LANDSNET

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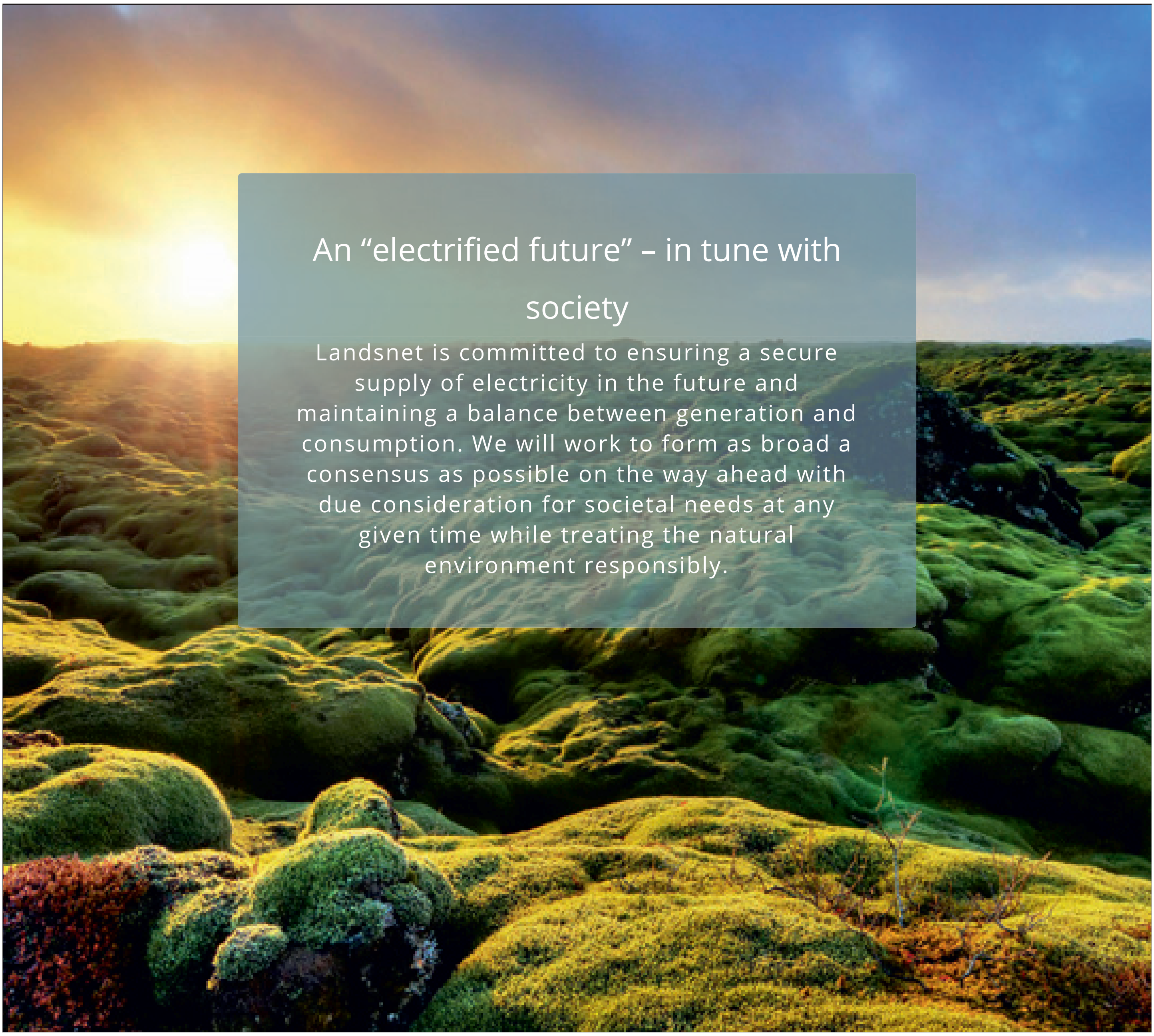

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Guðmundur Ingi Ásmundsson, CEO & President

Geir A. Gunnlaugsson, Chairman of the Board

Statement by the President & CEO and the Chairman

Landsnet achieved a good performance in 2015, delivering a profit of ISK 4 billion. Revenue was ISK 16 billion and turnover was up 13% year-on-year. Our transmission tariff for distribution system operators and power-intensive consumers remained unchanged in the year. Transmission was up by 3.6%. The year-on-year increase in revenue is largely due to a rise in the US dollar, whose average exchange rate was up 12.6%.

Strong financial position

Total assets stood at nearly ISK 103 billion at year-end. Fixed assets were revalued during the year, the first such revaluation since 2008. Periodic revaluation had not been carried out earlier because of the high level of uncertainty surrounding the profitability of the company's revenue cap and thereby its income. After adjusting for calculated income tax, the revaluation result was ISK 18,737 million, which is recognised in equity. Equity at year-end stood at ISK 41,956 million. The equity ratio was 41%.

Interest-bearing liabilities were ISK 47,863 million at year-end, of which approximately 90% were funded in ISK. About 80% of interest-bearing long-term liabilities consists of a start-up loan from the parent company, on which no payments are due until 2020. No payments are due on a large portion of our borrowings, an important factor for our cash position. An agreement was made with the parent company to pay on the loan during the year. Since Landsnet is changing its functional currency, however, it is clear that its debts will be refinanced in the next few years, which is expected to deliver more favourable interest terms.

2015 is the last year for which Landsnet is publishing its annual financial statements in ISK. The Annual Accounts Register has agreed that we will henceforward prepare our financial statements in US dollars.

Landsnet's financial position is strong. The company is thus well placed to undertake important grid strengthening in the next few years and at the same time pay its owners a reasonable dividend. Therefore, our Board of Directors is proposing to the Annual General Meeting to pay out a dividend this year totalling ISK 400 million, or about 10% of the profit for the financial year 2015.

Further improvements to Landsnet's operating environment needed

The aims of amendments passed in February 2011 to the Electricity Act included improvements to Landsnet's operating environment. Under the amendments, Landsnet's revenue cap was to be decided five years in advance at a time. The first such period under the amended Act covered the years 2011-2015. Unfortunately, these aims were not achieved during the period. A decision on the revenue cap for the period was delayed owing to repeated complaints, so it was not until late 2015 that the 2011-2014 revenue cap was finally determined.

This problem has now been addressed through a review of a government regulation introduced by the Ministry of Industries regarding Landsnet's allowed rate of return and cost of capital. This has been followed by an effort to determine the revenue cap for 2016-2020.

The experience of the legislative provisions governing the revenue cap shows that further amendments are needed to ensure that Landsnet's operating environment is fit for purpose in the future. Attention must be paid to the fact that Landsnet is a growing company on which ever-increasing demands are being placed.

What does the Paris Agreement mean for Landsnet's grid?

Like the road system, the electricity system is one of modern society's most fundamental infrastructures. Its future development must take account of long-term considerations and the interests of the nation as a whole.

Deficiencies in the system affect many facets of our society, including value creation, and detract from the value of our common energy resources. It is commonly held that Landsnet's plans to strengthen and develop the grid address primarily the needs of power-intensive industries. The fact is, however, that the current need for grid strengthening is primarily owing to rising general electricity consumption and requirements for increased security of supply.

Signed this past winter, the Paris Agreement sets out an action plan for the global community to limit global warming to well below 2°C above pre-industrial levels, thus mitigating against climate change. This shifts the benchmark for our society and thereby Landsnet's activities. Electric power will play a key role in achieving targets of clean, renewable energy sources, which raises standards still further for our grid. The Paris Agreement thus poses a challenge for Landsnet and calls for a review of existing benchmarks and criteria.

A decision is needed on the grid's future

The electricity system's sustainability will not be achieved without a strong grid based on solutions that reduce environmental impact and are acceptable to society at large.

Our Grid Plan submitted in the summer of 2015 sets out two main options for the grid's development in the next few years. One of these is to construct a transmission line over Iceland's central highland plateau. The other is to reconstruct the existing Inter-Regional Transmission Network. An environmental impact assessment (EIA) is in progress for the highlands option and preparations for an EIA of the inter-regional network option are underway.

Naturally, opinion is divided on these two Grid Plan options. Therefore, it is important to complete research into their pros and cons as soon as possible to settle the debate and make an informed decision on the grid's future development – both from the perspective of societal needs and from an environmental point of view.

Changed appearance of infrastructure part of the consensus

A part of the consensus that needs to be achieved on the electricity system of the future concerns the appearance and development of new electrical power infrastructure.

Landsnet is committed to keeping abreast of technical innovations and utilising these in its activities where feasible to ensure that the grid serves its purpose in the best way possible.

New transmission tower designs have been developed, with the first prototypes scheduled to be erected this year. Our substations are also undergoing a transformation. We are constructing new substations one by one, each of which is specially designed to integrate into its natural settings as seamlessly as possible. Our line routeing also aims to minimise visibility and maximise successful integration into the natural environment. Our expertise in underground cable installation in Icelandic conditions is growing by leaps and bounds as the number of such projects grows. Our innovation in high-tech system management solutions for the electricity system has also opened up opportunities to participate in extensive and interesting pan-European research projects.

Energy trading in the market

The growing number of electricity generators in Iceland, driven by new mini-power stations and other generation, calls for changes in energy trading domestically. To further develop this market, ways must be sought to shape energy trading in Iceland towards overseas practices where electricity is like any other tradable market commodity. This is a delicate task owing to the small size of Iceland's electricity market.

The real security of supply

Despite a considerable rise in the number of grid disturbances over the past few years and ever-growing risks in the grid's operation due to increased transmission through the Inter-Regional Transmission Network, calculated outage duration in 2015 was well within the defined limits. Outage minutes numbered just under 27, a figure comparable with that of our Nordic and European peers.

Landsnet is proud to be able to offer such a reliable supply of electricity for priority consumers. However, this indicator does not paint the entire picture. When the quantity of reserve power activated during disturbances and the extent of power curtailments to consumers with interruptible service contracts are taken into account, another picture emerges. It shows that the grid's performance would have been much poorer without these measures, as the total number of outage minutes in 2015 would have been around 214. This is yet another proof of the necessity of grid strengthening.

A challenge for the future

Icelandic society is at a crossroads. The grid in its current form has reached the limit of its carrying capacity. The need for its further development has become urgent at the same time that demand for electricity is growing at a rapid pace. This poses challenges in terms of building a grid fit for purpose in harmony with society – a grid capable of providing Icelandic homes and businesses with secure access to electricity in years and decades to come.

Ahead is a time of change, new solutions and new challenges. Landsnet is well placed to meet these. We undertook extensive policy reformulation in 2015 to redefine our future vision and policies. On this basis, key priorities and focus areas for the coming years were defined in consultation with our staff. A new organisational structure and redefined values to support our role, future vision and policy were also established. We extend warm thanks to Landsnet's employees for their contribution to our new ways of working and their excellent work in years past.

Guðmundur Ingi Ásmundsson forstjóri

Geir A. Gunnlaugsson stjórnarformaður

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News in review

Exciting times ahead, says new CEO of Landsnet

Preventive measures against flooding risk in the River Þjórsá area

FEBRUARY

Iron sheet blown by wind caused outages throughout the Reykjanes peninsula for a couple of hours

Publication of a new report on undergrounding at higher voltages in the Icelandic electricity system

Landsnet’s annual financial statements: A total profit of of ISK 3,762 million in 2014.

More than ten power poles broken by storm

Landsnet and PCC sign a new power transmission deal for silicon metal plant

in northern Iceland

APRIL

Landsnet´s 2015 spring meeting proclaims an "electrified future" in tune with society

New government policy-making on grid's development underway

Energy, transport and telecommunications vital for rural areas

Celebration og af new reserve power station and smart grid in the West Fjords

MAY

Organisational changes at Landsnet: Five new core divisions

JUNE

All reservations lifted in Landsnet's agreement with PCC

JULY

Landsnet and municipality of Hafnarfjörður sign deal on demolition of Hamranes Line no later than 2018

AUGUST

Well attended presentation on Landsnet´s grid development over next 10 years

SEPTEMBER

Important for Landsnet to build consensus with all stakeholders

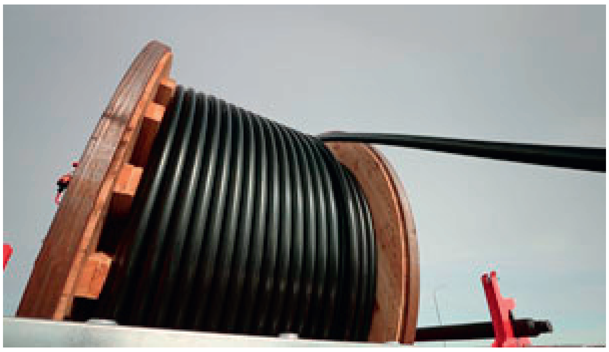
Landsnet signs contract with engineering firm Mannvit on the design of transmission lines in north-east Iceland

Launch of construction phase at Bakki site

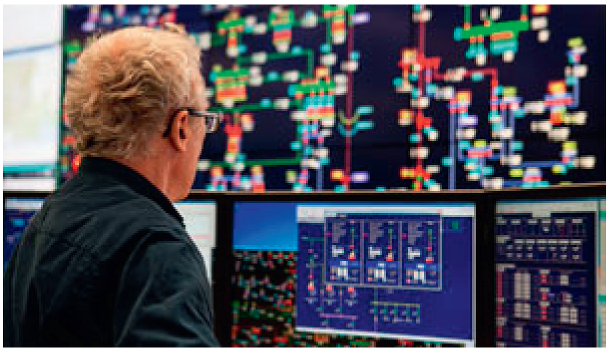
OCTOBER

Constructive points raised in Icelandic National Audit Office report on Landsnet

Overhead line between Hella and Hvolsvöllur demolished



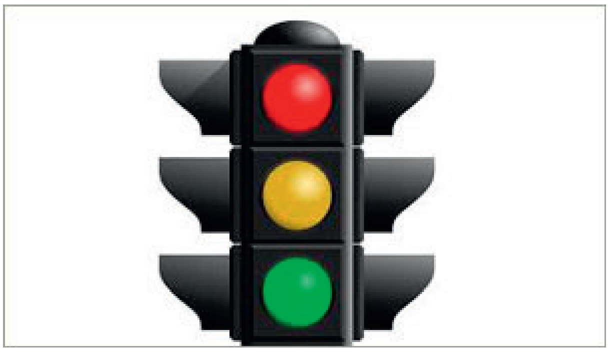
Underground cable installation between Fitjar and Helguvík proceeding well



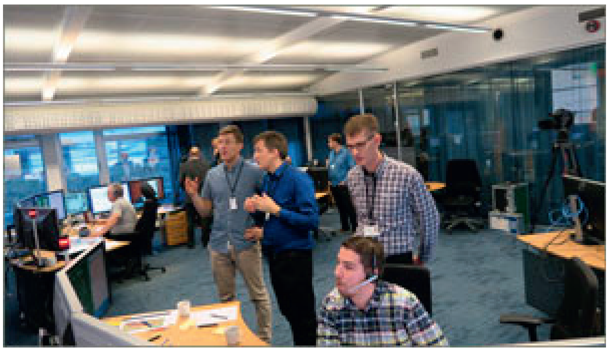
Landsnet participates in an international forum held in Iceland on energy security in the 21st century

Landsnet signs deal with Thorsil on transmission for a silicon metal plant at Helguvík

Draft scoping document for Sprengisandur Line submitted



New disturbance classification system adopted by Landsnet



Emergency exercise held by Landsnet and the Electricity System’s Emergency Partnership

DECEMBER

Landsnet's storm losses assessed at ISK 120 million – of which ISK 90 million in the West Fjords

Landsnet supports Specialisterne in Iceland and the Charity for Children with Autism

Landsnet becomes member of Festa – the Icelandic Centre for Corporate Social Responsibility

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About Landsnet

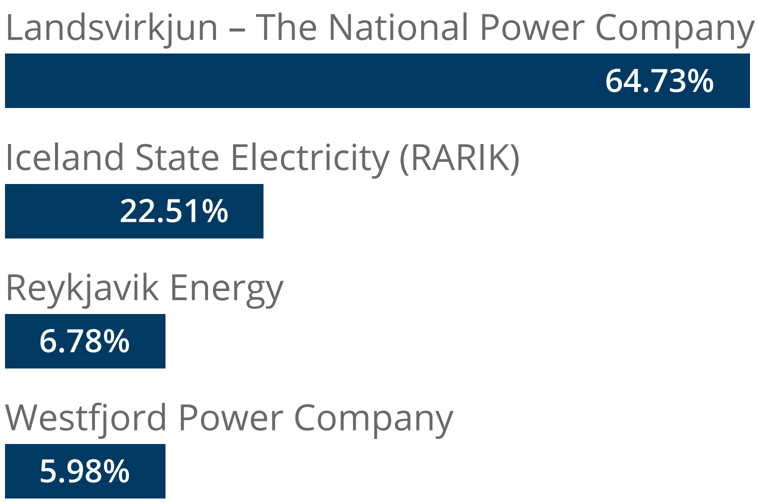
Landsnet hf. is a responsible and cutting-edge service company with a strong team of professionals and a high level of community awareness. We aim to be at the global forefront in our industry.

Iceland has only a single defined grid but a number of regional or distribution networks. Landsnet owns and operates all bulk transmission lines in Iceland. The grid also includes all main substations in the country. Our nearly 3,300km line network includes lines with voltages of 66 kV and higher and a number of 33 kV lines. The grid's highest operating voltage is 220 kV. A large part of the grid operates at 132 kV and some parts at 66 kV and 33 kV. Transmission lines in the south-west and east of Iceland were built as 420 kV lines but operate at 220 kV.

The grid receives electricity directly from power stations and transmits it to distributors and power-intensive users. All power stations that are 10 MW or larger connect to the grid, which transmits the electricity to six power-intensive consumers and distribution system operators in 59 locations around the country. The distributors then carry the electricity onwards to individual consumers.

Landsnet's owners

Landsnet began operations at the start of 2005 on the basis of the 2003 Electricity Act. Landsnet is a public limited company owned by Landsvirkjun, Iceland State Electricity (RARIK), Reykjavik Energy and the Westfjord Power Company. It operates under a concession arrangement and is subject to regulation by the National Energy Authority, which determines the revenue cap on which our tariff is based.



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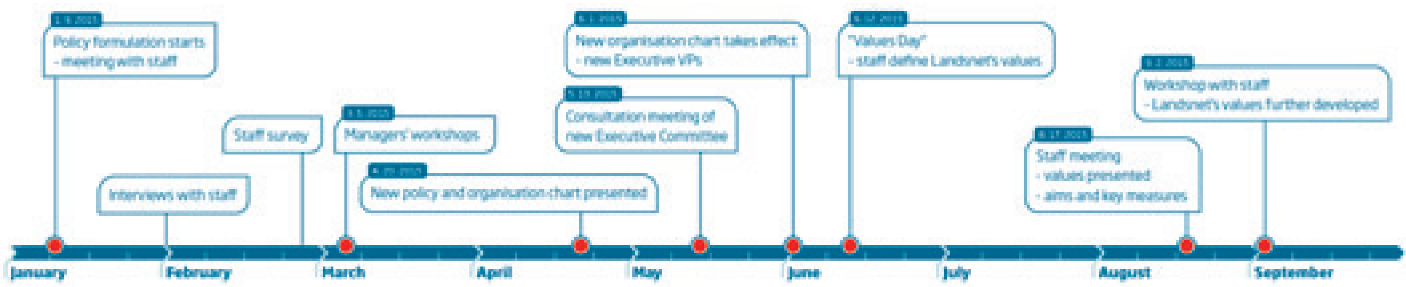
New policy

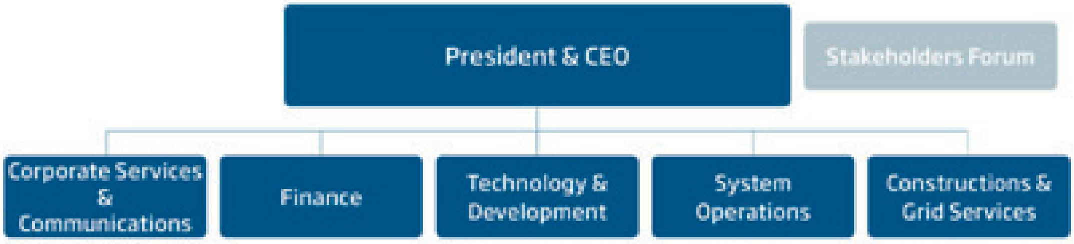
A new future vision and policy for Landsnet was formulated in 2015 after Guðmundur Ingi Ásmundsson took over the reins as President & CEO at the beginning of the year.



The key aim of the policy reformulation was to better ensure that Landsnet is prepared to meet future challenges with regard to the grid's development. The company's organisational structure was also changed to better support the new policy. This involved the creation of five new core divisions and the appointment of Executive VPs in charge of these divisions.

Landsnet's organisation chart

The organisational changes took effect on 1 June 2015. Landsnet's activities are now divided into Corporate Services & Communications, Finance, Technology & Development, System Operations and Constructions & Grid Services. A Stakeholders Forum will serve as a formal advisory organ for consultation and discussion about the grid's development and the future needs of Landsnet´s customers.



Our role

Landsnet's role is to ensure cost-efficient development and operation of the grid and a secure and uninterrupted electricity supply, an essential requirement for any modern society. Our role also includes maintaining a balance between electricity supply and demand at all times in the electricity system.

Landsnet thus plays a central role in ensuring that Iceland's people and economy have a secure supply of electricity at all times.

> ***Ensuring and maintaining the grid's long-term capacity and maintaining a balance between electricity supply demand at any given time***

Our future vision

At the core of our future vision is an "electrified future" in keeping with society's needs and expectations. Modern societies increasingly rely on a secure supply of electricity, making it necessary to strengthen the grid.

Landsnet is committed to ensuring a secure supply of electricity in the future and maintaining a balance between generation and consumption. We will work to form as broad a consensus as possible on the way ahead, with due consideration for societal needs at any given time. We will treat the natural environment responsibly.

Landsnet places priority on fostering a healthy electricity market environment and efficient use of financial resources.

> ***An electrified future in tune with society***

Our values

In parallel with formulating new policies, our employees adopted a new set of values to guide customer and inter-employee relations.

Landsnet's core values – responsibility, co-operation and respect – shape its culture and outlook, including the views and behaviours of our staff. Our values are designed to inspire professionalism and support effective decision-making.

- Respect involves a positive and tolerant attitude towards the opinions and work of others.
- Co-operation is reflected in team cohesion and in listening to different viewpoints.
- We conduct our work responsibly in accordance with the important societal role played by Landsnet.

Our corporate policy

Landsnet's corporate policy is based on the company's role and future vision and aims to ensure that we perform our duties with care and diligence and in the best possible harmony with society and the environment.

The corporate policy sets out a promise to society to ensure a secure electricity supply, a high-quality grid, a high level of operational security in the future, harmony with society and the environment, efficient operations, informed debate and effective management and organisation. The promises are:

A secure electricity supply – a high-quality, secure grid for the future

Landsnet is committed to ensuring that that all citizens, whether individuals, companies or public bodies, have access to electricity in the quantity and quality needed at all times. Future priorities are defined, including reliability, security and quality criteria. Landsnet will work towards a broad consensus on the rationale underlying decisions on infrastructure development and investment.

In harmony with society and the environment

Building a social consensus on Landsnet's role and aims will be an important enabler of progress. Such a consensus requires an understanding among the general public that the grid is one of the mainstays of our society. Landsnet therefore works towards raising awareness of its role, activities and importance as one of modern society's fundamental facilities. This requires a focus on corporate social responsibility intertwined with our policies. The company will seek to initiate and maintain a continuous dialogue with stakeholders – a dialogue characterised by honesty, responsibility, open-mindedness, mutual respect and a co-operative spirit. We will strive to minimise the environmental impact of the grid's operation and development.

Prudent use of funds – effective operations

Grid strengthening and a focus on bottleneck elimination will support a healthy investment environment for participants in the energy market and serve to reduce waste in the electricity sector as a whole. We take a "cradle to grave" approach to the grid when making decisions on investment and activities, with due consideration paid to the national interest. We manage and use the funds entrusted to us in a prudent manner, including proper stewardship of financial and other resources and cost-effective grid development, construction and operation.

A clear image

Landsnet seeks to build a clear corporate image of professionalism, trust and social responsibility. We strive to be a modern and forward-looking company that looks for a variety of solutions with an open mind in the overall public interest. We are committed to thorough, readily understandable and honest communication of information.

Strategic management and organisation

Landsnet's organisational structure must support its role, policy and activities in a clear and targeted manner, including the company's promises to its customers and society at large. We place importance on a simple and effective organisational structure with strong main functional divisions and clear lines of responsibility that allow for a holistic overview of processes. In parallel, focus is placed on continuous improvements to simplify processes and step up efficiency and effectiveness. We use methodical practices and procedures and strive for continual improvement based on international management standards. We meet the requirements applicable to our activities, including legal and other requirements.

A good workplace

Landsnet shows due care for all its employees. This includes providing them with opportunities to engage in exciting work and develop their skills in a professional and ambitious environment. We are committed to creating a good workplace whose culture and relations are shaped by our corporate values and whose employees are afforded opportunities to develop and progress. Our corporate culture is characterised by service-mindedness and due care for the needs of our customers, staff, society and the environment. We work continually to improve health protection, safety and operational security and attach importance to cultivating a shared outlook among our staff on the company's values, purpose and role

Landsnet's Board of Directors

Our Board of Directors is composed of Geir A. Gunnlaugsson, previously chief executive of Marel and Promens, Svana Helen Björnsdóttir, CEO of Stiki, and Ómar Benediktsson, CEO of Farice. The Alternate Director is Svava Bjarnadóttir, Partner and Consultant at Strategía ehf.

