

Liberalising the Electrical Power Market in Slovenia

V. POZEB¹, T. KROPE², D. GORICANEC³

¹Dravske elektrarne Maribor,
Obrezna ulica 170, 2000 Maribor
SLOVENIA

²LL.M. student at University College London, Faculty of Laws
Bentham House, Endsleigh Gardens
London WC1H 0EG
UNITED KINGDOM

³Faculty of Chemistry and Chemical Engineering
University of Maribor
Smetanova ul. 17, 2000 Maribor
SLOVENIA

Abstract: The article deals with the issue of opening up the electrical power market in Slovenia in relation to the growth of the market relating to factors which influence the costs of electrical power. It demonstrates the physical and financial flows from all market participants on the production - transfer - distribution and supply chains describing their tasks and characteristics. The article lays out the activities and organisation of electrical power exchange and reflects on the future of the Slovenian market.

Key words: Power, liberalising the electrical power market, market organiser, power exchange, consumers, costs

1 Introduction

Electrical power is a resource which has become vital to our everyday lives. It has an important effect on the efficiency of the economy, while it also affects people's standard of living. This makes prices of electrical power a key factor in determining the competitiveness of individual economies, as higher prices result in increases in consumer goods prices, which in turn leads to a fall in the competitiveness of an economy. On the other hand, higher electrical power prices result in a lower standard of life for individual households. The drive to ensure lower and lower prices of electrical power has led to the formation of different systems of organised markets of electrical power supply.

The organisation of electrical power markets is also influenced by the fact that electrical power is not a standard commodity. We are forced to immediately transfer, distribute and consume it. This means that the balance between the demand and supply side must be constantly maintained, meaning that electrical power markets must have certain organisational and technical characteristics. An additional problem is represented by the fluctuation of electrical power through time, whereby we are familiar with certain patterns of consumption (daily, weekly, annual), but we can never be certain of the demand. Before the liberalisation of electrical power

markets, the coordination of electrical power production was generally carried out by vertically integrated monopolistic corporations. Therefore, decisions regarding operation and investment were being taken by a monopolistic corporation, thereby considering the technical obstacles and obstacles to the transfer of electrical power.

Before changes to the electrical power market, supply is inseparably linked to distribution, as customers are not able to choose their distributors, which makes supply in terms of an independent function a non-issue. Traders in or suppliers and producers of electrical power therefore adjust their activities to correspond with the needs of consumers on special electrical power markets, while all operations must continue to be technically linked, if we wish to ensure unhindered consumption of electrical power.

2 Organised Electrical Power Market

The most important documents, which define the EU's energy policy, are without doubt the Green Paper on Energy Policy [1], which lays down the basic premises on energy policy, along with the White Paper on Energy Policy [2], which defines the ways through which it will be possible to attain the strategic objectives set out in Table 1.

Table 1: Energy policy objectives [3]

Environmental sustainability	Economy	Supply reliability
Strengthening of harnessing local resources Decreasing risks in importing – lon-term import insurance Rational and economical consumption of power – including new technologies Maintaining technical safety of transport networks.	Replacement of energy sources polluting the environment with environmentally-friendly sources, especially in order to ensure (objectives of) maintaining a clean atmosphere (renewable energy sources) Rational and economical consumption of power – including new technologies	Cost-effective and reliable production of power for industry and other consumers Enabling accession of national companies from the power sector into foreign markets

Fulfilling all the objectives of the energy policy is generally unattainable, although fulfilling some of them is a realistic proposition. Given the point of departure and the generally accepted limitations (natural characteristics and available funds), it is only possible to achieve certain ends. In addition, certain objectives are partially contradictory. The biggest conflicts tend to spring up between the goals of »competitiveness of the economy« and »protection of the environment and health«, while the threat of social political opposition in implementing individual energy policy provisions is also distinctive. This is why in 2006, the European Commission drafted a Green Paper [4], thereby raising the debate on the elements, contents and the need for a common energy policy on the community level. The results of the debate are likely to be transformed into new legislative proposals on an EU level.

