commission: the AC 400kV interconnection between Maritsa East 1 (in Bulgaria) and Nea Santa (in Greece) and the DC 600kV underwater interconnection between Israel, Cyprus and Greece²⁴⁹.

Gas

Greece has the potential to become a regional gas hub as it is located at the EU entry door of the Southern Gas Corridor, has access to LNG and gas supplies from Russia. It has therefore all the characteristics needed for the development of a liquid hub, providing price competition, security of supply and market integration in the Region.

The Trans Adriatic Pipeline (TAP) was selected by the Shah-Deniz Consortium in June 2013 as the route to transport gas from the Shah-Deniz II field in Azerbaijan to Europe. Together with the

²⁴⁵ DEDDIE SA.

²⁴⁶ RAE, 2012 National Report to European Commission, 2014.

²⁴⁷ LAGIE, Monthly Report December 2012.

²⁴⁸ LAGIE, Monthly Report December 2012.

²⁴⁹ Greek Ministry of Environment, Energy & Climatic Change.

Southern Caucasus Pipeline and the Trans Anatolian Pipeline, the TAP will form part of the Southern Gas Corridor allowing for the supply of Europe with gas from Caspian sources.

The regulatory framework for the development and operation of TAP was also concluded in June 2013 following the comprehensive assessment of TAP AG's exemption application by the regulatory authorities of two Member States (Greece and Italy) and one Contracting Party of the Energy Community (Albania) on the basis of the energy third package.

Several projects are currently planned to enhance supply opportunities and connections with its direct neighbors. This is most notably the case with the upgrade of the existing LNG terminal (Revithoussa) and the development of new ones, interconnections with Bulgaria through the reverse flow in Kula-Sidirokastron and the IGB, to Italy with the Trans-Adriatic Pipeline and, potentially, with IGI Poseidon and from Turkey with the upgrade of the compressor station in Kipi.

7. Security of Supply

Electricity

Electricity demand in 2012 remained fairly stable, exhibiting a minor decline of 0.5% relatively to 2011, while electricity production increased by 3.54% compared to 2011. Exports of electricity in 2011 increased by 40.4% compared to 2010, particularly due to exports to Albania²⁵⁰. Imports of electricity decreased by 15.7% in 2011, reaching 7,180 GWh. The main importers were Bulgaria and Turkey, accounting for 75.4% of total imports²⁵¹.

To enhance security of supply to the Aegean islands and facilitate further development of renewable energy, underwater interconnection of the Cyclades islands is planned by ADMIE. The first phase of the interconnection will be completed by 2016 while the second phase is planned for 2017. According to the last approved 10-year network development plan²⁵², the interconnection of Crete is planned to take place during the period 2017-2020.

Gas

The demand for natural gas in 2011 was 4.80 bcm, out of which approximately 66% was for the power generation sector²⁵³. Imports of natural gas amounted to 41.8 TWh in 2013, the majority of which (66% of total imports) came from Russia²⁵⁴. During 2012 DEPA imported gas primarily through existing long-term contracts from three different suppliers, namely Gazprom, Sonatrach (LNG) and BOTAS, while several spot cargoes were also unloaded in Revithoussa.

During 2012, there was no change regarding interconnection infrastructure of the Greek transmission system with neighboring gas systems, namely Bulgaria and Turkey.

RAE has been assigned by the Greek State as the Competent Authority for the implementation of the provisions of Regulation 994/2010/EC concerning measures to safeguard security of gas supply.

²⁵⁰ Eurostat.

²⁵¹ Eurostat.

²⁵² Government Gazette B' 556/05.03.2014.

²⁵³ RAE, 2012 National Report to European Commission, 2014.

²⁵⁴ Eurostat.

During 2011-2013 the risk assessment study, the preventive action plan, the emergency action plan, and the joint reverse flow proposal of the two TSOs, of Greece and Bulgaria, for the activation of reverse flow on the border of Greece and Bulgaria have been approved by RAE.

8. Key indicators

Number of companies representing at least 95% of net power generation	3	Number of entities bringing natural gas into country	3
Number of main power-generation companies	1	Number of main gas entities	3
Market share of the largest power-generation company	63.5%	Market share of the largest entity bringing natural gas	88.6%
Number of electricity retailers	11	Number of retailers selling natural gas to final customers	4
Number of main electricity retailers	1	Number of main natural gas retailers	3
Switching rates (entire electricity retail market, by volume)	3.6%	Switching rates for gas (entire retail market)	0.0%
Regulated prices for households – electricity	No	Regulated prices for households – gas	Yes
Regulated prices for non-households – electricity	No	Regulated prices for non-households – gas	Yes
HHI in power-generation market	6,183	HHI in gas supply market	N/A
HHI in electricity retail market	>9604	HHI in gas retail market	
Electricity market value ²⁵⁵ (bn€)	4.249	Gas market value ³⁰ (bn€)	0.753
Installed generation capacity (MW)	16,521		
Peak load (MW)	9,894		
Number of smart meters installed	N/A		

²⁵⁵ 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.