



INSTITUT LUXEMBOURGEOIS DE RÉGULATION

National Report – English summary

2010

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Major developments in the electricity and gas markets

Since 1st July 2007, all consumers have been able to choose their supplier of electricity and natural gas. In the Grand Duchy of Luxembourg, the market for electricity numbers 268,553¹ consumers who consume a supply of 6.71TWh and the gas market is made up of 81,638 consumers who consume a supply of 15.4 TWh. In the wake of what has been done to open up the market to professionals on 1st July 2004, the Institute monitors the opening of the market to all consumers. It reflects on the procedures, the information systems, the information channels and the protection of consumers and all other measures put in place, in consultation with stakeholders concerned.

I. The wholesale market

- **Development of market concentration**

Concerning the development of market concentration, 2010 confirmed the strong presence of alternative foreign electricity suppliers at national level, which testifies to the good integration of the Luxembourgish transmission network in the German market. Local suppliers have become more diversified in their sources of supply in order to cover themselves to the maximum against the risks of the market and to profit from opportunities as they arise.

The development of the natural gas market did not keep pace with that of electricity. Starting from 1st January 2010, four suppliers were allocated entry capacity at the border points with adjoining networks.

- **Integration of markets**

The Institute is involved in the integration process of the electricity market through participation in the Central-West regional initiative, one of seven launched by the European Commission in 2006. 2010 was marked by the setting up of market coupling within the Central-West region. With the current lack of congestion on the Luxembourgish interconnection lines, the mechanisms are not applied for transmission capacity allocation and congestion management.

The market coupling within the Central-West² region constitutes an important stage towards the integration of the European electricity markets. This coupling (CWE price market coupling) was launched on the 9th November 2010 simultaneously with a volume coupling between the market of the Central-West region and the Nordic region (CWE-Nordic Interim Tight Volume Coupling). So, consumers benefitted from the economic optimisation that results in a more efficient use of the electrical system in the region and in the convergence or equalisation of the prices on the electricity exchanges improving social welfare and the security of supply.

¹ Connection points

² The Central West region is made up of Germany, France and the Benelux

Jointly with the regulators of the nine countries of the North Sea, the Institute expressed its support to co-operation within the « North Seas Countries' Offshore Grid Initiative », a regional co-operation centring on carrying out common solutions to current and future problems in the regional development of an infrastructure for the electrical network in the North Sea.

The integration of the natural gas market is slowed by the limitations of firm capacity at the entry points to Luxembourg. So, at the Belgian border, the requests for firm capacity surpasses available capacity in a way that available capacity should be allocated through a process of congestion management.

The transportation of natural gas from Germany is equally limited due to a lack of firm capacity at the exit point of the German network.

In the course of the year 2010, the Institute studied the development of a new model of allocating capacity to enter at border points with neighbouring natural gas transportation networks. The Institute pursued a two stage approach - putting in place a short-term transitional method on the procedure in case the subscription requests exceeded availability at an entry point, and also developing and consulting on a target model. The Institute approved the access rules detailing the target model³ in the first half of 2011 and these will apply from 1st January 2012.

The Institute collaborated with the French regulator and the French and Luxembourgish transportation network operators in preparing an Open Season. The objective of the Open Season is to develop the firm transportation capacity of France towards Luxembourg. The non-binding phase of the Open Season was launched during a stakeholder group meeting of the North West region on 26th November 2010. The non-binding phase allows market actors to explain their needs regarding supply – this will provide a basis for network operators to plan out the rest of the project.

- **Development of OTC, PXs, gas and hub exchanges**

Most transactions made by electricity suppliers active in Luxembourg are of the OTC type. Because of the absence of congestion on cross-border transmission lines, no restrictions yet exist for the active players in Luxembourg to take part in trading electricity on the German exchange.

Luxembourg does not possess a virtual exchange point for natural gas. Shippers may stock up at the exchange points of neighbouring countries or directly at border entry points to Luxembourg through trading by mutual agreement.

- **Activities conducted by the regulator to promote competition in the wholesale market**

In 2010, the Institute took part in codifying the balancing rules on the electricity market, which resulted in the issuing of a manual⁴ describing the framework of the Luxembourgish balancing zone.

If the function of balancing responsible party is easier to access, and the balancing rules are clearer, these should help competition develop.

