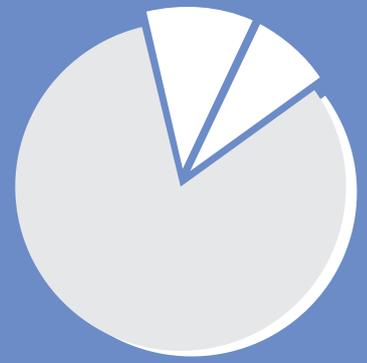


energy
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Greece

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Maria Kottari



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**Energy Fact Sheet
Greece**

Maria Kottari

February 2014

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1. Introduction

Key Economic Indicators

Population	11.28 million
Gross Domestic Product (GDP)	168.11 billion 2000 USD
Energy Production	10.08 MTOE (total) / 0.89 TOE (per capita)
Energy Consumption	29.44 MTOE (total) / 2.61 (per capita)
Electricity Consumption (per capita)	5.540 kWh
CO2 Emissions (per capita)	8 t

Source: EIA (2009)

The Greek energy sector is characterized, in general, by the presence of limited domestic resources, as shown in Table 1, resulting in an almost complete dependence on external energy resources. The lack of domestic energy resources increases the dependence from external energy suppliers and the need for energy mix diversification.

Table 1 – The Greek Energy Mix (supply and consumption)¹

(ktoe)	Production	Imports	Exports
Coal and Peat	8,176	173	-1
Crude oil	73	20,467	-998
Oil products	0	6,991	-7,843
Gas	12	2,962	0
Nuclear	0	0	0
Hydro	462	0	0
Geothermal, solar	428	0	0
Other renewables	929	57	0
Electricity	0	654	-278
Heat	0	0	0
TOTAL	10,080	31,303	-9120

As shown in Table 2, the energy dependency on imported sources is steadily around 70% of the energy consumed. Hydrocarbons are the main energy source in Greece with oil products representing the largest share, followed by gas that for the time being represents only a small fraction, despite its rapid growth over the past years.

¹ Source: IEA, 2009.

Table 2: The Greek energy dependency²

Import dependency (%)	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Solid Fuels	8.5	9.2	6.9	4.6	5.0	4.1	2.6	4.1	5	2	5.1
Hard Coal	105.8	10.7	102	82.5	102.1	11.2	80.6	83	12.7	78.6	100.5
Petroleum Fuels	100.2	98.5	102.5	96.1	104.8	97.7	101.2	100.9	101.2	96.7	98.5
Crude and NGL	99.5	98.9	101.3	97.5	104.4	95.2	99.2	100.7	101.5	98.0	99.5
Gases fuels	99.1	99.2	97.4	98.8	97.5	99.1	99.1	99.1	100	99.7	99.9
Natural Gas	99.1	99.2	97.4	98.8	97.5	99.1	99.1	99.1	100	99.7	99.9
TOTAL	69.5	68.9	71.5	67.5	72.7	68.6	71.8	71.2	73.3	67.8	69.1

Table 3: The Greek Energy Mix (use)³

(ktoe)	Industry	Transport	Residential	Commercial & Public Services	Agriculture & Forestry	Fishing	Non-energy	Other
<i>Coal and Peat</i>	168	0	4	0	0	0	0	4
<i>Crude Oil</i>	0	0	0	0	0	0	0	0
<i>Oil Products</i>	1,433	8,243	2,199	293	634	0	659	3,126
<i>Gas</i>	408	15	256	145	0	0	247	401
<i>Nuclear</i>	0	0	0	0	0	0	0	0
<i>Hydro</i>	0	0	0	0	0	0	0	0
<i>Geothermal, solar</i>	0	0	191	4	8	2	0	205
<i>Biofuels & Waste</i>	242	78	590	1	15	0	0	606
<i>Electricity</i>	1,210	20	1559	1,700	216	0	0	3,476
<i>Heat</i>	0	0	49	0	0	0	0	49
Total	3,461	8,356	4,848	2,143	873	2	906	7,865

As results from the Tables 1 and 3 above, the share of renewable energy sources (RES) in primary energy supply, despite being close to the EU average, is rather limited compared with the country's RES potential. Greece has a significant capacity in wind installations, but electricity production is still based in lignite, thus producing high levels of CO₂ emissions.

