

Report on regulation and the electricity market

2010

Iceland



The National Energy Authority in Iceland (NEA)

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1. Foreword

The following report is issued by the National Energy Authority in Iceland (NEA). It should give a comprehensive overview of the status of the framework of the electricity industry in Iceland. This report follows the common reporting structure created by the Commission and ERGEG.

Iceland is member of EFTA and a party to the European Economic Area agreement (EEA). As a consequence of this, the EEA procedures regarding adoption of new EU directives apply for Iceland. The Electricity Directive 2003/54/EC passed through the EEA Committee in December 2005. The report is based on the reporting requirements in the directive 2003/54/EC.

The Electricity Act No. 65/2003 was adopted midyear 2003 (Re. English version: http://eng.idnadarraduneyti.is/media/Acrobat/raforkulog_enska.pdf). The Act is based on EU Directives 96/92 and 54/2003, concerning common rules for the internal market to electricity, but is broader in scope, since it comprises comprehensive legislation on generation, transmission, distribution and sale of electricity. The Act deals with various areas which were previously treated in different Acts, including the Inland Waters Act no. 15/1923; the Energy Act, no. 58/1967; the Act on Electric Generation Stations, no. 60/1981; and Acts on individual energy enterprises. The Act was implemented in stages, but has by now been fully implemented.

According to the stated objectives of the Electricity Act it is intended to encourage an economical electricity system, thereby strengthening Icelandic industry as well as regional developments. To reach this goal, it was intended to create a competitive environment for the generation and sale of electricity, encourage efficient and cost effective transmission and distribution of electricity, ensure the security of the electricity system and interests of consumers, and promote utilisation of renewable energy resources.

The generation and sale of electricity are, according to the Act, competitive activities. These are, however, subject to public licences. The transmission of electricity is carried out by a separate, independently managed, enterprise. Six (seven at the time of adoption of the Act) distribution utilities have exclusive rights to distribute electricity in their areas of operation. NEA is entrusted with supervision of the transmission and distribution enterprises, which includes regulation of income caps, tariffs, quality of electricity and security of supply. In case of mixed companies which operate in the field of generation, sale and distribution, separate accounts must be kept for each area of activity. The generation and sale of electricity is under the surveillance of the competition authorities, as is any other competitive activity.

Several conditions are unfavourable for a competitive electricity market. One company dominates the electricity production as well as the wholesale of electricity and there is a great difference in the size of retail suppliers. Relating to this, customer switching has been low throughout the years from 2006 when the electricity market was fully opened, as only 0 to 2,5% of customers have switched supplier in a year. In spite of this electricity price has generally decreased compared to the price index. Similar positive effects can be observed when comparing distribution cost, taking into account the relatively low rate of return for these companies when the reforms were adopted.

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2. Main developments in the electricity markets

Introduction

About NEA

The main statutory objectives for NEA concerning energy, and which the regulatory functions is a part of, is to promote the compliance with the Electricity Act No. 65/2003, which purpose is to promote economic electricity system and thereby strengthening the Icelandic industries as well as regional development in Iceland. To this end a competitive environment shall be ensured for the generation and trade of electricity, with such restrictions, as may prove necessary, for the security of supply and other public interests, effectiveness and efficiency in the transmission and distribution of electricity shall be promoted, the security of the electricity supply system and consumer protection shall be ensured and finally the use of renewable energy sources and observance of other environmental criteria shall be promoted. According to Article 24 of the Act NEA is nominated as the national regulatory authority (NRA) for electricity.

NEA is the national independent regulatory authority for the electricity market in Iceland. NEA has no ownership interests in the electricity industry and is independent from the economic interests in the electricity industry. NEA is an independent legal entity with its own budget adopted by Parliament and power to act in the scope of its competences.

NEA shall consult with the Competition Authority on the regulation of the operation and tariffs of transmission system operators and distribution system operators, as applicable.

For NEA, both for regulatory tasks as well as for other tasks, the responsibility and field of work are defined in law, regulations and decisions from the Parliament (the Althingi) and Government.

Administrative decisions made by NEA on the basis of the Electricity Act regarding tariffs or the activities of the transmission system operator and distribution system operators may be appealed to the Appeals Committee on Electricity. Administrative decisions of NEA which cannot be appealed to Appeals Committee on Electricity may be appealed to the Minister of Industry, Energy and Tourism.

NEA is a member of CEER and participates as an observer in the ERGEG procedures

About the electricity market

The electricity sector is regulated by the Electricity Act No 65/2003 and regulations established on the basis of that Act. The Act transposes the EU common rules for the internal market in electricity into Icelandic legislation. The Act fully opened the Icelandic electricity market to competition on 1 January 2006 and introduced third party access for transmission and distribution networks. Fees for transmission and distribution are based on published tariffs approved by NEA. Furthermore, various acts and regulations in the field of environment apply to the construction and operation of electricity installations, such as the Planning Act No 123/2010, Act on Hygienic and Pollution Control No 7/1998 and Act on Environmental Impact Assessment No 106/2000.

According to the Electricity Act, a license is generally required for the construction and operation of a power plant with a production capacity of 1 MW or more. The general conditions for such a license are designed to promote an adequate supply of electricity, security, reliability and efficiency of the electricity supply system and the utilisation of renewable energy sources. The conditions are set out in Regulation No 1040/2005 and apply for all power plants that require a

license. According to the regulation, licenses can only be given for power plants that utilise renewable energy sources. The main electricity generator is Landsvirkjun, which is owned by the Icelandic State. Two other companies, Orkuveita Reykjavíkur and HS Orka hf., have significant electricity production, while there are also a number of companies with limited generation capacity, including small private hydro power producers.

