



# Annual Report 2016

**FINGRID**

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# Contents of the annual report and reporting principles

Fingrid's annual report for 2016 will be published in electronic format on the company's website. The annual report also includes Fingrid's corporate responsibility reporting and the corporate governance statement.

Fingrid draws up the consolidated financial statements and interim reports in accordance with IFRS reporting standards accepted by the European Union and in accordance with the Finnish Securities Market Act. The consolidated financial statements include the parent company Fingrid Oyj and its wholly owned subsidiaries Finextra Oy and Fingrid Datahub Oy. The consolidated associated companies are Nord Pool AS (ownership 18.8%) and eSett Oy (ownership 33.3%). The annual review and the financial statements of the Group's parent company and its subsidiaries are prepared in accordance with the Finnish Accounting Act and the guidelines and statements of the Finnish Accounting Standards Board. The information on personnel is based on the calculation systems used by human resources management, and the calculation of the relevant information is in compliance with the general guidelines of the Finnish Accounting

Standards Board concerning the preparation of annual reviews. The environmental data is collected from the information reported to the authorities and from our own data collection systems. An external emissions trading verifier has verified the company's carbon dioxide emission report.

Corporate responsibility reporting focusses on the main economic, social and environmental impacts of Fingrid Group's operations. In its reporting, Fingrid applies the international GRI G4 (Global Reporting Initiative, Core) reporting guidelines such that standard disclosures required by the guidelines and indicators required by sector disclosures for the energy industry are reported. The boundaries of the social and environmental data do not include the associated companies. The reported data is compiled in a GRI Content Index. Requirements for corporate responsibility reporting by state-owned companies are also taken into account. The annual report stands for a Communication on Progress (COP) report in compliance with the UN's Global Compact initiative.

# Review of the CEO

## Major steps towards a new energy system

The journey towards a new, more electricity-dominated energy system continues to gain momentum. During 2016, two important records were broken in the Finnish electricity system. In early January, the consumption of electricity throughout Finland reached the level of 15,100 megawatts.

Another national record was broken in August, when the production of wind power in Finland exceeded 1,200 megawatts. Later in the year, it even reached 1,300 megawatts. This is concrete proof of how wind power is gaining importance in our power system. Wind forecasts are an increasingly important daily tool for Fingrids control room.

All in all, 2016 was a very busy and successful year for us. System security of the transmission grid stayed at an excellent level. We also succeeded in serving the electricity market by securing the efficient use of transmission capacity. Power flowed freely from one country to another, driven by price signals. We have made major efforts to improve the reliability of cross-border transmission connections, and now this work is bearing fruit. The number of disruptions was decreased significantly and they are also shorter.

We have put forth ideas about how to control the future power system. We are strong proponents of a market-based system, and we believe the best solutions will be found when the operators, driven by market prices, can make decisions based on their own priorities. Demand side management is one area where answers are being sought to respond to

rapid changes in the production or consumption of electricity, even within seconds.

Fingrid plays an active part in this development. Pilot schemes are rapidly advancing to practical, commercial solutions. Roughly half of our new frequency controlled reserves for disturbances come from demand side management and the other half from electricity production. This doubles the amount of demand side management compared with the previous year. We seek to promote consumers possibilities to actively participate in the electricity market by developing a real-time market, by building the datahub to support the markets and by actively participating in the work of the national smart grid working group.

Fingrid has carried out capital investments at a brisk pace. In 2016 we had 27 substation and 13 transmission line projects underway. It is an indication of the organisations excellent capabilities that all the projects have progressed according to the set schedules and budget. Furthermore, we have maintained excellent cost effectiveness, as proven by the great results in international benchmarking studies. The flagship of our capital investments is the 400 kilovolt Coastal Power Line from Pori to Oulu, Fingrids all-time biggest investment, costing EUR 260 million and completed at the end of the year. This transmission connection will play a key role when building up a more environmentally sustainable power system not just in Finland, but in all of the Baltic Sea area. The next mega project is already ahead of us: in late 2016 we agreed with our Swedish colleagues on building an AC transmission connection between our countries. This is a project of great national importance.

Transitioning to the new energy system of the future requires international cooperation, where the overall

rules are being laid down in Brussels. Concrete co-operation with the other Nordic countries and the Baltics is reflected daily in our operations. Even if there are bumps in the road at times, the collaboration constantly produces new solutions that help to maintain high levels of system security and promote well-functioning markets. In the Baltic Sea region, this has for some time been based on close inter-TSO co-operation. In future, political decision makers should bear their responsibility for this work better.

In a changing and increasingly global operating environment, the sustainability of TSO operations is crucial. Our commitment to the UNs Global Compact initiative in 2016 is a testimony to how important sustainability and transparency are to Fingrid. We implement our strategy in strict compliance with the principles of corporate sustainability.

Our finances are in good shape, despite significant capital expenditure and operational development in recent years. Fingrids profitability was stronger than projected. The consolidated turnover amounted to EUR 586.1 (600.2) million and profit for the financial period to EUR 138.7 (103.6) million. The financial result was positively impacted by raises in grid pricing, increased consumption of electricity and cross-border transmission as well as decreased loss power and reserve costs.

Nevertheless, we have never forgotten that Fingrid exists for our customers and for Finnish society as a

whole. Fingrid celebrated its 20th anniversary with our customers in September. To mark the anniversary, our visual image received a facelift to communicate openness, activeness and a modern feel. Judging by the feedback we have received, it can be said that our clients are as happy as ever with our operations and we enjoy their continued trust. At the same time, the expectations placed on us and our services are becoming increasingly demanding. We are happy to accept this challenge as part of our own development work. In future, you will be served by Fingrid personnel with even more insight into customers needs and a strong drive to find new solutions.

Fingrid delivers – now and into the future.  
Responsibly.

Jukka Ruusunen  
President & CEO



# Fingrid in brief

- Fingrid Oyj is a Finnish public limited company responsible for electricity transmission in the high-voltage transmission system in Finland.
- Fingrid's nationwide grid is an integral part of the power system in Finland. The main grid is the high-voltage trunk network that covers all of Finland. Major power plants, industrial plants and electricity distribution networks are connected to the grid.
- Fingrid guarantees a disturbance-free electricity supply in Finland. Fingrid ensures that the generation and consumption of electricity are always in balance and will build some 2,500 kilometres of new transmission lines and eight substations between 2017 and 2026.
- Fingrid's customers include grid companies, electricity producers, electricity consumers and electricity market parties. The company provides these groups with various services, such as connecting consumption and production to the main grid, transmission system security, imbalance power trade and imbalance settlement, well-functioning electricity markets, the production and exchange of electricity market information, and guarantee-of-origin certificates.
- The Finnish power system is part of the common Nordic power system. The Nordic system is connected to the system in Central Europe via high-voltage direct current (HVDC) transmission links. Finland also has HVDC links with Russia and Estonia.
- The transmission system owned by Fingrid encompasses approx. 14,600 kilometres of 400, 220 and 110 kilovolt transmission lines, plus 118 substations, four HVDC connections and 10 of the company's own reserve power plants.
- Fingrid is responsible for planning and monitoring the operation of the Finnish electricity transmission system and for maintaining and developing the system. The company also participates in the work of ENTSO-E, the European Network of Transmission System Operators for Electricity, and in preparing European network codes and network planning. The Nordic TSOs additionally have an unofficial co-operation forum called the Nordic CEO meeting.
- Fingrid develops new services to improve market efficiency. In spring 2015, Fingrid launched a project that will centralise information exchange between electricity retail sellers and TSOs into one service, called the datahub. The project also aims to clarify and enhance the business processes of electricity retail markets.
- Fingrid is owned by the State of Finland (direct holding 28.2%), the National Emergency Supply Agency (24.9%), Aino Holding Ky (26.4%), Ilmarinen Mutual Pension Insurance Company (19.9%) and other institutional investors (0.6%). Aino Holding Ky is owned by OP Insurance and pension entities (Pohjola Insurance Ltd, OP Life Assurance Ltd., OP Pension Fund and OP Pension Foundation), the State Pension Fund and Elo Mutual Pension Insurance Company.
- The company was established on 29th November 1996.
- Operations started on 1st September 1997.
- Turnover EUR 586 (600) million.
- Balance sheet total EUR 2.1 (2.1) billion.
- The bonds issued by Fingrid in the capital markets are listed on the London Stock Exchange.
- Fingrid owns 18.8 per cent of electricity exchange Nord Pool AS.
- Fingrid owns the balance services company eSett Oy together with Statnett and Svenska Kraftnät. The company will offer imbalance

settlement services to parties on the Finnish, Norwegian and Swedish electricity markets as of spring 2017.

- The Finnish, Swedish, Norwegian and Danish TSOs have decided to establish an organisation in charge of joint Nordic operational planning,

Nordic RSC (Regional Security Coordination), in Copenhagen, Denmark in late 2017.

- Number of personnel at year-end: 334 (315), with 291 (280) permanent employees.
- Fingrid is headquartered in Helsinki, and the company also has offices in Hämeenlinna, Oulu, Petäjävesi, Rovaniemi and Varkaus.

## Fingrid Oyj, organisation

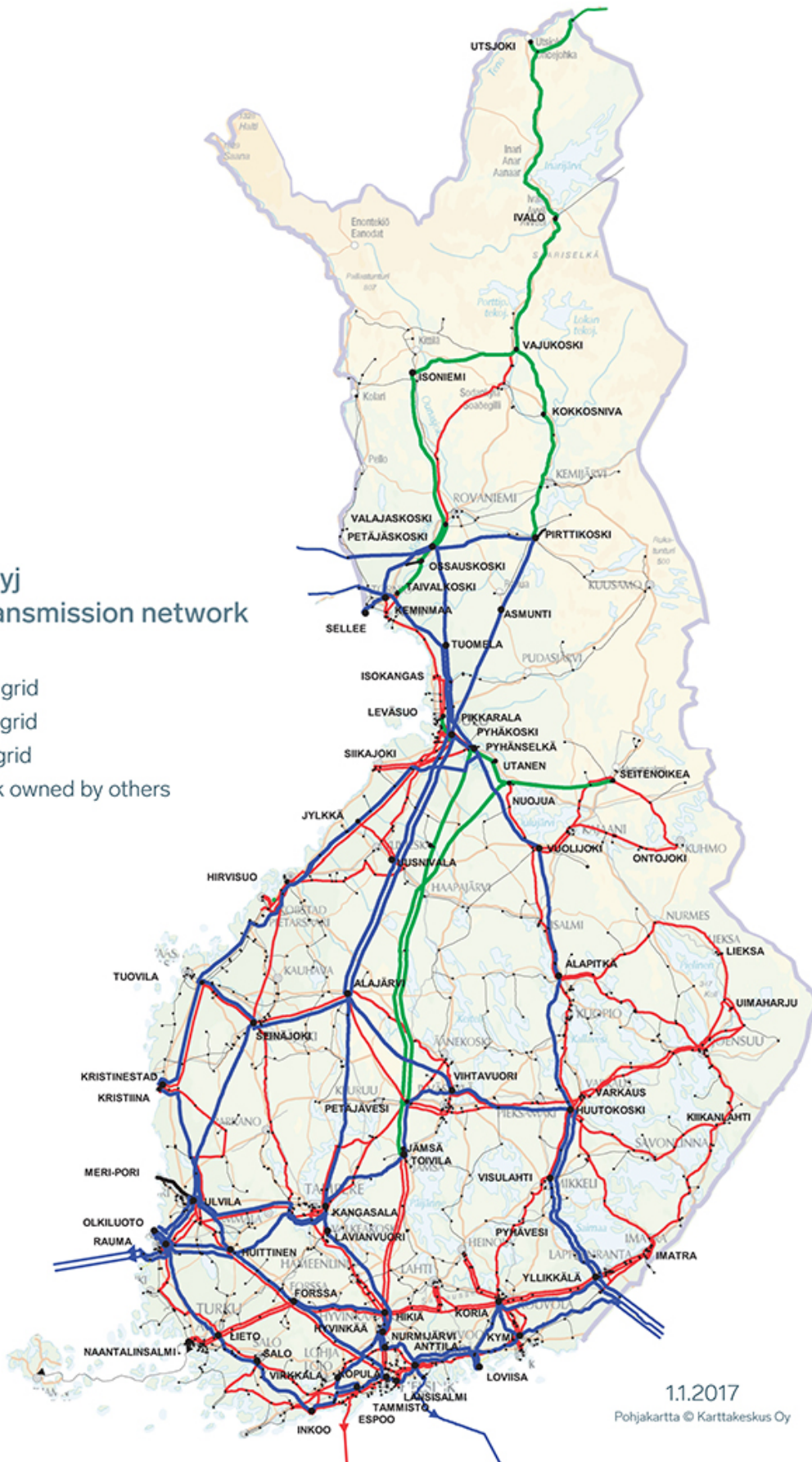




# Power transmission grid

Fingrid Oyj  
power transmission network  
1.1.2017

- 400 kV grid
- 220 kV grid
- 110 kV grid
- network owned by others



11.2017  
Pohjakartta © Karttakeskus Oy



# Climate change and transformation of the energy system

Greenhouse gas emissions must be rigorously limited through global measures. The EU's energy and climate policy, which is effective until 2030, is based on significant reduction targets for emissions, an increase in the share of renewable energy, and an improvement in energy efficiency. The climate agreement concluded in Paris is seen as a breakthrough in abating climate change. The energy industry plays a key role in combatting climate change.

The structure of electricity production will change as the share of renewable energy grows and adjustable fossil-fuel condensing power production decreases. Balancing supply and demand will be a challenge as condensing power declines, since its replacement power sources – wind and solar – do not react to market price signals. Various national subsidy mechanisms will disrupt the operations of the European electricity market.

Clean energy technology is globally one of the fastest growing industries. The target of a carbon-neutral society introduces opportunities to invest in

and develop new forms of technology in the areas of, for instance, electricity storage, low-emissions production and emissions sequestration. The growth of renewable energy will bring new operators into the market. With the increase of decentralised production, the role of distribution network companies will grow in controlling the system. Co-operation between TSOs and distribution network companies will be increasingly important in future.

The transformation in the structure of electricity generation due to efforts to mitigate climate change will result in a scarcity of power, flexibility and system inertia (the force that keeps the power system from disintegrating and evens out rapid fluctuations in the system). The significance of demand-side management is increasing. Storms intensified by climate change may cause widespread and sustained damage to electrical networks. This requires a high level of preparedness from Fingrid, as part of continuity management.

# Security of energy supply and electricity dependency

Growth in electricity consumption is projected to be moderate in the Nordic countries. Consumption is growing in services and households. The availability and affordability of electricity is extremely important for energy-intensive industries.

More than half of the energy consumed in the European Union comes from imported sources. The main themes of the EU's Energy Security Strategy are the diversification of external energy supply, improvement of the energy market design, completion of the internal energy market, and energy savings. The EU member states each have their own energy strategies, with the starting points being their national targets pertaining to the climate, competitiveness and self-reliance.

Grid development takes place as a collaborative effort in the Baltic Sea region, and transmission connections to northern continental Europe are being reinforced, which increasingly integrates the Nordic countries with the rest of Europe.

In addition to the increasing risks linked with the changing structure of power generation, society's capability to sustain disturbances in the supply of electricity is decreasing. Severe disturbances in the power system are among the most serious security threats to a modern society. Even in this respect, transmission system operators (TSOs) are expected to co-operate closely across national borders.

# Globalisation and sustainability

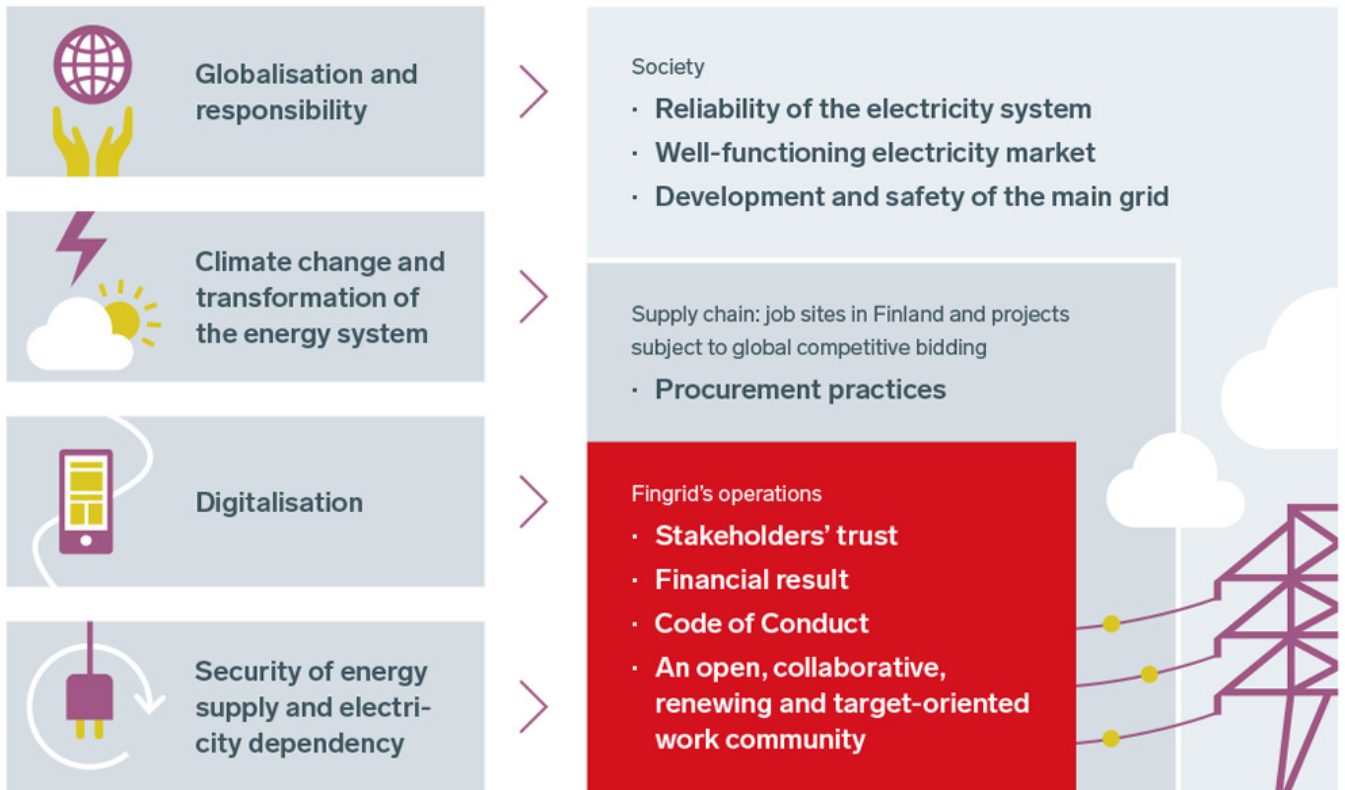
China is becoming the worlds largest economy and Asia the most important economic area in the world. Political and economic power is shifting from the West to the East, and from North to South. Europes relative competitiveness is weak, which poses a threat to the implementation of climate and energy policies dependent on capital investments. On the other hand, the EU has successfully created the worlds largest electricity market.

Major climate and energy programmes will attract more operators in the equipment and contractual market from outside of Europe. Global sourcing means longer international supply chains and increasing sustainability requirements. The mobility

of the workforce makes energy companies international players.

The global financial market offers a well-managed company with a high credit rating good opportunities for flexible and affordable financing. Instability in the financial markets, particularly in the euro zone, continues, and global volatility is also affecting Finland. Regulations concerning corporate finance and social corporate responsibility are increasing on both a national and global scale. Transparency is more and more important, environmental awareness continues to grow in importance, and environmental regulation becomes ever more stringent.

## Megatrends and key issues for Fingrid's operations and the areas affected



# Digitalisation

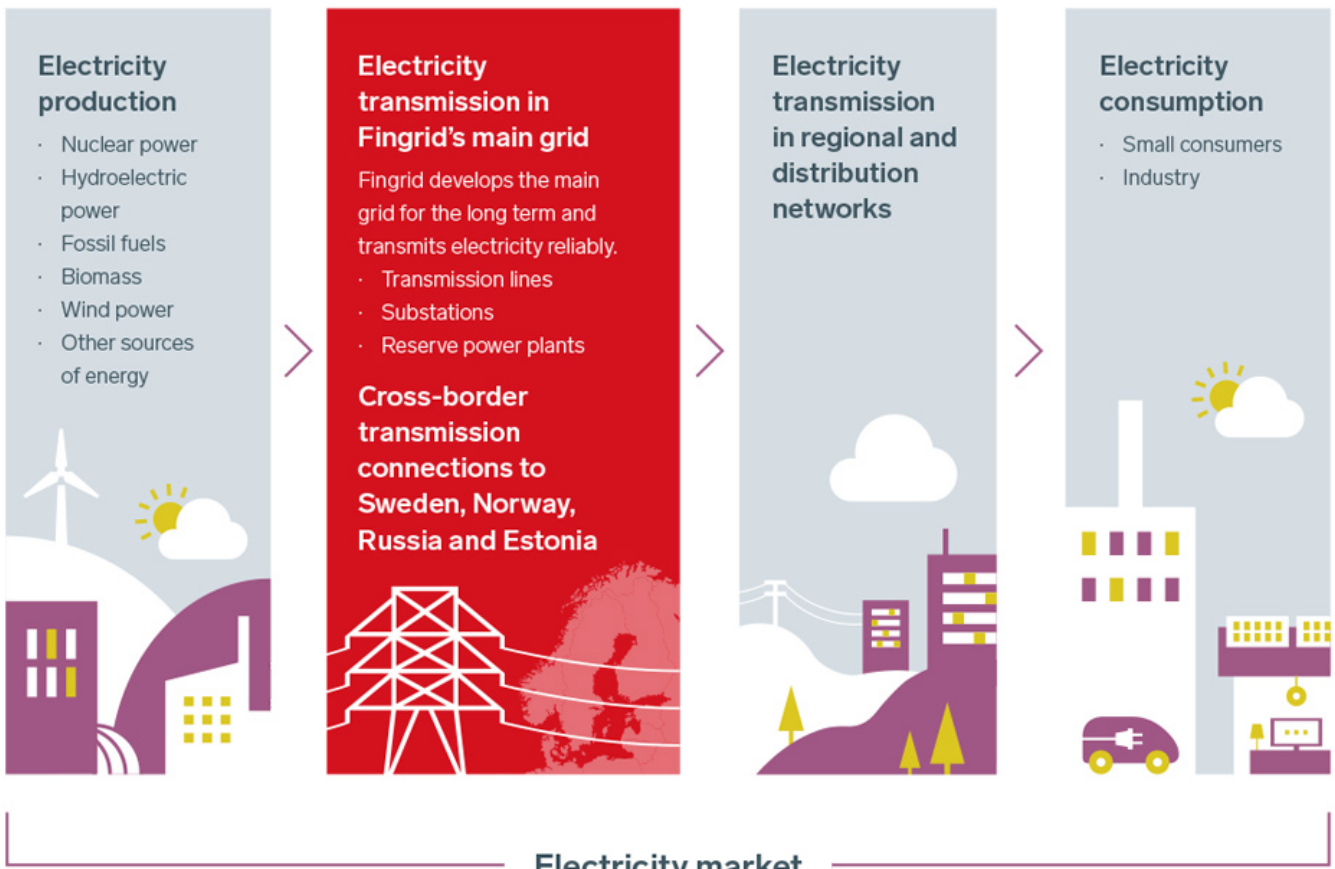
According to some estimates, by the end of the current decade, seven billion individual devices and 30 billion industrial, logistics and monitoring and control system devices will be connected via the internet. The internet that previously connected people to each other and to services is becoming the internet of everything.

Mobile-integrated, device- and individual-based information technology is changing peoples day-to-day lives, corporate management and business models. Digitalisation is changing the nature of work and enhancing the efficiency of data acquisition and processing. Digital production processes are replacing human workforce in people-dominated industries.

Digitalisation brings opportunities to improve the profitability of operations and creates a wide range of new e-services. As retail markets become digitalised, the need to compile and transfer measurement and control data for consumer-based decentralised production and consumption will grow significantly. Growing solar power and other modes of decentralised small-scale production and consumption will become an essential tool in power balance regulation. This, combined with the smart grid technologies enabled by digitalisation, will give rise to new business models. On the other hand, business continuity is increasingly dependent on ITC systems and requires constant vigilance in combatting cyber threats, as well as comprehensive data security solutions.



## Fingrid's role - from electricity production to consumption



Fingrid actively promotes the electricity market

- Information exchange services
- Datahub
- Balance services
- Energy development
- Market development

# Stakeholder co-operation

We maintain daily contact with our stakeholders, and being open to their expectations is an essential part of our sustainability approach. The operations of a transmission system operator are bound to affect several third parties. Customers and Finnish society as a whole expect Fingrid to secure a reliable supply of electricity and to enable a well-functioning electricity market. Our customers expect affordable services that meet their needs. The key issues for Fingrids owners include corporate responsibility, cost-effectiveness and shareholder value. Our personnel values equal treatment, the well-being of the work community, occupational safety and opportunities for developing their expertise. Occupational safety is

particularly important for Fingrids suppliers. Land owners and people living close to our transmission lines expect us to operate sustainably as regards land use and environmental issues.

In our stakeholder engagement, we operate openly, honestly and equally. An appointed executive is in charge of our customer perspective, and the heads of functions oversee stakeholder activities within their own areas of responsibility. We engage in dialogue, regularly survey the opinions of our stakeholders and publish material on our operations as openly as possible for all to see.

## Fingrid's key stakeholders and channels of engagement



### Customers

- Customer service and continuously inclusive collaboration
- Customer magazine and newsletters
- Customer committees: Advisory Committee, Grid Committee, Market Committee and Operations Committee
- Customer events
- Feedback questionnaires and discussions
- Annual customer and stakeholder questionnaire



### Authorities and organisations

- Working groups, committees and co-operation forums
- Statements
- Participation in the Power and District Heat Pool
- Regular contact with the Energy Authority



### Personnel

- Daily interaction and performance reviews
- Annual personnel survey
- Intranet
- Great Place to Work survey every two years
- Personnel events
- Events for the personnel association
- Alumni collaboration
- Best summer job questionnaire



### Landowners and neighbours

- Events for the general public
- Landowner bulletins
- Map feedback service
- Farmari agricultural fair and "Yhteisillä linjoilla" publication
- Feedback surveys about completed investment projects



### Shareholders

- Annual General Meeting
- Board work
- Information for shareholders



### Financers and credit rating agencies

- Regular interaction and annual reviews with credit rating agencies
- Regular co-operation with financers and debt investors
- Stock exchange releases



### Contractors and service providers

- Meetings and feedback sessions
- Training and audits
- Occupational safety magazine "Safety on the lines"
- Joint development projects
- Asset management theme day and OHS seminar



### Other partners

- Contribution to ENTSO-E; RSC and other industry collaboration
- R&D projects
- Collaboration with learning institutes
- Recruitment fairs
- Reputation&Trust survey of policymakers
- Reputation&Trust survey of business and technology experts



### Media

- Press events
- News and stock exchange releases
- Personal contacts
- Media monitoring and publicity analysis
- Media encounters
- Annual media barometer



### Society

- Contact with decision-makers
- Latest news and news releases
- Social media
- The Tunthinta mobile app for monitoring electricity prices
- The Fingrid Online mobile app for keeping track of the power system and outages
- Reputation&Trust survey of the general public

www.fingrid.fi

## Fingrid's vision and values

The task of a transmission system operator is to work for the benefit of its customers and society. Fingrid's vision is to be a forerunner in transmission system operation on the increasingly international electricity market. Our corporate values – transparency, impartiality, efficiency and responsibility – guide our practical operations and choices every day.

Fingrid delivers. Responsibly.

To be a forerunner in transmission system operation (Vision)

Transparency, Impartiality, Efficiency, Responsibility in all our operations (Values)

## Our way of working

We set ambitious goals for our operations.

Our corporate culture is open, collaborative, renewing and target-oriented and complies with good governance practices.

We develop our operations in a balanced way and with a long-term approach, from the perspectives of our customers, society, finances and personnel.

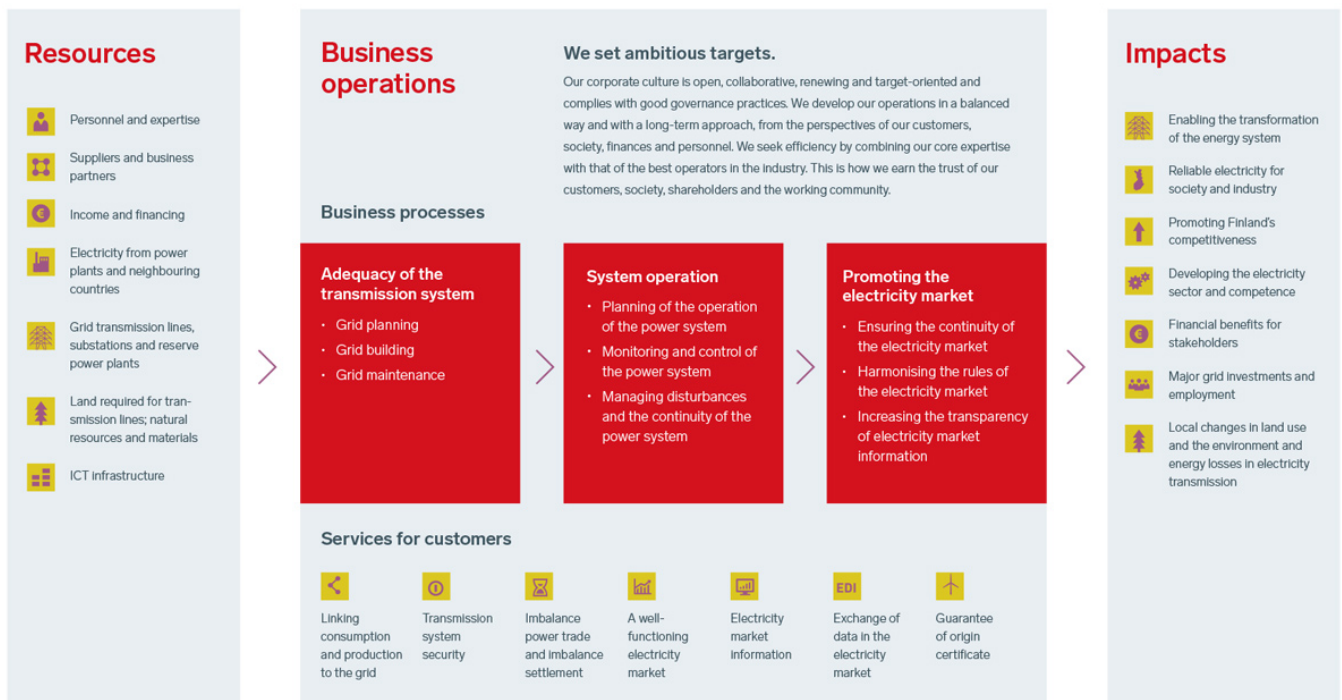
We seek efficiency by combining our core expertise with that of the best operators in the industry.

This is how we earn the trust of our customers, society, shareholders and the work community.

# Mission and business model

Fingrid ensures disturbance-free availability of electricity in Finland now and in future. We are involved in developing Finnish society and the well-being of all citizens. We have a positive effect on the daily lives of Finns via our mission: to transmit electricity reliably, to actively promote the electricity market, and to develop the transmission system over the long term.

## Fingrid's business model



# Strategy

In preparing and executing Fingrids strategy, we have examined the requirements set by our vision as fairly as possible from four different perspectives. Our organisation model is based on a matrix structure which supports effective implementation and comprehensively engages the personnel. We set ambitious targets for everything we do. Our corporate culture is engaging and innovative and target-oriented. We develop our operations in a balanced way and with a long-term approach, from the perspective of our customers, finances, processes and personnel. We seek efficiency by combining our core expertise with that of the best operators in the industry. This is how we earn the trust of our customers, society, shareholders and the work community.

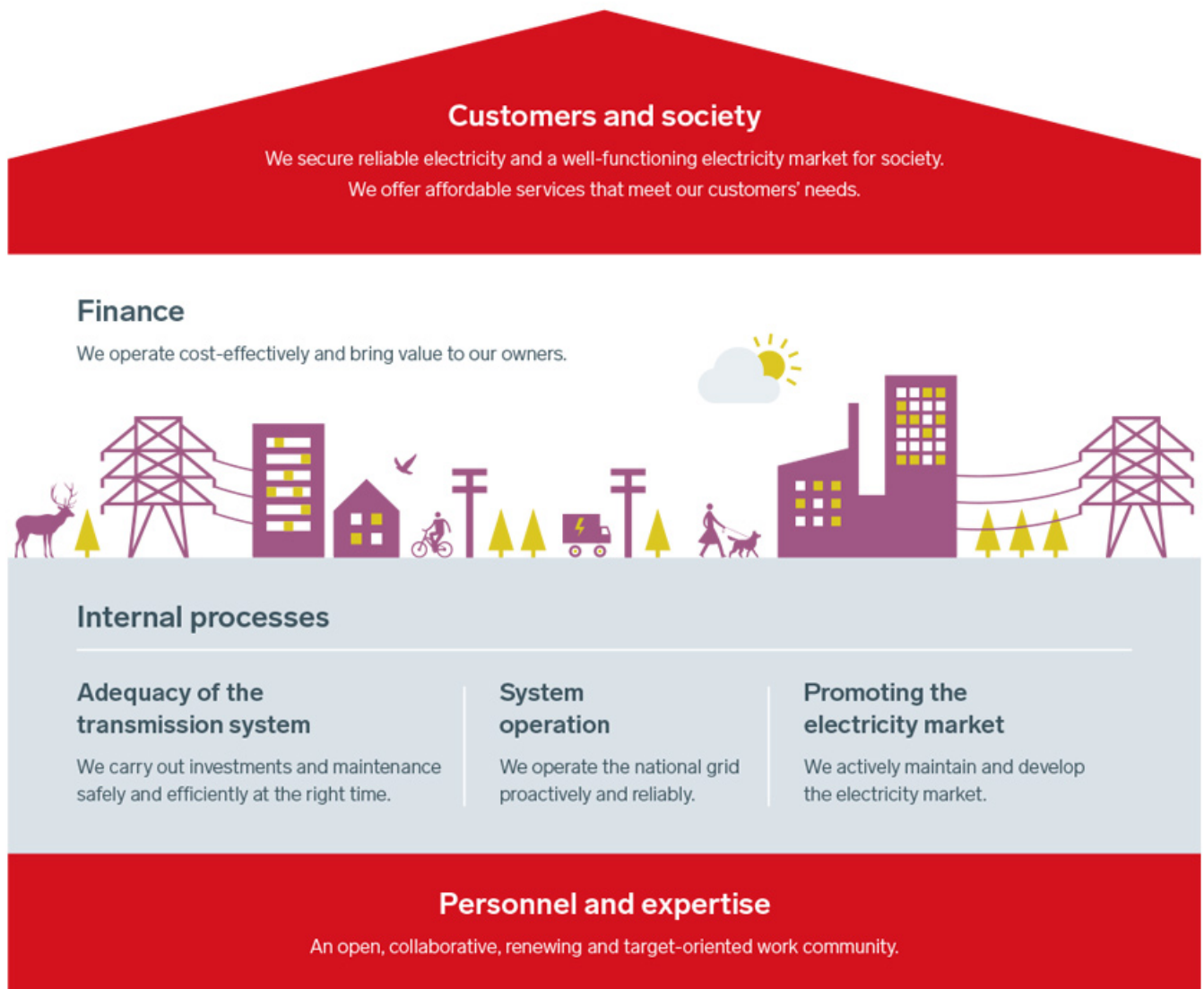
Our customers and stakeholders expect us to secure a reliable electricity supply for the nation, as well as a well-functioning electricity market. We develop our services based on our customers needs, and at the same time we ensure affordable grid transmission pricing. We are an active communicator to our customers.

Fingrids financial management is based on the premise that we respond to the expectations of society in the long term, that we operate cost-effectively and that we provide value to our owners. We are a forerunner in transmission system operation on the increasingly international electricity market. That means continuously developing our operations and our productivity. Successful financing activities secures our capital investments and operational maintenance.

Our internal processes are described according to Fingrids main duties.

- Managing system security requires proactive and reliable electricity transmission. Our objective is to keep the nation powered and to ensure that the consumption and production of electricity in Finlands power system is always balanced. We work around the clock, seven days a week to ensure this.
- We promote the functioning of the electricity market by taking active part in its maintenance and development. We strive to ensure adequate international transmission connections, we provide sufficient information about the market and we manage balance services efficiently. We actively participate in the preparation and implementation of European grid legislation. We build functional wholesale and retail markets and develop real-time markets.
- In order to ensure transmission capacity, our goal is to make investments in the grid effectively and, from the perspective of the national economy, at the right time, and to look after the condition of the grid. We build and maintain the grid safely and in a flexible manner in order to meet societys electricity production and consumption needs. Capital expenditure over the ten-year period of 2017–2026 will amount to approximately EUR 1 billion.
- We develop our personnel and expertise to ensure that our work community is productive, innovative and healthy. An HR point of view is included in the development and transformation of business operations, strategy and corporate culture to ensure that the entire organisation bears its responsibility. We ensure the expertise and progress of personnel through clearly outlined managerial and expert career paths and by developing know-how to support these.

## The perspectives of Fingrid's strategy



## Strategic projects

At the core of Fingrid's strategy implementation are the following multi-year, company-level strategic projects:

- Responding to the transformation of the Nordic electricity system
- Improving the reliability of cross-border connections
- Implementing European network codes

- Smart grid solutions that promote retail markets and transmission reliability
- Digitising business
- Renewing Fingrid's corporate culture

Each strategic project is assigned a person responsible on the executive management group level. We carry out strategic projects in the organisation as part of the annual action plan. The Board of Directors and executive management group regularly monitors the progress of the projects as part of its work.

We have set key targets by identifying matters that are essential to Fingrids strategy and the companys basic operations. Any needs for updates to the materiality analysis are assessed annually as part of the strategy process, based on an operating

environment and stakeholder analysis and on the strategy update. Fulfilment of the targets serves as the basis for executive managements and personnels remuneration.


### Strategy process, materiality analysis and target monitoring as an integrated whole










# Fingrid’s strategic targets and indicators








- = the set target was achieved / exceeded
- = close to the set target
- = below the set target level, but still a good result
- = below the set target, but result close to that of previous years
- = result clearly below the set target




	Our target in 2016	How did we do?	What are our targets in 2017?	UN Sustainable Development Goals
CUSTOMERS AND SOCIETY				
Impact of disturbances on the national economy and customers	Economic disadvantage of disturbances in the transmission grid to customers less than EUR 3.5 million.	<span style="color: #008080;">●</span> The economic disadvantage was EUR 3.1 million.	Calculation method changed due to regulation, target less than EUR 7.5 million; EUR 3.5 million acc. to the previous method.	








				
Customers trust in Fingrid	Target grade in the customer survey 3.7 (scale 1–5).	<ul style="list-style-type: none"> <li>The achieved grade was 4.0.</li> </ul>	Trust KPI in the customer survey 4.0.	  
Tariff level	ENTSO-E Overview of Transmission Tariffs in Europe: top three in the benchmark group of 16 countries.	<ul style="list-style-type: none"> <li>Fingrid ranked 4th.</li> </ul>	Target unchanged.	
FINANCES				
Credit rating	To maintain Fingrids credit rating at least at the A- level.	<ul style="list-style-type: none"> <li>Fingrids credit rating improved during 2016.</li> </ul>	Target unchanged.	

				
Dividend pay-out capacity	Dividend income in line with shareholders targets.	<ul style="list-style-type: none"> <li>● Dividend income in line with shareholders targets was achieved.</li> </ul>	Target unchanged.	 
Cost-effectiveness	To maintain the current solid cost-effectiveness and to continuously improve productivity.	<ul style="list-style-type: none"> <li>● Good cost-effectiveness was maintained.</li> </ul>	Target unchanged.	 
INTERNAL PROCESSES				
Implementation of capital investments	Implementation of the capital investment program-	<ul style="list-style-type: none"> <li>● The capex projects proceeded on</li> </ul>	Target unchanged.	

	<p>me concerning the transmission grid to support the Finnish climate and energy strategy: investment projects on schedule and within budget.</p>	<p>schedule and within budget.</p>		 
<p>Promoting the electricity market</p>	<p>The key electricity market development projects and services developed were realised as planned.</p>	<ul style="list-style-type: none"> <li>The projects were implemented mostly on schedule, and the key services met the quality standards.</li> </ul>	<p>The grade for developing the electricity market in the customer survey was 3.8.</p>	 
			<p>Timing of outages in the transmission connections with Sweden to decrease the impact on the electricity market. Target: &gt; 56%.</p>	

<p>Procurement chain</p>	<p>No significant deviations or problems in contractor obligation or employment relationship matters.</p>	<p>● No significant deviations or problems in contractor obligation or employment relationship matters.</p>	<p>Target unchanged.</p>	  
<p>Occupational safety</p>	<p>LTIF less than 5 by the end of 2018 (both Fingrid personnel and service providers).</p>	<p>● LTIF was 8.</p>	<p>Target unchanged.</p>	
<p>Land use and environment</p>	<p>No significant environment-related deviations.</p>	<p>● One major environment-related deviation occurred.</p>	<p>Target unchanged.</p>	 
<p></p>	<p>General grade of 'good' in landowner surveys.</p>	<p>● The general grade for the three completed transmission line pro-</p>	<p>Target unchanged.</p>	

		jects was around 4, i.e. 'good'.		
Efficiency in maintenance and physical asset management	Top three in international benchmark studies (ITOMS, ITAMS).	● Placed in the top three.	Target unchanged.	 
Operational efficiency	Top three in international operational benchmark studies.	● Very close to placing in the top three.	System security: System Average Interruption Duration Index in connection points less than 3 minutes.	 
			Sufficiency of the system reserves at least 99.99%.	 

PERSONNEL AND EXPERTISE				
Workplace atmosphere	Top grade in the personnel survey.	<ul style="list-style-type: none"> <li>The best grade was achieved.</li> </ul>	Target unchanged.	 
Leadership	Great Place to Work Finland survey, general series: Among the top 10 (survey every two years).	No survey in 2016.	Target unchanged.	 
Responsible operating methods	100% of Fingrid's personnel has passed the Code of Conduct online training.	<ul style="list-style-type: none"> <li>96% of Fingrid's personnel has passed the Code of Conduct online training.</li> </ul>	Grade 'good' for responsible operating methods in the personnel survey.	  





# Management system

The aim of Fingrid's management and leadership is to implement the strategy approved by the Board of Directors and achieve the business goals effectively, responsibly and sustainably. Internal control procedures enforcing corporate governance are applied in management and leadership.

## Matrix

Fingrid's operations are managed in a matrix of four perspectives: customers & society, finances, internal processes, and personnel & expertise. The internal processes consist of: ensuring transmission capacity, managing system security and promoting the electricity market.

The target setting and operational control for each strategic perspective is managed by an owner appointed by the President & CEO, supported by a steering group approved by the executive management group. The perspective owner acts as chair of the steering group and rules over any necessary teams and working groups under the control of the steering group. The targets and guidelines for each perspective are based on Fingrid's strategy and require the executive management group's approval.

The perspective owner is responsible for all major cost, revenue and investment forecasts related to the perspective, risk management, communications and stakeholder relations as well as for ensuring the quality and cost effectiveness of the IT system, information management and business solutions supporting the operations.

Personnel is organised according to function such that managers are in charge of the annual planning and budgeting of the tasks in their respective area

of responsibility and of implementing the action plans according to the business target set in the strategy.

The heads of functions are in charge of ensuring appropriate governance and decision-making procedures for their functions, as well as corporate responsibility, quality and cost effectiveness, correctness of the information required for monitoring the operations, controls, risks and implementing practical risk management measures in compliance with the principles of internal control and risk management and Fingrid's other guidelines.

## Instruction system

Fingrid's instruction system is composed of three levels: policies approved by the executive management group specify the principles approved by the Board of Directors and are complemented by the more detailed guidelines given by the perspectives and the business areas.

## Management principle documents approved by Fingrid's Board:

- Fingrid's Code of Conduct
- Management principles
- Corporate Finance and Financing Principles
- Internal control and risk management principles
- Main grid development and maintenance management principles
- Principles for managing system security
- Principles for promoting the electricity market

## Key events of 2016

### **Fingrid among the top four in an energy industry brand ranking**

Corporate brands are a topic of increasing interest amid the transformation of the energy industry. An international branding conference for the energy industry was arranged for the first time in Iceland during autumn 2016, where the industry's top brands competed for CHARGE awards. Fingrid made it to the final stages and eventually ranked among the top four brands in the transmission and distribution category.

The participating companies were assessed by various criteria in the CHARGE competition, including segmenting, uniqueness and business models. The candidates included both retailer companies engaged in direct trade with consumers and transmission and distribution companies. A total of 80 different brands from 20 countries were scrutinized. Of these, 15 were nominated in three categories (best energy brand, best green energy brand and best transmission or distribution brand). Fingrid was nominated in the 'best transmission or distribution brand' category.

# Personnel

The leadership and development of Fingrids work community aim at an open, social, innovative and goal-oriented corporate culture. Considerable demands are placed on personnel in an expert organisation, but on the other hand, people also have opportunities to take charge and accomplish goals in an industry that has a major impact on Finnish society. Engaging and responsible leadership aims at increasing the skills of leaders and promoting self-management.

Fingrids human resource management is based on the companys corporate values, management principles, HR policy and responsible operating methods. The companys long-term HR approach incorporates the personnel perspective in a balanced manner in the companys strategy and decision-making. Fingrid takes an engaging management approach in its flat matrix organisation in which a broad group of Fingrid employees are able to influence the strategy process.

A new HR policy was drawn up in autumn 2016. The HR policy defines the principles for practical implementation of the personnel & expertise perspective of the strategy in various areas of HR management. Management and leadership in the work community aims at continuously improving Fingrids performance. Core tasks should be taken care of effectively and productively, while also finding new and better ways of working and improving productivity. Talent management aims at meeting any future challenges by setting learning targets and by continuously developing a multi-skilled workforce. The management of workplace wellbeing aims at creating a continuously self-renewing work community at Fingrid which offers meaningful jobs and ensures the safety and wellbeing of its members. Fingrids workplace

atmosphere is open and engaging, and encourages bold action, presenting new varied ideas and constructive feedback and improvement suggestions.

In our work community management, we continued to invest in the development of supervisors and leaders, for example by providing personal coaching and sparring and by creating default training paths for supervisors. Focal areas in the training of supervisors and leaders included change management & leadership as well as emotional skills. A key area in 2016 in particular was the development and self management of experts. The entire expert staff completed so-called 270-degree appraisals, which were used as a basis for personal development plans. Personnel was also engaged in defining common rules for our work community: what type of expert work people would like to do at Fingrid and how everyone can develop further as a member of the work community. Fingrids corporate values were also updated during this process. Future updates will include the criteria of expert career paths to better comply with the demands of changing work life and our new work community rules.

Fingrids equal opportunity and non-discrimination plans were updated jointly with personnel representatives. The companys current status in equal opportunity and non-discrimination issues and the corresponding plan and its implementation are monitored annually during the HR reporting process. The surveys include various methods and channels, such as workplace atmosphere questionnaires, equal opportunity studies as well as feedback from management, supervisors and all employees.

### Criteria of the Fingrid work community

- I understand the importance of my work to the customer and society
- I work as a part of the team – I value, help and support others
- I take responsibility for my work, efficiency, innovation and achieving results
- I actively share my knowledge and skills and communicate so that others can understand me
- I am courageous and open to new ideas – I question the status quo and bring new solutions to the table
- I give and accept feedback – in a constructive way

Fingrids talent management efforts in 2016 included continued investments in continuous learning and competence development. Action was taken to support work rotation and several experts swapped their duties within the company. Good experiences of peer interaction between supervisors encouraged us to support mentoring among all other employee groups as well.

Employees were offered joint training co-ordinated at the company level, such as language courses, and individual proposals for supplementary training were also welcomed. Several people completed additional qualifications to enhance their expertise. Online training programmes were used throughout Fingrid on subjects such as data security and other security topics. The entire personnel received training on various IT systems and specialised tools. In 2016, each Fingrid employee received an average of 36 (37) hours of training. Fingrids ongoing broad and intensive projects also serve as training forums.

Innovation activities became a more and more integral part of Fingrids management system during 2016. An active innovation culture was promoted by encouraging all employees to actively participate in these activities. Examples of this include six brainstorming competitions to develop solutions for Fingrids key challenges and a virtual workshop where all employees were able to contribute, regardless of time and place, to the recognition and assessment of changes in Fingrids operating environment.

Workplace well-being was maintained through various campaigns and by supporting the physical

fitness and cultural events arranged by the personnel association. Fingrids employees have access to a wide range of comprehensive occupational healthcare and well-being services that aim to support their work capacity and well-being, regardless of the location. The starting point for well-being at work is to maintain the current favourable situation. The number of absences due to illness has been remarkably low for many years now, and the high age of retirement among the employees bears further testimony to their well-being. As in previous years, the number of occupational accidents at Fingrid remained low. A total of 2 (7) accidents took place, neither of which resulted in lost working time. Absences due to accidents or illnesses accounted for 1 (2) per cent of working time during the year.

Open communication and personal interaction are also part of supporting the well-being of personnel. A document management system was introduced to improve Fingrids information management and to better facilitate knowledge sharing and the integrity of information. Fingrids entire workforce came together on two personnel days. One took place in the spring and focused on physical well-being and encouraged people to try new workouts, while in the autumn we celebrated Fingrids 20th anniversary and reminisced about the history of Finland's transmission grid. The President & CEO additionally gave briefings at all of the companys business locations during the spring and autumn.

Fingrids personnel increased slightly during the year due to the companys new responsibilities and growth in the volume of its operations. New

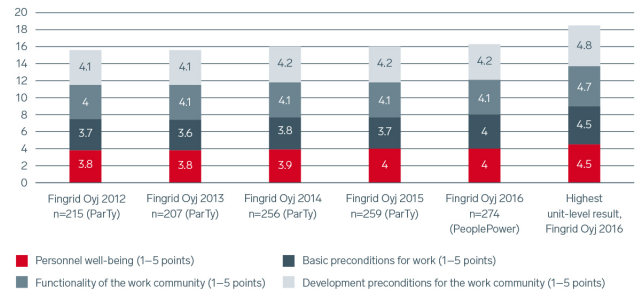
professionals were hired both in grid operation business processes and in corporate administration.

Various studies and surveys are carried out annually to support the development of the work community, including regular personnel surveys to gauge the workplace atmosphere. In 2016, we chose to replace the previous method with the PeoplePower® concept by Corporate Spirit. We wanted a new survey partner in order to gain new insights into HR development in areas such as personnel commitment and motivation regarding both their jobs and the company.

The excellent response rate of 93.2% indicates that Fingrids personnel is interested in actively contributing to the development of the operations. The results of Fingrids personnel survey score were significantly above the standard level in Finnish expert organisations in 2016. The PeoplePower® index for overall job satisfaction was at 80.9 (scale from 0 to 100) and the PeoplePower® rating was AAA (excellent). Only around six per cent of all the surveyed organisations annually achieve AAA, the highest rating.

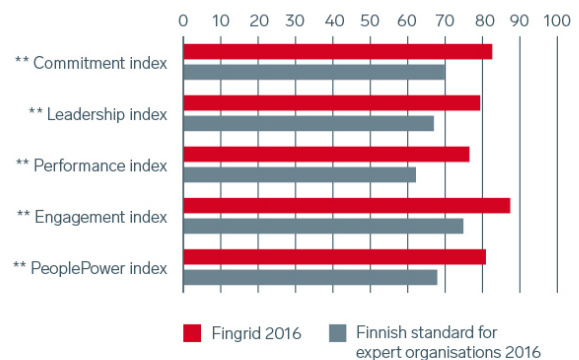
In order to attract new skilled employees, we took several measures to maintain and develop our employer image. For example, we invited for the first time ICT students to visit Fingrid and we participated in the Responsible Summer Job campaign competition, coming in fifth place this time. Fingrids recruiters made broad use of social media.

## Towards a better working community (ParTy) and PeoplePower key indicators



## Indices from the personnel survey

Picture: Fingrid scored significantly above the standard results in all the basic indices of the PeoplePower® survey. Indices of the personnel survey: personnel commitment, managerial work, performance, dedication and the PeoplePower® index.



\* = Statistically significant difference (95%)  
 \*\* = Very significant difference (99%) from the applied standard level  
 Scale 0-100, 100 = best

## Key events of 2016

### Fingrid 20 years

On the penultimate day of November 1996, Imatran Voima, Pohjolan Voima and the State of Finland signed the charter to found the transmission system operator. The deal signed on the last day of August in the following year, 1997, was the largest in Finnish history at that time. This is how Fingrid got its start. On 6th September 2016 Fingrid celebrated its 20 years of serving as a model of main grid operations.

To mark the anniversary, Fingrid completely updated its visual image, replacing the electric blue with a dynamic red. The new logo helps us create a streamlined and consistent image for Fingrid. We want to be transparent, active and modern. The new visual design is a key component of Fingrid's public image and communicates our trustworthiness, proficiency, co-operative spirit and capability to innovate.



### Dozens of young people got summer jobs at Fingrid

The chilly and rainy summer of 2016 did not bother our young summer staff. We offered a wide range of demanding jobs to more than 40 students from various disciplines. The jobs attracted a great deal of interest: we received more than 1,400 applications. Nearly all our business locations throughout Finland and also all functions, from technical tasks to Group administration, had summer employees. Teens less than 18 years of age also had a chance to experience working life for two weeks at Fingrid.

After a victorious 2015 in the Responsible Summer Job campaign, Fingrid scored well in a tough competition also in 2016, taking the fifth place. The young summer employees particularly appreciated Fingrid's fairness as an employer: we got the top score in this category.



# Corporate responsibility

Fingrids operations have a direct impact on the well-being of Finns. We understand how significant our work is for society and how important it is to ensure the responsibility of our business practices. For us, corporate responsibility means that in securing a reliable supply of electricity for society, we are also taking care of people and the environmental impacts of our operations, and complying with good governance practices.

Fingrids strategy and its various perspectives form the starting point for our corporate responsibility work. Corporate responsibility is a key element in the implementation of our strategy and in our business expertise. By operating responsibly in all areas of sustainability we can best bring value to our stakeholders and ensure the acceptance of our projects by society.

We manage corporate responsibility as an integrated part of Fingrids management system. Corporate responsibility is a systematic, targeted component of our basic operations and annual cycle of management. Corporate responsibility is part of our planning of operations and an integral, strategy-based component when we assess development opportunities and risks and devise measures for the subsequent year. Corporate responsibility risks are part of our risk management.

Fingrids Board of Directors approves the companys **Code of Conduct** and monitors the companys compliance in operating responsibly. The Board is responsible for the CSR management systems and their integration into business operations. The CEO and the heads of functions are each responsible for corporate responsibility issues within their area of responsibility. Alongside profitability issues, social issues and environmental impacts are taken into account in a well-balanced way in all decision-

making and when assessing operations. Corporate responsibility is co-ordinated at the company level by the steering group for Fingrids finance and business development perspective, which is headed by the Chief Financial Officer. The steering group is supported by the companys business development working group, which is composed of development managers. A development manager is appointed to co-ordinate corporate responsibility work.

Each Fingrid employee commits to abiding by our common values and our Code of Conduct, which we have updated taking into account the renewal of our corporate culture. Our Code of Conduct is based on the United Nations Global Compact initiative and the principles guiding business operations and human rights. Our managers and the entire work community ensure that behaviour is in line with the Code of Conduct. A whistle-blower system managed by an independent third party is also available to personnel for reporting possible misconduct etc. We help new employees assimilate the Code of Conduct through online orientation.

Fingrid committed in 2016 to the United Nations Global Compact initiative. Our Code of Conduct is in line with the principles of this leading corporate responsibility initiative on human rights, labour, environment and anti-corruption. Our commitment to a voluntary global initiative further strengthens the strategic and operational integration of corporate social responsibility in our operating methods and supports the co-operation with agreement partners in promoting CSR. We require our contract partners to commit to our **corporate responsibility requirements**, and we monitor their fulfilment through a risk-based approach. We are likewise prepared to commit to the corporate



responsibility requirements set for Fingrid by our contractual partners.



Responsible procurement practices play a key role in our business model based on outsourcing. We ensure that we meet our obligations to investigate and our responsibility when using external workforce. Grid infrastructure construction and maintenance is subject to competitive bidding, and our work sites around Finland employ competent workforce also from abroad. We audit our work sites to verify compliance with contractor obligations, occupational safety and environmental management. The audits carried out during 2016 proved that the operations at our work sites are generally at a high level and that use of the electronic reporting system is extensive. The development areas identified in the altogether 15 audits performed were typically related to risk assessment and documentation. The progress made in rectifying them was monitored in work site meetings.

We performed seven corporate responsibility audits related to our international procurements. In three of these, our experts audited our direct contractual partners and the other audits were conducted by a third party. In addition, we performed one sub-supplier audit jointly with our direct contractual partner. The most important non-conformities identified during the audits were related to the working hours and pay of subcontractors, chemicals storage and the use of personal protective equipment, identification of environmental risks and proactive measures. We addressed the

shortcomings in accordance with the action plans drawn up by the suppliers and achieved concrete improvements in the responsibility of our supply chain.