The basic principle guiding the policy-makers of energy policy is increasing the competitiveness of European industry in global markets. The European Commission assigned particular emphasis to three activities:

- Establishing a free market in the field of power supply, which will lower electricity prices,
- Ensuring a transparent and non-discriminatory market operation thus increasing the interest of capital investment organisations in the energy sector,
- Dismissing the obstacles for international energy trading between EU member states, which will help to stabilise opening the energy market in the EU.

The consequence of such an energy policy was the adoption of EU guidelines 96/92/EC [5] on common rules within the internal electrical power market, which resulted in significant changes in operations and organisation of the entire electrical

power sector.

The new terms and conditions mean that electrical power supply is now being carried out as a market activity, in which the supplier and the consumer freely agree on the quantity and price of the energy supplied, unless legislation states otherwise.

An example of an organised market is presented in Figure 1.

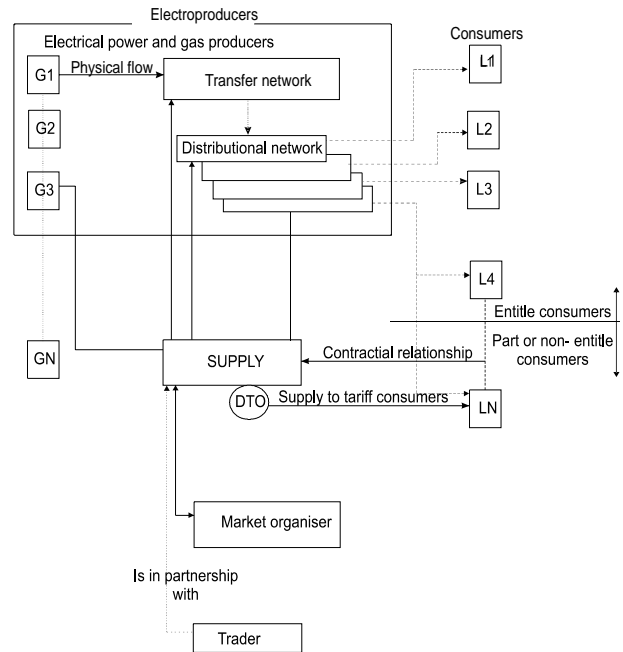


Figure 1: The organised market

Figure 1 highlights the financial and physical flow of energy between all the participants in the energy market along with the links on the production – transfer – distribution – supply chain. However, we must keep in mind the distinction between supply and delivery.

In Slovenia, contracts are reviewed by the market organiser, which is only part of the operation. The way in which a supplier obtains and sells electrical power is a significant issue.

The supplier may supply electrical power to legitimate entities either from the retail market (directly from the producers) or from the wholesale market, which represents a big risk, as the state, or rather regulator, do not have any influence or powers over eventual intervention, unlike, for instance, the retail market, where the relationship between the supplier and the consumer is licensed, regulated and controlled.

Trading in an organised market has the following advantages [6]:

- Insurance from financial risks,

- Possibility of optimum planning of production and consumption of electrical power,
- Direct link between supply and demand allows for high liquidity,
- Possibility of concluding bilateral agreements on the organised market ensures greater security,
- Standardised power exchange products allow regulated and monitored trading in accordance with established rules,
- Public announcement of trading results and movement of indices enables individual analysis and forecasting of price movements,
- Possibility of lowering operating costs,
- Trading allows companies to choose where and at what price they will purchase electrical power themselves,
- Trading in electrical power does not have spatial limitations.

3 The electrical power market in Slovenia

Adopting the Energy Act was one of the obligations taken up by the Republic of Slovenia, as it had to adjust its legislation and liberalise its energy market in line with EU Guidelines on the Internal Market [7].

In formal legal terms, the liberalisation of the electrical power market in Slovenia began on 15.4.2001, while consumers will undoubtedly note 15.10. 2001, when the beginning of the market's operations was announced.