The transmission system operator (TSO) is Landsnet hf., which owns and operates the whole transmission system, which consists of lines from 33kV up to 220 kV. Six companies are licensed to own and operate distribution systems in various regions. Each company has the status of distribution system operator (DSO) in their region and is responsible for supplies to its geographic area. The areas vary in size and population. The DSOs are all but one owned by either the Icelandic State or one or more municipalities. Most of the DSOs also operate hot and cold water distribution systems. The distribution networks are operated on 132 kV and lower.

The shareholders of the TSO (Landsnet hf.) are Landsvirkjun (64.73%), RARIK ohf. (22.51%), Orkuveita Reykjavíkur (6.78%) and Orkubú Vestfjarða (5.98%). According to the Electricity Act and the Act on the Establishment of Landsnet hf., No 75/2004, the board of directors of Landsnet hf. shall be independent of other companies engaging in the generation, distribution or sale of electricity, as further provided in the articles of association.

The competencies of the TSO are stipulated in the Electricity Act, Chapter III. The TSO is responsible for the development of the transmission system in an economic manner, taking into account security, efficiency, reliability of supply and the quality of electricity. The TSO possesses the exclusive right to construct new transmission facilities. According to the Electricity Act, Article 9, the TSO shall:

- Connect customers to the transmission system on request, provided that they fulfil the technical conditions required and provided also that they pay a connection fee according to the provisions of a tariff. However, new customers may be denied access to the transmission system on grounds pertaining to the transmission capacity, security and quality of the system. Such denial of access shall be in writing and reasoned
- Provide electricity in compensation for electricity losses in the system
- Provide reactive power for the system to utilise transmission capacity and ensure voltage quality
- Ensure reliability in the operation of the system
- Ensure the availability of a forecast on the projected demand for electricity and a plan for the development of the transmission system.

The TSO is responsible for the secure management of the electricity supply system and shall ensure the security and quality of delivery of electricity. Such system management includes, inter alia:

- Co-ordinating supply and demand as regards electricity so that discrepancies between agreed purchase and actual use can be met, and entering into contracts with producers in connection therewith
- Ensuring adequate supply of spinning reserves in the operation of the system
- Determining processes of use where power measurements are not conducted
- Measuring the delivery of electricity into and out of the transmission system in accordance with the applicable government regulation, documenting measurements and submitting records to the parties in question for the purpose of enabling financial settlement in relation to trade in electricity
- Supplying public authorities, customers and the public with the information necessary to assess whether the company is performing its obligations and to ensure non-discrimination in trade in electricity.

The TSO shall have access to all the information of producers, distribution system operators and suppliers necessary for the performance of his function. In the event of force majeure preventing the supply of electricity from meeting demand, the TSO shall take up rationing of electricity to distribution system operators and final customers. Rationing shall be non-discriminatory and based on objective criteria to be further specified in a government regulation.

According to the Electricity Act and Act on the Establishment of Landsnet hf. No 75/2004, the TSO may operate an electricity market provided that it keeps the accounts for such operation separate from accounts relating to other activities. An electricity market has not been established. Furthermore, the TSO is responsible for the issue of guarantees of origin of electricity produced from renewable energy sources.

Wholesale Market

No noticeable changes took place in the wholesale market in the year 2009. There are five major producers of electricity in Iceland (Landsvirkjun, Orkuveita Reykjavíkur, HS Orka hf., Fallorka and RARIK ohf.). As stated before, the wholesale market is dominated by one producer, Landsvirkjun, which produces 73% of the total electricity production, a decrease of 2% from last year. The three largest companies produce 97% of the electricity. 79% of the electricity consumption is used by the energy intensive industries, which buy electricity according to long term contracts (i.e. contracts longer than 10 years).

The Icelandic electrical system is an isolated system without any connection to other countries.

According to the Electricity Act the TSO is permitted to run a PX, as the Act states: "The transmission system operator shall not engage in any activities other than those which are necessary for the performance of his obligations hereunder. However, the company may operate an electricity market provided that it keeps the accounts for such operation separate from accounts relating to other activities". The TSO has started work on establishing a PX particularly for the general electric consumers. The opening has been delayed due to the financial crises in Iceland.

Retail Market

There are eight retail companies (Orkuveita Reykjavíkur, HS Orka hf., Fallorka, Orkusalan ehf., Orkubú Vestfjarða, Orkuveita Húsavíkur, Rafveita Reyðafjarða and Eyvindartunga ehf.), four of which are very small. These four are inactive on the market, serving only their local area.

The electricity market was opened to all customers in 2006. Only 0.2% of residential customers switched supplier in 2009, while 2,5% of industrial and commercial customers switched a supplier. The reason for this low rate might be that published prices are very similar for all the companies. Information on new contracts with the same supplier is included in the figures above and is not available.

The total price of electricity for households, services and light industry was ISK 15.10 per kWh inclusive of VAT (24.5%) and energy tax of 0.12 kr/kWh (the price is according to Reykjavik Electricity's tariff at the end of 2010, derived from utilization time = 4000 hours) which divides between distribution and supply thus: 9,16 and 5,94 per kWh.

Nine complaints in total have been filed in 2009 related to connection charges, metering and energy tariffs.

No special measures have been taken to encourage competition. Several signs of competition can be seen e.g. through advertising. In addition, NEA, in cooperation with the Consumer

Agency, operates a price comparison website. It compares available contracts of the market. The customer can easily carry out an evaluation and make the choice of supplier using a price calculator.

There is no existing threshold of eligibility of customers to choose supplier.

Infrastructure

Today virtually all inhabitants, except those living on small islands off the coast and remote farms, are connected to a single transmission system through a number of distribution networks. In 2009 the transmission system consisted of approx. 3,169 km of high voltages lines (33, 66, 132 and 220 kV) and around 70 substations and transformer stations. All power plants with a generation capacity of 7 MW or more must be connected to the transmission system. Electricity from the transmission system is fed to distribution system operators (DSOs) and power intensive industries at 77 delivery points.