² Source: European Commission, 2012.

³ Source: IEA, 2009.

2. Legislative background

The energy-related legislative measures in Greece aim at the liberalization of the internal energy market and the convergence of the Greek legal framework to the European one.

One important step towards this direction was the establishment of the Energy Regulatory Authority (RAE) in 1999⁴. The RAE is an independent administrative authority and the main advisory and recommendatory body for energy-related issues. Instituted as a result of the convergence process of the Greek legislation with the EU Directive 96/92 and appointed with the task of modernizing the energy markets in Greece, the RAE stands neither as an auditing nor as a legal authority. Its purpose is to facilitate the free and fair competition in the energy market through the recommendation and monitoring of prices, of market operation and licensing and through establishing an information and assistance point for both consumers and investors. The purpose of the RAE is to ensure the achievement of the long-term strategic objectives of energy policy as well, while promoting the public interest.

The legislative act n. 4001/2011, adopted in 2011, regulates the functioning of the energy markets of electricity and natural gas containing also provisions about the exploration, the exploitation and the development of hydrocarbons' transmission networks, including the necessary pipelines and grid connections.

The importance of this legislative act lays on the fact that it incorporates the EU Directives 2009/72 and 2009/73, of the European Parliament and of the Council, concerning common rules for the internal markets in electricity and natural gas. The so-called Third Energy Package for electricity and gas markets was adopted in order to allow consumers to choose between different suppliers and to ensure market accessibility to all different suppliers.

Following the EU legislation, the Greek state implemented the measure of the legal and functional unbundling of the Transmission System Operators (TSOs). In the case of natural gas, this development is of particular interests. Devastated by the economic crisis, the Greek state has a binding goal to raise 1,8billion Euros by assets selling⁵. The Greek Public Gas Corporation DEPA S.A. and the Administrator of the National System of Natural Gas, DESFA S.A. are two of the most prominent assets. The recent public auction (May-June 2013) saw the Russian state-run gas company Gazprom withdraw its bid, which was also the sole binding offer for DEPA; later, the Azeri state-run company SOCAR acquired a majority stake in DESFA⁶.

As far as exploration and exploitation of hydrocarbons resources are concerned, the legislative act no. 4001/2011 establishes the National Agency of Hydrocarbons Research for the exclusive management of the Greek state rights, the formation of a modern and competitive framework, the selection of the concession areas with strict criteria, the business promotion of selected areas, the selection of contractors and the strict monitoring of research and production.

⁴ By the Greek law 2773/22-12-99, as amended by Article 5 of Law 2837/2000.

⁵ "Greece dismisses fears of funding gap from asset sale delays", *Reuters*, 25 June 2013.

⁶ "Socar announces principal DESFA deal", *Kathimerini*, 21 June 2013.

3. Hydrocarbons markets and industry: key features and issues

3.1. Oil sector

3.1.1. Refining

The "Hellenic Petroleum Group" has three refineries (Aspropirgos & Elefsina in Attiki and one in Thessaloniki in Northern Greece) with a nominal annual refining capacity of 7.5 million tons, 5 million tons and 3.4 million tons crude oil respectively. That comprise 68% of the country's total refining capacity. In addition, via its affiliated company EL.P.ET. BALKANIKI, the Group holds since 1999 the majority shares in OKTA AD SKOPJE, which operates the only refinery in FYROM. The capacity of the OKTA refinery is 2.5 million tons.

"Motor Oil Hellas" is the second major oil refining company (one refinery in Corinthos) of the Greek energy market and it is considered to be one of the greatest contributors to the domestic economy as well as a key market player in the broader region. It has an annual capacity of 100,000 barrels per day. "Motor Oil Hellas" shareholders come exclusively from the private sector and the company is listed several Athens Stock Exchange.

3.1.2. Petroleum products and power generation

The "Hellenic Petroleum Group" is also active in downstream retailing of petroleum products through subsidiaries both in Greece (EKO A.B.E.E.) and abroad: Cyprus, Former Yugoslavian Republic of Macedonia (FYROM), Georgia, Bulgaria, Serbia, Montenegro and Albania. In terms of production and trading of petrochemicals and related chemicals, the Group is the sole producer in Greece.

