

caruna | Positive energy.



# Caruna's year

2019





# caruna

## **3 YEAR 2019**

- 4 Making things easy for customers is at the heart of what we do
- 5 Highlights of the year
- 6 Digitalisation is transforming electricity consumption

## **8 CARUNA IN SOCIETY**

- 9 We are responsible for about a fifth of Finland's electricity distribution
- 11 Aiming for one million satisfied customers
- 13 Our role in society

## **15 PRESENT IN THE MOMENT**

- 16 The electricity network has gone underground, and construction is closer to people's homes
- 21 For the benefit of customers

## **25 CORPORATE RESPONSIBILITY**

- 26 Corporate responsibility themes are a more integral part of the business strategy
- 30 Climate change
- 36 Working environment
- 42 Supply chain and environment
- 48 Corporate citizenship

## **55 CORPORATE RESPONSIBILITY REPORTING PRINCIPLES AND GRI**

- 56 Our corporate responsibility reporting principles
- 58 GRI Content Index





## YEAR 2019

- Making things easy for customers is at the heart of what we do
- Highlights of the year
- Digitalisation is transforming electricity consumption



# Making things easy for customers is at the heart of what we do

It is our job to get electricity to the place where our 692,000 customers need it. We are maintaining, refurbishing and building a weatherproof electricity network in our network areas in South, Southwest and West Finland, the city of Joensuu and in the regions of Koillismaa and Satakunta. We monitor the operation of our network 24/7 to ensure that customers can be guaranteed access to electricity with minimum disruption under any conditions. We concentrated on doing this also in 2019.

We are actively involved in developing new solutions for the expanding needs of our increasingly electrified society: electric transport, electricity generated by consumers, the ever-increasing number of digital services, and the construction of ultra-fast network connections. If our electricity

network starts to stutter despite our maintenance work, we take immediate action to rectify faults, whether on land or at sea, any time of day and any day of the week. We have prepared ourselves for the surprises that weather events can cause in order to minimise the disruption that our customers experience in the event of power outages, or to prevent power outages altogether.

The everyday lives of all of our customers are worth safeguarding, so we serve our customers in many different channels. We respond to questions and seek solutions to problems. We offer opportunities to find out about renewable energy generation and the possibilities of electric vehicles. We aim to become a valued partner for our customers – both now and in the future.

## CUSTOMERS:

~80 MUNICIPALITIES

~90,000 COMPANIES

~600,000 HOUSEHOLDS



## WE EMPLOY

313

PEOPLE DIRECTLY



## SHARE OF ELECTRICITY DISTRIBUTION IN FINLAND

20%



## ELECTRICITY NETWORK:

87,370 KM

RELIABILITY OF ELECTRICITY SUPPLY: 99.99%



# Highlights of the year

2019



## NEW PROTECTION TECHNOLOGY TO IMPROVE THE RELIABILITY OF THE ELECTRICITY NETWORK

We began a four-year project with ABB to significantly improve the reliability of the electricity network. We are focusing on developing and testing a new type of protection technology in the Noormarkku network area in Pori.

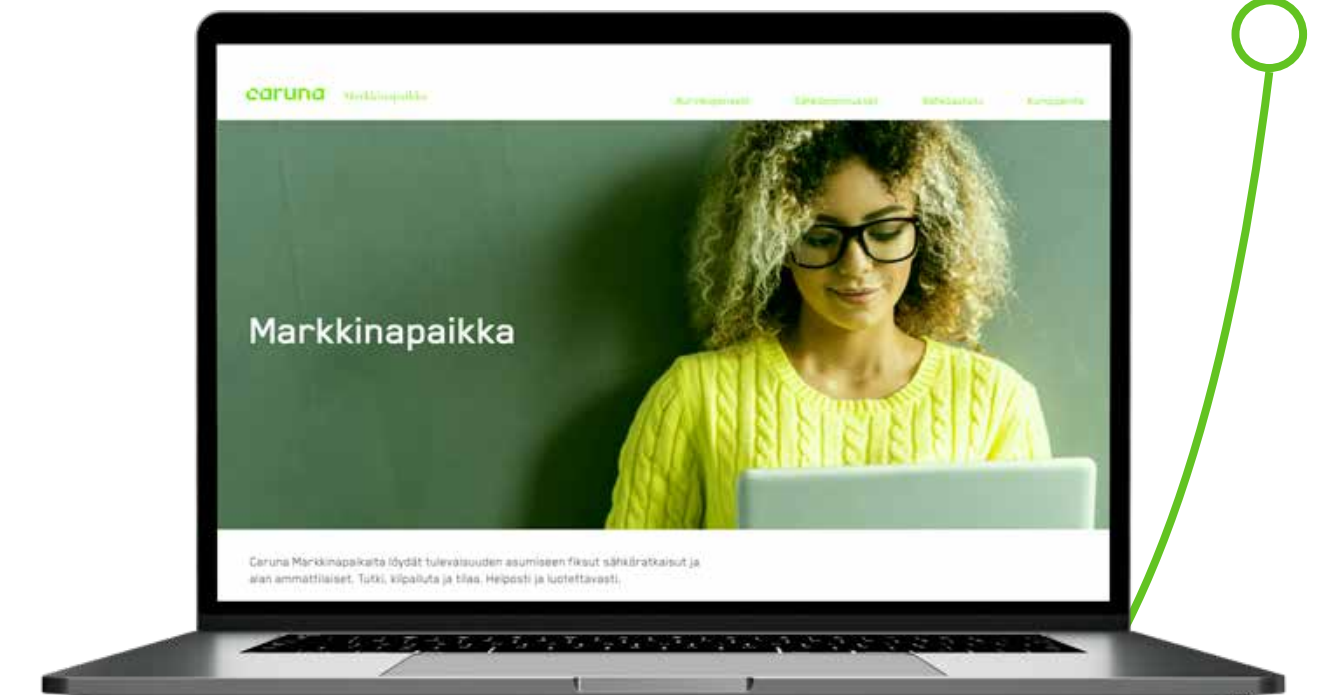


## SUBSTATION COMPLETED IN SUURPELTO, ESPOO

We built a modern primary substation in Suurpelto, Espoo, which will safeguard the electricity supply for the growing residential area and the western metro extension. The new substation improved the reliability of the electricity supply for more than 20,000 customers.

## CARUNA MARKETPLACE OPENS FOR BUSINESS!

Our service enables customers to browse the services offered by solar panel suppliers and check whether their existing electricity connections are suitable for charging electric vehicles.



## THE RESIDENT SERVICE ON TOUR



Our Resident Service team visited shops, events and homes near excavation areas. They provided our customers with information and answers, as well as a friendly chat.



## CARUNA+

We refreshed the visual appearance of our electronic service channel and renamed it Caruna+. Our service enables private customers to view their energy consumption and details on contracts and invoicing via a browser-based interface or a mobile app.

## ELECTRICITY NETWORK AND FIBRE-OPTIC CABLE IN THE SAME TRENCH

We started working with Telia Finland to combine construction of fibre telecommunication networks with the ongoing undergrounding of our electricity network.



# Digitalisation is transforming electricity consumption

Finland joined the international frontrunners in combating climate change when the government announced its plan to make Finland carbon-neutral by 2035.

From the perspective of an electricity network company, this policy represents a challenge that we will humbly accept. Combating climate change will require clean electricity generation and consumption, and the electrification of society as a whole.

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**“An electricity network built to address future needs will be able to cope with higher electricity consumption and tolerate the stresses caused by climate change without long power cuts.”**

Finland will need a strong and smart electricity network in order to enable the generation of a lot more emission-free renewable energy and to make it possible to increase the amount of electricity consumption. At the end of 2019, there were 6,600 small-scale solar power generators connected to Caruna’s network while wind power generated 900 GWh in our network area, and these figures are rapidly increasing. Approximately 70 per cent of the electric cars registered in Finland belong to customers in Caruna’s network areas.

## **CLIMATE CHANGE IS LEADING TO STRONGER WINDS AT COLDER TIMES OF YEAR**

The visible impacts of climate change vary in different parts of the world. Finland is in the zone where winter temperatures will increase, winds will become stronger and precipitation will increase. This will make electricity distribution more challenging in a forested country like Finland. Warmer, frost-free winters present a higher







risk of trees falling during storms and branches bending or breaking under heavier snow loads.

Caruna's network service companies are taking action to modernise the electricity network. An electricity network built to address future needs will be able to cope with higher electricity consumption and tolerate the stresses caused by climate change without long power cuts.

### LOCALITY IS KEY IN NETWORK CONSTRUCTION

Urbanisation is a megatrend that will give rise to challenges for electricity network operators. The number of people living outside growth centres

in Finland will decrease, and the people left behind are becoming older. In as many as 68 of the 80 municipalities located in the network areas of Caruna Oy, which operates in the countryside, the population is expected to decrease by 2030.

So far, our work to modernise the electricity network has focused on upgrading the medium-voltage network to ensure that as many customers as possible can avoid long outages in the event of a disruption. In the future, the work will focus on the low-voltage network, which runs right past customers' front yards. This also means that we will

customise our network construction methods in accordance with local requirements.

In recent years, Caruna's network companies have invested hundreds of millions of euros in Finland every year. In 2019, we spent EUR 167.3 million on building a reliable, weatherproof electricity network for our customers, mainly within the Caruna Oy area. The pace of investment has slowed slightly from the record rates set in the preceding years and, in terms of costs, we have completed about half of the construction of the weatherproof network. At this stage, it is clearly apparent that there are fewer power cuts due to weather in Caruna's network areas, and they are shorter in duration.

As the population of Finland concentrates in growth centres, it will affect the construction methods used to modernise the electricity network. Caruna Espoo, which operates in the cities in Greater Helsinki and in Joensuu, faces different challenges than Caruna Oy, which operates in the rural regions. The distribution of electricity to customers on low-voltage networks in sparsely populated areas can often be assured by means other than underground cabling. We also need alternatives that are not yet possible for distribution network companies, such as electricity storage to balance out the network and safeguard electricity distribution in the event of a fault.

Modernising the electricity network is an enormous undertaking for operators in the industry, and it would also be sensible to build other essential infrastructure, such as fibre-optic and street-lighting networks, at the same time. This requires better coordination and timelier information exchange between municipalities on the one hand and electricity and telecom network

companies on the other. We worked with Telia on the joint construction of the electricity network and fibre-optic network in Southwest Finland last year, and following this successful trial, we will continue working together in 2020.