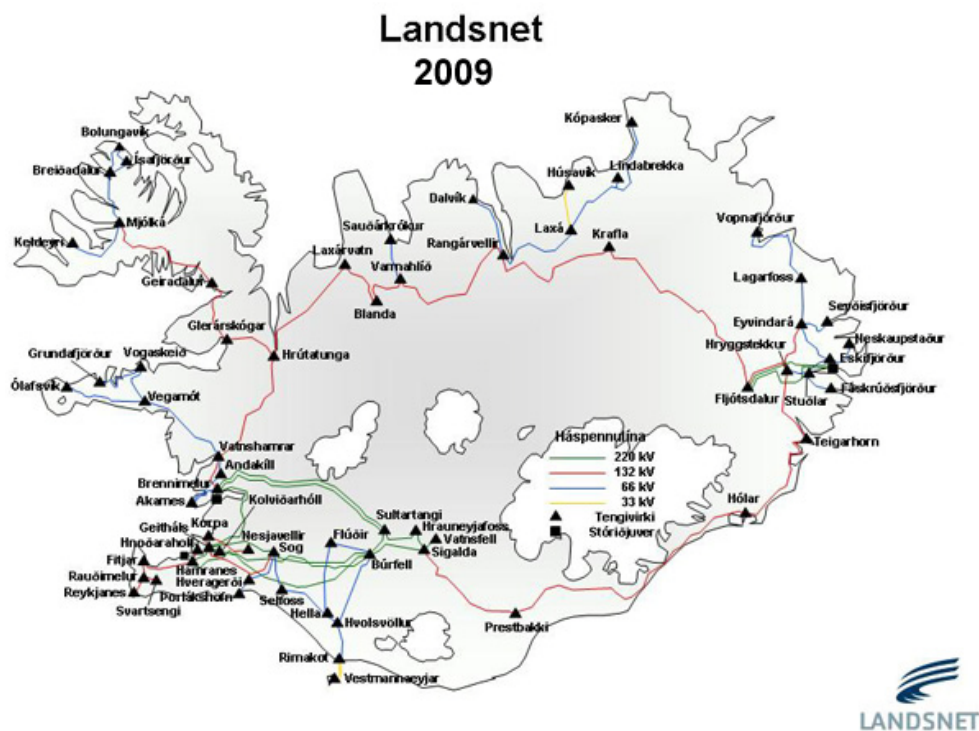


Fig. 1 All major electricity transmission lines in Iceland are owned and operated by Landsnet (TSO). The triangles represent substations and the squares represent large-scale users (Large-scale user: A user who uses in one place a minimum of 14 MW of power with an annual utilisation time of 8,000 hours or more).

The Icelandic electricity system has expanded considerably during the last 15 years, mainly due to the expansion of existing power intensive industries and the commissioning of new ones. The total length of the TSO network in Iceland is approx. 3169 km while the length of the DSO network (sum of all DSO) is approx. 22.565 km.

During the period of 1995 to 2009 the production capacity has increased from 1,049 MW to 2,579 MW and the generation from 4,976 GWh to 16,835 GWh. The increase in electricity supply to power intensive industries has called for considerable investments in the transmission system.

Electricity Production Capacity 1936-2008

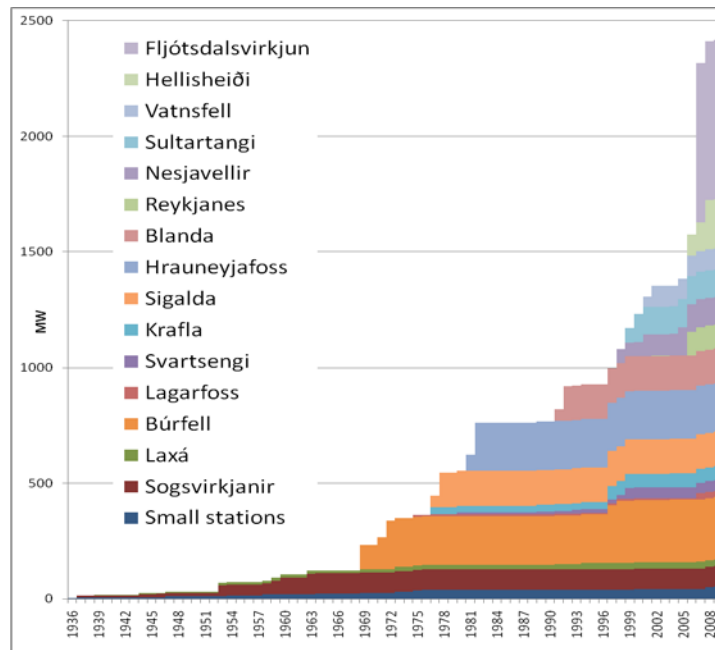


Fig. 2. The table shows the electricity production in individual power plants and also when those power plants began operating. Most are hydro power plants. However, Krafla, Reykjanes, Nesjavellir and Hellisheiði are geothermal power plants.

No changes in tariff structure have been taking place.

The Electricity Act stipulates that the TSO and the distribution system operators (DSOs) are responsible for maintaining and developing the transmission and distribution systems in an economic manner, taking into account security, efficiency, reliability of supply and the quality of electricity.

Investment intentions in transmission and generation are not monitored or forecasted by the Government. On the other hand, the TSO is required to ensure the availability of a forecast on the projected demand for electricity and a plan for the development of the transmission system. The Energy Forecast Committee, which is a cooperation forum for the key ministries, agencies, companies and associations in the field of energy operated since 1976, each year issues a forecast for the increase in electricity consumption.

The Electricity Act stipulates rate of return for both new and existing assets during their depreciation time. In an interim clause in the Electricity Act it is stated that for the first regulation period the rate of return shall be limited to the half of the stated value. The year 2009 was the last year of the regulation period. Proposal for several changes in the Electricity Act has been put forward and is awaiting debate at the Parliament. Some of the proposed alterations are related to the income cap structure.

