Long-term work continues under new ownership.
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The Elenia Group’s financial statements
Elenia at your service
Reliable electricity distribution and district heating services

Elenia Group consists of the electricity distribution company Elenia Oy and its wholly-owned subsidiaries Elenia Lämpö Oy, Elenia Palvelut Oy and Elenia Finance Oyj.

**Elenia Oy** distributes electricity to a total of circa 425,000 household, corporate and community customers in approximately one hundred municipalities in the regions of Kanta-Häme, Päijät-Häme, Pirkanmaa, Central Finland, Southern Ostrobothnia and Northern Ostrobothnia. The company is responsible for the construction, maintenance and operation of its electricity distribution networks in cooperation with external contractors, as well as connecting new customers to the network, measuring its customers’ electricity consumption and submitting consumption data to electricity suppliers. Elenia is the second largest among the approximately 80 electricity distribution companies in Finland. The company has circa 70,000 kilometres of electricity networks.

**Elenia Lämpö Oy** generates, distributes and sells district heating in approximately ten municipalities in the regions of Häme, Central Finland, Northern Ostrobothnia and Heinola. In addition, Elenia Lämpö Oy sells and distributes natural gas as well as generates electricity through its combined heat and power plant to be sold on the wholesale electricity market. Elenia Lämpö Oy has nearly 5,000 customers and around 85,000 end users.

**Elenia Palvelut Oy** is a multi-skilled service provider in the energy sector. It provides customer service for electricity distribution, district heating, natural gas and electricity sales businesses. The operations are guided by the service and business objectives of its customers. In cooperation with its customers, Elenia Palvelut Oy is renewing the Finnish energy markets’ customer service offering in response to the changing needs of end customers.

From March 2018 Elenia’s owners are Valtion Eläkerahasto (VER), Allianz Capital Partners (ACP) on behalf of the Allianz Group as well as Macquarie Infrastructure and Real Assets (MIRA). Elenia’s first owners, since 2012, were Ilmarinen Mutual Pension Insurance Company, 3i and GS Infrastructure Partners.
Key figures 2017

ELENIA OY’S CUSTOMERS
425,000

TOTAL UNDERGROUND CABLELING RATE OF THE ELECTRICITY NETWORK
41%

ELENIA LÄMPÖ OY’S CUSTOMERS
5,000
85,000

DIRECT CUSTOMERS
END USERS

ELECTRICITY NETWORK
70,170 km

TOTAL ELECTRICITY DISTRIBUTION VOLUME
6,342 GWh

SALES
Includes heating, electricity and gas sales
1.1 TWh

ELENIA GROUP’S INVESTMENTS, MEUR
Elenia Oy 261.0 (238.4)
Elenia Palvelut Oy 1.3 (1.4)
Elenia Lämpö Oy 76.6 (75.6)

ELENIA GROUP
CUSTOMER
BUSINESS ENVIRONMENT
SECURITY OF SUPPLY
PARTNERSHIPS
RESPONSIBILITY
GOVERNANCE

ELENIA ANNUAL REPORT 2017
4
The early part of 2017 was characterised by the contemplation of the schedule and content of the amendments to the Electricity Market Act. One significant change brought about by the amended Act, which entered into force at the beginning of September, was the right to apply for an extension for the fulfilment of the security of supply criteria, provided there are justified grounds for such an extension. Another key amendment was that the distribution tariff increases are now capped at 15% per year. One topic of debate surrounding the legislative amendments was whether the security of supply requirements stipulated by the Act are too strict. However, the snow load conditions in Eastern Finland in early winter 2018 have once again showed that there are no alternatives to the rapid weatherproofing of electricity networks in our climate.

Elenia’s operations are not affected by the legislative amendments. Our extensive electricity network is in need of renewal, which is why we are moving ahead with building a weatherproof network at a faster rate than the legal requirements for the security of supply. Our long-term business plan enables increased investments and moderate price development.

A RECORD-BREAKING YEAR

In 2017, we achieved the best results in our entire history in multiple areas: weatherproof network investments, financial performance and customer service level. The security of our electricity distribution to customers was 99.98%, an excellent figure for a rural operator and our underground cabling rate exceeded 40% at the end of the year. We also achieved nearly all of our targets for the year in the heating business.

When we updated our strategy in 2016, we clarified the strategy of our service company, Elenia Palvelut Oy, and decided to offer its customer service to other companies as well. We have made great progress in implementing our strategy. In 2017, Elenia Palvelut acquired three new customers: Tampereen Sähkölaitos, Jyväskylän Energia and Auris Kaasunjakelu. Including these customers, we now serve more than 700,000 customers in the supply of electricity, heating, gas and water.

STRONG FOCUS ON IMPROVING THE CUSTOMER EXPERIENCE

We have highlighted the development of the customer experience as a key theme in all areas of our operations, and we have implemented several related development projects aimed at enhancing our operating methods and systems. These efforts have produced significant results. Our customer service indicators showed substantial improvement in 2017.

In October, Elenia was selected as the best electricity distribution brand at the global CHARGE Energy Branding conference in Reykjavik. The award represents a strong recognition of our successful efforts in the area of customer service, and it received widespread international attention. The award took perfectly place at the anniversary of Finland’s 100 years of independence which we celebrated by organising a contest featuring the Finnish national bird, the whooper swan, together with our partner BirdLife Finland.
PURPOSEFUL IMPLEMENTATION OF THE STRATEGY CONTINUES UNDER NEW OWNERSHIP

THE CUSTOMERS’ ROLE IS CHANGING IN THE ENERGY MARKETS

The role of small scale customers in the electricity markets has traditionally been restricted to the opportunity to change their supplier. However, the development of smart grids and small-scale electricity production technologies make it possible for customers to take a more active role. Electrical appliances can be set up to operate when electricity is at its cheapest. Producing electricity locally for one’s own use and selling the excess production has become increasingly commonplace. In 2017, the number of small solar plants saw explosive growth among our customers to more than 1,500 at year’s end.

We are continuing to actively develop our smart grid and we implemented several related projects in 2017. Among other things, we installed next-generation electricity meters for approximately 30,000 of our customers to test a new metering system as part of our service development efforts.

TOWARDS EVEN MORE ECO-FRIENDLY HEATING

In the district heating business, the main theme in 2017 was customers evaluating their heating solutions to a greater extent than before. We acquired many new customers and worked with them to develop solutions such as solar heating, two-way heating supply as well as a comprehensive solution that also includes cooling. District heating remains the most popular form of heating in Finland by a clear margin: it accounts for nearly half of all heating.

A growing share of district heating is generated by domestic wood-based fuels. These renewable energy sources have already grown to account for 70% of our heating production. EU policies announced in late 2017 categorise wood as a sustainable alternative, which supports our strategic choice of producing eco-friendly heating energy to our customers.

NEW OWNERS ARE COMMITTED TO OUR STRATEGY AND OBJECTIVES

For several years now, our work has been guided by our goal-oriented long-term strategy, according to which we have developed our comprehensive service by improving the quality of electricity distribution, provided increasingly high-quality service through various channels, and made a strong commitment to social responsibility. My view is that the new owners, following the agreement signed in December 2017, were already committed to our strategy and objectives even before submitting their bid. This will lead to even greater certainty in the achievement of our customer service targets and the development of the industry as a whole.

The year 2017 was a success for us in many ways, and we are moving forward with positive future prospects. For this, I would like to thank our personnel, customers, partners and owners.

Tapani Liuhala
CEO
Significant events in 2017

Q1

- Partnership agreement for recycling metal and cables
- New regional partners for Elenia Oy on 1 February 2017
- 50% of customers connected to an electricity network that fulfils the quality requirements stipulated by the Electricity Market Act
- The year's only major power disruption, the Sauli storm on 27 March 2017
- Elenia Palvelut Oy service partnership with Jyväskylän Energia Oy

Q2

- Large-scale joint construction project to build telecommunications and electricity networks in Pirkanmaa
- Pilot project in next-generation smart electricity metering
- Elenia Lämpö's first, and Finland's largest, solar heating system at the service centre in Hämeenlinna
- Electricity distribution prices increased by an average of 6% on 1 May 2017
- Elenia was involved in nine articles published at the CIRED conference on 12-15 June 2017 in Glasgow, Scotland
- Elenia Palvelut Oy service partnerships with Tampereen Sähköitalos Oy and Auris Kaasunjakelu Oy

Q3

- Amendments to the Electricity Market Act, 15% ceiling on tariff increases effective from 1 September 2017
- Elenia chosen as Best Distribution Brand at the global CHARGE Awards on 9-10 October 2017 in Reykjavik, Iceland
- Multi-year partnership agreements for the construction of the Elenia Weatherproof network
- Elenia Palvelut Oy service partnership with Jyväskylän Energia Oy

Q4

- The underground cabling rate of Elenia's network exceeded 40% on 31 October 2017
- Elenia Lämpö's heat production and network remote control system was completed
- An agreement on the acquisition of Elenia Group was signed on 13 December 2017
- Elenia Lämpö supplied an indoor swimming pool in Hämeenlinna with a two-way district heating system that makes it possible to buy back waste heat into the district heating network.
- SAIDI for the year was 94 minutes, under 100 minutes for the first time in Elenia's entire history
- Elenia Weatherproof service agreement for installation materials and logistics on 1 January 2018

Elenia Oy safety campaign for personnel and partners
ACHIEVING GOALS THROUGH INTEGRITY, COURAGE AND COOPERATION

Elenia’s Code of Conduct is the foundation for the Group’s way of working. We promote courage and continuous development among our personnel. We want to be an honest and reliable partner for our stakeholders and we operate responsibly. Our Code of Conduct guides our day-to-day work throughout Elenia Group. Our personnel, Board of Directors and partners are committed to compliance with Elenia’s Code of Conduct.