### NEW DIGITAL SERVICES TO OUR CUSTOMERS LAUNCHED

A few years ago, we decided that Caruna's vision would be "one million satisfied customers" – everything we do is a step towards this vision. Last year, we introduced new services to make our customers' everyday lives easier. We now offer services that enable customers to compare solar panels and electric vehicle charging solutions and handle matters related to their customer relationship on Caruna+, a digital self-service channel. Caruna's Resident Service reached out to customers in the areas where the network is being built. It was pleasing to note that the effort we have made to improve customer relations led to good results and our customer satisfaction rating increased significantly.

A reliable electricity network requires seamless cooperation throughout the value chain. I would like to thank our expert employees, network construction and maintenance partners, and other partners for the fruitful cooperation in the past year and, above all, our customers – the people we work for. I would also like to express my thanks for the interactions and feedback in the past year. Our basic mission will remain the same – we want to keep the lights on and, thereby, ensure that our customers' everyday lives go smoothly.

**Tomi Yli-Kyyny**  
CEO



## CARUNA IN SOCIETY

- We are responsible for about a fifth of Finland's electricity distribution
- Aiming for one million satisfied customers
- Our role in society







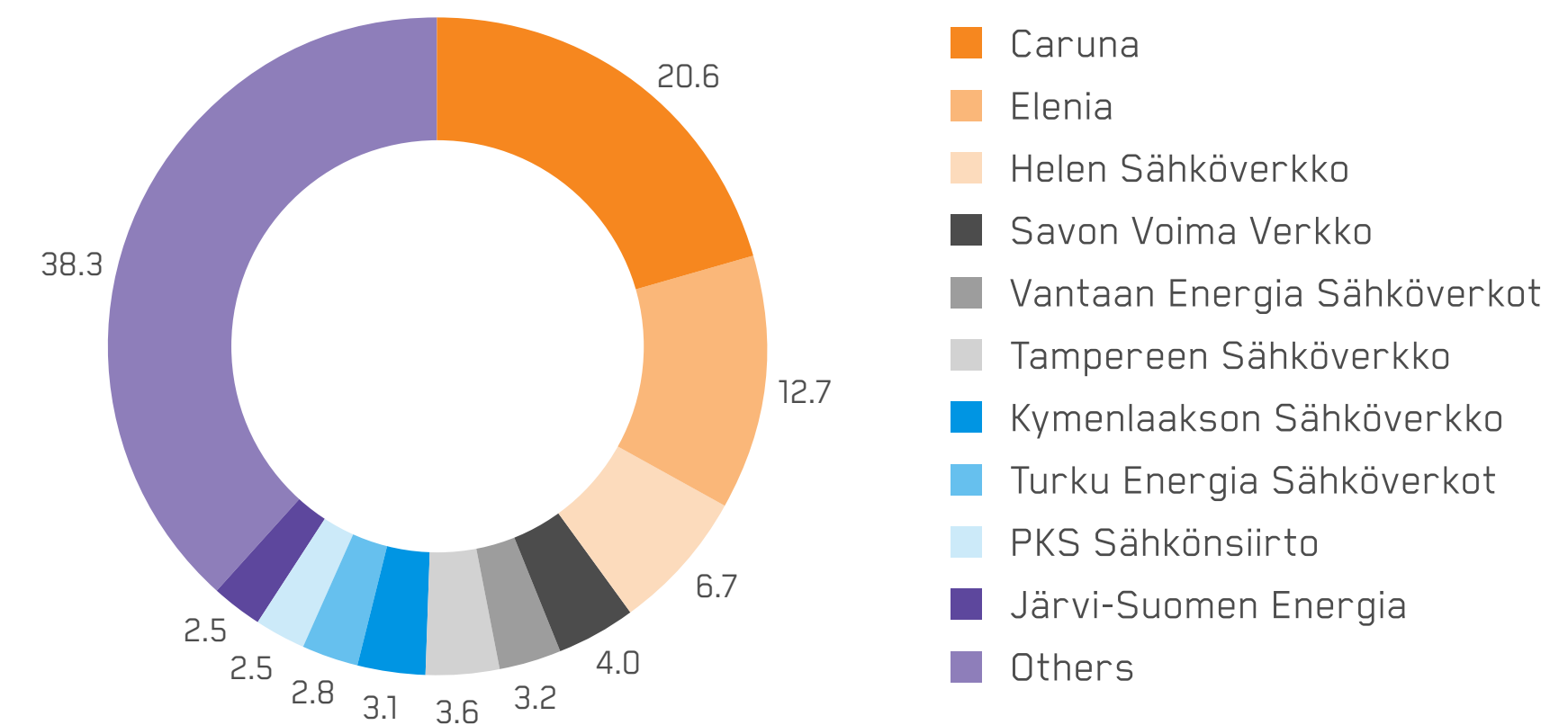
## We are responsible for about a fifth of Finland's electricity distribution

Electricity distribution is a strictly regulated and supervised business. In 2019, there were a total of 77 network companies operating on the distribution market in their own geographical areas.

Our Group includes two separate network companies. Caruna Espoo Oy is our urban company, with much of the network underground and a large number

of customers among which to share the costs per metre of network. Our electricity distribution company, Caruna Espoo, offers some of Finland's

Share of Caruna and other companies of the electricity supplied through the distribution network, (%)







We have begun making the investments required by the Electricity Market Act to ensure the reliability of supply by legislated deadlines because our network is so large.

In 2019, we invested  
**EUR 167.3 million**  
 in network improvements,  
 and we built  
**3,800 KM**  
 of cabling underground, where  
 it is protected from the elements.

lowest prices for electricity distribution. Our other network company, Caruna Oy, mainly operates in sparsely populated areas with a relatively long network length per customer. This is reflected in higher prices in comparison with Caruna Espoo.

**THE NETWORK LENGTH PER CUSTOMER AND THE AGE OF THE NETWORK HAVE THE GREATEST IMPACT ON THE PRICE OF ELECTRICITY DISTRIBUTION.**

Companies operating in urban areas have an average network length of 54 metres per customer, while the corresponding figure for sparsely populated areas is 199 metres per customer. In 2019, there were 29 companies operating in urban areas and 48 companies operating primarily in sparsely populated areas.

**THE ELECTRICITY MARKET ACT REQUIRES THAT SIGNIFICANT IMPROVEMENTS ARE MADE IN THE RELIABILITY OF SUPPLY**

We have begun making the investments required by the Electricity Market Act to ensure the reliability of supply by legislated deadlines because our network is so large. In 2019, we invested EUR 167.3 in network improvements, and we built 3,800 km of cabling underground, where it is protected from the elements. We also took other measures to improve the reliability of supply. These involved increasing the rate of network automation to increase the amount of remote control over the electricity network and accelerate fault rectification. We extended the service life of the overhead lines in sparsely populated areas by replacing pylons.

We also investigated alternative, more cost-efficient ways of improving the reliability of supply, such as using batteries to store electricity in sparsely populated areas.

The Energy Authority monitors the pricing of electricity distribution companies in four-year regulatory periods. The revenues that each company is permitted to make are set for the four-year period. If the company invoices more than the permitted amount in the period, it is considered to have made an excess return. In such cases, the company returns the excess profit to its customers over the following four-year term. If the company makes a deficit, it may invoice its customers for the difference over the following four years. A legislative amendment concerning deficits is pending. The amendment seeks to extend the levelling period from four to eight years. The

Energy Authority publishes annual calculations for monitoring the company-specific differences between permitted and invoiced net sales.

In spring 2019, the Energy Authority issued a conditional decision to Caruna Oy concerning an extension to the deficit levelling period. The decision enables Caruna Oy to allocate the network construction costs over a longer period.

**We extended the service life of the overhead lines in sparsely populated areas by replacing pylons.**

**Goals for the security of supply defined in the Electricity Market Act**

| CRITERION: Interruptions caused by storms or heavy snowfall may last a maximum of six hours in urban & suburban areas and 36 hours in rural areas. |   |   |  |
|--|---|---|--|
|  | 2019  | 2023  | 2028   |
| TARGET   | <b>50%</b><br>of customers covered, excluding holiday homes | <b>75%</b><br>of customers covered, excluding holiday homes | <b>100%</b><br>of customers covered, excluding holiday homes |



## Aiming for one million satisfied customers

Our vision is to have one million satisfied customers. We guarantee reliable electricity distribution for our customers, to enable them to play a part in combating climate change and sustainably develop the smart energy system of the future. We have a local presence where our customers are based.

We are the industry forerunner in developing, constructing, operating and maintaining a smart electricity network. Climate change and digitalisation are transforming the energy industry and society as a whole. A smart electricity network is a prerequisite for a green energy system.

All of our customers have the freedom to live, work and prosper however they want. To achieve

this vision, we have defined three focal points that will drive our strategy forward.

The pillars of our operations are an efficient, customer-oriented core business, good corporate citizenship, and growth and new services.

### **WE ARE DEVELOPING OUR ELECTRICITY NETWORK AND DIVERSIFYING OUR CUSTOMER SERVICE PRODUCTIVELY**

In 2019, our reliability of supply rate was 99.99 per cent, and we invested EUR 167.3 million in network development and construction. This work bore fruit when Storms Aapeli and Sointu struck Finland: the number of electricity distribution outages and the durations of outages were substantially lower than experienced under previous storms.

We introduced a new key account management model and system, as well as a chat service, we developed our complaint process, and we launched the new Caruna+ mobile app to make it

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**Our customers' satisfaction improved significantly year-on-year.**







Our customers can use the Marketplace to buy charging services for their electric vehicles.

easier for customers to do business with us.

Our investments in diversifying our service range and customer service are reflected in improved rates of customer satisfaction. In the year under review, we measured this development monthly using the Net Promoter Score (NPS) with private customers, small and medium-sized companies, large customers, landowners, municipal customers and contractors. Our NPS rose significantly year-on-year to 24.2 in 2019 (in 2018, the NPS was 6.5).

### COLLABORATION, DEVELOPMENT AND INTERACTION IN MANY AREAS

We contribute actively to development work within the industry and in interest groups. We meet customers and decision-makers regularly.

Safeguarding the competitiveness of Finnish society is important to us, and we recognise our role in this. We offer municipalities and telecom operators new models for joint construction with the aim of accelerating the construction of fibre-optic networks and strengthening regional vitality.

