Electricity Sector Reform in Greece

by

Ekaterini Iliadou

Lawyer - Legal Department of Public Power Corporation S.A.

CCP Working Paper 08-9

Abstract: The paper provides an overview of the electricity market reform in Greece which started in 2001 and is still developing slowly. This is related to the persisting dominance of the incumbent company and the specificities of the electricity sector of Greece, which is heavily dependent on indigenous lignite-firing generation, while being located in the periphery of the EU internal electricity and gas markets. Competition through enhancing electricity trade in the region is limited today, as the establishment of an internal market in South East Europe also progresses slowly. Development of competition through gas-firing generation by new entrants has been the priority adopted by State and Regulator's policies. However, the gas supply market in Greece and in the region still lacks behind.

November 2007

***JEL Classification Codes*:** L94, Q40, Q48

***Keywords*:** electricity reform, electricity market, competitiveness, market opening, liberalisation

Acknowledgements:

The views expressed in the paper are strictly personal. The support of the Economic and Social Research Council is also gratefully acknowledged.

Contact details:

Dr Ekaterini N. Iliadou, Public Power Corporation S.A., 30 Chalkokondyli str., 10432 Athens, GREECE

katerina.iliadou@gmail.com

ISSN 1745-9648

1. Introduction

Being a member state of the EU since 1981, Greece embarked on electricity market liberalisation in February 2001 (Law 2773/1999). Subsequently, the legal framework was revised in order to comply with the provisions of Directive 2003/54/EC and to incentivise private investment and competition. The new electricity law established a mandatory pool system and a capacity assurance mechanism.

In terms of customer eligibility, full market opening applies since July 2007. Six years after the start of liberalisation, PPC S.A., i.e. the former monopolistic company which is under state control, still holds a highly dominant position in both the electricity generation and power supply markets.

Insufficient power investment, needed to cover the fast growing electricity demand and modernise power generation technology, is still a major issue for the Greek power system. In addition, compliance with the EU legislation on unbundling has been delayed and is still poorly developed. All customer tariffs are regulated by the state and their structure still includes large cross-subsidies among customer categories. It is also claimed that the level of regulated electricity prices is below power generation costs. However, there is scope for cost reductions and productivity improvements which evolve at rates slower than expected.

Further revisions of the existing legislation are currently under consideration in order to further address the abovementioned issues and to comply fully with EU legislation.

2. Background on the Electricity Sector

Since 1889 when the lighting of the historical centre of Athens took place, several small power companies were created in order to supply restricted regions of the country with electricity.

In 1950, with the provisions of Law 1458/1950, the State united all these small companies and created the Public Power Corporation (PPC), a vertically integrated, state owned (at 100%) public company, which enjoyed exclusive rights and privileges as regards the construction, functioning and exploitation of hydroelectric and thermal power plants, as well as of the transmission and distribution networks. At the same time, the Law prohibited any private business initiative or action in the electricity sector.[1]

Like other Greek public corporations, such as the Telecommunications Corporation, PPC was traditionally considered to be part of the public sector. Therefore, the operation of PPC was based on the basic principles governing the provision of public services, such as the principles of ‘continuity’ (imposing

[1] For information see PPC website: www.dei.gr

the obligation of continuous service); of 'adaptability' (imposing an obligation to monitor the evolution of the citizen's fundamental needs and to meet these needs); of 'affordability' (imposing the obligation to ensure raising a minimal economic charge on the citizens); and of 'universality' (imposing an obligation for equal service independent of location).

The exclusive right of PPC regarding electricity generation has been limited for the first time by the provisions of Law 2244/1994 which permitted the operation of private power producers in exhaustively enumerated cases, namely the auto-producers, cogeneration and generation using Renewable Energy Sources (RES). The same Law imposed to those independent power producers the obligation to sell the entire electricity generated (except the self-used electricity by auto-producers) to PPC on the basis of regulated power purchase agreements. This is how the first privately owned generation units were constructed and started to operate in Greece.

The liberalisation of the market started in 2001 following the issuance of Law 2773/1999 which applied compliance with EU legislation. That reform also aimed at improving the economic efficiency of the sector.

3. Political Economy and Regulatory Environment

3.1 Geographical and Population Data

Greece is located at the southernmost part of the Balkan Peninsula and has borders on the Ionian Sea in the west, on the Mediterranean Sea in the south, on the Aegean Sea in the east, with Turkey in the northeast, and with Bulgaria, F.Y.R.O.M. and Albania in the north. The country's land area is mountainous with ranges extending into the sea as peninsulas or chains of islands. Greece has extensive coastlines (15,021km) and has also about 2,000 islands, most of which are not interconnected with the electricity grid of the continental part of the country.

Greece has a Mediterranean climate, with sunshine (duration of insolation is more than 2,700 hours annually at the greater part of the country), mild temperatures and limited rainfall, and different kinds of seasonal winds. The country's potential on Renewable Energy Resources (RES) such as solar energy or wind power is high. The weather of the islands of the Aegean and the Ionian seas is rather mild.

According to the latest census (2001) [2] the population of Greece is approximately 11 million, most of which lives in urban areas. Approximately 35.5% of the population lives in the Attica peninsula and mainly in Athens, which is the capital of the country.

Because of the geographical concentration of the population, Greece has two main electricity load centres: the one in Attica, which is the biggest, and the

[2] For information see the official website of the General Secretariat of National Statistical Service of Greece: www.statistics.gr

one in Thessaloniki, which is the second largest city of the country and is located in the northern region. The non-interconnected islands' electricity load represents approximately 8% of total electricity demand.

3.2 Political Organisation and General Principles

Since the end of the seven-year military dictatorship in 1974 and the adoption of the Constitution, Greece has had a stable political system and is organised as a parliamentary republic.[3] The Greek Constitution was adopted in 1975; it was revised in 1986 with the purpose of establishing a pure parliamentary governmental system and in 2001 with the main purpose of introducing new individual rights (e.g. protection of genetic identity, protection of personal data from electronic processing) as well as new rules regarding transparency in political life (mainly rules on the financing of political parties, on electoral expenditures, on the relations of media owners with the State) and to reinforce decentralisation. A new revision of the Constitution is currently under consideration and will be effected by the next Parliament.

The institutional framework of the State includes a unicameral Parliament which is elected through direct general elections for a mandate of four years, the President of the Republic who is elected by the Parliament for a fixed term of five years, and the Government which is composed of the leader of the majority party in Parliament (or of the coalition that enjoys the confidence of the Parliament) as Prime Minister and his Cabinet. Usually, Greece has one-party Governments. The current conservative government came to power in 2004[4] and was re-elected in September 2007.

Furthermore, according to a decentralisation principle, the country is divided into 13 administrative regions, headed by an administrator who is appointed by the Government; furthermore into 51 prefectures; and finally into many local communities (town municipalities and village communities), which are all headed by elected governors.

The central Government is responsible for defining and directing the general policy of the country. The legislative function is entrusted to the Parliament which adopts the Laws by voting. Secondary legislation is issued on the basis of a delegation included in Law and has the form of a Presidential Decree or of a Ministerial Decision, depending on the issue that has to be regulated and the nature of the decision making institution. Other administrative authorities may also have the power to issue regulatory decisions for specific issues of technical, local and detailed nature depending on Law-based delegation. The Greek Administration is obliged to comply with the principle of legality, i.e. to respect the laws and regulations in force. Administrative decisions may be challenged for annulment on legality reasons before the administrative courts and mainly before the Council of the State which is the Supreme Administrative Court.