SHARED VALUES AS THE FOUNDATION OF OUR WORK

Our core values are the foundation of our work and they describe the operating culture we foster at Elenia. Through our values, we create consistent operating methods for our work with customers, partners and other stakeholders.

CLOSE TO THE CUSTOMER

Customers fire our working community with enthusiasm to seek new ways of providing a service and developing our operations with a bold approach and a focus on results. We keep our promises.

ACCOUNTABLE PARTNER

We demand high levels of responsibility from ourselves and our partners. We actively care about our own and our shared well-being and safety at work.

ACHIEVING TOGETHER

We forge lasting relationships with local communities, resulting in trust and acceptance of our operations. We share our professional expertise with the working community at large.

COURAGE TO RENEW

The courage to embrace change is what leads to progress. This demands the right attitude. Based on our knowledge, skills and experience we lead Elenia’s development and that of our entire sector.

Values, vision, mission and strategy
VALUES, VISION, MISSION AND STRATEGY

Elenia Oy’s Vision, Mission and Strategy

VISON

Service and weatherproof network

MISSION

Electrifying life.

STARTERS

Clear and guiding strategy
Customer expectations and feedback
Influencing the business environment and society
Good management and self-driven professionals
An attitude based on values and a desire for renewal

ENABLERS

Sustainable network development
Smart grid and technology platform for new energy services
High-quality, efficient and networked processes and acquisitions
Integrated and transparent guidelines for the organisation and partners
Effective stakeholder cooperation
Availability of financing for investments and restructuring measures

SOURCES OF ADDED VALUE

Security of supply and quality
New products and services in electricity distribution business
Implementation of investment and maintenance programmes
Cost and investment efficiency

RESULTS

Satisfied customers, stakeholders and society at large
Elenia’s strong forerunner brand
Achievement of key performance indicators according to the Elenia model
Growth of business and EBITDA through corporate mergers and acquisitions
Elenia Lämpö Oy’s Vision and Strategy

**VISION**

Elenia Lämpö is a frontrunner in providing sustainable, energy-efficient and customer-friendly heating solutions in its area of operation.

**STRATEGIC OBJECTIVES OF THE HEATING BUSINESS**

- **INTERNAL EFFICIENCY AND PROFITABILITY**
  - Improving the operating efficiency of the production chain
  - Leveraging new technologies and automation

- **CUSTOMER SOLUTIONS AND FOCUS**
  - Developing the customer offering to meet market and customer needs
  - Building a harmonised service offering and comprehensively adopting a corresponding approach to operations

- **COMPETENCE DEVELOPMENT**
  - Increasing business insight and competence across all of the company’s operations
  - Strengthening the competencies required for developing operating activities and customer solutions
VALUES, VISION, MISSION AND STRATEGY

Elenia Palvelut Oy’s strategy

STARTERS

- Vision-based service development
- Success strategy based on identified customer needs
- Leadership and management supporting growth
- Operational performance and development are driven by measured feedback and rewarding system
- An attitude based on values and a desire for renewal

ENABLERS

- Innovative use of digitalisation and robotics
- Frontrunner’s service attitude, processes and system
- Partner network that promotes competitiveness
- Know-how supporting the development of service activities
- An operating model that provides a good customer experience, high quality and efficiency

SOURCES OF ADDED VALUE

- New, competitive products and services
- Successful implementation of mergers and acquisitions
- Service channels and partners
- Acquisition of new customers
- Efficiency and quality of operations

OUTCOMES

- Business growth
- Nationwide knowledge of the Elenia brand
- Customer and stakeholder satisfaction
- Financial performance in accordance with the objectives
Elenia Oy’s management system

Systematic management and operations control in order to achieve the targets

Asset Management Systems ISO 55001 and PAS 55
Occupational Health and Safety Management System OHSAS 18001
Environmental Management System ISO 14001:2015
Elenia’s electricity network and customers

<table>
<thead>
<tr>
<th>Region</th>
<th>Network/km</th>
<th>Customers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kanta-Häme</td>
<td>11,190</td>
<td>86,500</td>
</tr>
<tr>
<td>Päijät-Häme</td>
<td>6,710</td>
<td>37,000</td>
</tr>
<tr>
<td>Pirkanmaa</td>
<td>17,630</td>
<td>120,000</td>
</tr>
<tr>
<td>Keski-Suomi</td>
<td>18,090</td>
<td>94,000</td>
</tr>
<tr>
<td>Etelä-Pohjanmaa</td>
<td>5,780</td>
<td>34,500</td>
</tr>
<tr>
<td>Pohjois-Pohjanmaa</td>
<td>10,770</td>
<td>53,000</td>
</tr>
</tbody>
</table>
CUSTOMER SERVICE AND CUSTOMER EXPERIENCE

Significant new customers acquired for Elenia Palvelut Oy

Elenia Palvelut Oy is a versatile service provider in the energy sector. It provides customer service for the electricity distribution, district heating, natural gas, electricity sales and water utility businesses. Elenia Palvelut had a year of robust growth in 2017, which reflects strong confidence in our capacity to provide reliable service for our customer companies.

In addition to providing customer service for Elenia Group’s own companies, Elenia Palvelut began customer service production in 2017 for Jyväskylän Energia Oy and Tampereen Sähkölaitos Oy, followed by Auris Kaasunjakelu Oy in early 2018.

At Elenia Palvelut, our operations are guided by the service and business objectives of our customer companies. In cooperation with our customers, we are renewing the Finnish energy markets’ services and customer service in response to changing customer needs. Elenia Palvelut employs around 100 energy sector professionals with extensive expertise in energy industry services and in the continued need for service renewal.

Elenia’s customer service handles approximately 4.5 million customer encounters each year in a multichannel service environment. In 2017, we continued to work on improving the customer experience and develop our service quality. The most important development areas are to increase and maintain personnel competence and to effectively utilise customer feedback in service improvement. We take advantage of software robotics in process development, which increases the fluency of service provision for our customer advisors and allows them to focus on direct interaction with customers.

Our investments in continuously improving the customer experience produced good results, with the promoter score for Elenia’s customer service continued to increase at a steady rate. There was still some monthly variation in the score, although to a lesser extent than in 2016.

The main objective of Elenia Palvelut is to deliver a positive and reliable customer service experience. We also aim to continuously improve the customer experience and to make it convenient for customers to use the services. We must ensure a high service level even under exceptional circumstances, such as during power outages caused by storms, which is why we have invested in making our services scalable and digital. In spite of services becoming more digital, customers increasingly value friendly, professionally competent and personal service.

Elenia Palvelut sees itself as a future partner for the entire energy sector by delivering solutions based on modern technology and expert services to various energy and infrastructure operators in cooperation with its extensive partner network.
Our goal in 2017 was to continue the development of our strong digital service offering based on our customers’ wishes and feedback. We introduced new features in our Elenia Aina web and mobile services, made the processing of forms more digital and utilised software robotics to ensure a smoother customer experience.

For the Elenia Aina mobile service, we added a convenient option for monitoring electricity and heating consumption not only in a graphical view, but also in table format. On the home page of the Elenia Aina service, our customers can quickly see their forecast for the current month, and weekly consumption data is only one tap away. The service enables users to monitor energy consumption as well as energy production.

We redesigned the main page and content of our website, www.elenia.fi, to make it more convenient for our customers to use our digital services.

**SMOOTHER SERVICE THROUGH SOFTWARE ROBOTICS**

Our customers now submit the majority of the necessary signatures digitally. Recognising the strong growth in the microgeneration of electricity, we made it easier to connect microgeneration systems to the electricity network by implementing digital form processing for our customers. Our customers can submit the necessary information via our online service, and automated processes ensure that the data is processed without delay. The use of software robotics enables quick data entry into the system and supports a seamless process.

We also utilise software robotics extensively in our other services. Software robotics makes our customers’ service experience smoother by allowing us to automate routine background tasks. Our software robot processes, for example, orders for cable location and mark-out services as well as service actions related to relocation.

**E-SERVICES WIDELY USED**

Our customers are quick to adopt our new e-services. More than half of the requests for quotations for electricity connections from our customers are now sent via our digital price calculator. It provides convenient around-the-clock access to pricing information and an estimated delivery date for a new electricity connection for a detached house or summer cottage as well as upgrades to the existing connections. Notifications of planned outages due to maintenance are now received as text messages by two out of three customers. The customers are sent a reminder regarding the maintenance work on the electricity network 30 minutes before the start of the outage as well as cancellation messages when planned outages are cancelled.
Elenia Oy had 425,000 customers at the end of 2017. This represents an increase of approximately 0.9% from the previous year. The rate of growth in the number of customers was on par with 2016. The number of new electricity connections remained low in Elenia’s electricity network area, in spite of the year being a positive one with respect to the general Finnish economy and the level of new construction activity.

The electricity distribution volume saw moderate growth compared to 2016 (approximately +0.2%) and the total volume for the year was 6,342GWh. The highest growth in electricity consumption was seen at the 110kV voltage level, with a year-on-year increase of approximately 5.9%. At other voltage levels, electricity consumption was on par with 2016.

Residential customers are Elenia Oy’s largest customer segment, representing 85% of all customers and 41% of total distributed energy. The second largest customer segment is agriculture, services and construction, constituting 13% of all customers and 29% of total distributed energy. Industrial customers represent 1% of all customers but 24% of total distributed energy.

Elenia Lämpö Oy has around 5,000 customers, some 2,000 of which are household customers. The company has approximately 85,000 end users living in 16 district heating distribution areas.

Elenia Lämpö’s largest customer segment is residential properties, which represent around 40% of the total sales of heat energy. Corporate customers represent roughly 28% and municipal and state properties approximately 28% of the total sales. In addition to district heating operations, Elenia Lämpö Oy distributes natural gas in six urban areas where industrial customers constitute the largest segment.