The Board is elected for a term of one year at a time and has ultimate authority over the company's affairs between Annual General Meetings. To meet statutory requirements of utmost impartiality in our activities, our Directors must be independent in all respects from the company and shareholders as well as from other companies engaging in the generation, distribution or supply of electricity.

Geir A. Gunnlaugsson, Chairman of the board

Geir A. Gunnlaugsson was born in 1943. He is Chairman of the Board of Landsnet, having first been elected at the Annual General Meeting on 31 March 2011. He has served on the boards of numerous businesses, both Icelandic and foreign, as well as other organisations and institutions, and has extensive experience in business management in Iceland and overseas.

Mr Gunnlaugsson read mechanical engineering at the University of Iceland, earned an MSc degree in mechanical engineering from the Technical University of Denmark and a PhD from Brown University, USA. He was professor of mechanical engineering at the University of Iceland in 1975-1986 and chief executive of Icelandic Metals in 1983-1987. He was chief executive of Marel in 1987-1999, chief executive of Hæfi and chairman of Reyðarál in 2000-2002 and chief executive of Promens in 2003-2006.

Ómar Benediktsson, Director

Ómar Benediktsson was born in 1959. He was first elected to Landsnet's Board at the Annual General Meeting on 29 March 2012. He has served on the boards of numerous businesses, both Icelandic and foreign, as well as other organisations and institutions, and has extensive experience in business management in Iceland and overseas.

Mr Benediktsson holds a Cand.Oecon. degree in business administration from the University of Iceland. He served in managerial positions in tourism and aviation for three decades. At the beginning of 2012, he became CEO of Farice, which operates the submarine telecommunications network linking Iceland with the rest of the world. Farice is also a key player in developing Iceland's emerging data centre industry.

Svana Helen Björnsdóttir, Director

Svana Helen Björnsdóttir was born in 1960. She was first elected to Landsnet's Board on 31 March 2009. She has served on the boards of numerous businesses, organisations and institutions and has extensive experience in business management in Iceland and overseas.

Ms Björnsdóttir holds a BSc degree in electrical engineering from the University of Iceland and earned a Dipl.Ing. (master's degree) in electrical power engineering from the Technische Universität Darmstadt in Germany in 1987. She also holds a diploma in operations management from the University of Iceland and is currently working on a doctorate in risk analysis at Reykjavik University's School of Science and Engineering. She founded the information security company Stiki in 1992, and it´ s CEO. She was chairman of the Federation of Icelandic Industries in 2012-2014 and served concurrently on the executive committee and board of SA – Business Iceland.

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Landsnet’s Executive Committee

Landsnet’s Board of Directors engages a President & CEO, who is responsible for the company’s day-to-day operations. Landsnet’s Executive Committee is composed of the President & CEO, the CFO and the Executive VPs.

Landsnet’s CEO & President

Guðmundur Ingi Ásmundsson

“celandic society is at a crossroads. The grid in its current form has reached the limit of its carrying capacity. The need for its further development has become urgent at the same time that demand for electricity is growing at a rapid pace. This poses challenges in terms of building a grid fit for purpose in harmony with society – a grid capable of providing Icelandic homes and businesses with secure access to electricity in years and decades to come.“

Guðmundur Ingi Ásmundsson was born in 1955. He took over as President & CEO of Landsnet at the beginning of 2015, having previously served as Deputy CEO from 2008, Director of System Operations from 2005 and System Manager from Landsnet’s founding at the start of 2005. Prior to that, he worked for Landsvirkjun for 23 years as an engineer in the Operations department, later becoming chief engineer and Head of System Operations from 1993. He has a degree in electrical engineering from the University of Iceland in 1980 and a master’s degree in electrical power engineering from the Technical University of Denmark in 1982.

Finance

Guðlaug Sigurðardóttir, CFO and Deputy CEO

"We are responsible for Landsnet's finances, accounting, treasury management, purchasing, business intelligence, revenue cap compliance, budgeting, financial modelling and risk management. The Finance division includes an Analysis Unit that supports revenue and tariff analysis, the reliability of forecast models, the company's asset management, and analysis of investment and operational decisions. Finance is also responsible for the operation of Landsnet´s real property."

Guðlaug Sigurðardóttir was born in 1966. She joined Landsnet as CFO in March 2008. She holds a Cand.Oecon. degree in business administration from the University of Iceland.

Corporate Services & Communications

Einar S. Einarsson, Executive VP

"We serve customers, develop the terms for electricity transmission and serve as a focal point for HR and internal services. We thus work on activities that drive synergies, efficiencies and co-operation."

Einar S. Einarsson was born in 1972. He was appointed Service & Marketing Manager of Landsnet in 2014 and became Executive VP of Corporate Services & Communications on 1 June 2015. He was previously employed by the State Alcohol and Tobacco Company of Iceland (ÁTVR) as Director of Sales & Service. He holds a Cand.Oecon. degree in business administration and an MBA from the University of Iceland.

Technology & Development

Sverrir Jan Norðfjörð, Executive VP

"We prepare grid development plans for all Landsnet infrastructure projects and manage research, environmental impact assessments and preparatory projects necessary to make decisions on infrastructure development. Our division includes a Technical Services Unit, which prepares infrastructure works and provides cross-divisional technical services."

Sverrir Jan Norðfjörð was born in 1976. He joined Landsnet in 2010 as Head of IT and later served as Head of System Development before becoming Executive VP of Technology & Development on 1 June 2015. He holds a BSc degree in computer and electrical engineering from the University of Iceland and an MSc degree in electrical engineering from the Technical University of Denmark.

System Operations & ICT

Íris Baldursdóttir, Executive VP

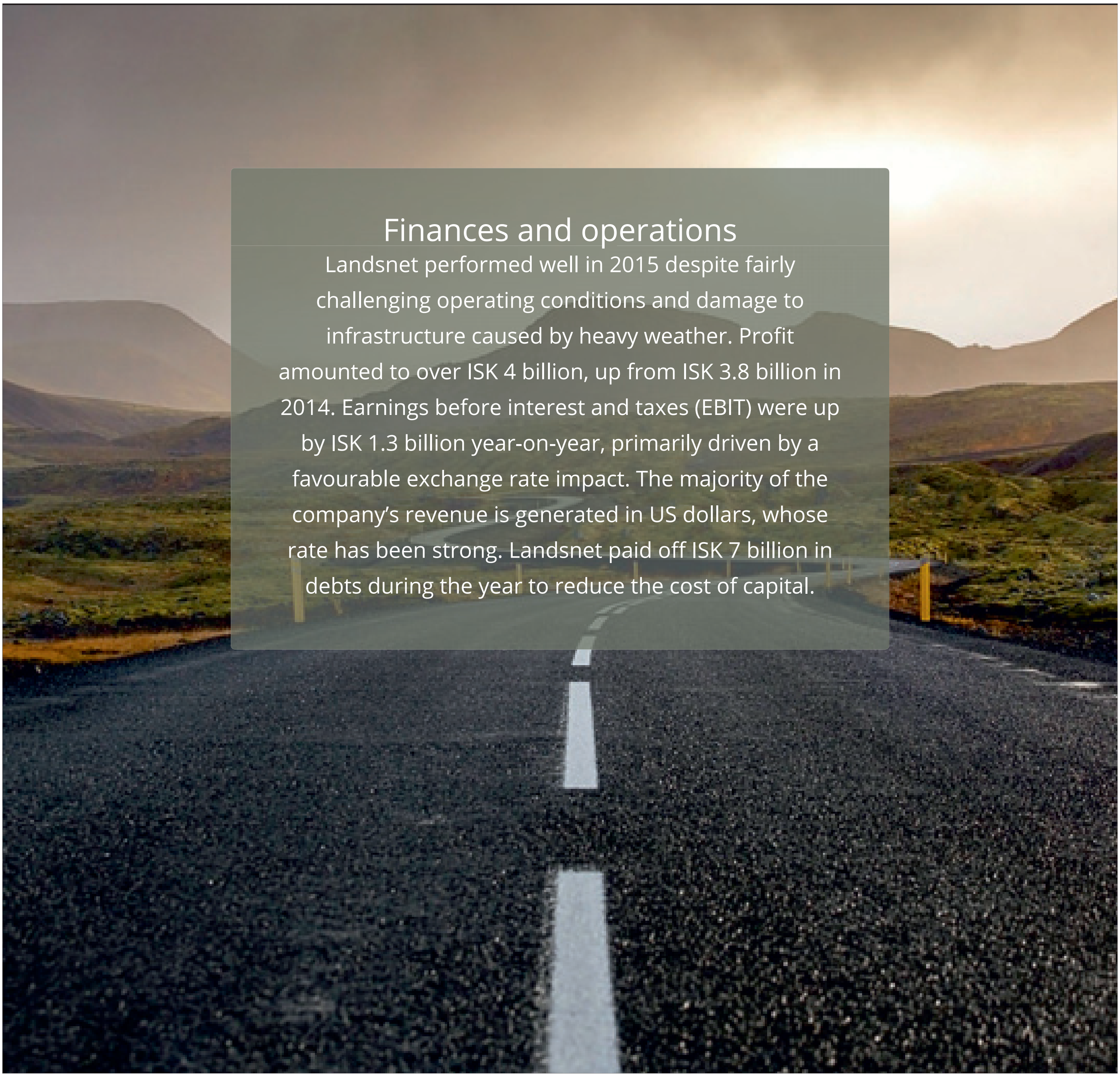
"We are responsible for the grid's operational security and system operations. This includes continuous balancing between power generation and consumption, co-ordinating plans for the disconnection of units and overseeing the response to grid disturbances. Conditions in the electricity system are subject to continual change, requiring constant system monitoring and often a rapid response. The division is also responsible for Landsnet's information systems and is at the heart of the development of smart grid solutions."

Íris Baldursdóttir was born in 1976. She joined Landsnet in 2006, serving as Head of System Development and Planning until 2010 when she became Head of System Operation and Market. She became Executive VP of System Operations & ICT in mid-2015. She holds a BSc degree in computer and electrical engineering from the University of Iceland and an MSc degree in electrical engineering from the KTH Royal Institute of Technology in Stockholm.

Constructions & Grid Services
Nils Gústavsson, Executive VP

"Our role is to manage and control all infrastructure projects and construction works relating to grid development and renewal. We also oversee maintenance, inspections and repairs of transmission infrastructure, including the key task of condition assessment of the grid."

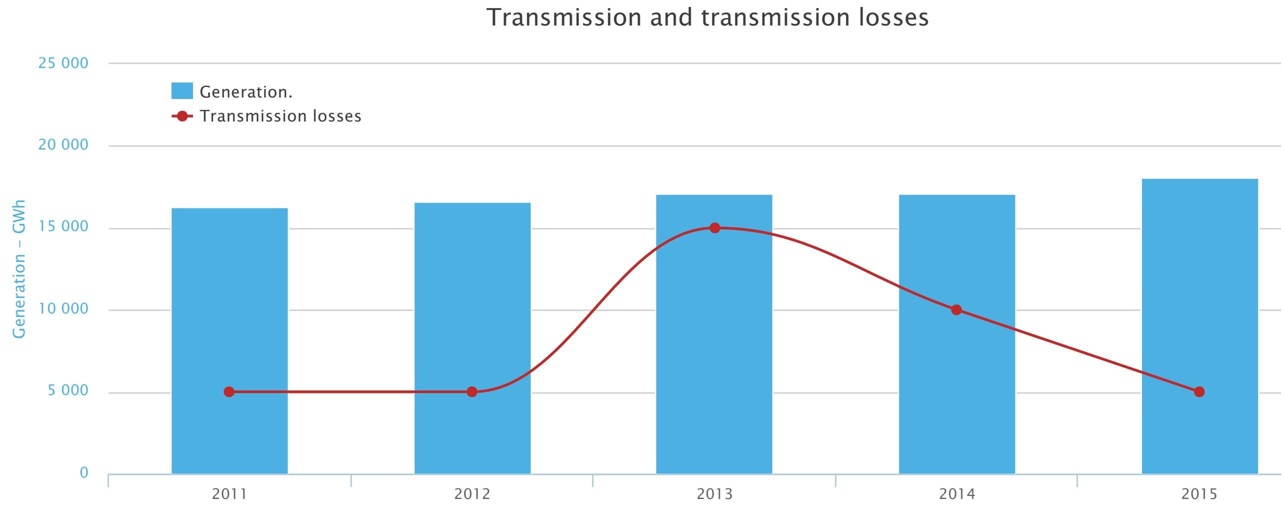
Nils Gústavsson was born in 1966. He has worked at Landsnet since the company's inception in 2005, first serving as Head of System Operations and then as Head of Grid Projects from 2010 before becoming Executive VP of Constructions & Grid Services on 1 June 2015. In 1993-2005, he worked at Landsvirkjun, first as an engineer and then as Head of the Control Centre from 2001. He holds a BSc degree in electrical and electronics engineering from the University of Iceland and an MSc degree in electrical engineering from the Technical University of Denmark.



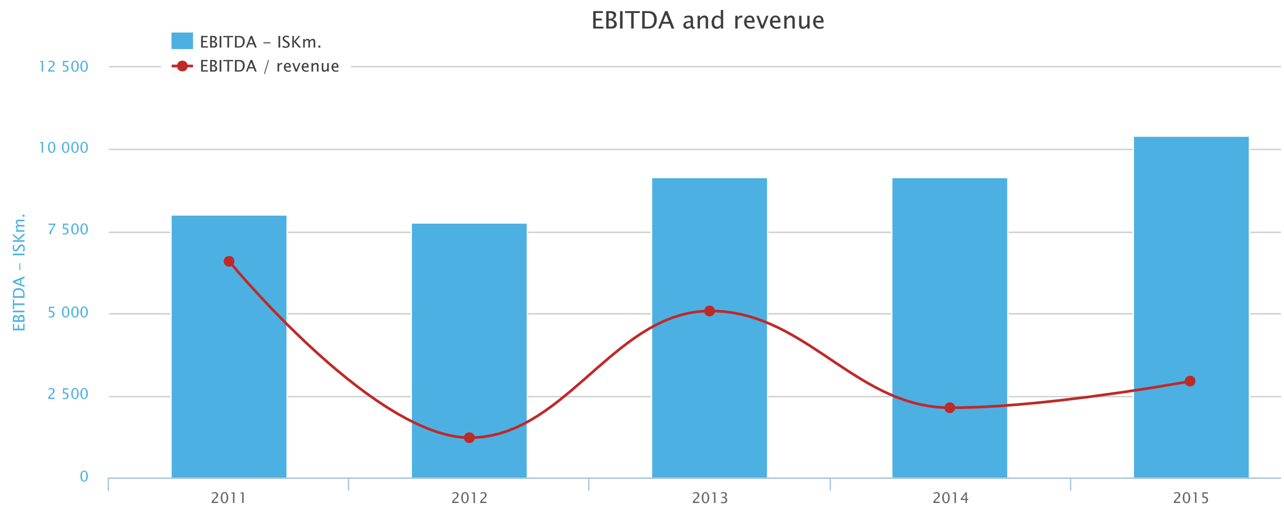
Finances and operations

Landsnet performed well in 2015 despite fairly challenging operating conditions and damage to infrastructure caused by heavy weather. Profit amounted to over ISK 4 billion, up from ISK 3.8 billion in 2014. Earnings before interest and taxes (EBIT) were up by ISK 1.3 billion year-on-year, primarily driven by a favourable exchange rate impact. The majority of the company’s revenue is generated in US dollars, whose rate has been strong. Landsnet paid off ISK 7 billion in debts during the year to reduce the cost of capital.

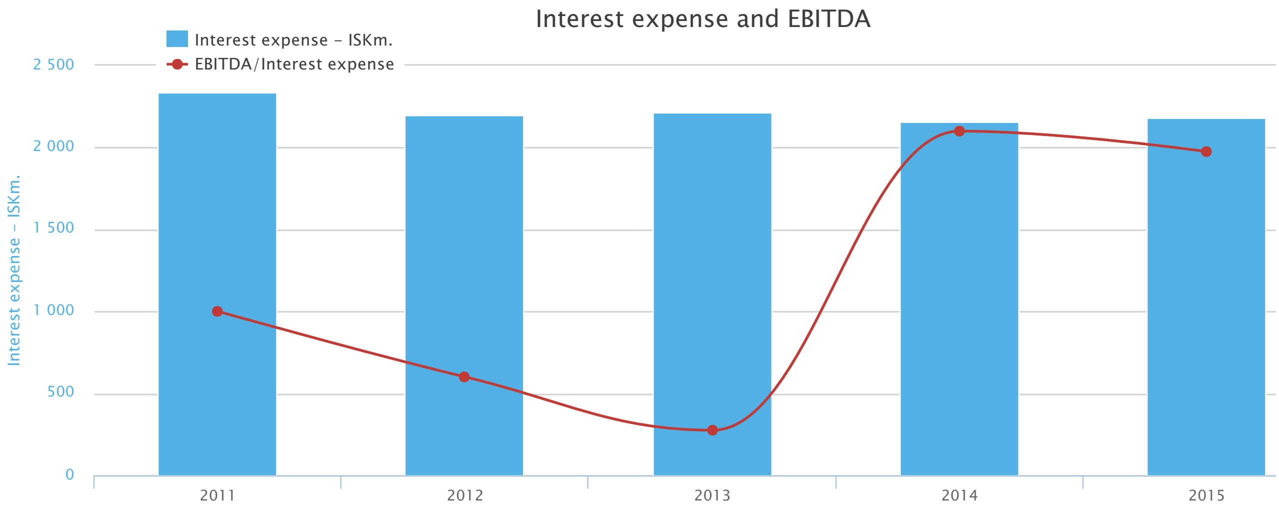
Key figures

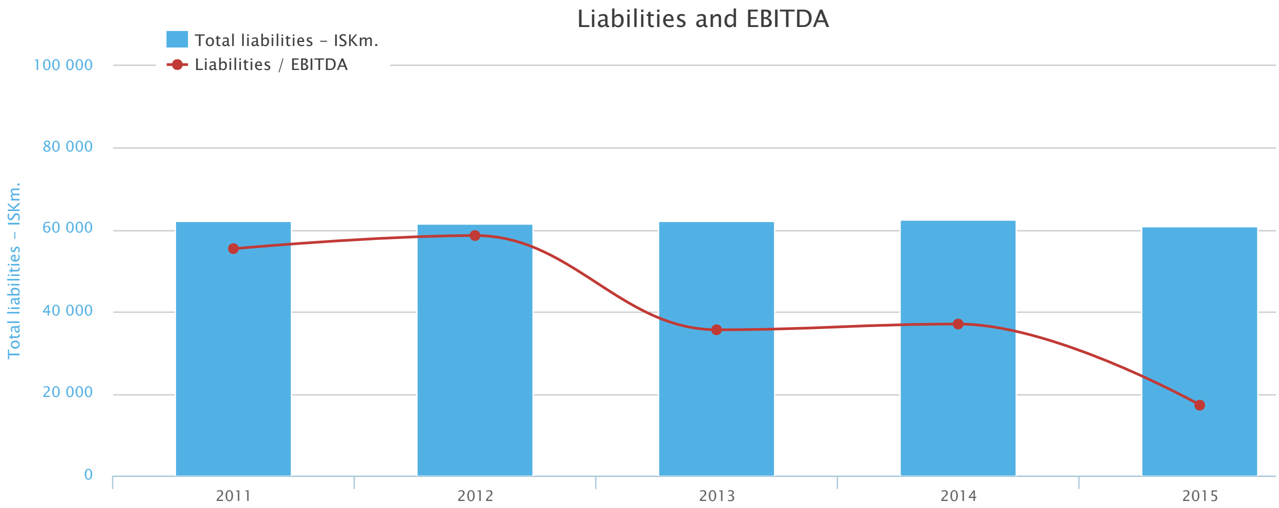


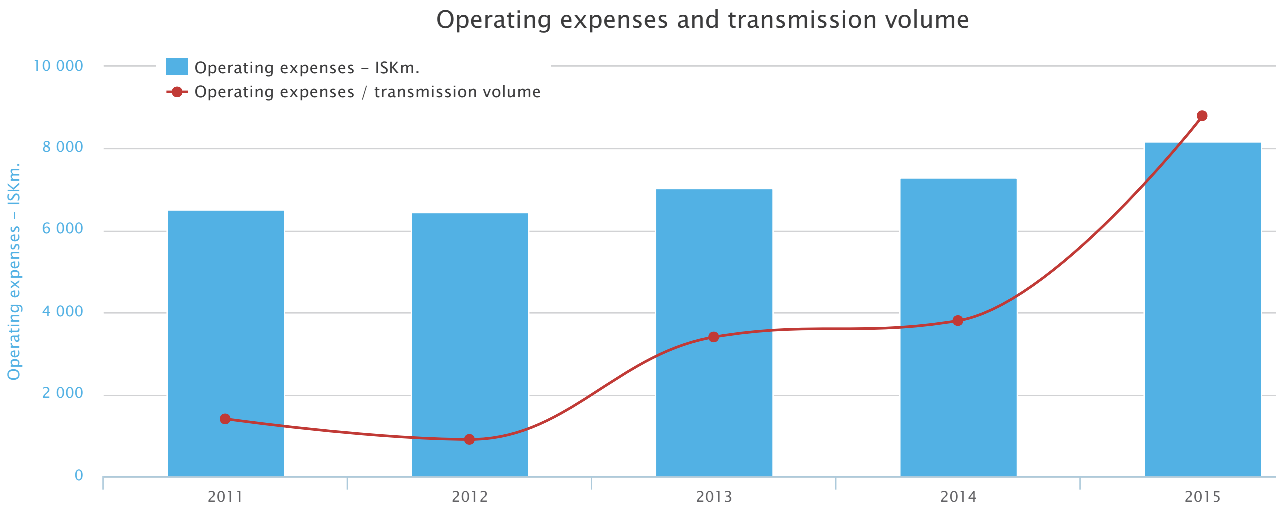
Transmission and transmission losses
Generation.
Transmission losses
Generation – GWh
25 000
20 000
15 000
10 000
5 000
0
2011
2012
2013
2014
2015

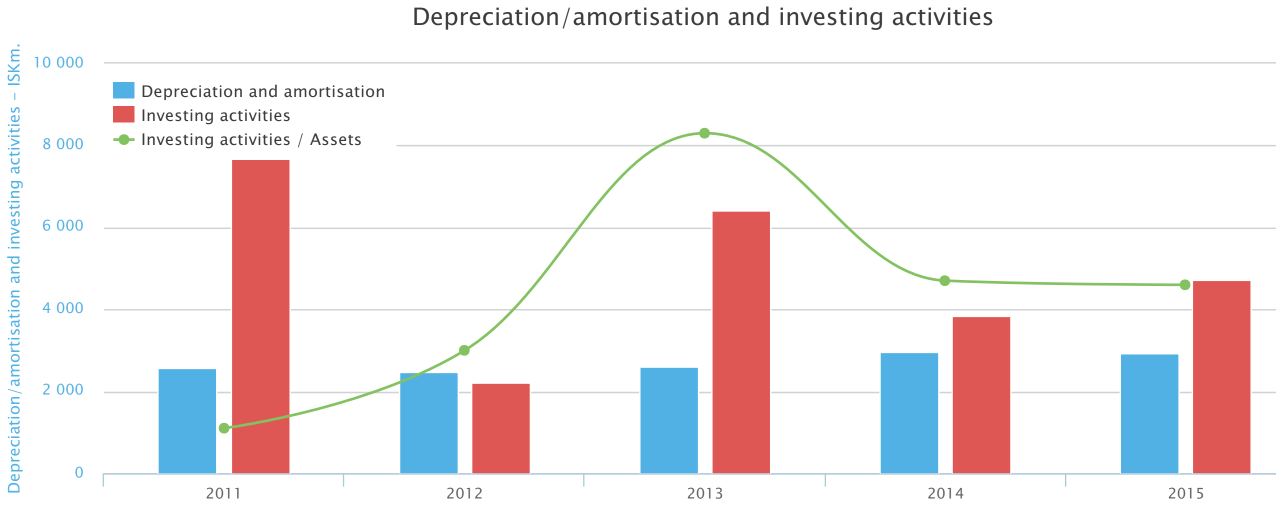


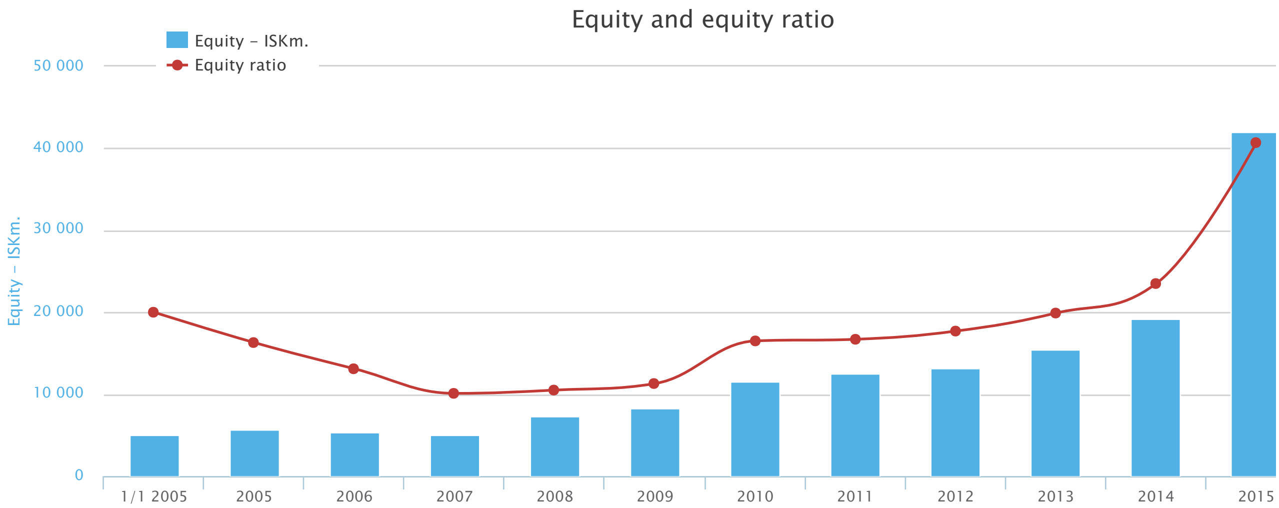
EBITDA and revenue
EBITDA – ISKm.
EBITDA / revenue
EBITDA – ISKm.
12 500
10 000
7 500
5 000
2 500
0
2011
2012
2013
2014
2015


