Greek Energy Strategy: Overcoming the Challenges Ahead

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Introduction

Greece has generally taken a conservative approach to liberalisation and, unlike the United Kingdom that opted to fully liberalise its markets, has often proceeded to implement only minimum EU law requirements. Prompted by the EU and IMF, Greece will need to accelerate and deliver structural reforms within short time periods across a number of areas, including the energy sector. This article will delineate the outcome of reforms and need for further change in both the electricity and gas sectors and will present the role of RAE, while matters related to security of supply, namely diversification of sources and routes in addition to energy infrastructure, will also be reviewed.

In the electricity sector, reform commenced in 1999 when a new regulatory framework was enacted. The shift towards a more competitive market emerged gradually, first in generation and later in supply. By 2010, significant private investment had taken place in renewable energy sources (RES) and combined cycle gas turbine (CCGT) plants which compete with the Public Power Corporation (PPC) in the wholesale electricity market resulting in an important decrease in PPC’s market share. Moreover, PPC’s exclusive rights to exploit lignite have since 2008 been found by the European Commission to infringe EU law requirements and Greece will, therefore, need to open up the market to competition. In respect of supply, despite the opening of the market since 2007, competition has been more limited and not without difficulties, with PPC remaining the dominant supplier. In this regard, it is worth noting that although a considerable number of entities have acquired a supply licence, the licence is primarily used for trading between suppliers rather than retail supply to final consumers, with the beginning of 2012 seeing two independent suppliers, namely Energia and Hellas Power, that were active in the retail market, forfeiting their licences and PPC taking on their customers as supplier of last resort.

As regards the gas market, the difficulty in facilitating greater competition partly reflects that Greece has no indigenous production and the Public Gas Corporation (DEPA) was, until fairly recently, the sole supplier of natural gas. In April 2011, DEPA’s monopoly role was, however, partly dismantled when new codes and regulations were adopted following the imposition of a fine on DEPA for its refusal to allow large customers to self-supply. The Regulatory Authority for Energy (RAE)’s intervention resolved the situation successfully in favour of independent suppliers and large customers. At the retail level, Greece has been characterised as an emergent market, having been granted a derogation from third-party access (TPA) in respect of certain geographical areas. There are currently three regional gas distribution companies (EPAs) in Attica, Thessaloniki and Thessalia which are 51 per cent owned by DEPA and 49 per cent by private investors, while new tenders have been announced for the creation of three new EPAs in other regions of Greece.

Both gas and electricity sectors are in the process of being restructured in implementation of the Third Energy Package and also in light of austerity measures mandating privatisation of much of the public sector and these developments will also be considered.

Competition and transparency in the Greek energy market is monitored by RAE, that may refer matters of competition to the Hellenic Competition Commission. RAE’s role has been significantly enhanced by recent Law 4001/2011, adopted in August 2011 in implementation of the Electricity Directive 2009/72/EC (‘Electricity Directive’) and Gas Directive 2009/73/EC (‘Gas Directive’) with a view to RAE becoming legally distinct and functionally independent from the Ministry of Environment, Energy and Climate Change (‘the Ministry of Energy’). In addition to being separated from the Ministry of Energy, RAE has been granted enhanced powers in the form of rights of investigation and the ability to impose fines. As a result of this, RAE is now competent to issue its own decisions, while previously, in the case of licensing, for instance, it would issue a recommendation with the decision ultimately being taken by the Ministry.

Greece has been successful in diversifying its sources and routes of supply with its sources of fuel consisting in lignite, oil, gas and RES, while Law 4001/2011 also adopted a new framework for exploration and production of oil and gas. Greece is in transition as regards its energy mix, with the share of natural gas and RES increasing at the expense of lignite production and oil generation. From a gas perspective, there have been two occasions, notably in 2009 and 2012, where crisis was declared when the full flow of Russian and/or Turkish gas was either constrained or cut-off. In 2009, additional Liquefied Natural Gas (‘LNG’)
shipments enabled the situation to be overcome, while in February 2012 load-shedding of five power plants was introduced for a limited two-day period pending delivery of a scheduled LNG shipment. These events demonstrate the importance of flexibility and the need to ensure that LNG can be procured quickly in emergency situations.7

Security of supply is evidently linked to adequate infrastructure and, in this regard, a number of future projects could enhance Greece's position such as the development of the Trans Adriatic Pipeline ('TAP') and new underground storage for natural gas, while there are also plans for the development of the transmission system so that it will have expanded capacity to absorb new RES generated electricity.