The political organisation of Greece relies on the principles of the rule of law and of the welfare state. Fundamental rights such as individual freedom,

[3] See http://www.parliament.gr/english/politeuma/default.asp
[4] See http://www.primeminister.gr

including also economic freedom and free private economic activity (Article 5 of the Constitution) as well as private property rights (Article 17 of the Constitution) are protected by the Constitution. Restrictions of such rights apply only if they are considered necessary in order to protect human dignity and the general interest. This approach is reflected in paragraph 2 of Article 106 of the Constitution, which provides that "Private economic initiative shall not be permitted to develop at the expense of freedom and human dignity, or to the detriment of the national economy." Moreover, paragraph 3 of the same Article grants authorisation to the legislature to decide on:

> the acquisition by purchase of enterprises or the compulsory participation therein of the State or other public agencies, in the event these enterprises are of the nature of a monopoly or are of vital importance to the development of sources of national wealth or are primarily intended to offer services to the community as a whole.

3.3 Economic Information

Greece has been a member of the EU since 1981, became member of the Eurozone in 2001 and applies a free market economy policy. GDP per capita is today equal to 75% of the average level of leading Eurozone economies and is 82% of the EU-25 average. The public or state owned sector accounts for about 40% of GDP. Over the last ten years GDP growth has on an annual basis been higher than the EU average.

According to latest statistics, the growth rate of the Greek GDP was 3.8% in 2005, more than 4% in 2006, and for the whole of 2007 is expected to be also over 4%. Inflation rates, as measured by the Harmonised Index of Consumer Prices (HICP), rose to 3.4% in 2006 (in average annual terms), from 2.5% in 2004. At present, inflation is reduced to 2.6% per year, which is higher than the Eurozone average.

As a result of stringent policies aimed at reducing public expenditure, the deficit of the general Government was reduced from 7.8% of GDP in 2004 to 2.6% of GDP in 2006; this is in line with Greece's commitments to the European Union's Growth and Stability Pact budget deficit criteria.

In order to overcome challenges such as covering the public debt, which is among the higher in the Eurozone, curbing inflation, and increasing employment, the current Greek Government, which is from a conservative party and was elected in spring 2004, announced a series of reform and other policy measures. These focus on rationalising public expenditure, reducing the size of the public sector, and reforming the labour and pension systems. These reforms are challenged by the country's powerful labour unions and generally by public opinion.[5]

[5] See information published by the Ministry of Economics, Fact Sheet on the Prospects of the Greek Economy (January 2007), in: www.mnec.gr/en/economics/greek_economy_prospects

3.4 Institutional arrangements

The main responsibility with regard to the energy sector is entrusted to the Ministry of Development,[6] which includes a Department of Energy and Natural Resources. The Ministry plays a central role in energy policy-making since it is responsible for elaborating the primary legislation, for defining market rules, for regulating the prices and for the issuance of administrative decisions such as market and technical codes, licenses and all kinds of authorisations of energy activities. Other Ministries involved in energy policy issues are the Ministry of Economy and Finance which is responsible for financial policy and privatisation issues and the Ministry of Environment, Physical Planning and Public Works which is responsible for environmental policy and licensing.

Other public institutions involved in energy issues are the Regulatory Authority for Energy (RAE), established as an independent administrative authority, which has been in operation since June 2000 and has responsibilities mainly towards market supervision and government advice;[7] and the National Energy Strategy Council (NESC) created in 2006 which has a solely advisory role on long-term strategic energy policy issues,[8] created with the purpose of assisting the Government in establishing a coherent energy policy. According to the Law 3438/2006 there shall be no overlapping of the NESC competencies with RAE competencies and responsibilities.

In addition, local Government institutions have decisive power regarding the issuance of environmental permits, as well as the installation and operation licenses for electricity generation units from Renewable Energy Sources (RES).

4. Electricity Reform Programme

4.1 Electricity Reform Legislation

The liberalisation of the electricity sector started in 1999, with the enactment of Law 2773/1999, which aimed at compliance with the provisions of Directive 96/92/EC.

According to the provisions of the Law, the electricity sector was divided into two sub-sectors: the networks have remained monopolistic and regulated, whereas free market rules have been applied for electricity generation and supply to eligible customers. The law imposed, as a condition for any activity in the electricity sector, the issuance of a relative license, issued upon decision by the Minister of Development after a simple opinion of RAE. Furthermore, the Law adopted the basic rules for the organisation of system and market operation, and empowered the Minister of Development broadly to decide, after (simple) opinion of RAE, about the issuance of the secondary legislation deemed necessary for the regulation of specific organisational

[6] For more information see the official website of the Ministry of Development: www.ypan.gr
[7] *C. Ocana,* International Journal of Regulation and Governance 3(1), pp.13-32 (22). For more information see RAE official website: www.rae.gr
[8] The National Energy Strategy Council was established with the provisions of Law 3428/2006 and started to operate in July 2006.

issues, including the regulation of prices. During the first years of market restructuring, the System Operation Code (2001), the Power Exchanges Code (2001), the Authorisations regulation (2000) and the Supply Code (2001) have been adopted. Only the issuance of the Distribution Network Code is still pending.

Law 2773/1999 was subsequently amended with the provisions of Laws 2837/2000, 2941/2001, 3175/2003, 3377/2005 and 3426/2005.

Substantial amendments aiming at the enhancement of market opening and competition in the electricity sector has been included in Law 3175/2003. More specifically, according to the provisions of this Law:

- A Mandatory Pool System was introduced for power generation and wholesale supply, covering the entire market for the interconnected system. All suppliers got the obligations to purchase energy from the Pool and all generators can operate only if selected by the market operator according to their economic bids to the Pool. The Pool was designed to operate on an hourly and daily basis.
- In order to allow for recovery of fixed and capital cost and therefore promote the construction of new power plants, generators acquired the right to submit free economic bids to the Pool, which have been restricted to reflect at least their variable costs.
- All consumers became eligible from July 2004, with the only exception being households and consumers located on non-interconnected islands. Also by July 2007 all customers, except those located on the islands, will become eligible.
- In addition, a capacity assurance mechanism has been adopted, based on the obligation of suppliers to hold capacity certificates and the obligation of generators to issue and market these certificates. To promote new investment, the Law provided for the possibility of organising capacity tenders in Greece, which would guarantee part of future revenues of new investors, in relation to the capacity certificate system.
- A delegation for the issuance of a new System Operation and Power Exchanges Code was also introduced. That Code would aim at setting the details of organisation of the wholesale market and the establishment of a capacity assurance mechanism.
- Electricity traders were allowed to operate.
- Generators acquired the right to choose their natural gas supplier from July 2004.

The proposal for a new System Operation and Power Exchanges Code was prepared by RAE and was put to public consultation at the end of 2003; due to the governmental change in 2004 and after a long-term period of public consultation mainly with the HTSO and PPC, the final Code was approved in May 2005. Compared to RAE's initial proposal, the final document contains several new provisions for a transition period which will apply until 1 July 2008 when the complete application of the Code is expected to start.

Further amendments of Law 2773/1999 were introduced with the provisions of Law 3426/2005 which was enacted for the purpose of implementing the provisions of Directive 2003/54/EC. The provisions of this Law may be summarised by the following:

- It granted the right to choose supplier to all customers, by 1 July 2007, when household customers become eligible, with the exception however of the customers situated on the non-interconnected islands.
- Reform of the licensing procedures regarding generation units of non-interconnected islands.
- Clarification of the HTSO duties and responsibilities, regarding the maintenance and expansion of the Transmission System; reinforcement of TSO's independence vis-à-vis PPC's management and competencies.
- Legal unbundling of the Distribution Network Operator, by 1 July 2007.
- Clarification of the public service obligations regime.
- Delegation for the issuance of a non-interconnected islands' Operation Code, which shall include rules regarding the operation of the electricity generation units situated on such islands, as well as rules on dispatching and grid operation, aiming at promoting reliability and economic performance.
- Facilitation of the criteria for the granting of supply licenses.
- Enhancement of the Regulator's role and duties.