We made progress on our culture of safety in many ways in 2019. We continuously strive to improve the everyday safety that our customers experience and the safe working conditions we ensure for our partners and our own personnel. In terms of factors indicating safety, 2019 was one of the best years in Caruna's history.

### NEW GENERATORS ON OUR NETWORK AND NEW SERVICES FOR OUR CUSTOMERS

The electricity distribution network is an excellent platform for green energy solutions, such as renewable energy generation, consumer demand response and energy communities. By the end of 2019, renewable energy producers had connected more than 6,600 systems to Caruna's network - 64 per cent more than in the previous year.

In 2019, we launched the Caruna Marketplace, which will become a platform for our customers to purchase various electricity-related services. Our customers can use the Marketplace to get information and to buy solar panels and electric vehicle charging services.

We also began piloting battery solutions. The pilots helped us to study means of safeguarding the reliability of supply and managing the balance of our electricity network. We are also developing technology to detect faults in the cable network automatically.

We participated in numerous business growth and development events as speakers and panel members. We held our own hackathon events, which seek to identify solutions for improving our electricity distribution service.

The work we have done to promote our culture of safety is also reflected in our partner network.

### KEY PROJECTS TO ADVANCE STRATEGIC PRIORITIES

Every year, we choose the key project that will help us to manage and implement our strategy.

#### Our key projects in 2019:

- We increased the number of digital services offered to customers
- We launched the Resident Service, which involves employees holding discussions with customers and maintaining a presence in their local areas
- We improved the quality and safety of network construction
- We piloted more cost-efficient solutions for network development



## Our role in society

In order for us to deserve our place and generate value in society, we must demonstrate how we will do it. Our growing customer base and developing electricity network are the prerequisites for creating value for our customers and society. Our strengths underpin value creation: cost benefits due to our large size, expert personnel and responsibly-managed, long-term collaboration with our partners. Our sustainable financing model enables investments in developing a smart electricity network and improving the reliability of electricity distribution. We operate responsibly, and we are taking responsibility for building a green energy system and for developing Finnish society. For more about our corporate responsibility programme and the focal areas of the programme, [see here](#) →





## INPUTS

### INCREASING CUSTOMER BASE AND DATA

- ~600,000 homes, ~80 municipalities, ~90,000 companies
- 1.5 million people covered by electricity distribution in Finland
- Proportion of electricity distribution in Finland ~20%
- Customer-specific data on use of electricity

### DEVELOPING AND RENEWING ELECTRICITY NETWORK

- 87,370 km electricity network, value EUR 2.9 billion
- 3,600 remote-controlled sites
- 690,000 smart electricity meters
- 56% cabled network
- Amount of solar power production 56 MW

### SKILLED AND COMMITTED EXPERTS

- 313 Caruna employees, ~1,000 contractor employees
- Employment commitment index 72%
- Skilled supply chain management

### STRONG COOPERATION NETWORK

- ~570 contractors
- ~100 suppliers of services and network materials
- Collaboration with authorities
- A functional transmission grid

### NATURAL RESOURCES ENABLING OPERATION

- Used land areas 18,500 ha
- Electricity network metals e.g. aluminium, copper

### FINANCING MODEL ENABLING INVESTMENT

- Own capital EUR 100.4 million
- Interest bearing debt EUR 3,375.1 million
- Balance sheet EUR 4,254.1 million
- Credit rating BBB+ (S&P)

## CARUNA'S BUSINESS MODEL

### UNINTERRUPTED AND SECURE NETWORK SERVICE 24/7

- Effective construction and operation of electricity networks
- Developing future infrastructures

### SMART ENERGY SOLUTIONS AND SERVICES

- Digital services
- Advice and engagement of customers in the energy market
- Ensuring cyber security
- Caruna Marketplace services

### CUSTOMER-ORIENTED ENERGY SYSTEM OF FUTURE

- Decentralised energy production
- Electrification of transport
- Energy communities
- Smart homes
- Electricity storages

## IMPACTS

### ON STAKEHOLDERS

#### HELPING DAILY LIVES RUN SMOOTHLY

- Reliability of supply rate 99.99%
- Customer satisfaction 24.2 (NPS)
- Own energy production
- Transparent and reasonable pricing

#### COMPETITIVENESS OF CITIES AND MUNICIPALITIES

- An electricity network to meet changing energy needs
- Enabling the business operations

#### SAFE AND DEVELOPING WORKING ENVIRONMENT

- Injury frequency of supply chain 5.3 (LWIF)
- Constant development of skills and safety culture
- 850 attendees in the environment and safety training sessions

### ON FINNISH SOCIETY

#### FUNCTIONING FINNISH SOCIETY

- Reducing and shortening power cuts
- Joint-construction of electricity and telecom networks and municipal infrastructure
- A significant employer in rural areas
- Ensuring security of supply

#### CONTROLLING CLIMATE AND ENVIRONMENTAL IMPACTS

- Enabling the generation of renewable energy
- Protecting biodiversity
- Releasing land for carbon sinks and agriculture and forestry purposes 3,500 ha
- Relative energy loss of electricity network 3%
- Recovery rate of dismantled material over 95%
- Removal of pole-mounted transformers from groundwater areas 235pcs
- 8 oil spills (>100 kg)

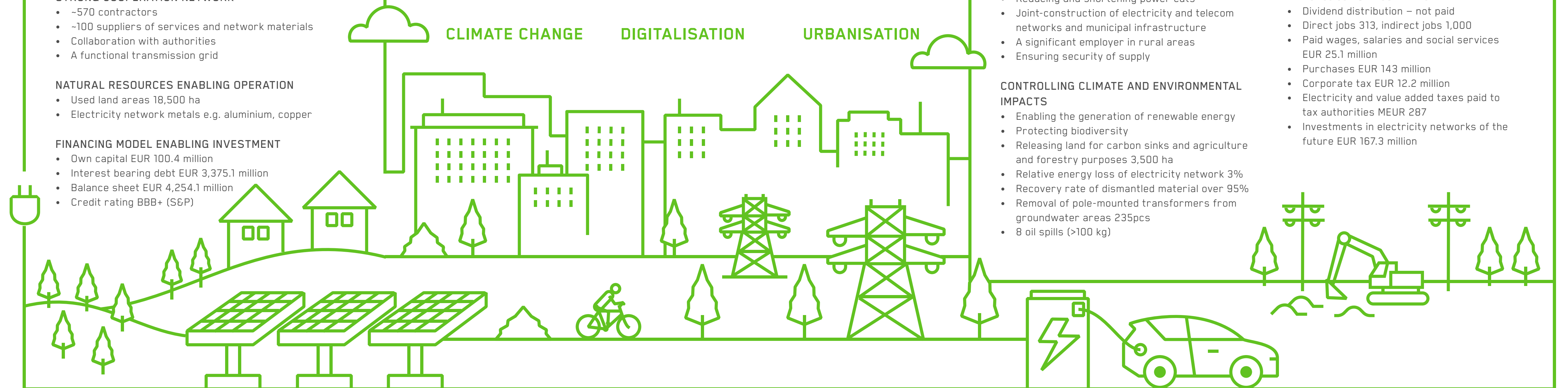
#### FINANCIAL FOOTPRINT

- Net sales EUR 466.4 million
- Dividend distribution – not paid
- Direct jobs 313, indirect jobs 1,000
- Paid wages, salaries and social services EUR 25.1 million
- Purchases EUR 143 million
- Corporate tax EUR 12.2 million
- Electricity and value added taxes paid to tax authorities MEUR 287
- Investments in electricity networks of the future EUR 167.3 million

CLIMATE CHANGE

DIGITALISATION

URBANISATION







## PRESENT IN THE MOMENT

- The electricity network has gone underground, and construction is closer to people's homes
- For the benefit of customers





## The electricity network has gone underground, and construction is closer to people's homes

We are building, maintaining, repairing, demolishing and monitoring our electricity network to ensure that we can distribute electricity to hundreds of thousands of customers with minimal disruption.

Right now, somewhere in Finland, a design partner responsible for building out the electricity network on our behalf will be talking to landowners about how our electricity network could be located on their land. Elsewhere, preparations are being made to repair, construct or demolish parts of the electricity network, install marker balls on overhead lines to prevent bird collisions, lay cables into the seabed or stand in a shopping centre answering customers' questions about electricity distribution.

Even the worst storms of 2019 did not cause large-scale distribution outages, so our underground cabling work is already bearing fruit.

Our control centre monitors the operation of our network 24/7 so that faults and disruptions can be addressed very quickly by utilising network automation or, if necessary, by sending an electrical professional to the site to repair the cause of the disruption. This is our everyday work and our

core business, which is funded by the electricity distribution charges that our customers pay.

In the review year, there were 313 Caruna employees working in various roles, and our projects directly employed 573 contractors. We indirectly employ approximately 1,000 professionals in various parts of Finland. All of our work is Finnish work.

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**We monitor our network around the clock, every day of the year.**





Our electricity network is

**~87,370 KM**

in length it is equal to **76** times the length of Finland

**2,070 KM** of high voltage network

**31,500 KM** of medium voltage network

**53,800 KM** of low voltage network

### THE ELECTRICITY NETWORK IS BEING MODERNISED AS PLANNED

In 2019, our most important work was to ensure that all of our customers received electricity 24/7. Our electricity network is getting older, so there is no alternative: all of Finland's network owners must discharge their obligations to ensure the reliability of supply in accordance with the deadlines set by law. That includes us. We at Caruna have been working on this since 2014, and our work will continue until 2028, when everything should be complete. For this reason, Caruna Oy was unable to avoid price changes in the year under review.

Prices remained unchanged in the area served by Caruna Espoo Oy.

In 2019, we put 3,800 kilometres of the electricity network underground, where it is protected from the fluctuating weather conditions. We distributed electricity to our customers with a reliability rate of 99.99 per cent.

### OUR CUSTOMERS HAVE DIFFERENT ELECTRICITY DISTRIBUTION NEEDS

Our customers include hundreds of thousands of private customers, as well as businesses and organisations ranging from wind farms, shopping

centres and factories to small companies, municipalities, towns and cities.

In the year under review, we added 35 kilometres to our high-voltage network in Espoo and Koillismaa, which distributes electricity from power plants to electricity distribution networks and heavy industry. Primary substations are a part of the distribution operation on the high-voltage network. Our newest

substation was completed in Suurpelto, Espoo in spring 2019, and it now takes care of the electricity supply for the 20,000 customers in the area.