Regulatory reform in the Greek energy sector has been gradually introduced in a climate where there are pressures to preserve state-owned monopolies. Recently, however, an undertaking has been made to relinquish monopoly structures in favour of a more competitive and liberalised market. The challenge for Greece will be to resist market pressures to the contrary in order to comply with the ambitious timetable for these reforms and attract necessary foreign investment.

Regulatory framework and reform

The electricity sector

The electricity sector

The electricity market has two separate systems, the mainland grid and the non-interconnected system that includes most of the Greek islands, in addition to Rhodes and Crete that have their own autonomous systems. Greece is also interconnected with Albania, the FYROM, Bulgaria and Turkey for the import and export of electricity as well as with Italy for export only.

Until recently, PPC (51 per cent state-owned) directly owned the transmission system8 and had a 49 per cent shareholding in the Hellenic Transmission System Operator (DESMIE). As a result of restructuring in early 2012, in implementation of Law 4001/2012, PPC owns the transmission system through its newly created subsidiary ADMIE, to which PPC transferred its ownership in the transmission system's assets while DESMIE transferred the operation, maintenance and development of the system. The purpose of this restructuring was to separate system operation from PPC's production and supply activities in accordance with the ITO model, which is the lowest threshold for unbundling pursuant to the Electricity Directive. ADMIE is, therefore, the autonomous transmission operator9 which will be required to comply with a number of additional rules pursuant to Articles 17 to 23 of the Electricity Directive to ensure that the incentive for PPC (a vertically integrated undertaking) to discriminate against investors as regards network access and investment is removed and to create incentives for the necessary investments, guaranteeing the access of new market entrants under a transparent and efficient regulatory regime.10 These include transmission system operator ('TSO') management and appointment of a supervisory body and compliance officer. Moreover, DESMIE has been recently renamed LAGIE and is the electricity market operator11 that is competent for administering participation in the mandatory electricity pool.

PPC has retained ownership of the distribution system12 but has legally and functionally unbundled its distribution activities from its other activities with a separate subsidiary of PPC (DEDDHIE) being established at the end of March 2012, to which PPC transferred its branch of distribution activities.13

RAE will have to ensure that TPA is carefully monitored and address issues such as the costs of connection, as the absence of the necessary grid codes has negatively impacted on connection time, while the costs are higher than in other countries. PPC has also been conservative in allowing TPA for photovoltaic ('PV') plants on the grounds of grid saturation and system instability, which is also a reason why PV development on islands has been restricted.14

Production of electricity is subject to licensing requirements or needs to be lawfully exempt from these requirements, while specific provisions apply to RES,15 where an effort has been made to increase investment by streamlining the licensing process16 and offering incentives such as feed-in-tariffs, although these will have to be re-examined so as not to strain public finances and over-compensate generators.17

Supply of electricity to eligible customers18 requires a supply licence, while import/ export, transit and trading electricity on the wholesale market is permissible for both supply and trading licence holders. Higher share capital requirements have been introduced in order to be eligible to obtain a supply licence and, notably, minimum share capital requirements are €600,000 as compared to €60,000 for a trading licence.19 Traders and suppliers may bid for interconnection capacity for the import and export of electricity at the interconnections with Albania, the FYROM, Bulgaria,20 Turkey and Italy. The access rules provide for annual, monthly and day-ahead explicit auctions of physical transmission rights ('PTRs'), while long term PTRs are freely transferable amongst participants.21

In the context of the mandatory wholesale electricity pool, ADMIE is responsible for preparing the day-ahead