However, in 2006 the Commission launched an infringement procedure (reasoned opinion) against Greece for failing to comply with the provisions of the Directive 2003/54/EC, mainly as regards the imposition of public service obligations (PSOs) and the conditions for granting supply licenses. This procedure is ongoing.

Finally, in October 2006 Law 3468/2006 was enacted with the purpose to further promote the generation of electricity produced from Renewable Energy Sources (RES) and High-Efficiency Cogeneration of Electricity and Heat. The Law included new incentives principally as regards photovoltaic plants as well as several facilitations of the complex administrative procedure for getting the operation permits.

Also for the purpose of simplification of administrative procedures, the Law 3325/2005 was enacted, regulating the licensing procedures for industrial installations and operation, including also energy-related infrastructure.

4.2 Corporatisation of State Owned Utilities

The state owned utility of the electricity sector, namely PPC, was created in 1950 as a vertically integrated company. Within the framework of a policy aiming at the reduction of the scope of the public sector in Greece and thus aiming at improving economic efficiency, partial privatisation has been decided. According to the provisions of the Presidential Decree (P.D.) 360/1991 PPC was exempted from many special restrictions that are applicable to the public sector, such as restrictions regarding personnel hiring, procurement of goods, services and works.

With the Presidential Decree no. 333/2000 which was issued upon delegation of Law 2773/1999, PPC was converted in December 2000 to a "*Société Anonyme*" (PPC SA) that is to a private law company. Subsequently PPC SA stocks have been introduced in the Athens and London stock exchanges.[9] After 3 public offerings, 49% of PPC shares belong to the general public, to institutional investors, and to the PPC's employee insurance fund (4%). The rest of the shares belong to the Greek State which, according to the legislation in force, must remain the majority shareholder.

PPC SA is still today a vertically integrated company, participating in all sub-sectors of the electricity market. PPC has approximately 26,200 employees, working in the distribution, mining and generation activities. It owns and operates 98 power generating units (95% of total power generation with the exception of RES; 12,695 MW) and is the exclusive owner of the Transmission System and of the Distribution Network. It participates in the electricity supply business, supplying more than 98% of the electricity consumed in Greece. PPC actual basic organisational structure includes five business divisions: Mines, Generation, Transmission, Distribution and Supply. Distribution and supply business are not yet fully unbundled.

PPC owns (100%) four subsidiaries: PPC Telecommunications, PPC Crete S.A., PPC Rhodes S.A. and PPC Renewables S.A. A large subsidiary is the one active in the RES business. The PPC Rhodes and Crete companies were created for the purpose of participating to the tendering procedure for new units in the respective islands which was launched in 2001. These subsidiaries are currently under liquidation. PPC Telecommunications holds 49% of the shares of the telecommunications company Wind-PPC Holding NV, whereas the rest (51%) is owned by Wind Spa. Wind-PPC Holding NV owns 100% of the shares of TELLAS A.E., a Greek telecommunications company.. Furthermore, PPC owns 28.6% of LARKO S.A. (nickel production) and 49% of the HTSO S.A. Finally, "SENCAP S.A.", a registered Greek *Société Anonyme,* was incorporated in 2006 by PPC and ContourGlobal LLC*,* for acquiring and developing energy projects in South Eastern Europe.

4.3 Unbundling of Vertically Integrated Utilities

According to the initial provisions of Law 2773/1999, legal unbundling was introduced only for the operation of the Transmission System. The related responsibilities were assigned to Hellenic Transmission System Operator S.A. (HTSO),[10] a majority state owned company, with 49% of its shares belonging to PPC.

As Law 3426/2005 provides, on 1 July 2007, the HTSO[11] should also acquire the responsibility for the operation of the Distribution Network, with the

[9] According to Article 15 of Law 3429/2005, PPC is exempted also from the provisions regarding the public sector in a broader sense, since its stocks are introduced in stock exchanges. Public sector rules apply only with respect to strictly enumerated cases in the same Article and refer mainly to personnel issues.

[10] See HTSO website: www.desmie.gr

[11] According to the Law, until that date, for reasons related to functional unbundling, a special department of PPC has to undertake the responsibilities of the Distribution System Operator; this department will consequently be transferred to the HTSO.

exception of the Network that is located on the non-interconnected islands;[12] HTSO will be renamed the Hellenic Transmission and Distribution Systems Operator (HTDSO), and will follow an organisational model of a combined transmission and distribution operator. However, even after such changes, the duties, financial resources and capabilities of this company will still remain relatively limited since it will still not obtain the ownership of the network and grid assets.

The organisational changes prescribed by Law 3426/2005 did not take place until today. A revision of the unbundling model is currently under consideration.

On the other hand, being the exclusive owner of the Transmission System and of the Distribution Network, PPC remains responsible for their expansion and maintenance, and will be subject to the Operator's relevant plans and orders. According to the Law 3426/2005, such PPC duties shall be accomplished within the framework of specific contracts, concluded between PPC and the HTSO; such contracts have not been concluded yet.

In order to overcome eventual incompatibilities with the EU directive in relation to the issue of unbundling, Article 27 of Law 3426/2005 includes specific rules for the implementation of functional unbundling between the PPC divisions that are responsible for the networks and the divisions active in the competitive parts of the sector, i.e. generation and supply. These rules involve the obligation of PPC to create specialised business units for the network and the operation of non-interconnected islands, as well as the obligation to guarantee the independence of the management of these business units and the protection of the staff's professional independence. The same provisions also establish a control mechanism, and authorise the Minister of Development upon opinion issued by RAE, to order structural changes if deemed appropriate.

As regards accounting unbundling, infringement procedures were launched by RAE against PPC because of non-compliance with the provisions of the Law 2773/1999 regarding unbundling and publication of separated accounts for the years 2000, 2001 and 2002 mainly with respect to the activity of lignite mining. These procedures led finally to the imposition of administrative fines against PPC. This was the reason of a lengthy period of dispute between RAE and PPC that ended in December 2005, as RAE after a long period of consultation finally accepted the submitted accounts for 2001–2002 and 2003.[13] Nevertheless, RAE stated that PPC should submit the unbundling methodology and its implementation for the Balance Sheet and Income Statement for 2004, 2005 and 2006 according to the provisions of the recently adopted Law 3426/2005.[14] During the first months of 2007 the unbundling methodology and the rules for the establishment of PPC separate accounts were approved by RAE.

[12] Due to the small size of the electrical systems of the non-interconnected islands, legal unbundling requirements are not applicable.
[13] On December 2004 the Commission launched an infringement procedure against the Greek State for not implementing correctly the provisions of Dir. 96/92/EC regarding accounting unbundling (case C-182/05) – IP/04/1498. After the approval of the accounts by RAE, the case was closed.
[14] See Annual Report 2006 to EC drafted by RAE – July 2006, pp.31-33.

4.4 Provision of Third Party Access to Networks

Since the beginning of market liberalisation Greece adopted the regulated Third Party Access (TPA) regime. According to the Law, Transmission System connection and usage tariffs are regulated by decision of the Minister of Development following opinion by RAE and according to a methodology that is set equally by the Minister, following consenting opinion by RAE.