In the establishment of an electrical power market, there are many conflicting interests, not least as there are large sums of money involved. There is also a profound redistribution of benefits, costs and power. This redistribution is strongly linked with the drafting of regulations and technical guidelines. The combinations are very complex, while bargaining power depends also on the narrow field of specialised expertise and experience. As no previous experience had been obtained, and those able to offer expertise without ceding to the interests of the electrical power suppliers were not given adequate assistance, participation in this process was reserved for those who possessed the technical-operational expertise and who have been omnipresent in the market. This includes electrical power companies and associated academic and research institutions, who are able to profit in this way through calls for optimisation of their individual benefits or through agreement on account of the third party – the small consumer.

Two years after the adoption of the Energy Act,

and at a time when the market was supposed to have formally been up and running, some of the key administrative-technical parameters were still unknown, while some were not logically harmonised. This shows that the process of market liberalisation had not been politically defined and will therefore be slowed down.

3.1 Power supply companies and consumers

Distribution companies have faced lack of funds for maintenance and development of the distributional network in the past, and it seems that under the new conditions, these funds will become even more scarce, which could lead to reduced efficiency and poorer quality of electrical power supply within a few years time. We can hope for an improvement of this state only after privatisation has been completed, especially in the case of eventual takeovers by foreign investors, when distribution will be carried out by someone fighting for the interests of capital ownership. At such a time, however, we could witness a price shock, as owners will no longer be influenced by direct political pressure. The state will be forced to listen to them; restricting electricity prices will no longer be possible, as poorer reliability and quality of supply will not be an option.

For Slovenia, as for other countries in transition, it was characteristic that a classic energy policy was absent in the past, while an energy market did not exist either. The state managed power supply on an administrative level. Low energy prices were set in order to achieve faster industrial development and improving citizens' standard of living. Construction of power supply developments and infrastructure was state financed, while quotas were set for imports of deficient resources. All this led to an irrational consumption of energy and hindered the development of the market in the power supply sector. It should be noted that the Government of the Republic of Slovenia has boldly endeavoured, in previous years, to adjust electrical power prices to reflect their fair market value, as they are currently well under the limit which ensures reimbursement of costs and depreciation to electrical power producers. The Government was hampered by the EU's demand on controlling inflation, which was partly being achieved with low electricity prices.

Such conditions could have negative consequences for power supply and the market. Vital investments in power supply distribution are being put on hold, while transfer and production of electrical power is facing a chronic lack of necessary funds. This is making power supply companies incapable of investing and therefore unprepared for competitive market conditions.

3.2 The costs of electrical power

In addition to the cost of the purchased electricity and their own expenses, traders and distributors of electrical power must cover the costs of the network charges, i.e. operational costs, maintenance and development of the transfer network, which is owned by the state and is managed by ELES (Elektro podjetje Slovenije), as well as prices of so-called system services, which are carried out by the latter. These prices are determined by the Energy Agency which acts as an independent market regulator.

In addition to the technical bottlenecks in transferring electricity from distant power stations, high network charges can be the main obstacle in supplying electrical power from abroad.

The Slovenian Electrical Power Exchange–Borzen, began conducting daily auctions allocating cross-border transmission capacities at borders with Croatia, Italy and Austria by authority of ELES, in the role of the transfer network system operator, as of 25. 4. 2005.

The average price of transmission for a base load product on the Croatian-Slovenian border from Croatia to Slovenia in the period from the beginning of the auctions until the end of 2005 amounted to 4.9 EUR/MWh, while the average price of transmission for a base load product on the Austrian-Slovenian border from Slovenia to Austria amounted to 1.7 EUR/MWh. At the Slovenian – Italian border, definitions of trading products changed three times, with the largest volume of trading being carried out with products DS1 and DS2 (between May and October), with the average price of the first amounting to 8 EUR/MWh, and the second 8.6 EUR/MWh [8].

3.3 Electrical Power Exchange

In Slovenia, the electrical power exchange activity was entrusted Borzen, d.o.o., a subsidiary of Elektro-Slovenija, which was been founded at the start of 2001.