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7 European Commission Assessment of the Declaration of Emergency according to Article 10.5 of Regulation (EU) 994/2010, 27 February 2012.
8 The transmission system comprises the high voltage electricity lines and interconnections.
9 Law 4001/2011, Article 94.
11 Law 4001/2011, Article 117.
12 The distribution system is the low voltage electricity system for the supply of electricity to consumers.
13 Id., Law 4001/2011 Article 123.
15 Law 4001/2011, Article 132.
16 Law 3851/2010 on promoting renewable energy sources.
17 Greece Memorandum of Understanding on Specific Economic Policy Conditionality, draft of 9 February 2012, at 36.
18 Eligible customers are all customers except those on micro-isolated systems which are exclusively supplied by PPC pursuant to Law 4001/2011, Article 137.
19 Law 4001/2011, Article 134.
20 On 10 February 2012, Bulgaria ceased to authorise exports of electricity to Greece.
21 See RAE 2011, Note 3 above, at 8.
forecast of generation units that are in merit, for determining the use of interconnections and for settling imbalances between generation and demand according to the systems deviations price.\textsuperscript{22} LAGIE is responsible for keeping the register of participants (which comprise generators, suppliers, traders and self-suppliers), for adjusting the pool to reflect real time requirements, for determining the system marginal price (‘SMP’) as well as for settling the market together with ADMIE.\textsuperscript{23} It is worth noting that prior to the beginning of 2012, all these features of the electricity pool were solely administered by DESMIE.

From a generation perspective, according to RAE’s 2011 National Report, new generation capacity, particularly CCGT and RES plants, have reduced PPC’s market share and enhanced competition, and although PPC covered 76.1 per cent of total demand in 2010 (including exports) as opposed to 85.1 per cent in 2009, wholesale prices continued to remain sensitive to PPC’s bidding behavior, given its diversified portfolio of power plants and flexibility to adjust hydro production declarations. As a result of this, RAE conducted an extensive inquiry in 2010 following on from a third-party complaint which resulted in PPC changing its bidding behavior, particularly in respect of hydro production declarations which was a critical factor in price formation.\textsuperscript{24} RAE also considers that the way the market has evolved renders the development of a forward market essential for risk management purposes. Moreover, RAE notes that bidding is currently not left to the market. In particular, according to market rules there is a floor on offers equal to the variable cost of the plant so as to prevent PPC from suppressing wholesale prices, as well as a ‘cost-recovery mechanism’ according to which, if the SMP is below the unit’s marginal cost plus a 5 per cent uplift, the generator is compensated for the difference. In this regard, RAE considers that a link between wholesale and retail prices is necessary in order to safeguard consumer interests.\textsuperscript{25} It is clear from this that PPC still retains sufficient power to influence the market which leads to distortions and that this power should be curbed in order to enable a more competitive market to emerge.

As regards supply, while there are a number of traders and suppliers, eligible customers have been reluctant to change suppliers in view of previous (negative) experience in the liberalisation of the telecommunications sector, while the recent de-registration of two of the more significant independent suppliers has caused concern and also an opportunity for PPC to retrieve its former customers as being more reliable suppliers. The adoption of a supply code is pending\textsuperscript{26} and necessary in order to safeguard consumer rights and determine supplier obligations in respect of quality of services and should ultimately contribute towards alternative suppliers being able to regain consumer confidence.

From a liberalisation perspective, Greece has chosen the lowest threshold for unbundling and, therefore, RAE will need to ensure strict compliance with the requirements for unbundling and non-discriminatory rules for TPA, particularly given that independent RES developers will be competing against PPC for interconnection to the transmission system, whose capacity to absorb new generation is limited. ADMIE will also need to be certified by RAE.\textsuperscript{27}

In the February 2012 Memorandum of Understanding, the Greek Government undertook to implement measures to ensure TPA to lignite-fired generation (which has been monopolised by PPC), so that, as of November 2013, third parties may effectively use lignite-fired generation in the Greek market. Moreover, as regards its ongoing commitment to privatisate PPC as part of the IMF austerity deal, the government is required to take steps to sell hydro capacity and other generation assets to private investors. The procedure for sale will be separate from the divestiture of lignite capacity, although the intention is for investors to be able to acquire hydro capacity and other generation capacity together with lignite capacity.\textsuperscript{28} These measures, once adopted, will enhance competition in the generation sector, while divestiture of PPC’s assets is also recommended by the International Energy Agency (‘IEA’) to ensure a more competitive market.\textsuperscript{29}