The Electricity Act does not stipulate methods how to allocate capacity.

The long term investment needs in the electricity sector are primarily based on developments in the power intensive industry. A medium or long term forecast for projects in power intensive industries does not exist. It is expected that the annual growth of the general market will be approximately 1,5%. The distribution system operators (DSOs) and the transmission system operator (TSO) make investment plans for the general market. According to information from

the TSO, the investment and reinvestment needs for the general sector, in the medium and long term, are estimated to amount to ISK 1 to 2 billion ISK per year. There is uncertainty regarding investment needs due to increased demand from power intensive industries after 2012 but such investments could amount to ISK 10 to 20 billion. All investments will be privately financed with cash flow generated from operating activities, issuance of bonds in the capital markets and borrowings in the loan market.

Regulation/Unbundling

According to the Electricity Act there are two regulatory authorities; NEA, which is under the Minister of Industry, Energy and Tourism and the Competition Authority, which is under the auspices of the Minister of Economic Affairs.

The NEA has a total staff of 35 persons and the Competition Authority a staff of 23. Both authorities have a number of functions, not related to regulatory functions according to the Electricity Act. Only a small proportion of the staff is working on regulatory functions on a daily basis. Staff members for the electricity regulation at the NEA are around 2.5. These have different educational backgrounds, such as technical, financial and legal education.

According to Article 31 of the Electricity Act the following fees are levied on electrical network companies for surveillance according to the Act:

- the transmission company is liable to pay 0.002 kr/kWh for all electricity
- the distribution companies are liable to pay 0.005 kr/kWh for all electricity from the transmission system or from power stations

The NEA is permitted to apply daily fines in the event that the NEA is of the opinion that an operation subject to regulatory monitoring does not conform to conditions such as the provisions of an agreement pursuant to Article 8 of the Electricity Act, the conditions of a licence or other authorisations, the NEA may require rectification subject to the imposition of daily fines. The nature of the negligence or violation may be taken into consideration in the determination of daily fines. The party in question shall be notified of a decision to impose daily fines by letter in a verifiable manner. No changes were made to this article in 2009.

The purpose of the TSO is to provide an easily accessible, indiscriminatory market place for electricity participants, producers and users, for the whole of the country. As mentioned above the TSO is permitted to run a PX, the cost of which should be kept separate from other activities. Due to the small market it was considered necessary to open for the possibility in setting up an electricity market to provide such a service for participants. The TSO (and probably the DSOs) will use the PX for the purchase of electricity for losses in their systems.

The TSO is a completely independent entity. The Electricity Act states: "One company, appointed by the Minister of Industry, Energy and Tourism, shall be responsible for the transmission of electricity and system management pursuant to the provisions of this chapter. The company shall be an independent legal and taxable entity".

Landsvirkjun is the major owner of the TSO, owns 65%. The Board of the TSO shall be independent from electric companies, such as production companies, distribution companies and sales companies.

Prior to the adoption of the Electricity Act, no requirements were in place concerning separation of activities in energy companies. Landsvirkjun was the main producer of electricity, owned and operated most of the transmission system and had the exclusive right to supply electricity to power intensive industries. Other electricity companies operated distribution systems and were engaged in the sales of electricity to final customers, while they were also engaged in other

activities, such as electricity production on a small scale and the distribution of hot and cold water.

After the adoption of the Electricity Act, in 2003, production and transmission activities were first separated within Landsvirkjun. In 2004 Landsnet hf. was established and as of 1. January 2005 the company was entrusted with the transmission of electricity in accordance with the Act on the Establishment of Landsnet hf. No 75/2004.

The company took over all transmission assets owned by Landsvirkjun, RARIK ohf. and Orkubú Vestfjarða, with the companies becoming shareholders in Landsnet hf. All these companies are in 100% public ownership. At a later stage the company also acquired transmission assets from Orkuveita Reykjavíkur and Hitaveita Suðurnesja. Orkuveita Reykjavíkur became a shareholder in Landsnet while Hitaveita Suðurnesja decided to sell their assets. The board of directors of the TSO shall be independent of other companies engaging in the generation, distribution or sale of electricity. The TSO is prohibited from engaging in any activities other than those which are necessary for the performance of obligations according to the Electricity Act. However, the company may operate an electricity market provided that accounts for such operations are kept separate from accounts relating to other activities.

Security of Supply

At the end of 2009 the installed capacity for electricity generation was 2579 MW. The increase in installed capacity in 2009 was 5 MW, which constitutes 0.2% increase in installed capacity. The increase in electricity production was 367 GWh, which constitutes a 2.2% increase in electricity production.

The total electricity consumption was 16327 GWh in 2009. Estimated production capability is 19250 GWh which gives 14% reserves for the year 2009. In 2009 the max. peak load of 2147 MW occurred on 23rd December.

General Conclusion

According to the Electricity Act the Act should be revised before the end of 2010. A special committee has already been appointed to revise the act and has commenced its task. NEA has drawn up a list of various changes which it considers to be important to improve present legislation and regulatory processes.

A bill, proposing amendments to the Electricity Act, has now been placed before the Parliament. It is currently under the Parliamentary procedures and has not been adopted yet.

The acquis concerning Third Energy Market Package are under review in the EFTA Working Group for Energy Matters. The EFTA Secretariat has sent Standards Sheets to the EFTA States regarding possible inclusion of these acquis into Annex IV to the Agreement on the European Economic Area. A decision by the Ministry of Industry, Energy and Tourism in Iceland, regarding possible incorporation of these acquis into the EEA Agreement, has not been taken yet.

3. Regulation and Performance of the Electricity Market

3.1. Regulatory Issues

3.1.1. *Management and Allocation of interconnection capacity and mechanisms to deal with congestion*

Investment intentions in transmission and generation are not monitored or forecasted by the Government. On the other hand, the TSO is required to ensure the availability of a forecast on the projected demand for electricity and a plan for the development of the transmission system. The Energy Forecast Committee, which is a cooperation forum for the key ministries, agencies, companies and associations in the field of energy operated since 1976, each year issues a forecast for the increase in electricity consumption.