³ http://www.creos-net.lu/fileadmin/dokumente/gaz/pdf/Regles_acces_capacites_transport_reseau_creos.pdf

⁴ http://www.creos-net.lu/fileadmin/dokumente/fournisseurs/pdf/Manuel_perimetres_d_equilibre.pdf

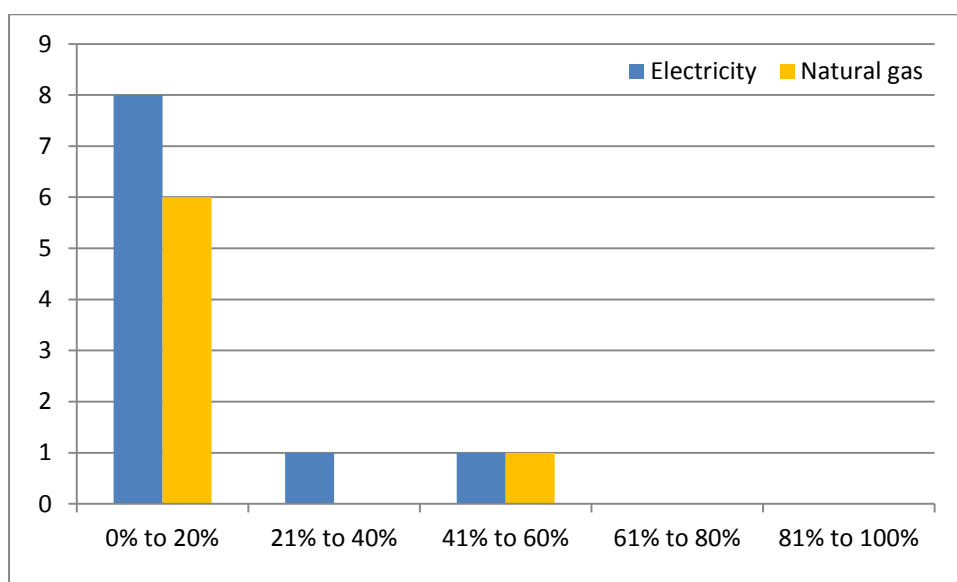
The Institute anticipates that through its activities on the wholesale natural gas market, in connection with the rules of access to entry capacity and with the Open Season, it will be able to significantly contribute to the proper development of the market.

II. Retail markets

- **Development of market concentration**

The data supplied by network operators are segmented by technical criteria and not by consumer activity. This is why it is not possible to distinguish consumption by industry from that of service businesses. It is the same for residential consumption, which can include small non-residential consumers.

Figure 1 Number of players by share of retail market



Regarding the retail market, the Enovos group took control of the suppliers Luxgas (2010) and Luxembourg Energy Office (2011). Although the takeover is not reflected in the HHI⁵ (2144) because the legal entities of Luxgas and Leo remain, it does demonstrate evidence of increasing concentration on the retail market. In the electricity market, the Institute has not noted much increase in alternative suppliers in 2010. By contrast, in terms of natural gas distribution, the first consumers were supplied with natural gas starting in 2010, and 2011, respectively, by new entrant alternative suppliers.

⁵ Herfindahl-Hirschman Index

- **Development of the number of supplier switches**

A change of supplier involves very few steps for the final customer. The supplier, with whom the final customer is going to conclude a supply contract, takes responsibility for the switching procedure, which is free. The final customer signs a supply contract with the supplier of their choice who proceeds with cancelling the current supply contract. The new supplier begins to supply the energy latest on the 1st day of the second month following the request to change. The length of time to change supplier cannot be longer than two months. Normally, the final customer does not have to get involved in the switching process again.

The rate of supplier switches remains at less than 1% (by volume and by number of customers). With electricity, the rate of switching in the professional segment grows steady year on year while the rate of change in the residential sector is returning to the levels of 2007 and 2008 after a drop in 2009. The rate of switching within the natural gas market remains very low despite the increase observed in the residential segment.

- **Price developments**

In Luxembourg, the electricity and natural gas markets have been completely open to competition since 1st July 2007. Since then, there has been no regulated supply price - consumers are supplied by the market offering.