**Gas sector**

DEPA was established in 1988 to construct the necessary infrastructure and import natural gas into Greece under the gas supply contracts that were signed with Russia for natural gas and with Algeria for LNG. According to a law adopted in 1995,\textsuperscript{30} DEPA was granted the right to plan, construct, own and operate the natural gas transmission system (ESFA).\textsuperscript{31} ESFA includes the main high pressure gas transmission network and the LNG facilities at Revythousa.\textsuperscript{32} In 2007, DEPA was restructured in implementation of the former Gas Directive 2003/55/EC.\textsuperscript{33} so that a TSO named DESFA was established that was legally separated from DEPA’s other activities.

DEPA also owns EDA SA, which has a 51 per cent holding in each of EPA Attica, EPA Thessaly and EPA Thessaloniki. The other shareholders of EPA Attica are Royal Dutch Shell (25 per cent) and the Agricultural Bank of Greece (24 per cent), while ENI (49 per cent) is the other shareholder of EPA Thessaly and EPA Thessaloniki.\textsuperscript{34} Each EPA has been granted exclusive rights to develop the distribution system\textsuperscript{35} and supply gas to small consumers within their territory. Therefore, the EPAs are already partly privatised, while tenders are to be announced for a minimum

\textsuperscript{22} Law 4001/2011, Article 96; RAE Decision 57/2012 on Approval of System Operation Code.
\textsuperscript{23} Law 4001/2011, Article 118; RAE Decision 56/2012 on Approval of Electricity Exchange Code.
\textsuperscript{24} See RAE 2011, Note 3 above, at 5.
\textsuperscript{25} \textit{Ibid.}, at 15 and 18.
\textsuperscript{26} The supply code will be implemented pursuant to Law 4001/2011, Article 138.
\textsuperscript{27} Law 4001/2011, Article 113.
\textsuperscript{28} See Greece Memorandum 2012, Note 17 above, at 35.
\textsuperscript{30} Law 2364/1995 on the import, transmission, trade and distribution of natural gas.
\textsuperscript{31} \textit{Ibid.}, Article 3(3).
\textsuperscript{32} Law 4001/2011, Article 67.
\textsuperscript{33} Directive 2003/55/EC concerning common rules for the internal market in natural gas and repealing Directive 98/30/EC.
\textsuperscript{34} See Note 29 above, at 72.
\textsuperscript{35} The distribution system is the low pressure pipeline system for the supply of natural gas to consumers.
35 per cent participation of private investors in new EPAs in Sterea Ellada, Evia, Central and Eastern Macedonia and Thrace, with exclusive licence rights for a 10- or 20-year period to develop and operate the distribution system and supply natural gas in the territory.\(^\text{36}\)

Currently, DEPA is 65 per cent owned by the Greek state and 35 per cent owned by Hellenic Petroleum in which the Greek State has a 35 per cent holding. PPC also has an option to acquire 30 per cent of DEPA’s shares from the Greek state.

On 29 February 2012, the Hellenic Republic Asset Development Fund (HRADF) launched a tender for the privatisation of the DEPA group,\(^\text{37}\) inviting expressions of interest in acquiring DEPA in its current form (‘bundled’ sale) or in acquiring DEPA following a corporate restructuring (‘unbundled’ sale). In the first scenario, 100 per cent of DEPA will be sold on condition that the Hellenic Republic retains a 34 per cent shareholding in DESFA on completion of the sale, while in the second scenario 100 per cent of DEPA will be sold and the sale of 66 per cent of DESFA will take place separately. In both scenarios, the Hellenic Republic is to retain a 34 per cent stake in DESFA. Expressions of interest were submitted in March 2012 with, as announced by HRADF,\(^\text{38}\) 14 qualifying parties being eligible to participate in the second stage of the tender process. The form of transaction will be finalised once the successful candidate has been selected. Restructuring and privatisation of the DEPA group will be in compliance with the requirements of the Gas Directive, while, according to the 2012 Memorandum of Understanding, unbundling is to be implemented as provided for in Article 9 of the most recent Gas Directive. This provides for the full ownership unbundling model and the unbundled TSO is to be certified by RAE in the third quarter of 2012.\(^\text{39}\)