Only one transmission line is congested under certain operational conditions. The TSO has published a dedicated Net Code, No. C6, Stipulation for Congestions Management, which describes the procedure in treating such problems.

The TSO publishes annually a report on energy balances, network operations, transmission capacity, network security, load flows, new connections and networks and prognoses on future reinforcements and extensions (Ref.: Landsnet, Energy balances 2011 – 2012 and Kerfisáætlun 2010 – 2014).

Due to the fact that the Icelandic electricity system is an isolated one there is no existing cross border link.

3.1.2. *The regulation of the tasks of transmission and distribution companies*

Network Tariffs

The TSO and the DSOs are required to send all transmission and distribution tariffs to the NEA for agreement two months before taking effect. If, according to the NEA, the submitted tariff is in violation of the Electricity Act or regulations, the Authority shall submit its comments to the TSO or DSO in question within six weeks of the submission. The tariff does not take effect until rectifications have been made to the satisfaction of the NEA. The TSO and the DSOs are obliged to publish the tariff.

As mentioned above, all tariffs for transmission and distribution services must be confirmed by the NEA as well as the related terms for the tariffs. The NEA will compare the income collected by the new tariffs with the issued income cap for the corresponding company and check if the terms conflict in any way with the Electricity Act or related regulation. In case of conflicts the NEA may require rectification of the tariff which will not take effect until the matter has been rectified.

Connection tariffs shall reflect the real cost of connection.

The System Average Interruption Duration Index (SAIDI) indicators are taken into account and are as follows:

- SAIDI (planned and unplanned interruptions) = 0.88 hours per customer
- SAIDI (planned interruptions) = 0.21 hours per customer
- SAIDI (unplanned interruptions) = 0.67 hours per customer

The Electricity Act stipulates incentive measures. The NEA has introduced benchmarking projects for the TSO and DSOs, which will be used for the next regulation period in the form of an efficiency requirement with a use of benchmarking of companies.

Further details concerning tariffs for transmission/distribution are as follows:

Transmission

The setting of tariff is based on entry-exit fees. The NEA establishes a revenue cap (income possibility curve) for the transmission system operator relating to the expense of transmitting electricity to DSOs, on the one hand, and to large-scale users, on the other hand. In the establishment of a revenue cap, account shall be taken of whether the connection of power intensive users or power plants will lead to, or has led to, increased efficiency in the development and use of the system. The revenue cap is based on criteria established by the Electricity Act. The revenue cap is determined for three years at a time, but may be reviewed annually if criteria change materially, in the opinion of the NEA.

The TSO establishes a tariff for its services in accordance with revenue cap. The tariff shall apply, on the one hand, to the delivery of electricity to DSOs and, on the other hand, to the delivery of electricity to power intensive industries. The tariff on delivery to DSOs is based on the delivery of electricity at 66 kV voltage. If energy from the transmission system is delivered at a higher voltage the tariff shall be reduced accordingly. In the same way, account shall be taken of other differences in delivery service in charging for individual points of delivery.

The same tariff shall apply to feeding into the transmission system from power plants. Where plants are connected to the transmission system through a distribution system the DSO collects the charge.

Distribution

The NEA also establishes a revenue cap for the DSOs relating to the cost of distributing electricity. If permission is granted for a separate tariff for rural areas, separate income possibility curves are to be established for the distribution of electricity in urban areas, on the one hand, and in rural areas, on the other hand. The revenue cap is based on a criteria established by the Electricity Act. The revenue cap is determined for three years at a time. However, they may be reviewed annually if criteria change materially, in the opinion of the NEA.

The distribution system operator shall establish a tariff for his services in accordance with the revenue cap. The same tariff applies in the distribution zone of each distribution system operator for the consumption of low voltage electricity, i.e. 230–400 V. If energy from the distribution system is delivered at a different voltage the tariff may be adjusted accordingly. In the same way, account may be taken of other differences in service in the tariff. Distribution system operators are permitted to apply to the NEA for permission to maintain a separate tariff for rural areas where the cost of distribution is demonstrably higher than in urban areas. The condition for permission to maintain a separate rural tariff is that the use in the rural area in question must amount to a minimum of 5% of the total use in the distribution zone of the distribution system operator.

Balancing

There have been minor developments in the market model for balancing energy minimum bids have been lowered down to 1 MW. The average price in 2009 was 2.25 ISK/kWh (2.51 ISK/kWh for 2010). As more than 95% of all hydropower reservoirs belong to Landsvirkjun, it has been the only active member on the balancing market so far, despite lower minimum bids. However, there are expectations of more parties offering their services on the balancing market in the future.

3.1.3. *Effective unbundling*

The TSO is an independent company, the board of directors of which shall be autonomous from companies involved in distribution, production or sale of electricity.

According to the present Electricity Act a producer shall, in its internal accounts, keep accounts for the generation of electricity separate from accounts relating to other generation. Also, according to the Act, if a DSO is engaged in activities other than the distribution of electricity, the company shall, in its internal accounting, keep accounts for distribution separate from accounts for other activities. If the same DSO is responsible for the operation of distribution systems in more than one tariff zone, the company shall, in its internal accounting, keep separate accounts for each zone. If a DSO owns transmission structures, the company shall, in its internal accounting, keep accounts for such structures separate from other accounts.

According to the Electricity Act all DSOs were obliged to maintain separate accounts for distribution and other activities. According to the Act companies engaged in the generation and sale of electricity were not allowed to subsidise activities by concessioned operations, conducted by the company, or other activities of a comparable status. With Act No 58/2008, amending the Electricity Act, all vertically integrated companies serving distribution areas with 10,000 or more inhabitants are required to separate distribution from other activities, as of 1 January 2012. All the DSOs except Orkuveita Reykjavíkur already comply with the provision. Furthermore, the board of directors of legally unbundled DSOs shall be independent of other companies engaging in the generation, transmission or sale of electricity.