For those clients connected to the distribution network, the three tariff components determining the price are:

1. The price of suppliers (price of energy);
2. The tariffs of the distribution network (approved by the Institute); and
3. The tax on energy, Value Added Tax (TVA), along with Public Services Obligations (OSP), such as contributions to the compensation mechanism.

The data regarding the evolution of the price components of supply to residential clients from 2004 to 2008 are published in the preceding reports of the Institute on the evolution of the market. Since 2009, Statec⁶ measures price levels of natural gas and electricity using the new Eurostat methodology.

After a significant increase from 2008 to 2009, retail prices were revised downwards in 2010. Retail price variations are mainly due to price variations on the electricity stock exchanges. The correlations between market prices for 'year ahead' and the retail sales prices show that price changes for suppliers are passed on to the retail market.

⁶ Central Service for Statistics and Economic Studies—<http://www.statec.lu>

- **Activities undertaken by the regulator to promote competition in the retail market**
 - **Information for final customers**

The Institute has made a substantial effort, through communication and information, to help final customers to navigate the market and to become/ remain active.

To provide better information for individual customers on the opening up of markets, active suppliers and available offers, the Institute updated⁷ the website dedicated to information on the choice of supplier and how to switch. This site's content is in line with the "consumer checklist" issued by the European Commission.

- **Labelling of electricity**

To provide better information to consumers, electricity suppliers must indicate on their bills, their web site and in their promotional documents, how each energy source contributes to their supply. Information on the environmental impact of the energy mix is also provided.

The Grand Ducal Regulation of 21st June 2010 on the labelling system of electricity details the control, supervision and organization of the system and sets out the detail and content of the information provided. The Institute complies with this in determining the mix of the product (s) of each supplier, the mix of each respective supplier and the national mix.

III. **Public Services Obligations and the protection of consumers**

- **Transparency**

The Institute closely monitors the publications released on the internet by the different suppliers and network operators. The transparency of the prices offered, the integrated supply contracts, the general conditions of grid usage and grid connection have improved significantly.

- **Complaint processing**

The powers of the regulators include the mediation between parties in disputes between final customers, network operators and suppliers. Beyond and within what is laid down in law on the markets for electricity and natural gas, any person or party who has a grievance to make against an electricity or natural gas supplier can file a complaint on a number of topics to the regulatory authority.

Over the course of 2010, the regulator did not receive any complaints from final customers neither in its role as mediator nor within the legal procedure for dispute resolution. Seven requests for information and/or complaints were processed without needing to use the procedures set down in law.

IV. **Infrastructure**

- **Evolution of tariffs**

⁷ <http://www.stroumagas.lu>

The tariffs for using the network were revised downwards slightly in 2010. More details are available in sections 3.1.2 and 4.1.2.

The institute has started, with the support of an external consultant, preparatory work with a view to introducing an incentivised regulatory model in Luxembourg. The work is ongoing and will continue in 2011.

- **Investments in the network**

It should be noted that a particular effort was focused on improving the high voltage infrastructure in the south east and south. The infrastructures were adapted to the specific conditions of the regions. Investment projects are underway in order to complete a 220kV loop around the city of Luxembourg to increase the capacity of some overhead lines, currently working at 65kV.

In addition, it should be noted that studies are being pursued with a view to strengthening the interconnection of the transmission network with neighbouring countries. The work focuses particularly on the analysis of the resultant flows of such an interconnection and on the control of risks that may result in the overloading of the transmission capacity. In this context, the Institute has taken part, with the German and Belgian regulators, in discussions on contributing to the costs of the transmission infrastructure and on the connection conditions of the Gas Steam Turbine in this interconnected network.

An industrial network connection from Sotel to the French transmission network of RTE is being constructed, with taking up of service set down for 2011.

Tests are also underway in order to install a new generation of smart meters which allow remote reading and new services to customers. Systematic deployment of these new meters is planned for the coming years. In 2010, the Institute took part in the cost-benefit study for the introduction of smart meters in the electricity and gas networks in Luxembourg. The study findings favour a widespread deployment based on a global architecture through a structured and coordinated process at national level. The Institute intends to actively monitor this process in 2011.

A table providing information on network infrastructure is available in sections 3.1.2. and 4.1.2.

- **Allocating capacity**

The electrical transmission network and interconnections do not lack capacity. So no management of capacity allocation is needed.