On the supply side, DEPA’s monopoly has been undermined by important secondary gas legislation enabling TPA to ESFA and the LNG terminal. The legislation was introduced by RAE after a third-party power producer (an eligible customer) attempted to import LNG and was denied access by DEPA despite RAE’s firm recommendation to the contrary. This resulted in an investigation by RAE and subsequent imposition of a fine in the amount of €250,000 on DEPA. The effect of the secondary legislation adopted is to enable independent suppliers and large customers wishing to self-supply to be able to import gas in the country. The IEA recommends that ‘the regulatory framework will have to be carefully designed and monitored to allow for the development of a more competitive and liquid market’ and notes that ‘reforms are yet to make their full mark but it is encouraging that more than a dozen players have entered the Greek gas market by the end of May 2011’.\(^\text{40}\) The situation should be further assisted by the adoption of an LNG code to ensure ‘transparency and non-discriminatory access to the Revythousa LNG plant and the efficient allocation of unused capacities’.\(^\text{41}\)

### Role of regulatory authority

In Greece, RAE was established pursuant to Law 2773/1999,\(^\text{42}\) but its role was considerably enhanced at the time that Law 4001/2011 was adopted, which transposed the latest Electricity and Gas Directives into Greek law.\(^\text{43}\) RAE is separate from the Hellenic Competition Commission and consists of seven members\(^\text{44}\) who are highest ranking state officials appointed after a selection exercise\(^\text{45}\) for a five-year term which is renewable once.\(^\text{46}\) They cannot be removed whilst in office except where disciplined for lack of independence or found guilty of an offence which conflicts or prohibits them from being a public official.\(^\text{47}\) In order to protect RAE’s independence, Law 4001/2011 provides that its members do not seek instructions from the government or any administrative body or from any other entity or institution and their remuneration, which is decided by the Ministry of Energy, is paid exclusively through RAE’s separate budget.\(^\text{48}\) The European Commission has been closely following these developments and has suggested that further amendments may be appropriate to ensure that requirements for RAE to have a separate budget and adequate human resources are not being undermined.\(^\text{49}\)

The enhancement of RAE’s role in terms of independence and impartiality is complemented by its duties and powers that have been broadened to include, amongst others: responsibility for monitoring security of supply; granting licences; monitoring investment plans of TSOs; deciding the methodologies for calculating transmission and distribution tariffs so that tariffs are not discriminatory and reflect the actual cost of services provided; monitoring relations and approving commercial and financial agreements between the transmission system operator and vertically integrated undertaking and ensuring that no discriminatory behaviour to the latter’s advantage has occurred; appointing and removing a compliance officer; ensuring transparent, equal and non-discriminatory access to interconnections and networks; monitoring compliance with competition rules, public service obligations, environmental and consumer protection law related requirements; and the development of an internal energy market.\(^\text{50}\) RAE also co-operates closely with the Hellenic Competition Commission and may make a recommendation for an investigation to take place in case of suspected breaches of competition rules.

Moreover, in order for RAE to be in a position to efficiently carry out its duties, RAE has been vested with wide ranging powers, namely enabling it to request information from energy undertakings, including the reason


\(^{38}\) See Greece Memorandum 2012, Note 17 above, at 35.

\(^{39}\) See International Energy Agency 2011, Note 29 above, at 79.

\(^{40}\) See Greece Memorandum 2012, Note 17 above, at 36.

\(^{41}\) Law 2773/1999, Chapter II, Articles 4 to 8.


\(^{43}\) Law 4001/2011, Article 7(1).