For information purpose it should be stated that the largest DSO in Iceland has less than 100.000 customers connected.

3.2. **Competition Issues**

3.2.1. *Description of the wholesale market*

There is no power exchange or special facility for whole sale market of electricity. All major producers are making bilateral agreement with power intensive industries and also to sales companies operating in the retail market. Three companies are known to be on the wholesale market. Landsvirkjun has made their offerings to retail suppliers for the public but does not engage in the retail market itself.

Electricity contracts for power intensive projects are concluded on a long-term basis (frequently of 20 years duration or more, including an option to renew, or with time horizons of 20-40 years). The sale amounted to 12925 GWh. Furthermore, the price component of such contracts often indexes the price of electricity to the price of the output of the business in question, e.g., the price of aluminium. The contracts are frequently structured on a "take-or-pay" basis. It should be noted that energy prices for power intensive industries are not publicly available but all power contracts with power intensive industry, since the entry into force of the EEA Agreement, have been notified to the EFTA Surveillance Authority, which has concluded that the contracts are in line with the market investor principle and do not involve state aid. The fee for transmission to power intensive industries is based on a special tariff.

As access to the electricity market is based on post stamp system, there is no reason to assume that neighbours are being discriminated. However, original cost of connection to the transmission system may vary between locations.

3.2.2. *Description of the retail market*

No major changes have taken place on the market in recent years.

Electricity for the general user is sold by traders, which buy the energy from production companies, most on fixed agreement of 1 to 12 years duration from Landsvirkjun, or from their own production companies. The total number of traders is seven, all of which were before part of a DSO and all of them still maintain dominant share of their original customers, and of whom only four traders have been active outside their old DSO area. A trader needs a license to operate. The electricity market is completely open for all users to select a trader. The largest trader supplies approximately 37%, the second largest approximately 33% and the third largest approximately 17% of the total sale of electricity, information on the split between these companies is not available.

The trade in electricity is a competitive environment. The sales companies (departments) advertise an indicative price for domestic and medium users. The price of electricity for domestic usage, inclusive of distribution services, is in the range ISK/kWh 11.47 to 13.60 for urban areas and ISK/kWh 16.13 to 16.75 for rural areas.

According to the switching procedure it must take place in the beginning of the month. Hence the waiting period for switching is minimum one month, but maximum two months. There is no charge for switching supplier. No difficulties have been encountered for customers in switching a supplier. When competition started, sales companies with the highest price lowered their prices more or less down to the lowest price, a state which has lasted. The duration of contracts is usually two years or less. Large proportion of the electricity for most of the traders is bought from Landsvirkjun which dominates the market and directs the market. Due to small price difference in supply the market is dormant.

Only 0.2% of residential customers switched supplier in 2009, while 2,5% of industrial and commercial customers switched a supplier.

The NEA, in co-operation with the Consumer Agency, offers a web based calculator to help households and smaller users find the cheapest supplier and tariff. The calculator can be found at <http://www.os.is/raforkuverd/>

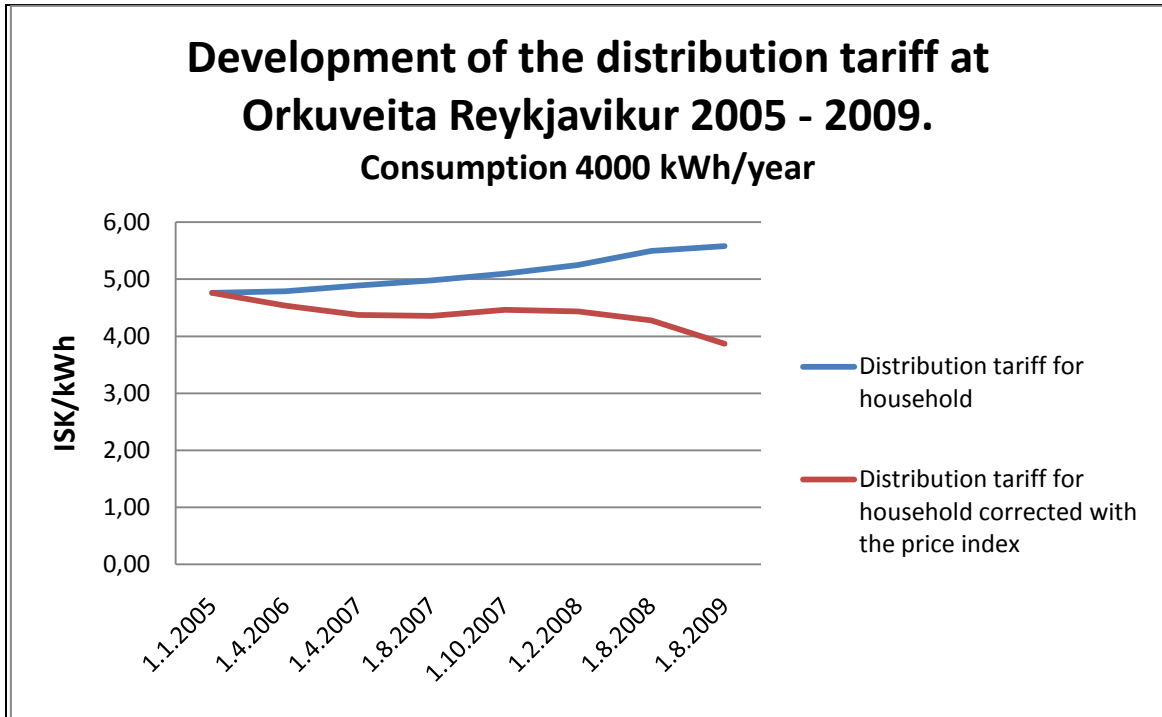


Fig. 3. Development of distribution cost from 2005 to 2009 (excluding VAT)