In order to ensure the transparency and comparability of our operations, we have reported on our corporate responsibility in accordance with the international Global Reporting Initiative (GRI) framework since 2011. We apply the GRI G4 reporting framework using the Core in accordance option. The matters we have prioritised are presented in the **figure**, and our reported data is compiled in a GRI Content Index .

Human rights and the tax footprint continued to be current corporate responsibility topics in 2016. To ensure we understand our impacts on human rights, we made an assessment in compliance with the due diligence process recommended in the UNs Guiding Principles on Business and Human Rights. Based on the assessment, we updated our Code of Conduct and corporate responsibility requirements and made Fingrids human rights commitment a part of our Code of Conduct. We ensured that our personnel practices meet the human rights responsibility and developed further our operating models for informing and engaging landowners in power line projects. We also published a new brochure where we answer landowners frequently asked questions concerning power line construction.

As regards tax footprint reporting, Fingrid only operated in Finland and did not make any special arrangements to minimise its taxes. Our tax footprint is presented in the annual reports **Corporate finances, financing and risk management** section. Dividends are mainly paid to the State of Finland and to Finnish pension and insurance companies. The Social Enterprise Mark granted to Fingrid by the Association for Finnish Work bears testimony to Fingrids responsibility in handling its socially important task.

## Key events of 2016

### Impact of Fingrid's operations on the UN Sustainable Development Goals

In 2016, we defined how Fingrid's operations are linked to the UN Sustainable Development Goals published in 2015. Of the 17 goals, we contribute especially to the following:

- **Affordable and clean energy.** We secure reliable electricity and affordable grid transmission pricing for society. Society's demands for a reliable electricity supply are increasing and serious disturbances in electricity supply are the greatest safety threats. Our investment programme improves the reliability of electricity transmission. We also secure a well-functioning electricity market and we are forerunner in electricity market services.
- **Industry, innovations and infrastructure.** We maintain and develop vital electricity transmission infrastructure for the needs of our customers and society. The extensive investments included in our grid development programme create jobs worth hundreds of man-years of labour for our service providers. We are actively engaged in international co-operation and innovation, developing future technologies for our sector.
- **Climate action.** The transformation in the structure of electricity generation due to the efforts to mitigate climate change results in changes in the electricity system. We make it possible to connect new forms of energy production to the grid. We ensure the sufficiency of system reserves also in the future and prepare for a decline in flexible production capacity while at the same time developing the electricity market to meet the needs of a carbon-neutral electricity system. We minimise power losses that have a climate impact in our electricity transmission.

Our business also supports the following UN Sustainable Development Goals:

- **Gender equality.** We treat everyone with respect and fairness in accordance with Fingrid's Code of Conduct and we ensure equal ways of operating for both genders.
- **Decent work and economic growth.** We do our part to promote technology renewal, innovation and resource efficiency. We want to be one of Finland's greatest workplaces, with a thriving work community as our pillar. We promote responsible business practices throughout our supply chain.
- **Responsible consumption and production.** We ensure sustainable consumption and practices in our own operations and strive to set an example for others. In our power line projects, we primarily utilise existing right-of-ways. We recycle the waste of our work sites almost to 100%.
- **Life on land.** We want to reduce the harmful effects of our power line projects on biodiversity, landscape and land use. We encourage our service providers and suppliers to commit to environmentally responsible practices.
- **Partnerships for the goals.** As a transmission system operator, our operations impact many stakeholders and interaction for the benefit of customers and society is important. We combine our core competence with the best players and promote sustainable development and responsible practices globally through our procurements. We engage in international co-operation networks and sectoral co-operation as well as in research and development and school partnerships. We promote public-private partnerships. Fingrid is a member of the Ministry of Economic Affairs and Employment's smart grid working group, whose mission is to look into the opportunities smart grids can offer the electricity markets.



# Customers

Openness and trust and active interaction with our customers are important elements in our operations. They have become all the more important as the electricity market is undergoing a shift and the operating environment is changing at a fast pace.

In May, we published a discussion paper to open up a dialogue on the future of the electricity market. Its purpose was to express our concern about the weakening viability of the electricity market and to present concrete measures to stimulate the electricity market in order to ensure that the switch to a low-carbon electricity system is achieved cost-effectively for society as a whole. Customers embraced Fingrid's initiative, and we received more than 30 instances of written feedback from electricity market players. The topic was also discussed in several bilateral meetings, in Fingrid's customer committees and at customer events throughout the year. We wish to continue the discussion going forward. In addition, we have already launched pilot projects and concrete measures to reach the goals together with the players in the sector.

Our co-operation with our customers in the data hub development project has been very lively. This project, related to a future information exchange solution for the electricity retail market, has received a lot of positive feedback for being open and for engaging stakeholders in defining the processes. Customers are also aware of the magnitude of the change and the tight schedule. This has also raised some concern. Customers are primarily interested in the improvement in the quality of information preceding the rollout of the data hub. Webinars, guidelines and info sessions on preparing for the data hub are in the pipeline for next year.

The entry into force of European network codes pertaining to the transmission system and electricity market kept Fingrid and its customers busy during 2016. To clear the jungle of network codes, we created a network code forum, which is open to all players.

The new reactive power delivery terms that entered into force at the start of the year were a hot topic among grid customers. Due to the cabling of the distribution network, among other things, the volume of reactive power in the grid has grown to the extent where it is fair to allocate the costs for compensation to those who give rise to the need for compensation on a connection-point-specific basis. For some customers, complying with the new delivery terms has proven to be a challenge, and we have teamed up with our customers to devise solutions for this. In December, we also organised a Reactive Power Day where we presented the monitoring and invoicing principles for reactive power, and customers recounted their experiences with practical compensation solutions.

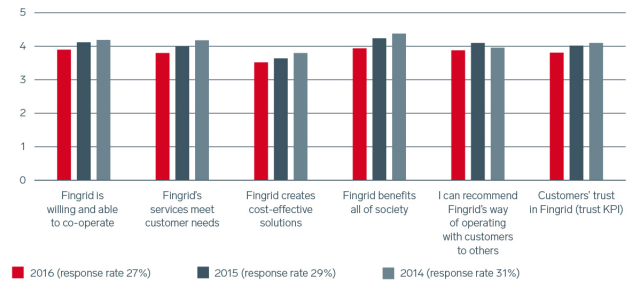
In 2016, we consulted with customers through a number of interviews and surveys in order to develop our operations. The results of these surveys show that our customers are fairly satisfied with us, but that their expectations are growing. Fingrid is expected to have greater insight into and a better understanding of its customers' business, cost-effectiveness and services that meet customer needs.

One key development area in our operations is electronic services, which is why we launched several new services during the year. We launched the ediel.fi portal, which enables the electricity retail markets information exchange operators to exchange information and ensures the effective

functioning of their communications. We made electricity quality measurement services available to TSOs to help them identify quality deviations and investigate detected fault situations. In the summer, we launched the most popular service on our website, the State of the power system, in the form of the Fingrid Online mobile app. In early 2017, the measurements describing the state of the power system will also be made available in the applications of our customers and third parties through an open interface. Going forward, electronic services will continue to be one of our development priorities. Our objective is to harmonise and clarify them further to ensure that our customers have

easy access to all of the information they require in one location.

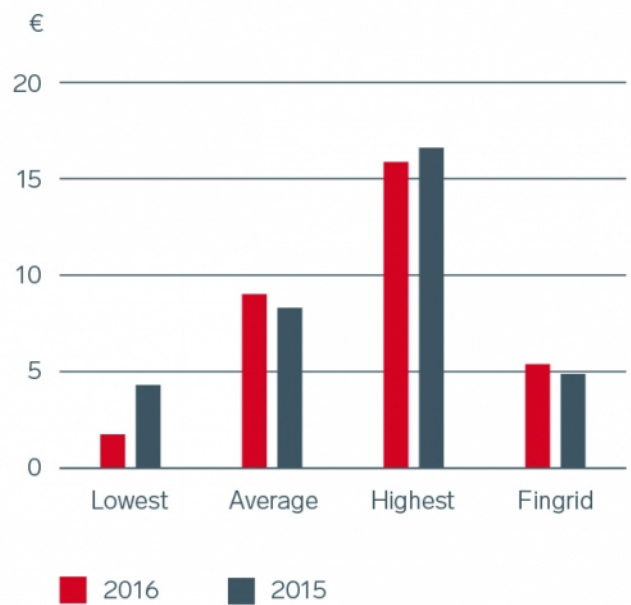
### Customers' trust in Fingrid



### Price of electricity service

Picture: Costs related to transmission system operation, such as investments, loss power, system services, but not directly related to transmission system operation, such as public service obligations, feed-in tariff for renewable energy, and peak load capacity. The comparison includes the EEA countries with a grid company in charge of both 110 kV and 400 kV structure.

The 15 countries included in the comparison are: Belgium, Czech Republic, Denmark, Estonia, Finland, France, Hungary, Iceland, Ireland, Lithuania, Norway, Poland, Romania, Slovakia and the UK.



## Key events of 2016

### **Customers praise smooth co-operation and willingness to develop the electricity market**

We measure the development of customer satisfaction annually. In our 2016 survey, our customers praised us for, among other things, the smoothness of co-operation and our strong efforts to develop the electricity market. However, there is still room for improvement in understanding our customers' business and their needs.

Customers' familiarity with Fingrid's operations increased clearly from the previous year. Seventy-one per cent of respondents know Fingrid's operations fairly well or very well, compared to 59 per cent a year earlier. At the same time, expectations towards Fingrid have increased. Customers expect Fingrid to have greater insight into and a better understanding of its customers' business and provide them with services that meet their needs. Seventy-three per cent of respondents would recommend our way of working with customers, compared to 75 per cent in the previous year.

According to the survey, the aspects that are most important to customers in Fingrid's operations are the equal treatment of customers, the cost-effectiveness of the solutions, services that meet customers' needs and Fingrid's willingness and ability to co-operate. Compared to the previous year, our customers were slightly more critical about Fingrid's performance in these areas. However, our customers gave Fingrid's operations a good overall score of 4.0 (on a scale of 1–5).

The data was gathered in the form of an email survey carried out by Innolink Research Oy. The response rate was 27 per cent.

# Customer committees and Advisory Committee

Fingrid has an Advisory Committee and three customer committees. The Advisory Committee serves as a channel of interaction between the company and its customers. Fingrid uses the committee to distribute information on its current affairs and plans. The representatives of the customer groups, in turn, can take a stand on the matters discussed within the committee and also introduce their own proposals to the agenda. The Advisory Committee deals with the company's entire field of operations and services offered to customers. The information dealt with by the Advisory Committee is openly available to all stakeholders. In 2016, the topics discussed in the Advisory Committee included, in particular, the shift taking place in the electricity system and electricity market and the opportunities brought by digitalisation and smart grids.

The customer committees deal with matters in their respective sectors. The Operations Committee discusses and expresses opinions on matters related to the development of procedures used for the operation of the power system and maintenance of system security. The Market Committee is an advisory discussion forum which assists Fingrid in the development of the Nordic and European electricity markets. The Grid Committee serves as a co-operation body in system development and in the management of system-related property.

*Names are not in the same order as persons in question are presented in the pictures.*

## Advisory Committee



Jukka Ruusunen (Fingrid Oyj), Juhani Järvelä, chairman (Oulun Energia Oy), Riikka Hirvisalo-Oja (Caruna Oy), Esa Hyvärinen (Fortum Oyj), Raimo Härmä (Kymenlaakson Sähköverkko Oy), Jarmo Kurikka (Nurmijärven Sähkö Oy), Ilkka Latvala (Metsä Board Oyj), Jarmo Myllymäki (Elenia Oy), Stefan Sundman (UPM-Kymmene Oyj), Tuomas Timonen (Kemijoki Oy), Jussi Jyrinsalo, secretary (Fingrid Oyj), Pekka Manninen (Helen Oy), Jarmo Tanhua (Teollisuuden Voima Oyj).  
Missing from picture: Jukka Mikkonen (Stora Enso).

## Grid Committee



Jyrki Havukainen (Kilpilahden Sähkösiirto Oy), Ismo Heikkilä (Kemijoki Oy), Jorma Heikkilä (Metsä-Fibre Oy), Risto Lappi (Vantaan Energia Sähköverkot Oy), Arto Nikkanen (LE-Sähköverkot Oy), Matti Ryhänen (Savon Voima Verkko Oy), Henrik Suomi (Caruna Oy), Seppo Tupeli (Herrfors Nät-Verkko Oy Ab), Kari Kuusela, chairman (Fingrid Oyj), Meri Viikari, secretary (Fingrid Oyj), Petri Parviainen (Fingrid Oyj).

## Operations Committee



Hannu Halminen (Boliden Harjavalta Oy), Teppo Härkönen (Helen Sähköverkko Oy), Turo Ihonen (Elenia Oy), Reima Päivinen, chairman (Fingrid Oyj), Jonne Jäppinen, secretary (Fingrid Oyj), Teuvo Jouhten (PVO-Vesivoima Oy), Jussi Karttunen (Fortum Power and Heat Oy), Ismo Reinikka (Loiste Sähköverkot Oy), Harri Salminen (Turku Energia Sähköverkot Oy).

## Market Committee



Asta Sihvonen-Punkka, chairman (Fingrid Oyj), Mika Laakkonen (Kymppivoima Hankinta Oy), Satu Viljainen, secretary (Fingrid Oyj), Janne Laine (Energia Oy), Mikko Lepistö (SSAB), Sami Oksanen (Nord Pool Finland Oy), Raimo Peltola (Fortum Power and Heat Oy), Ari Sormunen (Kuopion Energia), Anne Särkilahti (UPM-Kymmene Oyj), Harri Tiittanen (Power-Deriva Oy).  
Kuvasta puuttuu Jouko Isoviita (Oulun Energia).



# Corporate finances, financing and risk management

The main long-term goals for our financial guidance are:

- Good cost-effectiveness and continuous improvement of productivity in order to keep service prices at a moderate level. Our goal is to keep our cost-effectiveness on a par with the best in Europe and grid pricing in the best 25 per cent of the comparison group.
- A high credit rating to ensure the availability of diversified long-term financing, low financing costs and good debt-service capacity.
- Creating shareholder value by keeping the companys adjusted income at the level permitted by regulation and by paying dividends in compliance with shareholders profit targets.

We aim to guarantee the stable pricing development of our services through long-term planning of the companys finances, capital expenditure, risk management and financing. Short-term financial targets do not guide our investment decisions or other decisions. The companys consistently high rankings in annual international comparison studies on the cost-effectiveness and quality of grid operators, and the international certification for the management of physical assets (ISO 55001) granted to Fingrid serve as proof of the cost-effectiveness of our operations and our effective management of costs and other risks related to grid assets.

We set the pricing for our services one year at a time, striving for development that is as consistent as possible, regardless of uncertainty in the markets. However, major volatility on the market may necessitate price adjustments even within a

single year. A considerable share of the income collected by Fingrid is used for domestic investments. In addition to this, other types of expenditure covered by the companys income include services procured from suppliers, payroll, compensations for landowners and financiers, taxes and, finally, reasonable dividends to the owners, i.e. the State of Finland and domestic pension and insurance companies. In managing the companys finances, the Corporate Finance and Financing Principles approved by Fingrids Board of Directors are complied with.

## Financial position

Groups turnover was EUR 586.1 (600.2) million. Grid service income increased to EUR 382.4 (333.0) million, as a result of the change in grid pricing enacted at the start of the year and due to the growth in electricity consumption. Electricity consumption totalled 85.1 (82.5) terawatt hours. Fingrid transmitted 68.6 (67.9) terawatt hours of electricity in its grid, which represents 77.5 (77.1) per cent of all electricity transmitted in Finland. Imbalance power sales amounted to EUR 153.9 (137.1) million. The growth in imbalance power sales resulted from an increase in the volume of imbalance power and higher imbalance power prices. Cross-border transmission income from the connection between Finland and Russia increased to EUR 24.0 (11.2) million. This was due to the new dynamic tariff structure that was introduced as well as to increased imports from Russia. Fingrids congestion income from connections between Finland and Sweden declined to EUR 37.5 (86.8)

million due to weakened hydrological conditions, which significantly decreased the number of congestion hours. Fingrids congestion income from the links between Finland and Estonia amounted to EUR 2.4 (4.2) million. Congestion income will no longer be reported in Fingrids turnover as of the beginning of 2016. Other operating income totalled EUR 12.7 (5.2) million. The growth in other operating income mainly resulted from the EUR 6.3 million in recognised congestion income, in compliance with the regulation concerning the costs from maintaining cross-border capacity and countertrade.

The Groups total costs amounted to EUR 442.2 (418.6) million. Imbalance power costs increased from the previous years level to EUR 121.7 (98.2) million, due to the increase in the volume and price of imbalance power. Loss power costs amounted to EUR 57.6 (68.6) million. The declining loss power costs have been affected by the lower price of loss power procurement and the slightly lower volume of loss power. The average price of loss power procurement was EUR 43.87 (48.22) per megawatt hour. The cost of reserves to safeguard the grids system security decreased to EUR 50.5 (54.7) million. The reason for the decreased cost was an interruption in the procurement of the automatic frequency control reserve until August, as well as the lower procurement cost of frequency controlled reserves for normal operation and disturbances due to high availability on the markets. Depreciation amounted to EUR 99.2 (94.1) million. Grid maintenance costs grew to EUR 24.1 (19.2) million. The maintenance costs were increased by the periodical felling of trees around substations and the trimming of trees at the edges of transmission line right-of-ways. Personnel costs increased as the payroll expanded, due to new operations and increased statutory duties and due to higher employer contributions in additional personnel expenses, and amounted to EUR 28.6 (25.8) million.

The Groups operating profit was EUR 192.0 (162.6) million. To recognise changes in the fair value of electricity derivatives and the currency derivatives related to capital expenditure and other operating expenses, EUR 35.4 (-24.3) million was recorded in operating profit.

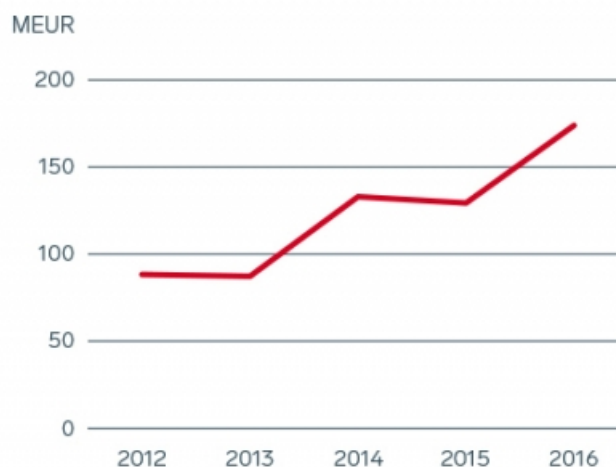
Net financial costs in accordance with IFRS were EUR 18.7 (33.7) million, including a change of EUR -0.3 (-13.3) million in the fair value of financial derivatives.

The Groups profit before taxes was EUR 173.9 (129.3) million. The biggest differences from the last year are explained by changes in the market value of derivatives (EUR +72.7 million), the growth in grid service income (EUR +49.4 million), and a change in the reporting of congestion income (effect EUR -84.6 million). The profit for the year was EUR 138.7 (103.6) million. The equity to total assets ratio increased and was 36.4 (33.5) per cent at the end of the review period.

The parent companys turnover was EUR 581.4 (592.4) million, profit for the financial year EUR 103.9 (123.7) million and the distributable funds EUR 176.0 million.

By the companys own calculations, the return according to the regulatory model that governs grid operations amounts to a deficit of around EUR 40 million for 2016.

## Profit before taxes



Our tax strategy is to be a responsible and exemplary tax payer. In accordance with our main principle, we pay and report the companys taxes and tax-based payments on time and without the use of tax planning. Our goal is for the companys taxes and tax-based payments to reconcile with the companys operations in terms of time. Operational

tax matters are handled by the Groups finance function, which reports to the Groups Chief Financial Officer. In addition to our in-house resources, we also use external experts when necessary for assistance in tax matters and in

making decisions. In handling tax matters, we comply with applicable legislation and regulations, and we communicate with the tax authorities in a professional manner in keeping with Fingrids values.

## Direct economic value generated and distributed (€)

2016



<span style="color: red;">■</span>	Income from customers .....	599,780,155
<span style="color: darkgrey;">■</span>	Payments to suppliers .....	312,394,445
<span style="color: grey;">■</span>	Remuneration to personnel.....	30,131,309
<span style="color: lightgrey;">■</span>	Remuneration to financiers and shareholders .....	21,058,652
<span style="color: yellow;">■</span>	Support in public interest and taxes.....	26,240,719
<span style="color: teal;">■</span>	Undistributed added value for developing Fingrid's operations .....	209,955,030

2015



<span style="color: red;">■</span>	Income from customers .....	606,403,565
<span style="color: darkgrey;">■</span>	Payments to suppliers .....	296,765,659
<span style="color: grey;">■</span>	Remuneration to personnel.....	27,210,758
<span style="color: lightgrey;">■</span>	Remuneration to financiers and shareholders .....	112,738,413
<span style="color: yellow;">■</span>	Support in public interest and taxes.....	31,289,733
<span style="color: teal;">■</span>	Undistributed added value for developing Fingrid's operations .....	138,399,002

<b>Fingrid's tax footprint, EUR</b>		<b>2016</b>	<b>2015</b>	<b>2014</b>
<b>Taxes payable</b>				
	Income tax	25,780,172	30,807,079	20,202,952
	Unemployment insurance contributions	853,024	482,819	580,287
	Social security contributions	460,905	438,785	436,274
	Real estate tax	409,145	393,259	427,408
	Electricity tax on auxiliary power	18,978	9,858	9,766
<b>Taxes payable total</b>		<b>27,522,224</b>	<b>32,131,799</b>	<b>21,656,685</b>
<b>Taxes to be collected and remitted</b>				
	Value added tax, net remitted	50,406,643	38,876,622	36,847,515

	Electricity tax (incl. emergency-preparedness contribution)	38,471,425	36,245,597	33,508,431
	Tax prepayments	6,968,506	6,775,996	6,525,519
	<b>Taxes to be remitted total</b>	<b>95,846,574</b>	<b>81,898,216</b>	<b>76,881,465</b>

The summary includes taxes and charges that Fingrid is under legal obligation to pay or to collect the tax or payment in question. However, taxes that are included in the purchase price of a product or service and which Fingrid is not under legal obligation to declare are not included in the summary data. For 2016, all taxes and similar charges have been paid in Finland. The Group did not have any operations outside Finland during the periods presented here.

## Foremost uncertainty factors and risks to Fingrid and society

Since the company plays a significant role in Finnish society, the impact of risks is assessed from both the company and society's perspective. The following have been identified as strategic risks:

## Strategic risks - risks to society and to Fingrid



One of the company's biggest business risks and the biggest risk where society is concerned is a major disturbance related to the functioning of the power system. A widespread disturbance in the power system may be caused by several simultaneous faults in the grid or in electricity production. A disturbance can also result from the combination of a technical fault and human operating error, from an unexpected meteorological phenomenon, work error, accident, vandalism or deliberate intrusion in critical IT systems. The extent or duration of the disturbance can be increased by a severe fault, appearing in the company's operation control system or other system, that hinders the operation of the grid. A major disturbance can cause significant financial and physical damage to Fingrid and society in general. Through capital investments in the transmission grid and reserve power, we are prepared for a widespread disturbance affecting Finland or the Nordic power system. We develop the operations together with other transmission system operators. In our strategy, we focus on the diverse utilisation of the operation control system, expedited disturbance clearing and management of power shortages. We prepare for disturbances through continuity management, procedural guidelines, continuity plans and exercises, and by building up various reserves. Fingrid limits its

financial claims liability in all cases of disturbances through contracts and insurance policies.

A poorly functioning electricity market is a significant risk for Fingrid and society. The reasons that may lead to the materialisation of this risk are a lack of regional energy policy co-ordination, market-distorting state subsidies and problems in the formation of the price of electricity. The impacts can be seen as a lack of investments and the exit of adjustable capacity from the markets due to unprofitability. In electricity market disturbances, a price cannot be calculated for electricity on the electricity exchange to guide production plants and electricity consumption. Efforts are being made to manage the risk by promoting market integration on the domestic and Nordic level. Promoting demand-side management, developing smart grid solutions for the retail market, increasing cross-border transmission capacity and carrying out investments that make it possible to maintain Finland as a single bidding area reduce the risks faced by the electricity market.

From the point of view of society and Fingrid, the most significant environmental risks are related to environmental damage and the failure to anticipate the environmental obligations set for the company's operations. We consider fuel and oil leaks and tank and transformer fires to be the most concrete risks.

The key contingency measures for these environmental risks are proactive assessment of environmental impacts, monitoring of changes in legislation, prevention of accidents by technical means, contractual terms related to environmental issues and auditing.

Electrical and occupational safety risks are linked to the electrical safety of the transmission grid, especially in connection with construction and repair work. Electrical safety risks may also affect by-standers. The reason for a risk being realised may be, for example, human error or an accident close to live components, an error occurring in construction work, damage or vandalism to live structures or carelessness close to live components. Consequences of the materialisation of such a risk can include a severe hazard to people, serious injury, periods of sick leave, inability to work, disability or death. An accident may also cause electricity outages. We constantly improve the safety of the transmission grid by promoting safe ways of working and developing, for example, technical solutions, work methods, skills and communications.

## Risks to society

Investments can sometimes take place at the wrong time. The reasons for incorrect timing of capital investments may be, for example, changes in the overall economic situation, regulation, or in electricity consumption and production, a postponement of a permit process, lack of resources or strike. Changes in energy policy goals can affect investments. Unsuccessful timing may cause restrictions in the electricity market whereby the market fails to operate efficiently. We carefully plan and build key projects to strengthen the cross-border transmission connections and the grid, and take into account the long-term effects on the market through regularly updated grid plans. Co-operation with customers, Nordic transmission system operators, other stakeholders and cross-national decision-making bodies reduces the risk of incorrect timing.

Long-term transmission capacity restrictions may be caused by, for example, technical failures or limitations related to system security and other

operators. Restrictions and outages in power transmission may cause financial harm to customers and society. We manage the risk by securing the critical parts of the transmission grid and cross-border connections and by means of efficient outage planning. We maintain disturbance-clearing readiness by ensuring know-how and developing back-up systems. For example, outages are timed so that they have minimum financial harm to society.

A problem or error in the production of a service or the functioning of technology can cause significant harm to a customer. The consequences may be seen as a disturbance in the services produced by the power system or in the electricity market. Errors in Fingrids guidelines or decisions may also cause harm. For the customer, this harm may take the form of loss of income, material damage, personal injury, or unnecessary investments. Fingrid has limited its liability in the grid service contract in situations where the customer may have suffered harm.

## Risks to Fingrid

Fingrids operations are subject to official regulation and supervised by the Energy Authority. Risks related to the unfavourable development of official regulation, such as changes in Finnish or European regulation or legislation, can weaken the company's financial position or its opportunities to pursue the objectives related to the development of the electricity market. We aim to establish effective co-operation and interaction models with the various stakeholders and to contribute actively to the reports and working groups of authorities and to increase understanding of grid operations.

Financing risks include currency risks, interest rate risks, commodity price risks, liquidity and refinancing risks, and credit risks. Financing risks can be caused by a major deviation in our operating environment or business, disturbances in the capital and money markets, by the realisation of counterparty risks in terms of derivatives or investments, by the realisation of credit risks in operations or disturbances in payment transactions. Liquidity risks can be caused by, e.g., an unexpected increase in market-based costs or an unexpected decrease in income. The goal is to limit risks through



internal control, a high and stable credit rating, and a diverse financing structure with an even maturity profile. We aim to restrict unanticipated increases in costs or decreases in income by enhancing the Groups financial guidance and forecasting, and by assessing its financial latitude. We use derivative contracts to hedge against changes in the price of electricity. The counterparty risk related to obligations of parties having a contractual relationship with Fingrid is limited contractually, by defining limits and by regularly monitoring the financial position of the counterparties. More information about financing risks can be found in section 3.3. of the consolidated financial statements.

Personnel risks concern the maintenance of expertise. We strive to limit personnel risks by the companys strategic long-term personnel planning, targeted training programmes for personnel and high-quality communication with stakeholders. Developing deputy systems and occupational safety is part of our personnel planning. We strive to develop competence in the energy industry.

ICT risks can materialise as a result of an accident in ICT hardware facilities, long-term inoperability of telecommunications or a serious ICT system failure. Such a situation may also be caused by a work error or breach of data security. The incident may immediately and significantly harm the companys operations and also affect societys functioning if the grids operation or the electricity markets functioning are disturbed. We prepare for these risks through sufficient and solid ICT expertise and by ensuring that the operations are secured in terms of hardware facilities, telecommunications and systems. We also ensure sufficient expertise in terms of service providers. We have drawn up continuity plans for the most critical systems and we monitor and anticipate possible data-security and cyber-security threats.

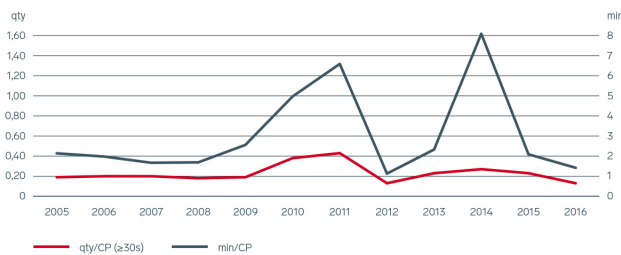
Asset risks cover significant damage to Fingrids assets, such as widespread failures or failures rendering significant assets beyond repair. A permanent failure of significant assets, such as the grid, a reserve power plant or a submarine cable, may cause extensive damage. Other causes of damage may include other significant and unanticipated events such as storms, protests or war. We manage asset risks through grid safety planning, geographical diversification, preventive maintenance management, comprehensive insurance policies for the key grid components, detailed specifications for projects and maintenance management, quality control and the use of proven technology and suppliers.

Reputation risks can be caused by, for example, serious disturbances or accidents, changes in prices, redemption of land areas or delayed grid investments. Serious accusations directly linked to the companys operations or various reputation risks in the media may increase critical discussion about the companys operations. We strive to reduce these risks by means of effective risk and change management as well as responsible, transparent and impartial operations, high-quality communication and active stakeholder dialogue.

Fingrids associated companies are long-term holdings and are covered by the companys overall risk management system. The associated companies only slightly increase the risks to Fingrid Oys financial position, result and cash flow, as their operations are minor compared to the operations of the parent company. Risks related to associated companies include unfavourable regulatory development, incorrect timing of investments, financing risks, poorly functioning electricity market and ICT loss.

# Power system

## Interruptions at connection points due to grid disturbances



Finlands electricity consumption rose 3.2 (-1.1) per cent on the previous year and totalled 85.1 (82.5) terawatt hours in 2016. Fingrid transmitted a total of 68.5 (67.9) TWh of electricity in its grid, representing 77.3 (77.2) per cent of the transmission volume in Finland (consumption and inter-TSO).

The electricity import and production capacity was sufficient to cover the peak consumption during the year. According to our measurements, electricity consumption peaked at 15,100 (13,500) megawatts on 7 January 2016 between 5 and 6 p.m. During that peak consumption hour, Finland generated 10,800 megawatts of electricity and the remaining 4,300 megawatts was imported from neighbouring countries. In peak consumption situations, Finland was dependent on electricity imports. During the peak consumption period, electricity was imported from Sweden (2,414 MW) and Russia (1,468 MW) using nearly full transmission capacity. At the same time, electricity was also imported from Estonia (435 MW) to Finland. Domestic combined heat and

power plants and hydro power plants still had available capacity during the periods of peak consumption. The availability of electricity in Finland was thus not in danger even during peak consumption periods and the power system functioned reliably also during the peak. Peak-load capacity was not used during the period of peak consumption.

Electricity transmissions between Finland and Sweden consisted mostly of large imports to Finland during the year under review. In the early part of the year, the electricity transmission between Finland and Estonia was dominated by exports from Finland to Estonia, and towards the end of the year, by imports from Estonia to Finland. Electricity imports from Russia to Finland grew slightly compared to the previous year. There are major intraday variations in import volumes, however. The maximum transmission capacity was available almost throughout the year, with the exception of the annual maintenance work carried out at the Vyborg DC station and on the Russian grid.

The planned maintenance shut-downs of transmission connections between Estonia, Sweden and Russia were on a normal level in 2016. Transmission capacity between Sweden and Finland was partly limited due to, among other things, the construction of a new 400 kilovolt power line and substations in northern Finland.

Countertrade	1-12/ 16	1-12/ 15	10-12/ 16	10-12/ 15
Countertrade between Finland and Sweden, €M	2.5	0.8	0.3	0.2
Countertrade between Finland and Estonia, €M	0.1	0.8	0.0	0.0
Countertrade between Finlands internal connections, €M	1.2	2.2	0.3	0.6
Total countertrade, €M	3.9	3.8	0.6	0.9

Our mission is to supply the electricity generated by power plants that are connected to the grid to our customers reliably and in a state of high quality. We continuously monitor the reliability of electricity transmission. As in the previous year, our transmission reliability rate remained at an excellent level during the year under review and was 99.999 (99.999) per cent. The importance of our electricity transmission reliability is illustrated by the fact that the cost of a nationwide major disturbance to customers and society at large would be in the region of EUR 100 million for each hour of outage.

During summer, the number of disturbances due to thunder exceeded the average, and the resulting multi-phase disturbances caused harm to the process industry. Otherwise the number of disturbances remained at the normal level. We allocated increased resources to determining the DC transmission links susceptibility to disturbances. DC transmission link failures declined slightly, and the time required for investigating the disturbances was substantially shortened. We raised the grids disturbance-clearing readiness a total of three times in 2016, mainly due to the prolonged cold period in January.

Countertrade costs totalled EUR 3.9 (3.8) million. Countertrade refers to special adjustments made to manage electricity transmission which are used to eliminate short-term bottlenecks i.e. areas where electricity transmission is congested from the grid. Fingrid guarantees the cross-border transmission it has confirmed by carrying out countertrades, i.e. purchasing and selling electricity, up until the end of the 24-hour usage period. The need for countertrade can arise from, for example, a power outage or disruption in a power plant or in the grid.

An outage in a connection point in the grid caused by a disturbance in Fingrids electricity network lasted an average of 1.4 (2.1) minutes, which is clearly shorter than the ten-year average. The estimated cost of the disturbances was EUR 3.1 (3.5) million.

Transmission outages in connection with investment projects mostly affected Ostrobothnia and northern Ostrobothnia. The outages were challenging and required careful advance planning and good cooperation with our customers. The outages were handled successfully.

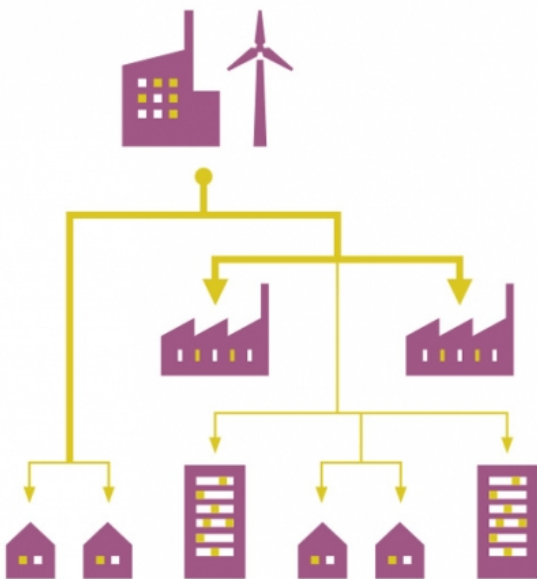
Reserves required to maintain the power balance of the power system were procured from Finland, the other Nordic countries, Estonia and Russia. More reserves were sold to Sweden than in the previous years. The availability of reserves was mostly good, but challenging situations arose, for example, during floods, when hydro power plants could not be utilised as they normally can. The costs of reserves remained clearly below the budgeted level. New operators have entered the reserve procurement scene, and consumer participation in the reserve market has increased. Nordic grid companies continued using the automatic frequency control reserve to restore the deteriorated frequency quality. A maximum reserve of 300 megawatts, of

which Fingrids share was up to 70 megawatts, was maintained for the selected hours.

**The volume of transmission losses in the Finnish grid decreased from the previous year and was 1.3 (1.4) terawatt hours. This is 1.5 (1.6) per cent of the total volume of transmitted electricity.** The decrease is attributable to declined electricity imports from Sweden compared to the previous year, and lower ITC volumes. The annual variation of losses is affected by the Nordic electricity production situation, such as sufficiency of hydropower.

### Centralised electricity system

### Decentralised electricity system



<b>Power system operation</b>	<b>2016</b>	<b>2015</b>	<b>2014</b>
Electricity consumption in Finland, TWh	85.1	82.5	83.4
Fingrids transmission volume, TWh	68.6	67.9	67.1
Fingrid's loss power volume, TWh, G4-EU12	1.3	1.4	1.3
<b>Electricity transmission Finland–Sweden</b>			
exports to Sweden, TWh	0.3	0.2	0.15
imports from Sweden, TWh	15.7	17.8	18.1
<b>Electricity transmission Finland–Estonia</b>			
exports to Estonia, TWh	3.1	5	3.6
imports from Sweden, TWh	0.7	0.05	0.05
<b>Electricity transmission Finland–Russia</b>			
imports from Russia	5.9	3.9	3.4

## Key events of 2016

### **The balancing power price rose momentarily to a high level early in the year**

The price of balancing power reached the level of €3,000/MWh for one hour on 22 January 2016. This the highest balancing power price ever in Finland. Colder-than-anticipated weather increased electricity consumption during the morning hours and substantially increased the need to balance the power system.

We take care of maintaining the balance between electricity consumption and production in Finland's power system through balancing power and power system reserves. Electricity market operators participate in the balancing power market and can freely price their balancing power bids. During the balancing power price peak, all available market-based balancing power bids were utilised to balance the power system. However, a high balancing power price has no direct impact on the electricity bill of households. Those balance responsible parties whose power balance was out of balance during the hour in question must pay the higher price.

### **Power and District Heat Pool turned 60**

The Power and District Heat Pool celebrated its 60th anniversary in spring 2016. The Power and District Heat Pool can be deemed to have been established on 12 April 1956, when the Power and District Heat Section (currently Power and District Heat Pool) held its first meeting. Its task is to guide and promote company-specific preparations and readiness plans for power supply, i.e. energy production, transmission and distribution. The Pool is a voluntary co-operation body of authorities and energy companies, whose role is to ensure the operational readiness of the nation's power supply in normal circumstances, during serious disturbances and in exceptional circumstances. We play a significant role in the Power and District Heat Pool, as its president and secretary are from Fingrid.

The operational readiness of the Pool has been tested through various exercises during its existence. The VALVE (Valot verkoon 2014) major disturbance exercise organised to test the nationwide restoration of electricity supply in the event of an outage covering the whole of Finland gained high visibility. For the exercise, the power was cut off momentarily in the city of Rovaniemi in autumn 2014. The exercise will be resumed in 2017, when the national JÄÄTYVÄ 2017 exercise will test contingency plans and co-operation in Northern Savo in the form of a fictional two-day drill. The set-up for the exercise is a widespread and long-lasting disturbance of the grid and distribution networks following a serious meteorological phenomenon.

### **Nordic Regional Security Coordinator (RSC) set up in Copenhagen**

The organisation in charge of joint Nordic operational planning was set up in 2016 to further deepen Nordic TSO cooperation in the changing power system and operating environment. The organisation benefits the electricity market operators by optimising and maximising transmission capacities and helps identify operational situations that could potentially weaken system security in advance on the Nordic level. The organisation of transmission system operators' regional operational planning will also become binding in the network codes and by the decision of ENTSO-E, which represents the EU's transmission system operators responsible for transmission grids.

The joint organisation of Finnish, Swedish, Norwegian and Danish transmission system operators has five tasks: transmission capacity calculation, regional system security analyses, maintenance and development of joint grid models, co-ordination of cross-border transmission outages and regional short-term electricity

sufficiency reviews. The RSC operates as a service provider. Each transmission system operator will be responsible for its system security and will continue to decide on operational measures in its own area.

The operations will start by the end of 2017 and employees from all Nordic Transmission system operators, a total of 10 persons, will work at the office. The number of Finnish employees will initially be two.

## **| We released the new Fingrid Online mobile app**

Our new mobile app Fingrid Online provides its users with real-time information about the state and the disturbances of the power system. The app has three functions: state of the power system, operational disturbances and disturbance reports.

# Electricity market

An electricity market that functions at its best benefits everyone: a common regional market and strong transmission connections boost competition and ensure that electricity is produced in the most efficient way. Reinforcing the domestic and cross-border transmission systems in Finland will improve the operations of the electricity market. In a strong transmission network, electricity can freely flow to where demand is highest. A disturbance in a transmission link between Finland and Sweden, for example, may cost consumers several million euros a day.

The European Union's climate policy and national energy and climate targets aim to reduce the emissions from electricity production and move towards a low-carbon power system. As a result, the structure of electricity production is changing. Weather-dependent, renewable energy generation has grown considerably in the European electricity market. National support mechanisms targeted at renewable energy have accelerated the change.

In 2016, the energy industry intensively sought new solutions to repair the electricity market. The electricity market has faced major challenges as a consequence of the renewable energy support schemes. The energy surplus of the northern European electricity market can be seen throughout the Baltic Sea area and has artificially pushed down prices. The market price of bulk electricity has plummeted, which has forced production capacity out of the market.

The support schemes in Europe have caused problems in terms of the sufficiency of electric power. Achieving a reliable, cost-effective and low-carbon energy system requires an increasingly market-based approach. In order for the markets to function, the impacts of the support schemes must

be reduced and the mechanisms harmonised in the entire Baltic Sea area. The bulk and retail electricity markets must be more closely linked than they currently are, and demand-side management in the retail markets must be introduced to balance the power system.

Growth in renewable electricity production has considerably weakened the profitability of other electricity production, which in turn has led to the removal of flexible generation capacity from the market. While the need for regulating capacity required to ensure variable electricity generation has grown, flexible generation capacity has been simultaneously shut down.

We believe that well-functioning electricity markets will ensure a cost-effective transition to low-carbon electricity system and will ensure sufficiently reliable supply. A prerequisite for a well-functioning electricity market is doing away with market-distorting state support schemes at least regionally, as in common market areas, the impacts of the support schemes cross state boundaries. The emissions trade mechanism is the most cost-effective and technology-neutral tool for promoting a low-carbon energy system.

A low-carbon electricity system demands co-ordination between the wholesale and retail markets. The retail market is required as a source of demand-side management, which will play an important role in balancing the electricity system in future. It lowers electricity consumption during periods of high consumption and price levels, or transfers it to a period with a lower cost. Demand-side management helps keep the electricity system in balance, while at the same time having a positive impact on consumers electricity bills. Electricity



market structures and the roles of market operators are still not established in that respect.

The Finnish government published a new energy and climate strategy at the end of the year. The strategy presents a package of policies and measures that concern the electricity markets and the power system. The policies underscore the active role of electricity consumers in the markets, price signals in the real-time markets, and the inter-Nordic retail markets. It also highlights the transition to a smart grid system, which will help lay the groundwork for the rise of electric cars. Electric cars will enhance the systems flexibility and contribute to

the transition to a low-carbon electricity system. The strategy states that in order to promote a third alternating current (AC) connection between Finland and Sweden, it is important to get it on the EUs list of key projects in 2017. Fingrids objective is to complete the new connection by 2025. At year-end, the European Commission published a so-called Winter Package that takes a stand on, among other things, issues related to the development of a future electricity market model. Fingrid considers the commissions development proposals for an electricity market model to be headed in the right direction.

<b>Electricity market</b>	<b>2016</b>	<b>2015</b>	<b>2014</b>
Day-ahead system price €/MWh	26.91	20.98	29.61
Area price Finland, average €/MWh	32.45	29.66	36.02
Congestion income in Nordic countries, €M	276.8	380.3	255.1
Congestion income between Finland and Sweden, €M	74.98	173.5	97.7
Congestion hours between Finland and Sweden %	32.7	47	47.8
Congestion income between Finland and Estonia, million €M	4.74	8.4	4.8
Congestion hours between Finland and Estonia %	9.7	12	8.2

## Nordic price level rose at the end of the year

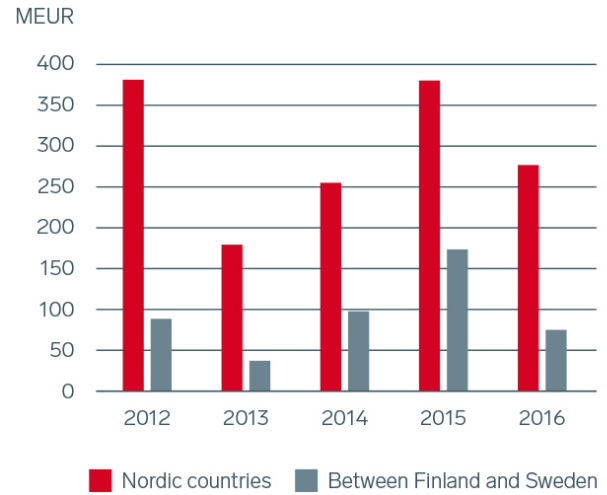
The average market price of spot electricity on the electricity exchange (system price) was EUR 27 (21) per megawatt hour. The price level in the Nordic electricity markets trended downwards for an extended period during the first half of 2016, but rebounded during the summer. The drivers behind the price increase include the weakened hydrological situation, as well as price hikes in fossil fuels and emission rights.

In 2016, prices on the Finnish wholesale market were higher than they were in other Nordic countries. The overall increase in Nordic prices made the price disparity between Finland and Sweden less pronounced and, as a result, congestion hours between Finland and Sweden decreased significantly during the latter half of the year. In addition to the increased Nordic price level, another reason for the decrease in congestion hours and decreased price disparity was the completion of the NordBalt transmission link between Sweden and Lithuania during the first half of 2016.

Fingrid accrued EUR 37.5 (87) million in congestion income from the cross-border power lines between Finland and Sweden. EUR 29.9 (24.3) million of this was accrued during the first half of 2016 and EUR 7.6 (62.5) million during the second half of the year. In addition, the links between Finland and Estonia generated EUR 2.4 (4) million in congestion income for Fingrid. Congestion income is used to maintain cross-border transmission capacity and for additional investments, as is also required by law.

Imports from Russia increased to 5.9 (3.9) terawatt hours. Despite the increase, electricity imports from Russia to Finland have decreased significantly in recent years, and the hourly import volumes from Russia have varied considerably. In addition to Russias capacity mechanism, the reduction in electricity trade is attributed to increased electricity prices in the country.

## Nordic congestion income and congestion income between Finland and Sweden



## Continued development in the market and transfer connections

In order to clarify the electricity market debate, in spring we published a discussion paper on the challenges faced by the electricity market and various solutions to them entitled Electricity market needs fixing – What can we do?, which sparked a lively debate. Our consultation request was responded to by a total of 36 industry operators, associations, research institutions and private citizens. During the second half of the year, we published a summary of the feedback on the paper, as well as our conclusions, in which we outline various routes to a green electricity system based on market terms.

The operating capacity of the electricity market and the sufficiency of electricity supply became national topics due to the bitter cold of January 2016. As the consumption of electricity broke records, the topics of meeting consumption needs and national self-sufficiency in terms of electricity were widely debated.

Roughly half of the cross-border transmission capacity between Finland and Sweden is provided

by the Fenno-Skan link, i.e. high-voltage DC connections. Early in the year, we launched several measures to improve the reliability of cross-border transmission capacity. Thanks to the improvements, it was possible to keep interruptions very brief, and the availability of the connections has been clearly better compared to previous years.

We established Fingrid Datahub Oy, a company focused on the transfer of retail market information, on 16 February 2016. The task of the company, our wholly owned subsidiary, is to implement a centralised information exchange system for the electricity markets, i.e. a datahub, in which the exchange of information between retail sellers and transmission system operators is concentrated into a single service. This makes the exchange of information in the retail electricity market more straightforward and efficient. Data exchange among retail markets is needed in managing the various business processes of the electricity markets, such as balance settlement, an end users change of address and a change of seller, for example. The system will facilitate the processing of measurement data, simplify and speed up client agreement events and improve the reliability of the service.

The implementation of European network codes required by the European Union proceeded in

Finland. We established a network code forum that is open to all market parties. The forum promotes public debate on all matters related to network codes and aims to gather the views of stakeholders as well as to complement the public hearing processes related to implementing the network codes. The network code forum convened three times during the year under review.

The Finnish, Norwegian and Swedish TSOs continued with the switchover to shared Nordic balance settlement. The jointly owned company eSett Oy, which Fingrid owns one third of, aims to start up operations in spring 2017.

In September, the Ministry of Economic Affairs and Employment set up a working group to look into the opportunities of smart grids in the electricity market. The aim of the working group is to forge a common vision of future smart grids and to propose concrete measures for using smart grids as a means of increasing customers opportunities to participate in the electricity market and contribute to maintaining a secure supply of electricity. The members of the working group broadly represent the stakeholders in the sector, including active participation by Fingrid.

## Key events of 2016

### Decentralised household consumption on the reserve market for the first time

For the first time in the Nordic countries, decentralised electricity consumption of households was approved for the frequency controlled reserve for normal operation. This marks a first for the Nordic countries – and probably even for Europe – with households, together with the electricity seller, participating in maintaining rapid and continuous power balance. Previously, only industrial electricity consumption, in addition to the traditional power plant reserve, participated in the frequency controlled reserve market. Now the hot-water tanks in households serve as a reserve, and are switched on and off according to the frequency variations.

We oversee the reserve market, which is used to maintain a balance between electricity consumption and production in the power system. Frequency controlled reserves react automatically to variations in the frequency of the electricity system by adjusting their electricity production and consumption.

### Balancing power market starts up

During the year, we introduced a new reserve market, the balancing power market. On the balancing power market we ensure that we have a sufficient volume of fast-disturbance reserve available, including in disturbance situations affecting reserve power plants and the transmission system.

In the first competitive bid we received offers of 236 megawatts. We procured 57 megawatts for the targeted time period from the balancing power market. We additionally purchase fast disturbance reserve power from Estonia, through an agreement between Fingrid and Elering.

### Aggregation development projects

We launched two aggregation pilot projects. On 1st September 2016, we initiated a five-month-long pilot project on a frequency containment reserve for the hourly market. In the project, we are examining the participation of a reserve seller outside the electricity supply chain in the reserve market and aggregating reserve bids from regulation-capable sites belonging to different balances.

We are also looking into what such an aggregation model would mean in practice, how the energy resulting from the activation of the reserves is processed in the imbalance settlement and what changes would be required to the IT system in order to implement the model. Fingrid is also preparing a similar aggregator pilot project on the balancing power market.

The results of our pilot projects will be completed during 2017 and 2018. New aggregation models will help enable the participation of small electricity producers and consumers in the reserve market in future.

## **| Wind energy exceeded the average hourly production of 1,000 megawatts**

Finland's total wind power production exceeded for the first time the hourly average production of 1,000 megawatts during the Rauli storm on the 27th of August 2016. During that measured peak production hour, wind power made up some 16 per cent of Finland's electricity production and was used to cover roughly 14 per cent of the total consumption. The volume of wind power production has increased and new power production capacity was taken into use towards the end of the year. At the end of 2016, Finland had over 1,400 megawatts of installed wind power production capacity.

# Grid development and maintenance

Fingrid's all-time biggest investment, the 400 kilovolt transmission connection from Pori to Oulu was completed at the end of 2016 in western Finland. With the completion of this power line, called the Coastal Power Line, there are now three 400 kilovolt transmission links connecting the northern and southern parts of the country. The project, which cost a total of EUR 260 million, was carried out according to plan over a span of ten years.

The transmission link serves the wind farms that have been built in western coastal areas and which will be followed by many more in the future. Several existing and planned nuclear power stations are also located close to this line. We upgraded the line's low capacity and the power lines that had reached the end of their lifetime with new structures and boosted the transmission lines between the north and south. As a result, Finland's future as a single price region is now more secure. The voltage

upgrade will also decrease transmission losses. With the higher voltage, we are enabling an annual reduction in transmission losses by an amount corresponding to the electricity consumption of roughly 2,500 electrically heated households. We have prepared for disturbance and maintenance situations by building more loops, i.e. alternative routes, to the grid.

This multi-year project was a major challenge for both Fingrid's entire personnel and our suppliers. The employment impact of the project amounted to approximately 1,000 man-years. We completed the project with excellent results. Our success was reflected in our ability to keep on schedule and within budget, and in the comprehensive environmental impact assessment that was carried out on the power line projects: Seinäjoki–Tuovila, Ulvila–Kristinestad and Hirvisuo–Pyhänselkä. The Hirvisuo–Pyhänselkä project received the national EIA award in 2011.

### The total project consisted of three extensive subprojects:

- A 400 and 110 kilovolt transmission line connection from Seinäjoki to Vaasa, and a new transformer substation in Nivala were completed in 2011.
- A 400 kilovolt connection from Ulvila to Kristinestad was completed in the second stage of the power line project in October 2014.
- In the final phase, a 400 kilovolt power line connection from Kokkola (Hirvisuo) to Muhos (Pyhänselkä) was completed in late 2016.

### Coastal Power Line 2007–2016

- 380 kilometres of 400 kilovolt power lines
- 9 new substations and several smaller substation extensions
- 600–800 megawatts of new transmission capacity between northern and southern Finland

The roughly EUR 130 million modernisation project on Finland's oldest transmission line, dubbed the 'Iron Lady' and running from Imatra to Turku, proceeded as planned during the year under review. The Hikiä–Forssa section of this major project was completed and commissioned in March. Modernisation of the Iron Lady continues between Lieto and Forssa. We also began to upgrade the Ylikkälä–Koria section between Lappeenranta and Kouvola and decided to upgrade the transmission line between Hikiä and Orimattila and to build a new substation in Orimattila. The Iron Lady project is expected to be fully completed by 2020.

With the aim of securing the electricity supply for both residents of the Helsinki region and functions that are vital to society, we will reinforce the Espoo substation and the Länsisalmi substation in Vantaa. The substation upgrades and extensions started in 2016 and will be completed in 2017. The supply of electricity from the main grid to Helsinki and Vantaa takes place via the Länsisalmi and Tammisto transformer substations, serving around 800,000 people. Increasing electricity consumption and changes taking place in the production of electricity in Helsinki necessitate upgrades in supply capacity. The extension of the Espoo substation will improve the system security of the transmission facilities in western Uusimaa, the region west of the capital area. In addition, local electricity production has decreased while consumption is increasing.

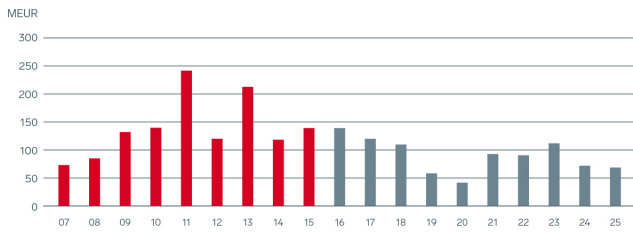
Over the last two years, we have made major investments to develop the transmission grid in Lapland by building or upgrading a total of six substations. These measures were necessary due to increasing local consumption and due to new wind power capacity. During the year under review, the substations at Vajukoski and Petäjaskoski received new transformers and the existing systems were upgraded and extended. The Vajukoski transformer substation, north of Sodankylä, serves both hydropower production and mining industry and links up with the Norwegian transmission grid via Ivalo. The Petäjaskoski transformer substation, a major link between Laplands 220 kilovolt and 400 kilovolt main transmission networks, also received an entirely new 220 kilovolt gas-insulated switchgear. Extensive upgrades were additionally carried out at the Taivalkoski and Ossauskoski substations.

We made several investment decisions during the year, many of which proceeded to the implementation stage.

The Inkoo substation that was built in the 1970s secures the electricity supply in western Uusimaa. We made an investment decision concerning the modernisation of the ageing station. The project is due for completion in 2018.

To secure the supply of electricity in the Hämeenlinna and Valkeakoski areas, we decided to modernise a 51-kilometre transmission line between the cities. We will dismantle the aged and worn out pylons and transmission lines and replace them with a new line in the same place. The project is due for completion in 2018.

### Fingrid's capital expenditure in the main grid



Many of our investments are related to enabling or improving the operating conditions of industry. We are planning to build a new Vuoksi substation and a roughly 24-kilometre-long Lempiälä–Vuoksi transmission line between Lappeenranta and Imatra. The investment will be carried out sooner than originally planned, due to an extension to Kemiras industrial plant in Joutseno, and it is due for completion in 2018. We are securing the electricity supply for the new bioproduct mill in Äänekoski with the construction of a new 110 kilovolt transmission line between Äänekoskis Koivisto and Laukaas Vihtavuori substations, due for completion in late 2017. We are also modernising Olkiluoto 400 kilovolt switching station, which is outdated and has insufficient system security. The Olkiluoto substation is one of the most important grid nodes, with three nuclear power plants connected to it. The project is due for completion in 2019.