The TPA tariffs currently in place for the High Voltage Transmission System reflect a 30-year period of recovery of cost of capital, and apply an 8% annual rate of return. Similarly, the Distribution Network tariffs are also regulated by decision of the Minister following binding opinion by RAE. However, the tariffs for access to medium or low voltage systems have not been adopted yet.

According to the Law, the HTSO is responsible for ensuring TPA of generators, suppliers and eligible customers under equal and non-discriminatory rules that are included in the Transmission System (and the Network) Operation Code(s). According to these provisions, upon application of the interested party, the HTSO shall prepare and submit a connection offer, which includes the design of the proposed connection and the budget. HTSO is obliged to select the most cost-effective and technically acceptable design of new connections.

Due to the exclusive ownership of the networks by PPC, TPA becomes practically effective through tripartite contracts between PPC, HTSO and the applicant of connection. The HTSO has limited capabilities and responsibilities as regards new connections, since these are constructed by PPC. This distribution of responsibilities has resulted in significant problems and delays during the construction of new connections. In order to overcome such problems, with the provisions of Law 3175/2003, the HTSO acquired similar rights as those entrusted to PPC and has the right to proceed with any expropriation that is eventually necessary for the construction of network installations. However, the situation did not change significantly.

The new System Operation and Power Exchanges Code (2005) provides that when PPC demonstrably invokes reasons of inability to comply with the project implementation time schedule or to ensure project financing regarding new connections, the HTSO may, subject to RAE’s approval, undertake itself or assign to third parties the construction of System projects, the expenses being borne either by the TSO or third parties through self-financing, or through any other suitable method to be decided by the TSO, subject to RAE's approval. The cost of such projects shall be recovered by the TSO or the latter shall ensure such recovery through charges for the use of the System. Similar provisions were also included in the first System Operation Code. However, the HTSO has up to now been hesitant in applying such provisions.

Finally, the northern interconnections of the electricity System are congested. The System Operation and Power Exchanges Code in force provides for the application of market-based mechanisms (explicit auctions) for long-term

interconnection capacity allocation, and for implicit auctions as regards short-term capacity nomination. Rules of good management like the 'use it or lose it' principle and imports-exports netting also apply.

4.5 Regulatory Reform, including Adoption of Incentive Regulation for the Natural Monopoly Network Activities

Due to difficulties faced in the past regarding compliance with accounting unbundling obligations, incentive regulation for the natural monopoly network activities is still not applicable in Greece, since this model was considered more complex. Future application of incentive regulation is not excluded.

4.6 Establishment of an Independent Regulator

The Regulatory Authority for Energy (RAE) was established with the provisions of Law 2773/1999 as an independent administrative authority, and started to operate in the summer of 2000.

According to the Law, RAE is a public body, composed of 7[15] members with fixed-term mandates. The members of RAE are selected on the basis of professional capacity and scientific excellence and are appointed by the Minister of Development. Three of the members are appointed by the Ministerial Council, which are for the positions of the President and the two Vice-Presidents, upon proposal of the Minister and opinion of the competent parliamentary committee.

RAE members enjoy personal and functional independence, are not obliged to comply with governmental orders and may not be dismissed for reasons that do not fall within the scope of strictly enumerated cases (mainly conviction for serious felonies during execution of their duties). Nevertheless, according to the opinion that was issued by the Legal Council of the State and accepted by the Minister of Development, RAE decisions are subject to *ex ante* legality control by the Minister itself.

RAE disposes of its own economic resources i.e. levies applied to the regulated industry and has a budget which is independent from the State budget. The financial operation of RAE is subject to *ex post* control by the High Court of Audit.

From an administrative aspect, RAE is assisted by a Secretariat which is manned by two main staff categories (administrative staff and scientists). Currently RAE has approximately 60 employees.

RAE is not simply an advisory institution; besides its advisory responsibilities regarding mainly the proposal to the responsible State institutions of any measures deemed necessary for energy market restructuring according to the principles of liberalisation and consumer protection, RAE also has a set of specific competencies, as provided in the liberalisation directives.

[15] Initially RAE was composed of five members.

More specifically RAE duties and responsibilities may be summarised by the following:[16]

(i) Advisory duties:

- Proposals for the adoption of measures regarding energy market restructuring according to the principles of liberalisation and consumer protection.
- Opinion (simple or binding) for the issuance of secondary legislation in the energy sector, according to specific delegations included in the Laws.
- Simple opinion for the issuance of licenses.
- Simple opinion for regulated tariffs.

(ii) Decision making powers:

- Imposition of administrative sanctions, mainly fines.
- Approval of implementation details of the Codes.
- Issuance of decisions in case of complaints against the companies that are involved in the monopolistic parts of the market.

(iii) Dispute settlement procedures, including arbitration in cases of disputes between consumers and market participants or market participants and the companies having duties with regard to the networks

(iv) Monitoring and reporting duties regarding the performance of energy enterprises

(v) Monitoring duties regarding security of supply

While exercising its duties, RAE is obliged to comply with the legality principle and its decisions, when not solely advisory, are subject to judicial review by the Athens Administrative Court of Appeals.

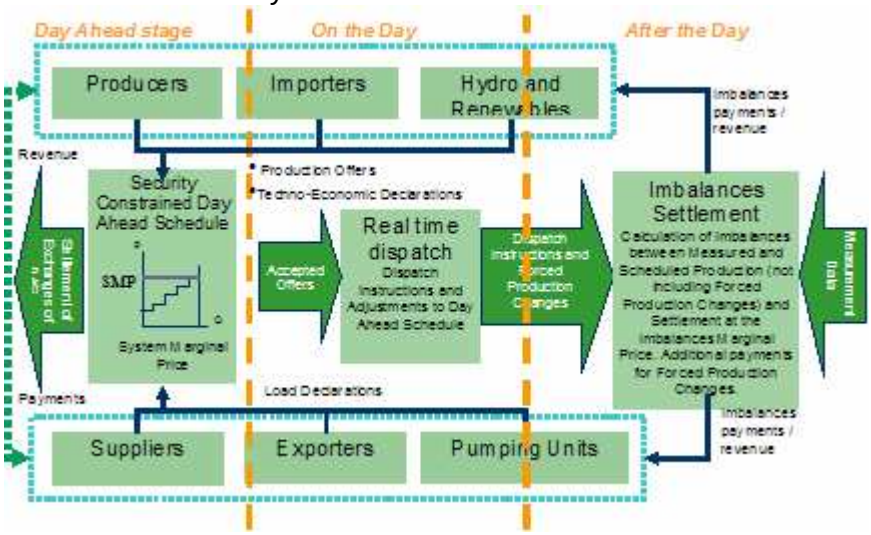
For the purpose of ensuring parliamentary control and accountability, RAE is obliged to publish and submit to the Parliament, via the Minister of Development, an annual report giving detailed information about its functioning and acts.

4.7 Establishment of a Competitive Wholesale Market and Capacity Assurance Mechanism

As mentioned above, after the enactment of Law 3175/2003, a new System Operation and Power Exchanges Code, providing for the organisation of a competitive day-ahead wholesale market, was adopted (2005). The applicable model is the one of the mandatory pool system, consisting mainly of the following:

[16] See Annual Report 2006 to EC drafted by RAE – July 2006, pp.4-6.