The medium-voltage network distributes electricity to small industrial sites and transformers located near residential areas. In 2019, we added total 2,300 kilometres to our medium-voltage network in our whole electrical network.

### Electricity network key indicators: Caruna Oy and Caruna Espoo Oy

|  | Caruna Oy | Caruna Espoo Oy |
|--|-----------|-----------------|
| Length of electricity network (km)                 | 79,470    | 7,900           |
| Level of cabling in the low-voltage network (%)    | 50        | 74              |
| Level of cabling in the medium-voltage network (%) | 63        | 83              |

### Electricity network key indicators

|   | 2019   | 2018   | 2017   |
|---|--------|--------|--------|
| Length of electricity network in total (km)         | 87,370 | 87,600 | 85,200 |
| Length of low-voltage network                       | 53,800 | 53,400 | 52,400 |
| Length of medium-voltage network                    | 31,500 | 32,100 | 30,700 |
| Length of high-voltage network                      | 2,070  | 2,100  | 2,100  |
| Number of secondary substations                     | 30,600 | 31,300 | 30,600 |
| Number of primary substations                       | 188    | 190    | 207    |
| Underground cable network laid during the year (km) | 3,800  | 6,300  | 6,200  |
| Level of cabling in total (%)                       | 56     | 52     | 45     |
| Level of cabling in the low-voltage network         | 53     | 51     | 48     |
| Level of cabling in the medium-voltage network      | 64     | 56     | 44     |
| Investments in the electricity network* (MEUR)      | 167.3  | 258.5  | 276.5  |

\* The investment figure for 2017 is not completely comparable to earlier years due to different calculation methods.





The supply of electricity is expected to be undisturbed and capable of responding to needs in the future.

The first joint construction sites implemented with Telia are in Raisio and Rusko in Southwest Finland and in Hyvinkää in South Finland. Customers in these areas were offered the opportunity to get a fast fibre optic connection to their homes, ensuring that quick connection speeds regardless whether the network is used by households or businesses.

### SEVERAL FACTORS BEHIND THE NETWORK INVESTMENT PROGRAMME

Our substantial renovation investments, which totalled EUR 167.3 million in 2019, are founded on

the Electricity Market Act and the expectations of our customers and society. Electricity distribution is required to be free of disruptions and flexible enough to serve the needs of an increasingly electrical world.

Electricity consumption is increasing from one year to the next, and various forms of generating, distributing and storing electricity will become more and more relevant. This is demonstrated by the growing interest in generating solar power in our network area. At the end of the year, there were 6,600 solar power generators connected to our network (+64% growth year-on-year).

### Factors guiding our investments

|                 | REALIABILITY OF SUPPLY  | AGEING NETWORK  | GROWTH  |
|-----------------|---|---|---|
| GUIDING FACTORS | <ul style="list-style-type: none"> <li>Key expectations for the reliability of supply or electricity by the society and customers</li> <li>Target levels are defined in the updated Electricity Market Act</li> </ul>             | <ul style="list-style-type: none"> <li>The majority of our medium voltage grid was built in the 1970s–1980s</li> <li>About to reach the age for renovations for the first time</li> </ul>   | <ul style="list-style-type: none"> <li>New connections</li> <li>New town plan areas</li> <li>New industrial connections</li> </ul>  |
| ACTIONS         | <ul style="list-style-type: none"> <li>Main focus on the improvement of the network's weather resistance</li> <li>More underground cabling</li> <li>More network automation</li> <li>Clearance of power line corridors</li> </ul> | <ul style="list-style-type: none"> <li>Main focus is on replacing the older network elements approaching the end of their technical life cycle</li> <li>Overhead lines of medium and low-voltage network</li> <li>Lines and primary substations of high-voltage network</li> <li>Secondary substations and cable cabinets of cable network</li> </ul> | <ul style="list-style-type: none"> <li>Connections for new customers will be implemented with customer's current and future needs in mind. In addition to reliable electricity distribution the customer connections enable small-scale production of electricity and serve the need of growing electric transportation.</li> </ul> |
|                 | REPLACEMENT INVESTMENTS   |   | GROWTH INVESTMENTS  |

### THE LOCAL CABLE PROJECT BEGAN – WE WILL BE BUILDING NEAR HOUSES

The low-voltage network connects homes to the electricity distribution network. During the year under review, we named our low-voltage network projects Local Cable Projects. Some of the Local Cable Projects are being conducted in cooperation with other parties, such as telecoms operators, or when municipalities, towns and cities upgrade their street lights. Joint construction is a good option, particularly for local residents. The streets only need to be dug up once, so residents do not suffer constant disruption. This also benefits the environment.

In the year under review, we worked with Telia Finland Oy to participate in a joint construction competition held by Traficom, the Finnish Transport and Communications Agency. We did not win this time, but the benefits of joint construction were demonstrated by several worthy projects in various parts of Finland.

Rate of the reliability of electricity supply

**99.99%**

At the end of the year, there were

**6,600**

solar power generators connected to our network



Cabling rate 2017-2020

|      |     |             |     |
|------|-----|-------------|-----|
| 2017 | 45% | 2018        | 52% |
| 2019 | 56% | Target 2020 | 60% |



## THE RELIABLE DISTRIBUTION OF ELECTRICITY IS BASED ON THE SECURITY OF SUPPLY EVEN UNDER DIFFICULT CIRCUMSTANCES

In 2019, our reliability was close to 100 per cent, just as it had been in the previous year.

At the turn of the year, our electricity network in Southwest and West Finland and in the Satakunta region was put to the test by Storm Aapeli, which caused 29,000 of our customers to suffer power outages simultaneously. The faults were rectified on 1 January in several locations. The most difficult areas were on the coast of Ostrobothnia and the Turku archipelago. We were prepared for substantial snowfall in February, and there were no large-scale power outages.

In May, we were prepared for the effects of thunderstorms and strong storm winds in almost all of our network areas. There were no large-scale distribution outages, although

the winds were very strong at times. In June, thunderstorms and gusts of winds shook the electricity network, but there were no major distribution outages. In October, an autumn storm cut the power to thousands of our customers in West Finland and Satakunta. At most, around 7,200 customers were without electricity. On Independence Day, up to 12,000 of our customers in the Turku archipelago suffered power outages. The fault was caused by the breakdown of a surge arrester on the high-voltage network. Electricity was restored to all of our customers by the evening of Independence Day.

In 2019, the System Average Interruption Frequency Index (SAIFI), an indicator of the frequency of supply interruptions, was 1.4. This figure means that our customers were subjected to an average of 1.4 distribution outages during the year. The System Average Interruption Duration Index (SAIDI), an indicator of the total duration of power cuts per customer, was 79 minutes in 2019.

### Reliability of supply key indicators

|   | 2019  | 2018  | 2017  |
|---|-------|-------|-------|
| System Average Interruption Frequency Index (SAIFI) (no of incidents) | 1.4   | 1.9   | 1.8   |
| System Average Interruption Duration Index (SAIDI) (min)              | 79    | 103   | 123   |
| Damage caused by interruptions (MEUR)                                 | 17.2  | 24.2  | 27.9  |
| Rate of the reliability of electricity supply (%)                     | 99.99 | 99.98 | 99.98 |

This table shows the number of interruptions experienced by our customers and the duration per customer, as well as the calculated total inconvenience caused by interruptions (KAH) for the year as a whole. The reliability of supply rate describes the reliability of electricity distribution for the year as a whole. The table also shows the inconvenience caused by outages related to planned improvements to the electricity network.







### NEW JOINT CONSTRUCTION MODEL DEPLOYED

Caruna and Telia Finland agreed on a joint construction project that will see electricity and fibre-optic networks being built in an efficient and environmentally friendly manner. The first projects began in Southwest Finland in the year under review.

Constructing fibre networks in connection with undergrounding makes it possible for customers to get modern and reliable internet connections to their homes. Once we began building closer to our customers' houses, it became possible to build fibre and electricity networks at the same time. We have already moved most of our robust medium-voltage network underground, so the next step is to bury the low-voltage network, which distributes electricity to homes and businesses.



### SUURPELTO SUBSTATION COMPLETED

The Suurpelto substation in Espoo was commissioned at the end of the summer. The modern substation will safeguard the supply of electricity to an expanding area. A community event was held to celebrate the commissioning.

Once we began building closer to our customers' houses, it became possible to build fibre and electricity networks at the same time.

### REGULAR PRACTICE IS REQUIRED TO MAINTAIN THE RELIABILITY OF SUPPLY

During the year, we participated in several joint exercises related to managing disruptions in our various network areas. Voimatalouspooli, a reliability-of-supply organisation, ran exercises in South, North and West Finland. The exercise scenario was that freezing rain had damaged the structures of the grid and distribution networks, leading to a long interruption affecting several regions of Finland.

The exercise brought Caruna employees into co-operation with various different parties to practice

managing situations, forming and communicating a status overview during disruptions, and working with other parties. We also arranged exercises of our own on topics such as cyber-attacks.

Caruna is involved in planning collaboration in the fields of reliability of supply and preparedness by working on committees convened by the Voimatalouspooli reliability-of-supply organisation and the regional business preparedness project (ELVAR).

We are updating our preparedness plans on the basis of this committee work and exercises, as well as on the basis of the experience we gain during actual incidents of large-scale disruption.







## For the benefit of customers

Our customers would like everyday matters to be simpler: hassle-free service, reasonable pricing and reliable electricity distribution, whatever the weather.

We have nearly 700,000 customers in our network areas of South, Southwest and West Finland, Joensuu and the regions of Koillismaa and Satakunta. The majority of our customers are private customers, but we also serve smaller, medium-sized and large customers ranging from hairdressing salons, municipalities and cities to large industrial plants.

In 2019, a total of 9,000 new customers were connected to our electricity network, 2,000 of which were connections to new buildings.