Fingrids Huutokoski reserve power plant will undergo a EUR-15-million upgrade. The Huutokoski plant, located in Joroinen, is one of the ten reserve power plants owned by Fingrid which are tasked to support a sufficient supply of electricity in Finland during major disturbances in the power system. The six gas turbine units of the Huutokoski reserve power plant were built in 1971–73, and they have a combined power rating of 180 megawatts. The upgrade project includes the modernisation of

obsolete systems to secure reliable operation for the next 20 years as well as significant environmental investments. The systems to be modernised include fuel tanks and fuel systems, extinguishing systems, the plants internal electrical and automation systems as well as the plants own reserve power systems. The modernisation project on the Huutokoski reserve power plant will improve environmental safety.

The grid is kept in good condition and developed continuously. Several IT systems for asset management and utilisation are needed to support grid operations at every stage of the process, from long-term asset planning to the daily planning and maintenance of operations.

In 2006, we launched a project aimed at building a complete, modern IT system to support asset management operations. In 2012, we decided on a solution that comprises eight IT system products. We have integrated the products such that now the master data of the transmission grid assets is contained in a single application. This new IT system package that supports asset management and utilisation is called ELVIS. In this major overall project, we combined both the latest information technology and in-house knowledge and transformed operational procedures. The project was completed in 2016. Industry operators have followed our multi-dimensional and challenging project with great interest. We presented the project at the ELVIS Event held in Helsinki in the autumn; the event gathered representatives of TSOs from close to 20 countries.

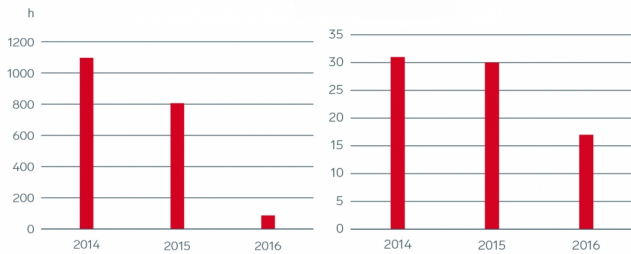
Fingrids assets are carefully managed. In August, Lloyds Register audited Fingrids asset management operations over a two-week period, and awarded us a certificate for compliance with the ISO 55001 standard.

We have implemented significant revisions to the operating model to improve the reliability of cross-border transmission connections, and we have increased our expert resources on DC transmission connections. A 24/7 back-up system was also taken into use in HVDC operations as of the beginning of 2016. During the year under review, we were able to, above all, accelerate disturbance clearing, prevent individual disturbances and implement measures to



secure the reliability and availability of the HVDC connections much faster than in previous years. Disturbances in HVDC connections did not affect the operations of the electricity market in 2016, which is partly thanks to the measures that were carried out. No disturbances requiring extensive repairs occurred in 2016, and less significant disturbances were cleared more quickly than in previous years. The total duration of interruptions in 2016 was as low as around 10% of the 2014 and 2015 levels. The number of interruptions was halved from 2014 and 2015.

### HVDC disturbances, total duration and quantity



The figures in the tables are based on international practices that are established in defining the availability of HVDC connections.

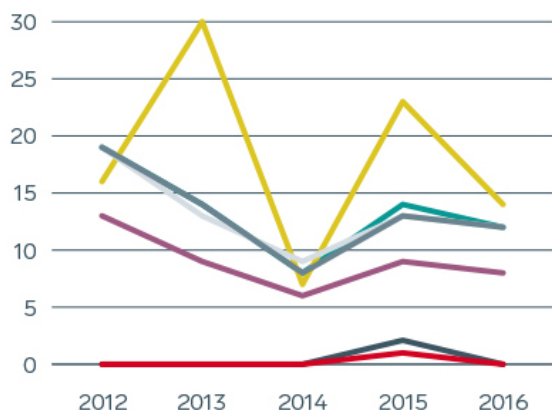
Fingrids maintenance management is, by international standards, still world-class. We were rated one of the best operators in the International Transmission Operations and Maintenance Study (ITOMS) for the 11th consecutive time.

Occupational safety is a priority in our company. It is important for us that our companies and our service providers personnel make it home safe and sound at the end of every work day. In 2016, Fingrids personnel had no accidents resulting in absence from work (2015: 1), in other words, the zero accidents target was achieved. Our suppliers personnel had 12 (13) accidents resulting in absence from work, three of which resulted in an absence of more than 30 days. The suppliers and Fingrids combined accident frequency rate decreased somewhat from the previous year. Accidents and near-misses that occurred during the year have been analysed, the reasons for them have been

determined, and measures to develop safety at work have been defined.

The occupational safety development project continued, with a focus on implementing occupational safety models and tools and improving safety attitudes. We trained the project and site managers and employees of our service providers, as well as Fingrids own personnel, in occupational safety matters. We introduced online training in early 2016 and it was used by more than 1,700 people during the year. We organised a safety observation campaign for our service providers and our own personnel. Work was also continued to develop a mobile reporting system for occupational safety, quality and environmental issues, online training and Fingrids safety management system.

## LTIF and severity of accidents



- No. of workplace accidents, Fingrid's personnel
- LTIF, Fingrid's personnel
- No. of workplace accidents, service providers
- LTIF, service providers
- Severity of the service providers' workplace accidents
- Total no. of workplace accidents
- Combined LTIF (Fingrid personnel & service suppliers)

LTIF = Lost time Injury frequency; number of occupational accidents that led to at least one day of inability to work/million completed work hours

Severity of occupational accidents = Days of inability to work caused by occupational accidents/number of occupational accidents

## Key events of 2016

### Cross-border capacity upgrade between Finland and Sweden

Fingrid and Svenska Kraftnät decided to proceed with the realisation of a third AC connection between Finland and Sweden. Fingrid's Board of Directors decided on the matter on 15th December 2016, while Svenska Kraftnät's Board had decided on the matter earlier. The target completion date for the project is by 2025. The next stage of the project is more detailed planning that will seek to find a route for the new power line that is suitable in terms of the environment.

Electricity transmission between Finland and Sweden is among the most congested in Europe. Electricity imports from Sweden have increased, and in recent years the cross-border capacity has been sufficient to meet market needs only over half of the time. Congestion between Sweden and Finland has resulted in differing prices of electricity in the countries.

In 2016, Fingrid and Svenska Kraftnät conducted a study on the need to develop cross-border capacity. According to the study, congestion situations are also probable in future, and there will be a need for a new transmission connection. The most significant benefit brought by the new connection is the balancing of the price difference between the countries, but a third AC connection is also very important for Finland's system security, sufficiency of electricity and boosting the reserve markets.

The new line will upgrade the transmission capacity from Sweden to Finland by 800 megawatts, an increase of approximately 30% over the current capacity. The planned route for the transmission line runs from Messaure in Sweden to Keminmaa and Pyhänselkä in Finland, and will thus be roughly 370 kilometres long. The cost of the project is estimated at just under EUR 200 million.

### Open door event attracts visitors in Petäjävesi

We organised an open-door event at the Petäjävesi substation in August, and the event attracted more than 120 local residents and cottagers. An introduction to the substation was arranged before voltage was connected to the new power lines. Guests enjoyed a rare tour of the switching station and the concrete transformer bunker. The new 400 kilovolt substation that was started up in Petäjävesi in autumn replaced the 220 kilovolt substation that was built in the 50s and which had reached the end of its service life.



# Environment

When we build and maintain power lines, substations and reserve power plants, we make sure that environmental and land-use issues are taken into account for the long term. We also relate our principles for reducing our environmental impacts in our land use and environmental policy, which we made sure was up to date during the financial year. Key aspects include a thorough environmental impact assessment (EIA) and preparedness for environmental risks. During the year we further developed our environmental management by establishing a management system in compliance with the ISO 14 001 standard for the reserve power plants.

We also encourage our contractors and service suppliers to commit to our operating practices with the help of contractual terms, environmental training and auditing related to environmental matters. During the financial year we introduced an online environmental training course intended for those working on our construction sites. We also provided environmental training during the kick-off meetings for investment projects, and we organised training on the use of chemicals, the management of safety data sheets and oil spill response for the providers of maintenance services at substations and reserve power plants. On our construction sites, environmental aspects were monitored as part of work site monitoring. Compliance with environmental requirements, occupational safety and contractor obligations was verified in 15 audits.

Our goal is to complete grid investment projects and maintenance without any environmental deviations. At substations and reserve power plants, we improved chemical safety through several development projects, such as by determining the environmental impacts of the chemicals used in

maintenance and by looking into ways of limiting the environmental impacts of transformer fires. We drew up oil spill response plans and updated our emergency response plans at all reserve power plants. One significant environmental deviation was detected in our operations during the year, however, when an oil leak of roughly 180 litres occurred at the Isokangas substation construction site.

Fingrid actively participates in land-use planning to ensure safety and land-use reservations for the grid. In 2016, we issued around 260 statements on land-use plans and EIAs. In addition, we directed the construction taking place near grid installations by issuing safety instructions and statements including land use restrictions. Some 420 such statements were issued.

We were active in, among other things, reforming radiation legislation. We commissioned measurements at substations and drew up guidelines related to the entry into force of the directive on workers exposure to electromagnetic fields. We were also part of the Ministry of Social Affairs and Healths working group preparing legislation on exposure to non-ionising radiation. We continued to commission status reports by the Tampere University of Technology on global, medically oriented research reports on electromagnetic fields. There was no new evidence of the health impacts, but we understand that people are concerned about the electromagnetic fields of power lines.

Depending on the project, the environmental impacts of transmission line projects on people and nature are analysed either through an environmental impact assessment (EIA) or an environmental study in compliance with the Electricity Market Act. Consultations with landowners are very important in

terms of ensuring that the power line adapts to the environment, taking into account various perspectives and stakeholders. In our power line projects, we primarily utilise existing right-of-ways, in accordance with the nationwide land-use objectives stipulated in the Land Use and Building Act. When planning transmission line routes in a new right-of-ways, a key aspect is to avoid residential areas and other significant sites.

EIAs were carried out for six transmission line projects in 2016. Two events were arranged to inform the public about the environmental impacts of the power lines required to connect the Hanhikivi 1 nuclear power plant to the grid; the EIA process for the project was completed in October 2016. A Natura assessment update was carried out and a considerable bird population database was compiled for this project in compliance with the Nature Conservation Act. An EIA was completed for five transmission line projects (Hämeenlahti–Hännilä, Kontiolahti–Pamilo, Kontiolahti–Uimaharju, Siikajoki–Raahe and the line rearrangements for the Olkiluoto substation). Three projects involved archaeological inventories.

In order to be able to build, operate and maintain a transmission line, Fingrid redeems a right of use to the transmission line area. Redemption permits were obtained for the re-routing of transmission lines from Multisilta and Kangasala to Lavianvuori and for the transmission lines Vanaja–Tikinmaa, Vihtavuori–Koivisto and Korja–Ylikkälä. A redemption permit application was filed for the transmission line project Hikiä–Orimattila. The redemption compensation procedure was completed in seven transmission line projects. Eight hearings in accordance with the Finnish Act on the Redemption of Immoveable Property and Special Rights were held with landowners. A residential property was purchased in order to ensure appropriate line planning.

Co-operation with land owners is important in power line projects. In a questionnaire given to landowners on the three completed transmission line projects, we received a grade of around 4 on a scale of 1 to 5, i.e. good. With 247 landowners responding to the questionnaire, the response rate was 54%. Landowners would like to see more pro-

active and accurate communication from Fingrid as the construction work progresses, and they highlight the importance of agreeing in advance on the use of roads and moving about in fields and yard areas. We are further developing our communication practices and channels on the basis of the feedback.

Our service providers who carry out maintenance work and trim vegetation along power line right-of-ways are always instructed to take land owners and environmental matters into account. The transmission line right-of-ways that are kept permanently open by regular clearing transform the local land use and landscapes. The impacts on biodiversity can also be positive, as transmission line areas can act as a replacement habitat for species threatened by disappearing meadows or the drainage of peatlands. In 2016, we looked into how to take better advantage of power line areas to promote the well-being of nature and people. With the help of studies conducted together with our stakeholders and representatives of various professions, we have prepared so-called idea cards for land owners, explaining the possibilities of using power line right-of-ways. Municipalities land-use planning is also a good opportunity to promote the sustainable use of power line areas. This is something we have underscored in our updated guidelines intended for land planners and construction supervisors. Efforts to protect the endangered false heath fritillary butterfly continued in a power line area in the region of Pirkanmaa, and in Nokia grazing sheep revived the disappearing meadow flora.

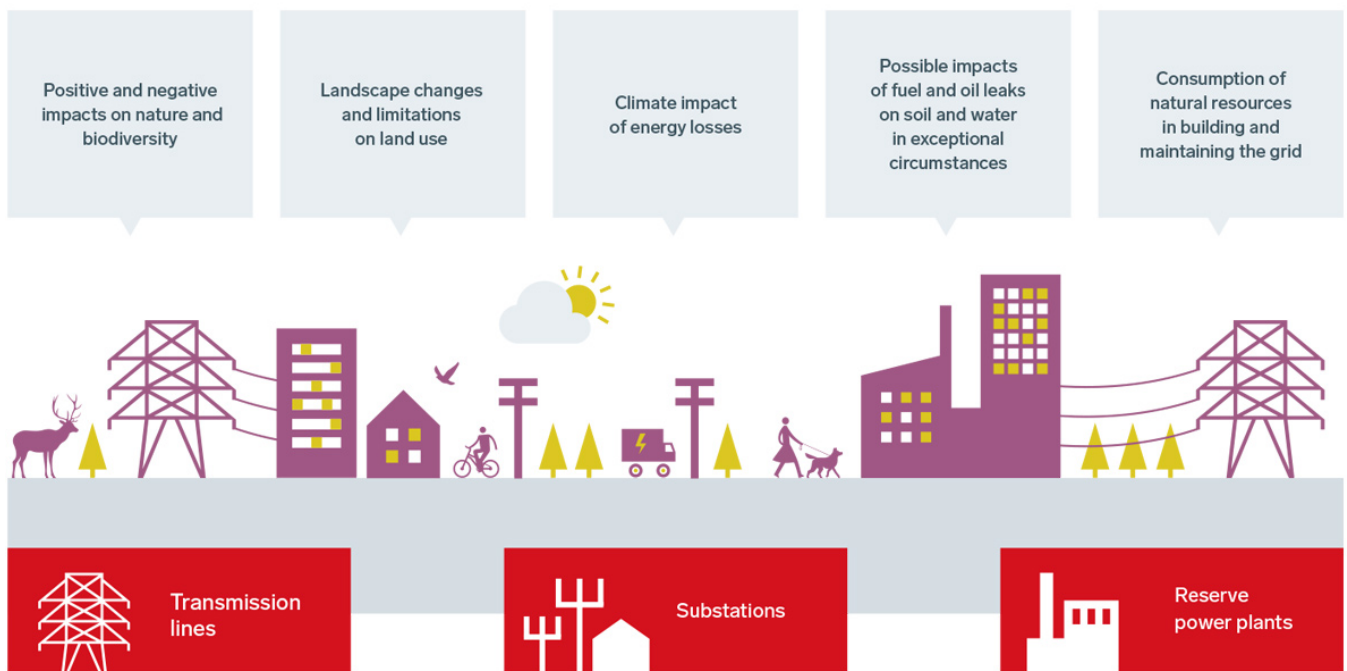
Fingrid is responsible for the functioning and safety of the electricity supply system in all circumstances. During the financial year, we had to apply for a special permit under the Nature Conservation Act due to a flying squirrel habitat on a power line right-of-way in Äänekoski and the substation in Jyväskylä. We also had to remove an osprey nest from a transmission tower for safety reasons.

Power losses caused by climate impacts take place during electricity transmission amount to roughly one per cent of Finland's total electricity consumption. We minimise losses by keeping the voltage of the transmission grid as high as possible

and by making grid investments and equipment procurements that promote energy efficiency. During 2016, Fingrid signed the energy efficiency agreement of Finnish industries 2017–2025 and committed to the target of cutting energy use by six per cent by 2025. Climate impacts also result from our reserve power plants and from sulphur hexafluoride (SF6), a powerful greenhouse gas used in our substation equipment. Our SF6 gas emissions

in 2016 were 21 (64) kg. At the end of 2016, there was a total of approximately 37 (34) tonnes of SF6 gas at our substations, and the annual leakage rate in the long-term has been on average less than 0.2 per cent. Fingrids methods of monitoring SF6 gas are of an internationally high level. Gas facilities are monitored using online maintenance monitoring technology to help catch even minor leaks rapidly.

## Fingrid's main environmental impacts



# Research, development and innovation

The goal of innovation efforts is to improve the profitability and quality of operations and respond to changes in the operating environment. R&D projects are often a prerequisite for processing an idea into an innovation. In addition, by predicting the coming changes in the operating environment, brainstorming and R&D projects can be targeted to the right business areas and the necessary measures can be implemented in good time.

During the financial year, a record EUR 2.1 million was invested in R&D operations. Most (67%) research work was outsourced to universities, research institutes and other parties, with Fingrids in-house work consisting mostly of thesis projects (8) and steering R&D projects. Digital-related development projects have become a new focal point alongside traditional development areas (system security, electricity markets and transmission system).

Developing competence in the industry, taking into account the future needs of Finland, is also in Fingrids benefit in terms of ensuring both high-quality R&D work and competent staff. The programmes and chairs supported by Fingrid included the Lappeenranta University of Technologys Doctoral Programme in Energy Systems (2014–2016), the University of Vaasas smart electricity grid professorship (2016–2021), and the development of the University of Vaasas education services related to bus systems for substation automation (2015–2016).

As international, especially Nordic, collaboration intensified, we concluded an R&D collaboration agreement with the Nordic TSOs (Statnett, Fingrid, Svenska Kraftnät, Energinet.dk and Landsnet). The goal is to, among other things, promote the Nordic

perspective in European R&D activities and to collaborate in R&D projects.

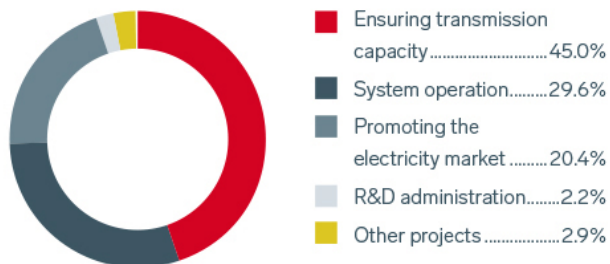
Positive communication, for its part, supports the development of a successful innovation culture and good collaboration. During the financial year, we published an R&D and innovation magazine aimed at our stakeholders and our own personnel. The magazine presents the most interesting R&D projects throughout the years as well as an overview of future innovation activities.

R&D co-operation brings synergy benefits to the different parties. The collaboration with technology companies, service providers and startups creates new business opportunities for companies, and gives them the opportunity to pilot innovations in a real environment and using real data. Fingrid, for its part, receives the methods and services it requires on market terms and with the efficient use of resources. In addition, customer needs are taken into account in projects carried out jointly with customers. In order to further the collaboration, we published Fingrids R&D roadmaps on our website and we updated our guidelines in order to make practical co-operation run more smoothly. We had a positive experience during the year with our open innovation competition, which led to collaboration with four companies. The winning ideas – an acoustic camera, smart glasses, crowdsourcing and sensor technology – will be jointly developed into functional solutions for grid maintenance. Another good example of R&D co-operation is the electricity storage pilot project in Helsinkis Suvilahti that was launched together with the customer and service provider. With the assistance of the Lappeenranta University of Technology, the project involves developing a solution that enables the use of a battery storage facility to meet the needs of the

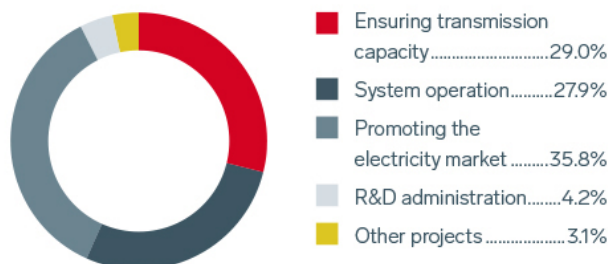
electricity seller, TSO and distribution company in a market environment.

### Breakdown of R&D costs

2016



2015



### Actual R&D expenditure by account

2016



2015





## Key events of 2016

### | Fingrid's competition results in four new development ideas

We held an open competition to brainstorm development ideas for improving the grid system's maintenance and repair work. Four of the proposed ideas advanced to the implementation stage. The ideas support the trend toward maintenance based on condition and measurement data. Through the competition, we also sought approaches for developing innovation activities.

Our objective with the brainstorming competition was to introduce outside competence and ideas in the efforts to develop the company's operations.

The winning ideas were:

**Empower – using smart glasses in maintenance.** The idea is based on virtual documentation technology that can bring benefits in grid maintenance, planning and asset management.

**Noiseless Acoustics – acoustic camera for detecting and locating deviating sounds.** The idea is based on a new kind of acoustic camera technology, which enables the location of equipment faults, for example.

**Scoopshot – utilising crowdsourcing with targeted photo tasks.** The idea is based on information collection with photos using crowdsourcing. The method can be used, for example, for locating faults by people participating in the task.

**Vaisala – a new measurement technology.** The idea is based on a simple sensor and a new kind of measurement technology. The method can be used to detect faulty components without an inspection that requires an outage, thus bringing savings in maintenance costs.

The winning ideas may not be implemented exactly as they are, as they need further joint research. The winners were announced in May 2016 at Fingrid's Maintenance Management 2020 event.

# GRI index

## CORPORATE RESPONSIBILITY GRI INDICATORS

### GENERAL STANDARD DISCLOSURES

Designation	GRI content	Location	Additional information	Global Compact
<b>Strategy and analysis</b>				
G4-1	Statement by the President & CEO	Review by the President & CEO		
G4-2	Description of key impacts, risks, and opportunities	Strategy and management system Operating environment Governance Report of the Board of Directors		
<b>Organisational profile</b>				
G4-3	Name of the reporting organisation		Fingrid Oyj	
G4-4	Primary brands, products and services	Fingrid in brief		
G4-5	Location of the organisation's headquarters		Fingrid's headquarters are located in Helsinki.	
G4-6	Number of countries where the organisation operates, and names of countries where either the organisation has operations or that are specifically relevant to the sustainability topics covered in the report.	Fingrid in brief		
G4-7	Nature of ownership and legal form of the organisation	Fingrid in brief		
G4-8	Markets served	Fingrid in brief		
G4-9	Scale of the organisation	Fingrid in brief		
G4-10	Number of employees by employment type and employment contract, by region and by gender			6

**TOTAL NUMBER OF EMPLOYEES**

	2016			2015			2014		
	Men	Women		Men	Women		Men	Women	
Permanent	291	220	71	280	211	69	282	215	67
	87 %	76 %	24 %	89 %	75 %	25 %	90 %	76 %	24 %
Temporary	43	30	13	35	27	8	31	26	5
	13 %	70 %	30 %	11 %	77 %	23 %	10 %	84 %	16 %
Full-time	302	226	76	293	220	73	290	222	68
	90 %	75 %	25 %	93 %	75 %	25 %	93 %	77 %	23 %
Part-time	32	24	8	22	18	4	23	19	4
	10 %	75 %	25 %	7 %	82 %	18 %	7 %	83 %	17 %
<b>Total</b>	334	250	84	315			313		
Average	336			318.9			305.3		

**PERSONNEL BY LOCATION**

	2016	2015	2014
Helsinki	285	267	260
Hämeenlinna	16	15	17
Oulunsalo	9	9	10
Petäjavesi	13	12	13
Rovaniemi	2	2	2
Varkaus	9	10	11

G4-10 (add.)	Number of contractors' employees by employment type, contract and region	Reporting covers the service providers' working hours included in Fingrid's internal monitoring. In 2016, grid building and maintenance operations amounted to 976,650 work hours, equalling 575 man-years.	6
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**PERSONNEL AND SERVICE PROVIDERS, MAN-YEARS**

	2016	2015	2014
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Man-years, Fingrid's personnel	300	287	275
Man-years, service providers	575	593	533
<b>Man-years total</b>	<b>876</b>	<b>880</b>	<b>808</b>

G4-11	Personnel covered by collective bargaining agreements	Fingrid complies with the collective labour agreement for salaried employees and senior professional employees in the energy industry. These agreements cover the entire personnel excluding top management.	3
G4-11 (add.)	Fingrid's contractors' personnel covered by the collective labour agreements by country	According to the Act on the Contractor's Obligations and Liability when Work is Contracted Out, the entire chain of contractors at Fingrid's work sites is obligated to operate in compliance with applicable Finnish collective labour agreements both regarding Finnish and non-Finnish workforce.	
		Fingrid requires that its service and goods suppliers commit to Fingrid's Supplier Code of Conduct or with their own similar code. The Code covers issues such as business practices, human rights, labour rights, occupational safety and the environment. The Supplier Code of Conduct is applied for procurements worth at least EUR 30,000 and they are linked, e.g., to material, equipment or ICT purchase agreements. Fulfilment of the requirements is monitored on a risk basis. The Code of Conduct is a condition for being included in supplier registers used in recurring substation and power line procurements. In addition, contractual partners are subject to separate contract conditions related to the use of subcontractors and workforce, and to occupational safety and environmental matters.	
G4-12	Organisation's supply chain	Building work on the grid is carried out on a project basis, in separate substation and transmission line projects as well as in turn-key contracts. The main contractor, acting in the role of Fingrid's contractual counterparty, is in charge of the detailed design, the procurement of material and equipment as well as building and installations until commissioning. The main contractor on a specific project may have several subcontractors.	

The qualifications of the contractors and service suppliers carrying out grid construction and maintenance are verified primarily by means of various supplier registers and shortlisting procedures. A validation system to ensure the proper qualifications of employees for performing basic maintenance on power lines and substations is also in place.

Fingrid has around 60 direct contractual partners, 12 of which account for roughly 90 per cent of the total financial value of the procurements. There are two companies with regional contracts on transmission line maintenance and four companies with regional substation maintenance contracts. Both the contractors' and subcontractors' use mostly Finnish workforce for grid building work. A substantial number of non-Finnish workers, hailing from countries such as Poland, Croatia, the Baltics, Germany and Italy work mainly on transmission line work sites. Grid maintenance suppliers and their suppliers use Finnish workforce. Some non-Finnish personnel is used in vegetation trimming at transmission lines and in areas requiring special expertise.

G4-13	Significant changes regarding the organisation's size, structure, ownership, or its supply chain during the reporting period	Report of the Board of Directors	No significant changes
EU-1	Installed capacity, broken down by primary energy source and by regulatory regime		Not applicable to Fingrid. Fingrid does not produce its own energy.
EU-2	Net energy output broken down by primary energy source and by regulatory regime		Not applicable to Fingrid. Fingrid does not produce its own energy.
EU-3	Number of residential,		

industrial,  
institutional  
and  
commercial  
customer  
accounts

**CUSTOMERS CONNECTED TO THE GRID**

	December 2016		December 2015		December 2014	
	Customers	Connection points	Customers	Connection points	Customers	Connection points
Distribution networks	62	412	62	414	60	409
Production	32	56	29	54	25	50
Industry	24	48	25	49	28	40
Institutional customers	1	43	1	44	1	44
<b>Total</b>	<b>119</b>	<b>559</b>	<b>117</b>	<b>561</b>	<b>114</b>	<b>543</b>

EU-4	Length of above and underground transmission and distribution lines		The transmission grid owned by Fingrid encompasses approx. 14,600 kilometres of 400, 220 and 110 kilovolt transmission lines, plus 118 substations and four HVDC substations.
EU-5	Allocation of CO <sub>2</sub> e emissions allowances or equivalent, broken down by carbon trading framework	Report of the Board of Directors	Fingrid’s reserve power plants are included in the European Union’s emissions trading system. The accuracy of the measuring and reporting systems for fuel consumption is verified by an accredited emissions trading verifier. A total of 10,326 (6,697) units (tCO <sub>2</sub> ) of emission allowances were returned, all of which consisted of acquired emission rights units. Fingrid has not been granted free-of-charge emission rights for the emissions trade period 2013–2020. No emissions rights were purchased in 2016. Emissions trading had minor financial significance for Fingrid.
G4-14	Whether and how the precautionary approach or principle is addressed by		The precautionary principle is included in Fingrid’s Code of Conduct and the UN’s Global Compact initiative, which Fingrid has committed to. The environmental impacts of new transmission line projects are analysed through an environmental impact assessment (EIA) or an environmental study in compliance with the Electricity Market Act.

	the organisation	Fingrid's reserve power plants are subject to an environmental permit.
G4-15	Externally developed economic, environmental and social charters, principles, or other initiatives to which the organisation subscribes or which it endorses	Global Compact initiative Energy efficiency agreement of Finnish industries 2008–2016 and 2017–2025
G4-16	Memberships in associations and advocacy organisations	ENTSO-E (European Network of Transmission System Operators – Electricity), Finnish Energy Industries, Cigré (International Council on Large Electric Systems), FIBS Corporate Responsibility Network, Association for Finnish Work

**Identified material aspects and boundaries**

G4-17	Entities included in the organisation's consolidated financial statements or equivalent documents	Contents of the annual report and reporting principles
G4-18	Process for defining the report content	An assessment of the substantial financial, social and environmental impacts of Fingrid's operations, as well as the impacts on stakeholders' decision-making was updated in 2016, taking into account the strong connection between sustainability and strategy and business and its impact on Fingrid's ability to create value, as well as the requirements of the GRI reporting guidelines, which extend throughout the value chain. The starting point for the update was a thorough materiality analysis conducted in 2014, which included a broad background analysis, meetings attended by dozens of experts from Fingrid, and a stakeholder survey sent out to roughly 700 individuals. In 2016, the need to update the materiality analysis was evaluated by Fingrid's development managers and the executive management group confirmed the most important issues concerning Fingrid's operations as well as the adequacy of how such issues are managed.

G4-19	Material aspects identified in the process for defining report content	Operating environment	The matters prioritised for Fingrid as being key issues and their corresponding GRI G4 reporting aspects are presented in the section 'Operating environment' and in the GRI Content Index.
G4-20	Aspect boundary within the organisation for each material aspect	Contents of the annual report and reporting principles	
G4-21	Aspect boundary outside the organisation for each material aspect	Contents of the annual report and reporting principles	
G4-22	Effect of any restatements of information provided in previous reports		Significant changes to information from previous reports are stated in connection with the relevant information.
G4-23	Significant changes from previous reporting periods in the scope and aspect boundaries		There are no significant changes from previous reporting periods in the scope and aspect boundaries.
<b>Stakeholder engagement</b>			
G4-24	List of stakeholder groups engaged by the organisation	Stakeholder engagement	
G4-25	Basis for identification and selection	Stakeholder engagement	



	of stakeholders	
G4-26	Organisation's approach to stakeholder engagement	Stakeholder engagement
G4-27	Key topics and concerns raised through stakeholder engagement	Customers Corporate responsibility Environment

**Report profile**

G4-28	Reporting period	The reporting period covers the financial period 1 January to 31 December 2016.
G4-29	Date of most recent previous report	The previous annual report was published on 6 April 2016.
G4-30	Reporting cycle	The annual report is published every year.
G4-31	Contact point for questions regarding the report or its contents	Feedback and questions about the annual report and Fingrid's corporate responsibility can be sent to <a href="mailto:viestinta@fingrid.fi">viestinta@fingrid.fi</a> .
G4-32	GRI content index	Corporate responsibility GRI indicators Fingrid's corporate responsibility reporting is realised in accordance with the Core requirements of the GRI guidelines.
G4-33	Organisation's policy and current practice with regard to seeking external assurance for the report	Corporate responsibility information has not been assured externally except for the account for carbon dioxide emissions which has been assured by an external emissions trading verifier.

**Governance**

G4-34	Governance structure and governance committees	Corporate Governance Statement
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G4-35	Process for delegating authority	Corporate Governance Statement Corporate responsibility	
G4-36	Positions with responsibility	Corporate responsibility	
G4-38	Composition of the Board of Directors	Corporate Governance Statement	The report includes the composition of the Board of Directors and independence of Board members.
G4-39	Position of the Chair of the Board	Corporate Governance Statement	
G4-40	Nomination and selection processes for the Board of Directors	Corporate Governance Statement	The report accounts for the selection of Board members and the related criteria.
G4-41	Avoidance of conflicts of interest	Corporate Governance Statement	The report accounts for the selection of Board members and the related criteria.
G4-42	Board of Directors' role in the formulation of the organisation's purpose, values and strategy	Corporate Governance Statement Corporate responsibility	
G4-45	The Board of Directors' role in the identification and management of risks	Corporate Governance Statement Report of the Board of Directors	Describes the Board of Directors' responsibilities in the arrangement of risk management.
G4-46	Review of the effectiveness of the organisation's risk management	Corporate Governance Statement Report of the Board of Directors	

		Corporate Governance Statement	
G4-47	Frequency of risk reviews	Report of the Board of Directors	Describes the Board of Directors' role in the approval of risk management principles and in the definition of risks and their management measures as well as implementation.
G4-51	Remuneration policies for the Board of Directors and senior executives	Remuneration statement	Describes the principles of remuneration policies and systems for the Board of Directors and senior executives.
G4-52	Remuneration systems	Remuneration statement	The report describes the approval process of remuneration systems and forms of remuneration.

**Ethics and integrity**

G4-56	Values and codes of conduct	Fingrid's vision and values Corporate responsibility	1-10
G4-57	Mechanisms for seeking advice on ethical and lawful behaviour		Fingrid's employees can receive advice in applying Fingrid's Code of Conduct from the company's legal services. 1-10
G4-58	Mechanisms for reporting concerns about unethical or unlawful behaviour	Report of the Board of Directors Corporate responsibility	Suspensions of behaviour that goes against Fingrid's Code of Conduct must be reported to a supervisor, Fingrid's management or internal audit without delay. An independent so-called whistleblowing channel is also in use. No reports were made via the whistleblowing channel during the year. Suspected breaches are investigated with confidentiality and discretion, ensuring that no negative consequences befall the person reporting the behaviour. Behaviour that goes against the Code of Conduct will lead to a discussion with the supervisor and, if necessary, other disciplinary measures. 1-10

**Material aspects**

MATERIAL TOPICS FOR FINGRID	FINGRID'S MANAGEMENT APPROACH (G4 DMA)	FINGRID'S MANAGEMENT INDICATORS	MATERIAL GRI ASPECT FOR FINGRID'S OPERATIONS	MATERIAL GRI INDICATOR FOR FINGRID'S OPERATIONS
Reliability of the electricity system	Principles for managing	Grid disturbances: financial harm to	Indirect economic impacts	G4-EC8 Significant indirect economic impacts and their

				<p>extent</p> <p>EU12 Transmission and distribution losses EU28 Power outage frequency EU29 Average power outage duration</p> <p>G4 EN3 and G4 EN4 Energy consumption EU5 Allocation of CO2e emissions allowances or equivalent, broken down by carbon trading framework G4-EN15 Direct greenhouse gas (GHG) emissions (Scope 1) G4-EN16 Indirect greenhouse gas (GHG) emissions (Scope 2) G4-EN17 Other indirect greenhouse gas (GHG) emissions (Scope 3) G4-EN21 NOx, SOx and other significant air emissions</p> <p>EU12 Transmission and distribution losses EU28 Power outage frequency EU29 Average power outage duration</p> <p>G4 EN3 and G4 EN4 Energy consumption EU5 Allocation of CO2e emissions allowances or equivalent, broken down by carbon trading framework G4-EN15 Direct greenhouse gas (GHG) emissions (Scope 1) G4-EN16 Indirect greenhouse gas (GHG) emissions (Scope 2) G4-EN17 Other indirect greenhouse gas (GHG) emissions (Scope 3) G4-EN21 NOx, SOx and other significant air emissions</p>
	<p>system security Reserve policy Preparedness policy for managing system security</p>	<p>customers Operational efficiency: ranked in international operational benchmarks</p>	<p>Electricity availability and transmission reliability Demand-side management System efficiency Availability</p> <p>Research and development: R&amp;D and expenses related to electricity supply Energy consumption</p> <p>Emissions</p>	<p>EU12 Transmission and distribution losses EU28 Power outage frequency EU29 Average power outage duration</p> <p>G4 EN3 and G4 EN4 Energy consumption EU5 Allocation of CO2e emissions allowances or equivalent, broken down by carbon trading framework G4-EN15 Direct greenhouse gas (GHG) emissions (Scope 1) G4-EN16 Indirect greenhouse gas (GHG) emissions (Scope 2) G4-EN17 Other indirect greenhouse gas (GHG) emissions (Scope 3) G4-EN21 NOx, SOx and other significant air emissions</p>
<p>Stakeholder engagement</p>	<p>Fingrid's Code of Conduct Land use and</p>	<p>Customer survey grade ENTSO-E: ranked in</p>	<p>Stakeholder engagement</p>	<p>G4-26 Organisation's approach to stakeholder engagement G4-27 Key topics and concerns</p>

	environment policy Communications policy	price level comparisons Landowner survey grade	Product and service labelling Local communities	raised through stakeholder engagement G4-PR5 Results of surveys measuring customer satisfaction EU22 Number of people physically or economically displaced and/or compensation broken down by type of project
Financial result	Management principles Corporate Finance and Financing Principles Financing policy	Credit rating Dividend payout capacity Cost-effectiveness	Economic performance	G4-EC1 Direct economic value generated and distributed G4-EC4 Financial assistance received from government
Procurement practices	Fingrid's corporate responsibility requirements for suppliers Procurement policy	Deviations or problems in contractor obligation or employment relationship matters	Procurement practices	G4-12 Description of the supply chain Fingrid's own indicator: Deviations in contractor obligation or employment relationship matters
Development and safety of the transmission grid	Main grid development and maintenance management principles System security management policy Company security policy Grid planning, construction, maintenance management policies	Implementation of capital investments Maintenance efficiency: ranked in international benchmarks (ITOMS, ITAMS) LTIF Environmental deviations	Occupational health and safety Employment Customer health and safety Compliance (environment) Biodiversity Waste	G4-LA6 Accidents and lost days EU18 Proportion of suppliers' and contractors' employees who have taken part in occupational safety training EU25 Number of injuries and fatalities to the public involving company assets, including legal judgments, settlements and pending legal cases of diseases Fingrid's own indicator Environmental deviations G4-EN29 Monetary value of significant fines and total number of non-monetary sanctions for non-compliance with environmental laws and regulations G4-EN11 Operational sites owned, leased, managed in, or adjacent to, protected areas and areas of high biodiversity value outside protected areas G4-EN23 Waste

Well-functioning electricity market	Principles for promoting the electricity market Loss power procurement policy Transmission capacity allocation and congestion management policy	Implementation of key electricity market development projects and services	Customer privacy	G4-PR8 Total number of substantiated complaints regarding breaches of customer privacy and losses of customer data
An open, collaborative, renewing and target-oriented work community	Management principles HR policy Equal opportunity and non-discrimination plan	Workplace atmosphere: result of personnel survey Management: ranked in the Great Place to Work Finland survey	Employment Education/Training Diversity and equal opportunities	G4-10 Number of employees and contractors by employment type and employment contract, by region and by gender, including EU17 G4-11 Employees covered by collective bargaining agreements G4-LA1 Total number and rates of new employee hires and employee turnover by age group, gender and region EU15 Percentage of employees retiring within the next 5 and 10 years G4-LA9 Average hours of training per year per employee by gender, and by employee category G4-LA10 Programmes for skills management and lifelong learning G4-LA11 Performance and career development reviews G4-LA12 Composition of governance bodies and breakdown of employees per employee category according to gender, age group, minority group membership, and other indicators of diversity
The company's Code of Conduct	Fingrid's Code of Conduct Management principles Internal control and risk management	Passing the online Code of Conduct training	Business ethics Non-discrimination Anti-corruption and anti-bribery	G4-56 Values and codes of conduct G4-57 Mechanisms for seeking advice on ethical and lawful behaviour G4-58 Reporting concerns about unethical or unlawful behaviour

	principles HR policy Data security policy		Public policy  Anti-competitive behaviour  Compliance (society)	G4-HR3 Total number of incidents of discrimination and corrective actions taken G4-SO5 Confirmed incidents of corruption and actions taken G4-SO6 Total value of political contributions by country and recipient/beneficiary G4-SO7 Total number of legal actions for anti-competitive behaviour, anti-trust, and monopoly practices and their outcomes G4-SO8 Significant fines and non-monetary sanctions for non-compliance with laws and regulations
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## SPECIFIC STANDARD DISCLOSURES

Designation	GRI content	Location	Additional information
<b>Management approach</b>			
G4-DMA	Disclosures on Management Approach	Strategy Fingrid's strategic targets and indicators Personnel Corporate responsibility Environment Corporate Governance Statement Report of the Board of Directors	

## ECONOMIC RESPONSIBILITY

<b>Economic impacts</b>	
G4-EC1	Direct economic value generated and distributed, €

Income from customers	2016	2015	2014
Turnover	586,119,500	600,224,476	567,155,225

Other operating income	12,688,847	5,199,164	4,619,211
Contributions received	-282,023	-199,475	-199,534
Dividend income	564,840	555,518	345,805
Income from investments and loans	688,991	623,881	1,035,098
<b>Total</b>	<b>599,780,155</b>	<b>606,403,565</b>	<b>572,955,805</b>

### Payments to suppliers

Purchases, materials and services	248,358,502	240,642,741	264,304,258
Electricity tax on auxiliary power	-18,978	-9,858	-9,766
Other costs	30,585,523	82,287,655	48,148,708
Changes in fair value	35,444,373	-24,275,675	6,171,081
Voluntary additional personnel expenses and compensation for expenses (excl. training)	-1,533,407	-1,406,409	-1,323,771
Real estate tax	-409,145	-393,259	-427,408
Contributions	-32,424	-79,538	-190,656
<b>Total</b>	<b>312,394,445</b>	<b>296,765,659</b>	<b>316,672,447</b>

### Remuneration to personnel

Salaries, remunerations, social security contributions	28,597,902	25,804,350	24,992,709
Voluntary additional personnel expenses and compensation for expenses (excl. training)	1,533,407	1,406,409	1,323,771
<b>Total</b>	<b>30,131,309</b>	<b>27,210,758</b>	<b>26,316,480</b>

### Remuneration to financiers and shareholders

Dividend*	97,999,992	90,000,004	65,000,001
Finance costs	21,058,652	22,738,413	24,021,610
<b>Total</b>	<b>21,058,652</b>	<b>112,738,417</b>	<b>89,021,611</b>



**Support in public interest and taxes**

Income tax for the financial year	25,780,172	30,807,079	20,202,952
Real estate tax	409,145	393,259	427,408
Electricity tax on auxiliary power	18,978	9,858	9,766
Contributions and sponsoring	32,424	79,538	190,656
<b>Total</b>	<b>26,240,719</b>	<b>31,289,733</b>	<b>20,830,781</b>

<b>Undistributed added value for developing Fingrid's operations</b>	<b>209,955,030</b>	<b>138,398,998</b>	<b>120,114,486</b>
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\*The dividend for 2016 is the Board of Directors' proposal to the Annual General Meeting

G4-EC4	Financial assistance received from government	Financial statements, note 2, other operating income, Financial statements, consolidated cash flow statement
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	<b>2016</b>	<b>2015</b>	<b>2014</b>
Tekes	75,714	34,475	66,181
National Emergency Supply Agency	145,000	145,000	130,000
Real-Smart (EU)			3,353
EU investment grant		15,000,000	19,935,000
Other financial assistance			
<b>Total</b>	<b>262,023</b>	<b>15,179,475</b>	<b>20,134,539</b>

**Indirect economic impacts**

G4-EC8	Significant indirect economic impacts and their extent	Power system
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**Procurement practices**

	Report of the Board of Directors Strategy Corporate responsibility Corporate responsibility GRI indicators	See G4-12.
G4-DMA		
<b>Electricity availability and transmission reliability</b>		
G4-DMA	Grid development and maintenance	
<b>Demand-side management</b>		
G4-DMA	Power system Electricity market	
<b>Research and development</b>		
G4-DMA	Research, development and innovation	
<b>System efficiency</b>		
EU12	Transmission and distribution losses Power system	See also G4-EN4.
<b>ENVIRONMENTAL IMPACTS</b>		
<b>Energy</b>		
G4-EN3 and G4-EN4	Energy consumption within and outside of the organisation	7, 8

## ENERGY CONSUMPTION

Direct		2016	2015	2014
Light fuel oil	t	3,217	2,068	3,289
	GJ	138,320	88,905	140,757
Indirect				
Electricity transmission energy losses	GWh	1,270	1,380	1,266
	GJ	4,572,000	4,968,431	4,558,700
Fast disturbance reserve electricity procured	GWh	1.3	3.4	0.5
	GJ	4,676	12,700	1,937
Reserve power plants' auxiliary energy	GWh	9.9	9.4	9.2
	GJ	35,724	33,719	33,195

Reserve power plants'				
district heating	GWh	0.6	0.6	0.7
	GJ	2,319	2,242	2,610

Fingrid's environmental data reporting encompasses the entire company except for the data on substation electricity consumption, electricity and heating for premises, and the related carbon dioxide emissions. The compilation of this data will be developed in the coming years. Reporting does not include emissions data from transportation carried out by service providers. Fingrid does not own any motor vehicles.

## Biodiversity

		Operational sites owned, leased, managed in, or adjacent to, protected areas and areas of high biodiversity value outside protected areas	
G4-EN11			8

		2016	2015	2014
Grid transmission lines in protected areas and Natura sites <sup>1</sup>	km	257	260	240

Reported transmission line kilometres in protected and Natura areas.

<sup>1</sup> Approx. 2% of Fingrid's transmission lines are located in nature reserves or Natura sites. Protected areas amounted to around 9 per cent of Finland's total area in 2016.

## Emissions

	Direct greenhouse gas (GHG) emissions	
G4-EN15	(Scope 1)	7, 8

## Direct emissions (Scope 1)

	2016	2015	2014
Reserve power plant fuels, tCO <sub>2</sub>	10,326	6,502	10,660
Substations' sulphur hexafluoride, tCO <sub>2</sub> e	479	1,459	342
Total, tCO <sub>2</sub> e <sup>1</sup>	10,805	7,961	11,000

1 According to Statistics Finland, the total CO<sub>2</sub> equivalent emissions in Finland in 2015 were 55.6 million carbon dioxide tonnes. Fingrid's share of all Finnish CO<sub>2</sub> emissions amounted to approximately 0.1‰ in 2015.

Fingrid's carbon dioxide emissions calculations are based on the EU emissions trading system (EU-ETS) and on the international Greenhouse Gas (GHG) Protocol standards. The emission factors used in Fingrid's CO<sub>2</sub> calculations are based on the latest factors from Statistics Finland, the average emission factors of electricity procurement and district heat production for Finland, and IPCC 2007 (AR4) Global Warming Potentials (GWPs). The calculation of electricity CO<sub>2</sub> emissions applies a rolling average of the last five years recorded in statistics. Emissions in 2016 were calculated using Statistics Finland's emissions factor of 209 kg CO<sub>2</sub>/MWh. District heating CO<sub>2</sub> emissions were calculated using the emissions factor of 183 kg CO<sub>2</sub>/MWh published by the Finnish Energy Industries for the last three statistical years.

G4-EN16 Indirect greenhouse gas (GHG) emissions (Scope 2)	7, 8
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### Indirect emissions (Scope 2)

	2016	2015	2014
Transmission losses, tCO <sub>2</sub> -e	265,430	303,626	354,800
Fast disturbance reserve electricity procured, tCO <sub>2</sub> -e	775	897	122
Reserve power plants' auxiliary energy, tCO <sub>2</sub> e	2,074	2,061	2,096
Reserve power plants' district heating, tCO <sub>2</sub> -e	118	116	152
Total, tCO <sub>2</sub> e	268,397	306,700	357,170

1 2015 calculation includes CH<sub>4</sub> and N<sub>2</sub>O emissions.

G4-EN17 Other indirect greenhouse gas (GHG) emissions (Scope 3)	7,8
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### Other indirect emissions (Scope 3)

	2016	2015	2014
Business travel (flights and kilometre-reimbursed business trips), tCO <sub>2</sub> -e	694	752	552
Total, tCO <sub>2</sub> e	694	752 <sup>1)</sup>	552

1 2015 calculation includes CH<sub>4</sub> and N<sub>2</sub>O emissions.

G4-EN21	NO <sub>x</sub> , SO <sub>x</sub> and other significant air emissions	8
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### Reserve power plants' sulphur dioxide and nitrogen oxide emissions

	2016	2015	2014
	tonnes	tonnes	tonnes
Sulphur dioxide, SO <sub>2</sub>	0.80	0.48	1.45
Nitrogen oxide, NO <sub>x</sub>	61	40	62

### Effluents and waste

G4-EN23	Total weight of waste by type and disposal method	8
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### Total weight of waste by type and disposal method

	2016	2015	2014
	tonnes	tonnes	tonnes
Total waste volume	7,397	6,052	3,678
Hazardous waste	481	333	412
Recycling and reuse	5,275	4,770	3,128
Other utilisation, e.g. for civil engineering	1,195	955	430
Combustion in a power plant	40	37	3
Final disposal, e.g. landfill	887	290	117

G4-EN24	Total number and volume of significant spills	Report of the Board of Directors Environment	One major environment-related deviation occurred in the company's operations during the year
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**Compliance** **8**

G4-EN29	Monetary value of significant fines and total number of non-monetary sanctions for non-compliance with environmental laws and regulations	No fines or sanctions during the reporting period.
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**SOCIAL IMPACTS, LABOUR PRACTICES AND DECENT WORK**

**Employment** **6**

G4-LA1	Total number and rates of new employee hires and employee turnover by age group, gender and region
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**TYPES OF EMPLOYMENT**

	2016	2015	2014
New permanent employment contracts	15	10	23
Number of expired employment contracts	7	7	5
Retired	3	8	3
Average retirement age	65	65	63

Average length of employment* (y)	10.3	8.3	8.9
Number of persons made redundant	0	0	0
Incoming turnover rate	5.15%	3.57%	8.16%
Outgoing turnover rate	3.44%	4.64%	2.84%

Incoming and outgoing turnover rates not reported by age group and gender. The report accounts for absolute values; percentage rates not reported due to a low turnover rate.

\*Fingrid was established in 1996 and its operations started in 1997. The personnel were transferred to the company as serving employees.

### NEW, PERMANENT EMPLOYMENT CONTRACTS, BY AGE GROUP

	2016	2015	2014
	No. of people	No. of people	No. of people
Under 29 yrs.	2	3	5
30–39	7	4	12
40–49	5	2	6
50–59	1	1	0
60–69	0	0	0

### NUMBER OF EXPIRED PERMANENT EMPLOYMENT CONTRACTS BY AGE GROUP

	2016	2015	2014
	henkilöä	henkilöä	henkilöä
Under 29 yrs.	1	0	
30–39	5	3	3
40–49	1	2	2
50–59	0	2	0
60–69	3	6	3

<p>Percentage of employees retiring within the next 5 and 10 years</p> <p>EU15</p>	<p>Percentage of employees retiring within the next 5 years, %:</p> <p>Percentage of employees retiring within the next 10 years, %:</p> <p>*The estimate is based on the lowest age that one can retire on old-age pension according to the statutory pension system.</p>	<p>13 %</p> <p>24 %</p>	<p>Salaried employees</p> <p>Salaried employees</p>	<p>3 %</p> <p>4 %</p>	<p>Senior salaried employees</p> <p>Senior salaried employees</p> <p>97 %</p> <p>96 %</p>
<p>Days worked by contractor and subcontractor employees involved in construction, operation &amp; maintenance activities.</p> <p>EU17</p>	<p>The report accounts for the total working hours of service providers. See G4-10 (add).</p>				
<p>Percentage of contractor and subcontractor employees that have undergone relevant health and safety training.</p> <p>EU18</p>	<p>The source of the report is the OHS development project.</p>				
<p><b>Occupational health and safety</b></p>					
<p>Type of injury and rates of injury (LTIF), occupational diseases, lost days, and absenteeism, and total number of work-related fatalities, by region and by gender</p> <p>G4-LA6</p>	<p>Grid development and maintenance</p>	<p>Personnel Report of the Board of Directors</p>			



**NUMBER OF OCCUPATIONAL ACCIDENTS AND ABSENCES DUE TO ILLNESS**

Absences due to illness	2016		2015		2014	
	1% (3.4 days/person)		2% (3.6 days/person)		2% (3.6 days/person)	
	Workplace	Business trip	Workplace	Business trip	Workplace	Business trip
Accidents resulting in absence from work	0	0	1	0	0	0
Accidents not resulting in absence from work	1	1	3	3	3	1
LTIF (accidents/million work hours)*	0	0	2.1	0	0	0
Work-related fatalities	0	0	0	0	0	0
Occupational diseases	No cases		No cases		No cases	

\*LTIF in line with Zero Accidents criteria.

No occupational diseases diagnosed in 2016. The report accounts for the number of accidents, LTIF, fatalities and percentage of absences due to illness.

G4-LA6 (add.)	Contractors' and suppliers' OHS-related performance	Grid development and maintenance	The report accounts for the number and seriousness of accidents, LTIF and fatalities.
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**Training and education 6**

G4-LA9	Average hours of training per year per employee by gender, and by employee category
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**NUMBER OF TRAINING HOURS BY PERSONNEL GROUP AND GENDER**

	2016	2015	2014
	h	h	h
Number of training hours by gender, Women	40	32	31
Number of training hours by gender, Men	34	40	32

Number of training hours by employee group, salaried employees	21	23	26
Number of training hours by employee group, senior salaried employees	38	40	32

**PERFORMANCE REVIEWS**

	2016	2015	2014
Basic and secondary education	21	21	24
Lowest level of tertiary education	34	33	34
Bachelor’s degree	104	101	102
Master’s degree	123	116	114
Second stage of tertiary education	9	9	7
Training days per person	5	5	4

G4-LA10	Programs for skills management and lifelong learning that support the continued employability of employees and assist them in managing career endings		6
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G4-LA11	Percentage of employees receiving regular performance and career development reviews		
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**PERFORMANCE REVIEWS**

	2016	2015	2014
% who participated	99	99	99

Performance reviews apply to all permanent employees. Performance reviews conducted twice a year include a discussion on personal goals and results as well as an individual long-term and short-term development plan. Total percentage reported.

**Diversity and equal opportunities** **6**

Composition of governance bodies and breakdown of employees per employee category according to gender, age group, minority group membership, and other indicators of diversity

G4-LA12 Corporate Governance Statement

**AGE DISTRIBUTION OF PERMANENT PERSONNEL**

	2016	2015	2014
Under 29 yrs.	25	22	19
30–39	80	81	86
40–49	91	86	83
50–59	76	75	75
60–69	19	16	19
Average age	44	44	44

**GENDER DISTRIBUTION BY EMPLOYEE GROUP**

2016		2015		2014	
Men	Women	Men	Women	Men	Women

Board of Directors	3	2	3	2	3	2
Management	6	2	7	1	7	1
Senior salaried employees	213	57	203	56	207	54
Salaried employees	1	12	1	12	1	12

The Board of Directors and personnel groups reported by gender. The age distribution of permanent personnel reported. (number of people)

**SOCIAL IMPACTS, HUMAN RIGHTS**

**Non-discrimination 6**

G4-HR3	Total number of incidents of discrimination and corrective actions taken	No incidents of discrimination during the reporting period.
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**SOCIAL IMPACTS, SOCIETY**

**Local communities 1**

EU22	Number of people physically or economically displaced and/or compensation broken down by type of project	A residential property was purchased in order to ensure appropriate transmission line planning.
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**Anti-corruption 10**

G4-SO5	Confirmed incidents of corruption and actions taken	No incidents of corruption during the reporting period.
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**Public policy 10**

G4-SO6	Total value of political contributions by country and recipient/beneficiary	Fingrid does not provide any direct or indirect support, including non-monetary support, to religious or political activities.
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**Anti-competitive behaviour**

G4-SO7	Total number of legal actions for anti-competitive behaviour, anti-trust, and monopoly practices and their outcomes	No legal actions regarding anti-competitive behaviour during the reporting period.
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**Compliance**

G4-SO8	Significant fines and non-monetary sanctions for non-compliance with laws and regulations	No fines or sanctions during the reporting period.
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<b>SOCIAL IMPACTS, PRODUCT RESPONSIBILITY</b>			
<b>Customer health and safety</b>			
EU25	Number of injuries and fatalities to the public involving company assets, including legal judgments, settlements and pending legal cases of diseases	Power system	Two known cases of damage during the reporting period.
<b>Access</b>			
EU28	Power outage frequency	Power system	
EU29	Average power outage duration	Power system	
<b>Product and service labelling</b>			
G4-PR5	Results of surveys measuring customer satisfaction	Customers	
<b>Customer privacy</b>			
G4-PR8	Total number of substantiated complaints regarding breaches of customer privacy and losses of customer data		No fines or sanctions during the reporting period.

# Board of Directors





**Juhani Järvi, Chair**

M.Sc. (Finance), born in 1952

Main position: Board work



### **Juha Majanen, Deputy Chair**

LL.B, born in 1969  
Board member since 22 March 2012

Main position:  
Budget Counsellor, Deputy Director General,  
Ministry of Finance, Budget Department,  
Fiscal Policy Unit 2014-



### **Anu Hämäläinen**

Master of Science (M.Sc.), Economics,  
born in 1965  
Board member since 6 April 2016

Main position:  
Wärtsilä Corporation, Vice President,  
Group Treasury  
and Financial Services & Support.