Interest expense and EBITDA
Interest expense – ISKm.
EBITDA/Interest expense
Interest expense – ISKm.
2 500
2 000
1 500
1 000
500
0
2011
2012
2013
2014
2015


Liabilities and EBITDA
Total liabilities – ISKm.
Liabilities / EBITDA
Total liabilities – ISKm.
100 000
80 000
60 000
40 000
20 000
0
2011
2012
2013
2014
2015


Operating expenses and transmission volume
Operating expenses – ISKm.
Operating expenses / transmission volume
Operating expenses – ISKm.
10 000
8 000
6 000
4 000
2 000
0
2011
2012
2013
2014
2015


Depreciation/amortisation and investing activities
Depreciation and amortisation
Investing activities
Investing activities / Assets
Depreciation/amortisation and investing activities – ISKm.
10 000
8 000
6 000
4 000
2 000
0
2011
2012
2013
2014
2015


Equity and equity ratio
Equity – ISKm.
Equity ratio
Equity – ISKm.
50 000
40 000
30 000
20 000
10 000
0
1/1 2005
2005
2006
2007
2008
2009
2010
2011
2012
2013
2014
2015

Key figures (ISKm)	2011	2012	2013	2014	2015
System demand (GWh)	16,287	16,652	17,108	17,116	18,106
Transmission losses (GWh)	324	339	379	361	370
Transmission losses as a ratio of consumption	2.0%	2.0%	2.2%	2.1%	2.0%
Operating revenue	11,903	12,344	13,874	14,350	16,183
Investing activities	830	2,211	6,408	3,851	4,711
Investing activities as a ratio of operating revenue	7.0%	17.9%	46.2%	26.8%	29.1%
Earnings before interest and taxes (EBIT)	5,440	5,306	6,568	6,174	7,491
EBIT as a ratio of operating revenue	45.7%	43.0%	47.3%	43.0%	46.3%
General operating costs	2,550	3,187	3,209	3,445	3,601
General operating costs as a ratio of operating revenue	21.4%	25.8%	23.1%	24.0%	22.3%
Profit	840	801	2,183	3,762	4,010
Profit as a ratio of operating revenue	7.1%	6.5%	15.7%	26.2%	24.8%
Assets	74,679	74,873	77,608	81,859	102,973
Equity	12,462	13,263	15,446	19,208	41,956
Liabilities	62,217	61,610	62,162	62,651	61,018
Return on equity	7.2%	6.4%	16.5%	24.4%	20.9%
Equity ratio	16.7%	17.7%	19.9%	23.5%	40.7%
Length of overhead transmission lines (km)	3,055	3,055	3,061	3,066	3,053
Length of underground and sub-sea cables (km)	147	147	158	160	173
Full-time equivalent positions at year-end	94	106	114	113	118

Calculation of key figures:

Return on equity = $\dfrac{\text{Profit}}{\text{Equity at beginning of year}}$

Equity ratio = $\dfrac{\text{Equity}}{\text{Assets}}$

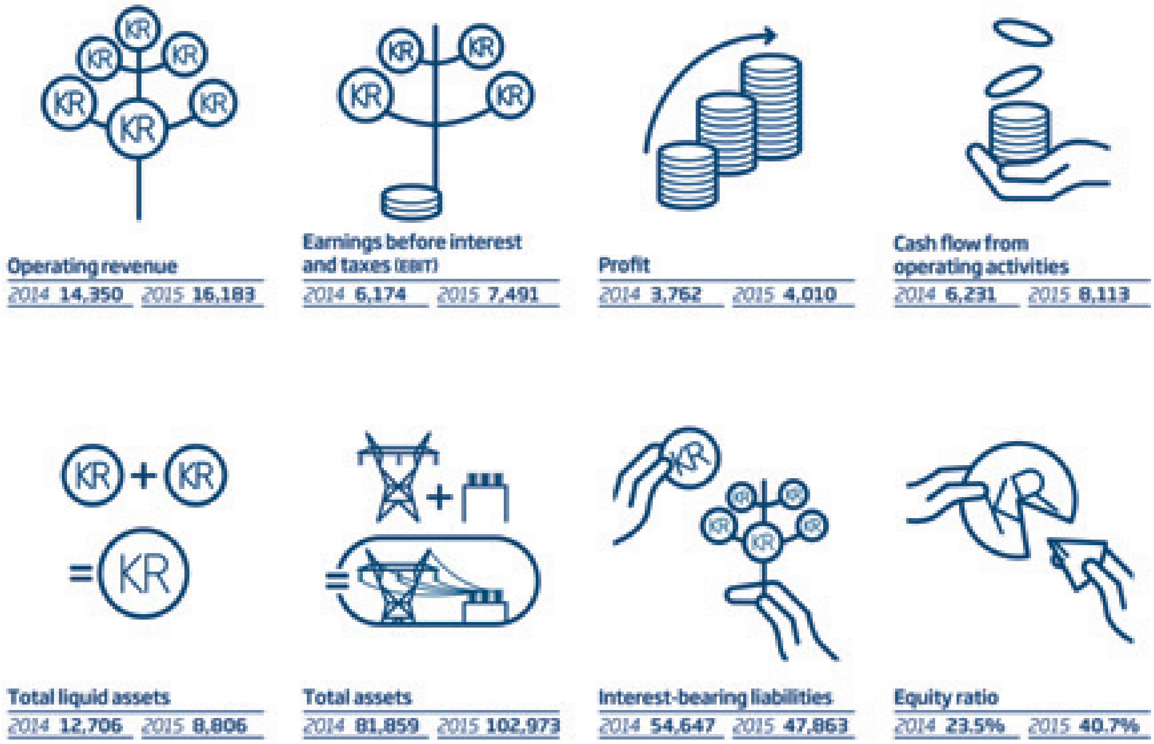
General operating costs = Operating expenses - Depreciation and amortisation - Ancillary services and losses

Finance and operations

Positive steps have been taken to improve Landsnet's operating environment through a new government regulation designed to secure the company's revenue source in the future. Landsnet's reporting and functional currency will henceforward be the US dollar, which creates opportunities to obtain funding at more favourable terms and to reduce operational risks. Thus, 2015 is the last financial year for which the ISK serves as the reporting currency of Landsnet's financial statements.

The company's fixed assets were revalued during the year. The revaluation of the asset base increases transparency in our operations. The value of the company's fixed assets is now in line with price level changes, the valuation of grid rebuilding costs and the asset base used by the National Energy Authority to determine Landsnet's revenue framework. This was the first revaluation of the company's assets since 2008, when the Board of Directors decided that revaluations should be carried out periodically. The reason why no revaluations were made until last year was the uncertainty surrounding the company's required rate of return.

Highlights of the 2015 financial statements (ISKm)



Profit of ISK 4 billion

According to the income statement, Landsnet generated a total profit of ISK 4,010 million in 2015, compared with a profit of ISK 3,762 million in 2014. Earnings before interest and taxes (EBIT) were ISK 7,491 million, against ISK 6,174 million for 2014, which is mostly explained by a favourable exchange rate impact.

Operating expenses were ISK 16,183 million, up by ISK 1,833 million or 12.8% year-on-year. While the transmission tariffs for power-intensive consumers and distribution system operators remained unchanged in 2015, transmission volume was up slightly. Revenue from transmission to power-intensive consumers, which is denominated in USD, was up by ISK 1,226 million (14.5%), primarily driven by the higher dollar (12.6%). The impact of exchange rate movements accounts for almost ISK 1.1 billion of the year-on-year increase.

Revenue from transmission to distribution system operators was up by ISK 255 million (6.8%) in the year, although the tariff remained unchanged. Priority transmission (firm service) to general consumers was up slightly year-on-year and non-firm transmission increased somewhat more strongly. Revenue from the sale of ancillary services and from charges for transmission losses was up by ISK 354 million (18.6%) between years. The tariff for ancillary services was reduced by 4.2% on 1 February and raised again by 12.5% on 1 August. The tariff for energy losses was raised by 24.7% on 1 February. The tariff increases in August were due to higher purchasing prices for these items, as the tariffs are determined on a cost-price basis with a 1.5% margin.

Operating expenses before depreciation and amortisation were ISK 5,769 million, up by ISK 561 million or 11% year-on-year. This increase was primarily due to higher purchasing prices for ancillary services and energy losses, which were up by ISK 404 million.

Net financial expenses for 2015 were ISK 2,502 million, compared with ISK 1,519 million for 2014, up by 983 million or 64% year-on-year. Foreign exchange gains were down by ISK 787 million year-on-year and came to ISK 195 million in 2015. The company's funding was mostly denominated in ISK, with inflation for the year calculated at approximately 2%, compared with around 1% in 2014, as a result of which inflation indexation was up by ISK 453 million year-on-year. Interest expenses, on the other hand, were down by ISK 157 million.

Assets revalued at ISK 103 billion

Total assets stood at ISK 102,973 million at year-end 2015, up from ISK 81,859 million a year earlier. Of this total, fixed assets accounted for ISK 91,983 million, compared with ISK 66,780 million at year-end 2014. Fixed assets in operation were valued at ISK 86,428 million at year-end, compared with ISK 63,771 million at the end of 2014.

Landsnet's fixed assets were revalued in 2015, resulting in an ISK 23,422 million upwards adjustment in value. The first and only previous revaluation of Landsnet's assets dates from 2008, when the Board decided to exercise the right to use the revaluation model under the International Accounting Standards. Once revaluation has been applied, the company is obliged to carry out periodic revaluations, but owing to uncertainty regarding Landsnet's required rate of return no revaluations were made until last year. The initial value of the company's lines and substations was revalued at year-end 2015. Two methods were applied in the revaluation. First, it was based on the estimated reconstruction cost of the transmission system. Second, the company's operating value was estimated using cash flow analysis. The revaluation carried out during the year was based on the operating value of the company's current assets.

Long-term liabilities and obligations stood at ISK 56,485 million and short-term liabilities at ISK 4,533 million at year-end 2015. At the end of 2014, in comparison, long-term liabilities and obligations were ISK 58,496 million and short-term liabilities ISK 4,155 million. No new loans were raised during the year. In addition to yearly repayments in the amount of ISK 967, the company repaid ISK 6,895 million on the start-up loan from the parent company, Landsvirkjun.

Of interest-bearing debt, ISK-denominated loans accounted for 90% and CFH-denominated loans for 10%. No loan refinancing was required in 2015 as loan repayments and investments were made with cash on hand.

Equity at year-end 2015 stood at ISK 41,956 million, including share capital of ISK 5,903 million, as stated in the balance sheet. By comparison, equity at the end of 2014 was ISK 19,208 million. The equity ratio was 40.7% at year-end 2015, up from 23.5% at the end of 2014.

Cash flow

Net cash from operating activities was ISK 8,113 million in 2015, compared with ISK 6,231 million in 2014. Cash outflows from investing activities for the year were ISK 4,711 million and financing activities amounted to ISK 7,862 million. Cash at year-end 2015 was ISK 8,072 million. The company's liquidity position is thus very strong.

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Revenue cap and tariffs

Landsnet operates on the basis of the Electricity Act No. 65/2003. Under Article 12 of the Act, the National Energy Authority (NEA) determines a revenue cap for Landsnet, which decides a tariff for its services in accordance with the cap. The revenue cap is based on historical operating expenses, depreciation of fixed assets, Landsnet's allowable profitability as decided annually by the NEA and taxes. The profitability factor is accorded significant weight in deciding the revenue cap. Therefore, decisions on the company's revenue cap and profitability must be made on a solid foundation to ensure the necessary stability with respect to charging for electricity transmission.

In 2015, the NEA issued its decision on the allowed rate of return for the years 2011-2015. Subsequently, the revenue cap settlement for 2011-2014 was finalised. This largely ended the uncertainty that existed for several years regarding Landsnet's revenue cap for the period 2011-2015.

As a result of a dispute that has lasted for a number of years regarding the allowed rate of return for concessionaires operating in the electricity market, the Ministry of Industries and Innovation decided to review the Regulation on the Valuation of Weighted Average Cost of Capital. This review has been completed, providing a basis on which to determine the revenue cap for the period 2016-2020.

Transmission tariff for power-intensive consumers in line with inflation

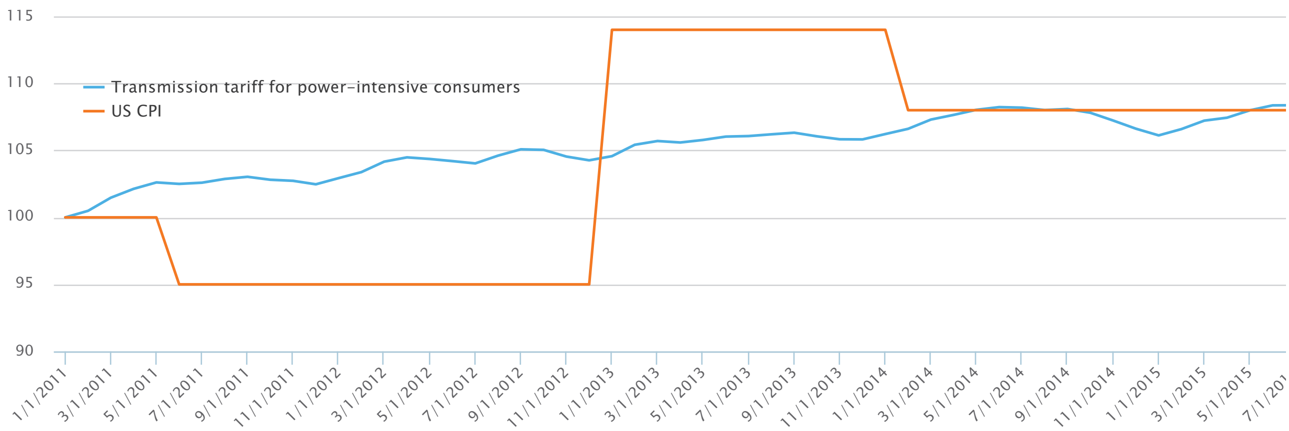
At year-end 2015, the last year of the previous revenue cap period, the tariff for power-intensive consumers was in line with that period's inflation, or up 8% from the beginning of the period, i.e. the beginning of 2011. The tariff has changed in keeping with decisions on, first, the rate of return within the framework applicable to power-intensive consumers and, second, repayment of an older debt.

Large fluctuations in transmission tariffs are undesirable, making it important to ensure stability as regards their underlying assumptions. A firm foundation in this respect depends on decisions on the rate of return, the revenue cap established pursuant to the provisions of law and a stable revenue-cap base.

The graph below shows the development of Landsnet's tariff since the amendments to the Electricity Act took effect in 2011 compared with the United States Consumer Price Index (US CPI), which the valuation of the asset base underlying our revenue cap is required to follow. This comparison shows how the tariff developed with respect to purchasing power in USD. No changes were made to the transmission tariff for power-intensive consumers in 2015.

Development of the transmission tariff for power-intensive consumers compared with the US CPI index

Base values of 100 in January 2011

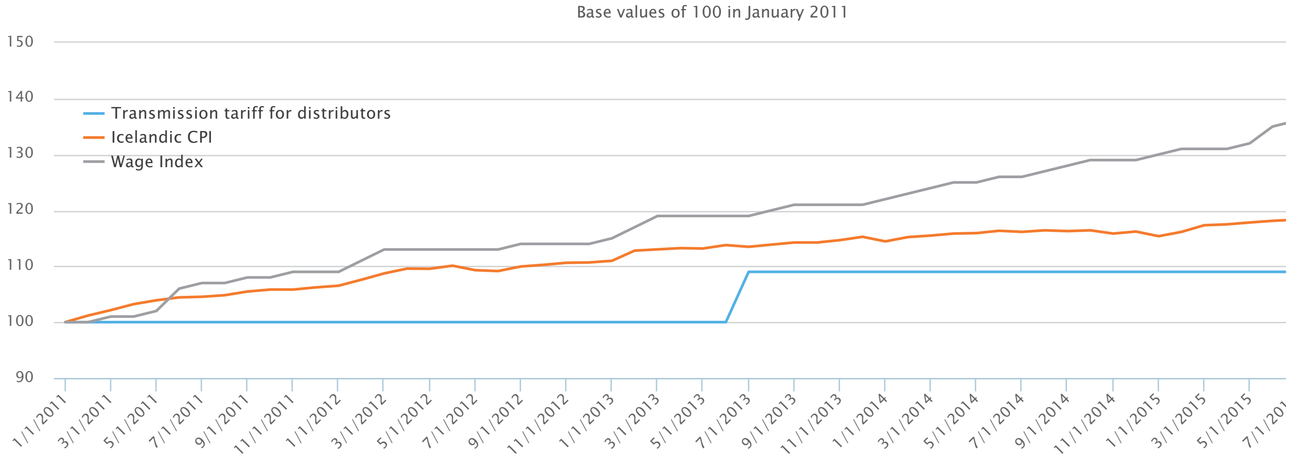


Unchanged transmission tariff for distributors

The transmission tariff for distribution system operators remained unchanged in 2015. The tariff was last increased on 1 July 2013, when it had not changed since 2009.

The graph shows how the tariff for distributors has developed since 2011 compared with the Icelandic Consumer Price Index (CPI) and the Wage Index. The asset base for distributors must follow the CPI and has the highest weighting in tariff decisions. The graph shows that the tariff increase did not keep up with inflation for the entire period. It also shows that purchasing power increased substantially in excess of the price of the transmission component of electricity supply to households.

Development of the transmission tariff for distributors compared with Iceland's CPI and Wage Index

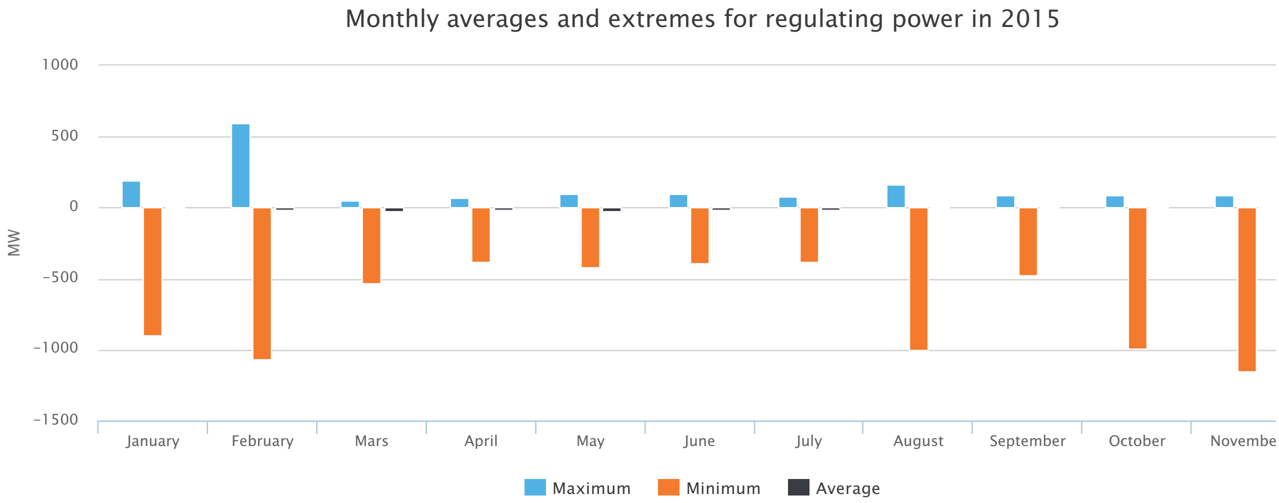


Tariff increase for ancillary services

Ancillary services are the services Landsnet provides to maintain operational security and balance between supply and demand of electricity at any given time. This includes spinning reserves for frequency control and disturbances, non-spinning reserves and instantaneous disturbance reserves. Landsnet must also provide guaranteed regulating power to operate a balancing energy market. To meet these statutory obligations, we purchase electricity, mainly from generating companies, and procure access to non-spinning reserves from distributors.

Landsnet has placed an emphasis on increasing the range of bids in the regulating power market. We continued experimenting with "telephone bids" and other special solutions in an aim to stimulate competition and increase the number of suppliers. A regulating power option held by Landsnet, which had been in effect for over a decade or ever since the company's founding, was reviewed during the year. The review led to a 12.5% reduction in the tariff for ancillary services as of 1 August, which followed a previous 4.2% increase at the beginning of February. Long-term contracts with generating companies ensured the availability of 100 MW of spinning reserves in 2015. A part of these long-term contracts, or 40 MW of the total of 100 MW, expired at year-end 2015.

A tender process for the period May 2015 to May 2016 was held during the year, with bids received from two parties. In accordance with the winning bid, the average price per guaranteed MWh rose to ISK 393 in the year, representing a 31% increase on average between contracts. The price for up-regulation rose by 51%.

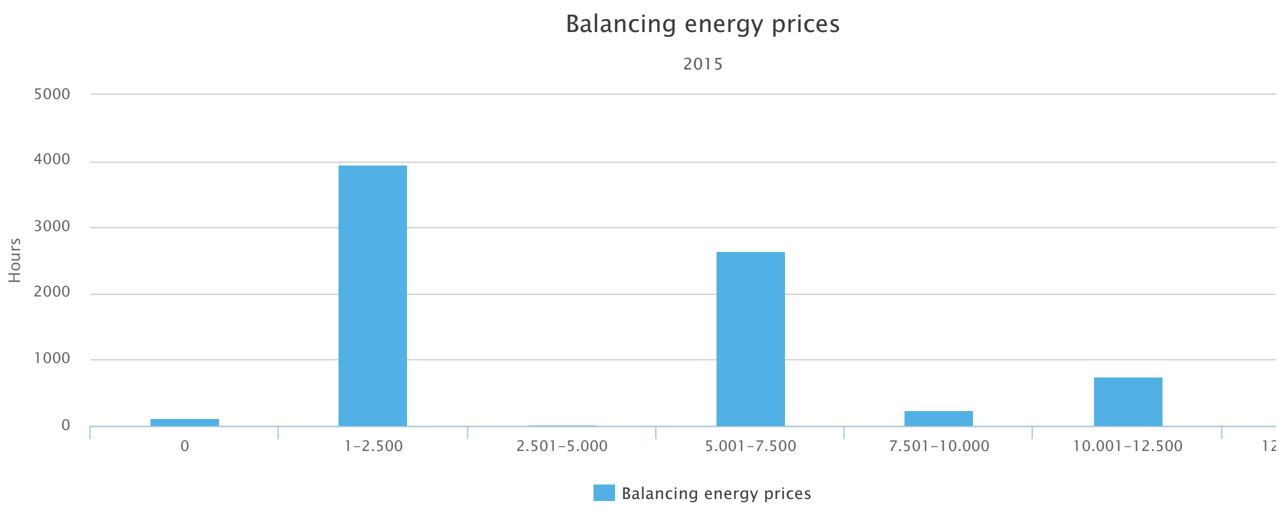


Increasing costs of grid energy losses

Under the Electricity Act, we must provide electricity to replace grid losses. From the outset, the arrangement of such purchases has been that the generators make offers to Landsnet for the purchase of electricity on the basis of a previous auction, leading to the conclusion of contracts on electricity purchases for this purpose for a term of one year at a time. The cost of transmission losses has been rising in recent years, partly because of growing transmission losses attendant with increased generation and partly because of an upturn in the average price resulting from tender processes.

The average price of electricity purchased by Landsnet to meet grid transmission losses rose by 25% year-on-year on the basis of a tender process held in the autumn of 2014. A tender process held in the autumn of 2015 to meet transmission losses in 2016 led to still further increases from ISK 3,799/MWh to ISK 4,447/MWh, which represents a 17% year-on-year rise on average.