Figure 1: Wholesale Electricity Market



Source: RAE

- The HTSO is granted the duties of the market operator. Within that framework, the HTSO:
  - Collects (a) the demand declarations that are submitted by the load representatives and exporters, and (b) the generation offers that are submitted by the generators and the importers.
  - Computes the system marginal price – SMP for each hour of next day by sorting in ascending order the economic bids.
  - Determines the operation schedule for the next day applying least cost unit commitment based on economic offers and system constraints.
  - Controls the operation of power plants and the use of interconnections.
  - Settles financial transactions, and manages imbalances.
  - Plans for and carries out the provision of ancillary services, such as voltage control, reactive power and power reserves.
- Generation offers include an economic bid (except RES other than large hydro), which has ten steps for each hour of the next day and must be equal or higher than the unit fuel cost of the plant. A price cap is applicable (150 €/MWh).
- Withholding capacity is not permitted except in case of planned or unplanned outage; otherwise the HTSO is responsible for imposing penalties to generators.
- All financial transaction between the HTSO and generators and suppliers are carried out on the basis of the SMP.
- Bilateral contracts with physical delivery are not permitted; but, bilateral contracts about financial settlements (e.g. contracts for differences) are permitted and are uncontrolled.
- Capacity Certificate Obligations for load representatives, i.e. suppliers and auto-supplied customers, apply. More specifically, according to the capacity assurance mechanism:
  - Capacity Certificates are issued by all generators, refer to a future date and declare technical availability of certain power

capacity (even future) from a specific power plant – Generators may price freely their Certificates.
  - Each supplier bears the obligation to submit to the HTSO Capacity Certificates up to a level covering the peak load of his customers; otherwise a penalty is applied by the HTSO.
  - Suppliers purchase their Certificates from Generators after bilateral financial agreements that are not regulated. Vertically integrated companies (e.g. PPC) are not obliged to enter into such financial agreements.
  - During a transitory period, in order to purchase power from Day Ahead Wholesale market, suppliers other than PPC may just pay a fee which is currently set at 35,000 €/MW-year.
  - Total cost borne by suppliers is equal to SMP, plus capacity payments corresponding to Capacity Certificates.
- In case of inadequacy of supply, the HTSO may organise tenders for new capacity by granting capital revenue guarantees. The first tender was launched in 2006. This tender was stopped in summer 2007, since upon complaint related to the tender rules and specifications the Commission decided that it did not comply with the general principles of EU legislation.

Rights to use the interconnections for imports are granted after yearly and short-term auctions for part (North) or the whole (Italy) of capacity. From 2007 PPC is also obliged to participate in such auctions, while up to December 2006 a capacity slot of the northern interconnections was granted directly to PPC. Exports are permitted only if the exporter is also a power generator in Greece, if the exporter holds Capacity Certificates, or if he is an importer.

4.8 Liberalisation of the Retail Supply Market

The electricity market opening started on 19 February 2001 when consumers connected to the HV System or the MV Network acquired the right to choose supplier. With the provisions of Law 3175/2003 from 1 July 2004 all non-household customers situated on the interconnected system (circa 70% of the annual electricity consumption) became eligible. However, in 2003 still only five eligible customers were served partially by a supplier other than PPC, covering a small part of their load through imports.

According to Law 3426/2005, on 1 July 2007 all customers, including households, became eligible. However, the practical consequences of market opening are rather negligible, since nobody has changed supplier so far. This is mainly due to the regulated tariffs that PPC is obliged to apply: as explained below, these tariffs are often below cost, making new entrance into the supply business almost impossible.

A request for derogation regarding the small non-interconnected islands (not including Crete and Rhodes) was submitted by the Greek Government to the Commission. If such derogation is granted, consumers situated on such islands will remain non-eligible, and PPC will remain the sole generator, distributor and supplier operating on such islands.

Table 1: Market Opening

Year	**Threshold GWh/year**	**% Market Opening**
1999	N/A	0
2001	1 kV	34
2005	All except households & non-interconnected islands	70
2007	All except non-interconnected islands	92

Source: Annual Report 2006 to EC drafted by RAE

The condition for entering the supply business is the issuance of a supply license and the proof of adequate power generation capacity through the capacity assurance mechanism. Licenses to Supply are restricted in terms of power. All licensed suppliers (29 licenses for a total capacity of about 4,936 MW) other than PPC are currently traders selling imported electricity from the North interconnections mostly to the Day-Ahead Market.

4.9 Privatisation of Electricity Assets

Privatisation of electricity assets was not applied. It is not predicted that this policy choice will change.

4.10 Definition of Rules Concerning Consumer Protection, Allocation of Energy Subsidies, and Stranded Costs

Rules regarding consumer protection are included in the Supply Code that was issued in 2001 and includes two parts, that is for eligible and non-eligible customers. The provisions of these Codes have not been revised following the amendments of the initial provisions of Law 2773/1999 and this situation is a source of uncertainty and incompatibilities.

Specific rules as regards supply contracts apply to dominant suppliers and mainly to PPC for as long as it supplies more than 70% of eligible customers' total consumption. These rules include regulation of tariffs and of the contractual terms and conditions.

According to Article 26 of Law 2773/1999, PPC is a supplier of last resort, having the obligation to supply all customers that cannot find another supplier. In such cases, PPC may request for approval of special tariffs, enabling the recovery of eventual costs that are due to the fact that such customers previously had another supplier. Such tariffs have not been approved yet. In May 2007 RAE launched a public consultation with the purpose of granting opinion to the Minister for the approval of such tariffs. This procedure is ongoing.

5. Recent Performance of the Electricity Sector

5.1 Investment

5.1.2 Interconnected System

Between 1995 and 2007 total nominal installed capacity of the electricity generation system in Greece rose from 9,198MW to 12,229MW. However, because of high increase of electricity demand, Greece is currently lacking sufficient power capacity. Investment in power generation, particularly during the past seven years, which coincide with the first steps of market liberalisation, has not been sufficient to allow for a normal reserve margin. Electricity demand and in particular the growth of peak load has been growing at a pace of 4% per year on average.[17] Peak load is currently above 9,960MW and the reserve margin close to zero.

The main energy form used to generate power in the interconnected system is indigenous lignite which is extracted (mainly by PPC) from surface mines located mainly in the northwest part of Greece (Ptolemaida/Kozani) and secondarily in Peloponnese (Megalopolis). Lignite plants cover mainly the baseload. It is worth mentioning that 1,150MW of the 5,288 installed MW of lignite power plants are very old; therefore PPC is currently considering their replacement.

Natural gas was introduced to the Greek energy system after 1996 (Law 2364/1995). Since then, the share of gas in total electricity generation has been continuously increasing. During the last decade, new combined cycle natural gas generation units were commissioned and part of the old oil-firing plants have been transformed to burn natural gas. As a result, the share of natural gas in total electricity generation increased significantly from 5.1% in 1999 up to 21% in 2007. At the same time, the share of oil-based power generation decreased from 18.8% down to 6%.

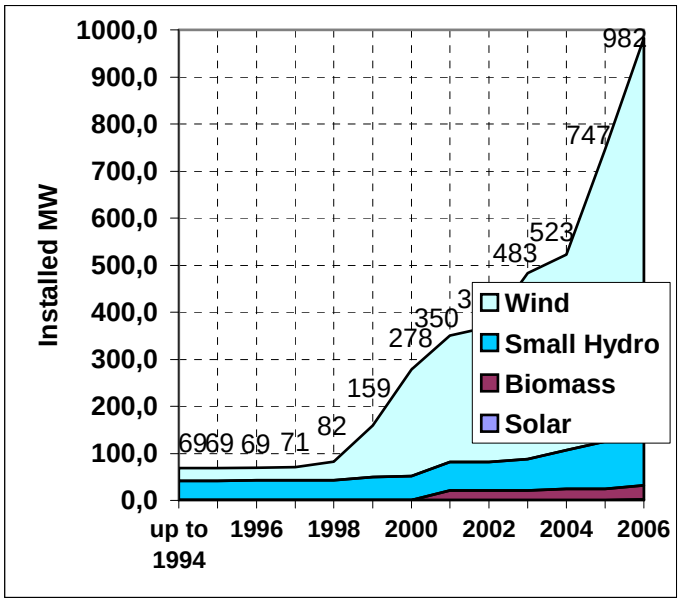
Oil-fired power plants installed in the mainland system are few and very old; they use residual fuel oil and operate mainly for supplying ancillary services and reserve power (e.g. PPC units in Lavrio and in Aliveri).