In terms of natural gas, the target model which was discussed with stakeholders over 2010 profoundly changed how capacity is allocated and how congestion is managed. Capacities will from now on be allocated via the OSP (Open Subscription Period) with the possibility of taking up firm capacity and interruptible capacity in different scenarios.

Given the rarity of firm and level1 interruptible capacity, these should only be used to supply the annual peak consumption of the shippers' portfolio and they must commit any firm or level1 interruptible capacity they have annually or monthly in excess to the secondary market. In addition, a Use-It-Or-Lose-It mechanism has been set up to prevent overbooking of firm and level1 interruptible capacity from the shippers.

V. Security of supply

- **Electricity sector**

Compared to a peak load of the two simultaneous networks of 1.116MW, the total installed generation capacity amounts to 624MW excluding the pumped storage plant of Vianden. The new investments in generation stock in 2010 were mainly in the plant for developing waste to energy (Sidor S.A.) and the photovoltaic plants following the clarification of the subsidy schemes around the Grand-Ducal Regulation of 8th February 2008 on the generation of electricity based on renewable energy sources. Additional information regarding Luxembourg generation plants is available in section 3.2.1.

The Luxembourgish generation stock is made up of two principal units, the Gas Steam Turbine plant of Esch-sur-Alzette of 376MW and the Vianden hydroelectric plant (pumped storage plant) with a maximum capacity of 1.096MW.

The Gas Steam Turbine plant of Esch-sur-Alzette is connected to the transmission network, but, in normal operation, inputs to the industrial network only, due to the lack of a permanent interconnection between the industrial network and transmission network. The Vianden hydroelectric plant is located on the border with Germany and generates electricity as part of the German system, given its direct connection to Amprion's network.

The principal investments in the high voltage networks have been described in Section IV above.

The Government Commissioner for Energy is responsible for monitoring the security of supply, notably the balance between supply and demand, existing and planned generation capacity, the investment required and the safe operating of networks. They provide information on their monitoring activities through a biennial report⁸.

The balance between generation and consumption is usually evaluated as one criterion for security of supply. This balance is assured when the generation stock of a country at any time and, in view of reserves being available or unavailable, is able to cover the country's load. In the event of a generation deficit in a country, security of supply is ensured when the deficit can be met from surpluses from other interconnected countries provided that enough capacity exists in the transmission infrastructure.

The report notes sufficient spare capacity in neighbouring countries, which Luxembourg could use subject to having the capacity to import it. However, this situation should be re-evaluated following the decisions taken in some European countries, including Germany, to opt out of nuclear in the near future.

- **Natural gas sector**

Security of natural gas supply includes all stages of the value chain, from its exploration and production, storage and transportation to distribution.

⁸ <http://www.eco.public.lu/documentation/rapports/index.html>

For geological, technical and economic reasons, Luxembourg is unable to produce/explore or store natural gas. Indeed, Luxembourg has no exploration fields or geological conditions for naturally holding gas. The only indigenous source is biogas from fermentation and its direct piping into the natural gas network. Apart from the gas in Luxembourgish pipes, the ability to balance demand and supply must come from neighbouring networks, if available.

To transport natural gas to the entry points to Luxembourg, suppliers mainly use the Belgian and German pipe network. Given the agreements with the neighbouring systems involved, the firm entry capacity on the Luxembourg Creos network is limited which is why interruptible capacity covers a part of the demand.

Similar to the electrical sector, the Government Energy Commissioner is responsible for monitoring and reporting on the security of supply.

A regulation (EU) No. 994/2010 of the European Parliament and the Council of 20th October 2010 concerns measures to safeguard security of natural gas supply, reinforcing provisions that aim to maintain the security of natural gas supply and it also enables the implementation of exceptional measures when the market cannot guarantee the security of supply.

VI. Regulation and unbundling

- **Powers of the regulator**

The function of regulator for electricity and natural gas markets is entrusted, by the legislator, to the Luxembourgish Institute of Regulation. As an independent player in the internal market structure, its mission is to ensure regulation and supervision, in the interest of the consumer and the proper functioning of markets on the basis of effective and sustainable competition, while ensuring a universal service.

The regulator is responsible for ensuring the non-discrimination, effective competition and efficient functioning of the electricity and natural gas markets. It carries out this mission through the powers granted under the laws of 1st August 2007.