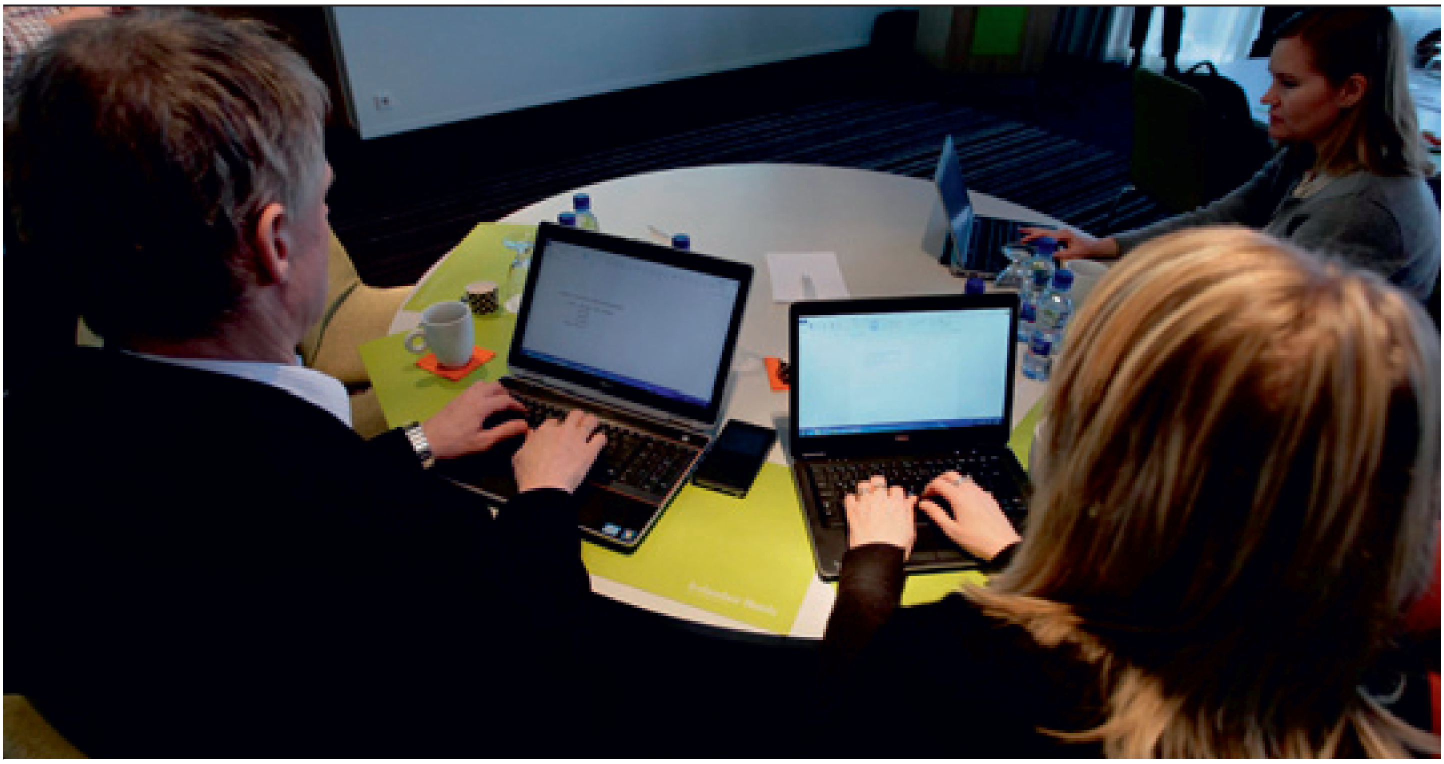
Landsnet's transmission loss tariff is identical for distributors and power-intensive consumers and is issued in ISK. Our purchasing of electricity for this purpose is subject to surveillance by the National Energy Authority, which ensures that the tariff is based on the purchasing price plus a 1.5% margin to meet administration costs.



Glossary

Spinning reserve is reserve power already connected to the grid and immediately available.
Non-spinning reserve is generating capacity that is not connected to the power system but can be brought online, connected to the system and fully utilised within a short time frame.
Instantaneous disturbance reserve is reactive power activated either automatically or manually during a short deviation from normal operating conditions.
Regulating power is the power Landsnet procures to balance differences between forecast energy use and actual energy use in the electrical network as a whole.
The regulating power market is the market from which Landsnet procures regulating power.
A regulating power option ensures a minimum supply of regulating power in the regulating power market.

Up-regulation refers to a demand for positive regulation power, i.e. power that needs to be fed into the system whenever actual consumption is higher than forecast for the electrical network as a whole.



Risk management

Landsnet is committed to meeting its legal obligations in a manner ensuring that the safety and security of its employees, customers and equipment are assured, its financial position is solid and that it performs its core functions in the best possible harmony with the environment and society at large.

The objective of our risk management is twofold: to increase the probability of a successful outcome and to reduce, first, the probability of shocks and, second, uncertainty about the achievement of goals.

A major factor informing our approach to risk is the fact that Landsnet provides an essential service to society. Accordingly, the company's risk appetite and risk tolerance are low.

Risk assessment

A risk assessment of Landsnet's activities is carried out annually. This work is led by a special Risk Committee. Our risk assessment went through extensive improvements during the year. It identifies the risks that may occur in our activities, examines the potential impacts of these risks on our operations and sets out mitigating strategies to minimise or prevent the impacts of these risks.

The types of risk covered by the assessment include operational risk, counterparty risk and financial risk.

- *Operational risk* is defined as the risk of negative impact on Landsnet’s performance. This includes aspects relating to generation fed into the grid, the grid itself, information and surveillance systems, management, the legal environment, contracts, etc.
- *Counterparty risk* is the risk of a counterparty to a financial or other commercial agreement failing to meet its obligations thereunder.
- *Financial risk* primarily concerns financial aspects of the company’s activities, i.e. the risk of financial loss on both on- and off-balance-sheet items, including as a result of changes in the market price of such items. This includes changes in interest rates, exchange rates and inflation. Landsnet’s defined financial risk consists of market risk, liquidity risk, exchange rate risk and inflation risk.

Guarantees of Origin

Landsnet has been issuing Guarantees of Origin of electricity (GOs) since 2012. The certificates serve as confirmation that a certain quantity of electricity is generated from renewable energy sources, e.g. hydropower or geothermal power.

We issued just over six million GOs in 2015, down from 10 million in the preceding year. This drop was primarily owing to price reductions in GO markets.

Landsnet is an active participant in the Association of Issuing Bodies (AIB), an enabler of European GO schemes. In 2015, AIB carried out an extensive review of Landsnet's processes and procedures relating to the issuance of GOs. The review's results were presented at AIB's annual general meeting in the autumn of 2015 and were approved without any objections.

The year saw considerable discussion about the nature and scope of GOs in Iceland. Landsnet welcomes this discussion and points out that the procedures in question were introduced partly to increase the market value and competitiveness of electricity generated from renewable energy sources. Under the GO rules that took effect in Iceland in 2012, GOs are not included in the sale of the electricity, i.e. they can be sold irrespective of the sale of the electricity. This means that all electricity consumers have equal access to renewable energy sources regardless of their location in the European electricity system. Generators in Iceland can either deregister GOs delivered to consumers in Iceland or sell them to buyers in the European Economic Area.

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Purchasing and inventory control

In 2015, emphasis was placed on implementing an electronic tender process for Landsnet, which resulted in the adoption of a new e-tendering system, Delta eSourcing, at the end of October. Our tender processes have thus become fully electronic, as bids are now received electronically through the system. All our public tenders are now advertised on a designated tender website.

The heightened level of construction activity at Landsnet was reflected in our purchasing in 2015. The number of tender exercises climbed to a total of 27, up from three in 2014. The increase in construction was also reflected in our inventory control in the first half of the year. This included the procurement of undergrounding equipment and of materials for the reconstruction of the Sigalda Line 3. The second half of the year was also busy in the reception of reserve and residual materials after the summer's construction activity.

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Landsnet’s activities

Landsnet’s staff came under some considerable pressure during the year because of increasing load on the grid and thereby increased operational risks. Heavy weather and faults put their mark on our activities right from the start of the year until Easter, and again towards to the end of the year. Various research and preparations for the connection of new customers continued apace. Much time was spent on routine maintenance and technological development, the preparation of the annual Grid Plan and its environmental impact assessment and the EIA scoping document for the Sprengisandur Line, the last of which was submitted to the National Planning Agency. IT and software development are becoming ever more important aspects of our activities. The extensive policy formulation exercise launched at the beginning of the year also added to our staff’s already busy schedule.

New infrastructure projects and maintenance

Investment in new grid infrastructure projects in 2015 amounted to around ISK 3.7 million, which is similar to the preceding year's investment costs. The large majority of these projects concerned grid renewal or strengthening, while others pertained to the construction of new connections for consumers.

The year's largest individual projects concerned the installation of underground cables. Maintenance projects also took up considerable time. Extensive new infrastructure projects were prepared during the year, with investment in such projects in 2016 expected to be triple that of 2015, or about ISK 11 billion..

Connection for United Silicon

In 2015, we worked on the construction of transmission infrastructure for the connection of the United Silicon plant under construction at Helguvík in south-west Iceland. A new breaker was installed at the Fitjar substation, a 9km long 132 kV underground cable was laid between Fitjar and Helguvík and a new substation was constructed at Helguvík. These works were completed at the beginning of 2016.

Substation at Akranes

In co-operation with the multi-utility company Veitur, we worked in the construction of a new substation in the town of Akranes, west Iceland, which is scheduled for completion in the first half of 2016. Located in the industrial district in the west part of the town, the new substation will replace an old substation located in a designated residential area.

Selfosslína 3

The installation of a new 28km long 66 kV underground cable connection between the towns of Selfoss and Þorlákshöfn in the south of Iceland commenced during the year and is scheduled for completion in the first half of 2016. We also worked on modifications to the substations at these towns. The new Selfoss Line 3 will improve the security of supply for the towns of Hveragerði, Þorlákshöfn and Selfoss.

Hella Line 2

In the summer of 2015, a new 66 kV, 13km long underground cable was laid between the towns of Hella and Hvolsvöllur in southern Iceland. Once the cable had been brought into service in September, the overhead line was demolished. It was one of the oldest lines of the entire grid, having been installed in 1948.

Hella Line 2 demolished – Landsnet hf. from Landsnet on Vimeo.

Modifications to the Sigalda substation

To increase transmission capacity via the Inter-Regional Transmission Network, we completed modifications to the substation at Sigalda during the year. With a new additional breaker and modifications to the high-voltage connections, the substation's operation can now be split up to react to disturbances without any curtailments or supply interruptions experienced by customers. These improvements are primarily a temporary measure in response to the challenges of operating the Inter-Regional Transmission Network at levels exceeding stability limits for a large part of the year.

Transmission capacity of Sigalda Line 3 doubled

In the autumn, we completed the strengthening of the Sigalda Line 3, a 37km long 220 kV line between Sigalda and Búrfell installed in 1975 in connection with the construction of the Sigalda Power Station. Conductors and insulator chains were replaced and new transmission towers were constructed next to the Sigalda Power Station. This doubled the line's transmission capacity for only about one-third of the cost of constructing a new one.

Construction works on the Snæfellsnes peninsula

Earthworks for the construction of a new substation at the town of Grundarfjörður in west Iceland began in the second half of 2015. The substation's construction is scheduled for completion in early 2017. It needs to be expanded to accommodate the planned installation of a new 66 kV underground cable between Grundarfjörður and the town of Ólafsvík in 2017. Since the town's limits now extend to the substation, enlargement of the substation at its current location was found unfeasible, so the decision was made to construct a new one. The construction of a new substation at Ólafsvík is also being prepared.

Purchase of reserve transformer

During the year, we finalised the purchase of a reserve transformer (132/66/32 kV) to replace transformers in the Inter-Regional Transmission Network and in other parts of the grid. In various locations around the country, delivery to customers is dependent on transmission through a single transformer. Having a reserve transformer provides a major boost to security of supply, since a fault in a transformer can take a long time to repair. The reserve transformer arrived in Iceland at the beginning of 2016.

Strengthening of the Hrauneyjafoss Line 1

The Hrauneyjafoss Line 1 was strengthened during the year by modifying a number of transmission towers and replacing insulator chains. Strengthening the line and increasing its transmission capacity in a section between Langalda and Sultartangi became a pressing issue after the Búðarháls Line 1 was connected to the Hrauneyjafoss Line 1 at Langalda.

Strengthening of cable ends

There are a number of bottlenecks in the grid where short underground cables extending from a substation to the first tower of an overhead line have significantly lower transmission capacity than the overhead line to which they connect. The decision has been made to replace these underground cables with higher-capacity ones. We worked on the design and preparations for this project in 2015. The cables have been purchased and shipped to Iceland. The first milestone, the installation of new cables at the Eskifjörður substation, commenced at year-end 2015, with other milestones to follow in 2016.

Sandskeið Line 1 and modifications in Hafnarfjörður

In the summer of 2015, we reached an agreement with the Municipality of Hafnarfjörður and the inhabitants of its Vellir district to make modifications to a part of the transmission network within the municipality. The agreement enables the demolition of the Hamranes Lines 1 and 2 and the removal from inhabited areas of the ÍSAL Lines 1 and 2, which extend from the Hamranes substation to the aluminium plant at Straumsvík just outside Hafnarfjörður. There are plans for the Suðurnes Line 2 to connect to the Hamranes substation through a 1.5km-long 220 kV underground cable extending from Hraunhella in Hafnarfjörður. The decision was also made to improve the acoustical properties of the Hamranes substation, including by encasing the transformers in sound-insulating materials and raising the noise barrier. Construction for this project commenced in late 2015 and is scheduled for completion in the first half of 2016. The works under the agreement are expected to be completed by year-end 2018, subject to all required permits being obtained in time. This project will vastly improve the visual appearance of the substation at Hamranes.

The construction of the Sandskeið Line 1 from the Sandskeið substation to Hraunhella is necessary for the demolition of the Hamranes Lines and other modifications to the grid in Hafnarfjörður under the aforesaid agreement. Landsnet’s preparations for the construction of the line and the substation at Sandskeið have already begun.

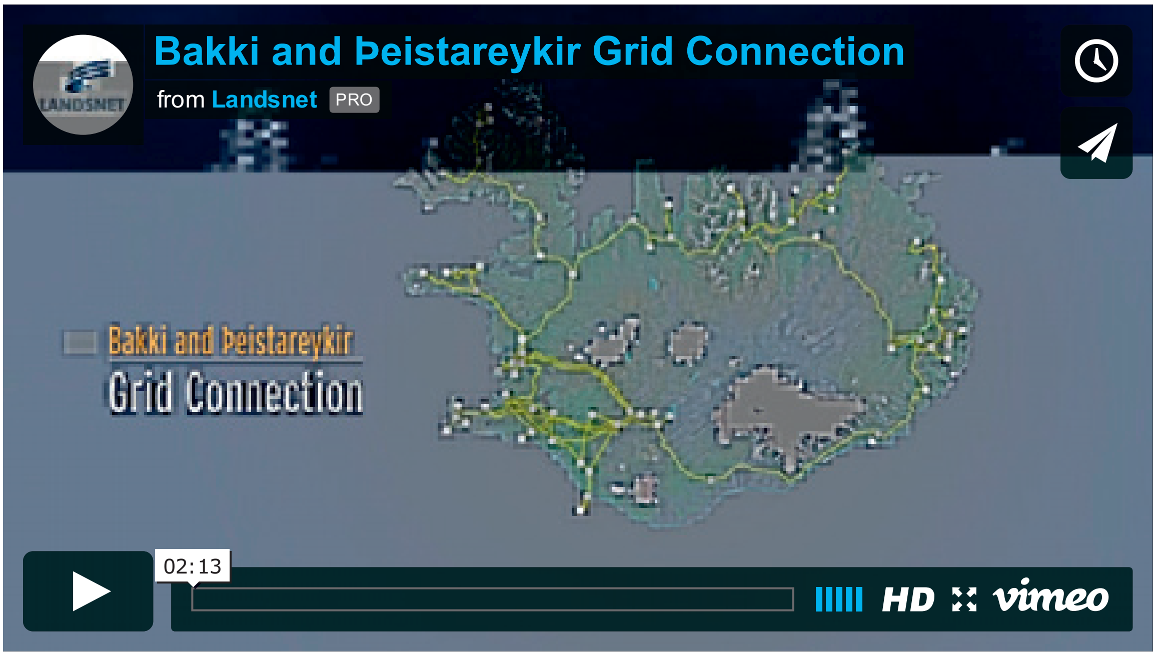
Suðurnes Line 2

Landsnet has for years been preparing the construction of the Suðurnes Line 2, which will extend from the Greater Reykjavík area onto the Reykjanes peninsula and increase security of supply in the Suðurnes region. The line route is just over 32km. In 2015, development permits were obtained from the four municipalities through which the line will be built. Preparatory works were tendered out in the autumn of 2015. Construction of the line tracks and foundations is scheduled to begin in spring 2016 and the stringing of the line is scheduled in 2017.

Krafla, Þeistareykir and Bakki

Landsnet is planning an extensive construction project in north-east Iceland for, on the one hand, the connection of the Þeistareykir Power Station to the Bakki industrial site near the town of Húsavík and, on the other hand, the connection of the power station to the grid. The project involves the construction of two 220 kV transmission lines, the Krafla Line 4, an approximately 33km line extending from the Krafla Power Station to Þeistareykir, and the Þeistareykir Line 1, an approximately 29km line extending from Þeistareykir to the Bakki site.

Three new 220 kV substations will also be built: at Krafla, a new, four-breaker substation and a connection to an older substation; at Þeistareykir, a new five-breaker substation; and at Bakki, a new three-breaker substation. We worked on the design and preparation of the project during the year. Tenders will be invited for the largest project components in the first half of 2016, with project completion scheduled in 2017.



Bakki and Þeistareykir Grid Connection from Landsnet on Vimeo.

Voltage raising in the Westman Islands

Works for the voltage raising of the Westman Islands Line 3 were prepared during the year. A new 66 kV substation needs to be constructed in the Westman Islands, and modifications are needed to the substation at Rimakot, which connects the Islands to the main grid. A contractor was appointed through a tender process, with works scheduled to start in early 2016 and to be completed by year-end. This is a partnership project between Landsnet and the multi-utilities company HS Veitur. The voltage raising of the Westman Islands cable will enable a doubling of its transmission capacity.

Reinforcement of the Mjólká substation

Landsnet has plans to bolster the West Fjords transmission network by adding one 132/66 kV transformer at the Mjólká substation. The current transformer there has reached the limit of its carrying capacity and is a bottleneck for transmission to the West Fjords. In 2015, we worked on the preparations and concluded a contract on the purchase of the new transformer. It is scheduled for delivery in October 2016 and will then be installed in the West Fjords and energised.

Cable conduits in the Norðfjörður Tunnel

After hearing about plans to construct a tunnel between the fjords Eskifjörður and Norðfjörður in East Iceland, Landsnet decided to prepare for the future by installing conduits for underground cables in the tunnel. We worked on the preparation of this project in 2015. The installation of the conduits is scheduled to begin in the first half of 2016. The tunnel itself is scheduled to be opened for traffic in late 2017.

Maintenance and repairs

Landsnet’s Grid Service division worked on around 600 O&M tasks of varying sizes and scope in 2015. Among the largest incidents Grid Service had to deal with in the year were the damage sustained by transmission towers on the Hvolsvöllur Line 1 during a lightning storm in January, wind-blown materials hitting the Suðurnes Line 1 during a storm in February, damage to towers and lines in the West Fjords and western Iceland in March and April, a fault in a transformer at the Rimakot substation, which provides the Westman Islands with electricity, in August and damage to the Rangárvellir Line 1 in the Skagafjörður region in December. Other Grid Service activities included inspection of substations and maintenance of their electrical equipment, work relating to the construction of new infrastructure, work on outage management and underground cables, and inspections and maintenance of transmission lines. This included busbar splitting at the Sigalda substation, maintenance of transformers at the Brennimelur substation, modifications to the Prestbakki Line 1 at Gígjukvísl, the renewal of the suspension equipment and insulator discs of the Geiradalur Line 1, the renewal of a conductor on the Mjólká Line 1 extending over the fjord Þorskafjörður, a conductor replacement on the Ólafsvík Line 1 in the Bláfeldarhraun lava field, modifications to connectors on the Fljótsdalur Line 4 and an interconnection for the Fljótsdalur Lines 3 and 4, to name but a few examples.

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Operation of the grid

Total feed-in to the transmission system

18,114 GWh

Highest average power of feed-in (hour value)

2,301 MW

Total load on the transmission system

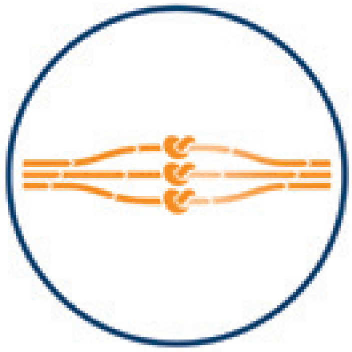
17,744 GWh

Highest average power of the load (hour value)

2,248 MW

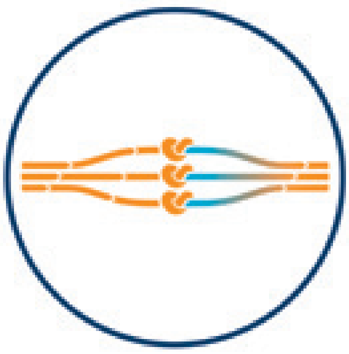
Transmission losses

370 GWh



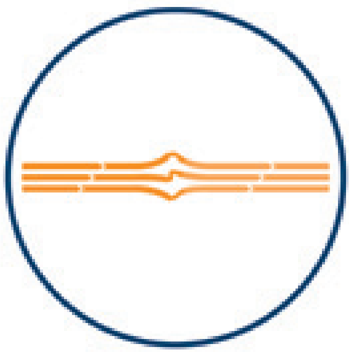
Number of grid disturbances

94



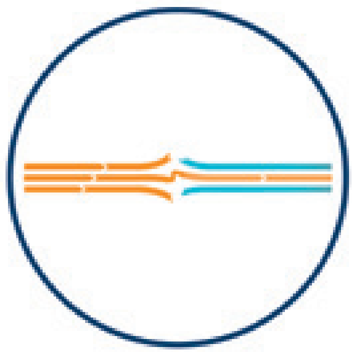
Number of grid disturbances leading to curtailment

63



Number of faults

159



Number of faults leading to curtailment

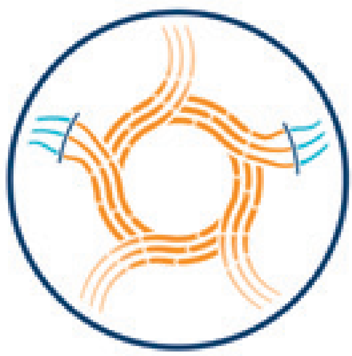
73

Total energy not supplied due to faults

897 MWh

Reserve fossil fuel generation due to faults

1,951 MWh

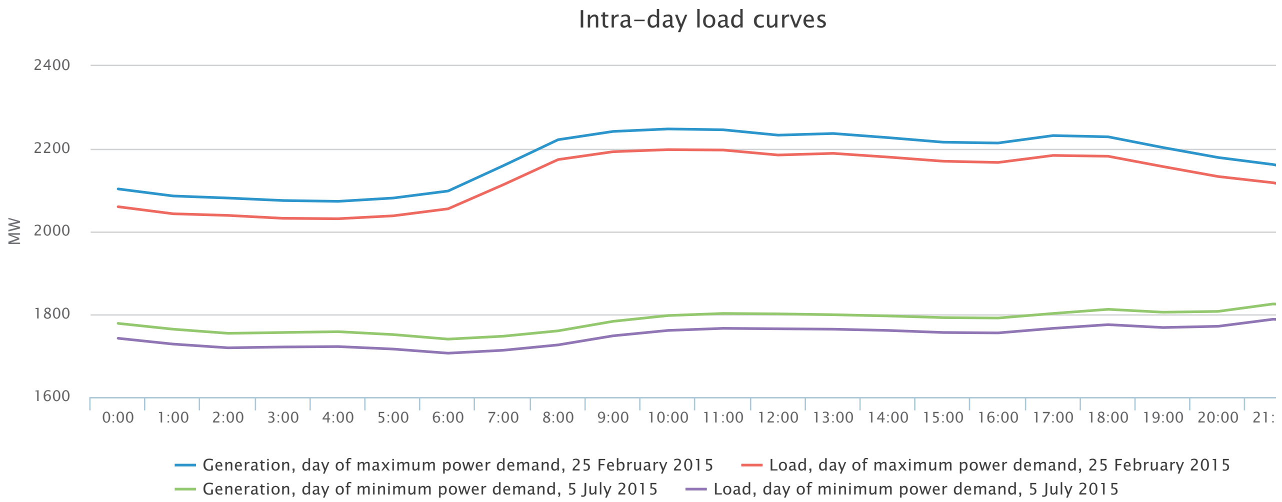


Total energy not supplied to users with curtailable secondary load

4,376 MWh

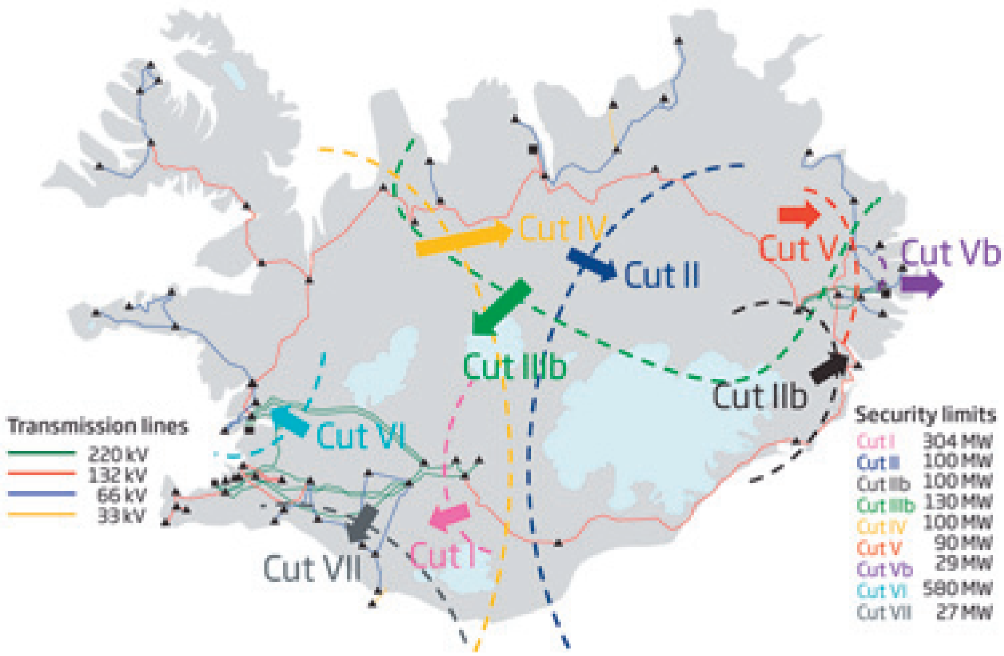
Peak load in the year

The year's peak in power fed into the grid was recorded on 25 February at 2,301 MW, which is 2.11% higher than the previous year's peak. Total system demand in 2015 was 17,744 GWh, up 3.59% on the previous year. Transmission losses totalled 370 GWh, or 2.04% of generation, up by 2.39% year-on-year.