In the area of power production and trading, the Group's activities mainly focus on the production of electricity and its cross-border trading. In particular, since 2005 the Group's subsidiary T-POWER (fully owned) has been the first, independent power producer in Greece with a total established capacity of 395MW, using combined-cycle natural gas technology and with a maximum production capacity of 3,300,000MWh. The total investment for this unit amounted to about €250m. The "Hellenic Petroleum Group" entered into a strategic alliance with Italian EDISON, in order to create one of Greece's leading power producers: ELPEDISON. The recently formed 50:50 joint venture, aims to a power generation portfolio of 1,500-2,000MW, out of which a 390MW CCGT plant is already in operation and a new 420MW CCGT plant is expected to start its operation in 2010.

3.1.3. Mining and oil exploration

"Energiean Oil & Gas" is an international upstream oil & gas exploration & production company with a focus on the Mediterranean and North African Basin. The company is the only operator of oil and gas in Greece operating Prinos and South Kavala development areas.

In Greece, the company produces hydrocarbons through a system of three offshore oil platforms, one gas platform and a comprehensive onshore plant which offers storage, offshore loading, de-sulphurization and power generation capabilities.

The company has been recently given permission by the Egyptian authorities for the exploitation of the East Magawish Block in the area of Gulf of Suez and the West Kom Ombo Block in Upper Egypt.

3.1.4. Ports and pipelines

There are ten oil terminals in Greece. Seven of them are located in the Attiki Area (Athens) and the remaining three in the Thessaloniki area. Six oil terminals can accept crude oils, of which four are located near the refineries; they are Aspropyrgos, Elefsina, Thessaloniki, Aghioi Theodori, Pachi (Megara) and Agia Trias.

There are two oil pipelines in Greece. The first, a 220-km, 16-inch crude pipeline with a capacity of 50 kb/d (2.5 Mt/yr), links the Thessaloniki port in Greece with the OKTA refinery in FYROM. It is owned and operated by Hellenic Petroleum. The second, a 53-km, 10-inch JET A-1 pipeline with a capacity of 42 kb/d, connects the Aspropyrgos refinery with Athens International Airport.

The Burgas – Alexandroupolis oil pipeline⁷ was destined to transport Russian and Caspian oil to western markets: first transferred by tankers from the Russian port of Novorossiysk to the Bulgarian Black Sea port of Burgas and then through a new pipeline to the Greek Aegean port of Alexandroupolis. Proposed in 1994 by Greek and Russian companies, an intergovernmental agreement for the construction of the pipeline was signed between the three countries in Athens in 2007. The project was presenting an alternative route for Russian oil to bypass the Bosphorus and the Dardanelles. This pipeline would create for both Greece and Bulgaria a great opportunity to become energy transit links towards Europe. However, the realization of the project faced numerous challenges along the way. On December 7th 2011, the Bulgarian government announced its definitive decision to withdraw from the pipeline project. The main reasons for Bulgaria's decision were stated to be environmental risks, financial concerns and mismatch with the country's national interests. However, environmental concerns as the real reason behind the Bulgarian government's opposition to the project is debatable, as Burgas hosts also the country's largest oil refinery, owned by Russian company LUKoil and tankers of 300.000 tones call the port regularly in order to unload oil. Faced with opposition from the Bulgarian government, the Russian side seems to have lost interest in the project⁸. Admittedly, the Burgas – Alexandroupolis pipeline has been seen as a cornerstone for the Greek strategic objective of becoming a key transit country for hydrocarbon flows from Caspian and Black Sea towards European markets. The cancellation of this project, given the serious economic crisis in Greece, is affecting negatively the country's short and long term energy and economic strategic plans.

⁷ Maria Kottari et al., "Energy politics, pipelines and the Black Sea basin: On the route to diversification of EU energy sources", *Strategy Paper*, European Centre for Energy and Resource Security (EUCERS), King's College, London, 2013.

⁸ Dimitar Bechev, "Sofia view: Oil pipeline cancellation questions", *European Council on Foreign Relations*, February 2011.