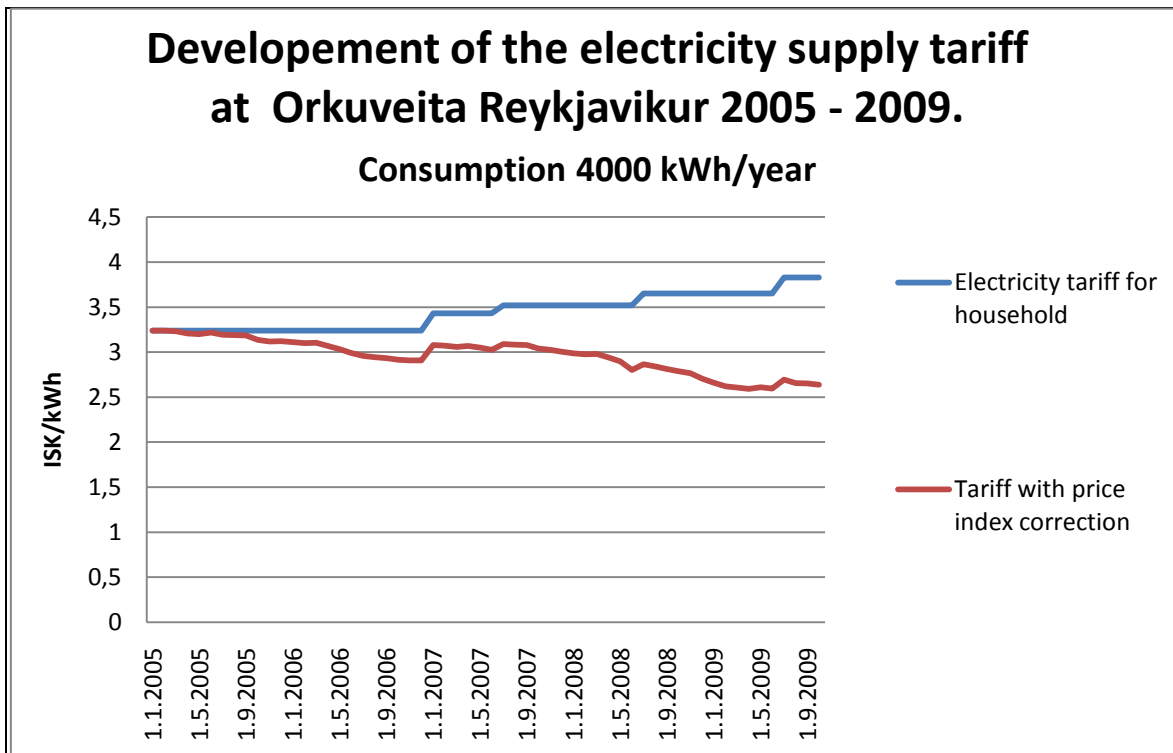


Fig. 4. Development of supply cost from 2005 to 2009 (excluding VAT)

Fig. 3 and 4 show how the cost of distribution and supply has developed from 2005. The cost of distribution services for industrial and commercial companies has developed in a very similar

way. Although information on public tariffs of sales companies to medium industries have been published, the NRA has not collected information on how much discount larger companies may receive. Prices of supply for large industries users (100 GWh or more) are not available, although transmission cost is public.

Complaints are in all cases formally presented, but informal inquiries are generally not registered.

3.2.3. Measures to avoid abuses of dominance

Landsvirkjun, the dominant electricity producer, must publish the price of wholesale electricity.

As mentioned before traders buy electricity according to fixed agreements for one to twelve years. In most cases the electricity companies have their own production but the rest of the electricity needed is purchased from Landsvirkjun or other producers.

The market surveillance is the responsibility of The Competition Authority.

Regulation 1050/2004 stipulates that a standardized contract shall be the basis for the purchase of electricity between the consumer and the trader. In case of an unconventional contract, such a contract should be in writing. Contracts between energy intensive consumers and traders shall always be in writing. Termination of a contract shall be in writing.

The structure of contracts is neither stipulated in the Electricity Act nor the derived regulations.

4. Security of Supply

In 2009 all electricity was produced by renewable sources, 73% by hydro and 27% by geothermal. Landsvirkjun produces 75% of the total, but the three largest companies produce 96% of the total production. The increase in electricity production in 2009 was 367 GWh, which constitutes 2.2% increase in electricity production. The total electricity consumption was 16327 GWh in 2009. Estimated production capability is 19250 GWh which gives 14% reserves for the year 2009. In 2009 the max. peak load of 2147 MW occurred on 23 December.

At the end of 2009 installed capacity in power stations was 2579 MW. The increase in installed capacity in 2009 was 5 MW, which constitutes 9% increase in installed capacity.

Electricity forecast 2010 - 2013

	Electricity production	Peak demand
Year	GWh	MW
2008	16468	2135
2009	16835	2141
2010	17210	2192
2011	17552	2212
2012	17595	2218
2013	17830	2249

Table 1. The total electricity production 2008-2009 and the estimated electricity production for 2010-2013 (in GWh). The same for the peak demand (in MW).

According to Landsnet's report on the electricity balance¹ for the next 3 years the probability of electricity shortage is very low or 1/10000. This calculation is based on that curtailable load disconnected.

Generation mix 2009

	Hydro	Geothermal	CHP	Fuel
Year	MW	MW	MW	MW
2009	1883	456	120	120

Table 2. The electricity production by source in 2009.

No information is available on investment intentions.