### THE SERVICE IS EXPECTED TO BE CLEAR, RELIABLE AND DIVERSE

Caruna continued to digitalise its customer service in 2019, and this work is still ongoing. We released an electronic self-service channel in 2018 under the name 'My Pages'. Under the 2019 digitalisation project, the service was given a new visual appearance and was renamed Caruna+. Caruna+ works on a web browser and as a mobile app. Alongside the modernised visual appearance and the new name, several new features were

### Caruna Oy and Caruna Espoo Oy customer facts

|   | Caruna Oy | Caruna Espoo Oy |
|---|-----------|-----------------|
| Network length (m) / customer                 | 168       | 36              |
| Cabling rate (%)                              | 54        | 76              |
| Electricity distribution price K1* (cent/kWh) | 15.09     | 9.47            |
| Investments per customer (EUR)                | 305       | 105             |

\* K1 = apartment, no electric sauna stove, main fuse 1 x 25 A, electricity usage 2,000 kWh/year (11/2019)



## Caruna's Customer Volumes by Voltage Level

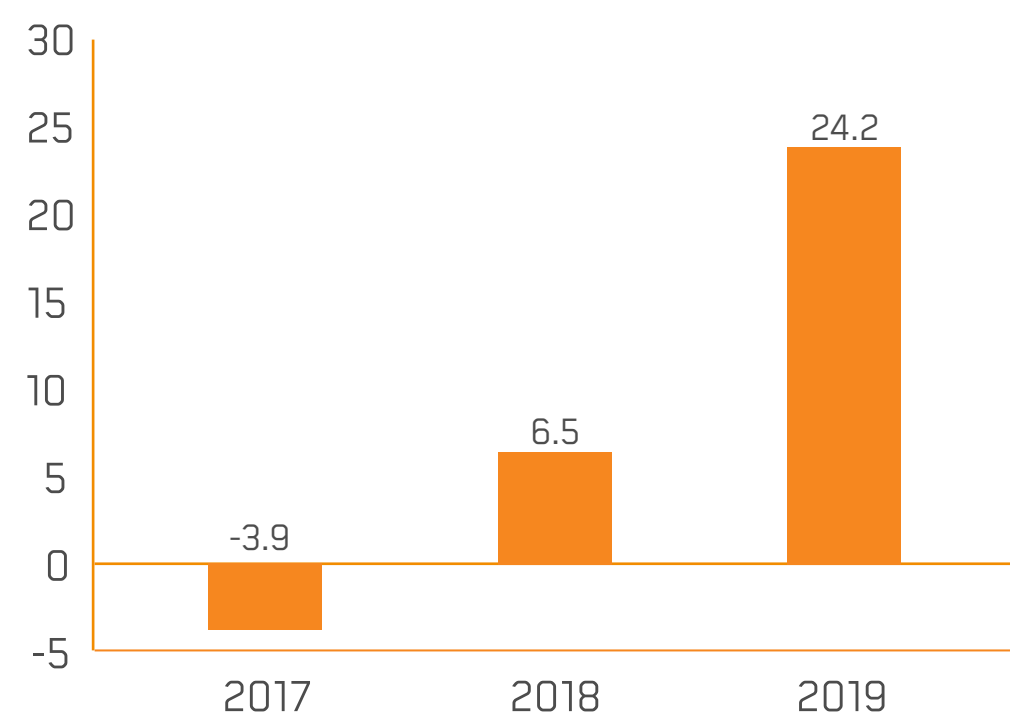
|   | 2019    | 2018    | 2017    |
|---|---------|---------|---------|
| Customer volume in the low-voltage network    | 691,000 | 682,000 | 671,000 |
| Customer volume in the medium-voltage network | 800     | 800     | 800     |
| Customer volume in the high-voltage network   | 55      | 55      | 55      |

added to the service, including the ability to pay invoices, which is now possible on the browser-based version of Caruna+ and will soon be possible on the mobile app.

### WE RECEIVED EXCELLENT RATINGS AND GOOD FEEDBACK FOR OUR CUSTOMER SERVICE IN 2019

In 2019, our customer service centre welcomed a new colleague: a customer service robot named Casper. Casper can answer customers' questions

### NPS-customer satisfaction (scale of -100 to +100)



about contracts and invoicing via our website chat function outside of customer service hours. In recent years, we have focused on improving customer satisfaction, and we reached a substantially better level in 2019. This is reflected in a better Net Promoter Score (NPS).

### WE PROVIDE LOCAL SERVICE

As Finland becomes increasingly digital, there is still a demand for personal contact. Since March 2019, Caruna's Resident Service has been travelling around Caruna's operating areas in Ostrobothnia and Southwest Finland. The Resident Service team tours the areas around Caruna's construction sites to meet customers, providing information and answering any questions they may have. The Resident Service received excellent feedback from customers and Caruna employees alike.

It is worth investing in a local presence for every customer segment. In 2019, our Key Account Managers held meetings with approximately 500 customers: municipalities, towns, cities, and small, medium-sized and large companies. The meetings with municipal customers often concerned joint construction. The company meetings focused on the reliability of supply and the customers' own projects related to growth and change.



### JESSE, CARL-EMIL AND JULIUS CREATE POSITIVE ENERGY – RESIDENT SERVICE ON THE MOVE

Since the beginning of March, Caruna's Resident Service has been travelling around Ostrobothnia and Southwest Finland. The service is an experiment in which representatives visit both public spaces such as shops and events located near excavation areas and people's homes. The Resident Service provides information and answers to questions, but also has friendly chats with people.

In the afternoon, the Resident Service performs home visits during its door-to-door round. The route is planned in advance to include households that we know are affected by the electricity network improvement programme.

[Read more](#) →



### "INCREDIBLE SERVICE. THANK YOU."

On a Friday evening in March, the lights suddenly went out on the island where Timo lives. The cause of the power cut was eventually traced to a fault in a low-voltage conductor. The entire operation, from the fault report to the stage at which the work was completed and electricity was restored to the customer, took just over three hours. The four-hour target was clearly met, even though the fault was in a difficult location and the weather conditions were challenging. A call to Caruna's 24-hour fault reporting service set in train the process, which Timo describes simply as: "an amazing job!"

[Read more](#) →





### CONTROL CENTRE OPERATOR TIMO KYRÖ

Control Centre Operator Timo Kyyrö ensures that hundreds of thousands of people can go about their daily business.

Dozens of computer screens light up the large control room. There are even larger monitors at the front. This is where Caruna's control centre team works, and the 15 employees here play a significant role. They are responsible for managing the operational actions on the electricity network, ensuring safety and the optimal operation and monitoring of the network. In other words, they are responsible for keeping Finland's lights on. One of the team members is Timo Kyyrö, a senior operations engineer and the 2018 Control Centre Operator of the Year.

[Read more](#) →

### OUR TOP PRIORITY IS TO KEEP THE LIGHTS ON SAFELY

Our customers rely on us to provide electricity, and they do not need to worry about their safety. This is our top priority. In the event of a sudden power cut, we always have a squad of expert technicians and other electrical professionals ready to go and fix the problem. Our control centre team of 15 professionals plays a very important role in monitoring our electricity network. They are responsible for ensuring that Finland's lights stay on 24/7.

### OUR MARKETPLACE OFFER SOLUTIONS FOR SOLAR POWER GENERATORS

We have the same wishes as our customers: to be involved in combating climate change and to be part of an environmentally friendly society. More and more of our customers are buying solar panels for their homes, both for environmental and financial reasons.

Our customers are increasingly interested in generating solar power: there are already 6,600 generators on Caruna's network, and this sum is constantly increasing. Our Caruna Marketplace offers information on solar panels and helps solar power companies and our customers to find each other.

**We work around the clock to ensure that our customers do not suffer electricity outages.**



Caruna's customer service team consists of dozens of professionals with in-depth knowledge of their field. Every day is different, and the team members put their hearts and souls into their work.



### SEE YOU AT THE MARKETPLACE

The Marketplace service makes it easy to test how much solar power your roof could generate. At the same time you can check whether your existing electricity connection is suitable for charging electric car.

[Read blog](#) →



## Developing services for customer groups

We have identified the following seven customer groups, and we will continue to develop their services and service channels in 2020:



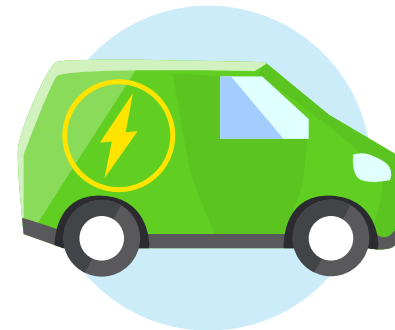
1. Personal customers



5. Energy advice actors



2. Small to mid-size enterprises



6. Electricity suppliers



3. Electricity contractors



7. Landowners

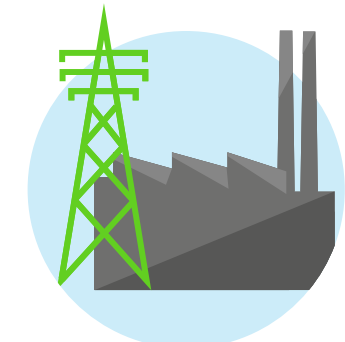


4. Professional builders

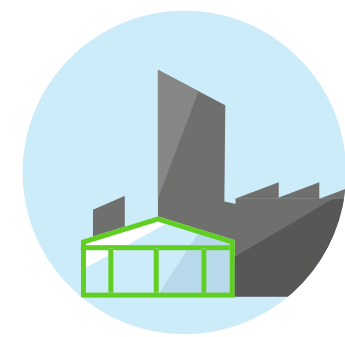
In addition, Caruna's key account managers manage our key accounts, which are categorised into the following groups:



1. Municipalities and cities



2. Large customers  
(large power plants, industrial plants and network companies)



3. Mid-sized customers  
(small-scale industry, food factories and greenhouses)

In 2018, we added new service description pages on our website to help Caruna's customer groups find the services designed for them.



# CORPORATE RESPONSIBILITY

- Corporate responsibility themes are an integral part of our business strategy
- Climate change
- Working environment
- Supply chain and environment
- Corporate citizenship





# Corporate responsibility themes are an integral part our business strategy

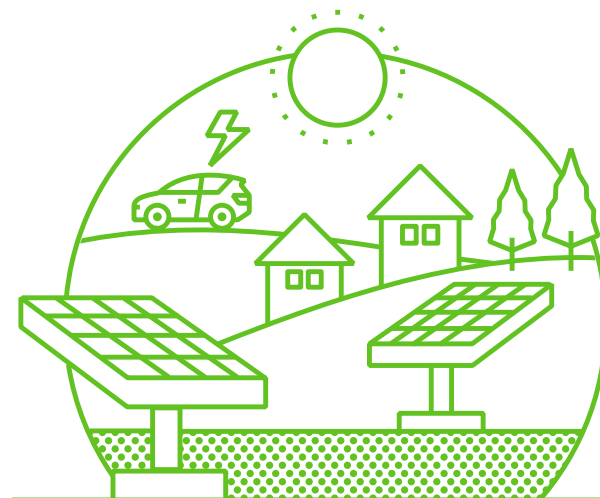
Our corporate responsibility programme is based on the three focal areas of our strategy: good corporate citizenship, an efficient, customer-oriented core business, and growth and new services.