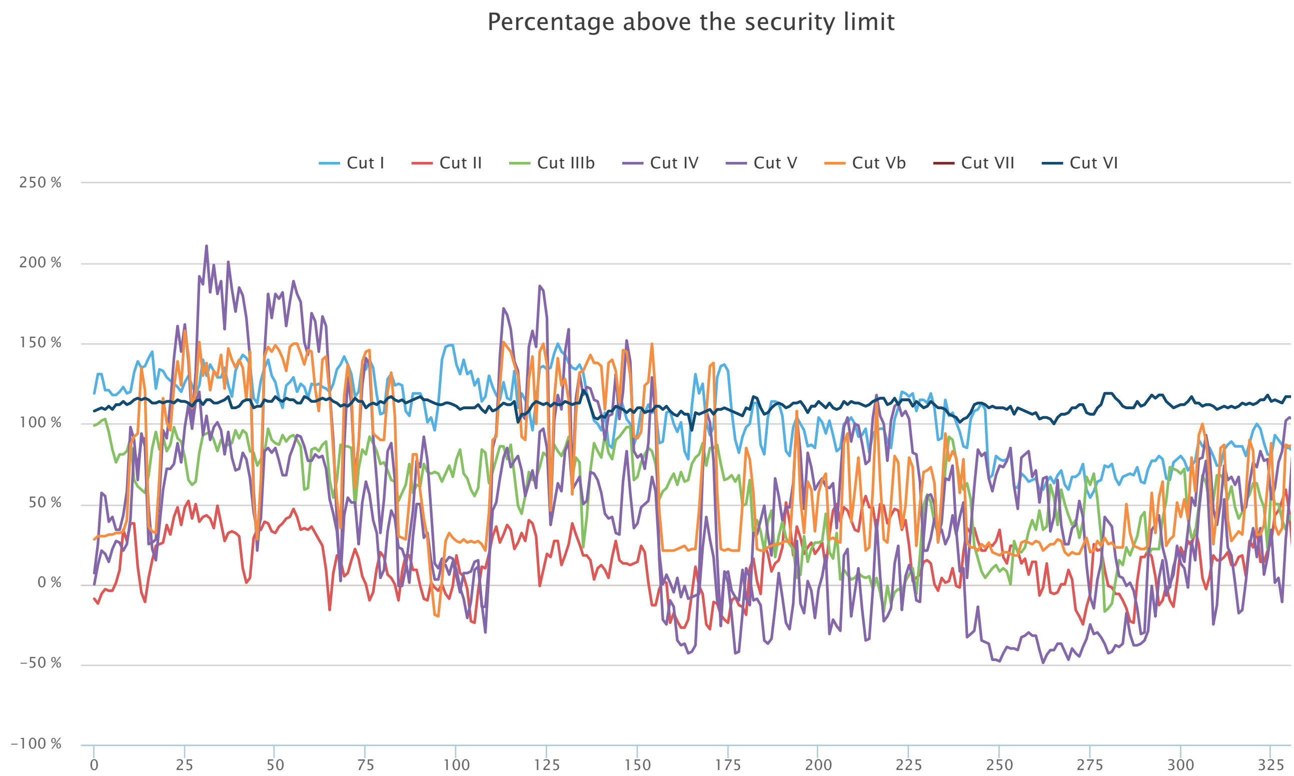


Growing operational risk

The load on the grid increased further in 2015. This was reflected in heightened operational risk, mainly owing to a general increase in firm load coupled with a substantial increase in load from consumers on non-firm transmission contracts, including data centres, increased tourism, fish processing and increased on-land freezing of catches by seafood companies. The need for inter-regional transmission has increased because generation has not grown in line with demand. At the same time, the grid's strengthening is proceeding at a slow pace, which increases the need for maintenance, partly because the grid is ageing.



We constantly monitor transmissions through nine defined transmission cut-planes in the grid, shown on the above map. When grid disturbances occur, the risk of an outage is heightened when the level of transmission through a cut-plane nears or exceeds security limits. The graph below shows the level of transmission through eight cut-planes for the whole of 2015. As can be seen, the grid's operation exceeded the security limits for a large portion of the year. In such conditions, Landsnet's Control Centre must require generators to change their generation plans, i.e. make alterations as to where in the country the electricity is produced, in addition to persistent curtailments in certain regions. An operation of this kind entails inefficiencies for all those connected to the grid.



To mitigate against risks in the grid's operation and to increase inter-regional transmission, Landsnet uses variable transmission limits that take account of the circumstances of generating units and load. Curtailment can be applied rapidly in the event of disturbances. Various technological solutions have also been tried. One example is a new circuit-breaker in the Sigalda substation and other modifications introduced there to increase operational security and transmission capacity through cut-plane IV.

Our Control Centre is also very advanced technologically when it comes to enhanced energy management and all grid operation. The Control Centre's team is specially trained in assessing the grid's performance and operational risks in accordance with pre-defined procedures.

Smart grid solutions ensure very rapid curtailment of load for consumers that have entered into contracts with Landsnet on non-firm, i.e. interruptible, transmission. These solutions also improve the inter-regional load balance through load management of aluminium plants, and control the splitting of the grid into separate components or “islands” during disturbances to ensure operational security for consumers. We are preparing faster controls of generating units during disturbances. Constant weather monitoring and preventive measures in co-operation with our customers are also designed to ensure an effective reaction to minimise the impacts of weather-related disturbances to power transmission.

Main grid disturbances

The number of grid disturbances rose by 29 year-on-year, from 69 in 2014 to 94 in 2015. The number of faults was also up significantly from the previous year, from 83 in 2014 to 159 in 2015, which means that more than one fault occurred in some instances. Energy not supplied as a result of grid disturbances totalled 897 MWh, which corresponds to just under 27 outage minutes. It should be noted that this excludes curtailments of electricity to consumers on non-firm contracts

The main grid disturbances causing outages and curtailment of power supply to customers were as follows:

On 8 January 2015, lightning struck the Hvolsvöllur Line 1 between Búrfell substation and the town of Hvolsvöllur. The line tripped and was damaged. A surge arrester at Transformer 1 at Hvolsvöllur exploded. This caused outages at Hvolsvöllur, Rimakot, Vík and in the Westman Islands. Firm energy not supplied was assessed at 23 MWh and non-firm energy not supplied was assessed at 36 MWh.

On 25 January 2015, the Glerskógar Line 1 tripped in severe weather. The West Fjords smart grid immediately activated the reserve power station at Bolungarvík, which mitigated against outages in the northern West Fjords. The Mjólká substation took care of the more southerly fjords, preventing all outages of firm load. Firm energy not supplied was approximately 5 MWh and non-firm energy not supplied was about 41 MWh.

On 31 January 2015, an interference in telecommunications equipment at the Kolviðarhóll substation caused tripping at short intervals of the Kolviðarhóll Line 1 between the Geitháls and Kolviðarhóll substations and tripping of the Búrfell Line 2 between Kolviðarhóll and the Búrfell Power Station. This triggered tripping of all generating units in the Hellisheiði Power Station, underfrequency in the system and partial tripping of load for power-intensive consumers and consumers on non-firm contracts. Firm energy not supplied was assessed at approximately 150 MWh and non-firm energy not supplied was assessed at around 286 MWh.

On 6 February 2015, an iron sheet blown by wind got stuck in the Suðurnes Line 1 at the Ásbrú substation during a heavy windstorm, causing outages throughout the Reykjanes peninsula and tripping of generating units in the Reykjanes Power Station and the Svartsengi Power Station. An outage occurred at Keflavik International Airport as reserve power failed. Firm energy not supplied as a result was assessed at about 22 MWh and non-firm energy not supplied at around 10 MWh.

On 7 February 2015, a violent south-westerly storm hit northern Iceland, causing conductors to clash together on the Rangárvellir Line 1 between the Rangárvellir and Varmahlíð substations. This caused voltage to rise at Rangárvellir to 148 kV, which led to a fault in telecommunications equipment at Varmahlíð. Firm energy not supplied to power-intensive consumers as a result was approximately 27 MWh and non-firm energy not supplied was about 5 MWh.

On 14 March 2015, Landsnet’s grid came under much pressure when a deep low-pressure area swept across Iceland, bringing a violent windstorm. The average wind speed was more than 40 m/s, with wind speeds exceeding 60 m/s in gusts. The storm was so severe that 220 kV lines were tripping – a rare occurrence. A total of 19 lines tripped during the storm, some more than once. The Sog Line 3/Búrfell Line 3 tripped seven times, the Glerskógar Line 1 tripped five times, the Neskaupstaður Line 1 tripped four times, the Hrútatunga Line 1 tripped three times and the Grundarfjörður Line 1 tripped twice. A total of 13 lines tripped once: the Laxárvatn Line 1, the Vatnshamrar Line 1, the Ísafjörður Line 1, the Breiðadalur Line 1, the Mjólká Line 1, the Kolviðarhóll Line 1, the Búrfell Line 3, the Laxá Line 1, the Hveragerði Line 1, the Tálknafjörður Line 1, the Búrfell Line 2, the Andakíll Line 1 and the Geiradalur Line 1. Firm energy not supplied was assessed at approximately 38 MWh and non-firm energy not supplied was assessed at 273 MWh.

22.7.2015 bilaði varnarbúnaður fyrir Vatnfellslínu 1 í Sigöldu. Aðeins tveir af þremur fösum línunnar leystu út og sló þá safnteinavörn í tengivirkinu út öllum aflrofum á teininum. Við það sveiflaðist tíðni í kerfinu frá 48,4 í 51,5 Hz og olli útleysingu hjá nokkrum stórnotendum og notendum á ótryggum flutningi á Norðvesturlandi og skiptu þá kerfisvarnir í Blöndu og Hólum kerfinu í tvær eyjar. Skerðing á forgangsálagi var metið á um 144 MWst og 7 MWst hjá notendum á ótryggum flutningi.

On 22 July 2015, a fault occurred in protection equipment for the Vatnsfell Line 1 at the Sigalda substation. Only two of the line’s three phases tripped, causing the substation busbar protection to trip all circuit breakers of the busbar. This caused mains frequency to fluctuate from 48.4 to 51.5 Hz and resulted in tripping for a number of power-intensive consumers as well as consumers on non-firm contracts in north-western Iceland. Our Wide Area Protection Systems at Blanda and Hólar reacted by splitting the grid into two islands. Firm energy not supplied was assessed at about 144 MWh and non-firm energy not supplied was assessed at 7 MWh.

On 3 September 2015, a transformer at the Rimakot substation tripped, triggering outages in the Westman Islands and among RARIK customers in southern Iceland. As no fault was found in the transformer, repeated attempts were made to bring it back into service, but without success. Reserve power was activated in the Westman Islands and a reserve transformer was connected at Rimakot during the transformer’s repair. Extensive fault location attempts and analysis finally revealed a fault in the pressure sensor on the transformer’s tank. Firm energy not supplied was assessed at about 44 MWh and non-firm energy not supplied was assessed at about 22 MWh.

On 7-8 December 2015, a major storm hit the country, causing extensive outages and damage to the grid, in particular owing to heavy wind load and icing. The largest outage occurred in the Eyjafjörður region and the town of Akureyri in northern Iceland when both the Rangárvellir Line 1 and the Krafla Line 1 tripped. The situation was also challenging in the northern West Fjords, the East

Fjords and southern Iceland. The greatest damage occurred in the West Fjords where 20 transmission towers gave way on the Breiðadalur Line 1 in Dýrafjörður fjord. In northern Iceland, two towers broke on the Rangárvellir Line 1 in the Skagafjörður region and four towers broke on the Kópasker Line 1. In East Iceland, four towers broke on the Teigarhorn Line 1 in addition to damage to the Eyvindará Line 1 and the Prestbakki Line 1 between the Sigalda substation and the Hólar substation at Hornafjörður. Total energy not supplied as a result of these disturbances was assessed at approximately 330 MWh for firm transmission services and approximately 3,000 MWh for non-firm services, including 2,600 MWh for consumers on non-firm contracts in the West Fjords, who were not brought back online until repairs on the Breiðadalur Line 1 were completed six days after the storm subsided.

On 17 December 2015, the Geiradalur Line 1 tripped in heavy weather, causing consumers in the Geiradalur valley and the West Fjords to go without power, except those served by the Keldeyri substation, which received firm load from the Mjólká Power Station. Reserve generating units at Bolungarvík were activated immediately. Approximately one minute later, power was restored to the northern West Fjords. Firm energy not supplied was assessed at approximately 35 MWh and non-firm energy not supplied was assessed at about 211 MWh.

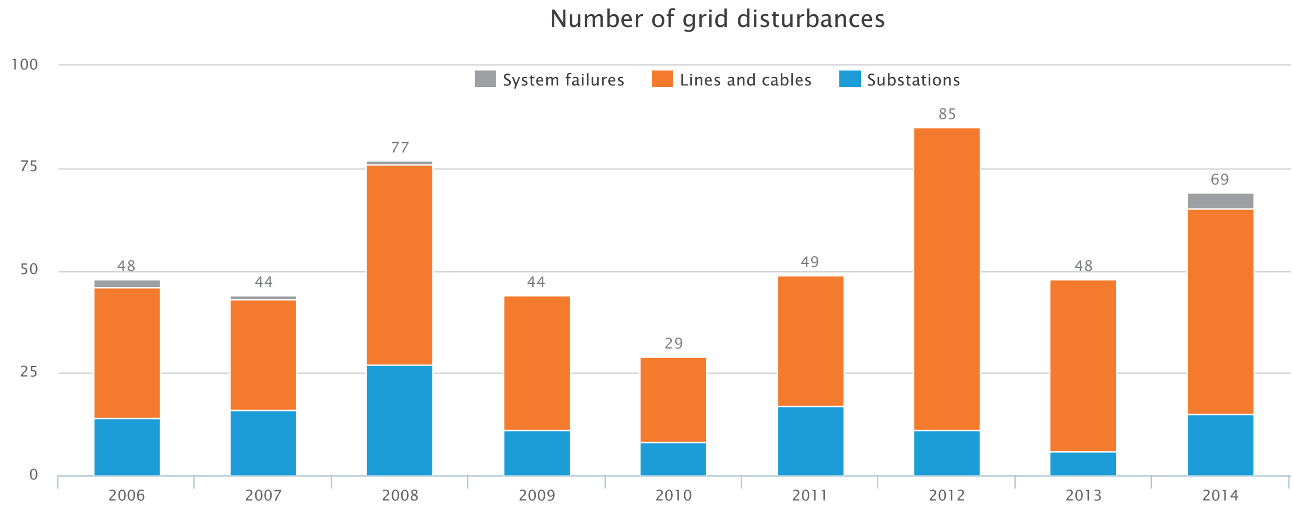
Glossary

Energy not supplied is electrical energy that cannot be delivered to one or more consumers as a result of a fault in the electricity system, changes to it, maintenance work or transmission constraints.
A line tripping. When a line stops transmitting electricity.
Island operation (or "splitting into islands") is the temporary operation of two or more sections of the grid that have been disconnected from each other and are therefore asynchronous.

Grid's security of supply

Measurements of outage minutes due to unplanned grid interruptions have been used to gauge the reliability of the Icelandic grid since 1987. Landsnet publishes this measurement in its annual Performance Report, which uses this indicator to present total outages for priority consumers.

Despite the increased number of disturbances in recent years and ever-growing risks relating to the grid's operation due to rising transmission levels via the Inter-Regional Transmission Network, Landsnet has always managed to meet the target of keeping the number of outage minutes for priority consumers (firm load) within 50 per year.

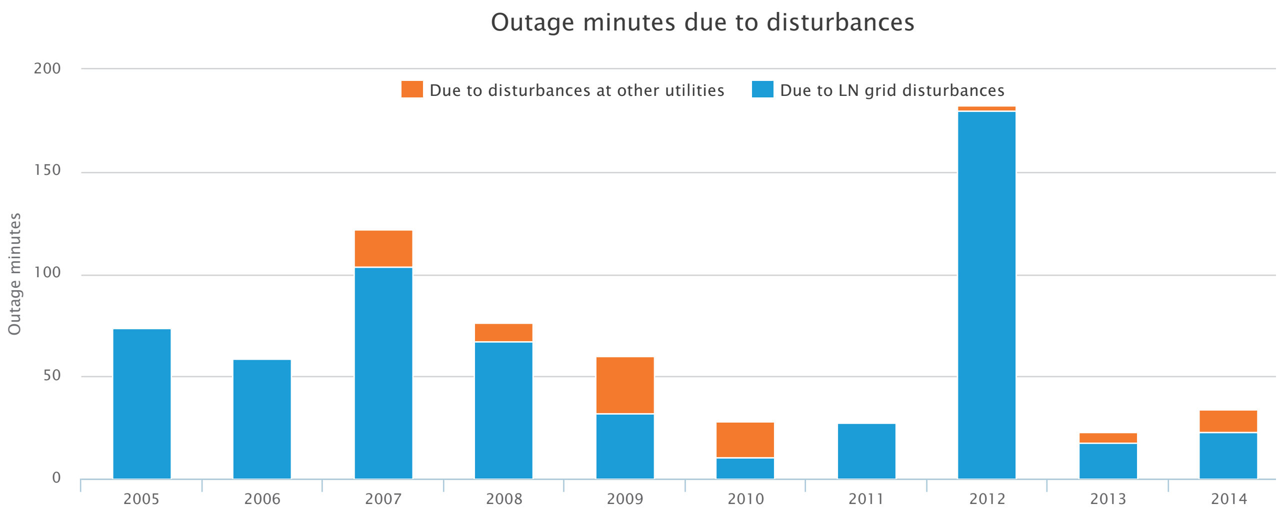


Calculated outage duration only 27 minutes in 2015

The total number of unplanned grid interruptions in 2015 was 94, which is 50% above the average of the last 10 years. Nonetheless, the calculated outage duration for priority consumers was only 26.6 minutes. This performance is on par with our peers in the Nordic countries and elsewhere in Europe. Landsnet is proud to be able to provide priority consumers with such a reliable supply of electricity.

However, the criterion "outage minutes for priority consumers" does not give the entire picture as regards the reliability of the grid itself. For the broader picture, the volume of reserve power used during disturbances and the curtailments to consumers on non-firm contracts also need to be taken into account.

Where available, reserve power stations are always activated as soon as possible when a grid disturbance occurs to reduce outages for the priority consumers of distribution system operators. Power transmitted to consumers whose supply Landsnet is authorised to curtail without prior warning is also curtailed if necessary. With the ever-growing application of smart grid solutions, these curtailments are now carried out largely automatically. This has stepped up operating stability during grid disturbances and thereby security of supply for priority consumers.



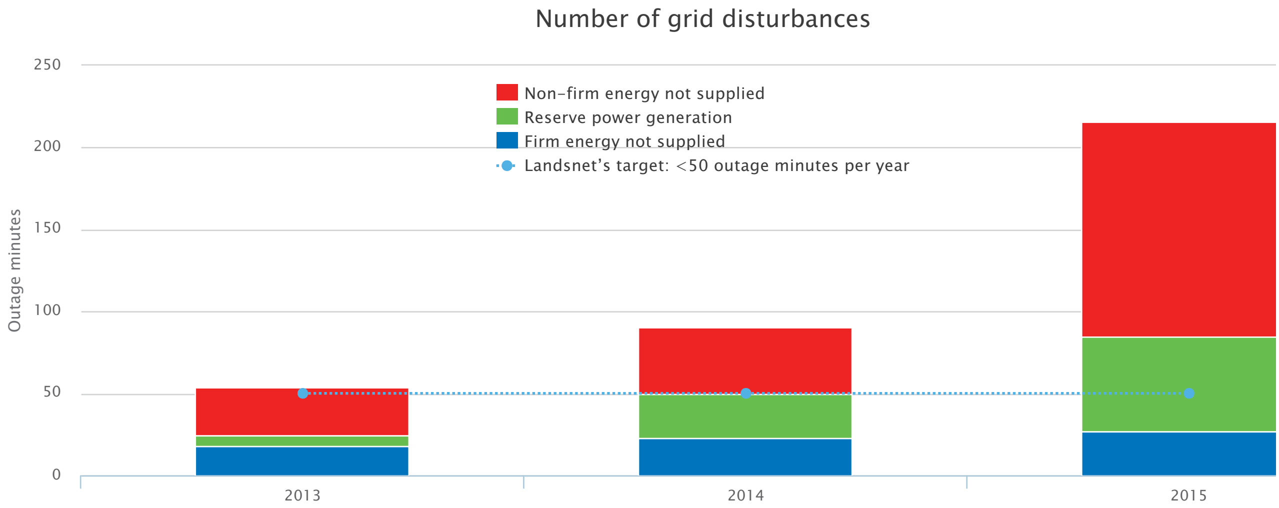
Curtailments to consumers on non-firm contracts are excluded here.

Use of reserve power increased tenfold in three years

The use of reserve power due to unplanned grid interruptions has increased tenfold over the past three years. Reserve power use in 2015 was largely because of disturbances that occurred during the major storm on 7 and 8 December when severe damage was sustained by the Breiðadalur Line 1 in the West Fjords and the Kópasker Line 1 in north-eastern Iceland. Generation by reserve power stations due to disturbances during the year totalled 1,951 MWh. Without access to reserve power, it is estimated that the number of outage minutes for priority consumers would have been 84.4 minutes instead of 26.6, or 57.8 more outage minutes than was actually the case.

Curtailments of non-firm service up fourfold in three years

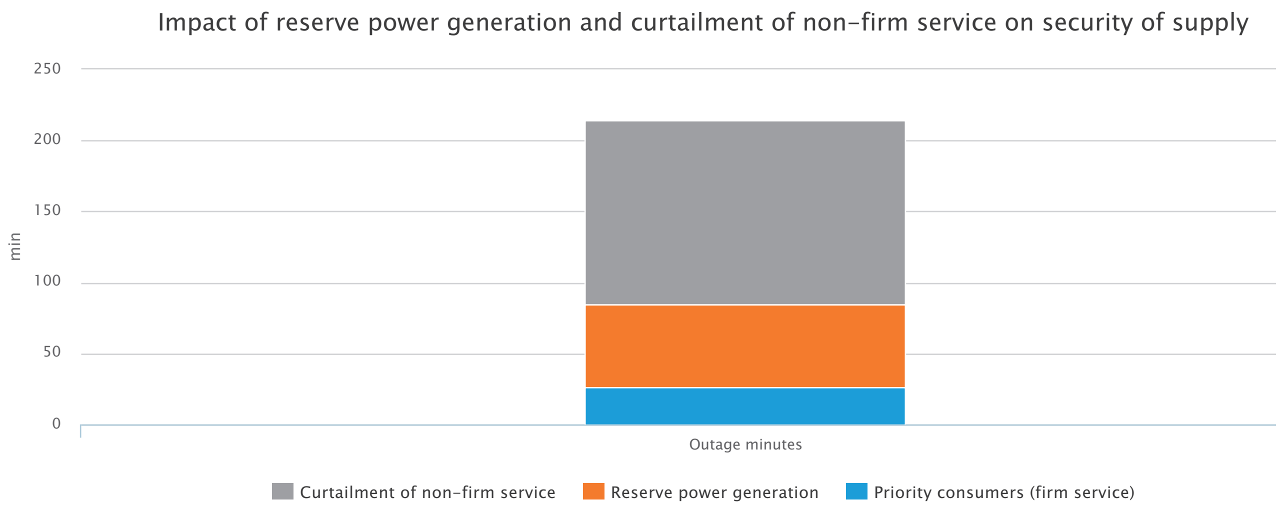
Our review of the data also shows that curtailments due to disturbances for consumers on non-firm supply contracts with distributors went up nearly fourfold in three years. Total curtailable energy not supplied to consumers last year owing to disturbances amounted to 4,376 MWh. Had curtailment not been allowed, a power shortage of this scale would have had a major detrimental impact on our key performance indicator of outage minutes, the number of which would have been higher by 129.6 minutes for 2015.



Grid overloaded in many places

The marked increase in the use of reserve power during disturbances and the use of curtailments to consumers on non-firm service contracts clearly demonstrate a worrying trend and that the grid is overloaded in many places. In the absence of reserve power and curtailment allowances, the grid's security of supply would currently be far below the reliability standards generally applicable to transmission systems. The grid's actual performance would then have measured at around 214 outage minutes in 2015, instead of 26.6 minutes.