We were successful in acquiring new customers during the year. Many customers opted for district heating, which reflects the competitiveness of district heating compared to other options and its limited environmental impact as well as our ability to meet customers’ needs with our services.
In 2017, Elenia Lämpö took steps towards becoming an energy company with a diverse range of services. Active customer work and deeper customer insight supported the development and market launch of new customer solutions.

We made new moves in 2017 particularly to support our customers’ energy efficiency. Finland’s largest solar heating system was built at the Voutila service centre in Hämeenlinna, where we also operate as a service partner in the system’s maintenance. Another significant project carried out in cooperation with the City of Hämeenlinna was related to the new energy solutions of a renovated indoor swimming pool. A substantial number of solar thermal collectors have been installed at the indoor swimming pool. When the facility is closed, the heat generated by the thermal collectors is not used. We buy this surplus heat back into the district heating network. The project is one of the first of its kind in Finland.

We also strengthened our role as a consulting energy partner. We signed our first remote control and maintenance agreement with a housing company in Hämeenlinna. The agreement is in line with our aim of providing comprehensive and consulting-oriented services to our customers, ensuring that their heating system functions effectively and energy is used sensibly.

We also offer a new comprehensive service to housing companies, allowing them to replace and upgrade their district heating equipment quickly and conveniently under a turnkey arrangement. The package also includes financing.

We have established a virtual development team to support the development of new service products. Consisting of members representing various roles in the company, the team focuses on taking development projects towards concrete implementation. Two new pilot projects started in 2017. Lämpölutsi Älykäs is a service that uses artificial intelligence to optimise heating. The aim of the service is to produce proactive heating that balances out peaks in consumption, ensuring pleasant and even heating. The second development project is related to a residential cooling solution. The first pilot site is the new Asemanranta residential area in Hämeenlinna, where Elenia Lämpö is the heating partner.

Activities under the energy adviser agreement we signed in 2016 with two day-care centres in Hämeenlinna began in earnest last year. The energy adviser activities are aimed at promoting energy and environmental awareness among children in day care. Solar panels installed on the roofs of the day-care centres generate approximately 2,000 kWh of energy per year. Easy-to-read displays on the premises allow the children and adults in the day-care centres to monitor energy production on a daily basis. We also organised two energy theme weeks with the day-care centres, one of which coincided with the national Energy Saving Week in the autumn.
ELECTRICITY DISTRIBUTION AND HEATING PRICING 2017

Aiming at maintaining moderate and stable development

ELECTRICITY DISTRIBUTION PRICING

As the decades-old overhead lines must be replaced, our goal is to renew and weatherproof our electricity distribution. Our solution for this is to install an underground cable network that will serve homes, businesses, and society for decades to come.

The renewal of the electricity network is a long-term project. In 2017, we built more than 3,000 kilometres of new underground cable networks. Our target is to achieve a 75% underground cabling rate by 2028.

So far, Elenia’s electricity network renewal has brought well over 6,000 person-years of work to contractors and other partners. Construction work, continuing well into the next decade, continuously provides employment to energy sector professionals in Elenia’s network area in Häme, Pirkanmaa, Central Finland, Southern Ostrobothnia and Northern Ostrobothnia.

In addition to network investments, our goal is to maintain a moderate and stable development in electricity distribution prices. We increased the electricity distribution tariffs at the beginning of May 2017 to enable the investments necessary for the renewal of the electricity network. The increase in Elenia’s electricity distribution tariffs was, on average, 6% with taxes and 9.4% excluding taxes.

HEATING PRICING

We also maintained a stable approach in heating pricing, with the moderate price increase implemented in the summer being in line with the general economy. We delivered more value for money in heating by developing tools for monitoring heating consumption, thereby improving the capacity to respond to changes in consumption. We continued to carry out district heating substation reviews, which had already proved useful in the previous year. This enabled us to help many of our customers optimise their heating.

TAXES IN THE ELECTRICITY TRANSMISSION PRICE

<table>
<thead>
<tr>
<th>Block of Flats</th>
<th>Terraced/Detached House</th>
<th>Detached House</th>
</tr>
</thead>
<tbody>
<tr>
<td>Annual Consumption</td>
<td>2,000 kWh</td>
<td>5,000 kWh</td>
</tr>
<tr>
<td>Electricity tax and value added tax (37%)</td>
<td>Electricity transmission (63%)</td>
<td>Electricity transmission (50%)</td>
</tr>
<tr>
<td>2,793.72 cent/kWh incl. VAT 24%</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The electricity transmission price includes the value added tax, 24%, and the electricity tax, which consists of excise and the emergency supply fee. Tax category I electricity tax 2.79372 cent/kWh, incl. VAT 24%.
REQUIREMENTS STIPULATED BY THE ELECTRICITY MARKET ACT CONCERNING THE RELIABILITY OF ELECTRICITY DISTRIBUTION.

Power outages caused by storms or snow loads shall not exceed 6 hours in zoned areas and 36 hours in other areas, as follows:

- 50% of customers by the end of 2019
- 75% of customers by the end of 2023
- 100% of customers by the end of 2028
GENERAL ECONOMIC DEVELOPMENT

Favourable investment climate continued in 2017

The Finnish economy developed favourably in 2017 for the third consecutive year. GDP growth is predicted to be approximately two per cent in 2018 and 2019. Growth was initially driven by strong consumer demand, and later by exports. However, export growth is predicted to slow down to a level of growth in global trade. Wages are predicted to increase in 2018–2019, but productivity is set to rise even faster, which will improve the competitiveness of Finnish production.

The number of unemployed continued to decline moderately in 2017, with the unemployment rate at 8.4% at the end of the year (8.7% at the end of 2016). With the favourable economic climate boosting employment, unemployment is expected to decrease in 2018–2019. For the Finnish economy, the requirement for flexibility in the labour market will continue to pose a challenge, which will also call for structural reforms. However, the Competitiveness Pact, championed by the Government to make wages more competitive, proved that a consensus can be reached and ensured moderate development in companies’ personnel expenses.

The rise in consumer prices slowed from 1.1% at the end of 2016 to 0.5% in December 2017. Inflation is clearly below the eurozone average, which was 1.4% in December 2017 (1.1% at the end of 2016). Inflation is slightly increased by energy prices. The average price of electricity (Nordpool, Finnish regional price) rose from EUR 32.45 last year to EUR 33.19 per megawatt-hour.

The development of interest rates was mixed in 2017. Short-term market rates continued to decline: the 12-month Euribor fell from -0.1% at the start of the year to -0.2%, although the 1-month Euribor, which is Elenia’s reference rate for bank financing, remained unchanged at approximately -0.4% throughout the year. Short-term interest rates are expected to remain negative in the near future. Long-term interest rates, on the other hand, rose almost throughout the year in 2017 and ended the year at a higher level compared to year’s end 2016. For example, the 10-year interest swap rate was 0.7% at the end of 2016, compared to 0.9% at the end of 2017. Long-term interest rates increased by approximately 0.2% in 2017 across the yield curve. The moderate rise in long-term interest rates has continued in the early part of 2018.

Elenia has taken advantage of low interest rates to implement our investment programme cost-effectively. Accordingly, Elenia continued to make significant investments in 2017, supported by the low interest rate level. Elenia issued two senior secured notes in April 2017: an 11-year EUR 78.5 million senior secured note with a coupon of 2%, and a 15-year EUR 60 million senior secured note with a coupon of 2.4%. In addition, we issued a 17-year EUR 75 million fixed rate bond in September 2017 with a coupon of 2.6%. The 2% coupon of the 11-year senior secured note issued through a private placement to institutional investors in North America is the lowest fixed-rate coupon in Elenia’s history. We expect the investment climate and the availability of long-term financing to remain favourable not only in 2018, but also in the next few years.
Elenia’s future challenges

- **SOCIETAL** and customer demands in the energy sector will grow
  - Challenges arising from international legislation
  - Increasing demands in supervision of interests
  - The changing role of municipality ownership

- **THE CUSTOMER’S** position will strengthen in the energy market
  - Customer needs and expectations will be a catalyst for development
  - The importance of customer experience will increase the value of Elenia
  - Stronger integration between customers and Elenia’s own organisation
  - Consumer customers will also become production customers
  - Trust and reputation in Elenia’s services must be kept at top level

- **SERVICE DEVELOPMENT AND INTEGRATION** will be emphasised
  - Strategy and changes in the business environment will cause visible changes in demands
  - Development of competency will have to evolve to a new level

- **ELENIA’S ROLE AS A FRONTRUNNER** requires **CONTINUOUS RENEWAL**

- **DIGITALISATION** is an enabler which requires immediate investments
  - Cyber security is vital for all business operations

- **THE CHANGING FORMS OF COOPERATION**, as well as the breadth and depth thereof
  - The success of partner selection and the steering of partners will transform into critical success factors
  - Contacts and open networking will enable growth
  - Network capital will be a significant competence

- **TRUST AND REPUTATION IN ELENIA’S SERVICES** must be kept at top level
THE CLEAN ENERGY PACKAGE IS MOVING FORWARD IN THE EU

Work continued in 2017 on the renewable energy winter package published by the European Commission in late 2016. The package has three primary goals: improving energy efficiency, European leadership in renewable energy and ensuring fair and equal treatment of consumers.

From an electricity distribution company’s perspective, the package proposes principles related to, for example the roles of electricity distribution companies in the markets, electricity storage, the implementation of charging infrastructure for electric vehicles, energy communities, as well as the technical requirements for smart electricity meters and the timetable for their deployment. It has also been proposed that electricity distribution companies establish an EU-level organisation to represent them in interacting with the European Commission.