\(^{44}\) Pursuant to Article 7(2) of Law 4001/2011, the selection exercise involves the Ministry of Energy and the Parliamentary Commission of Institutions and Transparency as well as the Council of Ministers although the latter is only involved in the appointment of the three most senior members, namely the Chairman and two Vice-Chairmans.

\(^{45}\) Law 4001/2011, Article 7(3).

\(^{46}\) Ibid, Articles 7(5) and 11.

\(^{47}\) Ibid, Article 10(2) to (4).

\(^{48}\) Letter from Mr. Günter Oettinger at the European Commission to Greek Minister of Energy, Mr George Papaconstantinou, 16 April 2012.
for refusing TPA, to carry out investigations, to adopt secondary legislation in the form of decisions and regulatory measures, to examine complaints, and to impose sanctions or preliminary measures.

Continuing to reduce the level of concentration of electricity and gas undertakings and promoting greater competition will be a challenge for RAE and a decision to privatise PPC and DEPA will be a step in the right direction in this regard. The IEA recommends that the Greek Government should strengthen RAE and the Competition Commission by giving them more decision and rule-making power and appropriate resources.

**Security of supply**

**Diversity of sources and routes**

Greece has no indigenous oil and gas production but has successfully diversified its imports of natural gas and LNG as well as crude oil and oil products. The country has also diversified electricity sources which include lignite, CCGT, hydro, RES, open-cycle gas turbine, CHP and electricity imports. The generation fuel mix in 2010 for the interconnected system was 52.4 per cent lignite, 19.8 per cent natural gas, 12.8 per cent large hydro, 10.9 per cent imports, 3.9 per cent RES and 0.21 per cent fuel oil, which can be contrasted to the non-interconnected islands where the generation fuel mix is 88 per cent fuel oil and 12 per cent RES.

There were a number of incentives for investing in that successfully resulted in the development of a number of CCGT and RES projects, so that the country has a sufficient capacity surplus, which also reflects contraction of demand during the country’s recession.

The energy mix is expected to change in the future, with further increases in cleaner sources of energy and a decrease in lignite generation to be expected, given that the EU Emissions Trading System will render the operation of lignite power plants more expensive and these will gradually have to be phased out. Efforts have been made to promote the development of RES with binding targets adopted in Law 3851/2010, exceeding those required by Directive 2009/28/EC. Law 3851/2010 also sets out the legal framework for the development of offshore wind parks. At the moment there is no volume or price risk for RES generators, which benefit from priority dispatch rules and attractive feed-in tariffs although these incentives will need to be reviewed as the supply of electricity from RES increases.

Although Greece is not capacity short, there was an instance in January 2012 where the demand and supply situation was tight for a number of reasons, including increased gas demand due to unusually cold temperatures and increased demand for electricity, gas flows from Turkey being cut, Bulgaria banning all electricity exports, scheduling of LNG shipment arrival on two occasions and an inability to procure LNG from both Algeria and the spot market. This led DESFA to declare an emergency on 14 February 2012, notified to the European Commission by RAE on the same day, which resulted in the introduction of load-shedding for five power plants in the days that followed, with the emergency status being lifted on 18 February 2012 upon successful delivery of the LNG shipment. This demonstrates that there can be circumstances where there is increased pressure on gas supply which can in turn impact gas-fired electricity generation and supply. The European Commission found the declaration of emergency to be justified and recommended that ‘market-based measures should be exploited to as much extent as possible [and] should be outlined in Preventive Action Plans and Emergency Plans and may include the use of interruptible contracts, economic fuel switch possibilities, diversification of gas supplies and gas routes especially through the possibility to procure LNG cargoes from the spot market within a short timeframe, the combined use of long-term and short-term contracts to increase import flexibility and contractual arrangements to ensure security of gas supply (such as emergency standby agreements)’.

It was also recommended that ‘gas and electricity TSOs should cooperate very closely’ and that since it was DESFA and not RAE that had declared the crisis levels, the Emergency Plan should describe the rules and procedures for declaring a crisis as well as the roles and responsibilities of authorities and market operators.