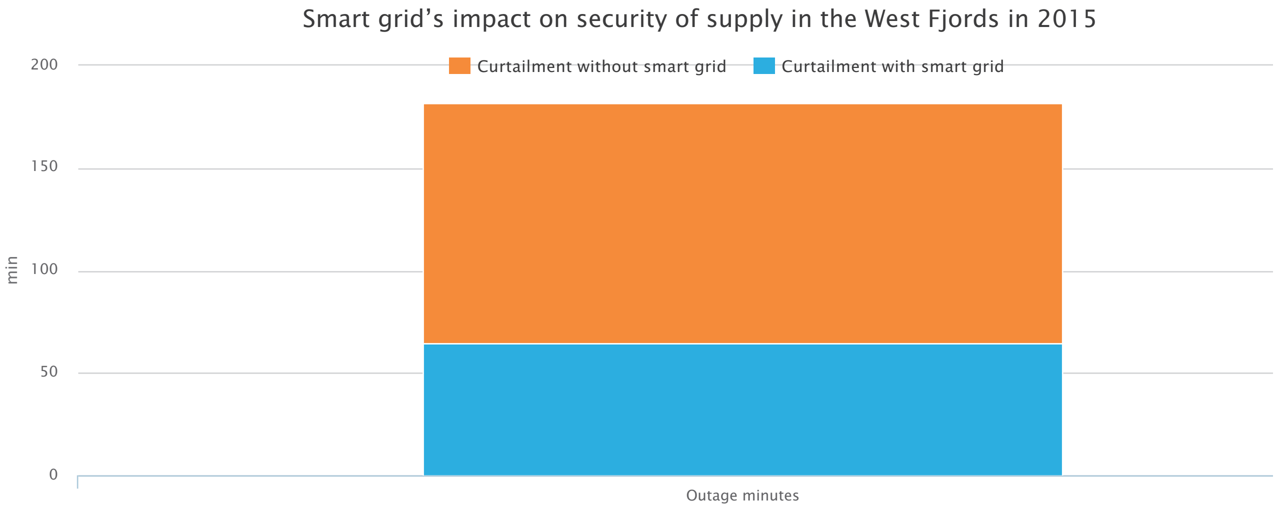
To ensure the grid's security so that it can provide all consumers in Iceland with electricity, its infrastructure must be fit for purpose. Smart grid solutions and increased use of reserve power are only temporary "Band-Aid" expedients that neither address the grid's transmission capacity nor its long-term reliability.



Security of supply in the West Fjords – first year with the smart grid and a new reserve power station

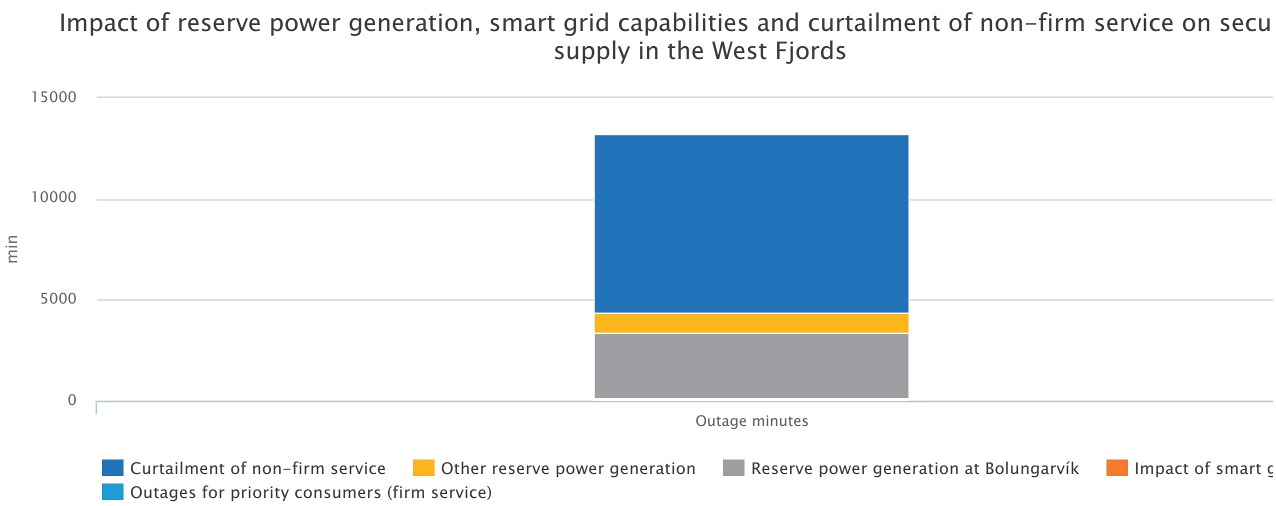
The year 2015 was the first full operating year of the new reserve power station at Bolungarvík and the smart grid in the West Fjords. Trial runs began in early December 2014, and over the course of 2015 the new equipment proved its worth unambiguously. Outage duration in the West Fjords has been reduced substantially for all lines, except the Tálknafjörður Line 1 between Mjólká and Suðurfjörður. This is clear from examining outages for priority consumers in the area in 2015. However, the use of reserve power has increased as have outages for consumers on non-firm contracts, who constitute 52% of the total number of electricity consumersin the West Fjords.

The protection equipment in our substations in the West Fjords is fitted with built-in smart grid capabilities, which have shortened the time it takes to activate reserve power and restore power to priority consumers from approximately half an hour to an average of a minute and a half. Energy not supplied to priority consumers in the West Fjords due to unplanned grid interruptions was measured at 64.5 outage minutes in 2015. Without the smart grid capabilities, this figure would have been nearly double, or about 117 minutes.



Curtailments to consumers on non-firm contracts are excluded here.

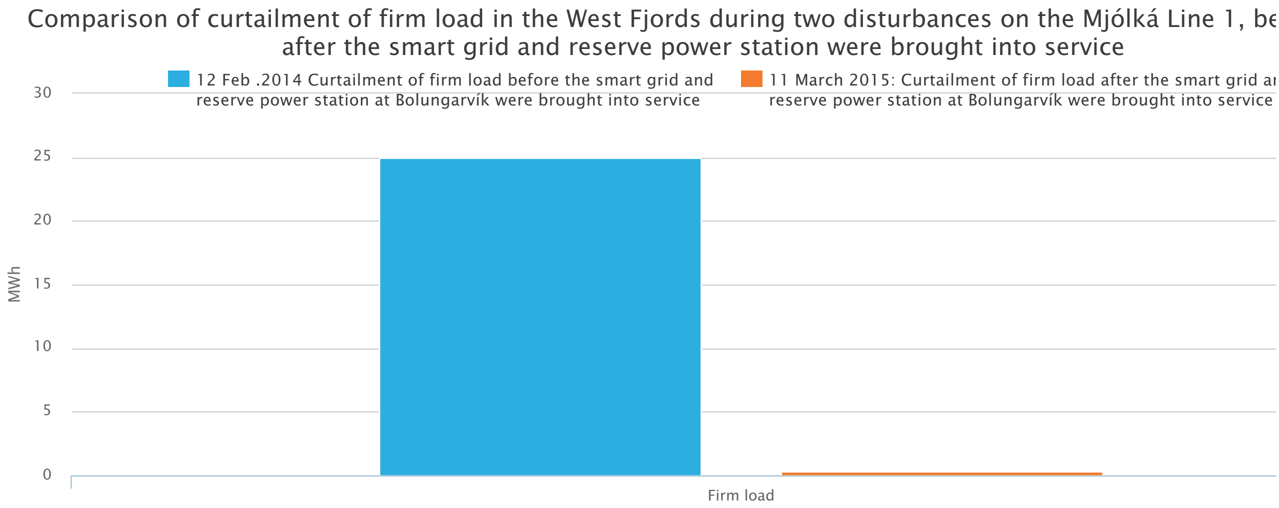
While smart grid solutions have brought a major improvement to the security of supply for priority consumers in the West Fjords, the new reserve power station at Bolungarvík has contributed even more in this respect. Without it, outages for priority consumers would be counted in hours rather than minutes. The reserve power station cut outages by about 3,253 minutes in 2015. Other reserve power stations in the West Fjords prevented around 1,022 outage minutes. This excludes delivery to consumers on non-firm contracts, for whom energy not supplied due to unplanned disturbances totalled 13,577 MWh in 2015. If their outages are added to those of priority consumer in the region, the number of outage minutes increases by 8,794 minutes to a total of 147 hours.



Two unplanned grid interruptions – before and after the smart grid and reserve power station

The addition of Landsnet's new reserve power station at Bolungarvík coupled with smart grid capabilities has cut outage minutes substantially for priority consumers in the West Fjords. This can be seen from the above chart comparing curtailment of firm load in the West Fjords due to a disturbance in the Mjólká Line 1 before and after the reserve power station and the smart grid were brought into service. The comparison excludes curtailments to consumers on non-firm contracts.

- The Mjólká Line 1 tripped on 12 February 2014 because of icing, which caused outages throughout the entire West Fjords. Energy not supplied to priority consumers until reserve power was activated was assessed at about 25 MWh. Consumers on non-firm contracts were subject to curtailment for the entire time that the line was out of service.
- The Mjólká Line 1 tripped on 11 March when a storm struck the country. A short outage occurred in the northern West Fjords until the smart grid took over and sent an activation signal to Landsnet's reserve power station at Bolungarvík and curtailed transmission to all non-firm consumers in the West Fjords. The smart grid also tripped the Breiðadalur Line 1 so that the Mjólká Power Station could provide the southern West Fjords with firm load. Thanks to the smart grid's high reaction speeds, energy not supplied to priority consumers was merely 0.36 MWh, whereas consumers on non-firm contracts were subject to curtailment for the entire time that the line was out of service.


Comparison of curtailment of firm load in the West Fjords during two disturbances on the Mjólká Line 1, be
after the smart grid and reserve power station were brought into service
12 Feb .2014 Curtailment of firm load before the smart grid and reserve power station at Bolungarvík were brought into service
11 March 2015: Curtailment of firm load after the smart grid ar reserve power station at Bolungarvík were brought into service
30
25
20
15
10
5
0
MWh
Firm load

Iceland´s Lifeline from Landsnet on Vimeo.

Grid development

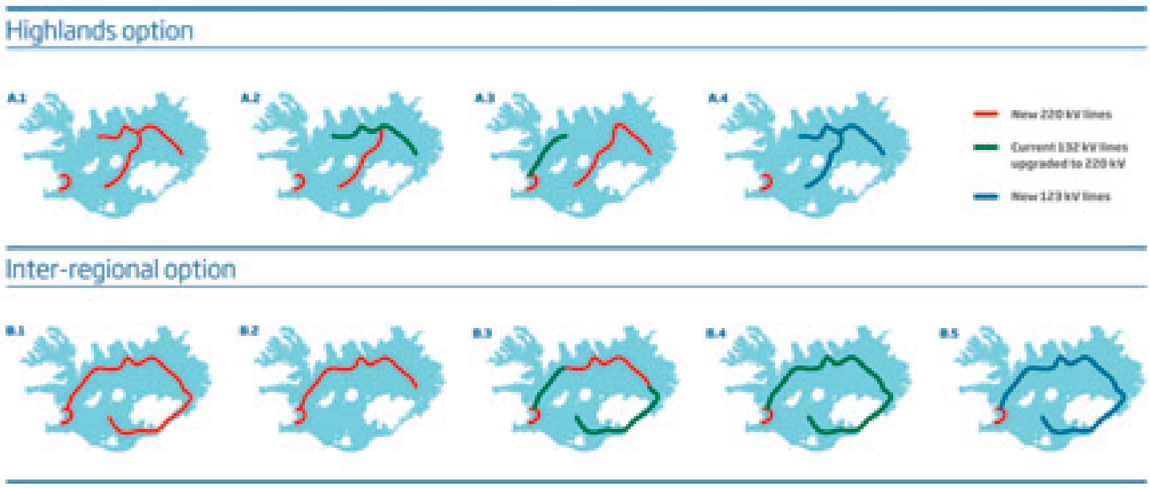
Preparations for grid strengthening continued during the year, including large infrastructure projects relating to grid reinforcement and connections for new consumers. Contracts on connections for power-intensive consumers at the Helguvík and Bakki industrial sites were reviewed by the EFTA Surveillance Authority (ESA) with respect to possible state aid. ESA concluded that the contracts did not involve state aid.

A new legislative act amending the Electricity Act's provisions regarding our Grid Plan took effect during the year. Under the new act, the Grid Plan will be issued annually for a 10-year horizon at a time and must include an infrastructure development plan for the subsequent three years. The Grid Plan will also be subject to the National Energy Authority's approval.

Grid Plan's new focus areas

We presented our 2015-2024 Grid Plan and Environmental Report during the year. This was the second time that the Grid Plan went through a strategic environmental assessment. A new thematic section in the plan discusses a potential sub-sea cable to Europe and its connection possibilities from Landsnet's point of view. The main change from the last Grid Plan is that the number of options has been reduced from three to two main options that Landsnet considers the most viable ones for future grid strengthening. One of these two options is a connection over Iceland's central highland plateau. The other is to reinforce the existing Inter-Regional Transmission Network. The Grid Plan sets out a total of nine different versions of these two main options, each involving a mixture of new infrastructure and voltage raising of current lines.

The most advantageous option is considered to be the connection over the central highlands with powerful transmission lines to the north and east. However, the renewal of the Inter-Regional Transmission Network with 220 kV lines is considered a systemically better option with respect to individual aspects such as the flexibility of power delivery, increased transmission, grid strength and security of supply. What makes the Inter-Regional Transmission Network option less attractive than the highland option, however, is the environmental considerations and higher construction costs. In addition, it is not expected to deliver its full systemic advantages until all construction milestones are complete.



A draft Grid Plan together with the Environmental Report were submitted for inspection and presentation to the National Planning Agency and posted on Landsnet's website around mid-year. Their contents were also introduced at a well-attended presentation at Hótel Natura, an internet video broadcast of which was provided. A total of 59 sets of comments were received on the draft Grid Plan, answers to which were posted on Landsnet's website in November and sent to consultation bodies.

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Grid Plan requires regulator's approval

Under amendments effective from June 2015 to the Electricity Act, the Grid Plan is now subject to the approval of the National Energy Authority (NEA), which also monitors its implementation. The NEA is obliged to take account of the Electricity Act's stated objectives regarding security, efficiency, security of supply, power quality and the government policy on the installation of power lines.

Since this is the first Grid Plan prepared by Landsnet under the amended legal framework, the planning process has unavoidably been affected. An updated Grid Plan that was completed following a general consultation process was submitted to the NEA at the end of November, which gave Landsnet's customers a time limit until January 2016 to submit written comments on the plan. This made it impossible to obtain approval of the 2015-2024 Grid Plan before year-end 2015, but it is hoped that the process will be completed in the first quarter of 2016.

Grid Plan's EIA

In parallel with the Grid Plan, the second Environmental Report was issued, this time focusing on the two options presented in the Grid Plan. The environmental impacts of the two options were subjected to a comprehensive assessment, with each option considered separately followed by their comparison.

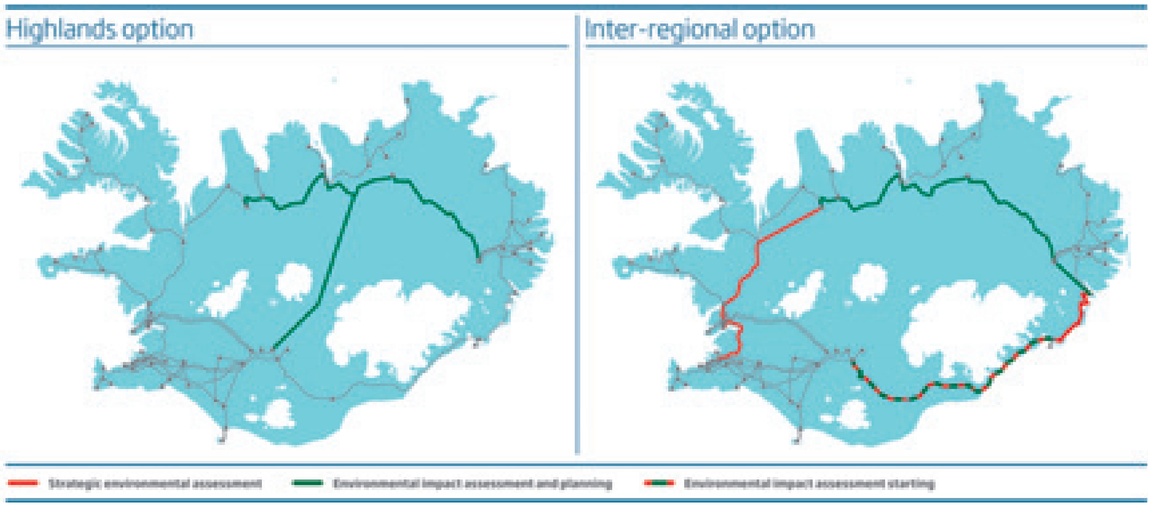
The assessment identified environmental impacts likely to result from the Grid Plan's performance and potential mitigating measures. One change from the previous year is that tourism was given a separate assessment instead of being placed under the general category of economic development. This aimed to provide more clarity on the options' negative impacts on tourism, instead of balancing the negative impacts against positive impacts that grid strengthening has on other economic development. The Environmental Report also looked at a more detailed version of one of the options presented in the Grid Plan. This is a version of the highlands option involving a 50km long underground cable on a section of the connection over the Sprengisandur plateau to minimise visual impact. The Environmental Report was submitted for presentation and comment together with the Grid Plan, which elicited a considerable number of comments.

Environmental impact assessment

To settle the question of whether the highlands option is a feasible way of strengthening the grid, preparation for the environmental impact assessment (EIA) of the Sprengisandur Line commenced in 2014. A draft scoping document was presented to stakeholders and the general public in late 2014. In late 2015, the document was submitted to the National Planning Agency for a formal decision on whether to proceed, in accordance with the EIA Act.

The EIA of the reinforcement of the Inter-Regional Transmission Network from the Sigalda substation in south Iceland to the town of Höfn in south-east Iceland is in the preparatory stages. Work on the EIA of the Krafla Line 3, to extend from the Fljótsdalur Power Station in eastern Iceland to the northern city of Akureyri, and the Blanda Line 3, extending from Akureyri to the Blanda Power Station in northern Iceland, has been ongoing for some considerable time.

An EIA is a systematic process to obtain more in-depth information with regard to routeing, the design of structures and potential environmental impacts before a decision is made whether to proceed with the works to strengthen the grid.



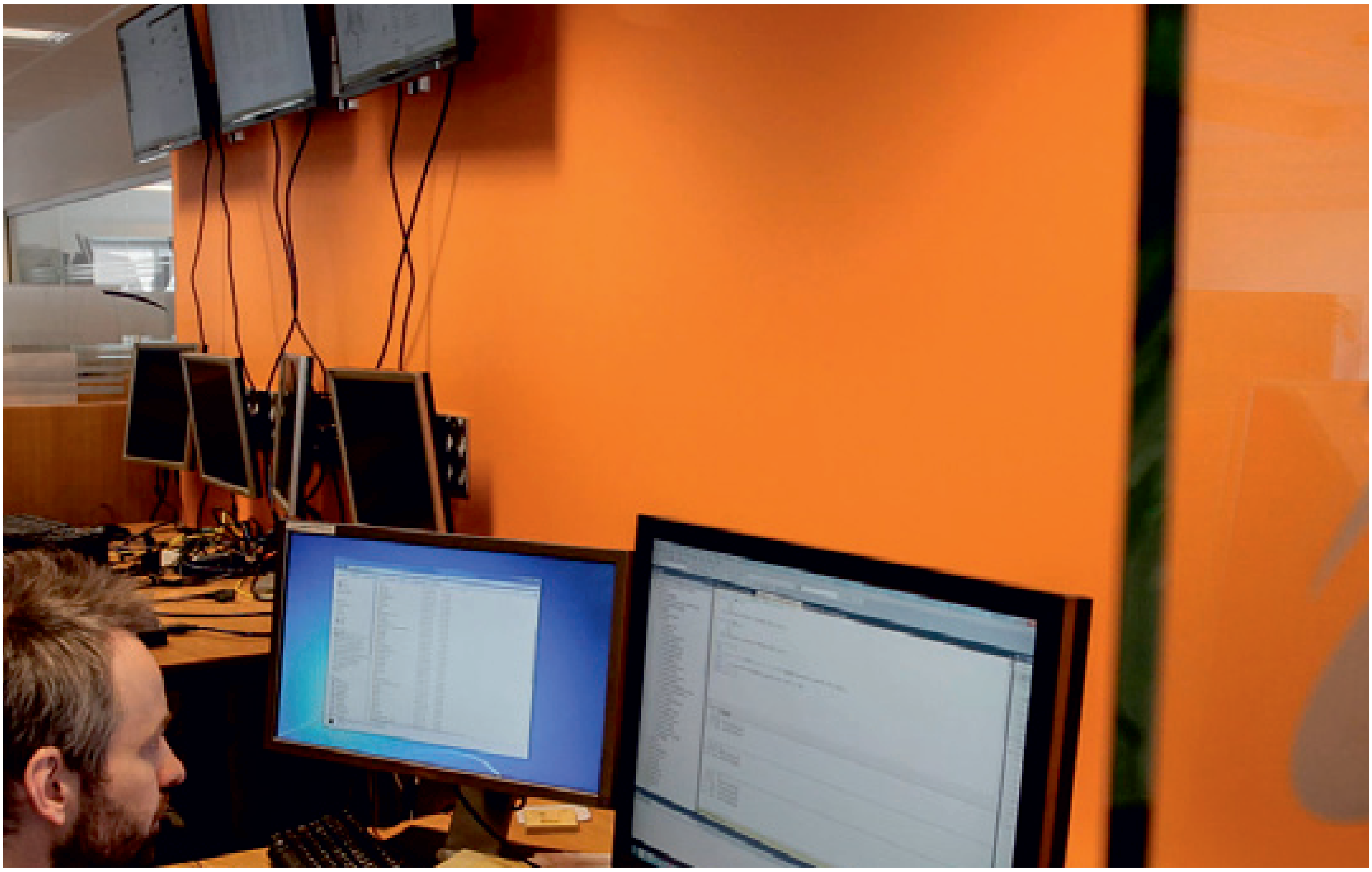
Line icing forecasting model being developed

Icing on structures is a major issue for many TSOs operating in cold climates. Landsnet has for several years taken an active part in international co-operation in this field, in which a key focus has been to develop a forecasting model for icing on transmission lines.

A Landsnet representative gave a presentation on this research at the annual International Workshops on Atmospheric Icing of Structures in the summer of 2015. Information from Landsnet's database for icing on transmission lines and from our experimental lines form a basis of comparison in this field of research between simulated accretions and icing data. Such comparison is essential for future forecasting models to become sufficiently reliable to determine load criteria, a major factor for the construction costs and operational security of transmission lines.

IT and telecommunications

In 2015, IT and telecommunications continued to be a major factor in our activities and for the transmission system as a whole. We updated key systems, improved telecommunications, safety and security and brought new Energy Management System terminals into service.



Software system for the regulating power market

We started developing a new software system for the regulating power market during the year. The system will manage offers and bids and send control values to Landsnet's Energy Management System to maintain balance in the electricity system. The project was tendered out in the European Economic Area and was won by the software company Kolibri. The aim is to bring the new system into service in the second half of 2016. Named Reskja, the new system will replace the “Regulation Display”, an important support system in Landsnet’s Control Centre.

SAReye

We completed the implementation of the incident and disaster management system SAReye. This puts Landsnet in the ranks of the Civil Protection Department and the Icelandic Association for Search and Rescue (ICE-SAR), both of which use this system in their day-to-day activities. SAReye is a management system for all incidents in the electricity system’s operation and is accessible wherever there is internet access. Considerable adjustment work went into tailoring SAReye to Landsnet’s needs, with further development work scheduled for 2016 to further increase the usefulness of the Incident Management System for the company.

Classification system for operating disturbances

A new system for classifying the severity of operating disturbances in the electricity system was adopted during the year. The purpose of the system is to provide faster and more effective information delivery to customers, i.e. consumers and generators, not least when transmission constraints or curtailments are necessary following extensive power disturbances.

The classification system is based on definitions used by the European Network of Transmission System Operators (ENTSO-E) of the severity of disturbances, to which were added categories for circumstances specific to the Icelandic grid. The system was also adapted to other Icelandic response systems; for example, the severity level of disturbances in the electricity system are classified using the same colour codes as used by the Civil Protection Department: Green (0) means a minor incident, yellow (1) means a moderately serious incident, red (2) means a serious incident and black (3) means a very serious incident that can result in a total systemic collapse.

The development of the classification system began in late summer 2014 when it became clear that volcanic activity was likely in the northern Vatnajökull ice cap. The hope is that the system will improve disturbance management by Landsnet’s Control Centre and help co-ordinate the responses of different operators.

The POLG innovation project

In 2015, Landsnet became a sponsor of the innovation project Power On-Line Generator (POLG). The aim of POLG is to create an internationally marketable product that increases the operational security of transmission grids and distribution systems, simplifies surveillance and maintenance, increases employee safety and reduces the risk of personal injury.

Developed by the research and innovation company Laki ehf, which specialises in eco-friendly energy solutions, the central idea of POLG is to use the electromagnetic field surrounding transmission lines to generate electricity. It is a very eco-friendly solution and is planned to deliver enough power to operate any electronic equipment, such as communications or monitoring equipment.

Other software projects

Our previous outage scheduling system, Rof, was replaced by a new software solution named RoVi. The new system is used to manage all information relating to planned shutdowns for maintenance and works. A settlement system from the IT company CGI (previously Lettera) was upgraded during the year in co-operation with the reseller. A new employee travel system was also introduced at Landsnet. The settlement of business trips is now entered directly into the financial system.