¹ Orkujöfnuður 2011 og aljöfnuðuð 2011/2012 fyrir Ísland, September 2008; Landsnet-08128

5. Public Service Issues

In paragraph 3, items 1 and 2, of Article 28 of the Electricity Act, No. 65/2003, the following is stated: "A distribution system operator shall, *inter alia*:

- Connect all parties that so request to the distribution system, provided that they fulfil the required technical conditions and pay a connection fee specified in the tariff. However, new applicants may be denied access to the system on grounds pertaining to the transmission capacity, security and quality of the system. Such denial of access shall be in writing and reasoned.
- Ensure reliability in the operation of the system.

Furthermore, in Article 28 of the Electricity Act the following is stated: "*Regulation of the quality of electricity and security of delivery*: Producers, the transmission system operator and distribution system operators shall establish internal controls on the quality of electricity and security of delivery. A government regulation shall specify the requirements to be met by internal controls pursuant to Paragraph 1 [of Article 28] and their arrangement, including monitoring by accredited inspection bodies.

The Regulation No. 1048/2004, on Quality of Voltage and Security of Supply, with later amendments, is set on grounds of the Article above. The Regulation stipulates the task of the regulator regarding monitoring of the voltage quality and security of supply according to which the companies shall report annually the results to the regulator. According to the Regulation the companies should set themselves certain goals in improving their security of supply. Regarding the quality of voltage, the companies shall fulfil the ÍST EN 50160:1999, standard on voltage characteristic of electricity supplied by public distribution systems.

Distribution tariffs have to be confirmed by the NEA taking into account the income cap for each company. The income cap shall be determined for three years at a time. However, the income cap may be reviewed annually if criteria change materially, in the opinion of the NEA.

Supplier of last resort is neither defined in the Electricity Act nor regulations derived from the Act. In Article 44 of Regulation No. 1050/2004, on Exchanges in Electricity and Metering, the procedure for electricity disconnection is described, e.g. time limit prior to disconnection. Some companies extend the stipulated time limit prior to disconnection for vulnerable consumer to give them time to consult with the local social assistance and/or welfare services.

In 2009 the total number of the DSOs customers was 185.124. The total number of disconnection in 2009 was 4.028, mainly due to non-payment. The percentage of disconnection was therefore 2,2%.

According to paragraph 4 of Article 7 of Regulation No. 1050/2004 all exchanges in electricity between a customer and a supplier shall be based on a standard contract. Such contract shall be applicable to all new customers. Paragraph 4 of Article 7 includes also strict rules on the dismissal of the aforementioned agreements. In paragraph 7 of Article 7 it is reaffirmed that a customer and a supplier shall both sign a contract on the electricity exchange.

Customers can complain to the NEA if they consider that application of tariffs, alleged discrimination, unjust tariffication etc. is employed (Articles 24, 25, 26 and 30 of the Electricity Act).

In addition to the regulatory monitoring of the NEA, the Competition Act also applies to business activities covered by the Electricity Act and is regulated by the Competition Authority. The Competition Authority is responsible for the enforcement of the Competition Act, the object of which is to promote effective competition in business activities. The Competition Authority is

charged with the task of achieving the objectives of the Competition Act by preventing unreasonable barriers and restrictions on freedom in business operations and preventing harmful oligopoly and restriction of competition. The supervisory work of the Competition Authority extends to all forms of business activity, regardless of whether such activity is conducted by individuals, companies, public entities or other parties.

In accordance with the aforementioned regulatory framework, customers may bring complaints to either the NRA or the Competition Authority, depending on the nature of the complaint.

As stated earlier, competition has been introduced in the supply of electricity. Six companies compete on the market and according to the interim provision No. IV all parties are entitled to select the electricity supplier of their choice, effective as of 1 January 2006. Customers can therefore choose their supplier, free of charge; however the termination of services shall be made in accordance with Article 9 of Regulation No. 1050/2004, i.e. with at least 30 days notice. The NRA also posts on its website general information and guidance for customers on the electricity market, such as electricity prices, how to switch to a new supplier as well as giving guidance on how to proceed with a complaint.

There are no provisions regarding the implementation of Article 3(6) of the Directive. Recital 25 of the Directive states that the Commission has indicated its intention to take initiatives especially as regards the scope of the labelling provision and notably on the manner in which the information on the environmental impact in terms of, at least, emissions of CO₂ and the radioactive waste, resulting from electricity production from different energy sources, could be made available in a transparent, easily accessible and comparable manner throughout the European Union and on the manner in which the measures taken in the Member States to control the accuracy of the information provided by suppliers could be streamlined.

NEA points to the fact that virtually all electricity produced and consumed in Iceland is from renewable sources, either hydro or geothermal. In addition to this, NEA provides information on its website on the electricity produced from each of the electricity companies.

Measures taken to fulfil universal service and public service obligations, including consumer protection and environmental protection, and their possible effect on national and international competition, are among others as follows:

1. Consumer protection: NEA is obligated to supervise certain general aspects of consumer protection, regarding the profitability of the electricity system and general tariffs, according to the Electricity Act No. 65/2003.

According to Act No. 62/2005 on the Icelandic Consumer Agency, Article 2, the Agency shall supervise the execution of all acts that regard surveillance on invidious business methods and transparency of the market.

2. Environmental protection: Act No. 105/2006 on Assessment of the Effects of Certain Plans and Programs on the Environment is in accordance with Directive 2001/42/EC and Act No. 106/2000 on Environmental Impact Assessment is in accordance with Directive 85/337/EEC as amended by Directive 97/11/EC. These Acts are enforced by the Icelandic Planning Agency.

All licenses according to the Electricity Act can be conditioned in regard to environmental protection.

Act No. 44/1999 on Nature Conservation provides that certain projects and certain aspects of projects shall be in accordance with its provisions. The Act is enforced by the Minister of the Environment and the Icelandic Environment Agency.

3. Competition: It is provided in the Electricity Act, Article 27, that the Icelandic Competition Authority is obligated to supervise industry that operates according to the Act.

Annex A: Organisation chart of the National Energy Authority in Iceland