### Sanna Syri

Doctor of Science in Technology,  
b. 1970  
Board member since 14 April 2015

Main position:  
Aalto University, Professor,  
Energy Technology and Energy Economics,  
School of Engineering 2010-



### Esko Torsti

Lic.Pol., born in 1964  
Board member since 22 March 2012

Main position:  
Ilmarinen Mutual Pension Insurance Company,  
Head of Non-listed investments 2006-

Secretary of the Board

### Marina Louhija

LLM, born in 1968  
Legal Affairs, Fingrid Oyj

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See full introductions of the Board members on [Fingrid's home page](#).

# Executive management group





## **Jukka Ruusunen**

Doctor of Technology, born in 1958  
President & CEO since 2007

Member of the executive management group since  
2007,  
employed by Fingrid since 2007



## **Kari Kuusela**

M.Sc. (Tech.), born in 1955  
Executive Vice President since 2007,  
Asset Management

Member of the executive management group since  
1999,  
employed by Fingrid since 1997



### **Jussi Jyrinsalo**

Licentiate in Technology,  
born in 1964  
Senior Vice President since 2005,  
Customers and Grid Planning  
Member of the  
executive management group since 2005,  
employed by Fingrid since 1997



### **Tiina Miettinen**

M.Sc (Politics), M.Sc (Knowledge  
Management),  
born in 1963  
Senior Vice President since 2013,  
HR and communications  
Member of the  
executive management group since 2013,  
employed by Fingrid since 2007



### Jan Montell

M.Sc. (Finance), born 1968  
Chief Financial Officer (CFO), since 2013  
Member of the  
executive management group  
starting since 2013



### Reima Päivinen

M.Sc. (Tech.), born in 1958  
Senior Vice President since 2005,  
Power System Operations  
Member of the  
executive management group since 2005,  
employed by Fingrid since 1997



### **Asta Sihvonon-Punkka**

Licentiate in Economics, M.For,  
born in 1962  
Senior Vice President since 2016,  
Markets  
Member of the  
executive management group since 2016,  
employed by Fingrid since 2016



### **Kari Suominen**

M.Sc. (Tech.), MBA, born in 1964  
CIO since 2013,  
ICT  
Member of the  
executive management group since 2013,  
employed by Fingrid since 2013

See full introductions of the Executive management group on [Fingrid's home page](#).



# 1. General

Fingrid is a public limited company whose governance is based on the Finnish Limited Liability Companies Act, the Securities Market Act, its articles of association and its shareholder agreements. Fingrid complies in its operations with the 2015 Corporate Governance Code for Finnish listed companies (“Corporate Governance Code”) published by the Securities Market Association because the company has issued bonds listed on the London Stock Exchange. This Corporate Governance Statement has been drawn up in accordance with the recommendations of the Corporate Governance Code. Fingrid's shares are not subject to public trading.

The company's activities are primarily regulated by the Electricity Market Act. The Electricity Market Act stipulates that Fingrid's governance and its grid operations must be independent of the production and sale of electricity and natural gas. Fingrid's owners must ensure that they keep separate decision-making which concerns Fingrid and decision-making concerning companies which practice the production or sale of electricity or natural gas. The confirmed regulatory methods allow the Energy Authority to monitor the

reasonableness of the prices of Fingrid's electricity transmission operations, as well as its capabilities to make sufficient investments in its grid and cover its costs. The Energy Authority confirms the allowed earnings for each regulatory period. The current regulatory methods for the regulatory periods 2016–2019 and 2020–2030 entered into force on 1 January 2016.

Fingrid's corporate governance statement has been drawn up in accordance with the reporting requirements of the Corporate Governance Code. The statement was drawn up as a separate report from the annual report and has been processed by Fingrid's Board and the Board's audit committee. Fingrid's auditing organisation PricewaterhouseCoopers Oy has verified that this statement has been provided and that the description of the internal control and risk management systems pertaining to the financial reporting process is consistent with the financial statements of the company.

The Finnish Corporate Governance Code is available in full at [www.cgfinland.fi](http://www.cgfinland.fi).

## 2. Description of Fingrid's administrative bodies

Fingrid's administrative system is described below, and the tasks of the administrative bodies are described later in sections 3–7.



## 3. General meeting

The general meeting is the company's supreme decision-making body. Each shareholder has the right to participate in the general meeting and to exercise their right to vote. The shares of the company are divided into Series A shares and Series B shares. Series A shares confer three (3) votes each at the general meeting and Series B shares one (1) vote each. When electing members of the Board of Directors, Series A shares confer ten (10) votes each and Series B shares confer one (1) vote each.

Decisions at the general meeting are primarily made with a simple majority vote. Certain changes to the articles of association nevertheless require support from a qualified majority. In addition, Series B shareholders have the right to elect one (1) member of the Board. Up-to-date information on the total number of shares and voting rights in each share class is published on Fingrid's website.

The general meeting adopts the financial statements, decides on the distribution of profits and elects an auditor and the company Board, elects a Chair and Deputy Chair of the Board and decides on discharging members of the Board and the President & CEO from liability. In addition, the general meeting decides on the remuneration paid to the Board of Directors and its committees. The annual general meeting is held once a year, no later than in June. An extraordinary general meeting shall be held if the Board so decides or if the Limited Liability Companies Act (Osakeyhtiölaki, 324/2006) so requires.

The general meeting is convened by the company Board. In accordance with the articles of association, invitations to general meetings and other notifications shall be sent to the shareholders at the earliest four (4) weeks and at the latest two

(2) weeks before the meeting by mailing the invitation to the general meeting as a registered letter to each shareholder to the address entered in the share register of the company.

The notice of the general meeting and the following information is published on the company website at least 21 days before the general meeting:

- The documents to be submitted to the general meeting
- Board proposals for decisions
- Proposals concerning the composition and remuneration of the Board
- The methods complied with while preparing the proposal for the election of the Board
- Procedure according to which the Board members are to be appointed in compliance with the articles of association
- Information on the proposed Board members and an assessment of their independence
- Proposal for the election of financial auditors
- Other proposals made by the shareholders and to be decided by the general meeting

Each shareholder has the right to have an item falling within the competence of the general meeting by virtue of the Limited Liability Companies Act addressed by the general meeting. The shareholder must submit his or her request to have the item discussed by the annual general meeting such that the company has sufficient time to process the matter before delivering the notice of the annual general meeting. The company publishes on its website dates by which shareholders must submit their requests to have a specific matter addressed by the annual general meeting and an email address to which the requests should be sent.

The company publishes the minutes of the general meetings on its website no later than two (2) weeks after the meeting.

As a rule, Fingrid's President & CEO, Chair of the Board and other Board members, together with the auditor, are present in a general meeting. Also, a person proposed for the first time as a Board

member shall participate in the general meeting that decides on his or her election unless there are well-founded reasons for the absence.

Fingrid's annual general meeting was held on 6 April 2016. The main decisions from the annual general meeting have been published on the company's website.

## 4. Board of Directors

Fingrid's annual general meeting elects a Board once per year. In accordance with the articles of association, the Board of Directors consists of five (5) members. Shareholders who hold Series B shares in the company are entitled to elect one (1) member of the Board through a simple majority decision in accordance with the quantity of Series B shares held. Individuals who are Board members in a company which practices the sale or production of electricity or natural gas, or in a body which represents such a company, may not be elected as a member of the Board. The general meeting elects one Board member to serve as the Chair of the Board and one member to serve as the Deputy Chair of the Board. The Board is convened by the Chair or Deputy Chair of the Board.

The Board constitutes a quorum when more than half of its members are present, and one of these is the Chair or the Deputy Chair. The decisions of the Board of Directors are made through a simple majority on the basis of the Board members present in the meeting. New Board members are familiarised with the company's operations. A Board member's period of office expires at the closing of the next annual general meeting following his or her election.

### 4.1 Duties of the Board of Directors

The tasks and responsibilities of Fingrid's Board are set out by the Limited Liability Companies Act and other applicable legislation, as well as the articles of association. The Board of Directors is responsible for the administration and appropriate organisation of the operations of the company. The Board of Directors makes sure that the company adheres to the relevant rules and regulations, articles of

association of the company, and guidelines provided by the annual general meeting. The primary duties and principles of the Board of Directors are also specified in the Board's working order, according to which the Board:

- Decides the company strategy.
- Approves the annual action plan and budget on the basis of the strategy and supervises its implementation.
- Approves Fingrid's management system and other business principles to be determined on the Board level.
- Confirms the values to be followed in Fingrid's operations.
- Approves the total amount of purchases and capital investments and its distribution on the various sectors, and decides separately on budgeted purchases and capital investments in excess of 10 million euros and on purchases, capital investments and sales outside the budget in excess of 2 million euros.
- Reviews and approves the financial statements, interim reports and the related stock exchange releases, the annual review and the management's reviews.
- Annually reviews the risks relating to the company's operations and the management of such risks.
- Decides on the operating model of the internal audit and reviews the internal audit's annual plan and audit reports.
- Appoints and dismisses the President & CEO of the company.
- Approves the basic organisation and composition of the executive management group of the company.
- Decides on the principles of the remuneration system and on the remuneration of the President & CEO and the executive management group.

- Holds some of the meeting at least once a year without the presence of executive management.
- Holds some of the meeting at least once a year with the auditor without the presence of executive management.
- Assesses its work once a year.
- Appoints from amongst its own members the audit committee and remuneration committee.
- Appoints an advisory committee whose task is to act as a link between the Board and the company management and electricity users and other stakeholders. The advisory committee has 10–14 members who represent electricity producers, transmitters, sellers, users and other electricity market actors. The term of office is three (3) calendar years. The Board confirms the advisory committee's regulations.
- Deals with other business which the Chair of the Board, a Board member or the President & CEO has proposed for inclusion on the agenda.

## 4.2 Board of Directors in 2016

Until the annual general meeting held on 6 April 2016, the Board consisted of Helena Walldén (Chair), Juha Majanen (Deputy Chair), Juhani Järvi, Sanna Syri and Esko Torsti. After the annual general meeting, Juhani Järvi (Chair), Juha Majanen (Deputy Chair), Anu Hämäläinen, Sanna Syri and Esko Torsti were elected as members of the Board.

Of the Board's members, Juhani Järvi, Anu Hämäläinen and Sanna Syri are independent from the company and its significant shareholders; the other members are independent from the company. The company's President & CEO, CFO and general counsel, who is the Board's secretary, participate in Board meetings. Board members do not own shares in the company.

The Board convened 8 times over the course of the year and approved the financial statements and annual review for 2015 and decided on, among other things, Fingrid's strategy for 2017–2021, the budget and annual action plan for 2017, the grid service pricing for 2017, grid investments of roughly EUR 120 million, the principles of risk management and continuity management, and all significant policies affecting the company. Furthermore, the Board made a decision in principle on a third connection line between Sweden and Finland. In its meetings, the Board discussed matters which have featured on committees' agendas.

## 4.3 Diversity of the Board of Directors

The Board of Directors' diverse composition supports the accomplishment and development of the goals and targets set by the company for its operations. An aim of the company is for all Board members to have adequate and mutually complementary experience and expertise in the areas essential for both the operations and societal role of the company. Fingrid additionally strives to assess the composition of the Board in terms of age and gender and to comply with the gender equality targets recommended by the state ownership steering. A proposal on the Board composition is prepared by significant shareholders. Fingrid Board members possess wide-ranging business and management expertise, also outside of Finland. The sectors and areas of expertise represented in the Board include industry, energy sector, financing and accounting as well as state administration. 40 per cent of the Board members are female and 60 per cent male. The ages of the Board members range between 46 and 65 years.

## Fingrid's Board of Directors on 31 December 2016

Name	Year of birth	Educa- tion	Main position and indepen- dence	Atten- dance at Board meetings	Attendance at committee meetings
Chair Juhani Järvi	1952	M.Sc. (Finance)	Board work, inde- pendent from the company and sig- nificant sharehol- ders	8/8	Audit committee 5/5  Remuneration committee 3/4 (since 6 April 2016)
Deputy Chair Juha Majanen	1969	LL.B.	Ministry of Fi- nance, Head of Fiscal Policy Unit, independent from the company, non- independent from significant share- holders	8/8	Audit committee 5/5
Anu Hämäläinen (since 6 April 2016)	1965	M.Sc. (Accoun- ting and Finance)	Wärtsilä Corpora- tion, Vice Presi- dent, Group Trea- sury and Financial Services & Sup- port, independent from the company and significant shareholders	7/8	Remuneration committee 3/4  (Member since 6 April 2016)

## Fingrid's Board of Directors on 31 December 2016

Sanna Syri	1970	D.Sc. (Techno- logy)	Aalto University, Professor, independent of the company, in- dependent from significant share- holders	8/8	Remuneration committee 4/4
Esko Torsti	1964	Lic. Pol.	Ilmarinen Mutual Pension Insurance Company, Vice President, inde- pendent from the company and non- independent from significant share- holders	8/8	Audit committee 4/5 (since 6 April 2016)  Remuneration committee 1/4 (until 6 April 2016)
Helena Walldén (until 6 April 2016)	1953	M.Sc. (Tech.)	Board work, inde- pendent from the company and sig- nificant sharehol- ders	1/8	Audit committee 1/5 (until 6 April 2016)  Remuneration committee 1/4 (until 6 April 2016)



## 5. Board committees

The Board has two (2) committees: the audit committee and the remuneration committee. The Board approves the committees' working orders, which are regularly updated. The Board appoints members of the committees from amongst its own members. Each committee has at least three (3) members. The requirements of the Corporate Governance Code are complied with when appointing members of the committees.

The committees appointed by the Board assess their operations once a year.

### 5.1 Audit committee

The audit committee is appointed by the Board of Directors and it assists the Board. The Board has specified the duties of the audit committee in its working order in accordance with recommendation 16 of the Corporate Governance Code, in addition to which the audit committee should also assess the audit plans of the auditor and internal auditor, review the auditor's and the internal audit reports, supervise compliance with legislation (incl. requirements set in the EU's Audit Regulation) and with the governance principles set by the Board as well as the financial reporting process and prepare the process for the selection of the auditor.

The audit committee consisted of Esko Torsti (Chair as of 6 April 2016), Juha Majanen, Juhani Järvi and Helena Walldén (Chair and member until 6 April 2016). The committee convened five times in 2016. The President & CEO, the CFO and general counsel participated in the committee's meetings. In its meetings, the audit committee dealt with issues such as the draft interim reports, the auditor's reports, the reports of the internal audit on

maintenance management, on the management of customer contracts and customer data and on financing activities, the principles for risk management and continuity management, as well as corporate finance and financing principles, and the corporate governance statement. The committee additionally prepared the company's financial reporting concerning matters up for decision by the Board.

### 5.2 Remuneration committee

The remuneration committee is appointed by the Board of Directors and it assists the Board. The Board has specified the duties of the remuneration committee in its working order in accordance with recommendation 17 of the Corporate Governance Code. Accordingly, the remuneration committee, among other things, prepares for the Board of Directors the principles of the remuneration system applied to the executive management and other personnel. The committee also prepares for the Board, on the basis of accepted principles, a proposal concerning the remuneration to be paid to the President & CEO and other members of the executive management group. The committee furthermore prepares matters concerning the election of the President & CEO and members of the executive management group and successor planning.

The remuneration committee consisted until 6 April 2016 of Helena Walldén (Chair), Sanna Syri and Esko Torsti and since 6 April 2016 of Juhani Järvi (Chair), Anu Hämäläinen and Sanna Syri. During 2016, the remuneration committee convened four times. The President & CEO and the Senior Vice President, HR and Communications, participated in

the committee's meetings. Topics discussed in the meetings included the remuneration systems for the executive management group and the President &

CEO as well as management successor planning and deputising arrangements.

## 6. President & CEO

The President & CEO, in compliance with the Limited Liability Companies Act, attends to the administrative routines of the company in accordance with guidelines provided by the Board of Directors. In accordance with the Limited Liability Companies Act, the President & CEO is responsible for ensuring that the company's bookkeeping complies with legislation and that financial management is reliably organised. Assisted by the executive management group, the President & CEO

is responsible for the operations of the company and serves as the Chair of the Board of the subsidiaries. The President & CEO is not a member of the company's Board of Directors.

Jukka Ruusunen (D.Sc. Tech., born 1958) has acted as Fingrid's President & CEO since 2007. He does not own Fingrid shares nor does he have share-based rights in Fingrid or in a company that belongs to the same group as Fingrid.

## 7. Company management

Fingrid holds key responsibility for the transmission of electricity in the main grid in Finland and thereby the functioning of the entire society. In its operations, Fingrid complies with the applicable legislation and international conventions as well as the principles approved by the Board of Directors and the policies approved by the President & CEO and discussed by the executive management group. Fingrid's Code of Conduct is published on the company's website.

The primary duty of Fingrid's executives is to ensure that the company's basic tasks are managed efficiently. The operations are based on meeting the needs of customers and society, taking into account the obligations laid down in the articles of association, shareholder agreements, electricity system license and Electricity Market Act.

Fingrid's operations are managed in a matrix of four perspectives. These are: customers and society, finance, internal processes (adequacy of the transmission system, system operation and the promotion of market functioning), and personnel and expertise.

The operational organisation has been organised into functions. The heads of the functions make up the executive management group of the company. The Board of Directors approves the basic organisation of the company on the level of functions.

Significant special tasks are separated and organised as necessary in a separate company. Such tasks include e.g. special electricity market services, such as the management of the power reserve system and taking care of the guarantees of origin for electricity, which are carried out by Finextra Oy, a wholly owned subsidiary of the parent

company Fingrid. Another subsidiary wholly owned by the parent company Fingrid, Fingrid Datahub Oy, is in charge of providing the electricity markets' centralised data exchange service and related services to electricity market parties as well as of the management of the registered information required by the electricity market and the development of these functions.

### 7.1 Executive management group

The executive management group supports the President & CEO. Its tasks are:

- To define, communicate, implement and follow up the strategy.
- To draw up an action plan and budget.
- To implement financial control and risk management.
- To implement resource planning, procurement and control.
- To implement external communications and stakeholder dialogue.
- To prepare matters for the Board of Directors.
- To develop the work of the executive management group.

Each member of the executive management group is responsible for day-to-day business operations of the organisation in his or her area of responsibility and for implementing operative decisions.

In addition to Jukka Ruusunen, President and CEO, the executive management group consisted in 2016 of:

- Kari Kuusela, M.Sc. (Tech.), born in 1955, Executive Vice President, asset management
- Juha Kekkonen, M.Sc. (Tech.), born in 1950, Executive Vice President, markets (until 28 February 2016)
- Asta Sihvonen-Punkka, Licentiate in Economics, M.For, born in 1962, Senior Vice President, markets (since 1 March 2016)
- Jussi Jyrinsalo, Licentiate in Technology, born in 1964, Senior Vice President, system development
- Tiina Miettinen, M.Sc. (Politics), M.Sc. (Knowledge Management), born in 1963, Senior Vice President, HR and communications
- Jan Montell, M.Sc. (Finance), born in 1968, Chief Financial Officer (CFO)
- Reima Päivinen, M.Sc. (Tech.), born in 1958, Senior

Vice President, power system operation

- Kari Suominen, M.Sc. (Tech.), MBA, born in 1964, Chief Information Officer (CIO)

Fingrid's general counsel additionally participates in the meetings of the executive management group.

The members of the executive management group do not own Fingrid shares nor do they have share-based rights in Fingrid or in a company that belongs to the same group as Fingrid.

The executive management group convened 15 times during the year.

## 8. Advisory committee

Fingrid's Board of Directors appoints an advisory committee with 10 to 14 members to serve as a link between the company, its customers and other stakeholders. The advisory committee is an advisory body which provides perspectives on the company's grid operations and customer services from a customer point of view. The advisory committee widely represents electricity producers, transmitters, sellers, users and other electricity market actors.

The advisory committee is set out in Fingrid's articles of association. The Board annually confirms the regulations concerning the work of the advisory committee. The term of office of the members of the advisory committee is three years. The President &

CEO and Vice President responsible for the company's customer relationships participate in the advisory committee's meetings.

The composition of the advisory committee is set out on the company's website.

The advisory committee convened four times during the year. The topics discussed in the advisory committee's meetings included in particular the transformation of the power system and the electricity market as well as the opportunities offered by digitalisation and smart grids and the impact of these, particularly from the point of view of customers.

# 9. Internal control and risk management

## 9.1 Internal control and risk management principles

Fingrid's internal control is a permanent component of the company's operations and deals with all those operating methods and procedures whose objective it is to ensure

- effective and profitable operations that are in line with the company's strategy,
- the reliability and integrity of the company's financial and management information,
- that the company's assets are protected,
- that applicable legislation, guidelines, regulations, agreements and the company's own governance and operating guidelines are complied with, and
- a high standard of risk management.

Risk management is planned as a whole with the objective of comprehensively identifying, assessing, monitoring and safeguarding the company's operations, the environment, personnel and assets from various threats and risks. Due to the nature of the company's basic mission, risks are also assessed from the perspective of society in general.

Continuity management is a part of risk management. Its objective is to improve the organisation's capacity to prepare and to react in the best possible way should risks occur, and to ensure the continuity of operations in such situations.

Further information on internal control, risk management and the foremost risks and factors of uncertainty is available on the

company's website at [www.fingrid.fi](http://www.fingrid.fi) and in the Board of Directors' annual review.

## 9.2 Arrangement of internal control and risk management and distribution of responsibility

### 9.2.1 Board of Directors

The company's Board is responsible for organising internal control and risk management, and it approves the principles of internal control and risk management on an annual basis. The Board defines the company's strategic risks and related management procedures as part of the company's strategy and action plan, and monitors their implementation. The Board decides on the operating model for the company's internal audit. The Board regularly receives internal audit and financial audit reports as well as a status update at least once a year on the strategic risks and continuity threats relating to the company's operations and their management and realisation.

### 9.2.2 Line management and other organisation

Assisted by the executive management group, the President & CEO is responsible for executing and steering the company's governance, decision-making procedures, control and risk management, and for the assessment of strategic risks and

continuity threats at the company level, and their related risk management.

The heads of functions are responsible for the practical implementation of the governance, decision-making procedures, controls and risk-management for their areas of responsibility, as well as for the reporting of deviations and the sufficiency of more detailed guidelines. Directors appointed in charge of the threats to continuity management are responsible for drawing up and maintaining continuity management plans and guidelines, and for arranging sufficient training and practice.

The CFO is responsible for arranging procedures, controls and monitoring at the company level as required by the harmonised operating methods of internal control and risk management. The company's general counsel is responsible for assuring the legality and regulation compliance of internal guidelines, as well as for the procedures these require. Each Fingrid employee is obligated to identify and report any risks or control deficiencies she or he observes and to carry out the agreed risk management procedures.

## 9.3 Arrangement of control and risk management related to the financial reporting process

The internal control systems relating to the financial reporting process are part of a more extensive overall system of Fingrid's internal control.

### 9.3.1 Control environment of financial reporting process

The Group comprises the parent company Fingrid Oyj and its wholly owned subsidiaries Finextra Oy and Fingrid Datahub Oy. The associated companies are eSett Oy (holding 33.3%) and Nord Pool AS (holding 18.8%). The Group has no joint ventures.

The financial administration of the company is responsible for the Group's centralised financial reporting and for the internal control and risk management of financial reporting. The executive management group and those with budget

responsibility as well as the heads of units and functions receive a monthly report of the financial situation. These reports include information on the proceeds, costs and capital investments in the relevant area of responsibility. In addition to financial accounting reports, the reporting covers comprehensive reports which contain business information. These are produced by means of cost accounting and the financial control system.

The interpretation and application of the standards governing financial statements are centralised at the Group's financial administration, which monitors the accounting standards (IFRS, FAS), maintains an account scheme, draws up internal guidelines for the financial statements, and is responsible for the financial reporting process. The process is documented and it specifies how, when and on what schedule the month-end accounts are drawn up.

Fingrid draws up the consolidated financial statements and interim reports in accordance with IFRS reporting standards accepted by the European Union and in accordance with the Finnish Securities Market Act. The annual review and the financial statements of the Finnish companies included in the Group are prepared in accordance with the Finnish Accounting Act as well as the guidelines and statements of the Finnish Accounting Standards Board.

The internal control and risk management systems and procedures related to the financial reporting processes, described in more detail below, have been devised so as to make sure that financial reporting by the company is reliable, coherent and timely and that the financial reports published provide an essentially true and fair view of Fingrid's finances.

### 9.3.2 Roles and responsibilities of the financial reporting process

Fingrid's Board of Directors is primarily responsible for the specification of the principles for internal control and risk management related to financial reporting, and the Board makes sure that these principles are followed in the company. The Board reviews and accepts the interim reports, annual review and financial statement. The audit committee



assists the Board in this by monitoring the efficiency of internal control, internal audit and risk management systems of the company.

The finance department of the Group is responsible for developing the financial reporting process through means such as monitoring the development needs of controls related to financial reporting, by supervising the sufficiency and efficiency of these controls, and by making sure that external reporting is correct and up to date and that the regulations pertaining to reporting are followed.

The company's financial auditor and internal auditor carry out inspections relating to financial reporting in accordance with the plan approved by the board.

### 9.3.3 Risk management, control procedures and monitoring of the financial reporting process

Controls pertaining to risk management are set throughout the Group, at all levels and units of the Group. Examples of the controls include internal guidelines, acceptance procedures and authorisations, cross-checking with cost accounting, matching, verifications, assessment of operative efficiency, securing of assets, and differentiation of tasks. The financial administration of the Group is responsible for the control structures relating to the financial reporting process.

The control of the budgeting process is based on the budgeting guidelines, with the financial administration of the Group being responsible for their specification, centralised maintenance, and for monitoring compliance with them. The principles are applied uniformly throughout the Group, and there is a common reporting system in use.

The monthly financial reporting to the executive management group together with the related

analyses constitute the primary control and monitoring process in securing the efficiency and purposefulness of the functions and the accuracy of financial reporting. The analyses compare the realised proceed and cost components with the budget and to the previous year, and the budget is compared to the quarterly forecast. The monitoring of cash flow and capital investments is part of this process.

Verification of the accuracy of monthly reporting employs the company's financial control system, which the controllers and heads of units of the company can use to find essential errors and deviations. The accuracy of financial reporting is also ensured through good data security and data protection. The goal is to avoid risky work combinations wherever possible. User rights are checked regularly, and user rights are determined by the position of a person in the organisation. Backups are taken regularly of the databases used in the financial control system and accounting system. The company has a data security manager who is responsible for the management and development of data networks and data security, as well as for providing personnel with guidance concerning data security matters.

Controls for the financial reporting processes are developed as part of internal control. Personnel is given training in how to monitor the correctness of the information produced by the financial reporting process of the company, concerning cost allocation, posting, acceptance procedures for invoices and receipts, as well as for budgeting and actual result follow-up.

The company's auditor and internal auditor carry out regular inspections on the functionality of controls concerning the financial reporting process and on the accuracy of information.

## 10. Financial audit and internal audit

### 10.1 Financial audit

An authorised public accounting company selected by the general meeting acts as auditor for the company. The company's financial auditor inspects the accounting, financial statements and financial administration for each financial period and provides the general meeting with reports required by accounting legislation or otherwise stipulated in legislation. The financial auditor reports on his or her work, observations and recommendations for the Board of Directors and may also carry out other

authorisation-related tasks commissioned by the Board or management.

The annual general meeting of 2016 elected authorised public accountants PricewaterhouseCoopers Oy as the auditor of the company. Authorised public accountant Jouko Malinen serves as the company's responsible auditor. The general meeting decided that the auditor's fee and expenses are paid on the basis of a reasonable invoice accepted by the company.

Auditor's fees, EUR 1,000	2016	2015
Auditing fees	65	45
Other fees	84	74
TOTAL	149	119

### 10.2 Internal audit

The Board of Directors decides on the operating model for the company's internal audit. The internal audit acts on the basis of plans processed by the Audit Committee and approved by the Board. Audit results are reported to the object of inspection, the CEO, the Audit Committee and the Board. Upon decision of the Board, an internal audit outsourced to an authorised public accounting company acts within the company. From an administrative perspective, the internal audit is subordinate to the

President & CEO. The internal audit provides a systematic approach to the assessment and development of the efficacy of the company's risk management, monitoring, management and administrative processes and ensures their sufficiency and functionality as an independent party. The internal audit has the authority to carry out reviews and to access all information that is essential to the audit. Fingrid's internal audit carries out risk-based auditing on the company's various processes.

In 2016, Deloitte & Touche Oy served as Fingrid's internal auditor and carried out a total of three audits. The audits concerned the company's maintenance management, the management of

customer contracts and customer data, and financing activities. The fees paid to Deloitte & Touche Oy for auditing tasks totalled EUR 63.200.

# 11. Related party transactions

The Group's related parties include, in addition to the parent company Fingrid Oyj, subsidiaries Finextra Oy and Fingrid Datahub Oy, and the associated companies Nord Pool AS and eSett Oy, the shareholder entities listed in Note 3.5 of the company's financial statements, and senior management and their related parties. The senior management is composed of the Board of Directors, the President & CEO, and the executive management group. Other related party transactions include transactions concluded with entities in which the State of Finland has a holding in excess of 50 per cent. Fingrid's related party

transactions are accounted for in section 4.1 of the financial statements.

In the decision making concerning related party transactions, Fingrid sees to it that any conflicts of interest are taken into account, and no one included in the related parties or a representative of a related party participates in deciding on a related party transaction. Business with related parties is conducted at market prices. Fingrid maintains a list of its related parties.

## 12. Main procedures relating to insider administration

Fingrid complies with Nasdaq Helsinki Oy's insider guidelines as well as the UK's Financial Conduct Authority's (FCA) and the Financial Supervisory Authority's (FIN-FSA) up-to-date guidelines on the governance and management of insider information. Fingrid additionally has an insider guideline approved by the Board of Directors, which describes the key principles for insider issues to be applied within the company. The company's general counsel Marina Louhija is in charge of insider administration.

Fingrid's permanent insiders consist of the Board of Directors, President & CEO, members of the executive management group as well as any person considered to have regular access, due to their duties, to insider information concerning Fingrid. Project-specific lists of insiders are drawn up as necessary; such lists include any persons in charge of preparations for the project who have access to insider information related to the project. Fingrid additionally applies a so-called extended closed

window to the persons who participate in the preparation of interim reports, management reviews and/or financial statements, including any external consultants and experts.

The lists related to Fingrid's insider administration are not public; only the person in charge of insider administration and his/her assistants have access to them.

According to Fingrid's insider guidelines, permanent or project-specific insiders and the persons under the extended closed window rules may not, on their own account or on the account of a third party, trade in Fingrid's financial instruments within thirty (30) days prior to the publication of Fingrid's financial statements release and the regularly published interim reports and management reviews.

# Remuneration statement

## 13. Arrangement of remuneration decision-making

The annual general meeting decides on the remuneration for Board members and the financial auditor. Fingrid's Board of Directors approves the remuneration for the President & CEO and the members of the executive management group, the remuneration systems for a given year, and the principles of remuneration for personnel.

## 14. Key remuneration principles at Fingrid

### 14.1 Remuneration and other benefits for the members of the Board of Directors

Each member of the Board is paid a fixed annual fee and a meeting fee. The meeting fee is also paid for committee meetings. The members of the Board have no share or share-related remuneration schemes or supplementary pension schemes. Fingrid does not pay pension fees for the Board's remuneration.

### 14.2 Remuneration of the President & CEO

The service terms of the President & CEO have been specified in a separate President & CEO service contract which is approved by the Board of Directors. The retirement age and pension accrual of the President & CEO are

determined in accordance with general pension legislation.

The total remuneration of the CEO consisted in 2016 of a fixed total salary, a one-year bonus scheme (max. 25 per cent of the annual pay for the earnings year), and a three-year long-term incentive scheme (max. 35 per cent of the annual pay for the earnings year). There is no share or share-based remuneration scheme or supplementary pension scheme in place for the CEO on behalf of the company.

The criteria for the CEO's one-year bonus scheme in 2016 were cost efficiency, customer satisfaction, functionality of the workplace community, and leadership. An additional criterion was a strategic project concerning the reliability of cross-border transmission. The criteria for the long-term incentive scheme are system security, electricity market functionality and shareholder value. Corporate social responsibility is taken into account in both the year-long and long-term incentive schemes.

The mutual period of notice for the President & CEO is six months. If the company dismisses the President & CEO, an amount of money corresponding to nine months' fixed salary is paid to the President & CEO in addition to the salary for the period of notice.

### 14.3 Remuneration of executive management

The total remuneration of the members of the executive management group consists of a fixed total salary, a one-year bonus scheme, and a three-year long-term incentive scheme. The maximum amount of the one-year bonus scheme is 20 per

cent of the annual pay for the earnings year. The annual maximum amount of the long-term incentive scheme is 25 per cent of the annual pay for the earnings year.

The criteria for the executive management's one-year bonus scheme in 2016 were cost efficiency, customer satisfaction, functionality of the workplace community, and leadership. The criteria additionally comprised the attainment of the key objectives of each member of the executive management group. The criteria for the long-term incentive scheme are operational reliability, electricity market functionality and shareholder value. Corporate social responsibility is taken into account in both the year-long and long-term incentive schemes.

There is no share or share-based remuneration scheme or supplementary pension scheme in place for Fingrid's executive management group on behalf of the company.

#### 14.4 Remuneration of the personnel

Personnel salaries comprise the basic salary determined according to the content of the task, competence, experience and results, an annual quality bonus that encourages the effective implementation of the strategy, and an incentive bonus to support personal performance.

Remuneration is supplemented by other benefits and worktime flexibility organised by the company. Results which form the basis of quality bonuses are measured using annually defined company and function-level indicators. Incentive bonuses are paid for good performance as part of the daily management of personal performance.

## 15. Remuneration report

### 15.1 Board of Directors

The annual general meeting confirmed the following monthly fees for the Board members on 6 April 2016:

- Chair of the Board EUR 2,400
- Deputy Chair of the Board EUR 1,300
- Board members EUR 1,000

In addition, it was decided that Board members will be paid a meeting fee of EUR 600 for each meeting and committee meeting attended by the member. In 2016, the Board convened 8 times, the audit committee convened 5 times and the remuneration committee convened 4 times.

Total fees paid to Board members in 2016:

	On the board in 2016	Fees total 2016*	On the Board in 2015	Fees total 2015*
Puheenjohtaja Helena Walldén	1.1. – 6.4.	11,143	1.1. - 31.12.	37,800
Juhani Järvi, Board member/ Chair since 6 April 2016	1.1. - 31.12.	35,800	1.1. - 31.12.	19,200
Deputy Chair Juha Majanen	1.1. - 31.12.	25,200	1.1. - 31.12.	21,000

	On the board in 2016	Fees total 2016*	On the Board in 2015	Fees total 2015*
Sanna Syri, Board member	1.1. - 31.12.	21,000	14.4. -31.12.	12,800
Esko Torsti, Board member	1.1. - 31.12.	21,600	1.1. - 31.12.	18,000
Anu Hämäläinen, Board member	6.4. - 31.12.	15,460	-	-
Sirpa Ojala, Board member	-	-	1.1. - 14.4.	5,200

\* Including monthly fees and meeting fees

## 15.2 President & CEO and executive management group

The table below indicates the salaries and benefits of Fingrid's President & CEO and other members of the executive management group in 2016:

	Salaries and benefits*	Variable merit pay**	2016	2015
President & CEO	253,000	99,000	352,000	324,400
Executive management group	989,000	229,000	1,218,000	1,147,000
TOTAL	1,242,000	328,000	1,570,000	1,471,500

\* Asta Sihvonen-Punkka joined Fingrid on 1 January 2016 and has served in the executive management group as of 1 March 2016. Juha Kekkonen served in

the executive management group until 28 February 2016 and left the company on 30 June 2016.

\*\* Merit pay earned in 2015 and paid in 2016.



# Stock exchange releases 2016

**29 December 2016**

Fingrid Oyj's financial reports in 2017

**21 November 2016**

Fitch Ratings has upgraded Fingrid Oyj's credit rating to 'A+'; outlook stable

**28 October 2016**

S&P Global Ratings has raised its long-term corporate credit rating on Fingrid Oyj to 'AA-'

**28 October 2016**

Fingrid Group's Interim Report 1.1–30.9.2016

**17 October 2016**

Grid fees to increase seven per cent – no major pressure to increase fees in the near future

**27 July 2016**

Fingrid Group's Interim Report 1 January–30 June 2016

**29 June 2016**

Fingrid Oyj's Interim Report January–June 2016 publication date has changed

**28 April 2016**

Fingrid Group's Interim Report 1 January–31 March 2016

**6 April 2016**

Juhani Järvi appointed Chairman of Fingrid's Board of Directors

**26 February 2016**

Disclosure of Home Member State

**19 February 2016**

Fingrid Group's Financial Statements Bulletin January–December 2015. Strong financials – investments continued systematically

**1 February 2016**

Fingrid has decided on the providers of credit rating services

**15 January 2016**

Fitch Ratings has affirmed Fingrid Oyj's credit rating 'A'; outlook stable

**5 January 2016**

The Energy Authority has decided on the regulation methods for 2016–2023

More stock exchange releases on [www.fingrid.fi/en](http://www.fingrid.fi/en)

# 1 Annual Review

## 1.1 Report of the Board of Directors

Fingrid's consolidated financial statements have been drawn up in accordance with the International Financial Reporting Standards (IFRS). Unless

otherwise indicated, the figures in parentheses refer to the same period of the previous year.

# Financial result

## 1.1.1 Financial result

In preparing these consolidated financial statements, the Group has followed the same standards as in 2015.

The Group's turnover was EUR 586.1 (600.2) million. Grid service income increased to EUR 382.4 (333.0) million, as a result of the change in grid pricing enacted at the start of the year and due to the growth in electricity consumption. Electricity consumption totalled 85.1 (82.5) terawatt hours. Fingrid transmitted 68.6 (67.9) terawatt hours of electricity in its grid, which represents 77.5 (77.1) per cent of all electricity transmitted in Finland. Imbalance power sales amounted to EUR 153.9 (137.1) million. The growth in imbalance power sales resulted from an increase in the volume of imbalance power and higher imbalance power prices. Cross-border transmission income from the connection between Finland and Russia increased to EUR 24.0 (11.2) million. This was due to the new dynamic tariff structure that was introduced as well as to increased imports from Russia. Fingrid's congestion income from connections between Finland and Sweden declined to EUR 37.5 (86.8) million due to weakened hydrological conditions, which significantly decreased the number of congestion hours. Fingrid's congestion income from the links between Finland and Estonia amounted to EUR 2.4 (4.2) million. Congestion income will no longer be reported in Fingrid's turnover as of the beginning of 2016. Other operating income totalled EUR 12.7 (5.2) million. The growth in other operating

income mainly resulted from the EUR 6.3 million in recognised congestion income, in compliance with the regulation concerning the costs from maintaining cross-border capacity and countertrade.

The Group's total costs amounted to EUR 442.2 (418.6) million. Imbalance power costs increased from the previous year's level to EUR 121.7 (98.2) million, due to the increase in the volume and price of imbalance power. Loss power costs amounted to EUR 57.6 (68.6) million. The declining loss power costs have been affected by the lower price of loss power procurement and the slightly lower volume of loss power. The average price of loss power procurement was EUR 43.87 (48.22) per megawatt hour. The cost of reserves to safeguard the grid's system security decreased to EUR 50.5 (54.7) million. The reason for the decreased cost was an interruption in the procurement of the automatic frequency control reserve until August, as well as the lower procurement cost of frequency controlled reserves for normal operation and disturbances due to high availability on the markets. Depreciation amounted to EUR 99.2 (94.1) million. Grid maintenance costs grew to EUR 24.1 (19.2) million. The maintenance costs were increased by the periodical felling of trees around substations and the trimming of trees at the edges of transmission line right-of-ways. Personnel costs increased as the payroll expanded, due to new operations and increased statutory duties and due to higher employer contributions in additional personnel expenses, and amounted to EUR 28.6 (25.8) million.

**Turnover and other operating income, € million**

	Jan- Dec/16	Jan- Dec/15	Oct- Dec/16	Oct- Dec/15
Grid service revenue	382.4	333.0	113.1	100.8
Sales of imbalance power	153.9	137.1	47.4	37.9
Cross-border transmission income	24.0	11.2	10.0	2.9
Finland-Estonia congestion income*	0.0	4.2	0.0	0.8
Finland-Sweden congestion income*	0.0	86.8	0.0	22.0
Peak load capacity income**	7.0	7.6	1.8	1.8
ITC income	13.2	15.3	3.8	4.5
Other turnover	5.6	5.1	2.0	1.8
Other operating income	12.7	5.2	2.0	3.0
<b>Turnover and other income total</b>	<b>598.8</b>	<b>605.4</b>	<b>180.0</b>	<b>175.5</b>

**Costs, € million**

	Jan-Dec/16	Jan-Dec/15	Oct-Dec/16	Oct-Dec/15
Purchase of imbalance power	121.7	98.2	37.5	29.6
Cost of loss energy	57.6	68.6	12.8	17.8
Depreciation	99.2	94.1	25.4	24.2
Cost of reserves	50.5	54.7	13.8	12.6
Personnel costs	28.6	25.8	8.4	6.8
Maintenance management costs	24.1	19.2	9.1	7.9
Cost of peak load capacity**	6.6	7.2	1.6	1.4
ITC charges	12.6	9.4	4.2	2.0
Estlink grid rents	0.0	0.0	0.0	0.0
Other costs	41.1	41.3	10.5	11.4
Costs total	442.2	418.6	123.4	113.7
<b>Operating profit excluding the change in the fair value of commodity derivatives</b>	<b>156.6</b>	<b>186.8</b>	<b>56.6</b>	<b>61.9</b>
<b>Operating profit of Group, IFRS</b>	<b>192.0</b>	<b>162.6</b>	<b>67.4</b>	<b>57.4</b>

\* Due to a change in congestion income reporting, congestion income is not reported in the turnover as of the beginning of 2016.

\*\* Peak load capacity income and costs are related to the securing of sufficient electricity supply during peak consumption hours in compliance with the Finnish Peak Load Capacity Act.

The Group's operating profit was EUR 192.0 (162.6) million. To recognise changes in the fair value of electricity derivatives and the currency derivatives related to capital expenditure and other operating expenses, EUR 35.4 (-24.3) million was recorded in operating profit.

Net financial costs in accordance with IFRS were EUR 18.7 (33.7) million, including a change of EUR -0.3 (-13.3) million in the fair value of financial derivatives.

The Group's profit before taxes was EUR 173.9 (129.3) million. The biggest differences from the last year are explained by changes in the market value of derivatives (EUR +72.7 million), the growth in grid

service income (EUR +49.4 million), and a change in the reporting of congestion income (effect EUR -84.6 million). The profit for the year was EUR 138.7 (103.6) million. The equity to total assets ratio increased and was 36.4 (33.5) per cent at the end of the review period.

The parent company's turnover was EUR 581.4 (592.4) million, profit for the financial year EUR 103.9 (123.7) million and the distributable funds EUR 176.0 million.

By the company's own calculations, the return according to the regulatory model that governs grid operations amounts to a deficit of around EUR 40 million for 2016.

# Capital expenditure

## 1.1.2 Capital expenditure

Fingrid's grid investment programme improves system security and promotes the electricity markets as well as the implementation of the national energy and climate strategy. The annual capital expenditure in the grid has remained extensive.

The company's total capital expenditure in 2016 amounted to EUR 146.7 (147.5) million. Of that amount, a total of EUR 135.8 (138.4) million was invested in the transmission grid and EUR 3.3 (0.7) million in reserve power. ICT investments totalled EUR 7.5 (8.4) million. A total of EUR 2.4 (1.8) million was used for R&D projects during the year under review.

At the end of 2016, Fingrid had thirteen 400 kilovolt substation sites and 67 kilometres of 400 kilovolt power line contracts as well as a significant number of 110 kilovolt substation and power line projects under construction.

Fingrid's all-time biggest investment, the 400 kilovolt 'Coastal Power Line' transmission connection from Pori to Oulu was completed at the end of 2016. With the completion of this power line on the western coast of Finland, there are now three 400 kilovolt transmission links connecting the northern and southern parts of the country. The project, which cost a total of EUR 260 million, was carried out according to plan over a span of ten years. The transmission link serves the wind farms that have been built in western coastal areas and which will be followed by more in the future. Several existing and planned nuclear power stations are also located close to this line. The new connection furthermore improves the cross-border

transmission between Sweden and Finland. The investments carried out by Fingrid also help prepare for the new AC link to be built between the countries by 2025. Thanks to the Coastal Power Line, Finland's future as a single price region is now more secure. The voltage upgrade will also decrease transmission losses. This multi-year project was a major challenge for both Fingrid personnel and our suppliers. The employment impact of the project amounted to approximately 1,000 man-years. A large part of the congestion income collected by Fingrid was allocated to this major investment.

Overall, the Coastal Power Line consisted of three extensive projects:

- A 400 and 110 kilovolt transmission line connection from Seinäjoki to Vaasa, and a new transformer substation in Nivala were completed in 2011.
- A 400 kilovolt connection from Ulvila to Kristinestad was completed in the second stage of the power line project October 2014.
- In the final phase, a 400 kilovolt power line connection from Kokkola (Hirvisuo) to Muhos (Pyhänselkä) was completed in late 2016.

Overall, the Coastal Power Line includes 380 kilometres of new 400 kilovolt power line, nine new substations and several smaller substation extensions. This provides 600–800 megawatts of entirely new transmission capacity between northern and southern Finland.

The roughly EUR 130 million modernisation project on Finland's oldest transmission line, dubbed the 'Iron Lady' and running from Imatra to Turku, proceeded as planned during the year under review.

The Hikiä–Forssa section of this major project was completed and commissioned in March.

Modernisation of the Iron Lady continues between Lieto and Forssa. Work on the Yllikkälä–Koria section also started, between Lappeenranta and Kouvola. Furthermore, a decision was made to renew the transmission line between Hikiä and Orimattila and to build a new substation in Orimattila. The Iron Lady project is expected to be fully completed by 2020.

With the aim of securing the electricity supply for both residents of the Helsinki region and functions that are vital to society, Fingrid will reinforce the Espoo substation and the Länsisalmi substation in Vantaa. These substation upgrades and extensions, which cost nearly EUR 9 million for Espoo and roughly EUR 18.5 million for Vantaa Länsisalmi, started in 2016 and will be completed in 2017. The supply of electricity from the main grid to Helsinki and Vantaa takes place via the Länsisalmi and Tammisto transformer substations, serving around 800,000 people. Increasing electricity consumption and changes taking place in the production of electricity in Helsinki necessitate upgrades in supply capacity. The extension of the Espoo substation will improve the system security of the transmission facilities in western Uusimaa, the region west of the capital area. Local electricity production has decreased while consumption is constantly increasing.

Fingrid has, over the last two years, made major investments to develop the transmission grid in Lapland by building or upgrading a total of six substations. These measures were necessary due to increasing local consumption and due to new wind power capacity. During the year under review, the substation at Vajukoski and Petäjäsoski received new transformers and the existing systems were upgraded and extended. The Vajukoski transformer substation, north of Sodankylä, serves both hydropower production and mining industry and links up with the Norwegian transmission grid via Ivalo. The Petäjäsoski transformer substation, a major link between Lapland's 220 kilovolt and 400 kilovolt main transmission networks, also received an entirely new 220 kilovolt gas-insulated switchgear. Extensive upgrades were additionally carried out at the Taivalkoski and Ossauskoski

substations. The total capital expenditure amounted roughly to EUR 43 million.

Several investment decisions were made during the year, many of which proceeded to the implementation stage.

The Inkoo substation that was built in the 1970s secures the electricity supply in western Uusimaa. An investment decision was made to modernise the ageing substation, and the project is due for completion in 2018. To secure the supply of electricity in the Hämeenlinna and Valkeakoski areas, Fingrid decided to modernise a 51-kilometre transmission line between the cities. Aged and worn out pylons and transmission lines will be dismantled and replaced with a new line. The project is due for completion in 2018.

Several of the investments are related to enabling or improving the operating conditions of industry. An upgrade on the Vuoksi substation and the roughly 24-kilometre Lempiälä–Vuoksi transmission line is planned between Lappeenranta and Imatra. The investment will be carried out sooner than originally planned, due to an extension to Kemira's industrial plant in Joutseno, and it is due for completion in 2018. The electricity supply for the new bioproduct mill in Äänekoski will be secured with the construction of a new 110 kilovolt transmission line between Äänekoski's Koivisto and Laukaa's Vihtavuori substations, due for completion in late 2017. Olkiluoto's 400 kilovolt switching station, which is outdated and has insufficient system security, will be modernised. The Olkiluoto substation is one of the most important grid nodes, with three nuclear power plants connected to it. The project is due for completion in 2019.

Fingrid's Huutokoski reserve power plant will undergo a EUR 15 million upgrade. The Huutokoski plant, located in Joroinen, is one of the ten reserve power plants owned by Fingrid which are tasked to support a sufficient supply of electricity in Finland during major disturbances in the power system. The upgrade project includes the modernisation of obsolete systems to secure reliable operation for the next 20 years as well as significant environmental investments. The systems to be modernised include fuel tanks and fuel systems,

extinguishing systems, the plant's internal electrical and automation systems as well as the plant's own reserve power systems.

In 2006, Fingrid launched a project aimed at building a complete, modern IT system to support asset management operations. Thanks to system integrations, all the master data of the transmission grid assets is now in a single application. The overall project combined both modern ICT technology and in-house knowledge, and transformed operational procedures. Thanks to advanced technology, significant efficiency improvements were achieved in asset management. The ELVIS IT system project tasked to support asset management and use of the assets was completed in 2016.

Major improvements have been achieved in the reliability of cross-border transmission connections and Fingrid now has more expert resources on DC transmission connections. A 24/7 back-up system was taken into use in HVDC operations as of the beginning of 2016. During the year under review, disturbance clearing has been accelerated, individual disturbances have been prevented proactively and measures to secure the reliability and availability of the HVDC connections have been implemented much faster than in previous years. The total duration of interruptions in 2016 remained at around 10% of the 2014 and 2015 levels. The number of interruptions was halved from 2014 and 2015.

By international standards, Fingrid's maintenance management is world-class. The company was one of the best operators in the International Transmission Operations and Maintenance Study (ITOMS) for the 11th consecutive time. Lloyd's Register audited Fingrid's asset management operations and awarded Fingrid a certificate for compliance with the ISO 55001 standard.

In 2016, Fingrid's personnel had no accidents resulting in absence from work (2015: 1), in other words, the zero accidents target was achieved. Suppliers' personnel had 12 (13) accidents resulting in absence from work, three of which resulted in an absence of more than 30 days. The suppliers' and Fingrid's combined accident frequency rate decreased somewhat from the previous year.

The occupational safety development project continued, with a focus on implementing occupational safety models and tools and improving safety attitudes. On-line training was introduced in early 2016 and used by more than 1,700 people during the year. A safety observation campaign was carried out with suppliers and Fingrid's own personnel. Work was also continued to develop a mobile reporting system for occupational safety, quality and environmental issues, on-line training and Fingrid's safety management system.



# Power system

## 1.1.3 Power system

In 2016, electricity consumption in Finland amounted to 85.1 (82.5) terawatt hours. A total of 68.6 (67.9) terawatt hours of electricity was transmitted in Fingrid's grid, representing 77.5 (77.1) per cent of the total transmission volume in Finland (consumption and inter-TSO).

Electricity import and production capacity was well sufficient to cover the peak consumption, which amounted to a maximum of 15,100 (13,500) megawatts. The peak consumption was at an all-time record high in Finland. During the consumption peaks early in the year, electricity production in Finland totalled approximately 10,800 (11,200) megawatts.

Electricity transmissions between Finland and Sweden consisted mostly of large imports to Finland. During 2016, 15.7 (17.8) terawatt hours of electricity was imported from Sweden to Finland, and 0.3 (0.2) terawatt hours were exported from Finland to Sweden.

The electricity transmission between Finland and Estonia was dominated by exports from Finland to Estonia, which amounted to 3.1 (5.0) terawatt hours.

The electricity imports from Russia increased by approximately 50 per cent. Nearly the full

transmission capacity was available. Electricity imports from Russia totalled 5.9 (3.9) terawatt hours.

With a transmission reliability rate of 99.9998 per cent, the reliability of the transmission grid was at an excellent level during the year under review. The number of disturbances due to thunder exceeded the average, and the resulting multi-phase disturbances were detrimental to the process industry. Otherwise the number of disturbances remained at the normal level. Increased resources were allocated on determining the DC transmission links' susceptibility to disturbances. Thanks to this, no disturbances requiring extensive repairs occurred in the DC links during 2016, and also less significant disturbances were cleared more quickly than in previous years. The total duration of interruptions due to disturbances in DC links in 2016 remained at around 10% of the 2014 and 2015 levels, and the number of interruptions was halved from the 2014 and 2015 figures.

Transmission outages in connection with investment projects mostly affected Ostrobothnia and northern Ostrobothnia. The outages were challenging and required careful advance planning and good cooperation with our customers. The outages were handled successfully.

Counter trade	Jan-Dec/16	Jan-Dec/15	Oct-Dec/16	Oct-Dec/15
Counter-trade between Finland and Sweden, €M	2.5	0.8	0.3	0.2
Counter-trade between Finland and Estonia, €M	0.1	0.8	0.0	0.0

Counter-trade between Finland's internal connections, €M	1.2	2.2	0.3	0.6
<b>Total counter-trade, €M</b>	<b>3.9</b>	<b>3.8</b>	<b>0.6</b>	<b>0.9</b>

Reserves required to maintain the power balance of the electricity system were procured from Finland, the other Nordic countries, the Baltic countries and Russia. Countertrade costs totalled EUR 3.9 (3.8) million. Countertrade refers to special adjustments made in the management of electricity transmission which are used to eliminate short-term bottlenecks (an area where electricity transmission is congested) from the grid. Fingrid guarantees the cross-border transmission it has confirmed by carrying out countertrades, i.e. purchasing and

selling electricity, up until the end of the 24-hour usage period. The need for countertrade can arise from, for example, a power outage or disruption in a power plant or in the grid.

An outage in a connection point in the grid caused by a disturbance in Fingrid's electricity network lasted an average of 2.1 minutes, which is clearly shorter than the ten-year average of 3.3 minutes. The estimated cost of the disturbances was EUR 3.5 (4.1) million.

<b>Power system operation</b>	<b>Jan-Dec/16</b>	<b>Jan-Dec/15</b>	<b>Oct-Dec/16</b>	<b>Oct-Dec/15</b>
Electricity consumption in Finland TWh	85.1	82.5	23.2	22.1
TSO transmission in Finland, TWh	3.5	5.5	0.4	1.4
Transmission within Finland, TWh	88.6	88.0	23.6	23.5
Fingrid's transmission volume TWh	68.6	67.9	17.4	17.7
Fingrid's electricity transmission to customers, TWh	64.9	62.3	16.8	16.3
Fingrid's loss energy volume TWh	1.3	1.4	0.3	0.3
<b>Electricity transmission Finland - Sweden</b>				
Exports to Sweden TWh	0.3	0.2	0.2	0.1
Imports from Sweden TWh	15.7	17.8	2.8	4.7
<b>Electricity transmission Finland - Estonia</b>				
Exports to Estonia TWh	3.1	5.0	0.2	1.2
Imports from Estonia TWh	0.7	0.0	0.5	0.0
<b>Electricity transmission Finland - Russia</b>				
Imports from Russia TWh	5.9	3.9	1.9	1.0

# Electricity market

## 1.1.4 Electricity market

The average market price of spot electricity on the electricity exchange (system price) was EUR 26.91 (20.98) per megawatt hour. The price level in the Nordic electricity markets trended downwards for an extended period during the first half of 2016, but rebounded during the summer. The drivers behind the price increase include weakened hydrological conditions as well as price hikes in fossil fuels and emission rights.

In 2016, prices on the Finnish wholesale market were higher than they were in other Nordic countries. The overall increase in Nordic prices made the price disparity between Finland and Sweden less pronounced and, as a result, congestion hours between Finland and Sweden decreased significantly during the latter half of the year. In addition to the increased Nordic price level, another reason for the decrease in congestion hours and decreased price disparity was the completion of the NordBalt transmission link between Sweden and Lithuania during the first half of 2016.

Fingrid accrued EUR 37.5 (86.8) million in congestion income from the cross-border power lines between Finland and Sweden. EUR 29.9 (24.3) million of this was accrued during the first half of 2016 and EUR 7.6 (62.5) million during the second half of the year. The links between Finland and Estonia generated EUR 2.4 (4.2) million in congestion income. All the congestion income accrued by Fingrid during 2016 was used for maintaining cross-border transmission capacity and for upgrade investments.

The imports from Russia increased to 5.9 (3.9) terawatt hours. Despite the increase, electricity

imports from Russia to Finland have decreased significantly in recent years, and the hourly import volumes from Russia have varied considerably. In addition to Russia's capacity mechanism, the reduction in electricity trade is attributed to increased electricity prices in the country.

In spring, Fingrid published a discussion paper on the challenges of the electricity market and various alternative solutions to them entitled "Electricity market needs fixing – What can we do?", which sparked a lively debate. Fingrid's consultation request was responded to by a total of 36 industry operators, associations, research institutions and private citizens. During the second half of the year, Fingrid published a summary of the feedback, which contained suggestions for various routes to a market-based green electricity system.

The operating capacity of the electricity market and the sufficiency of electricity supply became national topics due to the bitter cold of January 2016. As the consumption of electricity broke records, the topics of meeting consumption needs and national self-sufficiency in terms of electricity were widely debated.