Security and telecommunications

Landsnet places a major emphasis on ensuring the security of its software and IT systems, which play an ever more important role in the grid's operational security. In 2015, we continued to implement the ISO 27001 information security standard and carried out the annual security audit of Landsnet's operations.

Our Control Centre's Wide Area Monitoring System (WAMS), named PhasorPoint, plays an ever more important role in the grid's day-to-day management. The doubling of this system's capability was completed during the year to enhance operational security. Work commenced to implement WAMS measurements and controls in the Reykjanes region. A separate WAMS was also installed for the Westfjord Power Company, which can now monitor measurements for the West Fjords,

Having previously used ISDN D-channels for telecommunications, our substations were transferred to 2 Mb leased lines connected to the system of the energy telecoms company Orkufjarskipti. These connections can be expanded to up to 24 Mb. Equipment can be installed to separate connections for office networks, the Control Centre's WAMS and other operating units.

Landsnet's Energy Management System

The scope of our Energy Management System (EMS) has been growing from year to year, with 2015 proving no exception in this respect. The EMS terminal units at the substations at Glerárskógar, Geiradalur, Laxárvatn, Hólar, Hryggstekkur and Sigalda were renewed. A new control system at Krafla was connected to the EMS and a new terminal unit was installed at Prestbakki. A possible upgrade of the EMS was also prepared.

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Innovation and research

Ever since Landsnet's inception over a decade ago, research, innovation and development have been prime drivers of the grid's development and management, the aims being twofold: to ensure a secure supply of electricity to Iceland's general population and businesses and to minimise the visual impact of transmission infrastructure to the extent possible. The initial focus was on the design and development of transmission lines. In recent years, however, the focus has shifted to research and development relating to underground cables and electricity system management.

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Changed appearance of infrastructure

Landsnet has taken an active part in Nordic and European co-operation to develop new designs of transmission towers and substations in an aim to improve their appearance and minimise their visual impact. Such co-operation includes the European Network of Transmission System Operators for Electricity (ENTSO-E) and the International Council on Large Electric Systems (CIGRÉ). The Nordic TSOs have also co-operated in this field. In addition, Landsnet has employed the services of Icelandic architects and engineers to work on such projects.

Since early 2011, we have been working with the Norwegian TSO, Statnett, to develop new transmission tower designs following international design competitions. The objective was to create new designs on which greater consensus could be achieved than with existing ones.

The construction of the first new prototype tower – designed specifically for Icelandic conditions and to blend as seamlessly into the Icelandic landscape as possible – was completed in 2015. The tower will be erected in the first half of 2016 in the town of Hafnarfjörður in the Greater Reykjavík area as part of Landsnet's new transmission lines extending from the Geitháls substation to Hafnarfjörður. Named "the Ballerina" for its lightness and elegance, this new tower design is far less suggestive of a tree trunk than are conventional transmission towers. The Ballerina is a free-standing tubular tower that narrows towards the top. Its bottommost part is moss green in colour and the topmost part is light blue. The design is well suited to places where space is restricted and the line corridor is narrow.

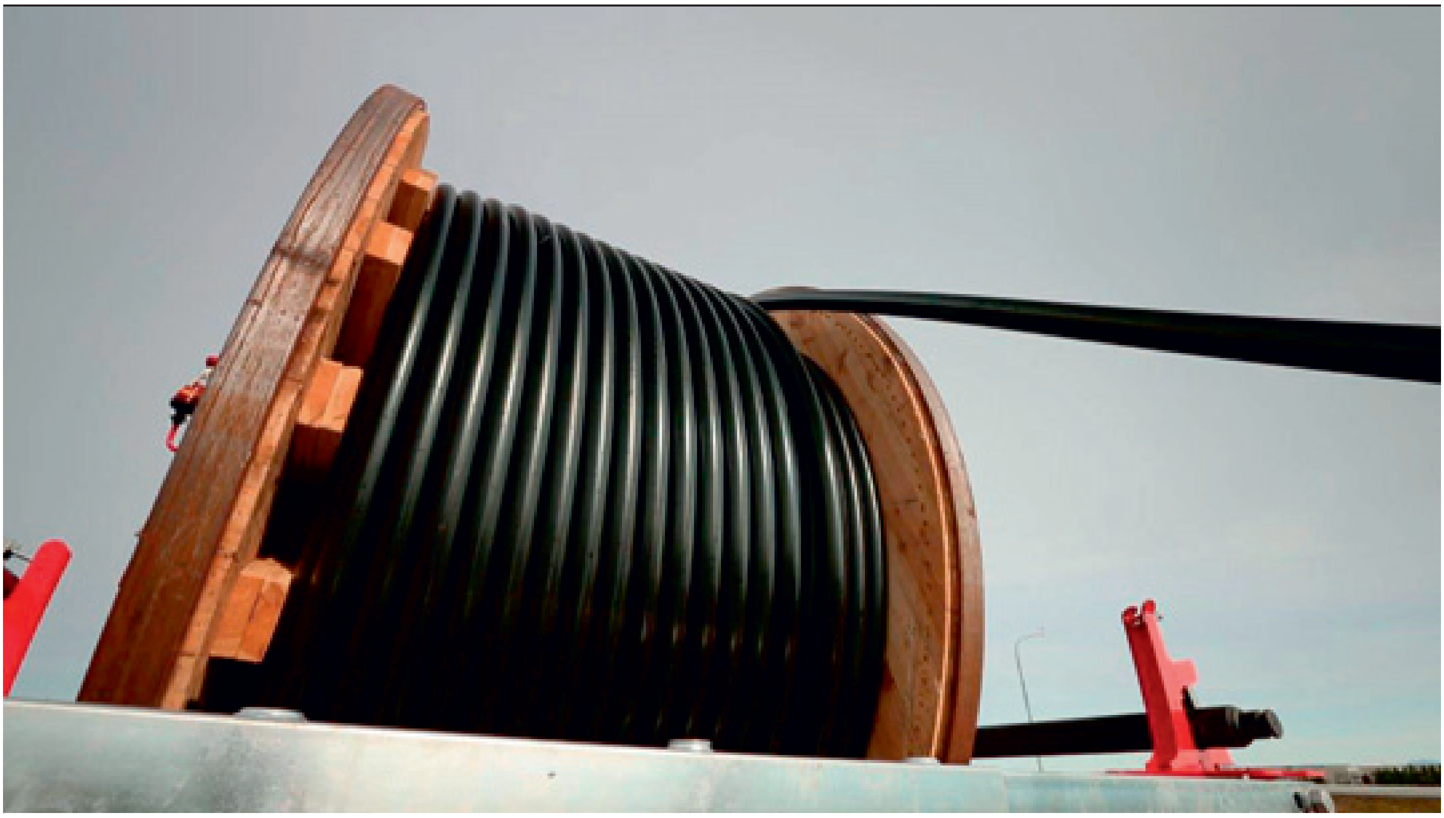
Another transmission tower design is "the Bird", which was also submitted in the international competition. This design has also entered production and is scheduled to arrive in Iceland for installation in 2016. The Bird is a guyed tower with two tubes and a crossbar that resembles the wing of a bird – hence the name.

The third tower design from the competition to enter production is the Giant or "Land of Giants" design, which has attracted much attention. The Giant's preliminary design has been completed and a number of structural load-bearing problems have been solved. The next step will be to complete the detailing and find a location for the tower – the suggestion has been made to place it as a sculpture where power lines traverse a frequently travelled road.

In parallel, the Norwegian TSO, Statnett, has been working on a number of tower designs, including ones made of aluminium and fibres. The low weight of these materials could cut the carbon footprint of transmission towers substantially – one reason for Landsnet to keep a close eye on developments.

A new generation of substations

The design and development of Landsnet’s substations has changed considerably in recent years. Following a design competition held a few years ago, a new generation of indoor substations has emerged, with emphasis on a more attractive appearance and better visual integration with natural surroundings. This is well exemplified by the new substations at Helguvík and Bolungarvík and the planned substations at Bakki, Þeistareykir and Krafla.



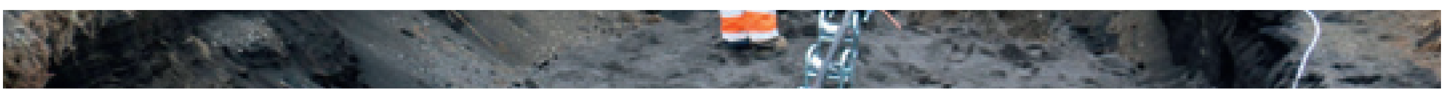
Underground cable research

Recent years have witnessed considerable discussion about the increased use of underground cables. Although Landsnet's oldest underground cables date from the 1950s, in Iceland and overseas the use of underground cables was in previous years largely limited to low-voltage distribution in urban areas. Thanks to great technological strides and increasing cost-effectiveness, the use of underground cables has been on the rise. Most of Landsnet's infrastructure projects in the last few years have been underground cable projects. This trend is expected to continue in the coming years.

To obtain a clearer picture of the costs involved, the environmental impacts and the use of underground cables at higher voltages, we organised an extensive research project in co-operation with the Danish TSO, Energinet.dk, the Danish consultancy firm StellaCable, Reykjavik University and Icelandic engineering firms.

The project report was presented in February 2015. Among the most salient findings was that the maximum length of an underground cable across the Sprengisandur plateau was 50 km. This is owing to technical limits due to the grid's variable strength in different regions of the country. The factors affecting the possible length of underground cables in the system include a low short-circuit power, or the strength of the system. The research also confirms that the price of underground cables with a high transmission capacity has come down considerably, or by almost half for 220 kV cables, and that he purchase price of an underground cable accounts for 30-50% of the total capital cost of a 220 kV underground cable installation. It should be borne in mind, however, that providing a general reference price is challenging. Each case needs to be considered individually on the basis of available facts.

The report also confirms that soil thermal conductivity in Iceland is generally lower than in our neighbouring countries, conventional cable laying in an open trench is the least costly option in the vast majority of cases and minimising environmental impact through effective underground cable routeing is important. Restoring the ground surface is easy in sandy terrain, well vegetated heathland or cultivated land, whereas in forests and scrubland a treeless corridor must be left above the cable. Furthermore, there are good reasons to avoid undergrounding in lava fields as far as possible, as the ground surface cannot be restored to its original condition, in addition to which Holocene lava fields are protected under the Nature Conservation Act.



International co-operation

Landsnet takes part in various international co-operation projects, the largest of which are two European research projects that have been awarded grants from the EU's Framework Programmes for Research and Technological Development. These projects focus on reliability analysis of electricity systems and controls that will in future ensure European grids' security of supply and stability.

Both projects support the EU policy goals of security, sustainability and economic efficiency. They also address social challenges. The EU places emphasis on delivering such research results to the market by supporting experimental projects and marketing of innovative solutions, the overriding aim being to increase competitiveness in Europe.

MIGRATE

he year 2015 saw the finalisation of an application for support from the EU's framework programme Horizon 2020 for the research project MIGRATE (Massive Integration of Power Electronic Devices), to which Landsnet is a party. The application was approved in August and the four-year project commenced in January 2016. The project involves 25 participants from 13 countries, including 11 European TSOs in addition to Landsnet. It will require 150 man-years, with the total cost estimated at 18 million euros.

MIGRATE's main aim is to research ways of increasing the stability of electricity systems faced with ever-increasing moment of inertia due to the growing use of renewable energy sources such as wind and solar energy and an ever-rising number of high-voltage direct current (HVDC) connections between systems. This development and widespread plans to abolish the use of conventional coal, gas and nuclear power stations, which currently contribute a substantial moment of inertia, has led to uncertainty about how to ensure the future stability of electricity systems.

Iceland is considered to offer an ideal research environment, as its electricity system already has a very low moment of inertia compared with the interconnected systems of other European countries and must sometimes deal with stability problems in various operating conditions owing to the system's small size and very weak inter-regional connections. Iceland also has important infrastructure that is useful for the project in gaining a better understanding of system behaviours. In recent years, for example, Landsnet has developed a Wide Area Monitoring System (WAMS) that has attracted overseas attention and serves as a useful testing tool.

The Icelandic electricity system is thus of considerable interest to the MIGRATE project despite not being part of the interconnected European electricity system. The reasons are, first, the properties of the system and, second, Landsnet's advanced measurements and real-time analysis of the system's performance at any given time.

Another European research project in which Landsnet takes part is GARPUR (Generally Accepted Reliability Principle with Uncertainty Modelling and through Probabilistic Risk Assessment), which is organised by Landsnet and Reykjavik University in partnership with European universities, research institutes and TSOs. This four-year project is now well advanced, having received an ISK 1.2 billion grant from the EU's 7th Framework Programme for Research in 2013.

GARPUR's key objective is to revolutionise the prevailing methodology in grid reliability calculations and develop new and more effective indicators to enable European TSOs to better deal with the substantial changes that have taken place in the development and operation of electricity systems in Europe and work on their further development.

Forecasting electricity supply and demand is becoming ever more challenging, partly because of markedly increased integration of distribution systems in the European electricity market and growing use of renewable energy sources, such as wind, solar and other options. Because of the slow pace of development of electricity systems, they are also increasingly operated near tolerance limits. At the same time, technological progress, such as in IT, measurement technologies and electronic technologies, have created new possibilities of gauging the reliability of transmission systems and facilitated their more precise management than was previously possible.

The latter part of the project focuses on the testing of a new methodology with the participation of European TSOs, and has now commenced under Landsnet's leadership. In 2015, efforts were devoted to defining applicable tests and participation in them. Landsnet places emphasis on ensuring that the testing is as close to the system's real-time management as possible, which involves a very challenging environment as large quantities of data must be processed automatically.

The project's website contains information on how the new methodology is developing as well as reports, presentations and published articles on the project.

Landsnet has in recent years been working with the Norwegian TSO, Statnett, and the software producer Goodteck on the installation and testing of the reliability analysis tool PROMAPS.

This software solution is closely related to the GARPUR research project and is already used by Landsnet's Control Centre. The Icelandic model is being developed at full steam. The tool analyses the electricity system's reliability in real time and estimates the number of outage minutes for the entire system and within individual regions based on the system's performance at any given time and reliability indicators for different system units. It also shows a list of the units that, on the basis of probability analysis, exert the greatest impact on the results, i.e. a negative effect on the security of supply.

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HR and corporate social responsibility

Landsnet's core values – responsibility, co-operation and respect – inform all our activities and services. We conduct our work responsibly in accordance with Landsnet's important role in modern society. Co-operation is reflected in team cohesion and in listening to different viewpoints. Respect involves a positive and tolerant attitude towards the opinions and work of others. The electricity system is one of the mainstays of our society, like roads, harbours and airports. Therefore, it must be fit for purpose to meet the requirements of consumers throughout the country for a secure and sufficient supply of electricity. Landsnet has set itself the goal of building as broad a consensus as possible on the best way forward to ensure a secure supply of electricity in the future, whilst maintaining due consideration to societal concerns and treating the natural environment responsibly.

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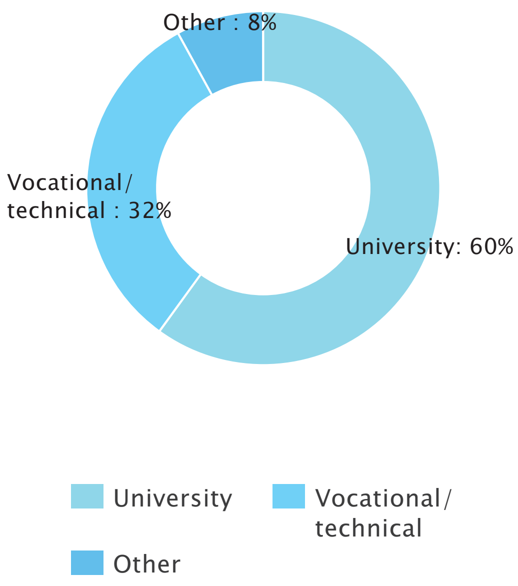
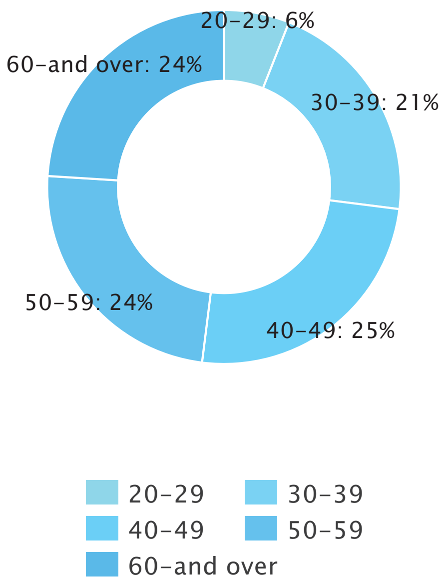
Our people

Landsnet employs highly professional and experienced staff. Our permanent employees numbered 114 at year-end 2015, of which 80% were men and 20% women. Our people are well-educated experts in their respective fields. Employees holding vocational education in an electrical field or a university degree in engineering and technology comprise the largest portion of our staff, who otherwise come from diverse educational and professional backgrounds.

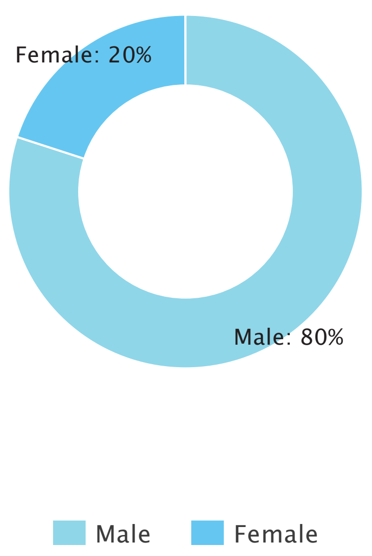
Employees education



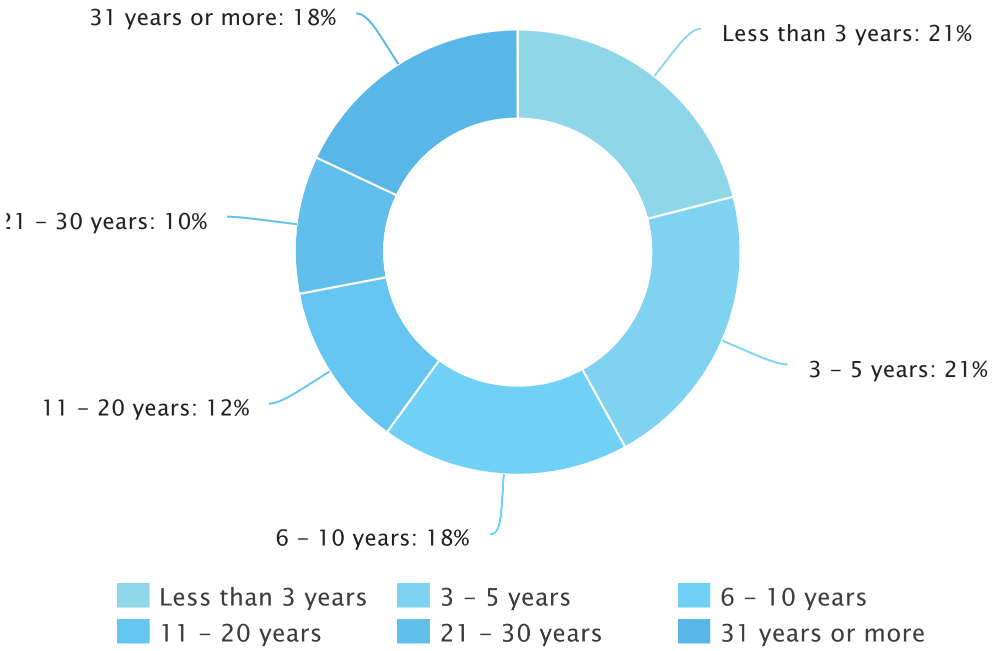
Staff age profile



Gender ratio



Length of service



In 2015, our employees played a key role in formulating a new corporate policy and future vision for the company. This was effected through an extensive policy reformulation exercise, including surveys, interviews and analysis by staff, who thereby contributed greatly to shaping our new way of working.

Landsnet's organisational structure was also revised to better support the new policies. Five new divisions were created, all of whose Executive VPs were appointed from Landsnet's ranks. All our staff have made a concerted effort to shape the new divisions. Many employees have been transferred between units following the organisational and policy changes, thereby acquiring new day-to-day colleagues.

Six new employees were recruited during the year. The staff turnover was just over 6%. Increased staff turnover may be expected in the coming years due to age-related retirement, as 24% of our staff are 60 or older. Almost 20% of our employees have worked for the company or its predecessors for over 31 years.

The Landsnet Academy

A major effort has been made to develop staff training and education in recent years to foster continual improvement and ensure that our employees have the capabilities and knowledge to tackle the tasks of the day and the company's future challenges.

An emphasis is placed on targeted instruction informed by the company's defined training and education goals. Needs analysis is used to assess training needs. This is followed by issuing a Landsnet Academy Training Plan that reflects the company's specialised activities and is designed to disseminate the considerable expertise that our staff possess. A total of 35 specialised training courses were held for teams within Landsnet during the year. The number of participants in these courses totalled 497.

All new members of staff are provided with induction training, in which their training needs for the first few months of employment are defined. Every new employee is assigned a "mentor" to assist with orientation to the job. The objectives of induction training are:

- To familiarise new staff with our activities and enable them to assimilate to the company's policies and values.
- To provide new staff with education and training in using equipment, tools and procedures required in their work to be able to attain the required level of performance as soon as possible.
- To provide new staff with specialised training defined as necessary for them to be able to perform well.
- To ensure that our staff are confident and comfortable in their work and receive support whenever needed.

Summer jobs for students

In the summer of 2015, we employed 16 university students and 30 upper-secondary school-aged youths in summer jobs. Importance is attached to affording university students with opportunities to perform real-world tasks in their respective fields of study. We thereby aim to contribute more to society and promote education and knowledge in the field of electrical energy.

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Safety, health and environment

Landsnet has always placed a high premium on safety, health and environment, all of which have been integral to our safety culture right from the outset. We have a zero-injury approach, the key objective of which is to ensure that all our staff and others working on our projects return safe and sound to their homes after each day's work.

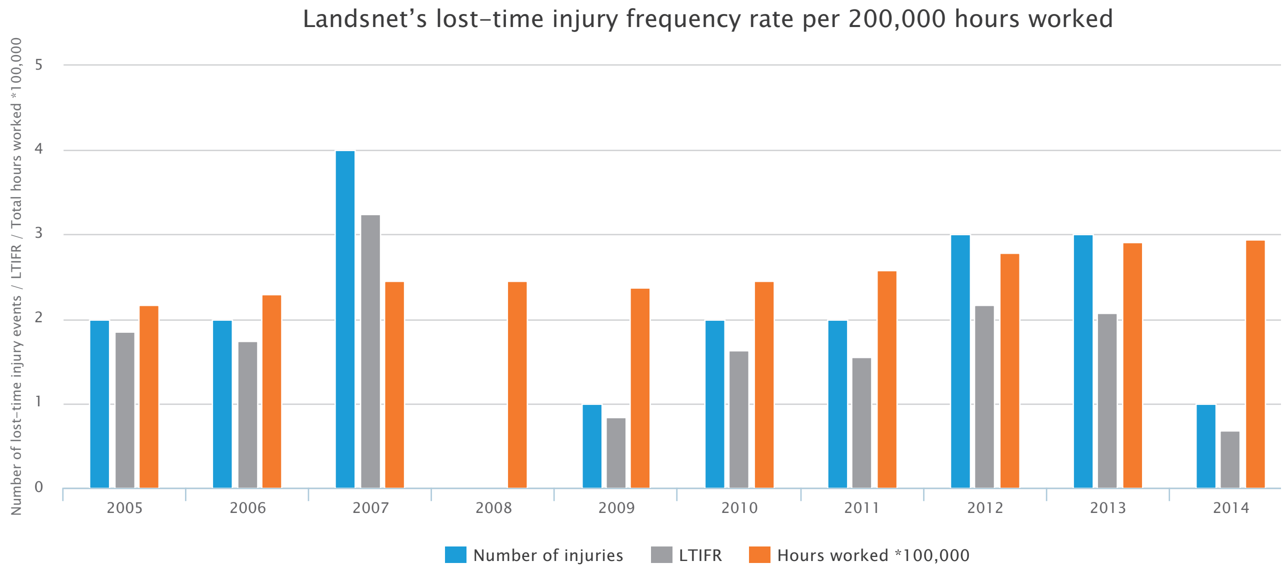
One lost-time injury event

One lost-time injury event occurred at Landsnet in 2015, which was a case of an employee falling on slippery ground while travelling to work. This is the same number of lost-time injury events as in 2014. However, because of the reduced number of hours worked at the company, the injury frequency went up slightly year-on-year after steadily decreasing for a number of previous years. The Lost Time Injury Frequency Rate (LTIFR) was 0.79 at year-end 2015 based on 200,000 hours worked, compared with 0.68 in the previous year.

Our employees' safety training is improving year by year. They deserve praise for their performance as no lost-time injury event occurred in the company's core activities in 2015. This performance far exceeds that of other Icelandic companies with a similar operating environment.

A never-ending story

Despite this good performance, our employees are mindful that we can always do better still. We place great emphasis on recording all safety incidents, however minor, to be able to react with preventive measures. The recording of safety incidents has grown year by year, which is positive as more and better information will facilitate injury prevention.



Safety manuals and standards

One of the most important tools in our 'safety toolbox' is the Landsnet Safety Manual. The Manual is in constant development based on the latest information and developments in safety culture, and is a cornerstone of the company's robust safety management.