Another source of energy which could further enhance diversity is nuclear power but Greece has been consistently unwilling to develop nuclear plants, with memories of the Chernobyl disaster having affected Greek public opinion in the long term, and this is not likely to change.

Laws 2289/2005 and 4001/2011 set out the legal framework for the prospecting, exploration and exploitation of hydrocarbons. According to enabling provisions in January 2012, the Hellenic Republic, acting through its competent authority, the Ministry of Energy, issued an open door invitation for granting and using authorisations for the exploration and exploitation of hydrocarbons onshore in Ioannina and offshore in the Gulf of Patraikos (West) and Katakolo. The deadline for submission of offers was 2 July 2012 and successful candidates will enter into an agreement with the Hellenic Republic on the basis of a royalty/tax arrangement (lease agreement). Although there are still outstanding issues regarding the delimitation of its exclusive economic zone and other maritime zones with neighbouring countries, these should be overcome in order to prevent delays in future exploitation.

**Energy infrastructure**

New electricity and gas infrastructure is necessary in order to reinforce the current systems and enable Greece to become an energy hub through ongoing cross-border integration.

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50 Law 4001/2011, Articles 12 to 15, 18, 20 and 22.
51 Ibid., Articles 27 to 29.
52 Ibid., Articles 34 to 36.
54 See RAE 2011, Note 3 above, at 42 (source: HTSO and PPC’s Islands Network Operations Department).
56 See European Commission Assessment 2012, Note 7 above.
In relation to electricity infrastructure, there are a number of proposed developments, namely a second line with Bulgaria and Italy\(^{59}\) and further expansion of interconnection capacity and integration with neighbouring countries, with tenders for interconnection capacity allocation\(^{60}\) having rendered the Greek wholesale market more dynamic.\(^{61}\) The Institute of Energy for South-East Europe (‘IENE’) has suggested that the interconnection of Southern Greece to North Italy should be combined with the interconnection of Crete to the Peloponnese and Cyprus to Crete to enable connection of South-East Europe to Central Europe.\(^{62}\)

ADMIE has the task of drawing up the 10-year development plan for the transmission system, which is updated on an annual basis and should contain efficient measures to guarantee adequacy of the transmission system and security of supply.\(^{63}\) The 10-year development plan is examined by RAE to ensure that it satisfies all investment requirements and complies with Regulation (EC) 714/2009.\(^{64}\) Where ADMIE does not execute an investment which, under the 10-year system development plan, was to be executed in the following three years (except where delay is attributable to overriding reasons beyond its control), RAE may either: require ADMIE to execute the investments in question; or organise a tender procedure open to any investors for the investment in question; or oblige ADMIE to increase its capital to finance the necessary investment and allow independent investors to participate in the share capital.\(^{65}\) ADMIE has not yet submitted the 10-year development plan, which is expected to include the connection of the islands to the mainland grid, with a view to replacing oil-fired plants with RES plants, and it is also likely to include infrastructure that is necessary in order to further develop and extend the system for the gradual implementation of ‘Project Helios’, which has an ultimate target of producing up to 10GW installed capacity for export to Central Europe\(^{66}\) and whose funds have already been ear-marked for the repayment of the country’s debt.\(^{67}\)

Greece is strategically placed to become a hub for the transit of gas to Southern Europe and the Balkan region\(^{68}\) and there are a number of projects that are being considered for development, the most significant of which being the TAP for non-Russian gas from the Caspian region to Italy (since the exclusion of ITGI by the Shah Deniz consortium in February 2012). Shah Deniz II will reach its ultimate decision as to whether TAP will be the successful candidate in mid-2013, with the Nabucco and South Eastern European Pipelines also competing in the selection process for the Central European route, although they do not pass through Greece. TAP will cross Bulgaria before reaching Italy and it is also being considered whether Greece can use the Interconnector Greece-Bulgaria Pipeline (IGB) to Hungary to transfer LNG to the Balkans once IGB is commissioned around 2013.\(^{69}\) Greece should also continue to support other pipeline projects such as South Stream (for Russian natural gas) and Burgas Alexandroupolis oil pipeline which, although frozen for the time being by the Bulgarian Government, Russia and Greece would support the project if Bulgaria were to reconsider its decision. There are also plans to expand the existing LNG storage facility in Revythousa by 2014,\(^{70}\) in line with the European Commission’s recommendations.