Roughly half of the cross-border transmission capacity between Finland and Sweden is provided by the Fenno-Skan links, i.e. high-voltage DC connections. Several measures were started by Fingrid early in 2016 to improve the reliability of cross-border transmission capacity. Thanks to the improvements, it was possible to keep interruptions very brief, and the availability of the connections has been clearly better compared to previous years.

Fingrid Datahub Oy, a company focused on the transfer of retail market information, was established on 16 February 2016. The task of the

subsidiary, wholly owned by Fingrid, is to implement a centralised information exchange system for the electricity markets, i.e. a datahub, in which the exchange of information between retail sellers and distribution system operators is concentrated into a single service. This makes the exchange of information in the retail electricity market more straightforward and efficient. Data exchange among retail markets is needed in managing the various business processes of the electricity markets, such as balance settlement, an end user's change of address and a change of seller, for example. The system will facilitate the processing of measurement data, simplify and speed up client agreement events and improve the reliability of the service.

The implementation of European network codes required by the European Union proceeded in Finland, as Fingrid established a network code forum that is open to all market parties. The forum promotes public debate on all matters related to network codes and aims to gather the views of

stakeholders as well as to complement the public hearing processes related to implementing the network codes. The network code forum convened three times during the year under review.

The Finnish, Norwegian and Swedish TSOs continued with the switchover to shared Nordic balance settlement. The jointly owned company eSett Oy, which Fingrid owns one third of, aims to start up operations in spring 2017.

In September, the Ministry of Economic Affairs and Employment set up a working group to look into the role of smart grids in the electricity market. The aim of the working group is to forge a common vision of future smart grids and to propose concrete measures for using smart grids as a means of increasing customers' opportunities to participate in the electricity market and contribute to maintaining a secure supply of electricity. The members of the working group broadly represent the stakeholders in the sector, including active participation by Fingrid.

<b>Electricity market</b>	<b>Jan- Dec/16</b>	<b>Jan- Dec/15</b>	<b>Oct- Dec/16</b>	<b>Oct- Dec/15</b>
Nord Pool system price, average €/MWh	26.91	20.98	34.42	21.92
Area price Finland, average €/MWh	32.45	29.66	37.48	30.59
Congestion income between Finland and Sweden, € million*	75.0	173.5	3.9	44.1
Congestion hours between Finland and Sweden %**	32.7	47.1	10.9	47.4
Congestion income between Finland and Estonia, € million*	4.7	8.4	0.1	1.6
Congestion hours between Finland and Estonia %	9.7	12.0	2.8	9.1

\* The congestion income between Finland and Sweden and between Finland and Estonia is divided equally between the relevant TSOs. The income and costs of the transmission connections are presented in the tables under 'Financial result'. Congestion income is used for investments aimed at eliminating the cause of congestion.

\*\* The calculation of a congestion hour between Finland and Sweden refers to an hour during which Finland's day-ahead area price differs from both Sweden's SE1 and its SE3 area prices.

# Financing

## 1.1.5 Financing

The company's credit rating remained high, reflecting the company's strong overall financial situation and debt service capacity. The company's net financial costs during the period under review were EUR 18.7 (33.7) million, including the change in the fair value of derivatives of EUR -0.3 million (EUR -13.3 million).

Interest-bearing borrowings totalled EUR 1,107.7 (1,143.4) million, of which non-current borrowings accounted for EUR 842.9 (907.2) million and current borrowings for EUR 264.9 (236.2) million. In 2016, the company issued bonds totalling EUR 80 million (EUR 50 million with a four-year maturity and EUR 30 million with a six-year maturity) to refinance current borrowings.

The company's liquidity remained good. Cash and financial assets recognised at fair value through profit or loss on 31 December 2016 totalled EUR 79.7 (116.6) million. The company additionally has an undrawn revolving credit facility of EUR 300 million to secure liquidity and EUR 50 million in uncommitted overdraft facilities. Fingrid used the

first extension option of the revolving credit facility during the period under review. This extended the maturity of the revolving credit facility until 11 December 2021.

The counterparty risk arising from derivative contracts relating to financing was EUR 16 (11) million. Fingrid's foreign exchange and commodity price risks were generally fully hedged.

The international credit rating agencies S&P Global (S&P) and Fitch Ratings (Fitch) upgraded Fingrid's ratings as follows:

- On 28 October 2016, S&P raised the rating for Fingrid Oyj's unsecured senior debt and long-term company rating to 'AA-' and the short-term company rating to 'A-1+', with a stable outlook.
- On 21 November 2016, Fitch raised the rating for Fingrid Oyj's unsecured senior debt to 'AA-', the long-term company rating to 'A+', and affirmed 'F1' for the short-term company rating, with a stable outlook. The rating received by Fingrid was, at the time of issuing, the highest valid rating given by Fitch to any European regulated TSO.

# Share capital

## 1.1.6 Share capital

The company's share capital is EUR 55,922,485.55. Fingrid shares are divided into Series A shares and Series B shares. The number of Series A shares is

2,078 and the number of Series B shares is 1,247. The voting and dividend rights related to the shares are described in more detail in the notes to the financial statements and in the articles of association available on the company's website.

# Personnel and remuneration systems

## 1.1.7 Personnel and remuneration systems

Fingrid Oyj employed 334 (315) persons, including temporary employees, at the end of the year. The number of permanent personnel was 291 (280).

Of the personnel employed by the company, 25.0 (24.4) per cent were women and 75.0 (75.6) per

cent were men. The average age of the personnel was 44 (44).

During 2016, personnel received a total of 11,647 (11,794) hours of training, with an average of 35.7 (37.4) hours per person. Employee absences due to illness accounted for 1 (2) per cent of the total working hours. In addition to a compensation system that is based on the requirements of each position, Fingrid applies incentive bonus schemes

# Board of Directors and corporate management

## 1.1.8 Board of Directors and corporate management

Fingrid Oyj's Annual General Meeting was held in Helsinki on the 6th of April 2016. Juhani Järvi was elected Chairman of Fingrid's Board of Directors and Juha Majanen was elected Vice Chairman. Other members elected to the Board were Esko Torsti, Sanna Syri and Anu Hämäläinen.

The Board members until 6th April 2016 were Helena Walldén, Juha Majanen, Juhani Järvi, Sanna Syri and Esko Torsti.

PricewaterhouseCoopers Oy was elected as the auditor of the company, with Jouko Malinen, APA serving as the responsible auditor.

The Board of Directors has two committees: the Audit Committee and the Remuneration Committee. As of 6th April 2016, the Audit Committee consists

of Esko Torsti (Chairman), Juhani Järvi and Juha Majanen. The members of the Audit Committee until 6th April 2016 were Juha Majanen (Chairman), Juhani Järvi and Helena Walldén.

As of 6th April 2016, the Remuneration Committee consists of Juhani Järvi (Chairman), Sanna Syri and Anu Hämäläinen. The members of the Remuneration Committee until 6th April 2016 were Helena Walldén (Chairman), Sanna Syri and Esko Torsti.

Jukka Ruusunen serves as President & CEO of the company. Fingrid has an executive management group which supports the CEO in the company's management and decision-making.

A corporate governance statement, required by the Finnish Corporate Governance Code, has been provided separately. The statement and other information required by the Code are also available on the company's website at [www.fingrid.fi](http://www.fingrid.fi).



# Internal control and risk management

## 1.1.9 Internal control and risk management

Fingrid's internal control is a permanent component of the company's operations and deals with all those operating methods and procedures whose objective it is to ensure

- effective and profitable operations that are in line with the company's strategy,
- the reliability and integrity of the company's financial and management information,
- that the company's assets are protected,
- that applicable legislation, guidelines, regulations, agreements and the company's own governance and operating guidelines are complied with, and
- that the company's risk management meets a high standard.

Risk management is planned as a whole with the objective of comprehensively identifying, assessing, monitoring and safeguarding the company's operations, the environment, personnel and assets from various threats and risks. Due to the nature of the company's basic mission, risks are also assessed from the perspective of society in general.

Continuity management is a part of risk management. Its objective is to improve the organisation's capacity to prepare and to react in the best possible way should risks occur, and to ensure the continuity of operations in such situations.

Further information on internal control, risk management and the foremost risks and factors of uncertainty is available on the company's website at

[www.fingrid.fi](http://www.fingrid.fi) and in the Board of Directors' annual review.

### Board of Directors

The company's Board is responsible for organising internal control and risk management, and it approves the principles of internal control and risk management on an annual basis. The Board specifies the company's strategic risks and related management procedures as part of the company's strategy and action plan, and monitors their implementation. The Board decides on the operating model for the company's internal audit. The Board regularly receives internal audit and financial audit reports as well as a status update at least once a year on the strategic risks and continuity threats relating to the company's operations and their management and occurrence.

### Line management and other organisation

Assisted by the executive management group, the CEO is responsible for executing and steering the company's governance, decision-making procedures, control and risk management, and for the assessment of strategic risks and continuity threats at the company level, and their related risk management.

The heads of functions are responsible for the practical implementation of the governance, decision-making procedures, controls and risk management for their areas of responsibility, as well as for the reporting of deviations and the sufficiency of more detailed guidelines. Directors appointed in charge of the threats to continuity management are responsible for drawing up and maintaining continuity management plans and guidelines, and for arranging sufficient training and practice.

The CFO is responsible for arranging procedures, controls and monitoring at the company level as required by the harmonised operating methods of internal control and risk management. The company's general counsel is responsible at the company level for assuring the legality and regulation compliance of essential contracts and internal guidelines, taking into account the company's interests, as well as for the procedures these require. Each Fingrid employee is obligated to identify and report any risks or control deficiencies she or he observes and to carry out the agreed risk management procedures.

### **Internal auditor and auditor**

The Board decides on the operating model for the company's internal audit. The internal audit acts on the basis of plans processed by the Audit Committee and approved by the Board. Audit results are reported to the object of inspection, the CEO, the Audit Committee and the Board. Upon decision of the Board, an internal audit outsourced to an authorised public accounting company acts within the company. From an administrative perspective, the internal audit is subordinate to the

company's CEO. The internal audit provides a systematic approach to the assessment and development of the efficacy of the company's risk management, monitoring, management and administrative processes and ensures their sufficiency and functionality as an independent party. The internal audit has the authority to carry out reviews and to access all information that is essential to the audit. The company's internal audit carries out risk-based auditing on the company's various processes.

An authorised public accounting company selected by the general meeting acts as auditor for the company. The company's financial auditor inspects the accounting, financial statements and financial administration for each financial period and provides the general meeting with reports required by accounting legislation or otherwise stipulated in legislation. The financial auditor reports on his or her work, observations and recommendations for the Board and may also carry out other authorisation-related tasks commissioned by the Board or management.

# Foremost risks and uncertainty factors for society and Fingrid

## 1.1.10 Foremost risks and uncertainty factors for society and Fingrid

One of the company's biggest business risks and the biggest risk where society is concerned is a major disturbance related to the functioning of the power system. A major disturbance or other electrical system disruption can cause significant financial and physical damage to Fingrid and society in general.

Other major risks for Fingrid and society are a loss of confidence in the electricity market, environmental risks and electricity and occupational health and safety risks.

The risks to Fingrid's operations are risks related to the unfavourable trend in official regulation, capital investments which have become unnecessary, financing risks, personnel risks, risks related to ICT and data transfer, asset risks and reputation risks.

Risks to society arising from Fingrid's operations are unsuccessful timing of capital investments and long-term restrictions in transmission capacity.

The most significant of the above-mentioned risks to Fingrid are explored in greater detail in the company's annual report. Fingrid's financing risks are described in more detail in sections 5.2 and 5.3 of the consolidated financial statements (IFRS). No substantial risks were realised in 2016.

# Corporate responsibility

## 1.1.11 Corporate responsibility

Fingrid's compliance with corporate responsibility is steered by the set strategy targets. Corporate responsibility is a key element in the implementation of Fingrid's strategy and in its business expertise. The key targets have been set by identifying matters that are of material importance to Fingrid. The need for updates to the materiality analysis is assessed annually as part of the strategy process, based on an operating environment and stakeholder analysis and on the strategy update. Fulfilment of the targets serves as the basis for executive management's and personnel's remuneration.

Corporate responsibility is managed as an integrated part of Fingrid's management system. Fingrid's Board of Directors approves the company's Code of Conduct and monitors the company's compliance in operating responsibly. The Board is responsible for the CSR management systems and their integration into business operations. The CEO and the heads of functions are each responsible for corporate responsibility issues within their area of responsibility. Social issues and environmental impacts are taken into account in all decision-making and when assessing operations alongside profitability issues.

Managers and the entire work community ensure that behaviour is in line with the Code of Conduct. A whistleblower system managed by an independent third party for reporting cases of misconduct etc. is available to the personnel. Fingrid Oyj committed in

2016 to the United Nations Global Compact initiative. Fingrid's Code of Conduct complies with the Global Compact initiative's principles on human rights, labour, environment and anti-corruption. Fingrid also requires all contractors to comply with the Code of Conduct and monitors their compliance based on risk assessments.

Fingrid's work sites are regularly audited to verify compliance with contractor obligations, occupational safety and environmental management. The audits carried out during 2016 proved that the work site operations are generally at a high level and that use of the electronic reporting system is extensive.

A human rights impact assessment was carried out in compliance with the due diligence process recommended in the UN's Guiding Principles on Business and Human Rights. As regards tax footprint reporting, Fingrid only operates in Finland and has not resorted to any special arrangements to minimise taxes. The company's tax footprint is presented in the annual report's 'Corporate finances, financing and risk management' section. Dividends are mainly paid to the State of Finland and to Finnish pension insurance and insurance companies.

To ensure transparency and comparability, Fingrid reports on its corporate responsibility in accordance with the international Global Reporting Initiative (GRI) framework. The GRI G4 reporting framework is applied using the Core 'in accordance' option.

# Environmental matters

## 1.1.12 Environmental matters

Fingrid has a long-term approach to its environmental impacts and land use issues, and the principles for minimising environmental impacts are accounted for in our land use and environmental policy. The key aspects include an environmental impact assessment (EIA) and preparedness for environmental risks. During 2016, Fingrid signed the energy efficiency agreement of Finnish industries 2017–2025 and committed to the target of cutting energy use by six per cent by 2025.

Environmental management was developed during the year by establishing a management system in compliance with the ISO 14 001 standard for the reserve power plants and by introducing an online training course on environmental issues for all personnel working at Fingrid sites. Environmental training was provided during the kick-off meetings for investment projects, and training was also provided on the use of chemicals, the management of safety data sheets and oil spill response for the providers of maintenance services at substations and reserve power plants. Environmental aspects were monitored as part of work site monitoring. Compliance with environmental requirements, occupational safety and contractor obligations was verified in 15 audits.

Several development projects were carried out to improve fire safety at substations and reserve power plants. Oil spill response plans were created and emergency response plans were updated at all reserve power plants. One significant environmental deviation occurred during the year, as around 180 litres of oil was leaked from a worksite at the Isokangas substation.

In 2016, Fingrid issued around 260 statements on land-use plans and EIAs. In addition, the company directed the construction taking place near grid installations by issuing statements containing safety guidelines and land use restrictions. Some 420 such statements were issued.

EIAs were carried out for six transmission line projects in 2016. Two events were arranged to inform the public about the environmental impacts of the power lines required to connect the Hanhikivi 1 nuclear power plant to the grid; the EIA process for the project was completed in October 2016. A Natura assessment update was carried out for this project in compliance with the Nature Conservation Act. An EIA was completed for five transmission line projects (Hämeenlahti–Hännilä, Kontiolahti–Pamilo, Kontiolahti–Uimaharju, Siikajoki–Raahe and the line rearrangements for the Olkiluoto substation). Three projects involved archaeological inventories.

In order to be able to build, operate and maintain a transmission line, Fingrid redeems a right of use to the transmission line area. Redemption permits were obtained for the re-routing of transmission lines from Multisilta and Kangasala to Lavianvuori and for the transmission lines Vanaja–Tikinmaa, Vihtavuori–Koivisto and Korja–Yllikkälä. A redemption permit application was filed for the transmission line project Hikiä–Orimattila. The redemption compensation procedure was completed in seven transmission line projects. Eight hearings in accordance with the Finnish Act on the Redemption of Immoveable Property and Special Rights were held with landowners.

Fingrid's reserve power plants are subject to an environmental permit and covered by the EU's emissions trading scheme. The accuracy of the measuring and reporting systems for fuel

consumption is verified by an accredited emissions trading verifier. A total of 10,326 (6,697) units (tCO<sub>2</sub>) of emission allowances were returned, all of which consisted of acquired emission rights units. Fingrid has not been granted free-of-charge

emission rights for the emissions trade period 2013–2020. No emissions rights were purchased in 2016. Emissions trading had minor financial significance for Fingrid.

# Legal proceedings and proceedings by authorities

## 1.1.13 Legal proceedings and proceedings by authorities

A lawsuit was initiated against Fingrid in December 2016, demanding non-specified damages due to an alleged breach of contract. The alleged injury is continuous and the claim amounted to EUR 135,000 by the time the lawsuit was initiated. Fingrid has

contested the claims presented in the lawsuit. The case is currently before the court. In Fingrid's view, the legal proceedings are not likely to have a substantial impact on the company's financial result or financial position. Thus no provisions were recognised in the financial statements in relation to these proceedings.

# Events after the review period and estimate of future outlook

## 1.1.14 Events after the review period and estimate of future outlook

Fingrid Group's profit for the 2017 financial period, excluding changes in the fair value of derivatives and before taxes, is expected to improve somewhat. Grid service pricing for 2017 is set in such a way as to achieve a regulatory-allowed financial result.

Results forecasts for 2017 are complicated especially by the uncertainty related to grid income, ITC income and cross-border transmission income, and to reserve and loss power costs. These are particularly dependent on temperature variations and precipitation and changes in the hydrological situation in the Nordic countries, which affect electricity consumption and electricity prices in Finland and its nearby areas, and thereby also the volume of electricity transmission in the grid. The company's debt service capacity is expected to remain stable.



# Board of Directors' proposal for the distribution of profit

## 1.1.15 Board of Directors' proposal for the distribution of profit

The guiding principle for Fingrid's dividend policy is to distribute substantially all of the parent company profit as dividend. When making the decision, however, the economic conditions, the company's near term investment and development needs as well as any prevailing financial targets of the company are always taken into account.

Fingrid Oyj's parent company's profit for the financial year was EUR 103,866,300.72 and distributable funds in the financial statements total

EUR 175,954,253.06. Since the close of the financial year, there have been no material changes in the company's financial position and, in the Board of Directors' view, the proposed dividend distribution does not threaten the company's solvency.

The company's Board of Directors will propose to the Annual General Meeting of Shareholders that

- a dividend of EUR 37,536.09 per share be paid for Series A shares and EUR 16,038.49 per share be paid for Series B shares, for a total of EUR 97,999,992.05.
- EUR 77,954,261.01 be retained in unrestricted equity.

# Annual General Meeting 2017

## 1.1.16 Annual General Meeting 2017

Helsinki, 17 February, 2017  
Fingrid Oyj  
Board of Directors

Fingrid Oyj's Annual General Meeting is preliminarily scheduled for 24 May 2017 in Helsinki.

# Consolidated Key Figures

## 1.2 Consolidated key figures

### CONSOLIDATED KEY FIGURES

		2016	2015	2014	2013	2012
		IFRS	IFRS	IFRS	IFRS	IFRS
<b>Extent of operations</b>						
Turnover	MEUR	586.1	600.2	567.2	543.1	522.1
Capital expenditure, gross	MEUR	146.7	147.5	129.5	225.3	139.0
- % of turnover	%	25.0	24.6	22.8	41.5	26.6
Research and development expenses	MEUR	2.4	1.8	1.7	1.8	1.5
- % of turnover	%	0.4	0.3	0.3	0.3	0.3
Personnel, average		336	319	305	277	269
Personnel at the end of period		334	315	313	287	275
Salaries and remunerations total	MEUR	22.7	21.3	20.5	19.0	18.2
<b>Profitability</b>						
Operating profit	MEUR	192.0	162.6	142.8	115.3	94.6
- % of turnover	%	32.8	27.1	25.2	21.2	18.1
Profit before taxes	MEUR	173.9	129.3	132.9	87.3	88.3
- % of turnover	%	29.7	21.5	23.4	16.1	16.9
Return on investments (ROI)	%	10.4	8.7	7.6	6.3	5.6
Return on equity (ROE)	%	18.8	15.0	16.3	15.0	12.4

**Financing and financial position**

Equity ratio	%	36.4	33.5	31.0	29.5	27.3
Interest-bearing net borrowings	MEUR	1,028.0	1,026.9	1,046.1	1,076.7	1,030.3
Net gearing		1.3	1.4	1.6	1.7	1.8

**Share-specific key figures**

Profit/share	€	41,706.1	31,150.8	32,027.9	27,277.9	20,159.2
Dividend/A shares	€	37536,09*	33,686.24	21,655.44	29,788.26	5,115.89
Dividend/B shares	€	16038,49*	16,038.49	16,038.49	16,038.50	2,018.26

Dividend payout ratio A shares	%	90.0	108.1	67.6	109.2	25.4
Dividend payout ratio series B shares	%	38.5	51.5	50.1	58.8	10.0
Equity/share	€	230,301	213,822	200,568	193,293	171,365

## Number of shares at 31 Dec

– Series A shares	shares	2,078	2,078	2,078	2,078	2,078
– Series B shares	shares	1,247	1,247	1,247	1,247	1,247
Total	shares	3,325	3,325	3,325	3,325	3,325

\* The Board of Directors proposal to the Annual General Meeting

**CALCULATION OF KEY FIGURES**

Return on investment, % =  $\frac{\text{Profit before taxes + interest and other finance costs}}{\text{Balance sheet total - non-interest-bearing liabilities (average for the year)}} \times 100$

Return on equity, % =  $\frac{\text{Profit for the financial year}}{\text{Equity (average for the year)}} \times 100$

Equity ratio, % =  $\frac{\text{Equity}}{\text{Balance sheet total - advances received}} \times 100$

Earnings per share, € =  $\frac{\text{Profit for the financial year}}{\text{Number of shares}}$

		<hr/>	Average number of shares	
Dividends per share, €	=	<hr/>	Dividends for the financial year	
		<hr/>	Average number of shares	
Dividend payout ratio, %	=	<hr/>	Dividend per share	× 100
		<hr/>	Earnings per share	
Equity per share, €	=	<hr/>	Equity	
		<hr/>	Number of shares at closing date	
Interest-bearing net borrowings, €	=		Interest-bearing borrowings - cash and cash equivalents and financial assets	
Net gearing	=	<hr/>	Interest-bearing borrowings - cash and cash equivalents and financial assets	
		<hr/>	Equity	

# 2 Consolidated Financial Statements (IFRS)

## Introduction

How to read Fingrid's financial statements and get the most out of it?

- Notes are compiled under specific themes to provide the best representation of Fingrid
- Chapters 3-6 consist of notes to the consolidated financial statements.
- Accounting principles are linked with the note most relevant for each specific principle.
- Accounting principles are shown at the end of each note, in a separate box and recognizable by the use of symbol



- Interesting facts about Fingrid's operating environment are highlighted in infoboxes throughout the notes to the financial statements. The infoboxes can be recognized by the use of symbol



### Fingrid's business model and the regulation of transmission system operations

Fingrid constitutes a natural monopoly as referred to in the Finnish Electricity Market Act (588/2013), with duties defined in legislation. The company's operations, reasonableness in pricing and financial result are regulated and overseen by the Energy

Market Authority. Transmission network operations constitute most of the company's turnover, result and balance sheet.

The allowed financial result from transmission network operations is calculated by multiplying the total adjusted capital invested in the transmission network operations (transmission network assets valued at the regulatory present value) with the reasonable rate of return defined by the Energy Market Authority.

The reasonable financial result allowed by the regulation forms the basis of Fingrid's financial

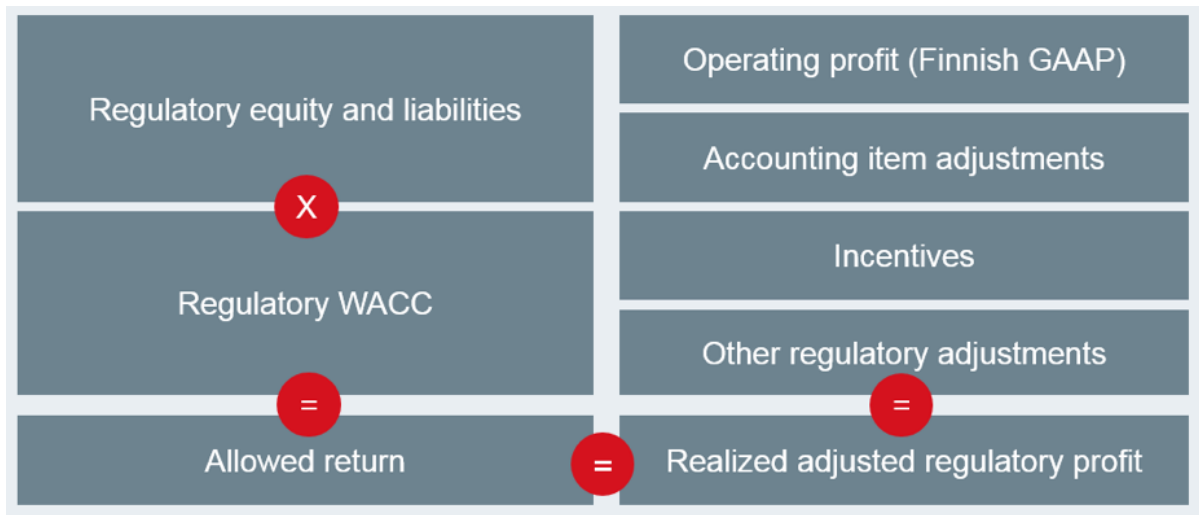
planning and pricing. One can calculate the required amount of turnover by adding operating expenses in the result. Fingrid's turnover mainly consists of the electricity transmission volume multiplied by the unit prices. The company determines in advance for the next year the unit prices for the transmission of electricity to recover required turnover. The company's total costs consist of the operating expenses and financial costs and taxes, which are excluded from regulatory calculations.

The so-called adjusted profit, realised in compliance with the regulation, is calculated by adjusting the parent company's operating profit according to the Energy Market Authority's regulation methods and by adding the impact of the incentives.

The regulation incentives are as follows: Investment incentive – intended to promote reasonable and cost-effective investments as well as a justified overhaul of components. The incentive impact is created by the fact that the methods allow the TSO straight-line depreciations based on the replacement value of the transmission network assets. Quality incentive – intended to encourage

the TSO to improve the quality of electricity transmission. In practical terms this means minimising the calculated negative impact caused by non-transmitted energy. Efficiency improvement incentive – intended to encourage the TSO to operate cost-effectively. The efficiency improvement incentive is based on Fingrid's controllable operating costs. Innovation incentive – intended to encourage the TSO to develop and use innovative technical and operational solutions in its network operations. In practice, this means adequate R&D resources.

Any realised regulatory profit over a regulatory period that exceeds the allowed return is a surplus that must be returned to the customers in the form of lower future prices. If the realised regulatory profit over a regulatory period is below the allowed return, the result is a deficit which the company may recover from the customers in the form of higher future prices. No regulatory surplus or deficit income is recorded in the financial statements. The main aim of Fingrid's business operations is to achieve the allowed financial result each year.



The Energy Market Authority determines Fingrid's allowed financial result over four-year regulatory periods (2016–2019 and 2020–2023). The table

below presents Fingrid's own rough approximations for 2016, as well as the cumulative figures for the current regulatory period.

<b>WACC</b>	<b>Adjusted equity</b>	<b>Allowed financial result</b>	<b>Deficit(-)/Surplus(+) 2016</b>	<b>Cumulative Deficit (-)/Surplus(+) 2016-2019</b>
6,55 %	Approx. EUR 2,950 million	Approx. EUR 190 million	Approx. EUR -40 million	Approx. EUR -40 million

The company also engages in other regulated business operations, but the impact of these on the company's financial income and balance sheet is negligible.



# Income statement

## 2.1 Income statement

### CONSOLIDATED STATEMENT OF COMPREHENSIVE INCOME

		1 Jan - 31 Dec, 2016	1 Jan - 31 Dec, 2015
	Notes	€ 1,000	€ 1,000
<b>TURNOVER</b>	1	<b>586,120</b>	<b>600,224</b>
Other operating income	2	12,689	5,199
Materials and services	5	-248,359	-240,643
Employee benefits expenses	9	-28,598	-25,804
Depreciation	11,12	-99,222	-94,119
Other operating expenses	6,13	-30,586	-82,288
<b>OPERATING PROFIT</b>		<b>192,045</b>	<b>162,570</b>
Finance income	17	694	706
Finance costs	17	-19,385	-34,401
Finance income and costs		-18,691	-33,695
Share of profit of associated companies		511	447
<b>PROFIT BEFORE TAXES</b>		<b>173,865</b>	<b>129,321</b>
Income taxes		-35,192	-25,745
<b>PROFIT FOR THE FINANCIAL YEAR</b>		<b>138,673</b>	<b>103,576</b>
<b>OTHER COMPREHENSIVE INCOME</b>			
Items that may subsequently be transferred to profit or loss			
Cash flow hedges		7,232	7,232
Translation reserve		318	-309
Available-for-sale investments		17	22

Taxes related to other items in total comprehensive income	-1,450	-1,451
<b>TOTAL COMPREHENSIVE INCOME FOR THE FINANCIAL PERIOD</b>	<b>144,790</b>	<b>109,070</b>

**Profit attributable to:**

Equity holders of parent company	138,673	103,576
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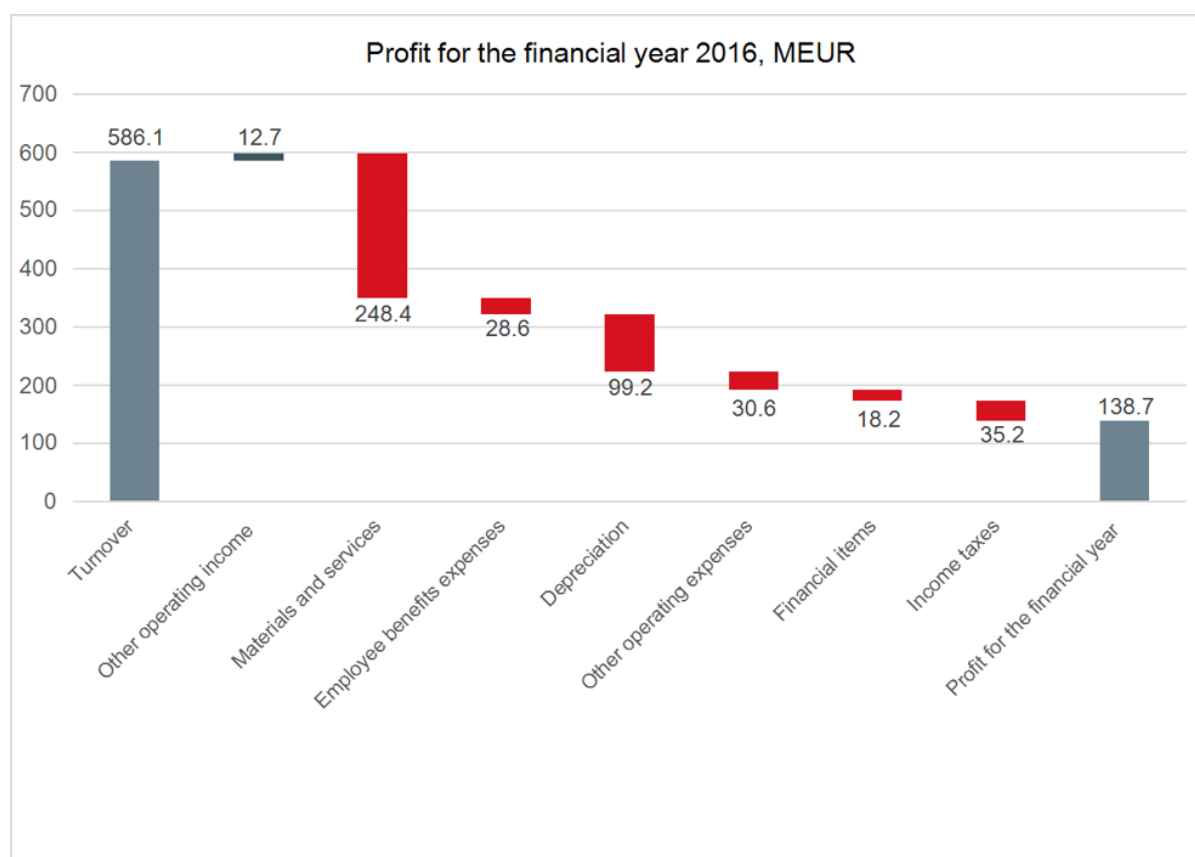
**Total comprehensive income attributable to:**

Equity holders of parent company	144,790	109,070
----------------------------------	---------	---------

**Earnings per share for profit attributable to the equity holders of the parent company:**

Undiluted and diluted earnings per share, €	41,706	31,151
Weighted average number of shares, quantity	3,325	3,325

Notes are an integral part of the financial statements.



# Consolidated balance sheet

## 2.2 Consolidated balance sheet

### ASSETS

	Notes	31 Dec 2016 € 1,000	31 Dec 2015 € 1,000
<b>NON-CURRENT ASSETS</b>			
Intangible assets:	12		
Goodwill		87,920	87,920
Other intangible assets		96,580	95,428
		184,500	183,348
Property, plant and equipment:	11		
Land and water areas		15,701	15,349
Buildings and structures		193,716	167,280
Machinery and equipment		578,281	567,627
Transmission lines		825,038	789,614
Other property, plant and equipment		7,602	7,548
Prepayments and purchases in progress		69,825	129,566
		1,690,162	1,676,984
Investments in associated companies	24	14,158	12,388
Available-for-sale investments and receivables		101	284
Derivative instruments	23	29,657	32,148
Deferred tax assets	10	6,155	16,479
<b>TOTAL NON-CURRENT ASSETS</b>		<b>1,924,733</b>	<b>1,921,632</b>

**CURRENT ASSETS**

Inventories	8	12,269	12,665
Derivative instruments	23	2,861	3,353
Trade receivables and other receivables	3	82,191	70,213
Financial assets recognised in the income statement at fair value	20	57,790	93,451
Cash in hand and cash equivalents	19	21,939	23,099
<b>TOTAL CURRENT ASSETS</b>		<b>177,050</b>	<b>202,782</b>
<b>TOTAL ASSETS</b>		<b>2,101,782</b>	<b>2,124,414</b>

Notes are an integral part of the financial statements.

**EQUITY AND LIABILITIES**

	Notes	31 Dec 2016 € 1,000	31 Dec 2015 € 1,000
<b>EQUITY ATTRIBUTABLE TO EQUITY HOLDERS OF THE PARENT COMPANY</b>			
Share capital	21	55,922	55,922
Share premium account	21	55,922	55,922
Revaluation reserve	21	59	-5,740
Translation reserve	21	-413	-731
Retained earnings	21	654,258	605,585
<b>TOTAL EQUITY</b>		<b>765,749</b>	<b>710,960</b>
<b>NON-CURRENT LIABILITIES</b>			
Deferred tax liabilities	10	125,778	125,240
Borrowings	14	842,866	907,232
Provisions	25	1,481	1,668
Derivative instruments	23	18,567	46,952
		<b>988,692</b>	<b>1,081,092</b>
<b>CURRENT LIABILITIES</b>			
Borrowings	14	264,865	236,217
Derivative instruments	23	7,859	30,331

Trade payables and other liabilities	7	74,617	65,815
		<b>347,341</b>	<b>332,363</b>
<b>TOTAL LIABILITIES</b>		<b>1,336,033</b>	<b>1,413,455</b>
<b>TOTAL EQUITY AND LIABILITIES</b>		<b>2,101,782</b>	<b>2,124,414</b>

Notes are an integral part of the financial statements.

# Consolidated statement of changes in equity

## 2.3 Consolidated statement of changes in equity

### Attributable to equity holders of the parent company, € 1,000

	Share capital	Share premium account	Revaluation reserves	Translation reserve	Retained earning	Total equity
<b>Balance on 1 Jan 2015</b>	<b>55,922</b>	<b>55,922</b>	<b>-11,543</b>	<b>-422</b>	<b>567,009</b>	<b>666,889</b>
<b>Comprehensive income</b>						
Profit or loss					103,576	103,576
<b>Other comprehensive income</b>						
Cash flow hedges			5,785			5,785
Translation reserve				-309		-309
Available-for-sale investments			18			18
<b>Total other comprehensive income adjusted by tax effects</b>			<b>5,803</b>	<b>-309</b>		<b>5,494</b>
<b>Total comprehensive income</b>			<b>5,803</b>	<b>-309</b>	<b>103,576</b>	<b>109,070</b>
<b>Transactions with owners</b>						
Dividend relating to 2014					-65,000	-65,000
<b>Balance on 31 December 2015</b>	<b>55,922</b>	<b>55,922</b>	<b>-5,740</b>	<b>-731</b>	<b>605,585</b>	<b>710,960</b>
<b>Balance on 1 Jan 2016</b>	<b>55,922</b>	<b>55,922</b>	<b>-5,740</b>	<b>-731</b>	<b>605,585</b>	<b>710,960</b>
<b>Comprehensive income</b>						
Profit or loss					138,673	138,673
<b>Other comprehensive income</b>						
Cash flow hedges			5,785			5,785
Translation reserve				318		318

Available-for-sale investments			13			13
<b>Total other comprehensive income adjusted by tax effects</b>			<b>5,799</b>	<b>318</b>		<b>6,117</b>
<b>Total comprehensive income</b>			<b>5,799</b>	<b>318</b>	<b>138,673</b>	<b>144,790</b>
<b>Transactions with owners</b>						
Dividend relating to 2015					-90,000	-90,000
<b>Balance on 31 Dec 2016</b>	<b>55,922</b>	<b>55,922</b>	<b>59</b>	<b>-413</b>	<b>654,258</b>	<b>765,749</b>

Notes are an integral part of the financial statements.

# Consolidated cash flow statement

## 2.4 Consolidated cash flow statement

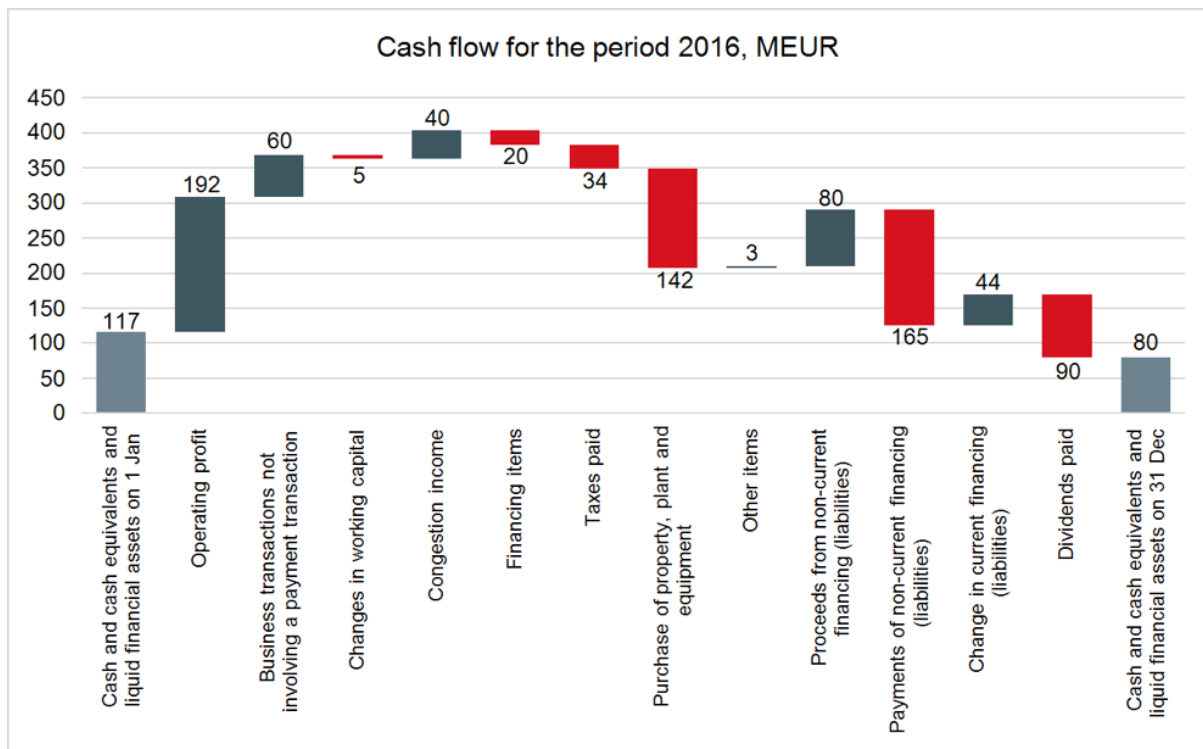
### CONSOLIDATED CASH FLOW STATEMENT

		1 Jan - 31 Dec, 2016	1 Jan - 31 Dec, 2015
	Notes	€ 1,000	€ 1,000
<b>Cash flow from operating activities:</b>			
Profit for the financial year	21	138,673	103,576
Adjustments:			
Business transactions not involving a payment transaction:			
Depreciation		99,222	94,119
Capital gains/losses (-/+ ) on tangible and intangible assets		-3,792	-1,970
Share of profit of associated companies		-511	-447
Gains/losses from the assets and liabilities recognised in the income statement at fair value		-35,378	24,276
Interest and other finance costs		19,385	34,401
Interest income		-689	-701
Dividend income		-5	-5
Taxes		35,192	25,745
Impact from changes in the fair value of the investment		203	-233
Changes in working capital:			
Change in trade receivables and other receivables		-13,121	-11,532
Change in inventories		396	178
Change in trade payables and other liabilities		7,371	-8,332
Congestion income		39,863	0
Change in provisions	25	-187	-18
Interests paid		-20,496	-23,734
Interests received		440	821



Taxes paid		-33,887	-20,470
Net cash flow from operating activities		232,679	215,674
<b>Cash flow from investing activities:</b>			
Purchase of property, plant and equipment	11	-138,084	-150,449
Purchase of intangible assets	12	-4,108	-3,421
Proceeds from sale of other assets		152	500
Proceeds from sale of property, plant and equipment		5,885	5,066
Loans granted		-1,500	-900
Dividends received		565	556
Contributions received		0	15,000
Capitalised interest paid	17	-2,016	-1,690
Net cash flow from investing activities		-139,106	-135,339
<b>Cash flow from financing activities:</b>			
Proceeds from non-current financing (liabilities)		80,000	107,424
Payments of non-current financing (liabilities)		-164,824	-104,220
Change in current financing (liabilities)		44,430	-80,961
Dividends paid	21	-90,000	-65,000
Net cash flow from financing activities		-130,394	-142,757
<b>Change in cash as per the cash flow statement</b>		<b>-36,822</b>	<b>-62,421</b>
<b>Opening cash as per the cash flow statement</b>		<b>116,550</b>	<b>178,972</b>
<b>Closing cash as per the cash flow statement</b>	19,20	<b>79,729</b>	<b>116,550</b>

Notes are an integral part of the financial statements.



## 3 Benchmark for TSO Operations

This chapter contains first general information about the Group and the general accounting principles applied to the consolidated financial statements.

- The chapter focuses on describing how Fingrid's turnover and result are formed and how they relate to the regulatory revenue level. The impact of the regulation is reflected in Fingrid's day-to-day operations and revenue collection.
- The chapter also describes Fingrid's operating receivables and liabilities, as well as the risk management they entail.
- People are Fingrid's most important resource, which is why information related to personnel has been included here, in the first note.
- Fingrid is a substantial tax payer, and Fingrid does not use tax planning. The note on taxes is at the end of this chapter, in [chapter 3.9](#).

# General information about the Group and general accounting principles

## 3.1 General information about the Group and general accounting principles

Fingrid Oyj is a Finnish public limited liability company responsible for electricity transmission in the high-voltage transmission system in Finland. Fingrid's nationwide grid is an integral part of the power system in Finland. The transmission grid is the high-voltage trunk network which covers all of Finland. Major power plants, industrial plants and electricity distribution networks are connected to the grid.

Finland's main grid is part of the Nordic power system, which is connected to the system in Central Europe via high-voltage direct current transmission links. Finland also has DC links with Russia and Estonia.

The transmission system encompasses more than 14,000 kilometres of 400, 220 and 110 kilovolt transmission lines, plus more than 100 substations.

Fingrid is in charge of planning and monitoring the operation of the main grid and for maintaining and developing the system. An additional task is to participate in work carried out by ENTSO-E, the European Network of Transmission System Operators for Electricity, and in preparing European market and operational codes as well as network planning.

Fingrid offers grid, cross-border transmission and balance services to its contract customers: electricity producers, network operators and the industry. Fingrid serves the electricity market by maintaining adequate electricity transmission

capacity, by de-bottlenecking cross-border transmission links and by providing market data.

The consolidated financial statements include the parent company Fingrid Oyj and its wholly owned subsidiaries Finextra Oy and Datahub Oy. The consolidated associated companies are Nord Pool Spot AS (ownership 18.8%) and eSett Oy (ownership 33.3%). The Group has no joint ventures.

Fingrid issues bonds under the Euro Medium Term Note (EMTN) programme. Fingrid Oyj's issuances under the EMTN programme are listed on the London Stock Exchange. Fingrid shares are not listed.

### Critical accounting estimates and judgements

When the consolidated financial statements are drawn up in accordance with the IFRS, the company management needs to make estimates and assumptions which have an impact on the amounts of assets, liabilities, income and expenses recorded and conditional items presented. These estimates and assumptions are based on historical experience

and other justified assumptions which are believed to be reasonable under the conditions which constitute the foundation for the estimates of the items recognised in the financial statements. The actual amounts may differ from these estimates. In the financial statements, estimates have been used for example, when specifying the economic lives of

tangible and intangible asset items, and in conjunction with deferred taxes and provisions. Critical estimates and judgements by management are described by topic in the notes, and the judgement or estimates related to which are in accordance with the following table.

Estimate of the purchase and sale of imbalance power	Chapter 3.3
Inter-Transmission System Operator Compensation (ITC)	Chapter 3.3
Deferred tax assets and liabilities	Chapter 3.9
Determination of the fair value measurement of grid assets	Chapter 4.1
Determination of the depreciation periods of property, plant and equipment, and intangible assets	Chapter 4.2



## Accounting principles

In preparing these consolidated financial statements, the Group has followed the same standards as in 2015. New standards, interpretations and changes took effect during the year, but these have not had a material effect on the consolidated financial statements, with the exception of the following change. The financial statement structure was revised in 2016 with the aim of making it more reader friendly and more focussed on information relevant to Fingrid. The revised version is in line with the changes in IAS 1 Presentation of Financial Statements, which entered into force on 1 January 2016 and which clarify that when drawing up their financial statements, companies may exercise their judgement in presenting, emphasising and consolidating their financial reports. Fingrid furthermore adopted,

ahead of their 1 January 2017 entry into force, the amendments to IAS 7 Statement of Cash Flows, according to which companies must now present disclosures on changes in liabilities arising from financing activities. This includes changes from financing cash flows (e.g. drawdowns and payments of debt), as well as changes in non-cash items, such as procurements, disposals, interest accruals and unrealised foreign currency exchange differences. The new note is presented in chapter 5.3.

IASB has published the following new and amended standards and interpretations, which the company has not yet applied. The company will begin applying the standard and interpretation from the date of its entry into force. The estimated impact of the standards is described in the notes listed in the table.

IFRS 9 Financial instruments, effective 1 January 2018	Chapter 5.6
IFRS 15 Revenue from Contracts with Customers, effective 1 January 2018	Chapter 3.3
IFRS 16 Leases, effective 1 January 2018	Chapter 4.3

### Segment reporting

The entire business of the Fingrid Group is deemed to comprise grid operations in Finland with system responsibility, only constituting a single segment. There are no essential differences in the risks and profitability of individual products and services. For that reason, segment reporting in accordance with the IFRS 8 standard is not presented. The operating segment is reported in a manner consistent with the internal reporting to the chief operating decision-maker. The chief operating decision-maker is the company's Board of Directors. Fingrid operates only in Finland, which is also why geographical data is not presented.

### Foreign currency transactions

The consolidated financial statements are presented in euros, which is the functional currency of the parent company. Transactions and financial items denominated in foreign currencies are

recognised at the foreign exchange mid-rate quoted by the European Central Bank (ECB) at the transaction date. Receivables and liabilities denominated in foreign currencies are valued in the financial statements at the mid-rate quoted by the ECB at the closing date. Foreign exchange gains and losses from business are included in the corresponding items above operating profit. Foreign exchange gains and losses from financial instruments are recognised at net amounts in finance income and costs.

### Earnings per share

The Group has calculated undiluted earnings per share in accordance with standard IAS 33. Undiluted earnings per share are calculated using the weighted average number of shares outstanding during the financial year. Since Fingrid has no share option schemes or benefits bound to shareholders' equity or other equity financial instruments, there is no dilutive effect.

# The company's general risk management processes and policies

## 3.2 The company's general risk management processes and policies

The objective of Fingrid's risk management is to make preparations for cost-effective measures providing protection against damage and loss relating to risks and to ensure the commitment of the entire personnel to considering the risks pertaining to the company, its various organisational units and each employee. In order to fulfil these objectives, risk management is continuous and systematic. The significance of individual risks or risk entities is assessed against the present level of protection, taking into account the probability of a harmful event, its financial impact and impact on corporate image or on the attainment of the business goals.

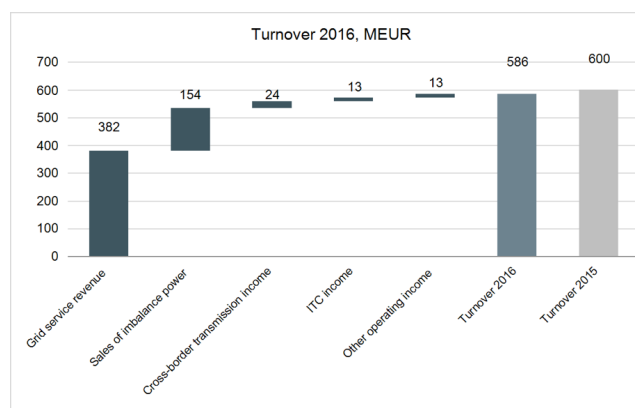
Risk management is planned as a whole with the objective of comprehensively identifying, assessing, monitoring and safeguarding the company's operations, the environment, personnel and assets from various threats and risks. Due to the nature of the company's basic mission, risks are also assessed from a societal perspective.

The Board approves the key principles of internal control and risk management and any amendments to them. The Board of Directors approves the primary actions for risk management as part of the corporate strategy, indicators, action plan, and budget. The Board of Directors (Audit Committee) receives a situation report on the major risks relating to the operations of the company and on the management of such risks.

# Formation of turnover and financial result

## 3.3 Formation of turnover and financial result

Turnover consists of the following:



### 1. TURNOVER, €1,000

	2016	2015
Grid service revenue	382,395	333,005
Sales of imbalance power	153,881	137,127
Cross-border transmission income	24,015	11,174
ITC income	13,199	15,298
Peak load capacity	7,023	7,585
Congestion income*	0	90,941
Other operating income	5,607	5,093
<b>Total</b>	<b>586,120</b>	<b>600,224</b>

\* The booking of congestion income was changed in 2016. This is presented in chapter 4.1.



Grid service income mainly consists of the unit price for electricity transmission multiplied by the volume. The Energy Market Authority approves the pricing structure for grid services, on the basis of which Fingrid sets the unit prices for electricity transmission during the winter period and for consumption during other times. The winter period begins on 1 December and ends on the last day of February. Fingrid additionally charges fees for output from and input into the grid, and power generation capacity fees. Fingrid strives to set the unit prices for electricity transmission each autumn for the next year, for one year at a time.

Within the framework of grid services, a customer obtains the right to transmit electricity to and from the main grid through its connection point. Grid service is agreed by means of a grid service contract signed between a customer connected to the main grid and Fingrid.

Each electricity market party must ensure its electricity balance by making an agreement with either Fingrid or some other party. Fingrid buys and sells imbalance power in order to stabilise the hourly power balance of an electricity market party (balance responsible party). Imbalance power trade and pricing are based on a balance service agreement with equal and public terms and conditions.

Fingrid is responsible for the continuous power balance in Finland at all times by buying and selling regulating power in Finland. The balance responsible parties can participate in the Nordic

balancing power market by submitting bids on their available capacity. The terms and conditions of participation in the regulating power market and the pricing of balancing power are based on the balance service agreement.

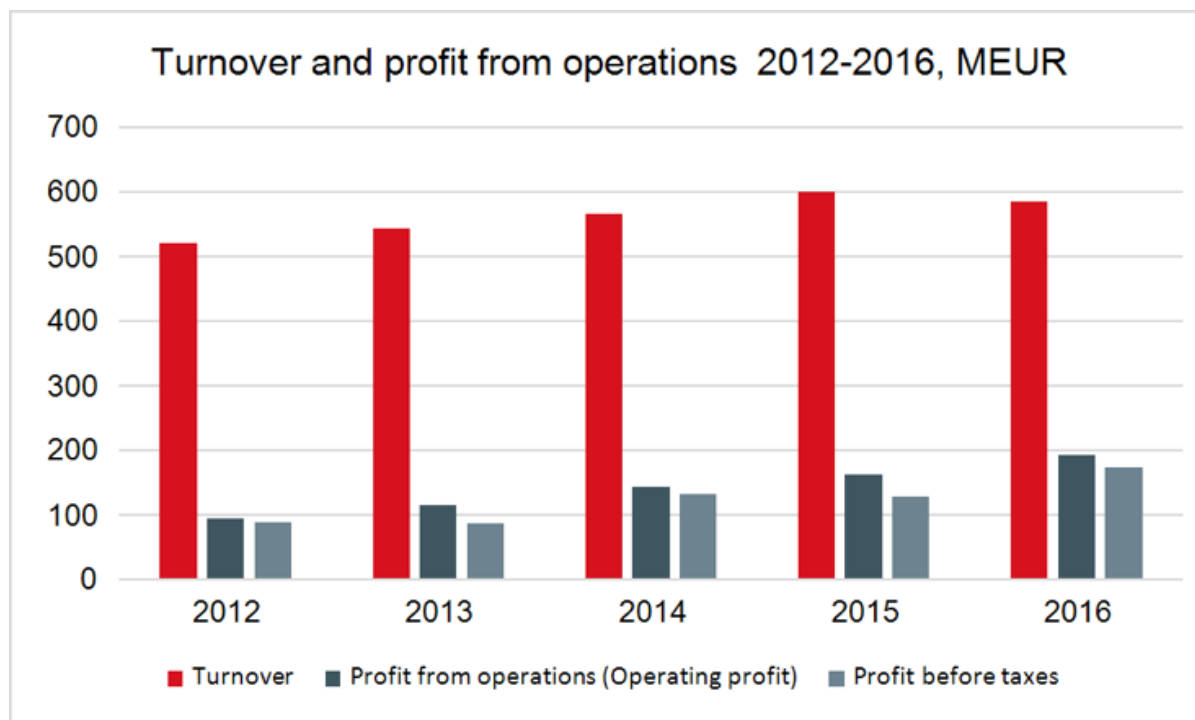
Transmission services on the cross-border connections to the other Nordic countries enable participation in the Nordic Elspot and Elbas exchange trade. Fingrid makes transmission services on the cross-border connections with Russia available to all electricity market parties. The transmission service is intended for fixed electricity imports. When making an agreement on transmission services from Russia, the customer reserves a transmission right (in MW) for a period of time to be agreed upon separately. The smallest unit that can be reserved is 50 MW. The contractual terms are equal and public.

ITC compensation is, for Fingrid, income and/or costs which the transmission system operator receives for the use of its grid by other European transmission system operators and/or pays to other transmission system operators when using their grid to serve its own customers.

The peak load capacity secures the supply security of electricity in situations of the Finnish power system where the planned electricity procurement is not sufficient to cover the anticipated electricity consumption. The peak load capacity can consist of both power plants and facilities capable of adjusting their electricity consumption.

## 2. OTHER OPERATING INCOME, €1,000

	2016	2015
Rental income	922	1,196
Capital gains on fixed assets	3,792	2,265
Contributions received	282	199
Congestion income	6,325	0
Other income	1,368	1,539
<b>Total</b>	<b>12,689</b>	<b>5,199</b>



## Accounting principles

### Revenue recognition

Sales recognition takes place on the basis of the delivery of the service. Electricity transmission is recognised once the transmission has taken place. Balance power services are recognised on the basis of the delivery of the service. Connection fees are recognised when connection to the grid has happened. Indirect taxes and discounts, etc., are deducted from the sales income when calculating turnover.

### Adoption of the IFRS 15 Revenue from Contracts with Customers standard, effective 1 Jan 2018

IFRS 15 will replace IAS 18, which outlines the accounting requirements for the sale of goods and services, and IAS 11 applied to long-term projects.

The fundamental principle of the new standard is that sales revenue should be recognised when control over the goods or the service is transferred to the customer; in other words, control of the asset is the criterion to be examined instead of the previous criteria of risks and rewards.