The corporate responsibility themes under these areas focused on services, reducing the emissions of our operations, operational and network safety, taking the environment into consideration, and promoting societal digitalisation.

In 2019, our corporate responsibility themes were reflected in the following actions:

- We helped our customers to become consumers and producers of renewable energy.
- We installed electricity cables underground to protect them from extreme weather, which releases land for carbon sinks and agriculture and forestry needs.
- We offered customers sustainable and cost-efficient solutions.
- We facilitated the digitalisation of society through the joint construction of electricity and telecom networks as well as municipal infrastructure.

**OUR GOAL IS TO BE A RELIABLE AND AFFORDABLE ELECTRICITY DISTRIBUTOR FOR CUSTOMERS AND TO PLAY A KEY ROLE IN DEVELOPING THE ENERGY SYSTEM OF THE FUTURE.**



**CLIMATE CHANGE**

Making a credible contribution to combating the impacts of climate change



**WORKING ENVIRONMENT**

Safe and developing operating environment for our employees and partners



**SUPPLY CHAIN AND ENVIRONMENT**

Sustainable infrastructure and targeted services for customers









**CORPORATE CITIZENSHIP**

Good corporate citizen in Finnish society





# Corporate responsibility themes and progress for 2019

| Theme  | Indicator  | Target 2019  | Outcome 2019  |   | Target 2020   |
|--|--|--|---|---|---|
| Climate change<br>                        | Reducing overhead lines by   | -3,300 km  | -4,100 km   | + | 3,500 km  |
|  | Carbon footprint   | new  | Calculation has been done in 2018 and 2019, in 2019 carbon footprint decreased by 23% | → | Continuous reduction  |
|  | Cabling rate   | 56%  | 56%   | → | 60%   |
| Supply chain and the environment<br>   | Number of oil leaks  | ≤3pcs (≥100 kg)  | 8pcs (≥100 kg)  | × | ≤3pcs (≥100 kg)   |
|  | Further processing of dismantled network components*                       | ≥90%   | 95%   | + | ≥90%  |
|  | Number of pole-mounted transformers in groundwater areas                   | 0  | 115   | × | 0   |
|  | Service provider auditing  | 8  | 8   | → | 8   |
|  | Supplier Code of Conduct online course                                     | Construction and deployment  | Built and put into operation  | → | Most important contracted suppliers have completed the course                                 |
|  | Supplementing the corporate responsibility targets in requests for tenders | The targets were supplemented for all of the competitive tendering processes in 2019 | Goals have been supplemented  | → | Further development of responsibility targets and implementation of new competitive tendering |
|  | Further development of supply chain HSEQ requirements                      | Assessment has been done and development targets have been identified                | HSEQ requirements updated   | → | New requirements for the competitive tendering in 2020  |

\* The onward processing of materials = Kuusakoski Oy handles the further processing of the materials.



| Theme   | Indicator   | Target 2019  | Outcome 2019                               |   | Target 2020   |
|---|---|--|--|---|---|
| Safe working environment<br>     | SAIDI**   | 99 min   | 79 min                                     | + | 85 min  |
|   | KAH***  | 21 MEUR  | 17.2 MEUR                                  | + | 20 MEUR   |
|   | Injury frequency (TRIF****) of own personnel                      | 0  | 0  | + | 0   |
|   | Injury frequency (LWIF*****) of contractors                       | 7.5  | 5.3  | + | 4.5   |
|   | Electricity-related injuries to third parties (reported to Tukes) | 0  | 0  | + | 0   |
|   | Completion rate of the Caruna Card subcontractor training         | 100%   | 100%                                       | + | 100%  |
|   | Employee job satisfaction   | 74   | 72   | × | 73  |
|   | Training days – 2 working days per person                         | 2 working days per person  | 2 working days per person                  | + | 2 working days per person                                   |
|   | Absence due to sickness   | ≤2.5%  | 2.3%                                       | + | ≤2%   |
| Good corporate citizenship<br> | Customer satisfaction (NPS)                                       | 8.0  | 24.2                                       | + | 26  |
|   | Reputation survey results   | Improvement on the previous year's results   | Reputation has improved among stakeholders | + | Improvement on the previous year's results                  |
|   | Stakeholder collaboration   | Active stakeholder work  | Carried out as planned                     | + | Active stakeholder work                                     |
|   | Management systems and processes                                  | Introduction of our new operating model and application of a new organisation structure. | Has been partly carried out                | × | Finishing touches and implementation of the operation model |

\*\* SAIDI = System Average Interruption Duration Index. System Average Interruption Duration Index per customer (SAIDI):

\*\*\* KAH = Inconvenience caused by interruptions. The indicator reflects the calculated cost of interruptions, which describes the inconvenience caused to customers.

\*\*\*\* TRIF = Total Recordable Injury Frequency. The indicator reflects the ratio of work-related injuries to Caruna's employees, leading to absences from work or requiring medical treatment visits, in relation to working hours (incidents/million realised working hours).

\*\*\*\*\* LWIF = Lost Workday Injury Frequency. This indicator reflects the ratio of occupational accidents to contractors or subcontractors, as well as trainees and temporary staff, while working for Caruna or within Caruna's work sites, leading to a disability lasting a minimum of one working day, in relation to working hours (incidents/million working hours).





### CARUNA AMONG THE SIGNATORIES OF E.DSO'S SUSTAINABLE GRID CHARTER

On 26 November 2019, E.DSO submitted the E.DSO Sustainable Grid Charter to Ditte Juul Jørgensen, Director-General of the European Commission's Energy department, and Clara de la Torre, Deputy Director-General of the Climate Action department. The Charter sets out the concrete measures that the group has already taken to contribute to the realisation of the UN's Sustainable Development Goals.

De la Torre believes that E.DSO will play an important role in achieving a climate contract. At the event, Juul Jørgensen said that she was satisfied with the group's role in combating climate change.

[Read more](#) →

## Caruna's corporate responsibility day highlighted the importance of collaboration throughout the supply chain.

### WE CONDUCT AND DEVELOP CORPORATE RESPONSIBILITY WORK IN CLOSE COOPERATION

In 2019, we integrated corporate responsibility into our strategy and business planning more deeply. Priorities for 2020 were evaluated by Caruna's management team as part of the strategy process, and action plans were further developed in cooperation with the management teams in each business unit. The management team will continue to assess corporate responsibility themes regularly and integrate them into business planning.

In 2019, we also conducted a stakeholder survey to gauge the views of the personnel, contractual suppliers, customers and decision-makers concerning the essential corporate responsibility themes for Caruna's business. We also held a corporate responsibility day to discuss these matters with our contractual suppliers. The results were analysed at the end of 2019 and will be approved by the management group in



Solar power is a compelling option at the moment. The Caruna Marketplace is a great way to find suppliers of solar panels.

early 2020. We will use the results to update our essential corporate responsibility themes and our corporate responsibility programme for 2020.

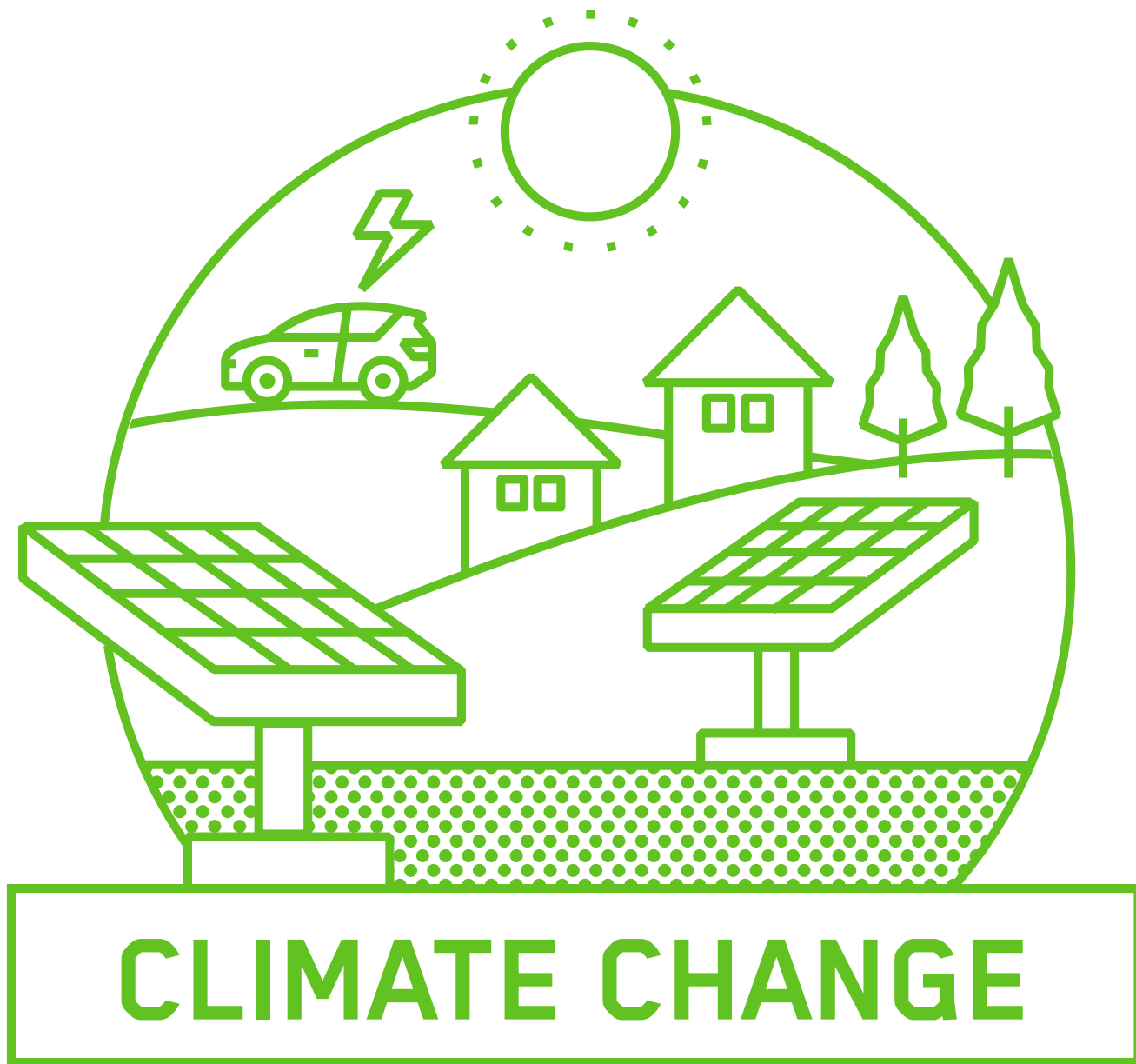
### WE ARE INVOLVED IN PROMOTING THE UN'S GLOBAL SUSTAINABLE DEVELOPMENT GOALS

We have identified the most relevant targets related to energy (SDG 7), infrastructure (SDG 9) and sustainable cities and communities (SDG 11) within the UN's Sustainable Development Goals and incorporated them into our corporate responsibility programme.