Hydroelectric plants are based on water reservoirs and operate so as to cover peak load. The installed capacity of RES is still very small, despite the high potential of wind power and of solar energy. Hybrid schemes have not yet been constructed; however, the recently adopted Law 3468/2006 clarifies the energy tariff regime that is being produced in Hybrids and is therefore expected to stimulate anew the investment interest for particular projects that had been examined in the past.[18]

[17] Historically, the demand for electricity increased from 80kWh per capita in 1950 to 4,808kWh in 2005. Electricity per capita is still low if compared with the EU average.

[18] For further information on RES see GREECE – Renewable Energy Fact Sheet, in: http://ec.europa.eu/energy/energy_policy/doc/factsheets/renewables/renewables_el_en.pdf

Figure 2: Cumulative Capacity of RES Installed Plants



Source: Ministry for Development 2005 - 3rd National Report regarding the penetration level of RES

Cogeneration plants (CHP) are few and small; their total installed capacity is 216.3 MW and they are linked with industrial applications. Only six distinct cases of CHP are operating. There exist also a small system of district heating with steam extracted from lignite plants of PPC. The first large CHP plant of 330MW is expected to be commissioned in 2008 and belongs to the company Aluminium of Greece S.A (a large industrial company). That plant is linked with the production of raw material for aluminimum melting.

The currently installed capacity of electricity generation of the interconnected System is shown in Table 2.

Table 2: Interconnected System Installed Capacity (2007)

Type	Installed capacity (MW)	**Percentage (%)**
Lignite	5,288	43
Natural Gas	2,523	21
Oil	750	6
Hydro-electric >10 MW	3,057	25
RES	611	5
Total	12,229	100

Source: PPC, HTSO

5.1.2 Non-Interconnected Islands

As already mentioned most of the Greek islands in the Aegean Sea are not interconnected with the electricity grid of the mainland and have local autonomous systems. The biggest autonomous systems are those of the islands of Crete and Rhodes.

Oil is almost exclusively the energy form used for electricity production in the non-interconnected islands; oil-fired plants cover more than 99% of total electricity produced in these islands. The percentage of RES is still small (below 10% of nominal installed capacity).

Table 3 shows the currently installed capacity of electricity generation in the non-interconnected islands.

Table 3: Non-Interconnected Islands Installed Capacity (2007)

Region	Fossil capacity (MW)	RES (incl. Hydro) (MW)	Total (MW)	% RES
Crete	730	18	748	2.4
Rhodes	206	0	206	0
Rest non-interconnected islands	581	13	594	2.2
Total	1,517	31	1,548	2%

Source: Ministry of Development

With the exception of RES, all generation licenses regarding the islands are held by PPC. PPC also holds licenses for two new oil-fired plants to be built on Rhodes (120MW)[19] and on Crete (270MW).

The introduction of natural gas on the island of Crete is still under consideration, although positive proposals were submitted by RAE in 2003. Furthermore, projects for large-scale interconnection of the islands with the electricity grid of the mainland are currently under consideration.

5.2 Prices and Consumer Issues

Total net electricity consumption in the Greek interconnected system is estimated at about 54.586TWh in 2004 and about 53.4TWh in 2005, of which 1.34TWh were transmission system losses.

Table 4 shows the increase of electricity sales in Greece since 1955, including exports and excluding electricity sales to lignite mines.

[19] The generation license for the island of Rhodes was granted by decision of the Minister of Development directly to PPC following an unfruitful tendering procedure. This license was annulled following a decision of the Council of the State, i.e. the Supreme Administrative Court. In August 2007 a new license was granted to PPC, according to the provisions of Law 3426/2007 that introduced a bottom-up procedure also for the non-interconnected islands.

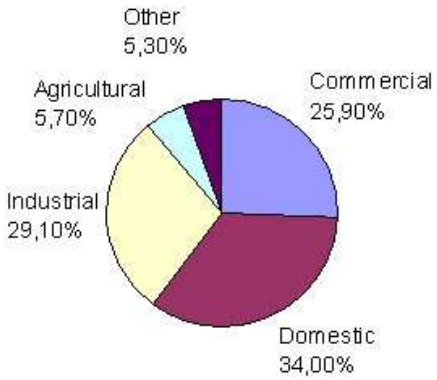
Table 4: Increase of Electricity Sales (GWh)

Year	1955	1960	1970	1980	1990	2000	2005
GWh	551	1.422	8.358	20.065	28.337	43.263	50.719

Source: PPC

Residential and commercial customers represent approximately 66%, industry 28% and agriculture 6% of total demand. The average load factor of power demand is approximately 61.5%.

Figure 3: Analysis of Greek Electricity Consumption (2003)



Source: PPC

As the law provides, PPC is obliged to supply non-eligible customers at prices that are regulated by decision of the Minister of Development issued upon opinion by RAE. Eligible customers have the right to negotiate prices with the supplier of their choice. However, aiming at mitigating excessive market power of PPC, according to the provisions of the Eligible Customers Supply Code (2001), the tariffs applicable by PPC to eligible customers are also regulated for as long as the said company supplies more than 70% of total electricity consumption of eligible customers of Greece. Currently PPC supplies more than 98% of total electricity consumption in Greece, i.e. approximately 7.1 million customers.

The structure of PPC tariffs, i.e. the rules defining tariffs as applied per sector, remains unaltered since the monopoly period, i.e. for almost 40 years. Only the numerical values of total tariff levels per sector are changed every year as a result of government regulations. These tariffs are applied in a uniform manner for all customers independently of their geographic location in Greece. The tariffs vary per connection voltage level and sector to which the consumer belongs (for example industry, residential, and so on.). Recently RAE launched a procedure for the revision and rationalisation of PPC tariffs. This procedure is ongoing.

Low tariffs are exceptionally applied for agriculture, PPC employees and families with more than three children.

The High Voltage (HV) and the Medium Voltage (MV) tariffs are binomial: they are based on separate charges for power and for energy. The tariffs apply to the power component (MW) generally a higher price than to the energy component (MWh). The related supply contracts apply take or pay obligation clauses regarding the power component, based on mentioning in the contracts per customer the volume of power on which take-or-pay obligations applies.

The Low Voltage (LV) tariffs are based only on an energy component and include a fixed payment term. The residential tariffs are varying stepwise and follow an upwards increasing slope; the first step is almost two times lower than the fourth and the subsequent steps.

Commercial and small industry electricity prices are significantly higher than average electricity cost, whereas the High Voltage prices as well as the residential and agriculture tariffs are below average cost.[20] Therefore, cross-subsidies between different consumer categories exist in Greece. Also cross-subsidies apply to the benefit of consumers located in non-interconnected islands.

Interruptible tariffs are not applied. However, in order to overcome supply shortages during the summer, over the last few years, PPC, upon decision by the Minister of Development and opinion by RAE, designed and offered to consumers specific economic incentives, so as to incentivise interruption of electricity consumption during peak hours. Covering peak demand has been a problem over the past years, particularly in summer and specifically in July. This is related to the high use of air conditioning installations.