A new five-step process should be applied when recognising sales revenue:

- Identify the contract(s) with a customer
- Identify the individual performance obligations
- Determine the transaction price according to the contract
- Allocate the transaction price to individual performance obligations, and
- Recognise revenue when each performance obligation is met.

The most significant differences compared with the present practice are as follows:

- The time of recognising sales revenue can change: some of the revenue currently recognised at the end of a contract may in future be recognised over the contract term and vice versa. The timing of recognition of grid connection fees will change along with the new standard.
- Like all new standards, IFRS 15 includes new requirements for the notes to the financial statements.

These changes in the accounting procedures may affect the company's business practices regarding

systems, processes and controls, compensation and bonus arrangements, tax planning and investor relations.

If a customer does not receive an individual item of goods or a service against the connection fee, this must be recognised as revenue in the same way as the other revenue according to the contract, generally over the contract term. This will change Fingrid's principles for recognising revenue regarding, for instance, connection fees.

Fingrid charges also other similar fees that in practical terms are linked with this issue, such as fixed fees and volume-based fees. Fingrid is currently specifying the performance obligations it must meet for each contract. Revenue recognition will be examined separately for each performance obligation. When determining the extent to which a performance obligation is met, a single method should be applied for all performance obligations to be met over time. The company is currently conducting an analysis of the impacts of the standard, and the impacts on connection fee recognition have been identified. The goal is to start applying the standard using the simplified transitional approach for the 2018 financial statements.

The standard can be applied either fully retroactively or non-retroactively by providing additional information.



## Judgements and estimates

### Estimate of the purchase and sale of imbalance power

The income and expenses of imbalance power are ascertained through a nationwide imbalance settlement procedure, which is based on the Ministry of Employment and Economy's 9 December 2008 decree on the disclosure obligation related to

the settlement of electricity delivery. The final imbalance settlement is completed no later than two months from the delivery month, which is why the income and expenses of imbalance power in the financial statements are partly based on preliminary imbalance settlement. The preliminary settlement has been made separately for consumption, production and foreign balances. For the two first balances, the volume of unsettled imbalance power has been estimated using reference group calculations. For foreign balances, the calculations have been verified with the foreign counterparties.

### Inter-Transmission System Operator Compensation (ITC)

Compensation for the transit transmissions of electricity has been agreed upon through an ITC (Inter-Transmission System Operator Compensation) agreement. The centralised calculations are carried out by ENTSO-E (the European Network of Transmission System Operators of Electricity). ITC compensation is determined on the basis of the compensation paid for use of the grid and transmission losses. The ITC calculations take into account the electricity transmissions between the various ITC agreement countries. ITC compensation can represent both an income and a cost for a transmission system operator. Fingrid's share of the ITC compensation is determined on the basis of the cross-border electricity transmissions and imputed grid losses. ITC compensation is invoiced retroactively after all parties to the ITC agreement have approved the invoiced sums. Control is carried out monthly. This is why the uninvoiced ITC compensations for 2016 have been estimated in the financial statements. The estimate has been made using actual energy border transmissions in Finland and unit compensations, which have been estimated by analysing the actual figures from previous months and data on grid transmissions during these months.

# Revenue-related receivables and credit risk management

## 3.4 Revenue-related receivables and credit risk management

### 3. TRADE RECEIVABLES AND OTHER RECEIVABLES, €1,000

	2016	2015
Trade receivables	72,914	55,709
Trade receivables from associated companies	125	39
Prepayments and accrued income from associated companies	18	9
Prepayments and accrued income	7,835	13,241
Other receivables	1,298	1,216
<b>Total</b>	<b>82,191</b>	<b>70,213</b>
<b>Essential items included in prepayments and accrued income</b>	<b>2,016</b>	<b>2,015</b>
Accruals of sales	1,153	4,046
Accruals of purchases/prepayments	2,364	4,016
Interest receivables	4,118	5,001
Rents/prepayments	200	178
<b>Total</b>	<b>7,835</b>	<b>13,241</b>

#### Credit risk management – customers

According to The Electricity Market Act, the company is obliged to accept distribution network operators joining the grid as well as electricity producers and consumers as its customers. Accordingly, the company cannot choose its customers based on a credit risk analysis or collect different fees from them. In general, bank guarantees are not required from the company's customers to secure sales payments, but in the event of an overdue payment, this is possible. The

unit in charge of the customer relationships is responsible for verifying their creditworthiness, with assistance from the Treasury unit. The Treasury has defined an operating process for monitoring customers' payment defaults in the terms and conditions of the Main Grid Contract. Any guarantees required by Fingrid will be either bank guarantees or an upfront payment in order to cover the electricity taxes payable by customers connected to the grid and subject to the tax, as ruled in the Main Grid Contract's Service Terms and Conditions. The company has no bad debts, and the

related credit risk is deemed to be minor. The company has no impairments related to receivables.

#### Netting of trade receivables and trade payables

The trade receivables and trade payables are netted in the balance sheet as presented in the table below.

The netted items are associated with purchases and sales of imbalance power. The company has a legally enforceable right of set-off to these items in any circumstance and will use this right.

#### 4. NETTING OF TRADE RECEIVABLES AND TRADE PAYABLES € 1,000

	2016			2015		
	Gross amount of trade receivables/ trade payables	Amount of netted items	Net amount of trade receivables and trade payables presented in the balance sheet	Gross amount of trade receivables/ trade payables	Amount of netted items	Net amount of trade receivables and trade payables presented in the balance sheet
Trade receivables	88,176	-15,136	73,040	66,118	-10,371	55,747
Trade payables	40,113	-15,136	24,976	25,025	-10,371	14,654
<b>Total</b>	<b>48,063</b>	<b>0</b>	<b>48,063</b>	<b>41,093</b>	<b>0</b>	<b>41,093</b>



### Accounting principles

#### Trade and other receivables

Loans and other receivables are recognised initially at fair value; subsequently they are measured at amortised cost using the effective interest rate method. The amount of doubtful receivables is estimated based on the risks of individual items. An impairment loss is recorded on receivables when there is valid evidence that the Group will not receive all of its receivables at the original terms (e.g. due to the debtor's serious financial problems, likelihood that the debtor will go bankrupt or be

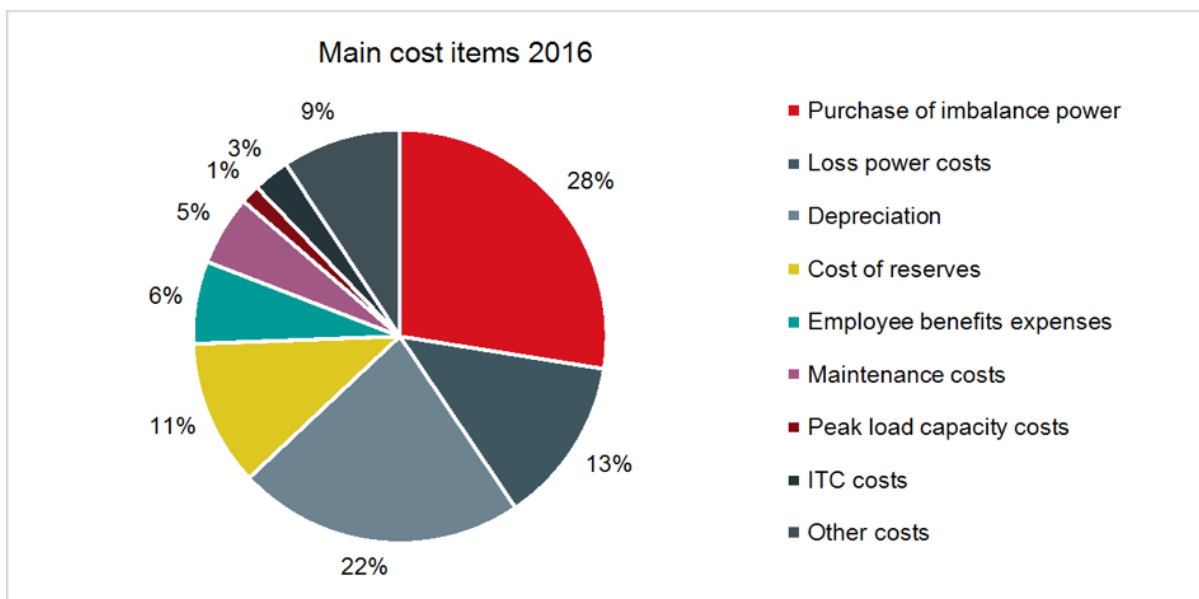
subject to other financial rearrangements, and payments overdue by more than 90 days). Impairment losses are recognised directly, under other operating expenses, to reduce the carrying amount of the receivables. Fingrid did not have any impairment losses during the periods presented here.

In addition to trade receivables and other receivables, the company has a small amount of loan receivables from associated companies. These are long-term and described in Chapter 6.1. The receivables from associated companies are recognised according to these same accounting principles.

# Operating expenses, liabilities and credit risk management for purchases

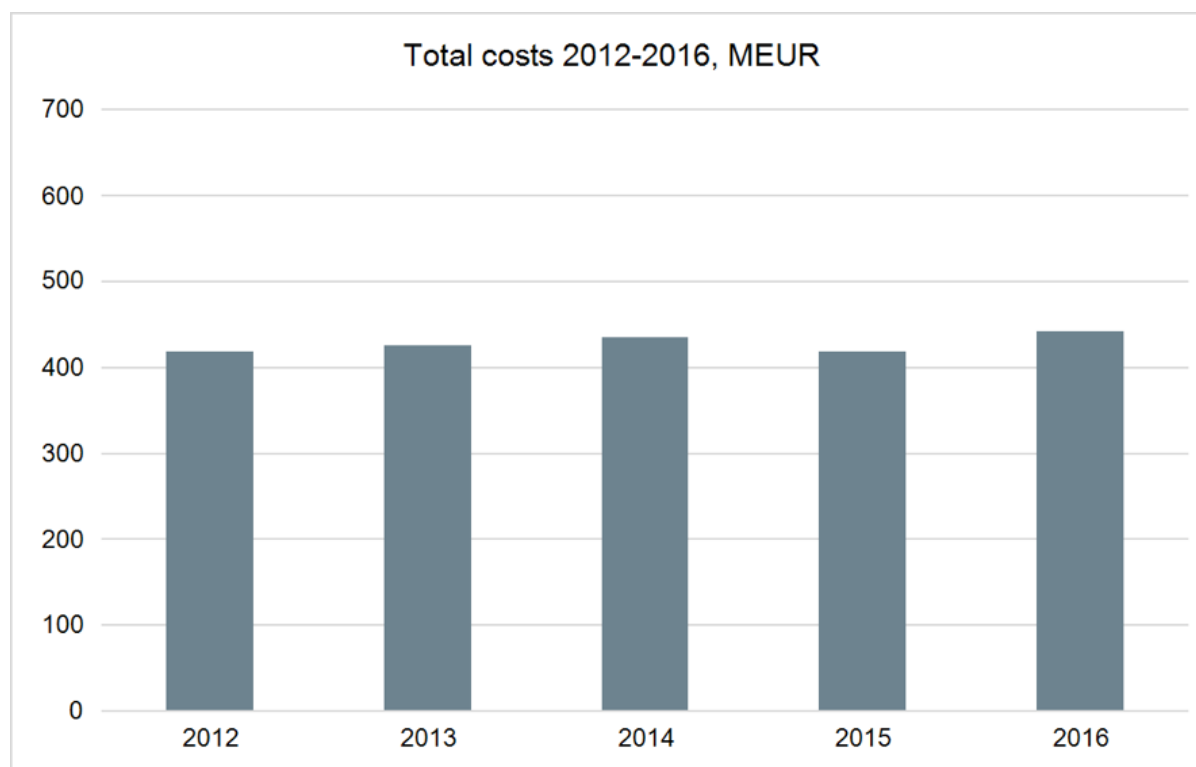
## 3.5 Operating expenses, liabilities and credit risk management for purchases

Fingrid's operating expenses consist of and have developed as follows:



Cost increases due in particular to new tasks and unexpected external changes affecting operations has been a special characteristic of grid operations in recent years. The new tasks involve, among other things, developing the Nordic imbalance markets, changes required by the new Electricity Market Act and the European network codes and the R&D expenses for these tasks. Some of the new tasks and responsibilities are assigned to Fingrid by law,

which means the company must increasingly develop and back up its operations. The cost factors also include society's increasing dependency on the power system, as well as needs related to data security. The Group's R&D costs in 2016 amounted to EUR 2.4 (1.8) million. Fingrid nevertheless continues to be one of the most cost-effective TSOs in the world in international benchmark studies.



## 5. MATERIALS AND SERVICES, €1,000

	2016	2015
Loss power costs	57,555	68,566
Purchase of imbalance power	121,697	98,032
Cost of reserves	44,907	50,271
Other material costs	4,189	5,906
Change in inventories, increase (-) or decrease (+)	396	178
Peak load capacity costs	6,604	7,211
ITC costs	12,645	9,423
Other external services	365	1,058
<b>Total</b>	<b>248,359</b>	<b>240,643</b>

## 6. OTHER OPERATING EXPENSES, €1,000

	2016	2015
Contracts, assignments etc. undertaken externally	53,427	45,757
Gains/losses from measuring electricity derivatives at fair value	-35,310	24,127
Other rental expenses	2,816	2,727

Other expenses	9,653	9,677
<b>Total</b>	<b>30,586</b>	<b>82,288</b>

Auditors' fees are included in other operating expenses

The company's operating model is largely based on outsourcing, including areas such as grid investments, maintenance management and ICT purchases. The company will apply competitive tendering as described in the procurement policy. All purchasing activities are based on impartiality,

equality and transparency. Procurement decisions will be made according to previously published financial and qualitative criteria that are verifiable also after the fact. Fingrid aims to ensure that all suppliers and their subcontractors operate in a sustainable manner. A commitment to Fingrid's Supplier Code of Conduct is required from all suppliers.

## 7. TRADE PAYABLES AND OTHER LIABILITIES, €1,000

	2016	2015
Trade payables	24,825	14,652
Trade payables to associated companies	152	2
Interest payable	13,751	15,529
Value added tax	11,860	7,787
Collaterals received	923	15
Electricity tax	3,093	3,045
Accruals	19,259	24,147
Other debt	755	639
<b>Total</b>	<b>74,617</b>	<b>65,815</b>

Essential items included in accruals	2016	2015
Personnel expenses	5,693	4,310
Accruals of sales and purchases	7,849	5,923
Tax liabilities	5,305	13,412
Other accruals	413	501
<b>Total</b>	<b>19,259</b>	<b>24,147</b>

### Credit risk in purchasing

The heads of functions are in charge of credit risks related to suppliers. The procurement policy and guidelines, and separate instructions set out the

financial criteria required for Fingrid's suppliers and how they should be monitored

### General procurement principles



The Group follows three alternative procurement methods when purchasing goods or services. When the value of the purchase is less than 30,000 euros and the benefits of a competitive tender are smaller than the costs of the purchase, the purchase can be realised without a competitive tender or it can be realised through an oral request. A written order or purchasing agreement is always drawn up. When the estimated value of the procurement exceeds

30,000 euros but is below the threshold values applied to public procurements, the procurement is subject to competitive bidding by requesting written bids from the supplier candidates. When the public procurement threshold values that apply to Fingrid (in 2016: EUR 418,000 for goods and services and EUR 5,225,000 for construction projects) are exceeded, the company follows the public procurement legislation applied to special sectors.

# Inventories

## 3.6 Inventories

Fingrid prepares for outages by maintaining reserve power plants. The inventories contain fuel for reserve power plants, spare parts for submarine cables, back-up equipment and parts for substations, and repair equipment for transmission lines. The aim of stockpiling is to achieve sufficient preparedness in case of faults and events possibly occurring during times of crisis at the substations and on the transmission lines owned by Fingrid.

### 8. INVENTORIES, €1,000

	2016	2015
Materials and consumables at 1 Jan		
Material stocks	6,144	5,678
Fuel stocks	5,995	6,969
Work in progress	131	18
<b>Total</b>	<b>12,269</b>	<b>12,665</b>

The cost of inventories recognised as an expense was EUR 2.1 (1.5) million.



### Accounting principles

#### Inventories

Inventories are measured at the lower of acquisition cost or net realisable value. The acquisition cost is

determined using the FIFO principle. The net realisable value is the estimated market price in normal business reduced by the estimated future costs of completing and estimated costs required by sale. Inventories consist of material and fuel inventories.

# Management of electricity price and volume risk and commodity risks

## 3.7 Management of electricity price and volume risk and commodity risks

The electricity price and volume risks are not significant to the company's turnover and financial result over time. If the volume of transmitted electricity deviates from the forecasted volume, the result may be a deviation in the company's turnover and financial result. This can lead to a surplus or deficit compared with the allowed reasonable return for the year in question, which the company will aim to offset during the subsequent financial year.

The company is exposed to electricity price and volume risk through transmission losses. Loss power purchases and the price hedging thereof are based on the Corporate Finance and Financing Principles approved by the Board of Directors. Moreover, the company has a loss power purchasing policy, approved by the Executive Management Group, for hedging and for physical electricity purchases, as well as operative instructions, instructions for price hedging and control room instructions. The purpose of price hedging is to

reduce the impact of market price volatility and enable sufficient predictability in order to keep the annual pressures on grid service fees of loss energy at a moderate level. Price hedging is implemented over a four year horizon such that by the end of September in the year preceding the delivery, the price risk for the next year is fully hedged. For the price hedging of loss power purchases, the company mainly uses NASDAQ OMX Commodities quoted products. The allowed hedging products are specified in the loss power purchasing policy. The company can also use OTC products comparable with NASDAQ OMX Commodities products. The nominal values, fair values and exposures are disclosed in Note 23.

Commodity risks other than those related to loss energy purchases arise if the company enters into purchasing agreements in which the price of the underlying commodity influences the final price of the investment commodity (commodity price risk). As a rule, commodity price risks and exchange rate risks are fully hedged. A risk that amounts to less than EUR 5 million when realised can be unhedged for reasons of cost-effectiveness.

# Personnel - the cornerstone of our operations

## 3.8 Personnel - the cornerstone of our operations

Fingrid Oyj employed 334 (315) persons, including temporary employees, at the end of the year. The

number of permanent personnel was 291 (280). Of the personnel employed by the company, 25.0 (24.4) per cent were women and 75.0 (75.6) per cent were men. The average age of the personnel was 44 (44).

## 9. EMPLOYEE BENEFITS EXPENSES, €1,000

	2016	2015
Salaries and bonuses	22,735	21,320
Pension expenses - contribution-based schemes	4,433	3,518
Other additional personnel expenses	1,430	967
<b>Total</b>	<b>28,598</b>	<b>25,804</b>

	2016	2015
<b>Salaries and bonuses of top management</b>	<b>1,553</b>	<b>1,472</b>

In 2016, the Group applied a remuneration system for senior management; the general principles of the system were accepted by the Board of Directors of Fingrid Oyj on 18 December 2015. The total remuneration of the members of the executive management group consists of a fixed total salary, a one-year bonus scheme, and a three-year long-term incentive scheme. The maximum amount of the one-year bonus scheme payable to the CEO was 25 per cent of the annual salary and to the other members of the executive management group 20 per cent of the annual salary. The maximum amount of the annual long-term incentive scheme payable to the

CEO was 35 per cent and to the other members of the executive management group 25 per cent.

The Group currently has contribution-based pension schemes only. The pension security of the Group's personnel is arranged by an external pension insurance company. Pension premiums paid for contribution-based schemes are recognised as an expense in the income statement in the year to which they relate. In contribution-based schemes, the Group has no legal or factual obligation to pay additional premiums if the party receiving the premiums is unable to pay the pension benefits.

**NUMBER OF SALARIED EMPLOYEES IN THE COMPANY DURING THE FINANCIAL YEAR:**

	2016	2015
Personnel, average	336	319
Personnel, 31 Dec	334	315

**Accounting principles****Employee benefits****Pension obligations**

The company has only defined contribution-based pension schemes. A defined contribution-based pension arrangement refers to a pension scheme according to which fixed contributions are paid into a separate entity, and the Group bears no legal or actual obligation to make additional contributions if

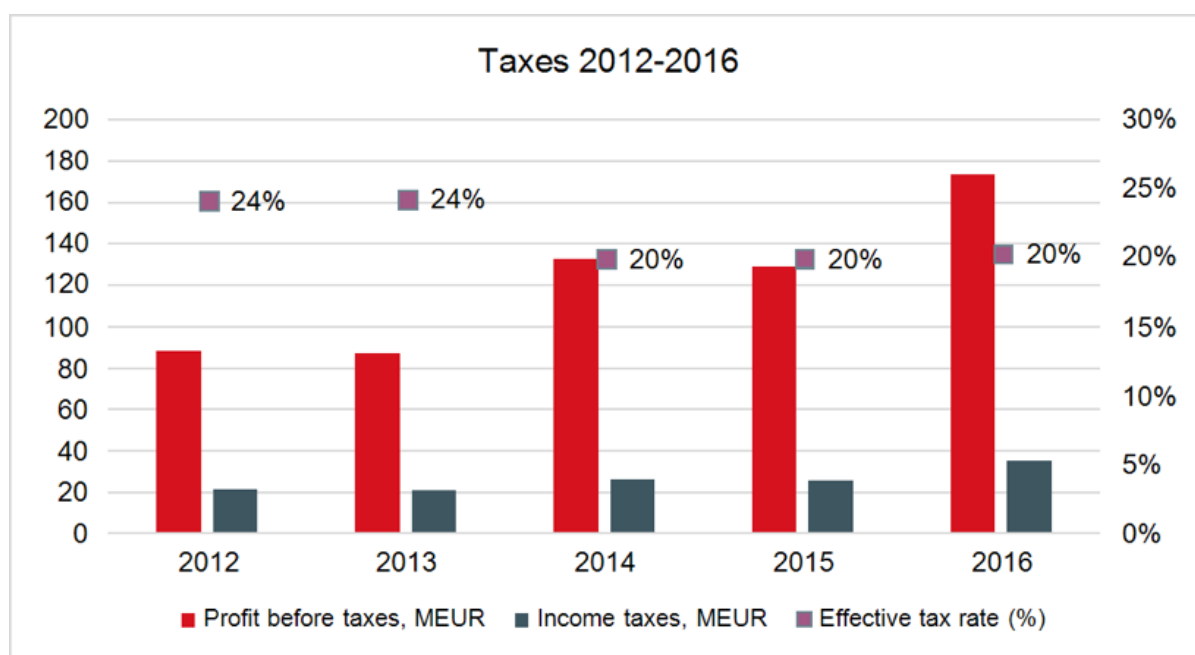
the fund does not contain sufficient funds to pay out benefits based on work performed during current and previous financial periods to all employees. Under defined contribution-based pension schemes, the Group pays mandatory, contractual or voluntary contributions into publicly or privately managed pension insurance policies. The Group has no other contribution obligations in addition to those payments. The payments are entered as personnel costs when they fall due. Advance payments are entered in the balance sheet as assets insofar as they are recoverable as refunds or deductions from future payments.

# Taxes

## 3.9 Taxes

The company will pay its income taxes in accordance with the underlying tax rate, with no tax planning. Income taxes consist of direct taxes and the change in deferred tax: EUR -25.8 (-30.8) million and EUR -9.4 (5.0) million respectively. Fingrid's effective tax rate is essentially comparable to

Finland's corporate tax rate (20% in 2016 and 2015). The only difference between the Finnish corporate tax rate and Fingrid's effective tax rate is due to a minor amount of non-deductible items, amounting in 2016 to EUR 0.4 (-0.1) million. The table below illustrates the development of Fingrid's effective tax rate. The impact of a change in the tax rate has been eliminated over the year in the 2013 figures.



## 10. DEFERRED TAX ASSETS AND LIABILITIES, € 1,000

### Changes in deferred taxes in 2016:

	31 Dec 2015	Recorded in income statement at profit or loss	Recorded in other comprehensive income	31 Dec 2016
<b>Deferred tax assets</b>				

Provisions	334	-37		296
Current financial receivables	3	9		12
Trade payables and other liabilities	6,336	-4,478		1,858
Derivative instruments	9,800	-4,365	-1,446	3,989
Other items	6		-6	0
<b>Total</b>	<b>16,479</b>	<b>-8,872</b>	<b>-1,452</b>	<b>6,155</b>

**Deferred tax liabilities**

Accumulated depreciations difference	-89,779			-89,779
Property, plant and equipment, tangible and intangible assets	-24,896	-2,224		-27,120
Available-for-sale investments	-33		13	-20
Other receivables	-1,005	166		-840
Current financial receivables				0
Financial assets recognised in the income statement at fair value	-39	-41		-79
Borrowings	-3,259	927		-2,332
Derivative instruments	-6,230	622		-5,608
<b>Total</b>	<b>-125,240</b>	<b>-551</b>	<b>13</b>	<b>-125,778</b>

**Changes in deferred taxes in 2015:**

	31 Dec 2014	Recorded in income statement at profit or loss	Recorded in other comprehensive income	31 Dec 2015
<b>Deferred tax assets</b>				
Provisions	337	-4		334
Current financial receivables	0	3		3
Trade payables and other liabilities	365	5,971		6,336
Borrowings	957	-957		0
Derivative instruments	8,995	2,252	-1,446	9,800
Other items	21	-19	4	6
<b>Total</b>	<b>10,674</b>	<b>7,246</b>	<b>-1,442</b>	<b>16,479</b>

**Deferred tax liabilities**

Accumulated depreciations difference	-89,779			-89,779
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Property, plant and equipment, tangible and intangible assets	-22,726	-2,170		-24,896
Available-for-sale investments	-25		-8	-33
Other receivables	-1,229	224		-1,005
Financial assets recognised in the income statement at fair value	-85	47		-39
Borrowings		-3,259		-3,259
Derivative instruments	-9,204	2,974		-6,230
<b>Total</b>	<b>-123,048</b>	<b>-2,184</b>	<b>-8</b>	<b>-125,240</b>



## Accounting principles

### Income taxes

Taxes presented in the consolidated income statement include the Group companies' accrual taxes for the profit of the financial year, tax adjustments from previous financial years and changes in deferred taxes. Deferred taxes are recorded in accordance with Finland's statutory corporate tax rate of 20%. Taxes are recognised in the income statement unless they are linked with other comprehensive income, in which case the tax is also recognised in other comprehensive income. Such items in the Group consist solely of available-for-sale investments, since hedge accounting for electricity derivatives was discontinued in 2014.

Deferred tax assets and liabilities are recognised on all temporary differences between the tax values of asset and liability items and their carrying amounts using the liability method. Deferred tax is recognised

using tax rates valid up until the closing date. The deferred tax liabilities arising from the original recognition of goodwill will not be recognised, however. Deferred tax liabilities will also not be recognised if they are caused by the original recognition of the asset or liability and the item is not related to a merger and the transaction will not affect the accounting totals or the taxable revenue during its implementation. The deferred tax assets are shown as non-current receivables and deferred tax liabilities correspondingly as non-current liabilities.

The largest temporary differences result from the depreciation of property, plant and equipment and from financial instruments. No deferred tax is recognised on the undistributed profits of the foreign associated company, because receiving the dividend does not cause a tax impact by virtue of a Nordic tax agreement. The deferred tax asset from temporary differences is recognised up to an amount which can likely be utilised against future taxable income.



## 4 Long-term Investor

This chapter focuses on Fingrid's assets, and above the most important ones: Grid assets and the indicators related to them.

- The chapter also takes a look at the company's goodwill and provides a description of other property, plant and equipment, and intangible assets.
- Leases are also included in this chapter as, for example, right-of-use agreements make up a





considerable share of the company's operations and are as important as the company's other assets. Their share will be especially highlighted when all lease agreements are included in the company's balance sheet following the introduction of the new IFRS 16 standard.

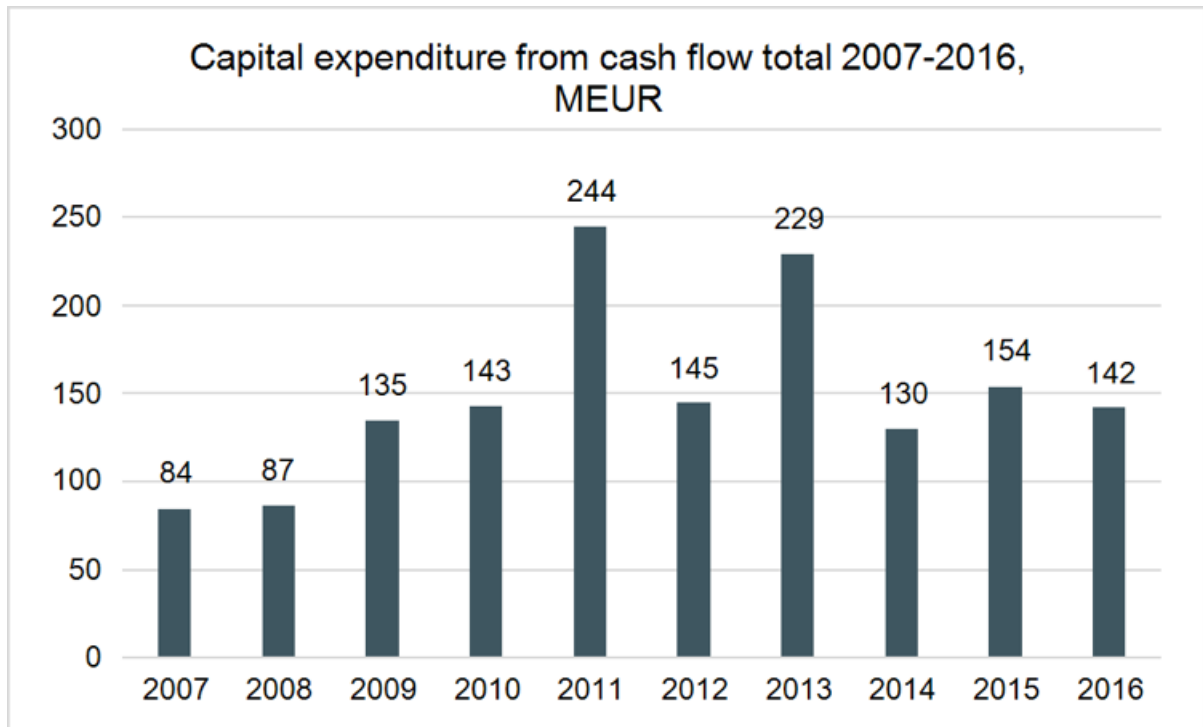
# Grid assets

## 4.1 Grid assets

Fingrids grid investment programme promotes the national climate and energy strategy, improves system security, increases transmission capacity and promotes the electricity markets. The annual capital expenditure in the grid has remained extensive.

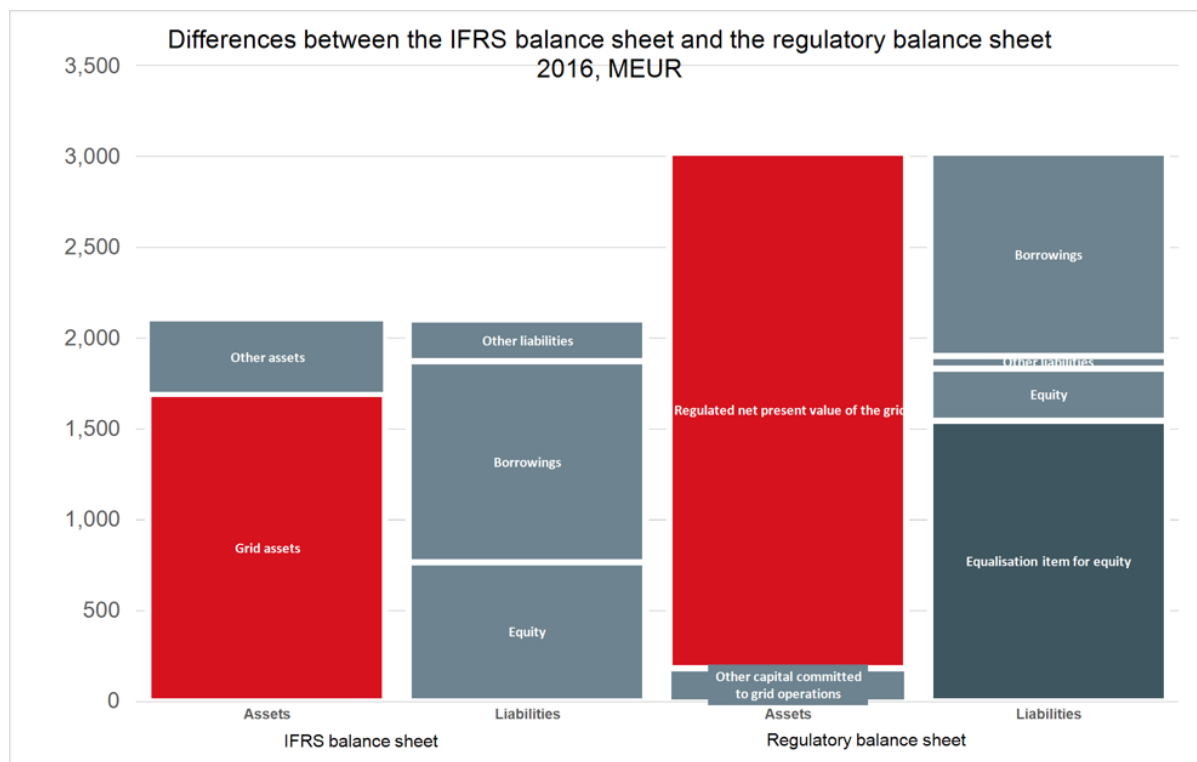
The company's total capital expenditure in 2016 amounted to EUR 146.7 (147.5) million. This included a total of EUR 135.8 (138.4) million invested in the transmission grid and EUR 3.3 (0.7) million for reserve power. ICT investments amounted to EUR 7.5 (8.4) million. A total of EUR 2.4 (1.8) million was used for R&D projects during the year under review. At the end of 2016, Fingrid had thirteen 400 kilovolt substation sites and 67 kilometres of 400 kilovolt power line contracts as well as a significant number of 110 kilovolt substation and power line projects under construction.

			
<p>14 300 km of power lines 300 km of submarine cable</p>	<p>over 49 000 towers</p>	<p>118 substations</p>	<p>10 reserve power plants &gt; 935 MW reserve</p>



Grid assets are recognised at fair value for the purposes of the company’s regulatory balance sheet, as described above. The fair value of the transmission network assets (adjusted replacement cost) is calculated by adding up the adjusted replacement costs for each grid component; these

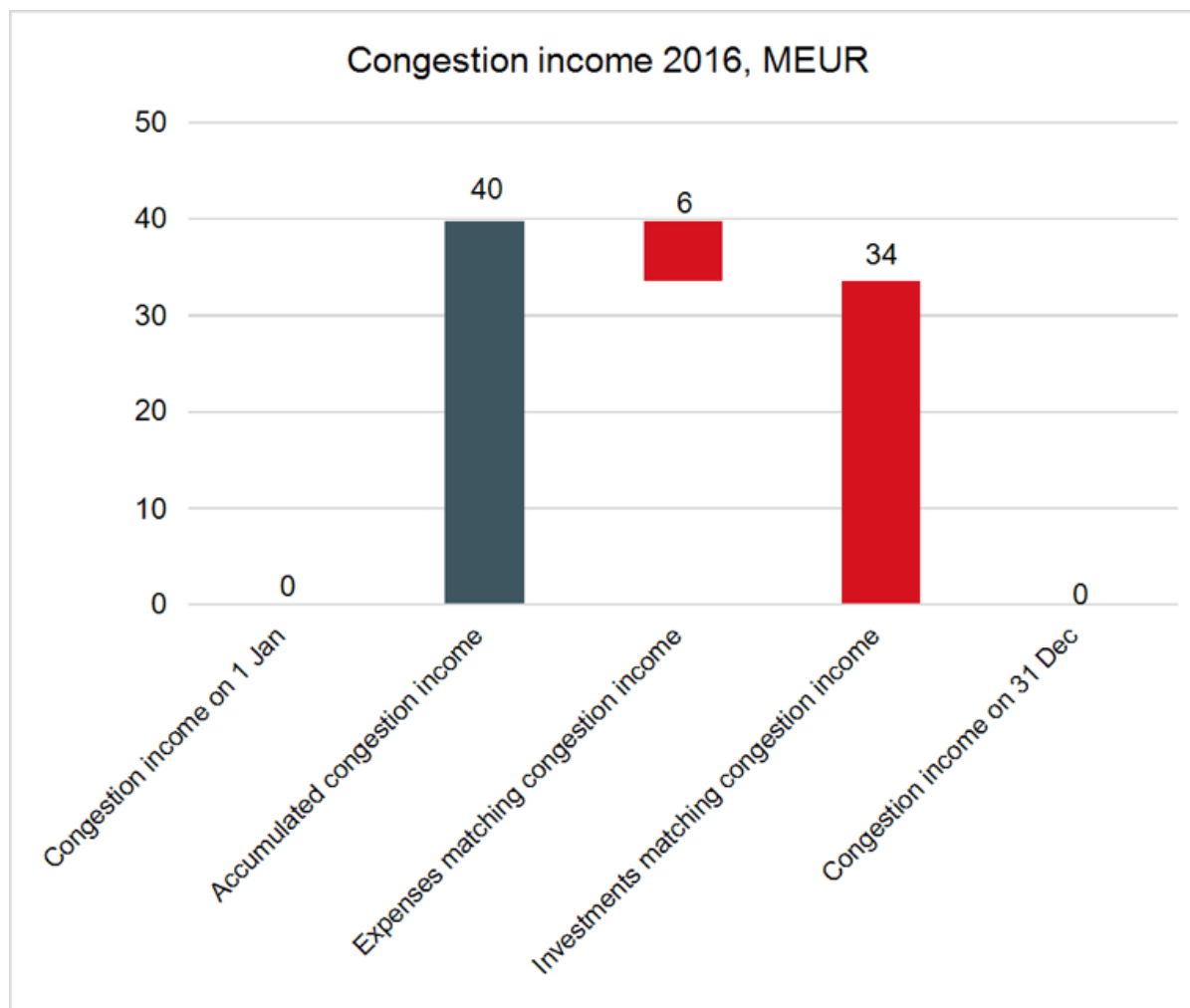
are calculated by multiplying the unit price specified by the Energy Authority with the number of grid components. The adjusted present value in use for a grid component is calculated based on the adjusted replacement cost, using the useful life of the grid component and its mean lifetime data.



### Congestion income

Congestion income is generated because of an insufficient transmission capacity between the bidding zones of an electricity exchange. In such cases, the bidding zones become separate price areas, and the transmission link joining them generates congestion income in the electricity exchange as follows: congestion income [€/h] = transmission volume in the day-ahead markets [MW] \* area price difference [€/MWh]. The basis for this is that a seller operating in a lower priced area receives less for their power than what a buyer pays for it in a higher priced area. The

additional income caused by this price difference, i.e. congestion income, remains in the electricity exchange, which then pays the income to the TSOs as per the contractual terms. The congestion income received by a grid owner must be used for the purposes stated in EC Regulation 714/2009, Article 16, Paragraph 6: guaranteeing the actual availability of the allocated capacity, and maintaining or increasing interconnection capacities through network investments. As a consequence of the change in the regulation governing Fingrid's grid pricing, the company will include the congestion income received after 1 January 2016 as accruals in the item other liabilities in the balance sheet.



The congestion income from 2016 was used for improving and maintaining the cross-border transmission connections, and in part also for the Hirvisuo–Pyhänselkä transmission network investment, which supports the cross-border transmission from northern Sweden.



## Accounting principles

### Congestion income

As a consequence of the change in the regulation governing Fingrid's grid pricing, the company will include the congestion income received after 1 January 2016 as accruals in the item other liabilities in the balance sheet. Of the accruals, congestion income will be recognised in the income statement as other operating income when their corresponding

costs, as defined in the regulation, accrue as annual expenses in the income statement. Alternatively, they are entered in the balance sheet against investments, as defined by regulation, to lower the acquisition cost of property, plant and equipment, which lowers the depreciation of the property, plant and equipment in question. The congestion income received before 1 January 2016 was recognised in turnover.

### Public contributions

Public contributions received from the EU or other parties related to property, plant and equipment are deducted from the acquisition cost of the item, and the contributions consequently reduce the depreciation made on the item. Other contributions are distributed as income over those periods when costs linked with the contributions arise. Other

contributions received are presented in other operating income.

# Tangible and intangible assets

## 4.2 Tangible and intangible assets

### 11. PROPERTY, PLANT AND EQUIPMENT, € 1,000

	2016	2015
<b>Land and water areas</b>		
Cost at 1 Jan	15,349	14,974
Increases 1 Jan - 31 Dec	393	442
Decreases 1 Jan - 31 Dec	-41	-67
<b>Cost at 31 Dec</b>	<b>15,701</b>	<b>15,349</b>
<b>Carrying amount 31 Dec</b>	<b>15,701</b>	<b>15,349</b>
<b>Buildings and structures</b>		
Cost at 1 Jan	220,357	202,370
Increases 1 Jan - 31 Dec	34,634	18,214
Decreases 1 Jan - 31 Dec	-168	-227
<b>Cost at 31 Dec</b>	<b>254,823</b>	<b>220,357</b>
Accumulated depreciation 1 Jan	-53,077	-45,829
Decreases, depreciation 1 Jan - 31 Dec	73	59
Depreciation 1 Jan - 31 Dec	-8,103	-7,307
<b>Carrying amount 31 Dec</b>	<b>193,716</b>	<b>167,280</b>
<b>Machinery and equipment</b>		
Cost at 1 Jan	1,053,479	1,015,283
Increases 1 Jan - 31 Dec	61,839	38,826
Decreases 1 Jan - 31 Dec	-100	-630
<b>Cost at 31 Dec</b>	<b>1,115,218</b>	<b>1,053,479</b>
Accumulated depreciation 1 Jan	-485,852	-438,393

Decreases, depreciation 1 Jan - 31 Dec	8	306
Depreciation 1 Jan - 31 Dec	-51,094	-47,765
<b>Carrying amount 31 Dec</b>	<b>578,281</b>	<b>567,627</b>

**Transmission lines**

Cost at 1 Jan	1,238,261	1,213,542
Increases 1 Jan - 31 Dec	74,414	30,003
Decreases 1 Jan - 31 Dec	-5,565	-5,283
<b>Cost at 31 Dec</b>	<b>1,307,111</b>	<b>1,238,261</b>
Accumulated depreciation 1 Jan	-448,647	-415,422
Decreases, depreciation 1 Jan - 31 Dec	3,944	3,223
Depreciation 1 Jan - 31 Dec	-37,370	-36,448
<b>Carrying amount 31 Dec</b>	<b>825,038</b>	<b>789,614</b>

**Other property, plant and equipment**

Cost at 1 Jan	22,756	22,232
Increases 1 Jan - 31 Dec	966	524
<b>Cost at 31 Dec</b>	<b>23,721</b>	<b>22,756</b>
Accumulated depreciation 1 Jan	-15,208	-14,326
Depreciation 1 Jan - 31 Dec	-911	-882
<b>Carrying amount 31 Dec</b>	<b>7,602</b>	<b>7,548</b>

**Prepayments and purchases in progress**

Cost at 1 Jan	120,816	78,687
Increases 1 Jan - 31 Dec	116,534	134,335
Transfers to other tangible and intangible assets 1 Jan - 31 Dec	-177,946	-92,206
<b>Cost at 31 Dec</b>	<b>59,404</b>	<b>120,816</b>
<b>Carrying amount 31 Dec</b>	<b>59,404</b>	<b>120,816</b>

**Capitalised interest**

Cost at 1 Jan	9,426	7,735
Increases 1 Jan - 31 Dec	2,016	1,690
<b>Cost at 31 Dec</b>	<b>11,442</b>	<b>9,426</b>
Accumulated depreciation 1 Jan	-676	-399
Depreciation on capitalised interest 1 Jan - 31 Dec	-345	-276
<b>Carrying amount 31 Dec</b>	<b>10,421</b>	<b>8,750</b>



<b>Carrying amount 31 Dec</b>	<b>69,825</b>	<b>129,566</b>
<b>Property, plant and equipment</b>	<b>1,690,162</b>	<b>1,676,984</b>

## 12. INTANGIBLE ASSETS, €1,000

	2016	2015
<b>Land use rights</b>		
Cost at 1 Jan	92,749	91,920
Increases 1 Jan - 31 Dec	2,022	2,758
Decreases 1 Jan - 31 Dec	-263	-1,929
<b>Cost at 31 Dec</b>	<b>94,507</b>	<b>92,749</b>
<b>Carrying amount 31 Dec</b>	<b>94,507</b>	<b>92,749</b>
<b>Other intangible assets</b>		
Cost at 1 Jan	30,853	29,829
Increases 1 Jan - 31 Dec	848	1,118
Decreases 1 Jan - 31 Dec	-57	-95
<b>Cost at 31 Dec</b>	<b>31,644</b>	<b>30,853</b>
Accumulated depreciation 1 Jan	-28,173	-26,732
Depreciation 1 Jan - 31 Dec	-1,398	-1,441
<b>Carrying amount 31 Dec</b>	<b>2,073</b>	<b>2,680</b>
<b>Carrying amount 31 Dec</b>	<b>96,580</b>	<b>95,428</b>

Land use rights are not depreciated but tested annually for impairment in connection with the testing of goodwill. No need for impairment has been noted as a result of the testing.

The entire business of the Fingrid Group is grid operations in Finland with system responsibility, which the full goodwill of the Group in the balance sheet is fully allocated to. The goodwill included in the balance sheet amounts to EUR 87,920 and has not changed during the periods under review. Since, per the regulation, the fair value of the net assets included in the company's grid assets is approximately EUR 2,800.0 million compared to the carrying amount of EUR 1,874.7 million in net assets,

which includes land use rights and goodwill, the book value of the asset items has not decreased.



### Accounting principles

#### Property, plant and equipment

Grid assets form most of the property, plant and equipment. Grid assets include, among other things, 400 kV, 220 kV, 110 kV transmission lines, direct current lines, transmission line right-of-ways, substations and the areas they encompass (buildings, structures, machinery and equipment,

substation access roads), gas turbine power plants, fuel tanks, generators and turbines.

Property, plant and equipment are valued in the balance sheet at the original acquisition cost less accumulated depreciation and potential impairment. If an asset is made up of several parts with useful lives of different lengths, the parts are treated as separate items and are depreciated over their separate useful lives.

When a part of property, plant and equipment that is treated as a separate item is replaced, the costs relating to the new part are capitalised. Other subsequent costs are capitalised only if it is likely that the future economic benefit relating to the asset benefits the Group and the acquisition cost of the asset can be determined reliably. Repair and maintenance costs are recognised in the income statement when they are incurred.

Borrowing costs, such as interest costs and arrangement fees, directly linked with the acquisition, construction or manufacture of a qualifying asset form part of the acquisition cost of the asset item in question. A qualifying commodity is one that necessarily requires a considerably long time to be made ready for its intended purpose. Other borrowing costs are recognised as an expense. Borrowing costs included in the acquisition cost are calculated on the basis of the average borrowing cost of the Group.

Property, plant and equipment is depreciated over the useful life of the item using the straight-line method. Depreciation on property, plant and equipment taken into use during the financial year is calculated on an item-by-item basis from the month of introduction. Land and water areas are not depreciated. The expected economic lives are verified at each closing date, and if they differ significantly from the earlier estimates, the depreciation periods are amended accordingly.

### **The depreciation periods of property, plant and equipment are as follows:**

#### **Buildings and structure**

Substation buildings and separate buildings = 40 years

Substation structures = 30 years  
Buildings and structures at gas turbine power plants = 20-40 years  
Separate structures = 15 years

#### **Transmission lines**

Transmission lines 400 kV = 40 years  
Direct current lines = 40 years  
Transmission lines 110-220 kV = 30 years  
Creosote-impregnated towers and related disposal costs = 30 years  
Aluminium towers of transmission lines (400 kV) = 10 years  
Optical ground wires = 10-20 years

#### **Machinery and equipment**

Substation machinery = 10-30 years  
Gas turbine power plants = 20 years  
Other machinery and equipment = 3-5 years

Gains or losses from the sale or disposition of property, plant and equipment are recognised in the income statement under either other operating income or expenses. Property, plant and equipment are derecognised in the balance sheet when their economic useful life has expired, the asset has been sold, scrapped or otherwise disposed of to an outsider.

#### **Goodwill and other intangible assets**

Goodwill created as a result of the acquisition of enterprises and businesses is composed of the difference between the acquisition cost and the net identifiable assets of the acquired business valued at fair value. Goodwill is allocated to cash-generating units and is tested annually for impairment. With associated companies, goodwill is included in the value of the investment in the associated company.

Other intangible assets consist of computer software and land use and emission rights. Computer software is valued at its original acquisition cost and depreciated on a straight line basis during its estimated useful life. Land use rights, which have an indefinite useful life, are not depreciated but are tested annually for impairment.

More on emission rights in chapter 6.2.

Subsequent expenses relating to intangible assets are only capitalised if their economic benefits to the

company increase beyond the former performance level. In other cases, expenses are recognised in the income statement when they are incurred.

# Lease agreements

## 4.3 Lease agreements

The lease agreements of the Group mainly relate to office premises. The durations of the lease agreements range from less than one year to fifteen years, and the contracts can usually be extended after the original date of expiration. The index, renewal and other terms of the different agreements vary.

In addition to real estate, the Group has additionally leased assets such as several land areas under

substations and transmission lines and some 110 kilovolt transmission lines and circuit breaker bays.

Under its system responsibility, Fingrid is also obligated to maintain a rapid response disturbance reserve to prepare for disruptions to the power system. In order to ensure the availability of this disturbance reserve, Fingrid has, in addition to its reserve power plant capacity, acquired power plant capacity suited to this purpose as well as disconnectable loads for industry by long-term agreement. These are shown below under the Right-of-use agreements.

### 13. OTHER LEASE AGREEMENTS, € 1,000

	2016	2015
<b>Rental obligations from lease agreements:</b>		
In one year	3,536	2,643
In more than one year and less than five years	13,676	10,698
In more than five years	14,977	12,601
<b>Total</b>	<b>32,189</b>	<b>25,942</b>
<b>Payment obligations from right-of-use agreements:</b>		
In one year	7,601	8,017
In more than one year and less than five years	36,477	44,258
In more than five years	36,201	36,790
<b>Total</b>	<b>80,278</b>	<b>89,065</b>



## Accounting principles

### Lease agreements

Lease obligations where the risks and rewards incident to ownership remain with the lessor are treated as other lease agreements. Lease obligations paid on the basis of other lease agreements are treated within other operating

expenses and are recognised in the income statement as equally large items during the lease period. Other lease agreements primarily concern office facilities, land areas and network leases. In accordance with the principles of standard IAS 17 Leases, those leases which transfer substantially all the risks and rewards incident to ownership to the company are classified as finance leases. The company has not leased tangible or intangible assets using finance leases.

#### **Adoption of the IFRS 16 Leases standard, effective 1 Jan 2019**

The company has started an assessment of the impacts of the adoption of the IFRS 16 standard. From the point of view of a lessee, the standard eliminates the current classification of leases as either operating leases or finance leases, and instead requires the recognition of practically all lease agreements as assets (right-of-use of the leased property) and the obligation of lease

payments as a financial liability. Exceptions are possible for leases concerning short-term asset items of insignificant value.

Consequently, the standard will affect both Fingrid's corporate balance sheet and income statement. The rental expenses now included in other operating expenses will be replaced by interest and depreciation to be recognised under operating profit. The liability will be amortized using the effective interest rate method, where the relative amount of interest expenditure decreases along with the loan capital. The expenditure is thus recognised in the income statement over the lease term according to a front-end-loaded schedule.

The cash flow from operating activities will increase, as the capital repayment in rental payments will be classified as cash flow from financing activities. The interest component will continue to be disclosed in the cash flow from operating activities.

## 5 Strong Financial Position

This chapter focusses on describing how Fingrid's financing is formed and how the related risks are managed, and at the same time, how short-term financial assets that secure liquidity are formed.

- The chapter describes the company's principles of capital management, ownership structure and dividend distribution policy.
- The end of the chapter contains a summary of all the financial assets and financing liabilities, as well as derivatives, that the company uses solely

for risk management purposes. The risks relate to various market risks: the electricity price risk and the interest rate and exchange rate risk. The management of electricity price risk is described in chapter 3.7.

# Capital management

## 5.1 Capital management

Equity and liabilities as shown in the balance sheet are managed by the company as capital. The principal aim of Fingrid's capital management is to ensure that the company is capable of uninterrupted operations and can rapidly recover from any exceptional circumstances. Additional key goals include maintaining an optimal capital structure such that the company's credit rating remains solid, cost of capital remains reasonable, and the company can pay dividends to its shareholders.

The company has not set specific financial ratio targets for capital management, but instead monitors and controls the overall capital structure based on credit ratings and their underlying parameters.

The company's credit rating remained high in 2016. This reflects the company's strong overall financial

situation and debt service capacity. Fingrid has credit rating service agreements with S&P Global (S&P) and Fitch Ratings (Fitch).

- On 28 October 2016, S&P raised the rating for Fingrid Oyj's unsecured senior debt and long-term company rating to 'AA-' and the short-term company rating to 'A-1+', with a stable outlook.
- On 21 November 2016, Fitch raised the rating for Fingrid Oyj's unsecured senior debt to 'AA-', the long-term company rating to 'A+', and affirmed 'F1' for the short-term company rating, with a stable outlook. The rating received by Fingrid was, at the time of issuing, the highest valid rating given by Fitch to any European regulated TSO.

The company aims to maintain a credit rating of at least 'A-'. The credit rating target and criteria guide financing activities.

# The aims and organisation of financing activities and the principles for financial risk management

## 5.2 The aims and organisation of financing activities and the principles for financial risk management

The company has a holistic approach to the management of financing activities, encompassing external financing, as well as managing liquidity, counterparty and financial risks, and supporting business operations in matters related to financing in general.

Core aims for financing activities:

- Protecting shareholder value by securing the financing required for the company's business operations, by hedging against the main financial risks and by minimising financial costs within the risk limits;
- Maintaining adequate liquidity even in unexpected situations;
- Long-term financing from diverse sources, taking into account the company's investment

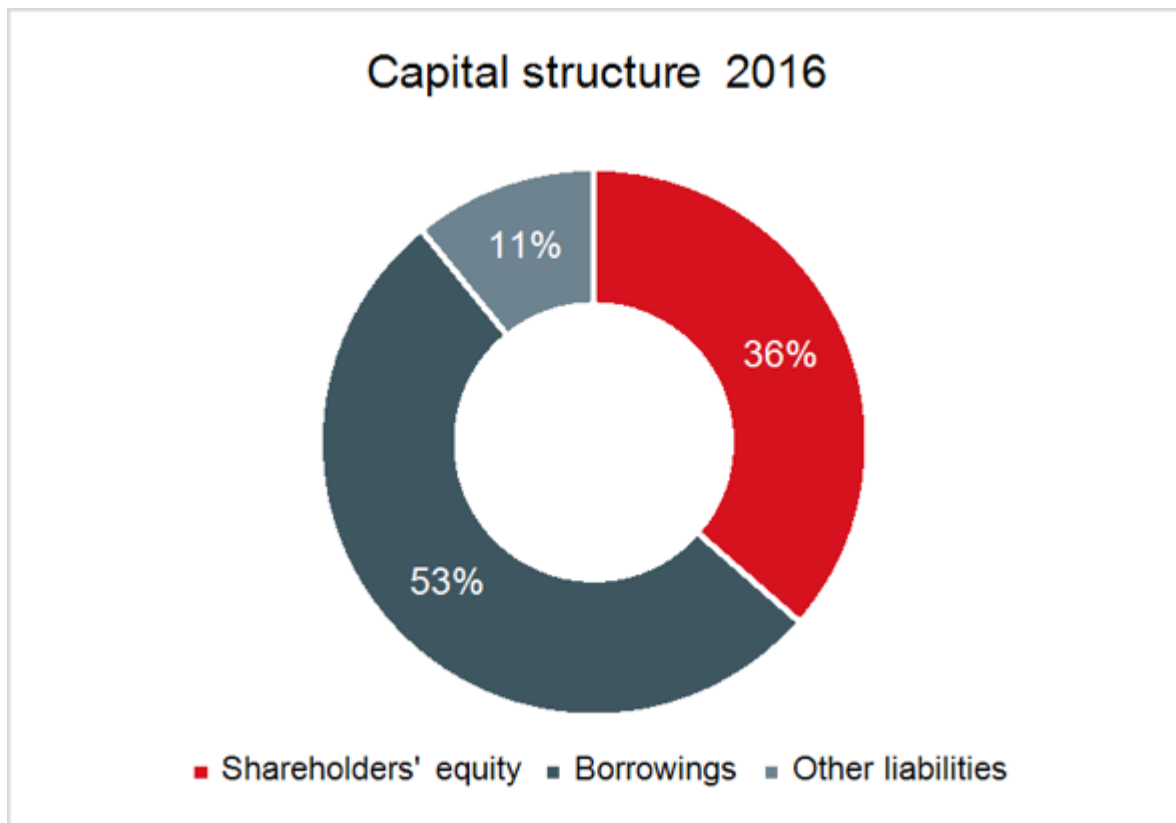
plan and cash flow from operating activities as well as credit rating and its criteria;

- Overall optimisation of the interest rate risk, including the interest rate risk of business operations via the Energy Authority's regulatory model (risk-free interest in the so called WACC model) and the company's interest rate risk of net debt;
- Forward-looking financial planning to ensure that the overall impact from the cash flow from operating activities, future investments, maturing loans and future dividends is taken into account when raising funds and optimising the loan portfolio structure.