At first, Borzen organised weekly meetings, which saw buyers and sellers of electrical power meeting to carry out trading. By the end of 2001, trading started taking place in electronic form. At first, trading on the power exchange was carried out on an auction basis only (market meetings, where trading is conducted for every hour for the coming day), while the new trading information system (TISOT) enabled real-time trading (supply and demand are constantly juxtaposed), which increased the dynamics of trading. Participants conducted transactions in real time, namely at different prices, which further stimulated the development of the day-ahead market or rather the changes of monthly

quotas and prices on the daily electrical power market in Slovenia in 2005 - figure 2. Each company is thus able to manage risks more effectively by entering the exchange and purchasing electrical power through various sellers. Companies find it difficult to plan exactly how much electrical power they are likely to consume, which makes it sensible to purchase electrical power on the day-ahead market and not purchase the entire planned quota a year in advance. What makes it even more important is that it is cheaper to do so than withdraw from purchased quotas stated in annual contracts. It is necessary to mention that even though companies lease the electrical power in an established manner through an annual contract, the day-ahead market allows them to sell eventual surpluses and therefore avoid withdrawals and associated costs. They can do this either on their own or through agreement thereon with their suppliers or representatives, who purchase or sell part of their electrical power requirements on the market. Monthly consumption quotas and prices on the day-ahead market in Slovenia in 2005 are presented in Figure 2.

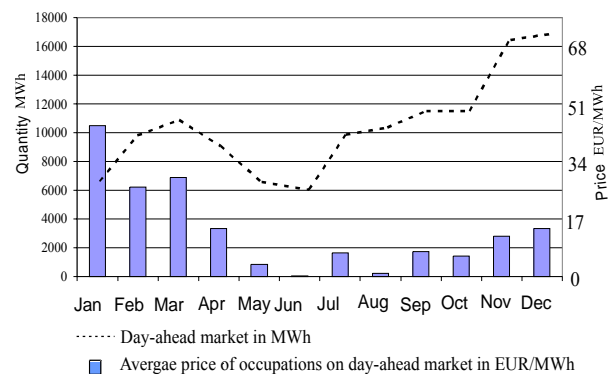


Figure 2: Monthly quotas and prices on the day-ahead market in 2005 [8]

3.3.1 The role of electrical power exchange and trading

Electrical power exchange must adhere to the following basic principles of exchange trading in order to operate successfully:

- The principle of transparency (open, clear and public trading for all participants);
- Public announcements of market fluctuations,
- The principle of liquidity (mitigation of unlikely changes of the scale of supply and demand without exaggerated price fluctuations, or rather none of the market participants should have an excessive influence on market prices),
- The principle of security (Energy Act, Rules on the operation of the electricity market, financial security of members all lower financial risks),

- The principle of fairness (non-discrimination in the organised market is determined by law),
- The principle of efficiency (adaptable market information systems).

Borzen enables transparency of the electrical power market by publishing prices and quotas from concluded transactions in the market at various intervals and by publishing special indices, thereby allowing its members to form a suitable strategy of trading and shaping their own offers.

The primary tasks of Borzen are as follows (Figure 3):

- Electrical power exchange,
- Statement of accounts and settlement of concluded transactions in the organised market,
 - Recording bilateral agreements,
 - Drawing up schedules,
 - Imbalances settlement,
- Publishing market movements.

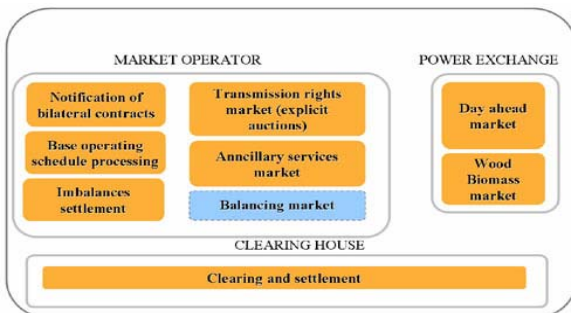


Figure 3: The organised market – Power Exchange [9]

Power exchange members can be producers, eligible customers, traders, sales representatives and brokers.

3.4 The future of the power supply market

The European Union is setting high demands in the field of forming power supplies for individual regions, along with a common energy policy [10]. We feel that Slovenia is investing too little and at too slow a rate into alternative energy sources: especially wind farms and hydro power plants, along with biomass power plants.