3.1.5. Taxation

Compared with other OECD Europe countries, Greece has a relatively low tax on gasoline and diesel (55.5% and 47.4% in 2009, respectively). In the period of 1999 – 2005 excise taxes have been quite stable (at around 0.296 Euro and 0.245 Euro per liter) but since 2006 the Administration has gradually raised excise taxes on the two products.

3.2. **Gas sector**

3.2.1. Articulation and operators

The Greek gas network has been greatly expanded recently since a new equilibrium between oil and gas consumption is both a Greek and a European objective. The construction of the natural gas distribution network is one of the most important infrastructures of modern Greece; an energy project that can be compared in size only with the electrification of the country. The National System Natural Gas includes:

- a) The main high pressure gas pipeline between the Greek – Bulgarian border and the area of Attica with total length of 512km;
- b) sub-sectors with total length of 706 km that connect different parts of the country's main pipeline;
- c) LNG facilities on the island of Revithoussa;
- d) Additional facilities and infrastructure.

The Hellenic Gas Transmission System Operator (DESFA) is an enterprise founded in 2007 after the legal separation of distribution and marketing activities of the Public Gas Corporation (DEPA SA), which firstly introduced natural gas to Greece, pursuant to Law of Greek state 3428/2005 for the liberalization of natural gas market.

Apart from operating, maintaining and developing the National System of Natural Gas, DESFA also:

- Revises and introduces, after the approval of the relevant public institutions (Energy Regulatory Authority, Ministry of Development) pricing policies and procedures regarding the distribution of natural gas to the wholesale distributors, which are responsible for the final distribution of natural gas to the end-consumers;
- Provides access to the National distribution network of Natural Gas to each one who wants to enter the market of gas distribution, by ensuring transparency, accountability and compliance with competition rules.

DEPA's key missions are:

- To sell natural gas to large, mainly industrial consumers, with an annual consumption of over 10 million cubic meters;
- To sell natural gas to Gas Supply Corporations (49% privately owned);
- To distribute natural gas to regions where Gas Supply Companies have not yet been established;

- To sell natural gas for transportation purposes.

The distribution of natural gas for household and industrial use is mainly operated by Gas Supply corporations, whose 51% of shares belong to DEPA. Currently, the natural gas distribution network covers only the areas of Attica, Thessalia and Thessaloniki resulting in a limited use of the fuel in the rest of Greece. The domestic and industrial users of natural gas profit from the more competitive prices in comparison to oil, as well as cleaner and safer infrastructures (the installation of which is nevertheless expensive). The Group is currently owned 65% by the HRADF (Hellenic Republic Assets Development Fund/TAYPED) and 35% by Hellenic Petroleum (HelPe).

3.2.2. Ports and pipelines

There are three entry points for the natural gas transportation system of Greece. The first entry point (with a maximum import capacity of 5.8 bcm per year) is at Promahonas, located on the Greek-Bulgarian border, via which natural gas from Russia is imported by a pipeline through Ukraine, Moldova, Romania and Bulgaria.

The second entry point (2.3 bcm/yr) is at Kipoi on the Greek-Turkish border, which connects the Greek national natural gas transmission system (NGTS) with the corresponding Turkish transmission system and enables gas imports from Turkey. The completion of TAP pipeline will use the NTGS of Greece and Turkey up to Komotini and then a new onshore pipeline connecting Greece and Albania will be constructed. This new pipeline will be part of an Independent Natural Gas System (INGTS) and not part of the Greek NGTS.

The Greek LNG sector is under expansion via greater imports. Currently the LNG regasification terminal on Revithoussa Island, the third entry point, has a capacity of 5.3 bcm/yr. LNG imports, in 2009 were equivalent to 2.3 mcm/d, which indicates that only 15% of the normal capacity of the LNG terminal was used.

The Greek ports could serve as re-gasification terminals but the relatively high infrastructure costs as well as the lack of international pipeline connections between Greece and its neighbors are holding back the development of this market.

These three entry points provide the Greek national gas transmission system with a maximum import capacity of 13.4 bcm per year. The total volume of imported gas that can be fed into the national transmission system was estimated at 6.5 bcm per year in 2009, much lower than the maximum import capacity, mainly due to the limited transport capacity of the main transmission gas pipelines linked to southern parts of the country.