A number of companies have used it as a model for their own safety manual. We have responded positively to all such requests, not least because of the wider societal importance of co-ordinating safety procedures and terminology to the extent possible.

We have also had a positive experience with the instructional manual *That's the Way We Do It*, issued in 2014, which sets out requirements and co-ordinated safety procedures and arrangements at Landsnet premises. This publication provides designers and operators with harmonised criteria for the operation and construction of new structures.

Over two years have now passed since we adopted the OHSAS 18001 safety standard. Its use has given good results by sharpening our staff's safety awareness and delivering an improved safety performance. A new safety standard will replace the OHSAS 18001 in October 2016. This is the ISO 45001 *Occupational health and safety management systems – Requirements*, the first ISO standard for OHSMS. It is very much in line with the ISO 9001 and ISO 14001.

In co-operation with the utilities federation Samorka, we worked on a safety training programme for contractors' employees leading to a certificate confirming their participation in the programme. Samorka's member companies and the aluminium companies intend to adopt this system, which will require all those working for Landsnet to hold such a certificate.

Landsnet Emergency Management

The organisational structure of Landsnet Emergency Management (LEM) underwent major changes last year, the aim of which was to make LEM's activities as effective as possible. LEM provides resolution of numerous issues, discusses possible emergency scenarios and looks for solutions. The geologic activity in the northern part of the Vatnajökull ice cap involved a significant amount of work for LEM, while also increasing its knowledge and capacity to deal with any emergency.

Exercises are a major part of emergency management training, making it all the more important to organise them effectively and engage as many participants as possible. One positive development is that interest in Landsnet's exercises is growing among energy companies and government agencies. Such co-operation strengthens ties and increases mutual understanding between companies in emergency situations.

Exercise 1511

In light of the volcanic activity in the Vatnajökull ice cap in recent years, Landsnet decided to stage an emergency exercise as a follow-up to the exercise held in the autumn of 2013 in dealing with a possible eruption in Vatnajökull. The 2015 exercise went several steps further in that the government authorities' participation was requested and various new scenarios were tested.

The exercise, which took place on 12 November, was very challenging for co-operation and co-ordination within the electricity sector to deal with enormous damage to the electricity system in southern Iceland and a resultant emergency situation due to an eruption in the western part of Vatnajökull. Almost 200 people took part. The exercise included extensive video broadcasts with news of the latest developments and interviews with participants.

In addition to Landsnet and the Ministry of Industries and Innovation, most member companies of the Electricity System's Emergency Partnership (ESEP) took part, as did the Civil Protection Department, the Icelandic Meteorological Office and many other government bodies and companies. The participants were unanimous that the exercise was a great success, as it revealed several areas in need of improvement to ensure an even faster and more effective response by all involved when such an emergency occurs

ESEP – the Electricity System's Emergency Partnerships

About a decade has passed since the Electricity System's Emergency Partnership (ESEP) was first formed. Its activities have grown steadily ever since.

ESEP is a co-operation forum for Landsnet, generators, distributors, power-intensive consumers and public bodies to deal with emergencies affecting power generation, transmission or distribution in Iceland. Iceland's infrastructure is highly dependent on secure power, making ESEP's role a very important one in co-ordinating emergency preparedness and sharing information between the participants. The year's largest single event for ESEP was the participation of its member organisations in the 1511 Exercise in November.

The ESEP members have expressed wishes to increase the partnership's co-operation still further. This will require a review of ESEP's regulatory framework and the earmarking of a revenue source for its activities.

NordBER

NordBER is the contingency planning and crisis management forum for Nordic TSOs and energy authorities. The participating countries share knowledge, provide cross-border assistance and hold joint emergency exercises. The activities are largely centred on three annual consultation meetings. NordBER operates a number of working groups, participation in which has been an important source of knowledge for Landsnet.

Glossary

Lost-time injury events are accidents that lead to absence from work for more than one day from the day of the accident.
LTIFR stands for Lost Time Injury Frequency Rate.

Environmental and climate issues

A strong transmission system is one of the key pillars of sustainable and eco-friendly energy use in Iceland. To reduce the current energy waste due to system constraints and bottlenecks, it is necessary to reinforce the grid. A stronger grid will increase Iceland's ratio of renewable energy use, partly because more transmission capacity enables the replacement of fossil fuel systems with clean electricity, such as in transport, the fisheries industry and tourism, in line with government policy to cut greenhouse gas emissions.

Declaration of climate targets

Landsnet is committed to tackling climate change. It was among the 103 companies to commit to specific climate action targets in the run-up to the 21st UN Climate Change Conference in the autumn of 2015. A declaration to this effect was signed at a ceremony at Höfði House in Reykjavík on the initiative of the City of Reykjavik and Festa – the

Icelandic Centre for Corporate Social Responsibility.

Landsnet subsequently became a formal member of Festa, joining more than 60 Icelandic companies that endeavour to organise their activities in ways beneficial to society at large.

Environmental impacts and mitigating measures

No serious environmental incidents occurred in our activities in 2015. We place a high priority on continuous improvements in this respect. The environmental impact of our Grid Plan was assessed for the second time during the year in accordance with the Strategic Environmental Assessment Act.

Our tender documents for all Landsnet investment projects include stringent environmental requirements. Upon completion of line works, our staff carry out a special audit of the project's standard of finish from an environmental standpoint in co-operation with key stakeholders, such as representatives of inspectorates, landowners and local authorities. As a statutory consultation body, Landsnet takes an active part in municipal planning to ensure that account is taken of planned works on the grid.

Such works have various environmental impacts, partly because of the construction of line tracks, the laying of underground cables and the installation of transmission towers, in addition to more subjective impacts.

Hella Line 2 – before and after

The visibility of overhead lines is mostly reversible. This is well exemplified by the demolition of the Hella Line 2 between the towns of Hella and Hvolsvöllur in south Iceland in the autumn of 2015. An underground cable was installed there to replace a 67-year old overhead line, one of the oldest in Iceland's electricity system. This brought a major visual change, not least for Hella's town centre where the line ran over the roundabout near the town hall and in front of a new hotel, as can be seen from the before-and-after photos below.

Co-operation on soil conservation

Icelandic power companies have played a major role in revegetating wind-eroded land in proximity to the electrical network all around the country. Since 2006, Landsnet has joined forces with the SCS to combat soil erosion and revegetate areas near transmission lines in the common pastures south of the Langjökull glacier and in the valley Víðidalur á Fjöllum.

The aim of this co-operation is to create a permanent vegetative cover in certain areas south of the Langjökull glacier, arrest wind and other soil erosion and strengthen weak vegetative cover. SCS brings expertise to the partnership and manages the project, whereas Landsnet funds the resources needed. Our soil conservation efforts have already delivered visible benefits. Soil seed banks that lay dormant in the ground have gained in strength and various grasses and plants have been coming along nicely, such as broad-leaved willow and alpine bartsia.

Research and outdoor recreation

Landsnet has throughout the years supported research into Iceland's natural habitats and archaeological and cultural remains in connection with the construction of transmission lines and power stations. Knowledge of Iceland's natural environment and heritage has thus grown in step with the country's electrification.

Other Landsnet projects and activities that have benefited society at large include the construction of transmission line service roads, which have opened up access to the interior highlands for travellers and improved telecommunications, e.g. in the Kárahnjúkar and Blanda areas. Some service roads have enabled the public to explore areas of the country that were previously inaccessible except to the most intrepid explorers, such as the track along the Sultartangi Lines 1 and 3. This track runs along the edge of the highlands south of the Langjökull and Hofsjökull glaciers. Its most popular section extends from the Kjalvegur trail westward to the Uxahryggjarvegur road. Among this route's pleasures are scenic views towards the Langjökull glacier, Mt Hlöðufell and Mt Skjaldbreiður.

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LANDSNET

Scholarships and community grants

Each year, we support community projects of relevance to our sphere of activities.

Co-operation with Reykjavik University

During the year, Landsnet signed a co-operation agreement with Reykjavik University (RU) on internships at the company for students at RU's School of Science and Engineering. The five-year agreement aims to promote students' expertise in the fields of risk analysis and electricity transmission.

Landsnet and RU's Centre of Risk and Decision Analysis (CORDA) have also entered into an agreement on scholarships to doctoral students. The aim is to increase knowledge and expertise in risk and decision analysis.

Support to University of Iceland engineering students

Landsnet supports engineering students at the University of Iceland who performed well in a competition against other universities in building an electric racing car during the year. The project is entitled Team Spark and aims to deliver better and more experienced engineers into the economy by enabling them to tackle "real-life" problems and training them in using the knowledge acquired in their studies.

A new team took over the mantle last autumn. It aims to improve the racing car still further and take part in the Formula Student race at the Silverstone Circuit in England in the summer of 2016.

Support to charities

Instead of sending Christmas cards to its customers, Landsnet annually contributes an equivalent amount to charities and welfare organisations. In 2015, the amount was divided between the Charity for Children with Autism and Specialisterne in Iceland, the latter of which is a private non-profit organisation that works to help individuals on the autism spectrum to develop independence.

Co-operation agreement with ICE-SAR

During the year, Landsnet, Landsvirkjun and RARIK renewed their co-operation agreement with the Icelandic Association for Search and Rescue (ICE-SAR) for another three-year term. The agreement ensures that the three electricity companies receive the assistance of search and rescue teams in emergencies and in other cases where assistance is required. The agreement also provides the electricity companies' staff with access to training at the ICE-SAR Search and Rescue Academy and outlines defined response procedures for the rescue teams whenever the energy companies need their assistance.

Miscellaneous projects

Landsnet and its partners have undertaken a range of IT- and communications-related projects benefiting society at large.

- *TETRA – secure telecommunications:* In co-operation with partners and service providers, Landsnet has developed an extensive TErrestrial Trunked Radio (TETRA) network to deliver more secure telecommunications in Iceland. The network has substantially increased communications security for our staff and improved the electricity system's operational security. It has also contributed greatly to public safety and security as we share the network with civil protection authorities, the police, fire brigades and search-and-rescue rescue teams.
- *Community use of facilities:* We are committed to being a good neighbour to those living near our infrastructure. For instance, we have allowed server companies and broadcasters to use our transmission facilities in rural areas. This support has been essential to providing these rural communities with important services at affordable prices. We have also provided the inhabitants of certain rural areas with access to Landsnet's fibre-optic cable where no other fibre-optic solutions are available.

Landsnet´s grid in2015

See interactive map

Landsnet's High-Voltage Transmission Lines

Voltage [kV]	Line	KKS code	First year in service	Connected substations	Length [km]	Of which un-dergr. [km]
220	**Brennimelur Line 1**	BR1	1977	**Geitháls - Brennimelur**	58.6	
	Búðarháls Line 1	BH1	2014	**Búðarháls - HR1 (Langalda)**	5.6	
	Búrfell Line 1	BU1	1969	**Búrfell - Írafoss**	60.8	
	Búrfell Line 2	BU2	1973	**Búrfell - Kolviðarhóll**	86	
	Búrfell Line 3 (partly built for 400 kV)	BU3	1992/1998	**Búrfell - Hamranes**	119	
	Fljótsdalur Line 3 (built for 400 kV)	FL3	2007	**Fljótsdalur - Reyðarfjörður**	49	
	Fljótsdalur Line 4 (built for 400 kV)	FL4	2007	**Fljótsdalur - Reyðarfjörður**	53	
	Hamranes Line 1	HN1	1969	**Geitháls - Hamranes**	15.1	
	Hamranes Line 2	HN2	1969	**Geitháls - Hamranes**	15.1	
	Hrauneyjafoss Line 1	HR1	1982	**Hrauneyjafoss - Sultartangi**	19.5	
	Ísal Line 1	IS1	1969	**Hamranes - Ísal**	2.4	
	Ísal Line 2	IS2	1969	**Hamranes - Ísal**	2.4	
	Járnblendi Line 1	JA1	1978	**Brennimelur - Járnblendiv.**	4.5	
	Kolviðarhóll Line 1	KH1	1973	**Kolviðarhóll - Geitháls**	17.3	
	Norðurál Line 1	NA1	1998	**Brennimelur - Norðurál**	4.2	
	Norðurál Line 2	NA2	1998	**Brennimelur - Norðurál**	4	
	Sigalda Line 2	SI2	1982	**Sigalda - Hrauneyjafoss**	8.6	
	Sigalda Line 3	SI3	1975/2015	**Sigalda - Búrfell**	36.8	
	Sog Line 3	SO3	1969	**Írafoss - Geitháls**	35.8	
	Sultartangi Line 1	SU1	1982	**Sultartangi - Brennimelur**	121.6	
	Sultartangi Line 2	SU2	1999	**Sultartangi - Búrfell**	12.5	
	Sultartangi Line 3 (built for 400 kV)	SU3	2006	**Sultartangi - Brennimelur**	119	
	Vatnsfell Line 1	VF1	2001	**Vatnsfell - Sigalda**	5.8	
				Total 220 kV	**856.6**	**0**
132	**Blanda Line 1**	BL1	1977/1991	**Blanda - Laxárvatn**	32.7	
	Blanda Line 2	BL2	1977/1991	**Blanda - Varmahlíð**	32.4	
	Eyvindará Line 1	EY1	1977	**Hryggstekkur - Eyvindará**	27.5	
	Fitjar Line 1	MF1	1991	**Rauðimelur - Fitjar**	6.8	
	Fitjar Line 2	FI2	In use 2016 (constructed 2015)	**Fitjar - Stakkur**	8.5	8.5
	Fljótsdalur Line 2	FL2	1978	**Fljótsdalur - Hryggstekkur**	25	7
	Geiradalur Line 1	GE1	1980	**Glerárskógar - Geiradalur**	46.7	
	Glerárskógur Line 1	GL1	1983	**Hrútatunga - Glerárskógar**	33.5	
	Hafnarfjörður Line 1	HF1	1989	**Hamranes - Öldugata**	4	4
	Höfn Line 1	HA1	1987/2014	**Hólar - Höfn**	7	1.5
	Hnoðraholt Line 1	AD7	1990	**Hamranes - Hnoðraholt**	9.7	2
	Hólar Line 1	HO1	1981	**Teigarhorn - Hólar**	75.1	
	Hrútatunga Line 1	HT1	1976	**Vatnshamrar - Hrútatunga**	77.1	
	Korpa Line 1	KO1	1974	**Geitháls - Korpa**	6	0.3
	Krafla Line 1	KR1	1977	**Krafla-Rangárvellir**	82.1	
	Krafla Line 2	KR2	1978	**Krafla - Fljótsdalur**	123.2	0.1
	Laxárvatn Line 1	LV1	1976	**Hrútatunga - Laxárvatn**	72.7	
	Mjólká Line 1	MJ1	1981	**Geiradalur - Mjólká**	80.8	
	Nesjavellir Line 1	NE1	1998	**Nesjavellir - Korpa**	32	16
	Nesjavellir Line 2	NE2	2010	**Nesjavellir - Geitháls**	24.6	25
	Prestbakki Line 1	PB1	1984	**Hólar- Prestbakki**	171.4	
	Rangárvellir Line 1	RA1	1974	**Rangárvellir - Varmahlíð**	87.5	
	Rangárvellir Line 2	RA2	2009	**Rangárvellir - Krossanes**	4.5	5
	Rauðimelur Line 1	RM1	2006	**Reykjanes - Rauðimelur**	15	
	Rauðavatn Line 1	RV1	1953	**Geitháls - A12**	3	1
	Sigalda Line 4	SI4	1984	**Sigalda - Prestbakki**	78.1	
	Sog Line 2	SO2	1953	**Írafoss - Geitháls**	44.4	

Voltage [kV]	Line	KKS code	First year in service	Connected substations	Length [km]	Of which un-dergr. [km]
	Stuðlar Line 1	SR1	2005	**Hryggstekkur - Stuðlar**	16	16
	Suðurnes Line 1	SN1	1991	**Hamranes - Fitjar**	30.7	0.1
	Svartsengi Line 1	SM1	1991	**Svartsengi - Rauðimelur**	4.9	
	Teigarhorn Line 1	TE1	1981	**Hryggstekkur - Teigarhorn**	49.7	
	Vatnshamrar Line 1	VA1	1977	**Vatnshamrar - Brennimelur**	20.2	
				Total 132 kV	**1,324.3**	**77.9**
66	**Akranes Line 1**	AK1	1996	**Brennimelur - Akranes**	18.5	18.5
	Andakíll Line 1	AN1	1966	**Andakílsvirkjun - Akranes**	34.9	1.3
	Bolungarvík Line 1	BV1	1979/2014	**Breiðidalur - Bolungarvík**	17.1	1
	Bolungarvík Line 2	BV2	2010/2014	**Ísafjörður - Bolungarvík**	15.3	15.3
	Breiðidalur Line 1	BD1	1975	**Mjólká - Breiðidalur**	36.4	0.8
	Dalvík Line 1	DA1	1982	**Rangárvellir - Dalvík**	39	0.1
	Eskifjörður Line 1	ES1	2001	**Eyvindará - Eskifjörður**	29.1	0.3
	Fáskrúðsfjörður Line 1	FA1	1989	**Stuðlar - Fáskrúðsfjörður**	16.8	
	Flúðir Line 1	FU1	1978	**Búrfell - Flúðir**	27.4	0.6
	Grundarfjörður Line 1	GF1	1985	**Vogaskeið - Grundarfjörður**	35.4	
	Hella Line 1	HE1	1995	**Flúðir - Hella**	34.4	1.7
	Hella Line 2	HE2	2015	**Hella - Hvolsvöllur**	13	13
	Hveragerði Line 1	HG1	1982	**Ljósafoss - Hveragerði**	15.4	0.1
	Hvolsvöllur Line 1	HV1	1972	**Búrfell - Hvolsvöllur**	45.1	0.3
	Ísafjörður Line 1	IF1	1959/2014	**Breiðidalur - Ísafjörður**	13.0	1
	Kópasker Line 1	KS1	1983	**Laxá - Kópasker**	83.3	0.1
	Lagarfoss Line 1	LF1	1971	**Lagarfoss - Eyvindará**	28	6
	Laxá Line 1	LA1	1953	**Laxá - Rangárvellir**	58.4	0.7
	Ljósafoss Line 1	LJ1	2002	**Ljósafoss - Írafoss**	0.6	1
	Neskaupstaður Line 1	NK1	1985	**Eskifjörður - Neskaupstaður**	18.2	1.9
	Ólafsvík Line 1	OL1	1978	**Vegamót - Ólafsvík**	48.8	
	Rimakot Line 1	RI1	1988	**Hvolsvöllur - Rimakot**	22.2	0.1
	Sauðárkrókur Line 1	SA1	1974	**Varmahlíð - Sauðárkrókur**	21.8	
	Selfoss Line 1	SE1	1981	**Ljósafoss - Selfoss**	20.3	2.7
	Selfoss Line 2	SE2	1947	**Selfoss - Hella**	32	0.7
	Selfoss Line 3	SE3	In use 2016 (constructed 2015)	**Selfoss - Þorlákshöfn**	28	28
	Seyðisfjörður Line 1	SF1	1996	**Eyvindará - Seyðisfjörður**	19.8	
	Steingrímsstöð Line 1	ST1	2003	**Steingrímsstöð - Ljósafoss**	3.4	1
	Stuðlar Line 2	SR2	1983	**Stuðlar - Eskifjörður**	18.2	2.4
	Tálknafjörður Line 1	TA1	1985	**Mjólká - Keldeyri**	45.1	
	Vatnshamrar Line 2	VA2	1974	**Andakílsvirkjun - Vatnshamrar**	2	0.2
	Vegamót Line 1	VE1	1974	**Vatnshamrar - Vegamót**	63.8	
	Vogaskeið Line 1	VS1	1974	**Vegamót - Vogaskeið**	24.8	
	Vopnafjörður Line 1	VP1	1980	**Lagarfoss - Vopnafjörður**	58	
	Þeistareykir Line 2	TR2	2013	**Þeistareykir - KS1 (Höfuðreiðarmúli)**	11	11
	Þorlákshöfn Line 1	TO1	1991	**Hveragerði - Þorlákhöfn**	19.3	0.1
				Total 66 kV	**1,017.8**	**109.9**
33	**Húsavík Line 1**	HU1	1964	**Laxá - Húsavík**	26	0.1
	Vestmannaeyjar Line 1 (sub-sea cable)	VM1	1962	**Vestmannaeyjar - Rimakot**	16	16
	Vestmannaeyjar Line 2 (sub-sea cable)	VM2	1978	**Vestmannaeyjar - Rimakot**	15	15
	Vestmannaeyjar Line 3 (sub-sea cable)	VM3	2013	**Vestmannaeyjar - Rimakot**	16	16
				Total 33 kV	**73**	**47.1**
				Total	**3,280.2**	**243.3**

Landsnet's Substations

Substations	KKS code	Co-owner	Voltage [kV]	First year in service	No. of switchyard bays	Number of transformers
Aðveitustöð 12 / Substation 12	A12	OR	132	2006	1	0
Akranes	AKR	OR	66	1987	4	0
Andakíll	AND	OR	66	1974	3	0
Ásbrú	ASB		33	2011	6	0
Blanda	BLA	LV	132	1991	5	0
Bolungarvík	BOL	OV	66/11	2014	3/8	0
Breiðidalur	BRD	OV	66	1979	4	0
Brennimelur	BRE	RA	220/132/66	1978	9/4/3	3
Búðarháls	BUD		220	2013	2	0
Búrfell	BUR		220/66	1999	8/4	0
Dalvík	DAL	RA	66	1981	2	0
Eskifjörður	ESK	RA	66	1993	5	0
Eyvindará	EYV	RA	132/66	1975	1/5	1
Fáskrúðsfjörður	FAS	RA	66	1998	3	0
Fitjar	FIT	HS	132	1990	4	0
Fljótsdalur	FLJ		220/132	2007	10/4	2
Flúðir	FLU	RA	66	1995	3	0
Geiradalur	GED	OV	132	1983	3	0
Geitháls	GEH		220/132	1969	7/9	2
Glerárskógar	GLE	RA	132	1980	3	0
Grundarfjörður	GRU	RA	66	1987	1	0
Hamranes	HAM		220/132	1989	7/7	2
Hella	HLA	RA	66	1995	4	0
Hnoðraholt	HNO	OR	132	1990	2	0
Hólar	HOL	RA	132	1984	4	0
Hrauneyjafoss	HRA	LV	220	1981	5	0
Hrútatunga	HRU	RA	132	1980	4	0
Hryggstekkur	HRY	RA	132/33	1978	6/5	1
Húsavík	HUS	RA	33	1978	3	0
Hveragerði	HVE	RA	66	1983	3	0
Hvolsvöllur	HVO	RA	66	1995	4	0
Írafoss	IRA	LV	220/132	1953	3/6	2
Ísafjörður	ISA	OV	66	2014	4	0
Keldeyri	KEL	OV	66	1979	2	0
Klafastaðir	KLA		220/16	2013	1/4	1
Kolviðarhóll	KOL		220	2006	7	0
Korpa	KOR	OR	132	1976	6	0
Kópasker	KOP	RA	66	1980	1	0
Krafla	KRA	LV	132	1977	4	0
Lagarfoss	LAG	RA	66	2007	5	0
Laxá	LAX		66/33	1937	6/1	1
Laxárvatn	LAV	RA	132	1977	3	0
Lindarbrekka	LIN	RA	66	1985	1	0
Ljósafoss	LJO	LV	66	1937	6	0
Mjólká	MJO	OV	132/66	1980	1/4	1
Nesjavellir	NES	OR	132	1998	6	0
Neskaupstaður	NKS	RA	66	1994	3	0
Ólafsvík	OLA	RA	66	1980	1	0
Prestbakki	PRB	RA	132	1984	3	0
Rangárvellir	RAN	RA	132/66	1974	8/7	2
Rauðimelur	RAU		132	2006	3	0
Reykjanes	REY	HS	132	2006	3	0

Substations	KKS code	Co-owner	Voltage [kV]	First year in service	No. of switchyard bays	Number of transformers
Rimakot	RIM	RA	66/33	1990	1/5	1
Sauðárkrókur	SAU	RA	66	1977	3	0
Selfoss	SEL	RA	66	2005	5	0
Seyðisfjörður	SEY	RA	66	1957	2	0
Sigalda	SIG	LV	220/132	1977	7/1	1
Silfurstjarnan	SIL	RA	66	1992	1	0
Steingrímsstöð	STE	LV	66	1959	1	0
Stuðlar	STU	RA	132/66	1980	3/5	2
Sultartangi	SUL		220	1999	6	0
Svartsengi	SVA	HS	132	1997	4	0
Teigarhorn	TEH	RA	132	2005	3	0
Varmahlíð	VAR	RA	132/66	1977	3/1	1
Vatnsfell	VAF		220	2001	2	0
Vatnshamrar	VAT	RA	132/66	1976	3/5	2
Vegamót	VEG	RA	66	1975	4	0
Vestmannaeyjar	VEM	RA	33	2002	4	0
Vogaskeið	VOG	RA	66	1975	3	0
Vopnafjörður	VOP	RA	66	1982	1	0
Þeistareykir	THR		66	2013	1	0
Þorlákshöfn	TOR	RA	66	1991	2	0
Öldugata	OLD		132	1989	3	0

* RA=RARIK (Iceland State Electricity)
OV=Orkubú Vestfjarða (Westfjord Power Company)
HS=Hitaveita Suðurnesja (Sudurnes Regional Heating)
LV=Landsvirkjun (The National Power Company)
OR=Orkuveita Reykjavíkur (Reykjavík Energy)