During Estonia’s Presidency of the Council of the European Union, focus was on renewable energy solutions and developing the EU market. Various stakeholders have been extensively heard during the process. Elenia has participated in the legislative process both as a company and through its stakeholders. The content of the package was developed in 2017 to better support the operations of electricity distribution companies. The first vote on the amendments will take place in the European Parliament in spring 2018. The winter package will clarify the role of electricity distribution companies in the management of energy systems and, through the requirements it sets, it will also affect the technology used in networks.

SMART GRID WORKING GROUP IS CONSIDERING FINLAND’S ENERGY TECHNOLOGY SOLUTIONS

The electricity market-related objectives outlined in Finland’s National Energy and Climate Strategy, published in 2016, are to develop an effective European electricity market, promote joint Nordic electricity markets and achieve the targets related to the security of supply of distribution networks. To support the implementation of the strategy, the Ministry of Economic Affairs and Employment established a smart grid working group to develop a common view of the smart grids of the future and propose concrete measures on how smart grids can improve customer participation in the electricity market and promote security of supply. Elenia has been actively involved in this preparatory work as a permanent expert member of the working group as well as through its stakeholders.

In an interim report published in autumn 2017, the smart grid working group presented its views on issues such as switching to market-based demand flexibility, using electricity storage as part of a flexible electricity system, the principles governing the implementation of energy communities, solutions for enabling new service offerings in the electricity markets and the development of electricity taxation. The working group’s views support Elenia’s perspective on the role of electricity distribution companies in the electricity markets as well as the development of the markets in line with customer needs. In 2018, the working group is set to focus on the use of electricity meters as part of the smart grid, synergies between electricity and heating as well as the retail market model. The group will also continue to put the finishing touches to the previous themes it has worked on. The working group will publish its final report in autumn 2018.

AMENDMENTS TO THE NATURAL GAS MARKET ACT

In autumn 2017, the Finnish Parliament approved legislative proposals for the new Natural Gas Market Act and the Act on Unbundling the Activities of the Natural Gas Transmission Network Operator. The Natural Gas Market Act entered into force at the beginning of 2018. The main goal of the new legislation is to open up the wholesale and retail natural gas markets to competition from the beginning of 2020.
The fourth regulatory period of the electricity network business, 2016–2019, reached its halfway point at the end of 2017. The regulation methods applied are the same for the fourth regulatory period, 2016–2019, and the fifth regulatory period, 2020–2023. The regulation methods encourage electricity network companies to improve the security of supply of electricity networks in line with the targets stipulated by the Electricity Market Act, and they guide electricity network companies to seek efficient and smart solutions that enable the creation of an electricity marketplace. The regulation methods ensure continuity in relation to the methods applied in previous regulatory periods and these reinforce Elenia’s view of secure electricity distribution being essential for customers and society.

CUSTOMERS BENEFIT FROM ELECTRICITY NETWORKS WITH A HIGH SECURITY OF SUPPLY
The Finnish Parliament approved the Government’s proposal on amendments to the Electricity Market Act in summer 2017. The Act entered into force in September 2017. Among the amendments to the Electricity Market Act was a provision restricting increases in electricity transmission and distribution fees to at most 15% in any given 12-month period. The amendments also saw the monitoring of contingency plans being assigned to the Energy Authority. The security of supply targets stipulated by the Electricity Market Act were not amended, although the requirements related to extensions to the schedule of implementing the relevant measures were adjusted slightly. The changes have no impact on Elenia’s long-term plans.

Since 2009, Elenia has worked on improving the security of supply of the electricity network by replacing the ageing overhead line network with weatherproof underground cabling and introducing new automation technology to the electricity network. We are committed to achieving the security of supply targets specified by the Electricity Market Act on schedule, by the end of 2028, for the benefit of our customers and society at large.
The key challenge faced by the Finnish electricity market in the future is ensuring security of supply with regard to electricity generation as well as electricity distribution networks. The main objective is to build a smart energy system that meets the requirements of security of supply. The growth of renewable energy production and the concurrent downscaling of traditional electricity production creates the need for more flexibility in electricity consumption. A smart energy system makes electricity available whenever it is needed, and implements this required level of consumption flexibility without disrupting the operations of customers and society.

For many years now, Elenia has engaged in the determined development of a smart grid that creates the platform for the electricity market of the future. We took further steps on this path in 2017. We started a pilot project to build a next-generation smart metering system. The new system enables more real-time consumption control, which we can later offer to users such as virtual power plant operators in the demand flexibility markets. These development efforts will continue in 2018.

In the future, the smart grid can promote the expansion of the commercial demand flexibility market by providing network-based load control for use by the competitive markets. This makes it possible to provide a growing number of retail customers with access to the demand flexibility market.

The smart grid working group established by the Ministry of Economic Affairs and Employment in 2016 published an interim report in October 2017, with views that are in line with Elenia’s perspective on future Finnish electricity markets and the role of the smart grid.
The electricity markets are becoming smarter

that electricity networks will play in these markets. Elenia is represented in the working group and furthermore, we are also actively developing our own smart grid functionality to satisfy the needs of customers and society.

The volume of electricity produced from solar power continued to see strong growth in Elenia's network area in 2017. This trend is expected to continue in 2018. The use of solar energy primarily involves private customers whose detached houses and summer cottages are installed with solar power systems. Solar power systems are also attracting interest among commercial operators, and it is likely that larger solar plants and solar farms will be built in Finland and in Elenia's network area in the coming years.

The joint Nordic Balance Settlement model of transmission system operators in the Nordic countries was successfully introduced in May 2017 after several years of development. Progress was also made in the Finnish transmission system operator Fingrid's national datahub project. We are closely involved in the project along with other companies and authorities in the electricity markets.

In the next few years, important themes in the development of the electricity markets will include not only renewable energy and demand flexibility markets but also the growing use of electric vehicles. The share of electric vehicles remains low for the time being, although this will change in the coming years. Smart grids create new opportunities related to the charging of electric cars and the development of market models. Elenia will contribute to these developments.
A more diverse customer experience in heating services

The evolution of the heating market presents new opportunities to industry operators and customers alike. Growing service business and digitalisation are creating new solutions and jobs in the energy sector. At the same time, industry integration is increasing as traditional heating companies engage in more cooperation with new operators.

The diversification of services supports the renewal of the industry while also presenting challenges to industry operators and customers. Comparing new alternatives can be challenging, and it may be complicated to determine whether different solutions are sensible and useful for a given property. With the industry developing at the rapid rate seen currently, the providers of energy solutions must focus on clear communication as well as consulting-oriented and open interaction with customers. Service culture is becoming increasingly significant in the industry, and Elenia Lämpö is investing resources accordingly. In the renewal of our operations, we pay special attention to ensuring that customers understand what solutions and implementation methods serve them the best.

Key trends in the technological development of the heating market include the growing popularity of hybrid solutions and cooling solutions. Combinations of multiple heat sources are becoming more common, which requires operators to develop new competencies and make them available to customers. Cooling is increasingly sought for by both new and old properties. The customer experience is the sum of many factors, and improving it is a challenge we are determined to respond to.

GROWTH IN HYBRID SOLUTIONS AND COOLING SOLUTIONS IN ELENIA LÄMPÖ’S BUSINESS.
SECURITY OF SUPPLY

NETWORK INVESTMENTS IN 2017
135.8 MEUR

NEW UNDERGROUND CABLE NETWORK
3,045 km

0.4 kV LOW-VOLTAGE NETWORK
1,657 km

20 kV MEDIUM-VOLTAGE NETWORK
1,388 km

NEW SECONDARY SUBSTATIONS
1,347 pcs

UNDERGROUND CABLE RATE OF THE NETWORK AS A WHOLE
41.1%

UNDERGROUND CABLE RATE OF THE MEDIUM-VOLTAGE NETWORK
32.3%

UNDERGROUND CABLE RATE OF THE LOW-VOLTAGE NETWORK
47.5%

RATE OF RENEWABLE FUELS USED IN DISTRICT HEATING PRODUCTION
68%
In 2017, Elenia continued its electricity network replacement investments and the underground cabling of the distribution network under the Elenia Weatherproof concept in accordance with its electricity network development plan, which extends to 2028.

In our operations, we have committed to the quality requirements stipulated by the Electricity Market Act, according to which, following the transition period until the end of 2028, outages caused by storms or snow loads may not last more than six hours in zoned areas and more than 36 hours in other areas. Our aim is to increase our electricity network’s underground cabling rate to 75% by 2028.

Elenia made a decision in 2009 to build its distribution network using underground cables. In addition to excellent security of supply, underground cabling provides benefits related to safety and the environment. Underground cabling is a responsible solution for modernising the ageing overhead line network to meet the future needs of the society.

In 2017, Elenia Oy invested a total of EUR 135.8 million in the construction and development of its electricity network. The company built a total of 3,045 km of underground cable network during the year, of which 1,388 km was medium-voltage underground cable network and 1,657 km was low-voltage underground cable network. At the same time, Elenia built 1,347 kiosk-style secondary substations to replace the old pole-mounted transformers of the overhead line network.

We are also continuously developing automation solutions for the underground cable distribution network in cooperation with our partners.
partners. In practice, approximately one in four new kiosk-style secondary substations was equipped with remote-controlled switching equipment in 2017. We also installed medium-voltage network fault indication equipment connected to the remote-control system in the kiosk-style secondary substations. Combined with modern telecommunications and the integrated control system, this equipment makes locating and isolating faults even faster than before.

At the end of 2017, the underground cabling rate of Elenia’s entire network was 41.1%. The underground cabling rate of the 20kV medium-voltage network was 32.3% and that of the 0.4kV low-voltage network was 47.5%.