**Conclusion**

From commencement of reform in 1999, Greece’s electricity and gas markets have become more competitive; however, there are still distortions and impediments which enable the incumbents to retain significant market power.

Although RAE is on track to remove these distortions, including full de-regulation of electricity tariffs by 2013, there are still important market and liquidity issues that need to be addressed. Recently, Price Waterhouse Coopers Business Solutions SA conducted a study on behalf of RAE which found that lack of liquidity is due to deficit of the RES account (for the payment of guaranteed feed-in-tariffs), outstanding PPC electricity bills resulting from the inclusion of a new property related tax in the electricity bill which many consumers are unable to pay and the deficit that LAGIE inherited as a result of the departure of Energa and Hellas Power from the electricity supply market. Although it is expected that loans from the Deposits and Loans Fund will alleviate this situation, the government and RAE will need to address this liquidity issue as a matter of priority affects the market’s capacity to be self-sufficient. This is also important given the country’s current commitment to privatise the incumbents and this should not be negatively impacted by factors that are external to the electricity market.

It is also clear that the government and RAE will need to reconsider mandatory dispatching and the feed-in-tariffs for RES given that, although these mechanisms have been conducive to investment, this is now having a significant uplift effect on consumer bills and is promoting a regulated rather than a liberalised electricity market.

Moreover, confidence clearly needs to be restored in independent electricity suppliers so that competition can be reintroduced at the supplier level and in this regard the supply code, which was made available for public consultation in April 2012, should be adopted without delay. PPC’s privatisation should commence with the planned sale.

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61 See RAE 2011, Note 3 above, at 23; International Energy Agency 2011, Note 29 above, at 120.
62 See Chadjivassiliadis and Stambolis 2012, Note 14 above, at 56.
63 Law 4001/2011, Article 108(1).
65 Law 4001/2011, Article 108(7).
67 In the Euro Summit Statement (26 October 2011) it is stated that: ‘Greece commits future cash flows from project Helios or other privatisation revenue in excess of those already included in the adjustment programme to further reduce indebtedness of the Hellenic Republic by up to 15 billion euros with the aim of restoring the earning capacity of the EFSF’.
69 See Dokos and Tsakiris 2012, Note 58, at 6.
70 Letter of Minister Lucas Papademos to the European Commission President José Manuel Barroso, 18 April 2012.
of hydros and lignite generation sectors, which will reduce PPC’s ability to influence the market. Restrictions in TPA access should also be removed and any reasons for refusal closely monitored by RAE. In addition, the potential for installing independent offshore wind farms should be further explored, while PVs on buildings should be encouraged, as opposed to widespread development of PV projects on agricultural land which will have a serious aesthetic impact on the country’s landscape.

From a gas perspective, the fact that numerous foreign investors have expressed an interest in the privatisation of the DEPA group is a clear signal that serious investors can be attracted. In addition to privatisation and restructuring, the regulatory framework will need to be amended and an LNG code be adopted, while RAE should strictly enforce its supervisory powers to ensure that TPA access is not impeded, acting promptly on any complaint so as to promote a more competitive market. Flexibility to procure LNG in a crisis situation and the creation of underground LNG storage is also recommended.

Greece’s development into a transit country for gas is clearly desirable as is its capacity to be a hydrocarbons producer, in respect of which it should pursue resolution of outstanding issues regarding the delimitation of its EEZ and other maritime zones.

It is, therefore, imperative for the government to implement the necessary reforms, with the privatisation of the incumbents clearly being a priority, while other infrastructure work should not rely on government funds or further borrowing but rather should focus on private investment. RAE will also need to closely monitor the situation to ensure that the reforms do not distort the market and should be prepared, where necessary, to make any necessary regulatory interventions.