Given Greece's geographic location, linking major gas exporters in the Southern gas corridor in the Caspian, Mediterranean and Middle East to gas importers in Southeast Europe, Italy and Western Europe, the Greek state is currently in discussions with various parties regarding participation in a number of international gas pipeline projects including IGB, ITGI, East Med, TAP and South Stream. On 28 June 2013, the consortium developing Azerbaijan's Shah Deniz gas field chose to award the transportation of its natural gas to the Trans-Adriatic Pipeline, originating at the Turkish-Greek border and ending in Southern Italy. The rival Nabucco West project was discarded due to commercial and financial reasons.

4. Renewable energy and energy efficiency

Following the EU binding policies related to the production of electricity from renewable sources and in order to establish security and diversification of its energy supply, and ensure environmental protection and sustainable development, Greece promotes the establishment of power using renewable energy sources (RES).

Renewable energy sources have started to play an increasingly important role in Greece's energy production profile. Following the EU binding policies related to the production of electricity from renewable sources and in order to establish security and diversification of its energy supply, and ensure environmental protection and sustainable development, Greece promotes the establishment of power using RES.

Renewable energy sources have started to play an increasingly important role in Greece's energy production profile. Current production is based on large-scale hydropower stations operated by PPC. Renewables account for approximately 5% of electricity production, not including the 5% contribution of hydropower stations.

The present investment framework calls for a striking increase in production from Wind, Solar, Geothermal, and Biomass/Biofuels, which are expected to contribute increasingly as a transport fuel.

In the first semester of 2011, the total installed capacity of RES stood at 2,022.2MW, 75% of which came from wind energy production, 11.5% from solar, and the remaining 13.5% from biomass and hydro-electric production units.

Greece's target is to produce electrical energy from RES at a 40% share of the total electrical power by 2020⁹. The graph below shows the development of the installed capacity of RES compared to the EU 2020 targets¹⁰ regarding renewable energies' share in the energy mix of its member-states.

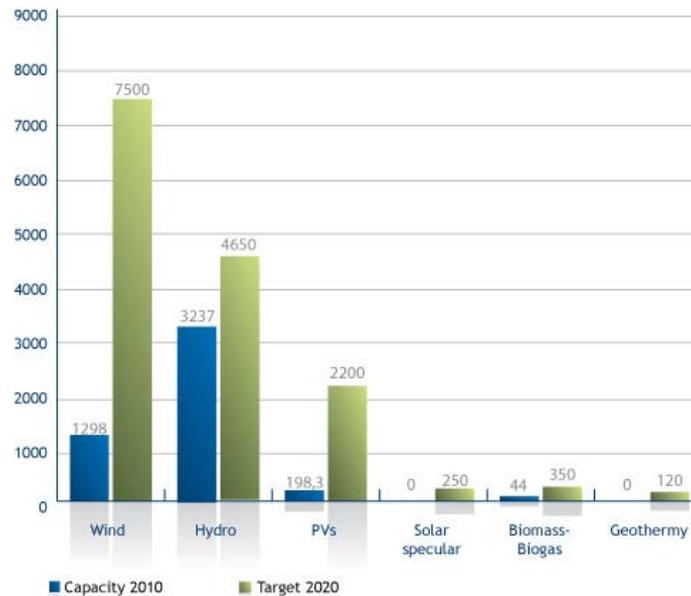
The development of solar power in Greece targets economic growth and job creation while within the context of the debt crisis, solar plants development and especially the HELIOS project has been presented by media as a Greek attempt to use its natural assets in order to attract foreign investments, to stimulate growth and to create job opportunities.

Tables 4 and 5 below present the most important photovoltaic (PV) parks installed and those under construction. The total photovoltaic parks capacity, installed by PPC renewables, is 0,7MW. According to the Greek operator of electricity market, LAGIE¹¹, in April 2013 the total photovoltaic parks capacity was 1,922MW.