Through our membership of the European Distribution System Operators (E.DSO) organisation, we are also committed to promoting the UN goals for good training (SDG 4), a safe working environment (SDG 8) and climate action (SDG 13). E.DSO's members ensure the reliability and safety of the electricity supply for European consumers.







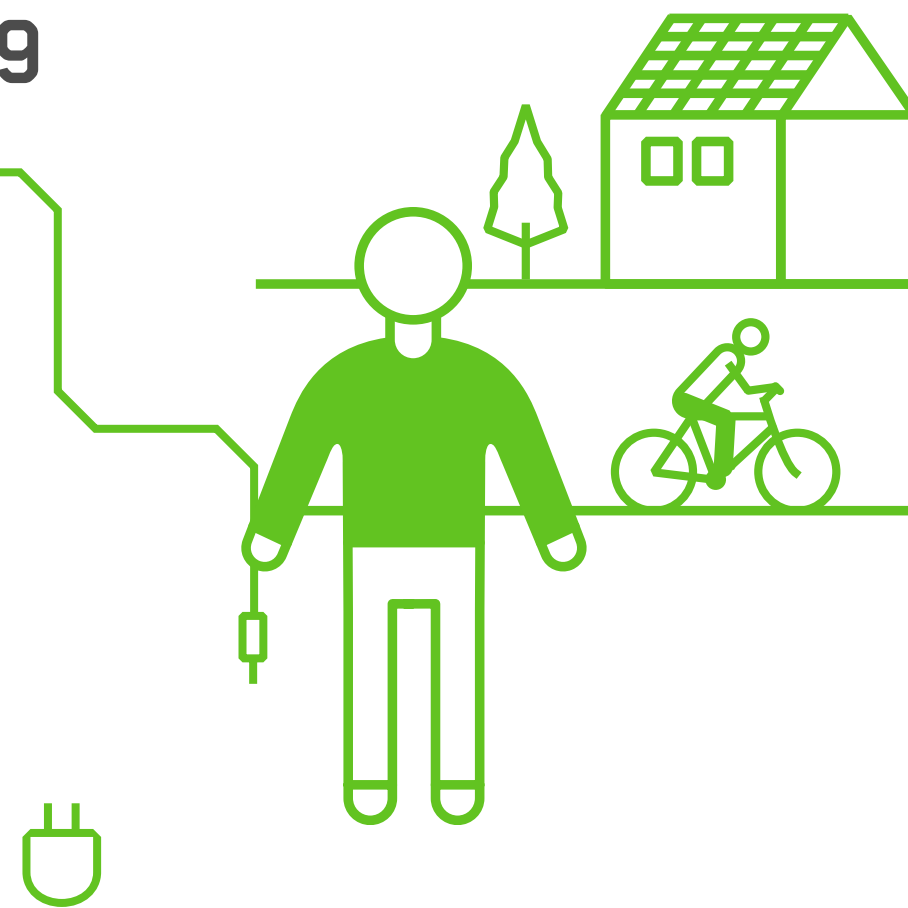
The electricity network will play a key role in the energy transformation. Our smart, reliable electricity network is capable of transmitting renewable energy from the place in which it is generated to customers without compromising the reliability of supply or losing renewable production. We support the electrification of society and the transition to carbon-neutrality as well as prepare for the impacts of climate change by investing in weatherproofing and automating our electricity network.

## ACHIEVEMENTS IN 2019

AROUND  
**3,400 GWh**  
 OF RENEWABLE ELECTRICITY  
 GENERATION ON OUR NETWORK  
 WITH POSITIVE CLIMATE EFFECT  
 EQUIVALENT TO THE AVERAGE  
 ANNUAL CARBON FOOTPRINT OF  
 AROUND 44,000 FINNS

**6,600**  
 SMALL-SCALE PRODUCERS OF  
 SOLAR ELECTRICITY

**3,500 HA**  
 OF LAND RELEASED FROM USE  
 THROUGH RENOVATION, 1,800  
 HA OF WHICH IS FOREST LAND,  
 WHICH HELPS TO INCREASE  
 FINNISH CARBON SINKS



### SMALL-SCALE SOLAR POWER GENERATION WITH NO HASSLE

For individual customers, solar power is a potential way to combat climate change. The number of small-scale solar power generators on our network has tripled in three years. We have 6,600 small-scale solar power generators, which have produced 56 MW in total. Our online Marketplace service makes it easy to compare and purchase a small-scale power generation system.



### RENEWABLE ENERGY IS EASY TO CONNECT TO THE SMART ELECTRICITY NETWORK

Our network carries around 11 per cent of all the renewable energy generated in Finland. Wind power is generated in our network areas in Southwest Finland and Ostrobothnia.

### OUR CARBON FOOTPRINT IS THE STARTING POINT FOR OUR POSITIVE CLIMATE ACTIONS

Our carbon dioxide emissions are mainly caused by the materials used to build the electricity network, the loss of electricity during distribution, the carbon dioxide emissions of electricity transmission in the other transmission networks, and construction work on the electricity network.



# Addressing climate change with knowledge and expertise

Finland aims to become carbon-neutral by 2035. This requires a significant increase in the use of renewable energy sources and more efficient use of energy.

In the year under review, we supported society's transition towards carbon-neutrality by continuing to invest in our smart electricity network. Smart features are essential for the expansion of renewable electricity generation, which is sensitive to disruptions. We also sought new ways of arranging a reliable supply of energy to customers and organisations without inconveniencing customers in their everyday lives.

We have increased the amount of joint construction with other operators and we built large entities, which reduced the need of transport and increased the efficiency of labour. In addition we will increase the amount of underground cabling and network automation which will reduce the need for fieldwork in the future.

The increase in extreme weather conditions will pose a challenge to electricity distribution. We continued to make preparations for an increase in extreme weather conditions by investing in weatherproofing the electricity network.

## A BATTERY THE SIZE OF A SHIPPING CONTAINER IS BEING CONNECTED TO THE ELECTRICITY NETWORK IN INKOO

A battery the size of a shipping container stores energy to cover incidents such as large-scale network faults. It will provide electricity to hundreds of households in the area until the network can be repaired. This is a trial to study methods for storing electricity and to seek new ways to improve the quality of supply in the region, as well as flexibility when required.





# Key environmental impacts

## Environmental impact

### Target

### CLIMATE IMPACTS →

- Promoting measures to combat climate change
- Making preparations for the impacts of climate change that might affect our business
- Enabling a carbon-neutral energy system
- Energy efficiency
- Efficient processes
- Preventing SF6 leaks

### Means of management

- Optimising the structure of the electricity network to meet the changing needs of energy markets and customers
- Promoting distributed renewable energy generation and energy storage (flexible connection to the grid)
- Enabling demand response as a data provider
- Keeping energy losses on the electricity network under control
- Promoting energy efficiency measures for customers
- Optimised construction method covering large entities
- Joint construction with other operators (municipalities and other infrastructure networks)
- Increasing the rate of underground cabling and network automation to reduce the need for fieldwork (inspections, maintenance, fault repair)
- Managing the SF6 gas balance, contractor awareness and expertise

### Indicator

- Number of renewable energy connections and number of storage registrations (units & MW)
- Ratio of joint construction to total construction (%)
- Carbon footprint
- Carbon handprint
- Number of SF6 gas leaks