According to the milestones of the Electricity Market Act, 50% of customers must be within the scope of the quality requirements by the end of 2019 and 75% by the end of 2023. At the end of 2017, more than 55% of Elenia Networks’ customers were within the scope of the quality requirements stipulated by the Electricity Market Act.

As in previous years, investments made in security of supply in 2017 were particularly targeted at densely populated areas, which are home to large numbers of customers as well as services and infrastructure that are significant to the functioning of society. In densely populated areas, nearly 65% of customers were within the scope of the six-hour quality requirement at the end of 2017. In sparsely populated areas, nearly 42% of customers were within the scope of the 36-hour quality requirement at the end of 2017.

Elenia’s largest-ever joint construction project began in Pälkäne municipality in 2017. This major investment is carried out in cooperation with Pälkäen Valokuitu Oy. The aim is to build approximately 500 kilometres of electricity network in 2017–2019. Open cooperation and the timely reconciliation of plans has enabled the optimisation of joint construction, with the majority of the electricity network being built on the same route as the fibre-optic network.
We continued to develop the electricity network responsibly to fulfil future needs

In addition to investing in security of supply, we take proactive measures to ensure the regulatory compliance of the electricity network as well as the network’s safety and environmental impact in accordance with the principles of sustainable development.

As part of our underground cabling strategy, we aim to promote efficient placement and permit practices for electrical equipment and cabling in cooperation with the Finnish Energy as well as other industry participants, public authorities and municipalities. We continued this close cooperation with positive results in 2017.

We have also continued to promote joint construction with other infrastructure developers. For example, we carried out several joint construction projects in 2017 in which fibre-optic connections were installed for telecommunications operators in conjunction with the installation of underground cables. Joint construction benefits all of the parties involved, including customers.

As an electricity network company, we deployed a new Supervisory Control And Data Acquisition System, SCADA, at the turn of the year 2016–2017. We also continued the successful ongoing development and improvement of other operational information systems in cooperation with our partners. For example, we deployed the Trimble UTG mobile application, which makes up-to-date network data available to our partners at network construction sites as well as in electricity network maintenance and fault repair operations.

Pursuant to the Electricity Market Act, quality requirements will apply to 50% of customers by the end of 2019, 75% of customers by the end of 2023 and 100% of customers by the end of 2028.
With efficient maintenance management in cooperation with its extensive partner network, Elenia proactively ensures the safety and functionality of the electricity networks. Our maintenance programme sets out the entire inspection, clearance and maintenance activities of our network.

In 2017, we reviewed the results achieved by our maintenance programme and revised our electricity network maintenance management strategy to better respond to future requirements related to network asset management.

**DEVELOPING MAINTENANCE MANAGEMENT OF THE UNDERGROUND CABLE NETWORK**
Operating models have been developed in a research project in cooperation with universities and other industry operators for measuring the condition of the underground cable network. We have also developed the maintenance of telecommunications and automation to improve efficiency and quality.

**SYSTEMATIC CLEARANCE OF ELECTRICITY NETWORKS**
Each year, we manage forest stock along approximately 5,000 kilometres of line corridors in order to ensure the security of electricity distribution in our overhead lines. We carry out systematic clearance on the high-voltage distribution network at intervals of approximately six years and we keep it clear of trees by felling adjacent trees and trimming the tops of trees.

Clearance work on the medium-voltage network is carried out on a needs-driven basis at intervals of 4-5 years either in the field, using multi-function machinery or from helicopters. In the low-voltage network, clearance work is carried out at intervals of eight years.
When managing trees, we utilise aerial imagery and clearing analyses based on laser-scanned data. The monitoring of clearance quality has been developed with the use of satellite-based data. Our electricity network clearance activities can be followed on our website.

**RESPONSIBLE ONGOING INSPECTION OF THE ELECTRICITY NETWORK**

We carry out inspections on the electricity network all year round. Our substations are inspected four times per year and we maintain substation components regularly in accordance with our maintenance programme. In 2017, we inspected low-voltage networks in the field over a distance of 2,000 kilometres along with more than 5,000 underground cable network sites. Helicopter inspections of the medium-voltage network are performed in the summer. We carry out photography and laser scanning of the high-voltage distribution network in its entirety at four-year intervals and a quarter of our medium-voltage network each year.

Regular inspections enable us to allocate maintenance activities in a timely manner in different sections of the electricity network. This ensures the efficient and high-quality maintenance of our network.

**THE MANAGEMENT OF FORESTS ADJACENT TO DISTRIBUTION LINES PREVENTS OUTAGES**

In 2017, we managed forests adjacent to the medium-voltage network in cooperation with our partners along a total distance of about 800 kilometres. An adjacent forest refers to trees outside the approximately 10-metre wide line corridor. Storms or heavy snow loads may result in trees outside the line corridors falling or bending over onto the power lines. We use tree clearance outside line corridors to reduce power outages caused by trees falling on distribution lines, thereby improving the security of supply of our overhead line network. We will continue the tree clearance outside line corridors in 2018–2020. Excellent cooperation with forest owners and forest management associations ensures that the work is performed efficiently.
The amount of renewable energy connected to Elenia’s electricity network continued to see significant growth in 2017.

Four new wind farms were connected to the network, representing 112MW in capacity. At the end of 2017, there were 19 wind farms of various sizes connected to Elenia’s network, with a total connection capacity of 476MW. One fifth of all wind power capacity built in Finland is connected to Elenia’s network. In early 2018, there are five more wind farm connections that are awaiting deployment, with a combined capacity of 243MW.

Wind power is expected to see continued strong growth in Elenia’s network area in the coming years. The reform of the Act on Production Subsidy for Electricity Produced from Renewable Energy Sources and the new renewable energy subsidy system are likely to lead to the start of several wind power projects in 2018, which will result in many new wind farms being commissioned in years to come. A record-breaking number of 900 new solar power systems were connected to Elenia’s network in 2017, representing more than a twofold increase from the previous year. At the end of 2017, there were 1,500 solar power systems connected to Elenia’s network. The rapid spread of solar power is continuing in Finland, and we expect the total number of network connections to more than double in Elenia’s network area in 2018.

RENEWABLE ENERGY INTO THE ELECTRICITY NETWORK

More wind and solar power into the electricity network

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**0.4kV SOLAR PANELS CONNECTED TO THE NETWORK ANNUALLY, PCS**

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**0.4kV SOLAR PANELS CONNECTED TO THE NETWORK KVARTALLY, PCS**

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ELENIA GROUP  CUSTOMER  BUSINESS ENVIRONMENT  SECURITY OF SUPPLY  PARTNERSHIPS  RESPONSIBILITY  GOVERNANCE  ELENIA ANNUAL REPORT 2017
DEVELOPMENT OF PREPAREDNESS FOR POWER OUTAGES

An excellent and nearly storm-free year in 2017

SECURITY OF ELECTRICITY SUPPLY 99.98%

With respect to preparedness for power outages, Elenia Oy’s focus in 2017 was on diverse cooperation with partners and system suppliers as well as on the development of Elenia’s own operations.

One significant improvement in systems development related to the rapid handling of power outages was the broad deployment of the mobile network information system in cooperation with our partners. The system helps electricians make better decisions and supports more effective communication with Elenia’s network control centre.

Elenia joined the KRIVAT preparedness system for critical infrastructure during the year. The system allows Elenia to communicate with Finland’s critical national infrastructure operators and the authorities on the status of its services and establish an understanding of the national situation to support Elenia’s own actions.

A new area partnership agreement made it possible to take a new step in the development of repair activities, particularly with respect to preparedness for major power disruptions. Together with partners, Elenia has created even better policies than before in order to support preparedness for power outages, while also simplifying and eliminating the unnecessary hand-overs in relation to repair work.

The significant investments Elenia made in remote-controlled switching equipment in 2017 further reduce the duration of power outages experienced by our customers. Combined with continuous contingency planning and operational development, these measures enable even better service in power outages in the future.

The only major power disruption in Elenia’s network area in 2017 was the storm Sauli in March. The spring storm left 22,000 of our customers without electricity simultaneously; we responded quickly with the help of our partners and repaired all the faults in less than 24 hours.

In the absence of major power disruption caused by extreme weather, the patterns of normal operations clearly demonstrated the benefits of underground cabling with respect to the number of faults as well as the speed at which they were repaired. In 2017, the security of supply of electricity for our customers was at an excellent level for a rural electricity distribution company at 99.98% as measured by the average duration of interruption.
Elenia Oy’s asset management system (AMS) has been certified in accordance with the international ISO 55001 standard and the British PAS55 standard. These certificates represent international recognition of the quality of Elenia’s electricity network development, construction, maintenance, operation and repairs as well as the quality of Elenia’s information systems. This ensures that the company operates, maintains and upgrades its electricity network in order to respond increasingly better to its customers’ and society’s needs. The certificates also require that Elenia’s suppliers and service providers commit to high-quality, responsible operations in accordance with Elenia’s operating methods.

Lloyd’s Register audited Elenia Oy’s asset management system in June 2017. The focus of the follow-up audit was on smart meters and IT systems. The entire life span of smart meters was reviewed in detail, from the acquisition of metering equipment all the way to their removal from the network. The follow-up audit also reviewed the installation of next-generation smart meters at a work site. It also covered the comprehensive management of metering data and its utilisation in Elenia’s core operating processes. With respect to IT systems, the audit focused on Elenia’s IT strategy and operational IT systems, such as the SCADA Operation and Control Information System update project. The audit also included comprehensive consideration of Elenia’s contracting partners’ perspective on the operations.