Liberalising the power market has not yet brought the desired and anticipated results in the field of power supply competition, which makes it necessary to establish proper operation of this market segment.

Despite the growth of electrical power consumption, along with highly unfavourable hydrological conditions for its production, there have not been any serious problems with power supply in

Slovenia as of now, although the past year showed that the electrical power market does not bring only benefits, but also certain risks.

A special particularity of the electrical power market in Slovenia in the past years has been consumption of power in the months of June, July and August, which has been sharply increasing in Slovenia. It is estimated that the cause of continuous growth in electrical power consumption during the summer months lies not only in the increasing number of air conditioning systems, but also in the stimulation of growth in the Slovenian economy as a whole. On the other hand, the lack of precipitation and consequential decrease in electrical power production by hydro power plants has hit domestic production. Similar conditions across Europe are hindering the possibility of importing the power deficit. However, despite the fact that Slovenia does not have many problems with its transfer capacities and transfer network, there are limitations set by the Austrian operator, in other words, increased imports are restricted.

Electrical power consumption from the transfer network has been on the rise for several years now, whereby the almost five per cent rise directly after the opening up of the power market in 2002 was more than evident. The key reasons for such growth were as follows:

- Construction of a new large production unit by Talum (Aluminium producer) and
- Relatively favourable prices of electrical power on the market.

4 Conclusion

The state of Slovenia, which is still the majority owner of manufacturing plants, will have to use an active policy to ensure measures allowing manufacturers to increase their competitiveness (adequate lowering of capital value, exclusion or rather sell-off of surplus assets, lowering operational costs and solving the issue of so-called stranded investments in power supply companies). As the market regulator, the state will have to intervene in market activities in order to prevent distortion and exploitation of a monopolistic position (these measures include linking production capacities, restricting maximum system prices on the market, activating state aid for reimbursement of investment loans, relaxing imports and exports of electrical power, etc.). Particular emphasis will have to be devoted to possible causes, which could lead to a considerable rise in electrical power prices, such as insufficient supply, excessive demand, insufficient transmission network capacities, etc.

Electrical power supply will soon experiences changes, and it would be naive to expect that the market will serve as a sufficient regulator of consumer and environmental aggravation with regard to services, which are critically dependent on natural-monopolistic activities (such as transmission of electrical power). A conflict of interests will be present for a good while to come, while one of the benefits we as consumers and market participants will have in all of this is the possibility of active participation in shaping, exercising and respecting the rules of market activity, with no united power supply-investment lobby standing in the way, but rather various market players, in which one should find allies.

References

- [1] For a European Union Energy Policy - Green Paper COM(94) 659, January 1995
- [2] Energy white paper, Version 11, February 2003
- [3] Nachhaltige Energiepolitik für eine zukunftsfähige Energieversorgung, Energiebericht, www.bmwi.de, 2001
- [4] Green papaer – A European Strategy for Sustainable, Competitive and Secure Energy, Brussels, 8.3.2006 COM(2006) 105 final
- [5] Directive 96/92/EC of the European Parliament and of the Council of 19 December 1996 concerning common rules for the internal market in electricity, Official Journal of the European Communities , L027,1997
- [6] Directive 2003/54/EC of the European Parliament and of the Council of 26 June2003 concerning common rules for the internal market in electricity and repealing Directive 96/92/EC, *Official Journal of the European Union*
- [7] Krope T., Krope J., Goričanec D. Energy market and environment in the aspect of European legislation. *Proceedings of the WSEAS International Conferences*, Venice, Italy, November 2-4, 2005
- [8] *Revija EGES*, Pregled trgovanja na borzi v letu 2005, EGES 2006/1, p.50
- [9] <http://www.borzen.si/>, 2.3.2006
- [10]Krope T., Krope J., Pukšič M.. Legal regulation of the European union energy market. *Proceedings of the 3rd WSEAS/IASME International conferences: Heat transfer, thermal engineering & environment, fluid mechanics and aerodynamics*, Corfu Island, Greece, August 20-22, 2005