⁹ Data source: <http://www.investingreece.gov.gr/default.asp?pid=38&la=1>

¹⁰ See more at: http://ec.europa.eu/energy/renewables/targets_en.htm

¹¹ See more at: <http://www.lagie.gr/nc/en/home/>

Graph 1: Development of installed capacity RES-2020 target

Table 4: Photovoltaic (PV) parks installed in Greece¹²

LOCATION	POWER (MW)
Atherinolakos (island of Crete)	0.48
ETHEL (Athens- public transports)	0.02
ILPAP (Athens- public transports)	0.02
ISAP (Athens – public transports)	0.02
Kithnos (Cyclades)	0.10
Sifnos (Cyclades)	0.06

Table 5: Photovoltaic (PV) parks under construction in Greece¹³

LOCATION	POWER (MW)
Megalopoli (South)	50.00
Ptolemaida (North-West)	200.00
PPC Roofs Athens	0.79
PPC Roofs Thessaloniki (North)	0.35
Stratos Agrinio (West)	9.70

¹² Source: PPC Renewables.

¹³ Source: PPC Renewables.

The HELIOS Project plans the construction of 2.2 GW PV systems in Greece (around 15,000 hectares of state-owned military lands, farmland and former mining areas) by 2020 and 10 GW by 2050. Most of the solar-generated electricity, 3 to 10 GW, will be transmitted to Germany, and the project's revenues are estimated at 80 –100 billion Euros over the course of 25 years. Besides that, the project could potentially create between 30,000 and 60,000 job positions, but it is still unclear how many jobs will be created in Greece, especially if the majority of the PV systems are constructed in Germany.

The project has been described as Germany's attempt to take advantage of the Greek solar intensity, in order to increase the share of solar energy in its energy mix. HELIOS is, undeniably, a large potential privatization project for Greece as it involves the attraction of significant FDI, a key factor for the improvement of economic growth prospects. Besides, it will assist the implementation of the RES Directive and the upgrade of its RES capacity.

The HELIOS project, however, should be seen in the wider spectrum of the environmental agenda, included in the EU energy policy, precisely the realization of the 20-20-20 targets and the relative RES EC Directive 2009/28. According to the European Commissioner for Energy, HELIOS could become a pilot project for the energy production strategic change and can be the momentum for an increase in the use of RES in order to address the challenge of climate change and reduce the EU dependence from imported fossil fuels sources. The required transportation infrastructures, upon the completion of HELIOS project, could accelerate the implementation of grid interconnections in the ENTSO-E (European Network of Transmission System Operators for Electricity) and the perspective of an integrated European energy network creation included in EU Communication regarding energy infrastructure priorities for 2020.

5. Energy policy

Greek authorities place energy policies high in their agenda, because of the country's high dependency on external sources, the environmental deterioration caused by the extensive use of hydrocarbons and the need for the development of the renewable energy sector. These interrelated issues require a holistic approach. The establishment of a separate Ministry of Environment, Energy and Climate, as of October 2009, could eventually become the right instrument for the implementation of an integrated energy policy. According to the Ministerial declarations, the leading objective of country's energy policy is, as expected, to guarantee a secure flow of energy resources and to efficiently manage these resources in order to meet domestic demand, under the most favorable conditions for both the market and the end-consumers. The second objective is to establish energy stocks, alliances and alternative channels in order to meet the needs of the domestic energy market during the times of energy crisis and thus to protect consumers via the application of stabilizing mechanisms. Finally, energy policies should promote the sustainable development of the energy sector, in relation to the environmental protection.

For the realization of the aforementioned aims and goals, the Greek state initiated specific policies and measures in line with the international and European cooperative frameworks¹⁴, agreements and protocols. These facts require the adjustment and the harmonization of the Greek energy market and related policies with the contemporary perceptions and requirements of the regional and international energy sector. As far as the issue of external energy dependency is concerned, Greece, not possessing energy autonomy, recognizes the paramount importance of good relations with supplier countries. Ensuring the access to energy resources with favorable terms is the primary objective for the energy-dependent countries, like Greece. Hence, the establishment of national energy policies is inevitably correlated with the external relations in the same field. At the same time, Greece is trying to counterbalance its energy dependency with its transportation potential in becoming a main transit route.