The Treasury maintains active and consistent dialogue with the credit rating agencies and monitors the key ratios used by the agencies, as well as other generally accepted financial ratios.

Fingrid's financial capital consists of equity and debt financing. The share of equity from the balance sheet total was 36,4% and that of liabilities 63,6% in 2016. Equity according to the regulatory balance sheet amounted to 60,7% and the corresponding liabilities to 39,3% of regulatory balance sheet total in 2016.





Fingrid Oyj's overall financial management is exposed to market, liquidity, counterparty and credit, among other, risks, when managing the company's financial position. The objective of financial risk management is to foster shareholder value by securing the financing required for the company's business operations, by hedging against the main financial risks and by minimising financing costs within the risk limits.

#### Corporate finance and financing principles

The Board of Directors of Fingrid Oyj approves the Corporate Finance and Financing Principles which define how Fingrid Oyj manages financing as a whole. The external financing of Fingrid Group is carried out by Fingrid Oyj.

#### Risk management execution and reporting

Fingrid's Chief Financial Officer is responsible for the practical measures related to securing financing and managing financial risks, in line with the company's Corporate Finance and Financing Principles and Treasury Policy. The CFO oversees

the day-to-day organisation, reporting and adequate controls of financing activities, and reports regularly to the CEO and the Board (Audit Committee).

#### Risk management processes

The Treasury unit is in charge of risk monitoring, systems and the models and methods used to calculate and assess risks. The Treasury unit is furthermore responsible for identifying, measuring and reporting the financial risks that the company may be exposed to. The internal audit additionally ensures compliance with the Corporate Finance and Financing Principles and the company's internal guidelines.

#### Fair value hierarchy

In the presentation of fair value, assets and liabilities measured at fair value are categorised into a three-level hierarchy. The appropriate hierarchy is based on the input data of the instrument. The level is determined on the basis of the lowest level of input

for the instrument that is significant to the overall fair value measurement.

Level 1: inputs are publicly quoted in active markets.

Level 2: inputs are not publicly quoted and are

based on observable market parameters either directly or indirectly.

Level 3: inputs are not publicly quoted and are unobservable market parameters.

# Financial liabilities, financial costs and managing the financial risks of liabilities

## 5.3 Financial liabilities, financial costs and managing the financial risks of liabilities

The company takes advantage of the opportunities offered by its credit ratings at any given time on the international and domestic debt capital and money markets. Market-based and diversified financing is sought from several sources aiming at a balanced

maturity profile. Fingrid's existing loan agreements, debt or commercial paper programmes are unsecured and do not include any financial covenants based on financial ratios. In 2016, the company issued bonds totalling EUR 80 million (EUR 50 million with a four-year maturity and EUR 30 million with a six-year maturity) to refinance current borrowings.

Borrowings are as follows:

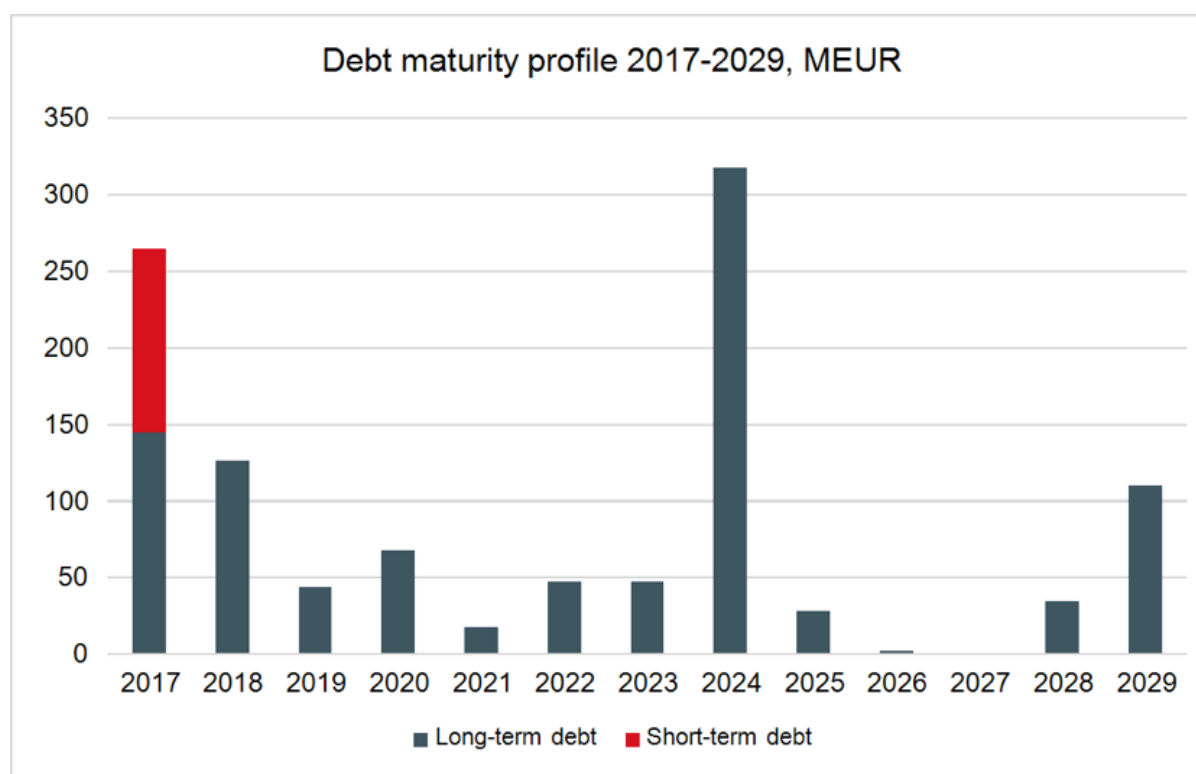
### 14. BORROWINGS, €1,000

	2016			2015			Hierarchy level
	Fair value	Balance sheet value	%	Fair value	Balance sheet value	%	
<b>Non-current</b>							
Bonds	791,948	691,662		829,075	734,366		Level 2
Loans from financial institutions	163,895	151,203		186,408	172,866		Level 2
			76			79	
	<b>955,843</b>	<b>842,866</b>	%	<b>1,015,483</b>	<b>907,232</b>	%	
<b>Current</b>							
Bonds	125,885	123,074		144,284	140,504		Level 2
Loans from financial institutions	23,246	21,662		22,195	20,710		Level 2

Other loans/Commercial papers (international and domestic)	120,059	120,128		75,022	75,003		Level 2
			24			21	
	269,190	264,865	%	241,501	236,217	%	
<b>Total</b>	<b>1,225,033</b>	<b>1,107,730</b>	100	<b>1,256,984</b>	<b>1,143,448</b>	100	
			%			%	

The fair values of borrowings are based on the present values of cash flows. Loans raised in various currencies are measured at the present value on the basis of the yield curve of each currency. The discount rate includes the company-specific and

loan-specific risk premium. Borrowings denominated in foreign currencies are translated into euros at the mid-rate quoted by the ECB at the closing date.



## 15. BONDS INCLUDED IN BORROWINGS, €1,000

				2016	2015
Currency	Nominal value	Maturity	Interest		
EUR	20,000	11.04.2017	floating rate	20,000	20,000

EUR	25,000	11.04.2017	floating rate	25,000	25,000
EUR	30,000	15.06.2017	3,07%	30,000	30,000
EUR	50,000	20.09.2020	floating rate	50,000	
EUR	30,000	19.09.2022	floating rate	30,000	
EUR	30,000	11.09.2023	2,71%	30,000	30,000
EUR	300,000	03.04.2024	3,50%	298,961	298,837
EUR	25,000	27.03.2028	2,71%	25,000	25,000
EUR	10,000	12.09.2028	3,27%	10,000	10,000
EUR	80,000	24.04.2029	2,95%	80,000	80,000
EUR	30,000	30.05.2029	2,89%	30,000	30,000
				628,961	548,837
JPY	500,000	22.06.2017	1,28%	4,052	3,815
				4,052	3,815
NOK	200,000	17.10.2016	5,15%		20,827
NOK	200,000	11.04.2017	5,16%	22,011	20,827
NOK	200,000	10.11.2017	5,12%	22,011	20,827
NOK	200,000	12.11.2019	5,37%	22,011	20,827
NOK	100,000	16.09.2025	4,31%	11,006	10,413
				77,039	93,721
SEK	100,000	15.01.2016	3,30%		10,882
SEK	500,000	18.10.2016	interest rate structure		54,385
SEK	500,000	18.10.2016	3,50%		54,410
SEK	1,000,000	19.11.2018	interest rate structure	104,685	108,820
				104,685	228,497
Bonds, long-term total				691,663	734,366
Bonds, short-term total				123,074	140,504
<b>Total</b>				<b>814,737</b>	<b>874,870</b>

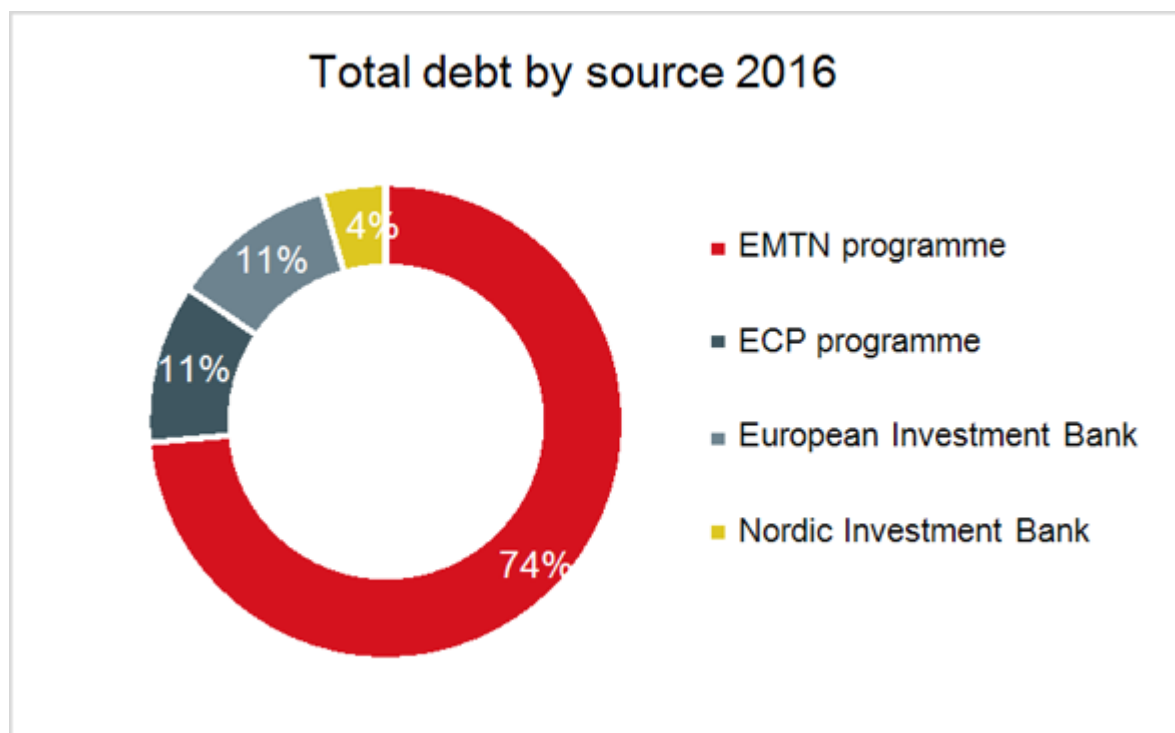
The company operates in the debt capital, commercial paper and loan markets:

- For long-term financing, the company has a Medium Term Note Programme (“EMTN Programme”), totalling EUR 1.5 billion.

- Fingrid has a Euro Commercial Paper Programme (“ECP Programme”) totalling EUR 600 million.
- Fingrid has a domestic commercial paper programme totalling EUR 150 million.
- Furthermore, Fingrid has bilateral long-term loan agreements with both the European Investment

Bank (EIB) and the Nordic Investment Bank (NIB).

The graph below illustrates Fingrid’s various sources of debt financing. Fingrid sources debt financing mainly from the international debt capital markets.



The company defines net debt as the difference between cash in hand, and the financial assets recognized in the income statement at fair value and

borrowings as shown in the balance sheet. The development of net debt is actively monitored.

## 16. RECONCILIATION OF DEBT, €1,000

	Borrowings due within 1 year	Borrowings due after 1 year	Total
<b>Debt on 1 Jan 2015</b>	<b>263,033</b>	<b>962,324</b>	<b>1,225,358</b>
Cash flow from financing activities	-185,181	107,424	-77,757
Exchange rate adjustments	-3,573	2,350	-1,223
Accrual of effective interest rates	1,051	12,873	13,925
Other changes not involving a payment transaction	161,937	-164,867	-2,930
<b>Debt on 31 Dec 2015</b>	<b>237,268</b>	<b>920,105</b>	<b>1,157,373</b>

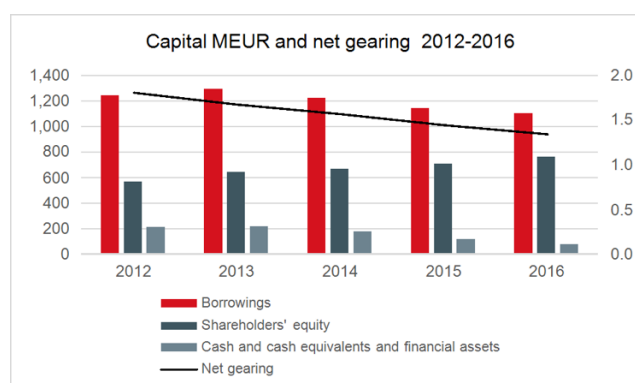
Cash flow from financing activities	-119,917	80,000	-39,917
Exchange rate adjustments	-1,192	5,243	4,051
Accrual of effective interest rates	355	1,472	1,827
Other changes not involving a payment transaction	149,757	-149,608	149
<b>Debt on 31 Dec 2016</b>	<b>266,271</b>	<b>857,211</b>	<b>1,123,482</b>

Financial assets recognised in the income statement at fair value are liquid investments traded on active markets.

### Reconciliation of net debt, € 1,000

	2016	2015
Cash in hand and cash equivalents	21,939	23,099
Financial assets recognised in the income statement at fair value	57,790	93,451
Borrowings - repayable within one year	264,865	236,217
Borrowings - repayable after one year	842,866	907,232
<b>Net debt</b>	<b>1,028,002</b>	<b>1,259,999</b>

Net debt is the difference between the company's debt and its cash in hand and cash equivalents



Interest income and costs on loans and other receivables are as follows:

### 17. INTEREST INCOME AND EXPENSES FROM LOANS AND OTHER RECEIVABLES, €1,000

	2016	2015
Interest income on held-for-trading financial assets	500	449
Interest income on cash, cash equivalents and bank deposits	189	174
Net foreign exchange gains and losses	0	77
Dividend income	5	5

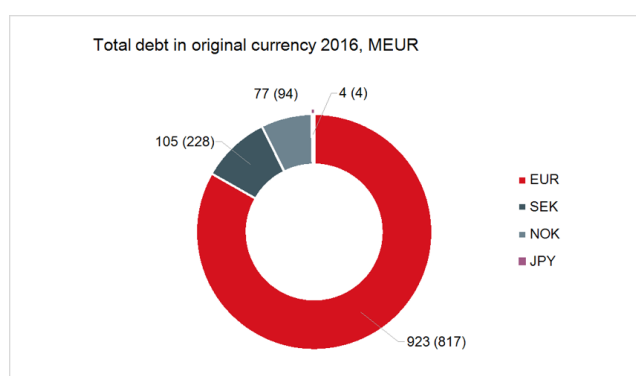
	694	706
Interest expenses on borrowings	-27,017	-29,650
Net interest expenses on interest rate and foreign exchange derivatives	7,261	8,250
Gains from measuring derivative contracts at fair value	6,016	3,749
Losses from measuring derivative contracts at fair value	-6,358	-17,025
Net foreign exchange gains and losses	-67	0
Other finance costs	-1,236	-1,416
	-21,401	-36,092
Capitalised finance costs, borrowing costs; at a capitalisation rate of 2 % (note 11)	2,016	1,690
<b>Total</b>	<b>-18,691</b>	<b>-33,695</b>

### Managing the market risks of debt

Fingrid's debts are based on both fixed and floating interest rates and issued in several currencies. They thus expose Fingrid's cash flow to interest rate and exchange rate risks. Fingrid uses derivative contracts to hedge against interest rate risks on cash flow and exchange rate risks on borrowings. Fingrid generally retains issued bonds until the maturity date and thus does not value its bonds in the balance sheet at fair value or hedge against the

fair value interest rate risk. The permitted hedging instruments are defined in the Treasury policy and are chosen in order to achieve the most effective hedging possible for the risks in question.

The functional currency of the company is euro. Generally, currency risks and the foreign exchange interest rate risk are fully hedged. A risk that amounts to less than EUR 5 million when realised can be unhedged for reasons of cost-effectiveness.



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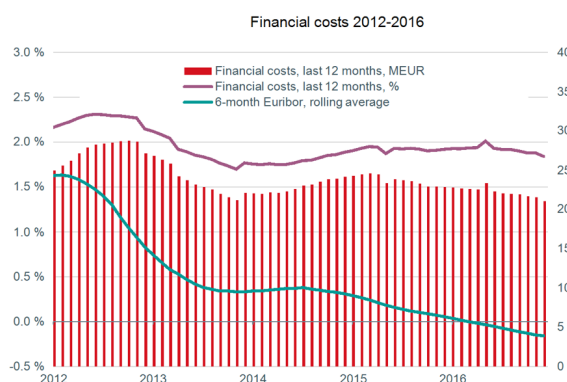


The company issues bonds in the international and domestic money and debt capital markets. The company's loan portfolio is spread across euro and non-euro currencies, and the total debt portfolio and the related interest rate flows are hedged against the currency risk. The currency risk for each bond is fully hedged in conjunction with its issuance. The company uses interest rate and cross currency swaps to hedge the exchange rate and interest risk of bonds.

Business-related currency risks are small and they are mainly hedged. During the financial year, the company used foreign exchange forwards to hedge business transaction risks. A summary of the derivatives is presented in Note 23.

The sensitivity analysis of changes in the foreign exchange rate is measured as a 10 per cent change

between the euro and the currency in question. The most important foreign currency for the Group is the Swedish krona (SEK). If the rate of SEK on 31 December 2016 had been 10% lower/higher than the euro, with all other variables remaining unchanged, the profit after taxes would have been EUR 1,000 higher/EUR 1,000 lower (2015: EUR 32,000/EUR 36,000). The main impact on the net profit is caused by the change in the fair value of derivatives. Starting in 2016, the impact of the SEK-denominated forward curve is also taken into account in the sensitivity analysis. In 2016, loans amounting to SEK 1,100 million and their corresponding derivatives matured, which accounts for the reduced impact of the exchange rate changes.



## Interest rate risk

The company is only exposed to the interest rate risk in euros from its business operations, assets and borrowings. The company's borrowings are, both in terms of principal and interest payments, fully hedged against exchange rate risks, and cash and cash equivalents and financial assets recognised in the income statement at fair value are denominated in euros.

Interest rate risk management will include optimisation of the future interest rate risk of business operations (risk-free interest in the WACC model described in the next infobox) together with the company's net debt interest rate risk through a regulatory model specified by the Energy Authority.

The interest rate risk from business operations can in part or in its entirety be hedged in terms of the adjusted capital committed to grid operations. The Board of Directors always makes a separate decision on the hedging of operational interest rate risks. The interest rate risk included in business operations was not hedged in 2016. The interest rate risk inherent in Fingrid's business operations is caused by changes in the risk-free interest in the WACC model. If the risk-free interest rate rises/falls by one percentage unit, the post-tax WACC rises/falls by 0.9%.

The objective of managing the interest rate risk on the loan portfolio is to minimise interest costs in the long term. The basic principle is to keep the interest rate exposure of the company's loan portfolio linked

to a floating rate of interest, targeting at most an average interest refixing period of 12 months. The loan portfolio's interest rate risk arises from market interest rate volatility, which decreases or increases the annual interest expenses on the company's floating-rate loans. When the interest rates increase (decrease) on the market, the interest expenses of the floating-rate loans also increase (decrease). The company hedges this so-called cash flow risk with derivatives. The exposure of the loan portfolio to interest rate risk is measured by using a Cash Flow at Risk (CFaR) type of model, more specifically the Autoregressive Integrated Moving Average (ARIMA) model. The key parameters of the model are the

3-month and 6-month Euribor rates, the historical development of which serve as a basis for a forward-looking simulation of the probable future interest expenses for Fingrid's loan portfolio. The exposure on which the sensitivity analysis is calculated includes all of the Group's interest-bearing borrowings, the loan portfolio's derivatives and interest-rate options purchased to hedge against unexpected changes in interest rates. According to the model, there is a 95% (99%) probability that Fingrid's interest expenditure will amount to no more than EUR 20 (20) million during the next 12 months.



### Determination of the reasonable rate of return in regulation and operational interest rate risk

The reasonable rate of return on adjusted capital committed to grid operations is determined by using the weighted average cost of capital model (WACC). The WACC model illustrates the average cost of the capital used by the company, where the weights are the relative values of equity and debt. The weighted average of the costs of equity and interest-bearing debt are used to calculate the total cost of capital, i.e. the reasonable rate of return per the regulation. The reasonable return is calculated by multiplying the adjusted capital invested in network operations by the WACC.

$$WACC_{post-tax} = C_E \times \frac{E}{E+D} + C_D \times (1 - yvk) \times \frac{D}{E+D}$$

WACC post-tax = reasonable rate of return after corporate tax

$C_E$  = reasonable cost of equity

$C_D$  = reasonable cost of interest-bearing debt

$E$  = adjusted equity invested in network operations

$D$  = adjusted interest-bearing debt invested in network operations

ctr = current rate of corporate tax

$$C_D = R_r + DP$$

$R_r$  = risk-free interest rate  
 $DP$  = risk premium of debt

$$C_E = R_r + \beta_{levered} \times (R_m - R_r) + LP$$

$R_r$  = risk-free interest rate

$\beta_{levered}$  = levered beta

$R_m$  = average market return

$R_m - R_r$  = market risk premium

$LP$  = liquidity premium

The above-mentioned reasonable rate of return after taxes is then adjusted with the current rate of corporate tax. This calculation gives the reasonable pre-tax rate of return.

$$WACC_{pre-tax} = \frac{WACC_{post-tax}}{(1 - ctr)}$$

$WACC_{pre-tax}$  = reasonable rate of return before corporate tax

A fixed capital structure is applied to the TSO, whereby the weight of debt capital is 50% and the

weight of equity capital is 50%. The pre-tax reasonable rate of return is calculated as follows

$$WACC_{pre-tax} = \frac{C_E \times 0,5}{(1 - yvk)} + C_D \times 0,5$$

$$R_{k,pre-tax} = WACC_{pre-tax} \times (E + D)$$

$R_{k, pre-tax}$  = pre-tax reasonable return, EUR  
 $WACC_{pre-tax}$  = reasonable rate of return, %  
 E = adjusted equity invested in network operations, EUR  
 D = adjusted interest-bearing debt invested in network operations, EUR  
 E + D = adjusted capital invested in network operations, EUR

Reasonable cost of equity	Variable	Value used
$C_E = R_f + \beta_{\text{adjusted}} \times (1 - (1 - \theta) \times D/E) \times (R_m - R_f) + LP$ $C_D = \text{Finland's 10y gov. bond} + 0.4 \times (1 + (1 - 20\%) \times 50/50) \times 5\% + 0.6\%$ $C_D = \text{Finland's 10y government bond} + 4.2\%$	Risk-free interest rate ( $R_f$ )	Higher: a) 10-year daily average of Finland's 10y government bond b) Daily average of previous year April-September of Finland's 10y government bond rate
Reasonable cost of liabilities	Asset beta ( $\beta_{\text{adjusted}}$ )	0.4
$C_D = R_f + DP$ $C_D = \text{Finland's 10y government bond} + 1.4\%$	Market risk premium ( $R_m - R_f$ )	5.0%
WACC (pre-tax)	Liquidity premium (LP)	0.6%
$WACC_{post-tax} = C_E \times 50 / 100 + C_D \times (1 - \theta) \times 50 / 100$ $WACC_{post-tax} = \text{Finland's 10y government bond} \times 0.9 + 2.68\%$ $WACC_{pre-tax} = \text{Finland's 10y government bond} \times 1.125 + 3.33\%$	Capital structure (D/E)	50/50
	Risk premium of debt (DP)	1.4%*
	Corporate income tax rate ( $\theta$ )	20%

### Liquidity risk and refinancing risk

Fingrid is exposed to liquidity and refinancing risks arising from the redemption of loans, payments and fluctuations in cash flow from operating activities. The liquidity of the company must be arranged so that 110% of the refinancing needs for the next 12 months can be covered by liquid assets (cash and cash equivalents, and financial assets recognised in the income statement at fair value) and available long-term committed credit lines.

The company has a revolving credit facility agreement of EUR 300 million signed on 11 December 2015. The maturity of the facility is five years. In addition to this, the company has two one-year extension options, one of which has been used. This extended the maturity of the revolving credit facility until 11 December 2021. The facility is committed and has not been drawn. The company additionally has uncommitted overdraft facilities totaling EUR 50 million.

The refinancing risk is managed by building an even maturity profile such that the share of long-term loans in a single year constitutes less than 30 per cent of the total debt and the average maturity of

the company's loan portfolio is at least three years. To secure refinancing, the company makes wide use of diverse sources of financing. The high credit rating and good bank and investor relations enable ready access to the debt capital market and thus minimises the company's debt refinancing risks and financing costs.

The counterparty risks of financing activities are caused by counterparties related to investing (e.g. money market funds), derivatives counterparties and bank counterparties. The company minimises any counterparty risks. As a rule, credit rating categories are the decisive factor in specifying the counterparty limit.

Contractual repayments and interest costs on borrowings are presented in the next table. The interest rates on floating-rate loans are defined using the zero coupon curve. The repayments and interest amounts are undiscounted values. Finance costs arising from interest rate swaps are often paid in net amounts depending on the nature of the swap. In the following table, they are presented in gross amounts.

## 18. DEBT REPAYMENTS, INTEREST PAYMENTS AND PAYMENTS AND RECEIVABLES UNDER DERIVATIVE CONTRACTS IN CASH, €1,000

31 Dec 2016		2017	2018	2019	2020	2021	2022-	Total
Bonds	- repayments	123,074	104,685	22,011	50,000	0	514,967	<b>814,737</b>
	- interests	20,874	17,555	17,361	16,398	16,247	68,012	<b>156,447</b>
Loans from financial institutions	- repayments	21,662	21,662	21,662	17,662	17,662	72,554	<b>172,866</b>
	- interests	3,264	2,859	2,572	2,305	1,999	4,383	<b>17,382</b>
Commercial papers	- repayments	120,000	0	0	0	0	0	<b>120,000</b>
Currency swaps	- payments	53,453	107,833	23,967	87	118	13,342	<b>198,800</b>
Interest rate swaps	- payments	2,287	2,204	845	269	370	2,204	<b>8,180</b>
Forward contracts	- payments	2,214	0	0	0	0	0	<b>2,214</b>
<b>Total</b>		<b>346,829</b>	<b>256,798</b>	<b>88,419</b>	<b>86,721</b>	<b>36,397</b>	<b>675,463</b>	<b>1,490,626</b>
Currency swaps	- receivables	49,434	110,878	22,394	449	449	12,209	<b>195,812</b>
Interest rate swaps	- receivables	4,933	4,015	3,859	3,662	3,371	8,381	<b>28,221</b>
Forward contracts	- receivables	2,271	0	0	0	0	0	<b>2,271</b>
<b>Total</b>		<b>56,638</b>	<b>114,893</b>	<b>26,253</b>	<b>4,111</b>	<b>3,820</b>	<b>20,590</b>	<b>226,304</b>
<b>Total</b>		<b>290,191</b>	<b>141,905</b>	<b>62,165</b>	<b>82,610</b>	<b>32,577</b>	<b>654,873</b>	<b>1,264,322</b>
<b>31 Dec 2015</b>		<b>2016</b>	<b>2017</b>	<b>2018</b>	<b>2019</b>	<b>2020</b>	<b>2021-</b>	<b>Total</b>
Bonds	- repayments	140,504	120,468	108,820	20,827	0	484,251	<b>874,870</b>
	- interests	24,850	21,043	18,711	17,111	15,993	83,757	<b>181,465</b>
Loans from financial institutions	- repayments	20,710	21,662	21,662	21,662	17,662	90,216	<b>193,576</b>
	- interests	3,707	3,270	3,066	2,841	2,544	7,051	<b>22,479</b>
Commercial papers	- repayments	75,000	0	0	0	0	0	<b>75,000</b>
Currency swaps	- payments	146,373	53,753	108,408	24,160	170	13,889	<b>346,753</b>
Interest rate swaps	- payments	3,632	2,102	1,991	1,029	534	3,715	<b>13,003</b>
Forward contracts	- payments	2,266	1,914	0	0	0	0	<b>4,181</b>

<b>Total</b>		<b>417,043</b>	<b>224,213</b>	<b>262,658</b>	<b>87,631</b>	<b>36,904</b>	<b>682,879</b>	<b>1,711,327</b>
Currency swaps	- receivables	148,587	49,939	111,766	22,394	449	12,658	<b>345,792</b>
Interest rate swaps	- receivables	4,656	4,733	3,751	3,339	2,813	8,863	<b>28,156</b>
Forward contracts	- receivables	2,222	1,871	0	0	0	0	<b>4,093</b>
<b>Total</b>		<b>155,465</b>	<b>56,544</b>	<b>115,517</b>	<b>25,733</b>	<b>3,262</b>	<b>21,520</b>	<b>378,041</b>
<b>Total</b>		<b>261,578</b>	<b>167,669</b>	<b>147,141</b>	<b>61,897</b>	<b>33,642</b>	<b>661,358</b>	<b>1,333,285</b>



## Accounting principles

### Borrowings

Borrowings are initially recognised at fair value net of the transaction costs incurred. Transaction costs consist of bond prices above or below par value, arrangement fees, commissions and administrative fees that are directly related to loan. Borrowings are subsequently measured at amortised cost; any difference between the loan amount and the amount to be repaid is recognised in the income statement over the loan period using the effective interest rate

method. Borrowings are derecognised when they mature and are repaid.

Commitment fees to be paid on credit facilities are entered as transaction costs related to the loan insofar as partial or full utilisation of the facility is likely. In such cases, the fee is capitalized in the balance sheet until the facility is utilised. If there is no proof that loans included in a facility are likely to be drawn in part or in full, the fee will be recognised as an upfront payment for liquidity services and amortized over the maturity of the facility in question.

# Cash and cash equivalents and other financial assets

## 5.4 Cash and cash equivalents and other financial assets

### 19. CASH AND CASH EQUIVALENTS, €1,000

	2016	2015
Bank deposits	10,000	10,000
Cash assets and bank account balances	11,939	13,099
<b>Total</b>	<b>21,939</b>	<b>23,099</b>

### 20. FINANCIAL ASSETS RECOGNISED IN THE INCOME STATEMENT AT FAIR VALUE, €1,000

	2016	2015	Hierarchy level
Commercial papers	12,998	53,984	Level 2
Short-term money market funds	44,792	39,468	Level 1
<b>Total</b>	<b>57,790</b>	<b>93,451</b>	



#### Accounting principles

##### Cash and cash equivalents

Cash and cash equivalents in the balance sheet include cash in hand and bank deposits with an initial maturity of no more than three months. Cash and cash equivalents in the cash flow statement also include financial assets recognised in the income statement at fair value. Cash and cash equivalents are derecognised when they mature, are sold or otherwise disposed of.

##### Held-for-trading financial assets

This category consists of the financial assets held specifically for trading purposes. The financial assets classified in this category include short-term money market securities (certificates of deposit, commercial papers and municipality bills) and current investments in short-term fixed income funds. Financial assets recognised at fair value in the income statement are entered in the balance sheet at fair value at the settlement date. Subsequently, the financial assets are measured on each reporting day at fair value, and the change in their fair value is recognised in the income statement under finance income and costs. Derivatives are also included in this group, but are presented in the balance sheet on their own lines.

Accounting principles for derivatives are disclosed in Chapter 5.6.

### **Available-for-sale investments**

Fingrid has insignificant amounts of financing assets classified as available-for-sale investments, mainly shares in telephone companies and publicly listed shares. Available-for-sale investments are recognised at fair value, which is the market value at the closing date and thus belongs to level 1 in the fair value hierarchy. Changes in fair value are

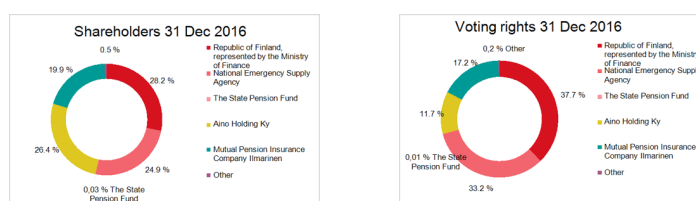
recognised through other comprehensive income in shareholders' equity, minus taxes, until the investment is sold or otherwise disposed of, or the value of the investment is impaired, at which time the changes in fair value are reclassified in the income statement.

Financial assets are derecognised when they mature, are sold or otherwise disposed of such that their risks and revenues have been transferred.

# Equity and dividend distribution

## 5.5 Equity and dividend distribution

The shareholders' equity is composed of two share classes. The shareholder breakdown and voting rights are illustrated in the following graphs.



### SHAREHOLDERS BY CATEGORY 31 DEC

	Number of shares	Of all shares %	Of votes %
Public organisations	1,768	53.17	70.87
Financial and insurance institutions	1,557	46.83	29.12
<b>Total</b>	<b>3,325.00</b>	<b>100.00</b>	<b>100.00</b>

### Shareholders, 31 Dec 2016

	Number of shares	Of all shares %	Of votes %
Republic of Finland, represented by the Ministry of Finance			
Aino Holding Ky	878	26.41	11.74
National Emergency Supply Agency	828	24.90	33.20



Mutual Pension Insurance Company Ilmarinen	661	19.88	17.15
Imatran Seudun Sähkö Oy	10	0.30	0.13
Fennia Life	6	0.18	0.08
Elo Mutual Pension Insurance	1	0.03	0.01
OP Insurance Ltd	1	0.03	0.01
The State Pension Fund	1	0.03	0.01
<b>Total</b>	<b>3,325</b>	<b>100</b>	<b>100</b>

The company's share capital is EUR 55,922,485.55. Fingrid shares are divided into Series A shares and Series B shares. The number of Series A shares is 2,078 and the number of Series B shares is 1,247.

The maximum number of shares is 13,300, as in 2015. The shares have no par value.

Series A shares confer three votes each at the Annual General Meeting and Series B shares one vote each. When electing members of the Board of Directors, Series A shares confer 10 votes each at the Annual General Meeting and Series B shares one vote each.

Series B shares have the right before Series A shares to obtain the annual minimum dividend specified below from the funds available for profit distribution. If the annual minimum dividend cannot be distributed in some year, the shares confer a right to receive the undistributed amount from the funds available for profit distribution in the subsequent years; however, such that Series B shares have the right over Series A shares to receive the annual minimum dividend and the undistributed amount. Series B shares have no right to receive any other dividend.

#### **Fingrid Oyj's Annual General Meeting decides on the annual dividend.**

Eighty-two (82) per cent of the dividends to be distributed for each financial year is distributed for all Series A shares and eighteen (18) per cent for all Series B shares, however such that EUR twenty (20) million of the dividends to be distributed for each financial year is first distributed for all Series B

shares. If the above-mentioned EUR twenty (20) million minimum amount for the financial period is not distributed (all or in part) for Series B shares in a financial period, Series B shares confer the right to receive the undistributed minimum amount in question (or the accumulated undistributed minimum amount accrued during such financial periods) in the next profit distribution, in any disbursements paid out, or in any other distribution of assets prior to any other dividends, disbursements or asset distribution until the undistributed minimum amount has been distributed in full for Series B shares. There are no non-controlling interests.

Equity is composed of the share capital, share premium account, revaluation reserve (incl. hedging and fair value reserves), translation reserve, and retained earnings. The hedging reserve includes changes in the fair value of hedging instruments for loss power. The translation reserve includes translation differences in the net capital investments of associated companies in accordance with the equity method of accounting. The profit for the financial year is posted in retained earnings.

#### **Share premium account**

The share premium account includes the difference between the counter value of the shares and the value obtained. The share premium account consists of restricted equity as referred to in the Finnish Limited Liability Companies Act. The share capital can be increased by transferring funds from the share premium account. The share premium account can be decreased in order to cover losses or, under certain conditions, it can be returned to the owners.

## Revaluation reserve

The revaluation reserves include changes in the fair value of derivative instruments used for hedging cash flow (hedging reserve) and changes in the fair value (fair value reserve) of available-for-sale investments (publicly quoted and unquoted securities). The company discontinued hedge accounting in 2014 and changes in the fair value of derivatives are no longer transferred to the hedging reserve. Changes in the value of the hedging reserve

are caused solely by the dissolution of the previously recorded fair value and its recognition in the income statement, EUR 11.6 million annually in 2015 and 2016, taking into account the deferred tax rate (20%). The changes in the fair value reserve are due to a change in the fair value of available-for-sale shares minus taxes (20%). In 2016, the company gave up a timeshare for EUR 152,000.

Changes to equity funds during the financial year are presented in the statement of changes in equity.

## 21. SHAREHOLDERS BY CATEGORY

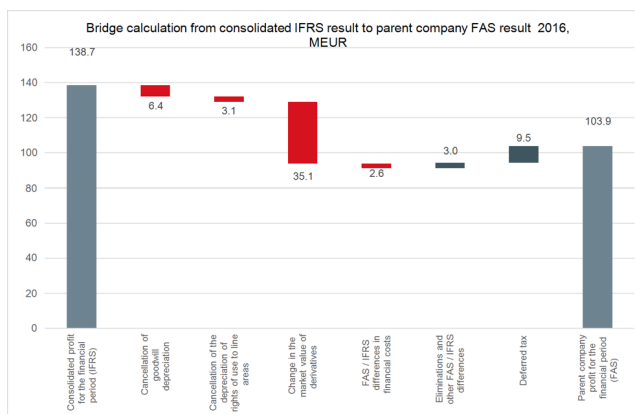
The share capital is broken down as follows	Number of shares	Of all shares %	Of votes %
Series A shares	2,078	62.50	83.33
Series B shares	1,247	37.50	16.67
<b>Total</b>	<b>3,325</b>	<b>100.00</b>	<b>100.00</b>

The purpose of Fingrid's dividend policy is to ensure that the shareholders receive a reasonable return on their investment while also maintaining the company's financial position such that it enables long-term implementation of the strategy and supports operational flexibility.

Fingrid Oyj's distributable funds in the financial statements total EUR 175,954,253.06. In 2016, EUR 90.0 million was paid in dividends (EUR 65.0). Since the closing date, the Board of Directors has proposed that a dividend of EUR 37,536.09 for Series A shares and EUR 16,038.49 for Series B shares be distributed per share (2015: EUR 33,686.24 for Series A shares; EUR 16,038.49 for Series B shares), totalling EUR 98.0 (90.0) million.

The distributable funds are calculated on the basis of the parent company's equity. Dividends are paid based on the distributable funds of the parent company.

Fingrid updated its dividend policy in 2014. The guiding principle for Fingrid's dividend policy is to distribute substantially all of the parent company profit as dividend. When making the decision, however, the economic conditions, the company's near term investment and development needs as well as any prevailing financial targets of the company are always taken into account. The graph below indicates the differences between the consolidated IFRS income statement and the parent company's FAS income statement.



## Accounting principles

### Dividend distribution

The Board of Directors' proposal concerning dividend distribution is not recorded in the financial statements. The liability and equity is recognised only after a decision is made by the Annual General Meeting of Shareholders

# Summary of financial assets, financial liabilities and derivatives

## 5.6 Summary of financial assets, financial liabilities and derivatives

The carrying amounts of Fingrid's financial assets and liabilities by measurement category are as follows:

### 22. CARRYING AMOUNTS OF FINANCIAL ASSETS AND LIABILITIES BY MEASUREMENT CATEGORY, €1,000

Balance sheet item 31 Dec 2016	Assets/ liabilities recognised in income statement at fair value	Available- for-sale financial assets	Financial assets/ liabilities measured at amortised cost	Total	Note
<b>Non-current financial assets</b>					
Available-for-sale investments		101		101	
Interest rate and currency derivatives	29403			29403	23
Electricity derivatives	254			254	23
Loan receivables			4000	4000	
<b>Current financial assets</b>					
Interest rate and currency derivatives	1475			1475	23
Electricity derivatives	1385			1385	23
Trade receivables and other receivables			79887	79887	3
Financial assets recognised in the income statement at fair value	57790			57790	20

Cash in hand and cash equivalents			21939	21939	19
<b>Financial assets total:</b>	<b>90308</b>	<b>101</b>	<b>105826</b>	<b>196235</b>	

**Non-current financial liabilities:**

Borrowings			842866	842866	14
Interest rate and currency derivatives	13196			13196	23
Electricity derivatives	5371			5371	23
Current financial liabilities:					
Borrowings			264865	264865	14
Interest rate and currency derivatives	5072			5072	23
Electricity derivatives	2786			2786	23
Trade payables and other liabilities			39666	39666	7
<b>Financial liabilities total</b>	<b>26426</b>	<b>0</b>	<b>1147397</b>	<b>1173823</b>	

<b>Balance sheet item 31 Dec 2015</b>	Assets/ liabilities recognised in income statement at fair value	Available- for-sale financial assets	Financial assets/ liabilities measured at amortised cost	Total	Note
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**Non-current financial assets**

Available-for-sale investments		284		284	
Interest rate and currency derivatives	32148			32148	23
Electricity derivatives				0	23
Loan receivables			2500	2500	

**Current financial assets**

Interest rate and currency derivatives	3353			3353	23
Electricity derivatives				0	23
Trade receivables and other receivables			63701	63701	3
Financial assets recognised in the income statement at fair value	93451			93451	20
Cash in hand and cash equivalents			23099	23099	19
<b>Financial assets total:</b>	<b>128953</b>	<b>284</b>	<b>89300</b>	<b>218537</b>	

**Non-current financial liabilities:**

Borrowings			907,232	907,232	14
Interest rate and currency derivatives	21,820			21,820	23
Electricity derivatives	25,132			25,132	23
<b>Current financial liabilities:</b>					
Borrowings			236,217	236,217	14
Interest rate and currency derivatives	6,403			6,403	23
Electricity derivatives	23,928			23,928	23
Trade payables and other liabilities			30,214	30,214	7
<b>Financial liabilities total</b>	<b>77,283</b>	<b>0</b>	<b>1,173,663</b>	<b>1,250,946</b>	

Fingrid uses derivatives for hedging purposes only, even though the company does not apply hedge accounting. Bilateral derivative transactions require a valid International Swap Dealers Association's (ISDA) Master Agreement with the counterparty. The derivatives falling under the scope of an ISDA agreement can be netted in conditional circumstances such as default or bankruptcy. The company had derivatives that can be netted as per ISDA at a total fair value of EUR 9,8 million in 2016 (12,3). Fingrid uses collaterals to cover the market value of the loss power price hedge derivatives. The management of electricity price risk is described in chapter 3.7. The hedging of interest rate and foreign exchange risks is described in chapter 5.3.

The company's derivative transactions consist of interest rate and cross currency swaps hedging the loan portfolio, and purchased cap options to hedge the loan portfolio from a sudden change in short-term interest rates. Forward contracts are used to fix the exchange rate for non-euro-denominated contracts related to business operations. The company uses electricity futures to hedge the price risk of future loss power purchases.

The table below includes all of the Group's derivatives.

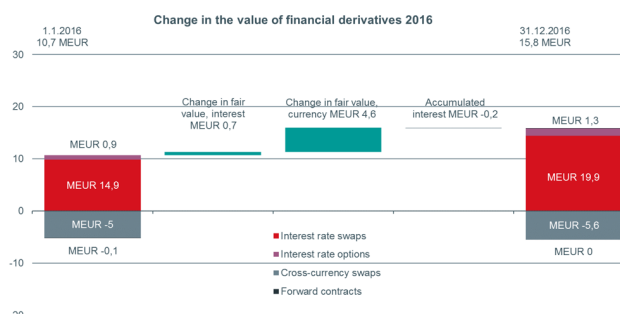
### 23. DERIVATIVE INSTRUMENTS, € 1,000

	2016				2015				Hierarchy level
	Fair value pos.	Fair value neg.	Net fair value	Nominal value	Fair value pos.	Fair value neg.	Net fair value	Nominal value	
<b>Interest rate and currency derivatives</b>	31.12.16	31.12.16	31.12.16	31.12.16	31.12.15	31.12.15	31.12.15	31.12.15	
Cross-currency swaps	6,930	-12,487	-5,558	196,396	15,286	-20,297	-5,011	341,205	Level 2
Forward contracts	46		46	2,271		-88	-88	4,505	Level 2
Interest rate swaps	26,667	-6,725	19,943	360,000	24,348	-9,442	14,905	430,000	Level 2

Bought interest rate options	1,350		1,350	518,820	862		862	358,820	Level 2
<b>Total</b>	<b>34,993</b>	<b>-19,212</b>	<b>15,781</b>	<b>1,077,487</b>	<b>40,496</b>	<b>-29,827</b>	<b>10,668</b>	<b>1,134,531</b>	
<b>Electricity derivatives</b>	Fair value pos.	Fair value neg.	Net fair value	Volume TWh	Fair value pos.	Fair value neg.	Net fair value	Volume TWh	
	31.12.16	31.12.16	31.12.16	31.12.16	31.12.15	31.12.15	31.12.15	31.12.15	
Electricity forward contracts. NASDAQ OMX Commodities, not designated as hedge accounting	1,640	-8,157	-6,518	4.07		-49,060	-49,060	4.22	Level 1
<b>Total</b>	<b>1,640</b>	<b>-8,157</b>	<b>-6,518</b>	<b>4.07</b>		<b>-49,060</b>	<b>-49,060</b>	<b>4.22</b>	

The net fair value of derivatives indicates the realised profit/loss if they had been closed on the last trading day of 2016. The net fair value cannot be used for deriving the net derivative liabilities or receivables in the balance sheet, as accrued interest is taken into account here.

The graph below indicates the change of value of all of the company's currency and interest rate derivatives on 2016.



## Accounting principles

### Derivative instruments

Derivatives are initially recognised at fair value according to the date the derivative contract is entered into, and are subsequently re-measured at fair value. Changes in the fair value of derivatives are recognised in profit and loss. The company uses derivative contracts only for hedging purposes according to the Corporate Finance and Financing principles and the loss energy hedging policy.

## Electricity derivatives

The company enters into electricity derivative contracts in order to hedge the price risk of electricity purchases in accordance with the loss energy forecast. Fingrid discontinued hedge accounting for electricity derivatives at the beginning of 2014. As a result, the entire change in the fair value of electricity derivatives was recorded and will continue to be recorded in the income statement. The hedge fund in the balance sheet was dismantled in the income statement during 2015

and 2016 in fixed instalments such that it decreases the result by EUR 11.6 million.

### Interest and currency derivatives

The company enters into derivative contracts in order to hedge financial risks (interest rate and foreign exchange exposure) in compliance with the Corporate Finance and Financing Principles approved by the Board of Directors. Fingrid does not apply hedge accounting to these derivatives. A derivative asset or liability is recognised at its original fair value. Derivatives are measured at fair value at the closing date, and the change in fair value is recognised in the income statement under finance income and costs.

The fair values of derivatives at the closing date are based on different calculation methods. Foreign exchange forwards have been measured at the forward prices. Interest rate and currency swaps have been measured at the present value on the basis of the yield curve of each currency. Interest rate options have been valued using generally accepted option pricing models in the market.

### Adoption of the IFRS 9 standard, effective 1 January 2018

IFRS 9 Financial instruments replaces IAS 39 and brings changes to how financial assets are recognised and measured, the application of impairment and hedge accounting principles.

- Bonds that are financial assets are measured at amortised cost, but only when the business model target is to hold on to these investments and collect all the cash flows based on the contract, and when the instrument's contract-based cash flows consist exclusively of capital and interest payments. All

other bonds, equity investments and structured investment products that are financial assets are recognised at fair value.

- Changes in the fair value of all financial assets are recognised in the income statement. The exception is changes in the fair value of equity investments, which are not held for trading: they can be recognised either in the income statement or in equity funds (in which case they are not transferred later to the income statement). In addition, some bonds that belong under financial assets may be recognised at fair value through other comprehensive income, depending on the company's business model.

- The impairment of financial assets must be determined using the expected loss impairment model.

- The new hedge accounting rules bring hedge accounting closer to general risk management practices.

Company management has begun an analysis of the impacts of the IFRS 9 standard. The company's current opinion is that the standard will not have a significant impact on the financial statement figures, since the company's financial assets have largely been recognised in line with the IFRS 9 standard. The company does not have a significant credit risk, nor are any essential credit losses expected to be entered in future. In addition, management's current opinion is that the company will not begin applying hedge accounting when the IFRS 9 standard enters into effect. The new standard also contains broader notes requirements than before, and changes will be made to the method of presentation.



## 6 Other Information

This chapter contains the rest of the notes.

- First comes a joint presentation of the Group companies and insider data.
- After that, other notes follow in the same sequence they appear in the income statement and balance sheet.

# Group companies and related parties

## 6.1 Group companies and related parties

The Group has two Fingrid's wholly-owned subsidiaries, Finextra Oy and Fingrid Datahub Oy.

Finextra Oy is a subsidiary wholly-owned by Fingrid Oy established to handle the statutory public service obligations not included in actual grid operations or transmission system responsibility. These tasks include peak load capacity services and guarantee-of-origin services for electricity. Through Finextra, the cost of public service tasks is separated from the cost of grid maintenance, which makes it possible to ensure the unequivocal transparency of the different operations. The Energy Authority oversees Finextra's operations and reasonable returns from its services. The aim of Finextra is to carry out the assigned duties cost effectively, making use of joint resources. The allowable annual return on peak load capacity services is EUR 75,000. The allowed return on guarantee-of-origin services for the regulatory period ending on 31 December 2016 was approximately EUR 100,000. The realised return

during the regulatory period consisted of a surplus of roughly EUR 200,000.

Fingrid Datahub Oy is a subsidiary wholly-owned by Fingrid Oy established in 2016 to handle the operations linked to the Datahub. Key duties of the subsidiary is to offer and develop centralised electricity market information exchange services and other related services to the market parties and to govern the register information required by the electricity markets. The Datahub is a centralised information exchange system for retail markets that stores data from all of Finland's 3.5 million places of electricity consumption. The information stored in the Datahub will be utilised by around 100 electricity sales companies and more than 80 distribution network operators to provide services to the consumers of electricity. Fingrid started the Datahub project during the spring of 2015.

The consolidated associated companies are Nord Pool AS (ownership 18.8%) and eSett Oy (ownership 33.3%). The Group has no joint ventures.

The investments in associated companies included in the balance sheet are composed of the following:

### 24. INVESTMENTS IN ASSOCIATED COMPANIES, € 1,000

	2016	2015
Interests in associated companies	10,158	9,888
Loan receivables from associated companies	4,000	2,500
<b>Total</b>	<b>14,158</b>	<b>12,388</b>

Receivable from an associated company consists of a loan receivable from eSett Oy. The main terms and conditions are as follows:

#### Associated company loan:

The loan capital is EUR 2.5 (2.5) million and the annual interest rate is 1.5 per cent, on top of the 12-month Euribor. The loan repayment is ten equal instalments every six months beginning one year from when eSett begins its operations. The amount of the loan capital is one third of the total loan that eSett's owners have granted the company proportionate to their holdings. The terms of the

loan are the same as the loan terms for eSett's other owners.

#### Capital loan:

The loan capital is EUR 1.5 (0) million. The fixed annual interest rate is 3.0 per cent. The loan repayment is ten equal instalments every six months beginning one year from when eSett begins its operations. The loan repayment is three equal instalments once a year beginning one year from when eSett begins its operations. The repayment is subordinated to all of the company's other liabilities and to the Limited Liability Companies Act's terms to be applied to capital loans.

### Financial summary of associated companies, €1,000

	Non-current		Current assets		Turnover	Profit/ loss	Dividends received during the financial period	Ownership (%)
	Assets	Liabilities	Assets	Liabilities				
<b>2016</b>								
Nord Pool AS	2,465		121,162	94,420	26,965	7,103	560	18.80
eSett Oy	7,507	12,000	5,748	657		-2,392		33.30

	Non-current		Current assets		Turnover	Profit/ loss	Dividends received during the financial period	Ownership (%)
	Assets	Liabilities	Assets	Liabilities				
<b>2015</b>								
Nord Pool AS	3,489		66,698	40,194	25,851	6,422	551	18.80
eSett Oy	5,364	7,500	5,474	328		-2,141		33.30

The Group's associated companies indicated in the tables are treated in the consolidated financial statements using the equity method of accounting.

The Nordic Balance Settlement (NBS) will be introduced in Finland on 1 May 2017. When the NBS begins its operations, management of the balance settlement will transfer from Fingrid's Balance Service Unit to eSett Oy.

The company has an equity investment in Norwegian kroner in an associated company, which results in exposure to translation risk. The translation risk is not significant and the company does not hedge against this risk.

### Equity investments in associated companies, € 1,000

	2016	2015
Cost at 1 Jan	9,888	10,515
Decreases		-214
Share of profit	511	447
Translation reserve	318	-309
Dividends	-560	-551
<b>Carrying amount 31 Dec</b>	<b>10,158</b>	<b>9,888</b>
Carrying amount of associated companies includes goodwill 31 Dec.	3,245	3,245

There are no material temporary differences related to associated companies on which deferred tax assets or liabilities have been recognised.

The subsidiaries, associated companies and parent company (Fingrid Oyj) described above are related parties of the Group. In addition, the shareholder entities mentioned in chapter 5.5 and the top management and its related parties are also considered related parties

The top management is composed of the Board of Directors, the President & CEO, and the executive management group. Other related party transactions include transactions concluded with entities in which the State of Finland has a holding in excess of 50 per cent.

The company has not lent money to the top management, and the company has no transactions with the top management.

Business with related parties is conducted at market prices.

### Transactions with associated companies, € 1,000

	2016	2015
Sales	473	809
Expense adjustments	48	30
Purchases	39,625	39,659
Receivables	343	2,973
Liabilities	152	2

Loan receivables	4,000	2,500
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### Transactions with owners, € 1,000

	2016	2015
<b>Owners:</b>		
Purchases	5,095	6,303
Liabilities	1	0
<b>Other related parties:</b>		
Sales	31,613	28,759
Purchases	51,044	69,538
Receivables	2,457	845
Liabilities	2,526	2,279



## Accounting principles

### Subsidiaries

The subsidiaries encompass all companies over which the Group has control (including structured entities). The Group is considered to have control over a company if the Group's holding results in exposure to variable returns or if the Group is entitled to variable returns and it can influence these returns by exercising its control over the company. The subsidiaries are consolidated into the consolidated financial statements starting from the day on which the Group gained control over the company. Consolidation is discontinued once the control ceases to exist.

Consolidation of operations is carried out using acquisition cost method.

Transactions, receivables and liabilities between Group companies and any unrealised profits from internal transactions are eliminated. Unrealised losses are also eliminated unless the transaction indicates an impairment of the disposed asset. If necessary, the financial statements of the subsidiaries have been adjusted to correspond to the accounting principles applied by the Group.

### Associated companies

The associated companies include all companies over which the Group has significant influence but no control or joint control. This is generally based on a shareholding amounting to 20–50% of the votes. Investments in associated companies are initially recognised at the acquisition cost and subsequently handled using the equity method. According to the equity method, investments are initially recorded at the acquisition cost and this is subsequently adjusted by recognising the Group's share of the profit or loss after the time of acquisition in the income statement and the Group's share of any changes in the investment object's other comprehensive income in other comprehensive income. Any dividends received or to be received from the associated companies and joint ventures are deducted from the investment's carrying amount.

If the Group's share of the losses of an investment recognised according to the equity method equals or exceeds the Group's holding in the company in question, including any other non-current receivables without collaterals, the Group will not recognise any additional losses unless it has

obligations or it has made payments on behalf of the company.

A share corresponding to the Group's ownership interest is eliminated from the unrealised profits between the Group and its associated companies and joint ventures. Any unrealised losses are also

eliminated unless the transaction indicates an impairment of the disposed asset. If necessary, the accounting principles applied by the investments to be recognised according to the equity method have been adjusted to correspond to the principles applied by the Group.

# Other notes

## 6.2 Other notes

### Emission rights

Fingrid's reserve power plants are subject to an environmental permit and covered by the EU's emissions trading scheme. A total of 6,634 (11,141) units (tCO<sub>2</sub>) of emission allowances were returned, all of which consisted of acquired emission rights

units. Fingrid has not been granted free-of-charge emission rights for the emissions trade period 2013–2020. No emissions rights were purchased in 2016. Emissions trading had minor financial significance for Fingrid. The use of emission rights had no impact on the financial result in 2016. CO<sub>2</sub> emissions included in emissions trading totalled 10,326 tonnes in 2016 (6,697). As of 31 December 2016, the balance sheet included EUR 0.4 million (0.5) in emission rights.