Overall, the follow-up audit was very successful. The auditors from Lloyd’s Register gave Elenia positive feedback on areas such as the management of metering data and its use in various core processes. They also praised Elenia’s IT processes and IT development plans as well as the systematic approach to the management of development projects. The audit also produced new proposals for the continued development of operations.
In 2017, Elenia Lämpö completed major investments in improving environmental safety, ensuring compliance with the requirements stipulated by the environmental legislation that entered into force on January 1, 2018. For example, we replaced oil tanks and oil processing equipment and areas in several facilities. Furthermore, alterations were made at 10 facilities in the Hämeenlinna area, and at the Jyränkö facility in Heinola, a 200 m³ oil tank and oil receiving area were modernised.

We improved the security of supply of heating by making significant investments in district heating pipelines. In Heinola, we replaced several major residential connections based on inspections, which helped avoid urgent renovation work during the heating season. The district heating network in Kanta-Häme was surveyed using helicopter heat camera imaging. In Hämeenlinna, a challenging project was carried out to replace a 1960s district heating line that runs under a motorway, connecting the eastern and western parts of the city.

Overall, Elenia Lämpö’s security of supply is very high. The average duration of interruptions is less than an hour and security of supply is 99.99%. The security of supply of district heating is generally high in Finland, with the total annual duration of service disruptions being 2.1 hours.

Elenia Lämpö’s basic district heating production plants produce their energy mainly from wood-based fuels. We also use gas and oil plants to ensure security of supply and reach peak loads. In 2017, we completed plans and reached a decision on the replacement of the back-up and peak load light oil plant in Vehniä. The necessary purchases will be made in early 2018.

OPERATING IN ACCORDANCE WITH THE PRINCIPLES OF THE CIRCULAR ECONOMY

Elenia Lämpö uses 88% domestic fuels in its production operations, with an emphasis on local sourcing and short transport distances. Some 70% of the fuels used are carbon-neutral wood-based fuels. We are a pioneer in the use of renewable bio-based fuels, as evidenced by our renewable fuel share being substantially higher than the corresponding average figure of 36% for Finland as a whole.

We follow the principles of the circular economy in our production operations. The fuels we use are mostly forest industry and forest management by-products. We also utilise industrial waste heat and surplus heat in our heating production. The ash left over from burning wood is recycled for use as forest fertiliser or raw material for earthworks. Last year, the ash from the Vanaja power plant in Hämeenlinna was used for environmental construction at a decommissioned landfill in Forssa. We also experimented with a broader range of renewable fuels at several of our heating plants.

EU climate policy and EU Directives on land-use change (LULUCF), biomass sustainability (REDII) and emissions trading (ETS) spurred discussion in Finland throughout the year on how our forests will be used in the future. The policies contained in the Directives were approved late in the year, which confirmed that the Finnish Government’s future goal of making sensible use of forest energy will be possible to achieve.
As an electricity distribution company, Elenia monitors changes in its operating environment and plays an active role in the development of new tools, operating methods and applications to suit the needs of the smart grid and to benefit customers. We engage in research and development cooperation with partners such as universities, research institutes, other electricity distribution companies, contractors and equipment manufacturers. We publish reports on completed projects on our website for public access.

**NEXT-GENERATION SMART METERING SYSTEM TRACKS ELECTRICITY CONSUMPTION**

We installed over 30,000 next-generation smart electricity meters in Häme, Pirkanmaa and Central Finland in 2017. We are testing a new radio network telecommunication solution based on the new smart meters. By enabling the collection of more accurate and real-time data, the new meters create the foundation for entirely new services that will allow flexible participation by Elenia’s customers in the electricity markets of the future.

In 2017, we began developing a new service for our customers to allow them to monitor their electricity consumption on mobile devices almost in real time. The new metering system enables us to offer new demand flexibility and control opportunities to serve market and customer needs. We will continue our development efforts in this area in the coming years to satisfy customer needs and develop the marketplace.

**MOBILE SOLUTIONS MAKE FIELD WORK MORE EFFICIENT FOR ELECTRICIANS**

Elenia’s partners adopted new mobile tools extensively in 2017. A mobile application developed to support field work allows fault repair and maintenance electricians to view real-time network data and, to some extent, update the network data straight from the field. Functions related to the task management system, such as signing off on performed tasks and received materials, can also be done in the field. We continuously develop information systems in response to the requirements for fluency and transparency in operations.
The renewal of the remote-control system that Elenia Lämpö began in Häme in 2016 was nearly completed, and the majority of our heating districts were connected to the system in 2017. The shared control system brings all of Elenia’s heating plants under a single monitoring system, expands reporting and ensures more reliable communication.

We continued to develop the use of big data and analytics in the heating business. Our first tests based on customer data revealed new ways of utilising information in a way that supports our goals of achieving deeper customer insight and having the capacity to respond to changing needs on a customer-specific basis. By enabling faster reaction to customer needs and enhancing internal cooperation, the improved utilisation of data promotes high quality in heating. We will continue our efforts related to data in 2018 to achieve further benefits related to customer solutions as well as the efficiency of our operations.

Our range of customer solutions was expanded in 2017 to include our first hybrid heating implementations, which develop our competence and diversify our services. The hybrid approaches involved complementing district heating with solar power and exhaust air heat pump solutions. We are also preparing ourselves to pilot a remote-control service for heating based on an artificial intelligence application. Guided by our practical experience and market trends, we are introducing an increasingly diverse range of comprehensive heating solutions for our customers.

INNOVATION PROJECTS

Quality in heating through pioneering solutions

The CIRCULAR ECONOMY AT ELENIA LÄMPÖ:

Nearly all plants are controlled remotely 24/7 from the Vanaja control centre.

Around 70% of the fuel we use is renewable, such as by-products from forest management and industry.

68%

Eco Heat is fully CO₂-neutral heat produced from wood-based fuels. We use fewer and safer chemicals.

We utilise heat generated in industrial production processes in locations such as Hämeenlinna, Heinola and Tervakoski.

We capture heat energy from flue gases and utilise it in district heating production.

The Lämpöluotsi service includes free inspections of heating equipment.

The ash generated from burning wood is reutilised as fertiliser or in earthworks.

We buy heat from our customers, such as surplus heat from solar thermal collectors at the Hämeenlinna indoor swimming pool.

The Elenia Aina service allows customers to monitor heating consumption and costs 24/7.
PARTNERSHIPS

New partnership agreements for Elenia Weatherproof construction

Large-scale joint construction of telecommunications and electricity networks

Managing trees to ensure the security of supply and protection from snow load

Service design in recycling decommissioned parts of the overhead network
As a pioneer of service markets in the energy sector, Elenia has systematically developed its partnerships for more than 20 years. The company has a large network of diverse partners consisting of electricity network construction and maintenance companies of various sizes as well as Finnish and international suppliers of materials and systems.

Together with our partners, we aim to create the best possible customer experience through efficient and high-quality operations. In construction, this means being on schedule, successful customer encounters, a smooth construction process, quality monitoring during work as well as rapid response to customer feedback.

According to customer surveys, the satisfaction among new electricity connection customers in the work performed by Elenia and its partner network remained at a favourable level in 2017. Customers rated the service received from Elenia’s contact persons and partners in the field as excellent. The survey respondents were also very satisfied with Elenia’s e-services. We launched a development project focused on the management of customer feedback to further enhance the customer experience.

In 2017, we continued to develop processes and systems throughout the partner network, using methods such as software robotics and mobile tools. As part of our quality improvement efforts, we also launched training and development projects aimed at implementing the Lean Six Sigma operating model.

Together with our partners, we are committed to uncompromising safety management. We ensure that Elenia is a safe workplace and that our electricity network is safe for customers as well as those who work on it. The number of certain types of accidents increased at our sites in 2017; we have, however, investigated the reasons behind this development. As a result of our continued and enhanced proactive efforts to promote safety, the number of reported safety observations and near misses increased. Awareness of such incidents reduces the risk of actual accidents.

NEW REGIONAL PARTNERSHIP AND CONTRACTING AGREEMENTS IMPLEMENTED SUCCESSFULLY

Our new multi-year regional partnership agreements entered into effect at the beginning of 2017. In conjunction with this, Elenia revised the regional
Elenia and its partners utilise new technology and enhance the customer experience

partner management and cooperation model. The regional partners successfully took over the new contracts and areas. We worked with our regional partners to develop maintenance and quality assurance as well as partner communications, for example.

In 2017, we signed multi-year Elenia Weatherproof contracting agreements with several partners. The new agreements increase the continuity and predictability of operations for Elenia as well as our partner companies.

The cold summer and rainy autumn delayed agricultural work in the fields, which affected Elenia’s underground cabling projects. Nevertheless, we carried out the majority of our construction projects in 2017 in line with our targets. Demolition work on the overhead line network was scheduled for winter 2018 to balance out seasonal variation in construction activity. Our contractors began the implementation of our Elenia Weatherproof projects for 2018 in a timely manner.

The majority of Elenia’s current electricity network consists of overhead lines, which require maintenance and line corridor management. Our new multi-year clearance contracts began with gusto in early 2017. We selected clearing partners for the management of forests adjacent to line corridors for the next three-year period. Clearing adjacent forests and managing seeding stands supports the long-term reduction of the risks posed to electricity networks by trees growing near overhead lines.

A partnership agreement related to the recycling of metals and cables entered into effect at the beginning of 2017. We used service design to develop new operating models for recycling in cooperation with our partner. Responsible network development includes recycling the obsolete overhead line networks in an efficient, reliable and environmentally friendly manner.

**MULTI-YEAR WHOLESALER SERVICE AGREEMENT FOR MATERIALS AND LOGISTICS**

Elenia signed a new multi-year wholesaler service agreement for installation materials and logistics. The agreement entered into effect at the beginning of 2018. We also extended our distribution transformer contracts by exercising the option period with our current partners. Elenia also signed a multi-year agreement on the supply of compensation equipment to substations.

We prepared for the coming transformation of the energy markets by installing approximately 30,000 next-generation smart electricity meters in 2017. We began the deployment of a telecommunication solution related to the monitoring and control of the smart grid using next-generation hardware.