The wider region of Southeastern Europe and East Mediterranean has a strategic significance for hydrocarbons transit and thus represents a key region for the EU energy security targets aiming at the differentiation of energy sources and the diversification of the supply routes¹⁵. Greece occupies a strategic position in the EU energy infrastructure priorities¹⁶ in the region of Southeastern Europe and East Mediterranean, aiming at reducing dependency from Russian gas supplies, through the pipelines projects included in Southern Gas Corridor strategy¹⁷. The recently discovered huge offshore gas fields in Israel and Cyprus make Eastern Mediterranean¹⁸ a promising hydrocarbons production region and Greece one of the main tran-

¹⁴ Maria Kottari, "Which is the role of Greece in the EU Energy Policy?", Greek Centre of European Studies and Research (EKEME), Working Paper Series no. 5, July 2012.

¹⁵ Michael A. Kohler, "EU Energy Policy: Engaging with partners beyond our borders", *EUCERS Newsletter*, no.11, March 2012.

¹⁶ Yannis Stournaras, Svetoslav Dunchev, Nikos Paratsiokas, "Greece as Europe's Energy Highway: Natural Gas pipeline projects going through Greece", *Foundation for Economic and Industrial Research*, Athens. November 2011.

¹⁷ Friedbert Pfluger, "The Southern Gas Corridor: Reaching the home stretch", *European Energy Review*, 12 January 2012.

¹⁸ Vlad Popovici, "The Levantine Basin: A Mediterranean Hydrocarbon Saga Begins for Greece, Turkey, Cyprus and Israel", *Balkan Analysis*, 13 January 2012. See also: Maria Kottari, "The disputed Aegean: Hy-

sit links to the EU markets. The Greek hydrocarbons potential in the regions of Crete and Ionian Sea has attracted international interest¹⁹ while, in the shadow of the current economic crisis, the privatization of the Greek gas assets may have serious impacts on the EU gas strategy. The owners of DESFA and DEPA would have the opportunity to play a key role in an emerging strategic energy market.

drocarbons prospecting in the Eastern Mediterranean", *Strategic Insights*, no. 39, p. 9, April 2012.

¹⁹ Chryssa Lagiou, "Major Interest in Greek Hydrocarbon reserves", *Kathimerini*, 2 March 2012. See also: Chryssa Lagiou, "Hydrocarbon market is attracting major players", *Kathimerini*, 14 March 2012.

6. Bibliography

6.1. Primary sources and statistics

Directive 2009/28/EC of the European Parliament and of the Council on the promotion of the use of energy from renewable energy sources and amending and subsequently repealing Directive 2001/77/EC and 2003/30/EC : <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=Oj:L:2009:140:0016:0062:en:PDF>

Directive 2009 /72/ EC of the European Parliament and the Council concerning common rules for the internal market in electricity and repealing Directive 2003/54/EC: <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2009:211:0055:0093:EN:PDF>

Directive 2009/73/EC of the European Parliament and the Council concerning common rules for the internal market in natural gas and repealing Directive 2003/55/EC: <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2009:211:0094:0136:en:PDF>

European Commission, DG Energy, Market Observatory & Statistics: <http://ec.europa.eu/energy/observatory/countries/doc/2012-country-factsheets.pdf>

EC Communication "Energy infrastructure priorities for 2020 and beyond – A Blueprint for an integrated European Energy Network": http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=SPLIT_COM:2010:0677%2801%29:FIN:EN:PDF

International Energy Agency (IEA) country analyses:

http://www.iea.org/stats/indicators.asp?COUNTRY_CODE=GR

http://www.iea.org/stats/balancetable.asp?COUNTRY_CODE=GR

http://www.iea.org/publications/freepublications/publication/greece_2010.pdf

6.2. Secondary sources

Dimitar Bechev, "Sofia view: Oil pipeline cancellation questions", *European Council on Foreign Relations*, February 2011, available at:

http://ecfr.eu/blog/entry/sofia_view_oil_pipeline_cancellation_questions

"Greece dismisses fears of funding gap from asset sale delays", *Reuters*, 25 June 2013, available at: <http://www.reuters.com/article/2013/06/25/greece-funding-idUSL5N0F13HX20130625>