Its powers involve determining how regulated tariffs are calculated, as well as the approval of the regulated tariffs and the contractual terms of the system to ensure non-discriminatory access for all network users. The provisions come into force after publication in the Official Journal (Memorial) of the decisions taken and regulations made by the directors of the Institute.

Aside from the monitoring of network access and obligations relating to the accounting, functional and legal unbundling, the Institute monitors compliance with the obligations associated with the provision of public service obligations and quality of universal service.

- **Administrative sanctions**

The Institute had to draw up several formal notices, which were followed by a summons under article 65 of the Law of 1st August 2007 on the organisation of the electricity market. Another formal

notice was followed by a summons under article 60 of the Law of 1 August 2007 on the organisation of the natural gas market.

The Institute had to deliver one administrative penalty against a natural gas network operator for violating professional obligations resulting from Article 29 of Law of 1st August 2007 on the organisation of the natural gas market.

- **Evolution of the unbundling of transmission and distribution network operators**

In 2010, the Institute continued to monitor the separation of accounts and functions of distribution network operators, in particular through the analysis of separate accounts for each activity and for service delivery contracts and internal regulations with the vertically integrated company.

Legal separation does not apply to distribution network operators who have less than 100,000 clients connected. So, only Creos Luxembourg SA, who manages combined natural gas and electricity transmission networks as well as the distribution of electricity and natural gas (following the integration of Luxgaz distribution SA network), is obliged to legally separate activities.

The exemption granted by Directive 2003/55 to the operator of the natural gas network did not have to be extended due to the creation of the Enovos group with its subsidiary network operator Creos Luxembourg SA.

The Institute continues to monitor compliance criteria guaranteeing the independence of Creos, namely:

- Completely independent decision-making by the subsidiary's network management, except the right to economic supervision by the parent group;
- Ensuring the professional interests of the responsible persons of the network operator, allowing them to act independently.

Creos Luxembourg SA today is not only an operator, but it also owns infrastructure and employs most of the staff it needs. However, the use of shared services with other Enovos group entities still happens.

Using the services of an integrated group could potentially harm the independence of the network operator. In no event should the independence of the subsidiary in terms of organization and decision-making be hindered by the performance of the services by other entities of the group. Use of services by other group entities must be a choice by the subsidiary, a transparent selection process, and may not benefit from cross-subsidies. Finally, the use of the integrated group's services must be clearly set out in contracts likely to be audited.

Reciprocal commitments have been made between Enovos group entities and Creos Luxembourg SA. Staff of each entity only have access to databases of the above companies to which they are attached, as described for different jobs for which access rights are clearly defined and delineated. The objects of the service delivery contracts entered into by Creos with other group entities are described in Section 3.1.3.

Creos has established a compliance programme which sets out measures taken to ensure that discriminatory conduct is prevented and that its implementation is subject to appropriate

monitoring. The compliance programme lists the specific obligations imposed on the staff of the company to achieve this objective. More details about the compliance programme are provided in Section 3.1.3.

The unbundling obligations are reinforced by the provisions of the third EU energy package (2009), currently being turned into national law.

VII. General conclusions

In 2010, integration strategies for electricity and natural gas networks were continued. They are accompanied by concentration effects on retail markets for the supply of electricity and natural gas. In addition, the Institute has not seen competition significantly develop in the retail market.

Significant progress has been made in the rules of network access, capacity allocation and congestion management, both nationally and regionally.

Meanwhile, considerable investment in both interconnection infrastructure and, at the same time, electricity generating stock, seem necessary to meet changes in demand, as well as targets for renewable energy and the restructuring of European generation stock.

Networks must equally prepare for the challenges of integrating decentralised generation sources and consumer information on their current consumption through the introduction of smart grid infrastructure, capable of real-time communication.

The efforts initiated concerning the protection of, and information to, consumers must be pursued consistently and coherently so consumers are in a position to make choices knowing the consequences.

Finally, the guidelines and regulations of the 3rd Energy Package aim to clarify the remaining obstacles to the sale of energy under the same conditions and without discrimination or disadvantages in the Community. With the implementation of effective unbundling, that is to say, the effective separation of networks from the activities of generation and supply, the new legislative framework currently being turned into national law should allow the establishment of non-discriminatory access to networks and push the development of cross-border interconnections.