We continued to develop materials and systems in cooperation with our partners. We also introduced new logistics solutions based on our development efforts.

**NATIONALLY SIGNIFICANT JOINT CONSTRUCTION PROJECT LAUNCHED**

In 2017, we surveyed the upcoming construction projects of various stakeholders to determine their schedules and potential opportunities for cooperation related to Elenia’s continued construction of underground cabling. We signed a nationally significant multi-year agreement on the joint construction of telecommunications networks and electricity networks with a fibre-optic company that operates in our network area. The use of joint construction increased in 2017 to represent about a quarter of the total ditch length.

We continued our active efforts to promote more efficient cable placement and permit processes. We engaged in extensive cooperation with local and national advocacy organisations and various authorities. We continued to work with municipalities concerning siting permits, street permits and action permits as well as in relation to zoning and land-use solutions. The Water Act amendment that entered into force at the beginning of 2018 simplifies permit processes for waterways.

Elenia signed more than 15,000 agreements and permits related to land use and construction during the year. Landowners’ satisfaction with the land use in construction projects remained at a healthy level in 2017 and the signing of agreements was perceived to be convenient.
In 2017, we negotiated significant long-term supply agreements for biofuels and peat, and several new partners started fuel deliveries at the beginning of 2018. The parties involved in the production and procurement of domestic fuel have a significant positive impact on employment in Elenia Lämpö’s areas of operation, as fuel is sourced and transported from optimal distances relative to where it is used.

With new fuel suppliers entering the picture, many new drivers will start making deliveries to our plants. With this in mind, we produced comprehensive video training materials in 2017 to allow drivers to familiarise themselves with the plants’ operational and safety requirements even before their first actual visit.

We also renewed our largest long-term heat purchase agreements with our partners, StoraEnso for Heinola and Jyväskylän Energia for the district heating networks of Jyväskylä. The agreements ensure the continuation of cooperation well into the 2020s. The majority of our purchased heat is also produced from biofuels in line with the principles of sustainable development.

The cities and municipalities in our network area are important partners for us. The renewal of district heating networks must be done in close cooperation with the city. In Heinola and Hämeenlinna, for example, district heating infrastructure in the city centres was renewed in conjunction with the city’s street repairs. This ensures that the street only needs to be excavated once.

In Voutilankeskus in Hämeenlinna, we implemented Finland’s largest solar power solution using solar thermal collectors supplied by the Finnish company Savo-Solar.
Responsibility

Coaching-style management for everyone

World-class energy efficiency

Continuous improvement of safety culture

Convenient grid connections for solar power
Achieving together is at the core of the Elenia spirit

Our work is guided by our shared values and a customer-oriented company culture. Our pioneering spirit is based on having the courage for renewal and the desire to develop ourselves as professionals. We join forces with our partners to work for the benefit of our customers, which is why seamless cooperation with partners is especially important. The key leadership goal is to strengthen the spirit of shared accomplishment to ensure that results and goals are achieved.

THE NUMBER OF PERSONNEL IS IN LINE WITH BUSINESS NEEDS

The size of Elenia Oy’s personnel was unchanged in 2017. We continued the practical implementation of the restructuring measures initiated in 2016–2017, which meant changes in job responsibilities and a new operating culture in the process organisation. New job vacancies provided opportunities for managers and employees to apply for new duties. Change was supported by promoting a coaching-oriented culture of leadership and interaction, as well as training for managers and supervisors to improve their coaching-related competencies.

For Elenia Palvelut Oy, 2017 was a year of growth in line with the new strategy. In January 2017, Elenia Palvelut took over customer service operations for Jyväskylän Energia Oy and, in May 2017, similar customer service cooperation began with Tampereen Sähkölaitos. Both business transfers also involved the transfer of personnel to Elenia Palvelut.

Elenia Lämpö Oy’s evolution towards becoming an even more customer-oriented organisation continued in 2017. The company’s operations were renewed to respond to changes in the operating environment even more efficiently and flexibly than before, while also providing interesting new job roles and career opportunities for personnel.

SYSTEMATIC APPROACH TO WELL-BEING AT WORK

The continuous improvement of well-being at work is a key aspect of Elenia’s company culture. The diverse range of measures to ensure well-being at work aims for a seamless flow of work and the perception of work as being meaningful, a well-functioning workplace community and the maintenance and promotion of functional capacity throughout the employees’ careers. We take a systematic approach to implementing Elenia’s well-being in work activities. The Elenia Tahto – Together at Work well-being programme covers health, appreciation, a healthy working community, inspiration and competence. Various well-being projects carried out each year support these focus areas.

Employee well-being is evaluated annually by means of an extensive PeoplePower personnel survey, and the feedback is taken into consideration in planning changes to operations. The personnel perceived the work atmosphere survey to be an important channel for development and exercising influence. The response rate was 87%. In 2017, Elenia Palvelut Oy conducted a Siqni survey. As the

PERSONNEL

SALARIED EMPLOYEES

PERSONNEL

349

SALARIED EMPLOYEES

84%

AVERAGE AGE

SUMMER TRAINEES

41

349

41

PARTNERS AT WORK

1,000 PEOPLE

AGE DISTRIBUTION OF ELENIA GROUP, DEC. 31, 2017

- Men
- Women
experiences were positive, the Siqni survey will be used again in the future by Elenia Palvelut.

We encourage our employees to look after their well-being by, for example providing occupational health services whose scope exceeds the statutory requirements. The focus of occupational health cooperation in 2017 remained on close cooperation between supervisors, employees and the occupational health service provider, as well as early intervention and supporting working capacity. The use of three-party discussions was increased under the early intervention principle. Our personnel participated in “coaching for change” groups organised in cooperation with our occupational health care partner. The groups aim to resolve individual challenges related to rest, exercise and nutrition. We support the cultural and sporting activities of our personnel through organised local recreational activities. The organised recreational activities brought Elenia’s employees together and improved team spirit through diverse sporting and cultural pursuits.

Flexible hours and work arrangements have a favourable impact on employee satisfaction, well-being and results. The opportunity to work remotely is perceived to be an efficient and productive option.

PERSONNEL DEVELOPMENT AND COACHING-STYLE MANAGEMENT

At Elenia, we value the competence of our personnel. We provide opportunities and encouragement for professional growth and the continuous development of competence. All of our personnel are covered by annual performance assessment and goal-setting discussions. The discussions include an assessment of the employee’s training needs, following up on previously set goals and setting new goals. Our personnel training activities include managerial and supervisory training, training for experts and employees, training aimed at the development of the working community, as well as coaching related to products, services, processes, systems and customer service.

We continued to develop the expertise of our key personnel through Global Leader training organised in partnership with Aalto University Executive Education. The Finnish Quality Association conducted Lean Six Sigma Green Belt training for Elenia’s personnel. The lessons learned will be put into practice in 2018. Elenia Lämpö’s experts participated in Energy for Professionals training in 2017. The company also organised coaching related to developing the company culture and strengthening customer orientation. These programmes will continue in 2018.

In spring 2017, we began training in coaching-style supervisory work for managers and supervisors throughout the Elenia Group. The training is aimed at establishing a coaching-style management culture and ideology as an integral aspect of Elenia’s management and cooperation. The supervisory training will continue in 2018. The project will be continued in 2018 by training in coaching-style interaction for all personnel.

DIVERSE COOPERATION WITH EDUCATIONAL INSTITUTIONS

We engaged in extensive cooperation with several educational institutions to introduce students to working life. This cooperation included thesis writing and projects, traineeships and participation in company and student organisation events. Our primary partners in education are schools and universities in the fields of technology and business.

In the autumn, teacher trainers visited Elenia’s office in Tampere as part of the OKAkatemia initiative. The event provided an excellent opportunity for discussing the impact of the digital transformation on business operations and employee competence needs. Cooperation between education providers and the business sector was seen as a potential solution to the transformation of working life.
SAFETY

Safety is always an important aspect of the work performed by Elenia and its partners. Electricity and heating network investments, maintenance and fault repair are aimed at keeping the networks safe for customers and the employees of Elenia’s partners. We carried out approximately 950 quality and safety inspections in 2017 at sites where we are building our weatherproof network or performing other work on the electricity network.

SAFETY OBSERVATIONS PROMOTE SAFER WORK
The systematic recording and reviewing of safety observations is an effective method for creating a foundation of continuous improvement for our safety culture. The role of safety observations in preventing accidents, near misses and safety-related deficiencies has increased. Safety reporting has been expanded to also cover observations related to data security.

In our electricity network operations, we recorded more than 500 reports of safety events in 2017, representing nearly a twofold compared to the previous year. A campaign aimed at increasing the number of reported safety observations and near misses in electricity network construction, maintenance and fault management operations from the spring to the end of the year produced excellent results. The development of the safety culture and the increased number of safety observations have also improved the reporting of minor accidents. This was reflected in an increased lost time injury frequency.

In 2017, we redesigned the monthly safety report distributed to Elenia Oy’s personnel and partners. The report provides a brief description of all safety events, proactive safety measures and areas requiring special attention. Our Safety Now newsletter covered topics including accident prevention.

Elenia Lämpö Oy achieved its target of zero accidents in 2017, proving that the target of zero accidents can be achieved when everyone perceives safety promotion as an important aspect of their own day-to-day work.

SAFETY CULTURE CONTINUES TO DEVELOP
We develop Elenia’s OHSAS 18001 occupational health and safety management system under the principle of continuous improvement. The system was recertified in 2017, confirming that it continues to fulfil the requirements stipulated by the standard. Particular strengths highlighted in the recertification process included the number and quality of safety observations, the commitment of senior management and the Board of Directors, as well as communications and the activities of Elenia’s partners.