Chryssa Lagiou, "Major Interest in Greek Hydrocarbon reserves" , *Kathimerini*, 2 March 2012, available at:

http://www.ekathimerini.com/4dcgi/_w_articles_wsite2_1_02/03/2012_430900

Chryssa Lagiou, " Hydrocarbon market is attracting major players", *Kathimerini*, 14 March 2012, available at:

http://www.ekathimerini.com/4dcgi/_w_articles_wsite2_1_14/03/2012_433005

Friedbert Pfluger, "The Southern Gas Corridor: Reaching the home stretch", *European Energy Review*, 12 January 2012, available at: <http://www.europeanenergyreview.eu/site/pagina.php?id=3455>

- Michael A. Kohler, "EU Energy Policy: Engaging with partners beyond our borders", *EUCERS Newsletter*, no. 11, March 2012, available at: <http://www.eucers.eu/wp-content/uploads/EUCERS-Newsletter-No.-11.pdf>
- Maria Kottari, "Which is the role of Greece in the EU Energy Policy?", *Greek Centre of European Studies and Research (EKEME)*, Working Paper Series no. 5, July 2012, available at: <http://www.ekeme.gr/html/index.php?newlang=english>
- Maria Kottari, "The disputed Aegean: Hydrocarbons prospecting in the Eastern Mediterranean", *Strategic Insights*, no. 39, p. 9, April 2012.
- Maria Kottari et al., "Energy politics, pipelines and the Black Sea basin: On the route to diversification of EU energy sources", *European Centre for Energy and Resource Security (EUCERS)*, Strategy Paper, King's College, London, 2013.
- Vlad Popovici, "Europe's new energy frontier", *European Energy Review*, October 2011, available at: http://www.europeanenergyreview.eu/site/pagina.php?id_mailing=218&toegang=e96ed478dab8595a7dbda4cbcbee168f&id=3309
- Vlad Popovici, "The Levantine Basin: A Mediterranean Hydrocarbon Saga Begins for Greece, Turkey, Cyprus and Israel", *Balkan Analysis*, 13 January 2012, available at: <http://www.balkananalysis.com/energy-sector/2012/01/13/the-levantine-basin-a-mediterranean-hydrocarbon-saga-begins-for-greece-turkey-cyprus-and-israel/>
- "Socar announces principal DESFA deal", *Kathimerini*, 21 June 2013, available at: http://www.ekathimerini.com/4dcgi/_w_articles_wsite2_1_21/06/2013_505396
- Yannis Stournaras, Svetoslav Dunchchev, Nikos Paratsiokas, "Greece as Europe's Energy Highway: Natural Gas pipeline projects going through Greece", *Foundation for Economic and Industrial Research*, Athens, November 2011.
- "World's biggest wind park approved", *Kathimerini*, 14 June 2012, available at: http://www.ekathimerini.com/4dcgi/_w_articles_wsite2_1_14/06/2012_447122

6.3. Other web resources

- Centre for Renewable Energy Sources: <http://www.cres.gr>
- ENERGEAN Oil & Gas: <http://www.energean.com/>
- Greek Operator of Electricity Market: <http://www.lagie.gr/nc/en/home/>
- Greek Association of RES Electricity Producers: <http://www.hellasces.gr>
- Greek Solar Industry Association: <http://www.ebhe.gr>
- Hellenic Gas TSO: <http://www.desfa.gr/default.asp?pid=1&la=2>
- Hellenic Petroleum: <http://www.hellenic-petroleum.gr/online/index.aspx>
- Hellenic Transmission System Operator: <http://www.desmie.gr>
- Hellenic Association for the Cogeneration of Heat & Power: <http://www.hachp.gr>
- Hellenic Association of Photovoltaic Companies: <http://www.helapco.gr>
- Hellenic Wind Energy Association: <http://www.eletaen.gr>

Invest in Greece: <http://www.investingreece.gov.gr/default.asp?pid=38>

Ministry of Environment, Energy and Climate Change: <http://www.ypeka.gr/>

Motor Oil Hellas: http://www.moh.gr/Home.aspx?a_id=10515

OKTA: <http://www.okta-elpe.com/Main.aspx?lan=2>

Public Gas Corporation (DEPA SA): <http://www.depa.gr/home.html>

PPC (Public Power Corporation) Renewables: <http://www.ppcr.gr/Energy.aspx?C=53>