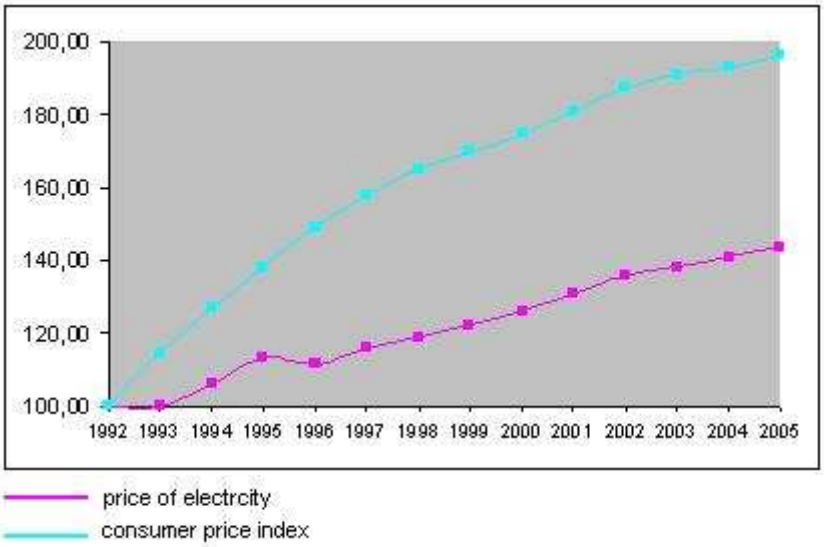
Finally, as regards the contractual relations with its customers, PPC still applies the supply contract forms that were applicable during the monopoly period. The supply contracts are not negotiable. These contracts are indefinitely renewed, without any negotiation between customers and PPC. The contracts also include terms and payments regarding the connection to the grid. This practice raises uncertainties as regards the relationships between PPC and its customers and for these reasons PPC services are currently reviewing the stipulations of the old contract-forms.

5.3 Financial Performance

PPC tariffs are regulated according to a cost-plus methodology: every year, PPC submits requests claiming coverage of all kinds of costs incurred plus profit. The currently applied PPC tariffs were approved in summer 2006.

[20] According to IEA recent studies, Greece has the lowest EU-15 household and industrial electricity tariffs: IEA, Energy policies of IEA Countries – Greece, 2006 Review, 2006, p. 128.

Figure 4: Comparison of Average Price of Electricity/Consumer Price Index



Source: PPC

In March 2007 the Government decided to increase the industrial tariffs at a rate of 4%. Further increases were approved in December 2007.

Over the last two years, PPC has seen its costs growing as a result of high fuel prices, including the prices of natural gas and oil and the payments for purchasing CO_2 emission allowances, which are related to the EU Emission Trading Scheme (EU ETS). PPC claims that these additional costs have not been reflected upon the regulated tariffs and asks for revision or even for an automatic system for revision of electricity prices. However, the Government has not yet accepted such a system.

Current customer supply electricity prices (average across all customers 81€/MWh) are below estimated total cost of PPC (83€/MWh) including a low rate of return on capital (below 5%). In addition, the lignite mining productivity is deteriorating and the generation fleet is old and source of pollution.

As a consequence, PPC profitability has been decreasing during the last two years (from €502 million in 2004, to only €42 million in 2006), as operating costs are steadily increasing more than the increase of revenues. The current effective rate of return on capital of PPC is small and is estimated to be between 1% and 3 %. New management has been appointed recently and therefore measures are expected to cope with the decreasing profitability trends.

5.4 Efficiency

As far as energy efficiency is concerned, power generation in Greece is characterised by low thermal efficiency on average. This is due to the ageing of power plants owned by PPC, notably the lignite plants and the old open cycle oil and gas plants which are still in operation.

The new power plants built over the past few years are based on Combined Cycle Gas Turbine (CCGT) technology and therefore display high thermal

efficiency rates. Since it is expected that most new investment will mainly apply the CCGT technology, average thermal efficiency of power generation in Greece is expected to rise. The average thermal efficiency of old plants is in a range between 0.31-0.33 which obviously is very low compared to state of the art technology. New power plants have an average thermal efficiency of the order of 0.50.

Concerning economic efficiency, the Greek power generation system is taking benefits from exploiting the low-cost indigenous resources, namely lignite. For this reason, the ratio of fuel cost over total generation cost is among the lowest in Europe. However, this ratio is deteriorating, because of the increasing marginal cost of lignite.

Non-fuel components of operation costs as a ratio to total power cost is largely inefficient. Ratios such as labour costs per MW, operation and maintenance costs per MW and network costs per MW are all clearly above the European average.

5.5 Network Coverage

The Greek mainland has a well-developed electricity transmission system which is interconnected with the transmission systems of the neighbouring countries in the north and through a DC 400kV direct-current submarine cable with the Italian transmission system; an interconnection at the border with Turkey is currently under construction. Greece operates under the UCTE system.

However the electrical stability of the Greek electricity system is vulnerable because of the high concentration of generation units in the northwest part of the country and the high distance from the south where most of the load is concentrated. In addition, the synchronous and the high capacity interconnections with other countries are also located at the northern borders. Transporting electricity to the main demand load which is situated in the South and principally in the Attica peninsula involves losses, high needs for reactive power and instability of voltage. Due to this high geographical imbalance between generation and demand, it is necessary to transfer big quantities of capacity along with the axe North-South, through four long-distance High Voltage (HV) lines, which operate in parallel.

The interconnected Transmission System consists of the High Voltage (HV) lines of 149kV to 400kV, including the interconnections with neighboring countries, and of the 66kV submarine connections to some of the islands. It has currently a length of approximately 11,300km. Table 5 provides information regarding the expansion of the length of the Transmission System since 1955.

Table 5: Transmission System (HV)

Year	1955	1960	1970	1980	1990	2000	2005
Km	1.125	1.960	4.286	6.612	9.098	10.551	11.373

Source: PPC

The (interconnected) Distribution Network consists of the Medium (MV) and Low Voltage (LV) lines, has approximately 7 million metering points and a length of 207,300 km, covering all population. Also part of the Distribution Network are the autonomous networks of the approximately 2,000 non-interconnected islands of the Aegean Sea. Table 6 provides information regarding expansion of the length of the Distribution Network since 1955.

Table 5: Distribution Network (MV & LV)

Year	1955	1960	1970	1980	1990	2000	2005
Km	1.480	9.300	58.450	109.566	151.548	190.211	207.299

Source: PPC

The exclusive owner of both the Transmission System and the Distribution Network is PPC. Within the framework of the unbundling requirements however, the operation of the Transmission System was granted in 2000 to a separate company, namely the Hellenic Transmission System Operator S.A. (HTSO S.A.), which from July 2007 was also responsible for the operation of the Distribution Network. The HTSO does not own the grid assets.

As the law and the System Operation Code provide, the Transmission System expands according to a five-year Electricity System Development Plan, which is yearly prepared by the HTSO and approved by the Minister of Development following opinion by RAE. The currently approved plan is applicable for the period 2005–2010 and aims at increasing reliability and the transmission capacity of the System. It includes the construction of the 400kV interconnection with the Turkish system, the expansion of the 400kV System to the South part of the Peloponnese, the installation of submarine cables for the interconnection of some islands in the Aegean Sea, as well as new high voltage transformer centres (Patra, Rouf, Korinthos, Argyroupoli).[21] As an exclusive owner of the Transmission System, PPC is responsible – within the framework of contracts concluded with the HTSO – for the expansion of the system as well as for planning and carrying out the maintenance, the daily operation and its functionality. Such contracts have not yet been signed.