### Accounting principles

#### Emission rights

Emission rights acquired free of charge are recognised in intangible assets at their nominal value, and purchased emission rights at their acquisition cost. A liability is recognised for emission rights to be returned. If the Group has sufficient emission rights to cover the return obligations, the liability is recognised at the carrying amount corresponding to the emission rights in question. If

there are not sufficient emission rights to cover the return obligations, the liability is recognised at the market value of the emission rights in question. No depreciation is recognised on emission rights. They are derecognised in the balance sheet at the time of transfer when the actual emissions have been ascertained. The expense resulting from the liability is recognised in the income statement under the expense item 'Materials and services'. Capital gains from emissions rights are recognised under other operating income.

## 25. PROVISIONS, € 1,000

	2016	2015
Provisions for creosote-impregnated towers 1 Jan	1,668	1,735
Provisions used	-187	-67
<b>Provisions 31 Dec</b>	<b>1,481</b>	<b>1,668</b>



## Accounting principles

### Provisions

A provision is recorded when the Group has a legal or factual obligation based on an earlier event and it is likely that fulfilling the obligation will require a payment, and the amount of the obligation can be

estimated reliably. The provisions are valued at the present value of the costs required to cover the obligation. The discounting factor used in calculating the present value is chosen so that it reflects the market view of the time value of money at the assessment date and the risks pertaining to the obligation

## 26. COMMITMENTS AND CONTINGENT LIABILITIES, €1,000

	2016	2015
<b>Pledges</b>		
Pledge covering property lease agreements	9	9
Pledge covering customs credit account	280	280
Pledge covering electricity exchange purchases		863
	<b>289</b>	<b>1,151</b>
<b>Other financial commitments</b>		
Counter guarantee in favour of an associated company		
Rent security deposit, guarantee	38	38
Credit facility commitment fee and commitment fee:		
Commitment fee for the next year	395	326
Commitment fee for subsequent years	1,154	1,154
	<b>1,587</b>	<b>1,518</b>
<b>Unrecognised investment commitments</b>	<b>84,572</b>	<b>124,314</b>

The investment commitments consist of agreements signed by the company to carry out grid construction projects.

## LEGAL PROCEEDINGS AND PROCEEDINGS BY AUTHORITIES

A lawsuit was initiated against Fingrid in December 2016, demanding non-specified damages due to an alleged breach of contract. The alleged injury is continuous and the claim amounted to EUR 135,000 by the time the lawsuit was initiated. Fingrid has contested the claims presented in the lawsuit. The case is currently before the court. In Fingrid's view, the legal proceedings are not likely to have a substantial impact on the company's financial result or financial position. Thus no provisions were

recognised in the financial statements in relation to these proceedings.

There are no other ongoing legal proceedings or proceedings by authorities that would have a material impact on Fingrid's business.

## EVENTS AFTER THE CLOSING DATE

The Group management is not aware of such significant events after the closing date that would affect the financial statements.



## GROUP'S CONTACT INFORMATION AND APPROVAL OF THE FINANCIAL STATEMENTS

Fingrid Oyj is a Finnish public limited liability company incorporated under the Finnish Companies Act. Fingrid's consolidated financial statements have been drawn up in accordance with the International Financial Reporting Standards (IFRS) as adopted by the EU. Fingrid's registered office is in Helsinki at the address P.O. Box 530 (Läkkisepäntie 21, 00620, Helsinki), 00101 Helsinki.

A copy of the consolidated financial statements is available on the website [fingrid.fi](http://fingrid.fi) or at Fingrid Oyj's head office.

The amounts in the financial statements are expressed in thousands of euros and are based on the original acquisition costs, unless otherwise stated in the accounting principles or notes.

Fingrid Oyj's Board of Directors has accepted the publication of these financial statements in its meeting on 17 February 2017. In accordance with the Finnish Companies Act, the shareholders have the opportunity to adopt or reject the financial statements in the shareholders' meeting held after their publication. The shareholders' meeting can also amend the financial statements.

# Parent company income statement

## 7 Parent company financial statements (FAS)

### 7.1 Parent company income statement

		Jan-Dec/2016	Jan-Dec/2015
	Notes	€	€
<b>TURNOVER</b>	2	<b>581,409,910.01</b>	<b>592,403,122.38</b>
Other operating income	3	12,693,378.54	5,358,153.35
Materials and services	4	-241,754,851.27	-233,431,910.68
Personnel costs	5	-28,597,902.39	-25,804,349.63
Depreciation and amortisation expense	6	-108,266,566.81	-103,322,929.47
Other operating expenses	7,8	-65,773,725.99	-57,903,667.10
<b>OPERATING PROFIT</b>		<b>149,710,242.09</b>	<b>177,298,418.85</b>
Finance income and costs	9	-20,121,491.84	-22,835,249.11
<b>PROFIT BEFORE EXTRAORDINARY ITEMS</b>		<b>129,588,750.25</b>	<b>154,463,169.74</b>
<b>PROFIT BEFORE APPROPRIATIONS AND TAXES</b>		<b>129,588,750.25</b>	<b>154,463,169.74</b>
Income taxes	10	-25,722,449.53	-30,721,273.94
<b>PROFIT FOR THE FINANCIAL YEAR</b>		<b>103,866,300.72</b>	<b>123,741,895.80</b>

Notes are an integral part of the financial statements.

# Parent company balance sheet

## 7.2 Parent company balance sheet

ASSETS		31 Dec 2016	31 Dec 2015
	Notes	€	€
<b>Intangible assets:</b>			
Goodwill	11	4,288,792.08	10,721,980.26
Other intangible assets	12	79,770,462.84	82,342,061.28
		<b>84,059,254.92</b>	<b>93,064,041.54</b>
<b>Tangible assets</b>			
	13		
Land and water areas		15,700,654.61	15,348,845.85
Buildings and structures		193,639,539.82	167,200,800.50
Machinery and equipment		576,316,710.23	565,543,070.37
Transmission lines		808,874,948.90	772,984,715.15
Other property, plant and equipment		117,516.35	117,516.35
Prepayments and purchases in progress		59,404,402.54	120,815,913.42
		<b>1,654,053,772.45</b>	<b>1,642,010,861.64</b>
<b>Investments:</b>			
	14		
Interests in Group companies		507,063.77	504,563.77
Interests in associated companies		8,587,578.95	8,587,578.95
Other shares and interests		1,965,313.45	1,885,466.31
		<b>11,059,956.17</b>	<b>10,977,609.03</b>
<b>TOTAL NON-CURRENT ASSETS</b>		<b>1,749,172,983.54</b>	<b>1,746,052,512.21</b>
<b>CURRENT ASSETS</b>			
<b>Inventories</b>	15	<b>12,269,117.70</b>	<b>12,664,970.40</b>
<b>Receivables</b>			
<b>Non-current</b>			
Loan receivables from Group companies	16	2,807,700.00	

Loan receivables from associated companies	16	4,000,000.00	2,500,000.00
Other receivables	16	0.00	0.00
		<b>6,807,700.00</b>	<b>2,500,000.00</b>

**Current**

Trade receivables		70,674,359.79	53,462,739.39
Receivables from Group companies	17	826,575.41	209,433.70
Receivables from associated companies	18	143,749.03	47,937.43
Other receivables		1,298,105.32	1,216,188.46
Prepayments and accrued income	19,20	9,198,988.07	14,491,440.95
		82,141,777.62	69,427,739.93
<b>Financial securities</b>	21	<b>57,393,757.42</b>	<b>93,258,506.42</b>
<b>Cash in hand and bank receivables</b>	21	<b>21,939,069.16</b>	<b>23,099,085.95</b>
<b>TOTAL CURRENT ASSETS</b>		<b>180,551,421.90</b>	<b>200,950,302.70</b>
<b>TOTAL ASSETS</b>		<b>1,929,724,405.44</b>	<b>1,947,002,814.91</b>

Notes are an integral part of the financial statement

**SHAREHOLDERS' EQUITY AND LIABILITIES**

		31 Dec 2016	31 Dec 2015
	Notes	€	€
<b>EQUITY</b>	22		
Share capital		55,922,485.55	55,922,485.55
Share premium account		55,922,485.55	55,922,485.55
Profit from previous financial years		72,087,952.34	38,346,060.29
Profit for the financial year		103,866,300.72	123,741,895.80
<b>TOTAL SHAREHOLDERS' EQUITY</b>		<b>287,799,224.16</b>	<b>273,932,927.19</b>
<b>ACCUMULATED APPROPRIATIONS</b>	23	<b>448,896,757.27</b>	<b>448,896,757.27</b>
<b>PROVISIONS FOR LIABILITIES AND CHARGES</b>	30	<b>1,480,946.78</b>	<b>1,667,546.78</b>

**LIABILITIES****Non-current liabilities**

Bonds	24,25	698,544,173.57	746,396,266.02
Loans from financial institutions		151,203,463.20	172,865,800.86
		<b>849,747,636.77</b>	<b>919,262,066.88</b>
<b>CURRENT LIABILITIES</b>			
Bonds	24	127,852,092.56	144,809,226.23
Loans from financial institutions		21,662,337.66	20,709,956.71
Trade payables		24,801,601.35	14,617,272.60
Liabilities to Group companies	26	1,102,734.71	502,586.32
Liabilities to associated companies	27	151,737.02	2,057.00
Other liabilities	28	136,671,358.46	86,432,083.11
Accruals	29	29,557,978.70	36,170,334.82
		<b>341,799,840.46</b>	<b>303,243,516.79</b>
<b>TOTAL LIABILITIES</b>		<b>1,191,547,477.23</b>	<b>1,222,505,583.67</b>
<b>TOTAL SHAREHOLDERS' EQUITY AND LIABILITIES</b>		<b>1,929,724,405.44</b>	<b>1,947,002,814.91</b>

Notes are an integral part of the financial statements.

# Parent company cash flow statement

## 7.3 Parent company cash flow statement

		1 Jan - 31 Dec, 2016	1 Jan - 31 Dec, 2015
	Notes	€	€
<b>Cash flow from operating activities:</b>			
Profit for the financial year	22	103,866,300.72	123,741,895.80
Adjustments:			
Business transactions not involving a payment transaction	33	104,488,603.07	101,194,099.56
Interest and other finance costs		28,312,997.36	36,664,709.62
Interest income		-7,332,443.33	-13,273,942.62
Dividend income		-859,062.19	-555,517.89
Taxes		25,722,449.53	30,721,273.94
Changes in working capital:			
Change in trade receivables and other receivables		-13,573,931.59	-12,005,406.78
Change in inventories		395,852.70	177,962.49
Change in trade payables and other liabilities		7,437,144.67	-7,952,730.92
Congestion income		39,864,046.47	0.00
Change in provisions		-186,600.00	-17,500.00
Interest paid		-22,481,770.87	-25,423,150.53
Interest received		436,541.27	820,524.86
Taxes paid	10	-33,782,121.37	-20,469,032.40
Net cash flow from operating activities		232,308,006.44	213,623,185.13
<b>Cash flow from investing activities:</b>			
Purchase of property, plant and equipment	13	-138,768,010.88	-151,451,793.93
Purchase of intangible assets	12	-3,284,749.24	-1,812,888.00

Purchase of other assets	14	-82,347.14	-414,196.31
Proceeds from sale of other assets	14	152,000.00	500,000.00
Proceeds from sale of property, plant and equipment	13	5,885,200.00	5,065,609.18
Loans granted		-4,300,000.00	-900,000.00
Dividends received	9	859,062.19	555,517.89
Contributions received		0.00	15,000,000.00
Net cash flow from investing activities		-139,538,845.07	-133,457,751.17
<b>Cash flow from financing activities:</b>			
Proceeds from current financing (liabilities)		240,118,091.67	285,317,516.75
Payments of current financing (liabilities)		-195,087,574.26	-366,163,563.46
Proceeds from non-current financing (liabilities)		80,000,000.00	107,424,078.03
Payments of non-current financing (liabilities)		-164,824,440.82	-104,220,179.01
Dividends paid	22	-90,000,003.75	-65,000,001.35
Net cash flow from financing activities		-129,793,927.16	-142,642,149.04
<b>Change in cash and cash equivalents and financial assets</b>		<b>-37,024,765.79</b>	<b>-62,476,715.08</b>
<b>Cash and cash equivalents and financial assets 1 Jan</b>		<b>116,357,592.37</b>	<b>178,834,307.45</b>
<b>Cash and cash equivalents and financial assets 31 Dec</b>	21	<b>79,332,826.58</b>	<b>116,357,592.37</b>

Notes are an integral part of the financial statements.

# Notes to the financial statements of parent company

## 7.4 Notes to the financial statements of parent company

### 1. ACCOUNTING PRINCIPLES

Fingrid Oyj's financial statements have been drawn up in accordance with the Finnish Accounting Standards (FAS). The items in the financial statements are valued at original acquisition cost.

#### Foreign currency transactions

Commercial transactions and financial items denominated in foreign currencies are recognised at the foreign exchange mid-rate quoted by the European Central Bank (ECB) at the transaction date. Interest-bearing liabilities and receivables and the derivatives hedging these items are valued at the mid-rate quoted by the ECB at the closing date. Foreign exchange gains and losses on interest-bearing liabilities and receivables, and on the instruments hedging these items, are recognised at maturity under finance income and costs. Foreign exchange rate differences arising from the derivatives used to hedge commercial currency flows are recognised to adjust the corresponding item in the income statement.

#### Interest and currency derivative

Interest rate and currency swaps, foreign exchange forwards and interest rate options are used, in accordance with the Treasury Policy, to hedge the interest rate and foreign exchange risk, as well as the commercial items, in Fingrid's balance sheet items. The accounting principles for derivative

contracts are the same as for the underlying items. The interest rate items of interest rate and currency swaps and interest rate options are accrued and recognised in the income statement under interest income and costs. The interest portion of forward foreign exchange contracts hedging the interest-bearing liabilities and receivables is accrued over the maturity of the contracts and recognised under finance income and costs. Premiums paid or received on interest rate options are accrued over the hedging period.

#### Electricity derivatives

Fingrid hedges its loss energy purchases by employing forward instruments quoted on the NASDAQ OMX Oslo ASA. There can also be trading in the OTC market in instruments corresponding to Nasdaq OMX Oslo ASA's financial instruments. The profits and losses arising from these contracts are used to adjust the loss energy purchases in the income statement in the period in which the hedging impacts profit or loss.

#### Research and development expenses

Research and development expenses are treated as annual expenses.

#### Valuation of fixed assets

Fixed assets are capitalised under immediate acquisition cost. Planned straight-line depreciation on the acquisition price is calculated on the basis of the useful life of the fixed asset. Depreciation on fixed assets taken into use during the financial year is calculated on an item-by-item basis from the month of introduction.



**The depreciation periods are as follows:**

Goodwill = 20 years

**Other non-current expenses**

Rights of use to line areas = 30-40 years  
 Other rights of use according to useful life,  
 maximum = 10 years  
 Computer software = 3 years

**Buildings and structures**

Substation buildings and separate buildings =  
 40 years  
 Substation structures = 30 years  
 Buildings and structures at gas turbine power  
 plants = 20-40 years  
 Separate structures = 15 years

**Transmission lines**

Transmission lines 400 kV = 40 years  
 Direct current lines = 40 years  
 Transmission lines 110-220 kV = 30 years  
 Creosote-impregnated towers and related  
 disposal costs\* = 30 years  
 Aluminium towers of transmission lines (400 kV)  
 = 10 years  
 Optical ground wires = 10-20 years

**Machinery and equipment**

Substation machinery = 10-30 years  
 Gas turbine power plants = 20 years  
 Other machinery and equipment = 3-5 years

\* Disposal costs are discounted at present value and added to the value of the fixed asset and recognised under provisions for liabilities and charges.

Goodwill is depreciated over a 20-year period, since grid operations are a long-term business in which income is accrued over several decades.

**Emission rights**

Emission rights are treated in accordance with the net procedure in conformance with statement 1767/2005 of the Finnish Accounting Board.

**Valuation of inventories**

Inventories are recognised according to the FIFO principle at acquisition cost, or at the lower of replacement cost or probable market price.

**Cash in hand, bank receivables and financial securities**

Cash in hand and bank receivables include cash assets and bank balances. Financial securities include certificates of deposit, commercial papers and investments in short-term money-market funds. Quoted securities and comparable assets are valued at the lower of original acquisition cost or probable market price.

**Interest-bearing liabilities**

Fingrid's non-current interest-bearing liabilities consist of loans from financial institutions and bonds issued under the Euro Medium Term Note (EMTN) programme. The current interest-bearing liabilities consist of commercial papers issued under the domestic and international programmes and of the current portion of noncurrent borrowings and bonds maturing within a year. The outstanding notes under the programmes are denominated in euros and foreign currencies. Fingrid has both fixed and floating rate debt and debt with interest rate structures. The interest is accrued over the maturity of the debt. The differential of a bond issued over or under par value is accrued over the life of the bond. The arrangement fees of the revolving credit facilities are, as a rule, immediately recognised as an expense, and the commitment fees are recognised as an expense over the maturity of the facility.

**Financial risk management**

The principles applied to the management of financial risks are presented in chapters 5.2 and 5.3 of the Notes to the Consolidated Financial Statements.

**Income taxes**

Taxes include the accrued tax corresponding to the profit for the financial year as well as tax adjustments for previous financial years.

**Deferred taxes**

Deferred tax assets and liabilities are not recorded in the income statement or balance sheet. Information concerning these is presented in the notes.

## 2. TURNOVER BY BUSINESS AREA

The business of Fingrid Oyj comprises entirely transmission grid business with system responsibility. For that reason, there is no distribution of turnover by business area.

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<b>TURNOVER, €1,000</b>	<b>2016</b>	<b>2015</b>
Grid service income	382,395	333,005
Imbalance power sales	153,881	137,127
Cross-border transmission	24,015	11,174
ITC income	13,199	15,298
Estlink congestion income	0	4,180
Nordic congestion income	0	86,762
Income from peak load capacity services	295	273
Income from guarantee-of-origin services	244	458
Other operating income	7,382	4,127
<b>Total</b>	<b>581,410</b>	<b>592,403</b>

<b>3. OTHER OPERATING INCOME, €1,000</b>	<b>2016</b>	<b>2015</b>
Rental income	922	1,196
Capital gains of fixed assets	3,796	2,424
Contributions received	282	199
Congestion income	6,325	0
Other income	1,368	1,539
<b>Total</b>	<b>12,693</b>	<b>5,358</b>

<b>4. MATERIALS AND SERVICES, €1,000</b>	<b>2016</b>	<b>2015</b>
Purchases during the financial year	170,793	154,208

Loss energy purchases	57,555	68,566
Change in inventories, increase (-) or decrease (+)	396	178
Materials and consumables	228,745	222,951
Services	13,010	10,481
<b>Total</b>	<b>241,755</b>	<b>233,432</b>

<b>5. PERSONNEL EXPENSES, €1,000</b>	<b>2016</b>	<b>2015</b>
Salaries and bonuses	22,735	21,320
Pension expenses	4,433	3,518
Other personnel expenses	1,430	967
<b>Total</b>	<b>28,598</b>	<b>25,804</b>

#### **Salaries and bonuses of the members of the Board of Directors and President and CEO, €1,000**

	<b>2016</b>	<b>2015</b>
Juhani Järvi, Chairman (since 6 June 2014)	34	19
Helena Walldén, Chairman (until 6 April 2016)	11	38
Juha Majanen, Vice Chairman (since 22 March 2012)	23	21
Sanna Syri, Member of the Board (since 14 April 2015)	20	13
Esko Torsti, Member of the Board (since 22 March 2012)	20	18
Anu Hämäläinen, Member of the Board (since 6 April 2016)	14	
Sirpa Ojala, Member of the Board (until 14 April 2015)		5
Jukka Ruusunen, President and CEO	352	324

#### **Number of salaried employees in the company during the financial year:**

Personnel, average	336	319
Personnel, 31 Dec	334	315

<b>DEPRECIATION ACCORDING TO PLAN, €1,000</b>	<b>2016</b>	<b>2015</b>
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Goodwill	6,433	6,433
Other non-current expenses	5,856	5,961
Buildings and structures	8,100	7,303
Machinery and equipment	50,973	47,643
Transmission lines	36,904	35,982
<b>Total*</b>	<b>108,267</b>	<b>103,323</b>
Deprecation on the electricity grid (notes 12 and 13)	88,967	94,249

<b>7. OTHER OPERATING EXPENSES, €1,000</b>	<b>2016</b>	<b>2015</b>
Contracts, assignments etc. undertaken externally	53,277	45,722
Grid rents	241	229
Other rental expenses	2,575	2,498
Other costs	9,681	9,455
<b>Total</b>	<b>65,774</b>	<b>57,904</b>

<b>8. AUDITORS' FEES, €1,000</b>	<b>2016</b>	<b>2015</b>
PricewaterhouseCoopers Oy:		
Auditing fee	61	42
Tax consulting	21	16
Assignments referred to in the Auditing Act, Chapter 1, Section 1, Subsection 2	3	0
Other fees	60	58
<b>Total</b>	<b>142</b>	<b>116</b>

<b>9. FINANCE INCOME AND COSTS, €1,000</b>	<b>2016</b>	<b>2015</b>
Dividend income from Group companies	294	0
Dividend income from others	565	556
Interest and other finance income from others	7,332	13,274
	8,192	13,829
Interest and other finance costs to Group companies	0	-0
Interest and other finance costs to others	-28,313	-36,665
	-28,313	-36,665

<b>Total</b>	-20,121	-22,835
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<b>10. INCOME TAXES, €1,000</b>	<b>2016</b>	<b>2015</b>
Income taxes for the financial year	25,722	30,721
<b>Total</b>	<b>25,722</b>	<b>30,721</b>

The company will pay its income taxes in accordance with the underlying tax rate, with no tax planning

### Deferred tax assets and liabilities, €1,000

#### Deferred tax assets

On temporary differences	296	334
	296	334

#### Deferred tax liabilities

On temporary differences	242	256
On appropriations	89,779	89,779
	90,021	90,035
<b>Total</b>	<b>89,725</b>	<b>89,701</b>

<b>11. GOODWILL, €1,000</b>	<b>2016</b>	<b>2015</b>
Cost at 1 Jan	128,664	128,664
Cost at 31 Dec	128,664	128,664
Accumulated depreciation according to plan 1 Jan	-117,942	-111,509
Depreciation according to plan 1 Jan–31 Dec	-6,433	-6,433
<b>Carrying amount 31 Dec</b>	<b>4,289</b>	<b>10,722</b>

Accumulated depreciation difference 1 Jan	-10,722	-17,155
Decrease in depreciation difference reserve 1 Jan–31 Dec	6,433	6,433
<b>Accumulated depreciation in excess of plan 31 Dec</b>	<b>-4,289</b>	<b>-10,722</b>

<b>12. OTHER NON-CURRENT EXPENSES, €1,000</b>	<b>2016</b>	<b>2015</b>
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Cost at 1 Jan	180,861	180,215
Increases 1 Jan–31 Dec	3,548	2,576
Decreases 1 Jan–31 Dec	-690	-1,929
<b>Cost at 31 Dec</b>	<b>183,719</b>	<b>180,861</b>
Accumulated depreciation according to plan 1 Jan	-98,519	-93,724
Decreases, depreciation according to plan 1 Jan–31 Dec	427	1,166
Depreciation according to plan 1 Jan–31 Dec	-5,856	-5,961
<b>Carrying amount 31 Dec*</b>	<b>79,770</b>	<b>82,342</b>
Accumulated depreciation difference 1 Jan	-55,954	-57,354
Increase in depreciation difference reserve 1 Jan–31 Dec	-737	-753
Decrease in depreciation difference reserve 1 Jan–31 Dec	1,496	2,154
<b>Accumulated depreciation in excess of plan 31 Dec</b>	<b>-55,195</b>	<b>-55,954</b>
<b>*Net capital expenditure in electricity grid, €1,000</b>	<b>2016</b>	<b>2015</b>
Carrying amount 31 Dec	74,378	77,101
Carrying amount 1 Jan	-77,101	-80,742
Depreciation according to plan 1 Jan–31 Dec	3,941	5,050
Decreases 1 Jan–31 Dec	263	763
<b>Total</b>	<b>1,482</b>	<b>2,171</b>

<b>13. TANGIBLE ASSETS, €1,000</b>	<b>2016</b>	<b>2015</b>
<b>Land and water areas</b>		
Cost at 1 Jan	15,349	14,974
Increases 1 Jan–31 Dec	393	442
Decreases 1 Jan–31 Dec	-41	-67
<b>Cost at 31 Dec</b>	<b>15,701</b>	<b>15,349</b>
<b>Buildings and structures</b>		
Cost at 1 Jan	218,637	200,650
Increases 1 Jan–31 Dec	34,634	18,214
Decreases 1 Jan–31 Dec	-168	-227
<b>Cost at 31 Dec</b>	<b>253,104</b>	<b>218,637</b>
Accumulated depreciation according to plan 1 Jan	-51,436	-44,192

Decreases, depreciation according to plan 1 Jan–31 Dec	73	59
Depreciation according to plan 1 Jan–31 Dec	-8,100	-7,303
<b>Carrying amount 31 Dec</b>	<b>193,640</b>	<b>167,201</b>
Accumulated depreciation difference 1 Jan	-13,534	-13,590
Increase in depreciation difference reserve 1 Jan–31 Dec	-970	-852
Decrease in depreciation difference reserve 1 Jan–31 Dec	925	908
<b>Accumulated depreciation in excess of plan 31 Dec</b>	<b>-13,579</b>	<b>-13,534</b>

### Machinery and equipment

Cost at 1 Jan	1,029,839	991,645
Increases 1 Jan–31 Dec	61,839	38,824
Decreases 1 Jan–31 Dec	-100	-630
<b>Cost at 31 Dec</b>	<b>1,091,578</b>	<b>1,029,839</b>
Accumulated depreciation according to plan 1 Jan	-464,296	-416,959
Decreases, depreciation according to plan 1 Jan–31 Dec	8	306
Depreciation according to plan 1 Jan–31 Dec	-50,973	-47,643
<b>Carrying amount 31 Dec</b>	<b>576,317</b>	<b>565,543</b>
Accumulated depreciation difference 1 Jan	-184,046	-188,372
Increase in depreciation difference reserve 1 Jan–31 Dec	-782	-2,012
Decrease in depreciation difference reserve 1 Jan–31 Dec	7,665	6,338
<b>Accumulated depreciation in excess of plan 31 Dec</b>	<b>-177,163</b>	<b>-184,046</b>

### Transmission lines

Cost at 1 Jan	1,221,808	1,197,089
Increases 1 Jan–31 Dec	74,414	30,003
Decreases 1 Jan–31 Dec	-5,565	-5,283
<b>Cost at 31 Dec</b>	<b>1,290,658</b>	<b>1,221,808</b>
Accumulated depreciation according to plan 1 Jan	-448,824	-416,065
Decreases, depreciation according to plan 1 Jan–31 Dec	3,944	3,223
Depreciation according to plan 1 Jan–31 Dec	-36,904	-35,982
<b>Carrying amount 31 Dec</b>	<b>808,875</b>	<b>772,985</b>
Accumulated depreciation difference 1 Jan	-369,891	-357,675
Increase in depreciation difference reserve 1 Jan–31 Dec	-50,934	-14,391
Decrease in depreciation difference reserve 1 Jan–31 Dec	36,904	2,175
<b>Accumulated depreciation in excess of plan 31 Dec</b>	<b>-383,922</b>	<b>-369,891</b>

**Other property, plant and equipment**

Cost at 1 Jan	118	118
<b>Cost at 31 Dec</b>	<b>118</b>	<b>118</b>

**Prepayments and purchases in progress**

Cost at 1 Jan	120,816	78,687
Increases 1 Jan–31 Dec	116,534	134,335
Transfers to other tangible and intangible assets 1 Jan - 31 Dec	-177,946	-92,206
<b>Cost at 31 Dec</b>	<b>59,404</b>	<b>120,816</b>

<b>Tangible assets total*</b>	<b>1,654,054</b>	<b>1,642,011</b>
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<b>*Net capital expenditure in electricity grid, €1,000</b>	<b>2016</b>	<b>2015</b>
Carrying amount 31 Dec	1,618,586	1,635,324
Carrying amount 1 Jan	-1,635,324	-1,598,045
Depreciation according to plan 1 Jan–31 Dec	85,026	89,199
Decreases 1 Jan–31 Dec	1,742	2,451
Total	70,030	128,930

Fingrid's reserve power plants are included in the property, plant and equipment of the transmission system.

**14. INVESTMENTS, €1,000**

	<b>2016</b>	<b>2015</b>
<b>Interests in Group companies</b>		
Cost at 1 Jan	505	505
Increases 1 Jan–31 Dec	3	0
<b>Cost at 31 Dec</b>	<b>507</b>	<b>505</b>

**Interests in associated companies**

Cost at 1 Jan	8,588	8,642
Decreases 1 Jan–31 Dec	0	-55
<b>Cost at 31 Dec</b>	<b>8,588</b>	<b>8,588</b>



**Other shares and interests**

Cost at 1 Jan	1,885	1,417
Increases 1 Jan–31 Dec	227	469
Decreases 1 Jan–31 Dec	-147	0
<b>Cost at 31 Dec</b>	<b>1,965</b>	<b>1,885</b>
<b>Investments total</b>	<b>11,060</b>	<b>10,978</b>

<b>15. INVENTORIES, €1,000</b>	<b>2016</b>	<b>2015</b>
<b>Materials and consumables at 31 Dec</b>	12,139	12,647
Work in progress	131	18
<b>Total</b>	<b>12,269</b>	<b>12,665</b>

<b>16. OTHER NON-CURRENT RECEIVABLES, €1,000</b>	<b>2016</b>	<b>2015</b>
Loan receivables from Group companies	2,808	0
Loan receivables from associated companies	4,000	2,500
<b>Total</b>	<b>6,808</b>	<b>2,500</b>

<b>17. RECEIVABLES FROM GROUP COMPANIES, €1,000</b>	<b>2016</b>	<b>2015</b>
<b>Current:</b>		
Trade receivables	799	209
Interest receivables	27	0
<b>Total</b>	<b>827</b>	<b>209</b>

<b>18. RECEIVABLES FROM ASSOCIATED COMPANIES, €1,000</b>	<b>2016</b>	<b>2015</b>
<b>Current:</b>		
Trade receivables	125	39
Interest receivables	18	9
<b>Total</b>	<b>144</b>	<b>48</b>

<b>19. PREPAYMENTS AND ACCRUED INCOME, €1,000</b>	<b>2016</b>	<b>2015</b>
Interest and other financial items	7,333	8,202
Accruals of sales and purchases	1,666	6,111
Other prepayments and accrued income	200	178
<b>Total</b>	<b>9,199</b>	<b>14,491</b>

<b>20. UNRECORDED EXPENSES AND PAR VALUE DIFFERENTIALS ON THE ISSUE OF LOANS INCLUDED IN PREPAYMENTS AND ACCRUED INCOME, €1,000</b>	<b>2016</b>	<b>2015</b>
<b>Par value differentials</b>	<b>1,039</b>	<b>1,184</b>

<b>21. CASH AND CASH EQUIVALENTS, €1,000</b>	<b>2016</b>	<b>2015</b>
Commercial papers	12,991	53,935
Short-term money market funds	44,402	39,324
Bank deposits	10,000	10,000
Cash in hand and bank receivables	11,939	13,099
<b>Total</b>	<b>79,333</b>	<b>116,358</b>

<b>22. SHAREHOLDERS' EQUITY, €1,000</b>	<b>2016</b>	<b>2015</b>
Share capital 1 Jan	55,922	55,922
<b>Share capital 31 Dec</b>	<b>55,922</b>	<b>55,922</b>
Share premium account 1 Jan	55,922	55,922
<b>Share premium account 31 Dec</b>	<b>55,922</b>	<b>55,922</b>
Profit from previous financial years 1 Jan	<b>162,088</b>	<b>103,346</b>
Dividend distribution	-90,000	-65,000
<b>Profit from previous financial years 31 Dec</b>	<b>72,088</b>	<b>38,346</b>
<b>Profit for the financial year</b>	<b>103,866</b>	<b>123,742</b>
<b>Shareholders' equity 31 Dec</b>	<b>287,799</b>	<b>273,933</b>

<b>Distributable shareholders' equity</b>	<b>175,954</b>	<b>162,088</b>
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<b>Number of shares</b>	Series A shares	Series B shares	Total
1 Jan 2016	2,078	1,247	3,325
31 Dec 2016	<b>2,078</b>	<b>1,247</b>	<b>3,325</b>

Series A shares confer three votes each at the Annual General Meeting and Series B shares one vote each. When electing members of the Board of Directors, Series A shares confer 10 votes each at the Annual General Meeting and Series B shares one vote each.

Series B shares have the right before Series A shares to obtain the annual dividend specified below from the funds available for profit distribution. If the annual dividend cannot be distributed in some year, the shares confer a right to receive the undistributed amount from the funds available for profit distribution in the subsequent years; however, such that Series B shares have the right over Series A shares to receive the annual dividend and the undistributed amount. Series B shares have no right to receive any other dividend.

Fingrid Oyj's Annual General Meeting decides on the annual dividend.

Eighty-two (82) per cent of the dividends to be distributed for each financial year is distributed for all Series A shares and eighteen (18) per cent for all Series B shares, however such that EUR twenty (20) million of the dividends to be distributed for each financial year is first distributed for all Series B shares. If the above-mentioned EUR twenty (20) million minimum amount for the financial period is not distributed (all or in part) for Series B shares in a financial period, Series B shares confer the right to receive the undistributed minimum amount in question (or the accumulated undistributed minimum amount accrued during such financial periods) in the next profit distribution, in any disbursements paid out, or in any other distribution of assets prior to any other dividends, disbursements or asset distribution until the undistributed minimum amount has been distributed in full for Series B shares.

There are no non-controlling interests.

<b>23. ACCUMULATED APPROPRIATIONS, €1,000</b>	<b>2016</b>	<b>2015</b>
Accumulated depreciation from the difference between depreciation according to plan and depreciation carried out in taxation	448,897	448,897

<b>24. BONDS, €1,000</b>	<b>2016</b>	<b>2015</b>

Currency	Nominal value	Maturity date	Interest		
EUR	20,000	11.4.2017	floating rate	20,000	20,000
EUR	25,000	11.4.2017	floating rate	25,000	25,000
EUR	30,000	15.6.2017	3,07%	30,000	30,000
EUR	50,000	21.9.2020	floating rate	50,000	
EUR	30,000	19.9.2022	floating rate	30,000	
EUR	30,000	11.9.2023	2,71%	30,000	30,000
EUR	300,000	3.4.2024	3,50%	300,000	300,000
EUR	25,000	27.3.2028	2,71%	25,000	25,000
EUR	10,000	12.9.2028	3,27%	10,000	10,000
EUR	80,000	24.4.2029	2,95%	80,000	80,000
EUR	30,000	30.5.2029	2,89%	30,000	30,000
				<b>630,000</b>	<b>550,000</b>
JPY	500,000	22.6.2017	1,28%	4,507	4,507
				<b>4,507</b>	<b>4,507</b>
NOK	200,000	17.10.2016	5,15%		24,620
NOK	200,000	11.4.2017	5,16%	24,620	24,620
NOK	200,000	10.11.2017	5,12%	23,725	23,725
NOK	200,000	12.11.2019	5,37%	23,725	23,725
NOK	100,000	16.9.2025	4,31%	12,512	12,512
				<b>84,582</b>	<b>109,201</b>
SEK	100,000	15.1.2016	3,30%		10,390
SEK	500,000	18.10.2016	floating rate		54,900
SEK	500,000	18.10.2016	3,50%		54,900
SEK	1,000,000	19.11.2018	floating rate	107,308	107,308
				<b>107,308</b>	<b>227,497</b>
Bonds, non-current, total				698,544	746,396
Bonds, current, total				127,852	144,809

<b>Total</b>	<b>826,396</b>	<b>891,205</b>
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## 25. LOANS FALLING DUE IN FIVE YEARS OR MORE, €1,000

	2016	2015
Bonds	517,512	487,512
Loans from financial institutions	90,216	107,879
<b>Total</b>	<b>607,728</b>	<b>595,391</b>

## 26. LIABILITIES TO GROUP COMPANIES, €1,000

	2016	2015
<b>Current:</b>		
Other liabilities	1,103	503
<b>Total</b>	<b>1,103</b>	<b>503</b>

## 27. LIABILITIES TO ASSOCIATED COMPANIES, €1,000

	2016	2015
<b>Current:</b>		
Trade payables	152	2
<b>Total</b>	<b>152</b>	<b>2</b>

## 28. OTHER LIABILITIES, €1,000

	2016	2015
<b>Current:</b>		
Other loans/Commercial papers (international and domestic)	120,128	75,003
Value added tax	11,860	7,787
Electricity tax	3,093	3,045
advances received	923	15
Other liabilities	667	582
<b>Total</b>	<b>136,671</b>	<b>86,432</b>

<b>29. ACCRUALS, €1,000</b>	<b>2016</b>	<b>2015</b>
<b>Current:</b>		
Interest and other financial items	12,822	14,739
Salaries and additional personnel expenses	5,693	4,310
Accruals of sales and purchases	5,766	3,784
Other accruals	5,277	13,336
<b>Total</b>	<b>29,558</b>	<b>36,170</b>

<b>30. PROVISIONS FOR LIABILITIES AND CHARGES, €1,000</b>	<b>2016</b>	<b>2015</b>
Creosote-impregnated and CCA-impregnated wooden towers, disposal costs	1,481	1,668
<b>Total</b>	<b>1,481</b>	<b>1,668</b>

**31. DERIVATIVE AGREEMENTS, €1,000**

	2016				2015				Hierarchy level
	Fair value pos.	Fair value neg.	Net fair value	Nominal value	Fair value pos.	Fair value neg.	Net fair value	Nominal value	
<b>Interest rate and currency derivatives</b>									
Cross-currency swaps	31.12.16	31.12.16	31.12.16	31.12.16	31.12.15	31.12.15	31.12.15	31.12.15	Level 2
Forward contracts	6,930	-12,487	-5,558	196,396	15,286	-20,297	-5,011	341,205	Level 2
Interest rate swaps	46		46	2,271		-88	-88	4,505	Level 2
Bought interest rate options	26,667	-6,725	19,943	360,000	24,348	-9,442	14,905	430,000	Level 2
<b>Total</b>	1,350		1,350	518,820	862		862	358,820	Level 2
	<b>34,993</b>	<b>-19,212</b>	<b>15,781</b>	<b>1,077,487</b>	<b>40,496</b>	<b>-29,827</b>	<b>10,668</b>	<b>1,134,531</b>	
<b>Electricity derivatives</b>									
Electricity forward contracts. NASDAQ OMX Commodities, not designated as hedge accounting	31.12.16	31.12.16	31.12.16	31.12.16	31.12.15	31.12.15	31.12.15	31.12.15	Level 1
	1,639.52	-8,157.40	-6,517.87	4.07			-49,060.14	4.22	
<b>Total</b>	<b>1,639.52</b>	<b>-8,157.40</b>	<b>-6,517.87</b>	<b>4.07</b>			<b>-49,060.14</b>	<b>4.22</b>	

**32. COMMITMENTS AND CONTINGENT LIABILITIES,  
€1,000**

	2016	2015
<b>Rental liabilities</b>		
Liabilities for the next year	3,536	2,643
Liabilities for subsequent years	28,653	23,299
	<b>32,189</b>	<b>25,942</b>
<b>Right-of-use agreements</b>		
Liabilities for the next year	7,601	8,017
Liabilities for subsequent years	72,677	81,048
	<b>80,278</b>	<b>89,065</b>
<b>Pledges</b>		
Pledge covering property lease agreements	9	9
Pledge covering customs credit account	280	280
Default fund covering electricity exchange purchases	0	863
	<b>289</b>	<b>1,151</b>
<b>Other financial commitments</b>		
Rent security deposit, guarantee	38	38
Credit facility commitment fee and commitment fee:		
Commitment fee for the next year	395	326
Liabilities for subsequent years	1,154	1,154
	<b>1,587</b>	<b>1,518</b>

**33. OPERATING CASH FLOW ADJUSTMENTS, €1,000**

	2016	2015
<b>Business transactions not involving a payment transaction</b>		
Depreciation	108,267	103,323
Capital gains/losses (-/+ ) on tangible and intangible assets	-3,778	-2,129
<b>Total</b>	<b>104,489</b>	<b>101,194</b>

**34. LEGAL PROCEEDINGS AND  
PROCEEDINGS BY AUTHORITIES**

A lawsuit was initiated against Fingrid in December 2016, demanding non-specified damages due to an alleged breach of contract. The alleged injury is continuous and the claim amounted to EUR 135,000

by the time the lawsuit was initiated. Fingrid has contested the claims presented in the lawsuit. The case is currently before the court. In Fingrid's view, the legal proceedings are not likely to have a substantial impact on the company's financial result or financial position. Thus no provisions were



recognised in the financial statements in relation to these proceedings.

There are no other ongoing legal proceedings or proceedings by authorities that would have a material impact on Fingrid's business.

## 35. SEPARATION OF BUSINESSES IN ACCORDANCE WITH THE ELECTRICITY MARKET ACT

### Imbalance power and regulating power

Each electricity market party must ensure its electricity balance by making an agreement with either Fingrid or some other party. Fingrid buys and sells imbalance power in order to stabilise the hourly power balance of an electricity market party (balance responsible party). Imbalance power trade and pricing are based on a balance service agreement with equal and public terms and conditions.

Fingrid is responsible for the continuous power balance in Finland by buying and selling regulating power in Finland. The balance responsible parties

can participate in the Nordic balancing power market by submitting bids on their available capacity. The terms and conditions of participation in the regulating power market and the pricing of balancing power are based on the balance service agreement.

Fingrid is also responsible for the national balance settlement. The balance settlement takes place after the utilisation hours by determining the actual electricity generation, consumption and electricity trade. The outcome of the balance settlement is power balances for each party to the electricity trade.

### Management of balance operation

In accordance with a decision by the Energy Market Authority, Fingrid Oyj shall separate the duties pertaining to national power balance operation by virtue of Chapter 12 of the Electricity Market Act. The management of balance operation is a part of grid operations.

The income statement of the balance service unit is separated by means of cost accounting as follows:

Income	direct
Separate	direct
Production costs	matching principle
Administrative costs	matching principle
Depreciation	matching principle in accordance with Fingrid Oyj's depreciation principle

Finance income and costs	on the basis of imputed debt
Income taxes	based on result

The average number of personnel during 2016 was 12 (14). The operating profit was 4 (6) per cent of turnover.

<b>MANAGEMENT OF BALANCE OPERATION, SEPARATED INCOME STATEMENT</b>	<b>1 Jan - 31 Dec, 2016</b>	<b>1 Jan - 31 Dec, 2015</b>
	<b>€1,000</b>	<b>€1,000</b>
<b>TURNOVER*</b>	<b>165,393</b>	<b>148,240</b>
Other operating income	1	1
Materials and services*	-156,520	-136,914
Personnel costs	-1,385	-1,552
Depreciation and amortisation expense	-181	-306
Other operating expenses	-1,129	-1,208
<b>OPERATING PROFIT</b>	<b>6,178</b>	<b>8,261</b>
Finance income and costs	48	30
<b>PROFIT/LOSS BEFORE APPROPRIATIONS AND TAXES</b>	<b>6,226</b>	<b>8,291</b>
Appropriations	-89	35
Income taxes	-884	0
<b>PROFIT/LOSS FOR THE FINANCIAL YEAR</b>	<b>5,253</b>	<b>8,327</b>

Turnover includes EUR 9.2 (8.8) million in sales of imbalance power to balance provider Fingrid Oyj, and Materials and services includes EUR 6.5 (7.2) million euros in purchases by Fingrid Oyj.

## **MANAGEMENT OF BALANCE OPERATION, SEPARATED BALANCE SHEET**

<b>ASSETS</b>	<b>31 Dec 2016</b>	<b>31 Dec 2015</b>
	<b>€1,000</b>	<b>€1,000</b>
<b>NON-CURRENT ASSETS</b>		

**Intangible assets**

Other non-current expenses	385	415
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**Tangible assets**

Machinery and equipment	247	254
Prepayments and purchases in progress	62	62

**Investments**

Interests in associated companies	2,001	2,001
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<b>TOTAL NON-CURRENT ASSETS</b>	<b>2,695</b>	<b>2,732</b>
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**CURRENT ASSETS****Non-current**

Loan receivables from associated companies	4,000	2,500
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**Current receivables**

Trade receivables	27,420	21,368
Receivables from Group companies	18,469	14,899
Receivables from associated companies	144	48
Other receivables	1,504	1,616
	47,537	37,931

Cash in hand and bank receivables	1	1
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<b>TOTAL CURRENT ASSETS</b>	<b>51,538</b>	<b>40,432</b>
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<b>TOTAL ASSETS</b>	<b>54,233</b>	<b>43,164</b>
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	<b>31 Dec 2016</b>	<b>31 Dec 2015</b>
<b>SHAREHOLDERS' EQUITY AND LIABILITIES</b>	<b>€1,000</b>	<b>€1,000</b>

**EQUITY**

Share capital	32	32
Share premium account	286	286
Profit from previous financial years	16,620	8,293
Profit for the financial year	5,253	8,327
<b>TOTAL SHAREHOLDERS' EQUITY</b>	<b>22,190</b>	<b>16,937</b>
<b>ACCUMULATED APPROPRIATIONS</b>	<b>-470</b>	<b>-560</b>
<b>LIABILITIES</b>		
<b>Current liabilities</b>		
Trade payables	30,724	26,020
Liabilities to Group companies	906	766
Accruals	884	
	32,513	26,786
<b>TOTAL LIABILITIES</b>	<b>32,513</b>	<b>26,786</b>
<b>TOTAL SHAREHOLDERS' EQUITY AND LIABILITIES</b>	<b>54,233</b>	<b>43,164</b>

### Development of information exchange

It is Fingrid's task to develop the exchange of information required for electricity trade and imbalance settlement as set out in the Electricity Market Act. Fingrid's information exchange services are part of the electricity markets' information exchange environment. In order to develop the effective and accurate exchange of information, Fingrid works in close co-operation with e.g. electricity market parties, interest groups, service providers, supervisory authorities, legislators, organisations that develop national and international communications and other transmission system operators.

In accordance with a decision by the Energy Market Authority, Fingrid Oyj must separate the duties pertaining to the development of information exchange by virtue of Chapter 12 of the Electricity Market Act. The development of information exchange is a part of grid operations.

The separation of the income statement for the development of information exchange is realised by means of cost accounting as follows:

Income = direct  
 Separate costs = direct  
 Administrative costs = matching principle  
 Income taxes = based on result

	1 Jan - 31 Dec, 2016	1 Jan - 31 Dec, 2015
<b>DEVELOPMENT OF INFORMATION EXCHANGE, SEPARATED INCOME STATEMENT</b>	<b>€1,000</b>	<b>€1,000</b>
<b>TURNOVER</b>	<b>595</b>	<b>528</b>

Personnel costs	-144	-165
Other operating expenses	-392	-236
<b>OPERATING PROFIT</b>	<b>59</b>	<b>127</b>
<b>PROFIT/LOSS BEFORE APPROPRIATIONS AND TAXES</b>	<b>59</b>	<b>127</b>
Income taxes	-12	-25
<b>PROFIT/LOSS FOR THE FINANCIAL YEAR</b>	<b>48</b>	<b>102</b>

## DEVELOPMENT OF INFORMATION EXCHANGE, SEPARATED BALANCE SHEET

	31 Dec 2016	31 Dec 2015
	€1,000	€1,000
<b>ASSETS</b>		
<b>CURRENT ASSETS</b>		
Trade receivables		56
Other receivables	147	159
<b>TOTAL CURRENT ASSETS</b>	<b>147</b>	<b>215</b>
<b>TOTAL ASSETS</b>	<b>147</b>	<b>215</b>

	31 Dec 2016	31 Dec 2015
	€1,000	€1,000
<b>SHAREHOLDERS' EQUITY AND LIABILITIES</b>		
<b>EQUITY</b>		
Share capital	3	3
Profits/losses from previous financial years	-636	-738
Profit for the financial year	48	102
<b>TOTAL SHAREHOLDERS' EQUITY</b>	<b>-586</b>	<b>-634</b>
<b>LIABILITIES</b>		
<b>Current liabilities</b>		
Trade payables	12	10
Liabilities to Group companies	686	716
Other liabilities	36	123

	734	849
<b>TOTAL LIABILITIES</b>	<b>734</b>	<b>849</b>
<b>TOTAL SHAREHOLDERS' EQUITY AND LIABILITIES</b>	<b>147</b>	<b>215</b>

### Grid operations

Grid operations refers to licensed electricity system operation that takes place on the electricity grid. Electricity system operations are defined in Chapter 1 of the Electricity Market Act (588/2013) and grid operations are defined in Chapter 5. Of Fingrid Oyj's operations, activities related to the management of the power reserve system and guarantees of origin for electricity, as well as the data hub project that was started in 2015 are not included in grid

operations. Operations that are not part of grid operations constitute 'other operations' as referred to in Chapter 12 of the Electricity Market Act and must be separated from grid operations in accordance with that Chapter.

The income statement and balance sheet of grid operations and other operations have, in compliance with Chapter 12 of the Electricity Market Act, been separated by means of cost accounting as follows:

Income	direct
Separate costs	direct
Production costs	matching principle
Administrative costs	matching principle
Depreciation	matching principle in accordance with Fingrid Oyj's depreciation principle
Finance income and costs	on the basis of imputed debt
Income taxes	based on result

Balance sheet items	matching principle
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	TRANSMISSION SYSTEM OPERATION	OTHER OPERATION
	1 Jan - 31 Dec, 2016	1 Jan - 31 Dec, 2016
<b>SEPARATED INCOME STATEMENT</b>	<b>€1,000</b>	<b>€1,000</b>
<b>TURNOVER</b>	<b>578,390</b>	<b>3,019</b>
Other operating income	12,693	
Materials and services	-241,755	
Personnel costs	-27,796	-802
Depreciation and amortisation expense	-108,267	
Other operating expenses	-64,229	-1,545
<b>OPERATING PROFIT</b>	<b>149,037</b>	<b>673</b>
Finance income and costs	-20,451	329
<b>PROFIT BEFORE EXTRAORDINARY ITEMS</b>	<b>128,587</b>	<b>1,002</b>
<b>PROFIT/LOSS BEFORE APPROPRIATIONS AND TAXES</b>	<b>128,587</b>	<b>1,002</b>
Income taxes	-25,522	-200
<b>PROFIT/LOSS FOR THE FINANCIAL YEAR</b>	<b>103,065</b>	<b>802</b>

**SEPARATED BALANCE SHEET**

	TRANSMISSION SYSTEM OPERATION	OTHER OPERATION
	31 Dec 2016	31 Dec 2016
<b>ASSETS</b>	<b>€1,000</b>	<b>€1,000</b>
<b>Intangible assets:</b>		
Goodwill	4,289	
Other intangible assets	79,770	
	<b>84,059</b>	
<b>Tangible assets</b>		

Land and water areas	15,701	
Buildings and structures	193,640	
Machinery and equipment	576,317	
Transmission lines	808,875	
Other property, plant and equipment	118	
Prepayments and purchases in progress	59,404	
	<b>1,654,054</b>	
<b>Investments:</b>		
Interests in Group companies		507
Interests in associated companies	8,588	
Other shares and interests	1,965	
	<b>10,553</b>	<b>507</b>
<b>TOTAL NON-CURRENT ASSETS</b>	<b>1,748,666</b>	<b>507</b>
<b>CURRENT ASSETS</b>		
Inventories	12,269	
<b>Receivables</b>		
<b>Non-current</b>		
Loan receivables from Group companies		2,808
Loan receivables from associated companies	4,000	
	<b>4,000</b>	<b>2,808</b>



<b>Current</b>		
Trade receivables	70,674	
Receivables from Group companies	3,706	827
Receivables from associated companies	144	
Other receivables	1,298	
Prepayments and accrued income	9,199	
	<b>85,022</b>	<b>827</b>
Financial securities	57,394	
Cash in hand and bank receivables	21,939	
<b>TOTAL CURRENT ASSETS</b>	<b>180,623</b>	<b>3,634</b>
<b>TOTAL ASSETS</b>	<b>1,929,289</b>	<b>4,141</b>

**SEPARATED BALANCE SHEET**

	<b>TRANSMISSION SYSTEM OPERATION</b>	<b>OTHER OPERATION</b>
<b>SHAREHOLDERS' EQUITY AND LIABILITIES</b>	<b>31 Dec 2016</b>	<b>31 Dec 2016</b>
	<b>€1,000</b>	<b>€1,000</b>
<b>EQUITY</b>		
Share capital	55,920	3
Share premium account	55,922	
Profit from previous financial years	72,630	-542
Profit for the financial year	103,065	802
<b>TOTAL SHAREHOLDERS' EQUITY</b>	<b>287,537</b>	<b>262</b>
<b>ACCUMULATED APPROPRIATIONS</b>	<b>448,897</b>	
<b>PROVISIONS FOR LIABILITIES AND CHARGES</b>	<b>1,481</b>	

<b>LIABILITIES</b>		
<b>Non-current liabilities</b>		
Bonds	698,544	
Loans from financial institutions	151,203	
	<b>849,748</b>	
<b>Current liabilities</b>		
Bonds	127,852	
Loans from financial institutions	21,662	
Trade payables	24,802	
Liabilities to Group companies	1,103	3,706
Liabilities to associated companies	152	
Other liabilities	136,653	19
Accruals	29,404	154
	<b>341,627</b>	<b>3,879</b>
<b>TOTAL LIABILITIES</b>	<b>1,191,374</b>	<b>3,879</b>
<b>TOTAL SHAREHOLDERS' EQUITY AND LIABILITIES</b>	<b>1,929,289</b>	<b>4,141</b>

## Other non-current assets included in the separated balance sheet for grid operations

### SEPARATED BALANCE SHEET

	<b>TRANSMISSION SYSTEM OPERATION</b>
<b>ASSETS</b>	<b>31 Dec 2016</b>
	<b>€1,000</b>
<b>Intangible assets:</b>	
Other intangible assets	5,392
	<b>5,392</b>
<b>Tangible assets</b>	
Land and water areas	15,459
Buildings and structures	4,170

Machinery and equipment	14,512
Transmission lines	1,209
Other property, plant and equipment	118
Prepayments and purchases in progress	59,404
	<b>94,872</b>
<b>TOTAL NON-CURRENT ASSETS</b>	<b>100,264</b>

### Congestion income in grid operations

The congestion income received by a grid owner must be used for the purposes stated in EC Regulation 714/2009, Article 16, Paragraph 6: guaranteeing the actual availability of the allocated capacity, and maintaining or increasing interconnection capacities through network investments. As a consequence of the change in the regulation governing Fingrid's grid pricing, the company will include the congestion income received after 1 January 2016 as accruals in the item other liabilities in the balance sheet. Of the accruals, congestion income will be recognised in the income statement as other operating income when their

corresponding costs, as defined in the regulation, accrue as annual expenses in the income statement. Alternatively, they are entered in the balance sheet against investments, as defined by regulation, to lower the acquisition cost of property, plant and equipment, which lowers the depreciation of the property, plant and equipment in question. The congestion income received before 1 January 2016 was recognised in turnover. The congestion income from 2016 was used for improving and maintaining the cross-border transmission connections, and in part also for the Hirvisuo–Pyhänselkä transmission network investment, which supports the cross-border transmission from northern Sweden.

<b>Congestion income, €1,000</b>	<b>2016</b>
Congestion income on 1 Jan	0
Accumulated congestion income	39,863
Expenses matching congestion income	-6,325
Investments matching congestion income	-33,538
<b>Congestion income on 31 Dec</b>	<b>0</b>

### Countertrade

In terms of the costs arising from countertrade used to safeguard system security in grid operations,

congestion income may be used to offset countertrade costs arising from cross-border transmission connections.

<b>Counter trade, €1,000</b>	<b>2016</b>	<b>2015</b>
Counter-trade between Finland and Sweden	2,531	783
Counter-trade between Finland and Estonia	87	768
Counter-trade between Finland's internal connections	1,242	2,233
<b>Total counter-trade</b>	<b>3,861</b>	<b>3,784</b>

### 36. EMISSION RIGHTS

Fingrid has not been granted free-of-charge emission rights for the emissions trade period 2013–2020. The use of emission rights had no impact on the financial result in 2016.

	<b>2016</b>	<b>2015</b>
Total CO2 emissions tCO2	10,326	6,697

# 8 Signatures for the Annual Review and for the Financial Statements

**Helsinki, 17 February 2017**

**Juhani Järvi**  
Chair

**Juha Majanen**  
Deputy Chairman

**Sanna Syri**

**Esko Torsti**

**Anu Hämäläinen**

**Jukka Ruusunen**  
President & CEO

## **Auditor's notation**

A report on the audit carried out has been submitted today

Helsinki, 17 February 2017

PricewaterhouseCoopers Oy  
Authorised Public Accountants

Jouko Malinen, APA