We also updated our corporate security practices in 2017 to better respond to current and future requirements. Elenia is actively involved in industry cooperation aimed at developing occupational safety and safety culture.
Elenia is part of the new national energy efficiency agreement

Elenia’s environmental work is guided efficiently by the ISO 14001:2015 environmental management system, which is supported by our partners’ environmental systems. Both Elenia Oy and Elenia Lämpö Oy signed national energy efficiency agreements for the period 2017–2025. Elenia’s investments in promoting energy efficiency are world class.

Elenia Palvelut Oy signed a cooperation agreement with WWF in June 2017 and began drafting a Green Office programme coordinated and administered by WWF. Aimed at reducing the ecological footprint of the workplace and decreasing carbon dioxide and greenhouse gas emissions, the programme represents another step in Elenia’s long-term commitment to continuous improvement in environmental management.

The digital Elenia Aina service is available to our customers free of charge, also via mobile. It gives our customers easy access to information on their consumption of electricity or heating. Our customers also received energy efficiency tips throughout the year via electronic media as well as newsletters.

OVERHEAD LINES REMOVED AS ELENIA WEATHERPROOF PROGRESSES

The recycling of decommissioned materials is routine for Elenia. We continuously develop our operating models and update our recycling instructions, and we also maintain our partners’ awareness of recycling through regular training and communication.

We removed a significant amount of overhead lines in 2017, along with more than 20,000 electricity poles. We protected valuable natural resources by removing more than 100 pole-mounted transformers from groundwater areas. Our goal for 2018 is to centralise the handling of poles and optimise the processing of poles removed from the network by relying even more on reuse.

At the beginning of 2017, we started an effective cooperation with a new metal recycling partner. The recycling of metal from cables and other electricity network components reduces the amount of landfill waste and conserves natural resources.

The old network is continuously being replaced by weatherproof underground cables and environmentally friendly secondary substations. Our planning of the underground cable network includes assessing the local natural and environmental values and determining the best option for the terrain in question. We prepare an environmental plan for each project to assess the environmental impact on air, water and soil, and we take into account groundwater areas, historical sites and nature reserves.

MAKING IT CONVENIENT TO CONNECT SOLAR POWER TO THE GRID

The number of solar power systems in Elenia’s network area continues to grow at a brisk rate. Connecting renewable energy to the electricity network is easy for Elenia’s customers. Through our website, our customers can conveniently submit a notification of having acquired a solar power system and apply for a permit for its use. Connecting a solar power system behind the customer’s electricity connection generally does not require any changes to the electricity network, and Elenia does not charge any fees for the deployment of such systems.

There are nearly 15,000 pole-mounted transformers in our network. Lightning strikes, storms and other circumstances caused oil-related damage to about 30 transformers in 2017. Together with our environmental and earthworks partners, we remedy all such situations quickly and with high quality. We also continue process development in cooperation with our partners and the environmental authorities.

As in previous years, we minimised bird collisions with the electricity network by installing another 200 bird markers. On Luoto Island in Nokia, sheep continued to graze in the power line corridor to keep it free from excessive vegetation. The joint project by Elenia, Fingrid and the City of Nokia promotes the diversity of agricultural nature and landscape management.
The use of electronic signing and electronic agreements has increased. Some 80% of new connection agreements are now concluded electronically. The increase was fastest in the corporate customer segment, where more than 84% of new customers signed an electronic connection agreement. In 2017, the electronic agreement and signing option was also offered for the land-use agreements concluded by our partners. More than 10,000 such agreements are signed each year with private landowners. We will continue to work on the electronic agreement environment further in 2018 with the aim of developing effective systems for signing land-use agreements on mobile devices.

**FIRST SOLAR POWER HYBRID SYSTEM IMPLEMENTED**

Elenia’s environmental work is guided efficiently by the ISO 14001 environmental management system, which was recertified in 2017 pursuant to the new ISO 14001:2015 standard in Elenia Lämpö Oy.

One of our recent development areas is solar energy, which is now being piloted and implemented by Elenia in several locations. We took a significant new step in solar energy in spring 2017 by implementing Finland’s largest solar heating system at the Voutila service centre in cooperation with the City of Hämeenlinna.

At Voutila, district heating and solar heat constitute a hybrid renewable energy system that is fully in line with Finland’s energy and climate strategy. The use of new and open-minded solutions allows us to work together to make Hämeenlinna a forerunner in the implementation of environmentally friendly and customer-driven energy solutions.

**HEAT FROM RENEWABLE FUELS**

Elenia Lämpö takes determined and systematic action to reduce its environmental impacts and improve the energy efficiency of production. Biofuels accounted for 70% of total production in 2017. The carbon dioxide emissions from heating production as a whole continued to decline in 2017.

We increased energy efficiency by means such as entirely decommissioning older plant capacity. We also improved the management of environmental risks by replacing oil containers. Ash generated in heat production is recycled as forest fertiliser or, for example, landfill structure material replacing virgin raw materials. Efficient recycling generates savings and promotes environmental protection.
Risk management is an integral part of business operations and it is characterised by both threat and opportunity. Elenia aims to manage risks in such a way as to reduce the threats associated with them while increasing business opportunities.

In 2017, our risk management focused particularly on occupational safety, cybersecurity and data protection. Safety campaigns, systematic development of cybersecurity and preparing for the requirements of the EU General Data Protection Regulation are all excellent examples of risk management measures that simultaneously create and improve the opportunities for success for several of Elenia’s stakeholders. Elenia’s long-term development efforts in these areas will continue as part of operational development to benefit customers, personnel and partners alike.

**TRANSPARENT RISK MANAGEMENT IS PART OF ALL OPERATIONS**

Elenia has a transparent and clear operating model for comprehensive risk management as part of its corporate culture. The objective is to promote risk awareness and to define an acceptable level of risk which, in turn, supports decision-making.

Comprehensive risk management is part of all management and operations at Elenia. Comprehensive risk management covers risk identification, risk assessment, reporting of risks and measures to manage risks as part of the yearly risk management processes.

Elenia’s management is responsible for including comprehensive risk management in the strategic and operative management. Elenia’s management systems play a significant role in risk management in practice. The Legal Affairs and Risk Management unit is responsible for the coordination and development of risk management and cooperates with business units in risk management activities. Business units and processes are responsible for risk identification and assessment as well as the planning, implementation and monitoring of risk management measures.

Group companies regularly report to their board of directors on risk management. In turn, internal audits evaluate Elenia’s risk management activities and their effectiveness.

**KEY RISK GROUPS**

Elenia’s most significant risks have been identified and the measures to manage these risks have been determined. Key risk groups have been presented in the diagram.

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**FINANCIAL RISKS**
- Financing and liquidity
- Credit risks
- Market risks

**STRATEGIC RISKS**
- Business environment
- Market position
- Management

**OPERATIONAL RISKS**
- IT systems
- Legal risks
- Processes
- Supply chains

**DAMAGE RISKS**
- Property
- OHS and the environment
- Personnel

**WEATHER**
- Environment

**ENVIRONMENT**
- Health

**SOCIETY**
- Safety

**RESOURCES**
- Partnership activities

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**Financial commitments**
- Finance markets
- Credit rating
- Taxation

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**Regulation**
- Investments
- Competing technologies

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ELENIA AND FINLAND 100 YEARS

Over 1,000 pictures were entered into the 100 SWANS contest

Elenia celebrated Finland's 100 years of independence together with its partner BirdLife Finland by organising a contest featuring the Finnish national bird, the whooper swan. Over one thousand pictures were entered into the contest in the children, youth and adults categories. Here are the winning pictures.

Outside of cities and population centres, a major part of the electricity network runs as overhead lines that may pose a danger to swans. Attaching brightly coloured balls to powerlines is an effective way of preventing collisions. Birds notice these balls and steer clear of the powerlines. Cooperation with bird enthusiasts, local residents and BirdLife Finland has increased the number of warning balls to over 3,000 in our network area. Protecting swans is part of our certified work for the environment.

PROTECTING OUR NATIONAL BIRD IN COOPERATION WITH BIRDLIFE FINLAND

ADULTS

1. Timo Vesterinen

2. Hannu Ahonen

3. Yrjö Pirnes

YOUTH

1. Antero Voutilainen

2. Jessica van Leeuwen

3. Vilma Karisto

CHILDREN

1. Sini Myyrä

2. Henri Gynther

3. Olivia Karhumaa
Elenia Oy Board of Directors

Robert Clark
GS Infrastructure Partners

Phil White
3i

Kunal Koya
GS Infrastructure Partners

Jorma Myllymäki
Elenia Oy

Tapani Liuhala
Elenia Oy

Timo Rajala
Chairman of the Board of Directors

Timothy Short
3i

Heidi Koskinen
Ilmarinen Mutual Pension Insurance Company
Elenia Oy Management Team

Heini Kuusela-Opas
Head of Communication

Teemu Hovi
General Counsel

Ville Sihvola
Head of Marketing and Sales

Tapani Liuhala
CEO

Jorma Myllämäki
COO

Tommi Valento
CFO

Jarkko Kohtala
Head of Project and Construction Management

Jarmo Karjalainen
CIO

Marianne Kihlman
Head of Human Resources
Elenia Lämpö Board of Directors

Mikko Räsänen
Ilmarinen Mutual Pension Insurance Company

Matti Manninen
Chairman of the Board of Directors

Anna Dellis
3i

Matteo Botto Poala
GS Infrastructure Partners
Elenia Lämpö Management Team

Janne Lamberg
COO

Tero Holappa
Head of Customer Relations and Business Development

Matti Tynjälä
CEO

Tommi Orkola
Head of Finance

Anne Piispanen
Head of Technics
WE CARE ABOUT
YOUR EVERYDAY LIFE