Detailed provisions regarding the expansion and maintenance of the Distribution Network will be included in the Distribution Network Code that has not yet been issued. The general provisions included in the law provide for the responsibility of PPC as exclusive owner of the Network to ensure the

[21] For related information, see the HTSO website: http://www.desmie.gr

reliability, functionality and efficiency of the Distribution Network, and to provide undistorted third party access.

5.6 Quality of Supply

Regarding the Transmission System, operating standards and obligations of the HTSO for ensuring and monitoring network performance are included in the System Operation Code. RAE is entrusted with the responsibility to control the compliance with these rules.

In September 2006, a tendering procedure was launched by RAE for "Recording of the electric energy quality provided to consumers", in order to specify quality standards in compliance with the legal provisions in force. This study will collect data about the quality of the voltage system as provided at 500 metering points, according to the specific standards applicable according to the Standard EN 50160.

With respect to the Distribution Network, quality standards have not yet been set, due to the absence of the Distribution Network Code which is currently under preparation.[22]

6. Assessment of the impact of reforms

The market restructuring rules that are applicable since 1999 did not lead to substantial changes of the market structure.

More specifically, although generation licenses for about 5,500MW were granted to independent power producers (IPPs), with the exception of RES which enjoys feed-in tariffs and small CHP, only two power plants were constructed and operate and both either belong to a state owned company or are financially covered by a state contract:

a. The first significant IPP unit was a 150MW gas-fired plant owned by HERON S.A. and located in Viotia (Southern system). This unit was commissioned in 2004, after a call for tender launched by the HTSO for the provision of ancillary services regarding reserve capacity. The duration of the contract with the HTSO expired in summer 2007. Right after HERON S.A. signed a contract with PPC, according to which PPC becomes responsible also for the operation of this unit for a three-year period. The Competition Commission and the RAE were notified of this contract.
b. The second IPP unit was a 400 MW CCGT gas-fired located in Thessaloniki (Northern system), which has been operating since December 2005. It belongs to T-Power, a subsidiary of the Hellenic Petroleum S.A., i.e. the state controlled petroleum company.

According to RAE reports and studies, the main reasons explaining the reluctance of new investors were related to high investment risk due to the

[22] For further information see Annual Report 2006 to EC drafted by RAE – July 2006, pp. 25-26.

market concentration and the institutional and regulatory framework in place.[23]

The establishment of the mandatory pool and the capacity certificate system are expected to facilitate new investment in CCGT plants. Most important, however, are the provisions of the legislation in force since 2003 about the tenders which would grant investment incentives, namely revenue guarantees, by the HTSO to new power plants. The first such tender is ongoing; it was launched in summer 2006 and four bids were submitted in February 2007. The procedure is still pending due to a complaint that was submitted to the Commission. However, it should be noted that investors have already officially declared their willingness to construct new power plants even in the absence of any investment incentives.

Regarding RES, impediments to the construction of new energy infrastructure in Greece were opposition of local communities and the excessive administrative burden. The administrative procedures regarding licensing are rather complex and time-consuming, while the respective decisions are often challenged for annulment before the competent administrative Courts, mainly on environmental grounds.

Again with the exemption of RES, all installed capacity on the non-interconnected islands belongs to PPC. According to the initial provisions of Law 2773/1999 a tendering procedure was provided for in order to grant generation licenses for new power plants on non-interconnected islands. Two tenders were launched in 2003 for the islands of Rhodes and Crete. Following RAE decision according to which PPC bidding practices in the Rhodes tender were predatory, the Minister of Development consider this tender unfruitful and granted directly to PPC the related license. The Crete tender was equally considered unfruitful, since only PPC submitted a bid.

With the provisions of Law 3426/2005, the bottom-up approach for granting generation licenses also for the non-interconnected islands was introduced. However, it is not expected that private investors will be interested in entering the generation business in such areas, since it is doubtful if such investment may be profitable due to the applicable PPC supply tariffs (cross-subsidie of customers located on non-interconnected islands).

As regards electricity supply, since the market organisation was principally based on bilateral contracts between power generators and suppliers and due to the absence of any measures introducing a virtual IPP mechanism or other capacity or energy release measures, competition was limited to imports. However, the capacity of the northern interconnections of the Greek Transmission System is limited, compared to the size of the market, and additionally, until December 2006 a significant part of this capacity was allocated directly to PPC (for the purposes of ensuring supply to non-eligible customers).[24]

[23] See Annual Report 2006 to EC drafted by RAE, pp. 33-34.
[24] See Annual Report 2006 to EC drafted by RAE, pp. 33-34.

7. Political Issues and Political Economy Issues Arising from Reforms

The main political issues that are currently under consideration are the eventual increase in PPC tariffs, in order to reflect costs and the rationalisation of PPC cost, mainly with respect to labour costs.

For the longer-term, a matter of political concern is the eventuality that PPC loses significant market share which may create instability in PPC's finance and threaten its financial capability to cover its financial debt.

8. Suggestions for Further Reform

The current considerations for further reforms may be summarised by the following:

First of all, it is considered absolutely necessary to reform PPC prices, so as to reflect true costs and therefore to ensure profitability and viability of the company. Rationalisation and reduction of PPC costs is another issue that has to be addressed.

Promotion of competition in the retail market for the benefit of consumers is an objective that is often combined with the restructuring and rationalisation of PPC tariffs.

A clear and coherent unbundling model, based mainly on efficiency considerations, has to be introduced, in order to avoid further delays as regards compliance with the EU *acquis*.

Promotion of new investment in order to ensure adequacy of power supply is the crucial issue for the Greek electricity market. Experience proves that this objective presupposes a stable regulatory framework and coherent regulatory decisions. Full application of the New Grid Operation and Power Exchanges Code is expected to play a significant role for enhancing new investment. However, the Code provides for the issuance of many handbooks that shall contain detailed rules as regards the application of its provisions. It is therefore necessary to accelerate the issuance of such handbooks.

Finally, it is necessary to complete the regulatory framework by issuing all secondary legislation. The main regulatory gap that actually exists is related to the absence of a Distribution Network Code.

References

Reports & Studies

Annual Report 2006 to EC drafted by RAE – July 2006.

GREECE – Renewable Energy Fact Sheet, at: http://ec.europa.eu/energy/energy_policy/doc/factsheets/renewables/renewables_el_en.pdf

Ministry of Economics, Fact Sheet on the Prospects of the Greek Economy (January 2007), at: www.mnec.gr/en/economics/greek_economy_prospects

Ocana C., International Journal of Regulation and Governance 3(1), pp. 13-32 (22). For more information see RAE official website: www.rae.gr

PPC Strategic Plan (November 2007), at: http://www.dei.gr/Default.aspx?id=3942&nt=18&lang=2

Strategic Plan of PPC (November 2007), at: http://www.dei.gr/Default.aspx?id=3942&nt=18&lang=2

IEA, Energy policies of IEA Countries – Greece, 2006 Review, 2006, p. 128.

Official Websites:

Greek Parliament: http://www.parliament.gr/english/politeuma/default.asp

Prime minister of Greece: http://www.primeminister.gr

Ministry of Development: www.ypan.gr

General Secretariat of National Statistical Service of Greece: www.statistics.gr

Regulatory Authority for Energy: www.rae.gr

Public Power Corporation: www.dei.gr

Hellenic Transmission System Operator S.A.: www.desmie.gr