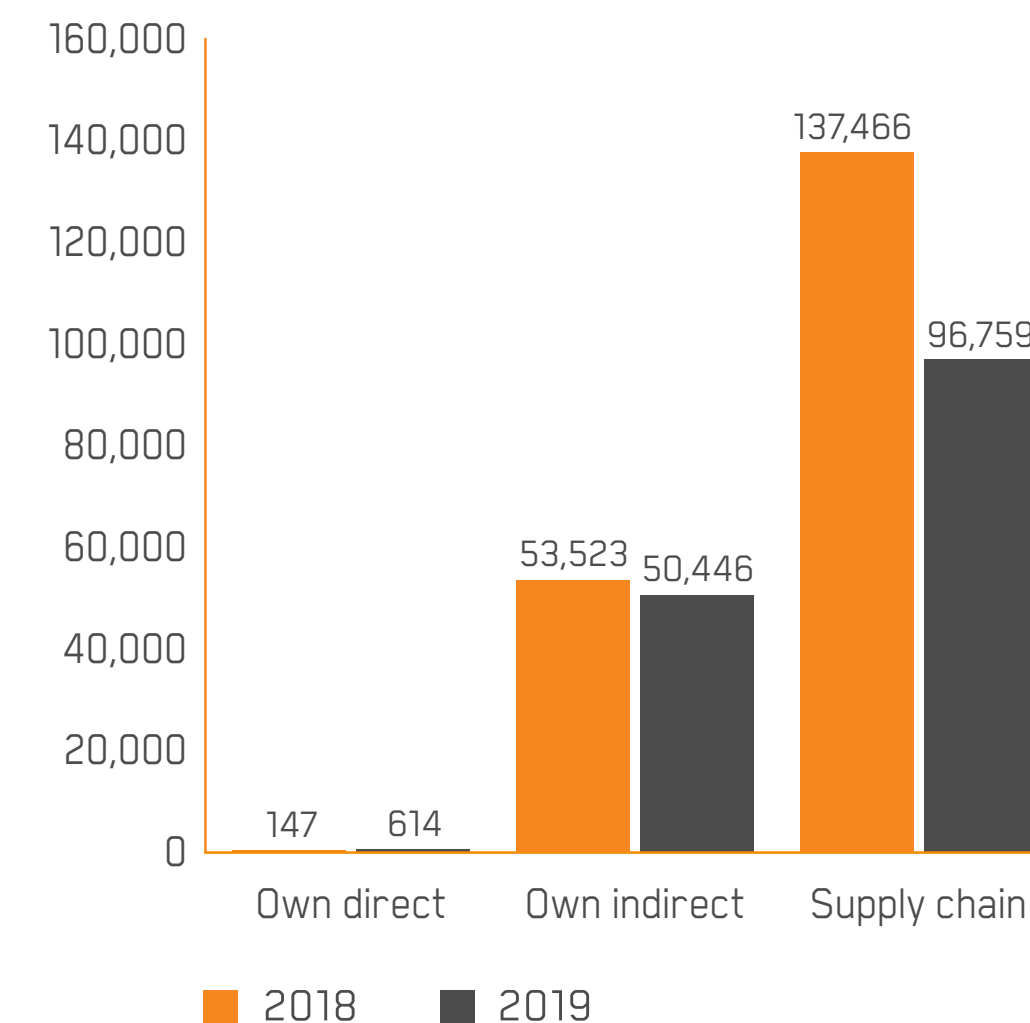
### ENERGY EFFICIENCY →

- Using energy more efficiently
- Promoting energy efficiency measures for customers

- Optimising the structure of the electricity network, selecting material and switching status optimisation
- Actively developing energy efficiency communications, advice and services for customers

- Effects of the electricity network renovation programme on relative network losses (%)

Caruna's total carbon footprint 2018-2019\*, tonCO<sub>2</sub>e



■ 2018    ■ 2019  
 Own direct (scope 1)  
 Mostly from used reserve power and SF6-leaks  
 Own indirect (scope 2)  
 Mostly from electricity network losses and own energy consumption  
 Supply chain (scope 3)  
 Downstream and upstream

\* Counted according to the GHG-protocol scope 1-3



## WE ANALYSED OUR CARBON FOOTPRINT

In 2019, we conducted a thorough assessment of the impacts of our operations on climate change and, conversely, the impacts of climate change on our operations. The study will enable us to take more efficient measures and monitor the effectiveness of such measures.

During the year under review, we calculated the carbon footprint of our operations in 2018.

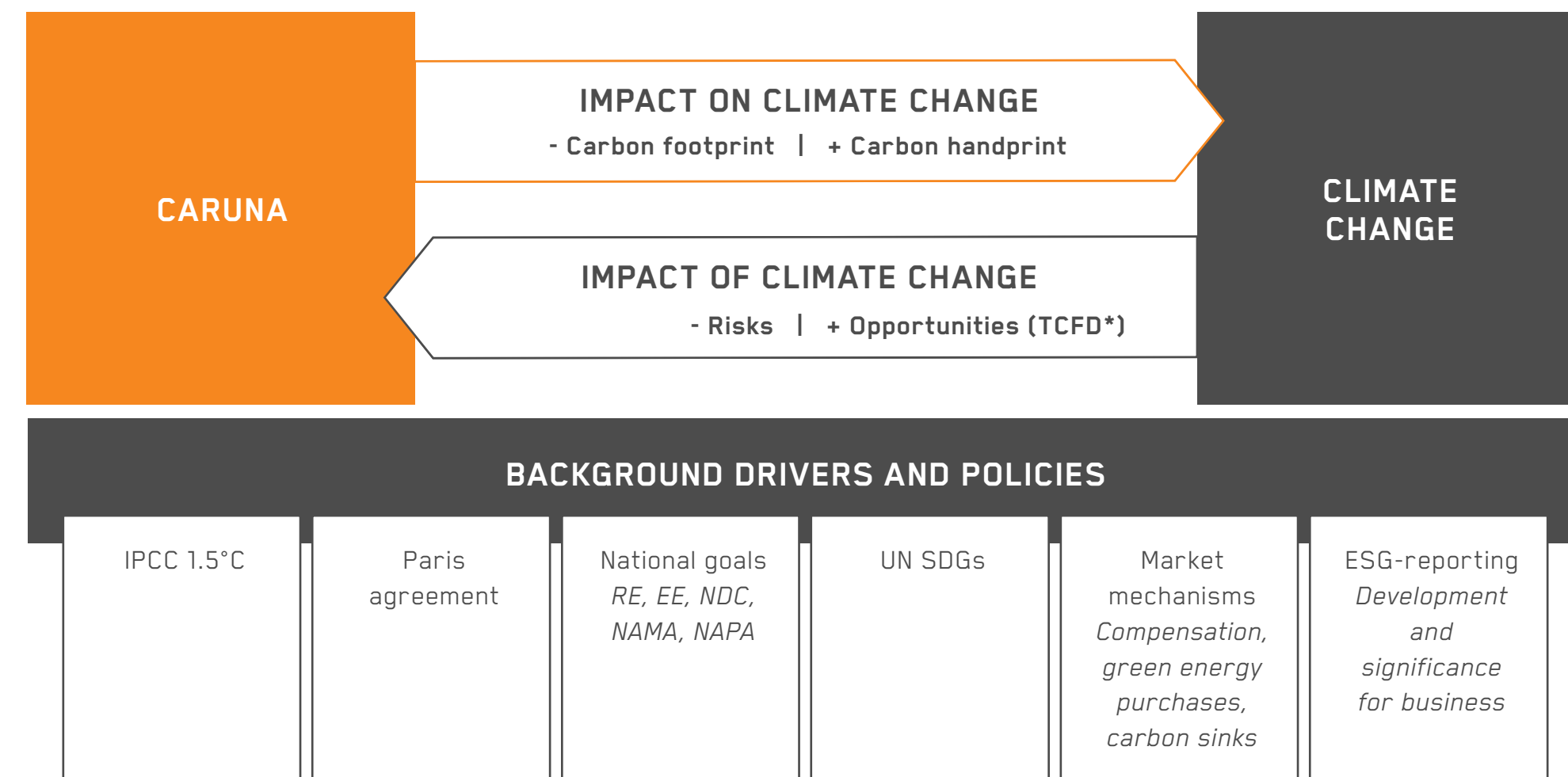
Our carbon footprint was calculated in accordance with the Green House Gas Protocol (GHG). We became the first company in our industry to include the emissions caused by our supply chain in addition to our own direct and indirect emissions in 2018 (GHG Protocol Scopes 1-3).

At the same time, we updated our assessment of climate risks by reviewing the overall impact of climate change on our operations in accordance with the Task Force on Climate-related Financial Disclosures (TCFD) framework and by cooperating with the Finnish Meteorological Institute on a study of the physical risks presented by climate change.

Our direct carbon dioxide emissions (Scope 1) are very low and consist mainly of minor leaks of sulphur hexafluoride, which we use as an insulating gas, as well as the use of back-up power systems. In 2019, the total amount of SF6 gas in Caruna's high-voltage and medium-voltage network was approximately 32,000 kilogram. Approximately 5,500 of the 32,300



## Caruna's carbon footprint and handprint



\* Task Force on Climate-related Financial Disclosures

distribution substations on Caruna's distribution network contained SF6 gas. A total of 3.58 kilogram of SF6 gas leaked into the atmosphere, which is 0.01 per cent of the total amount of the gas.

Our own indirect emissions (Scope 2) accounted for over a quarter of our carbon footprint, caused mainly by losses in electricity distribution and transformation. Energy loss always occurs when electricity is transformed and distributed, and the electricity network owner is liable for this. We use CO<sub>2</sub>-free electricity to compensate for losses on the electricity network. In 2019, our losses amounted to approximately 382 GWh.

The electricity and heat consumed in our office building also contributed to our indirect emissions,

### THE AIM IS TO SIGNIFICANTLY INCREASE THE RELIABILITY OF SUPPLY

In 2019, we announced an innovation project with ABB to develop technology that will protect the electricity network and ensure the reliability of supply. The reasons for this include the increase in renewable power generation, which is vulnerable to disruptions.



although this was just a fraction (less than 1%) of our total carbon footprint. In 2019, we consumed 1.53 GWh of electrical energy and 1.33 GWh of thermal energy. Almost 75 per cent of the energy consumed at the Upseerinkatu office is used for cooling, heating and ventilation for servers, the control room and the remainder of the building. Other significant energy consumption sources include heating domestic water and lighting. The energy consumed by the restaurant in the building is not included in Caruna's energy consumption measurement or carbon footprint calculation.

The vast majority – approximately two-thirds – of our carbon footprint arises in our supply chain (Scope 3). The materials used for network construction accounted for almost a third of our carbon footprint.

Other significant sources of emissions in the supply chain included the grid fees and local

network fees paid to electricity transmission and distribution companies (17%) and construction work on the electricity network (6%). The carbon footprint due to construction can be reduced by promoting the joint construction of various energy and telecommunication networks.

In total, Caruna's carbon footprint in 2019 was 148 kilotons CO<sub>2</sub>-eq, which corresponds to the average annual carbon footprint of approximately 14,000 average Finns. In 2019, our carbon footprint was 23 per cent smaller than in 2018, which was the peak of our construction.

### WE CONTINUED OUR INVOLVEMENT IN THE ENERGY EFFICIENCY AGREEMENT

Energy efficiency is a key aspect of our environmental responsibility and customer cooperation. We have been involved in the national energy efficiency agreement, and the energy saving

agreement that preceded it, since the beginning of the agreement system in 1997. The previous agreement ended at the end of 2016, and we joined the agreement for the next period from 2017 to 2025. We have analysed the impacts of our investments on electricity network losses. In our estimate, the development measures we are taking reduced relative network losses by approximately 1.6 GWh in 2019.

### WE ALSO GENERATE SOLAR POWER

Caruna has two solar power generation points, which are primarily intended to provide first-hand experience of distributed energy generation.

We had 110 solar panels installed on the roof of our Upseerinkatu office building at the end of 2015. The nominal output of the solar panels is approximately 29 kWp. In 2019, the solar panels generated approximately 25.7 MWh of energy.

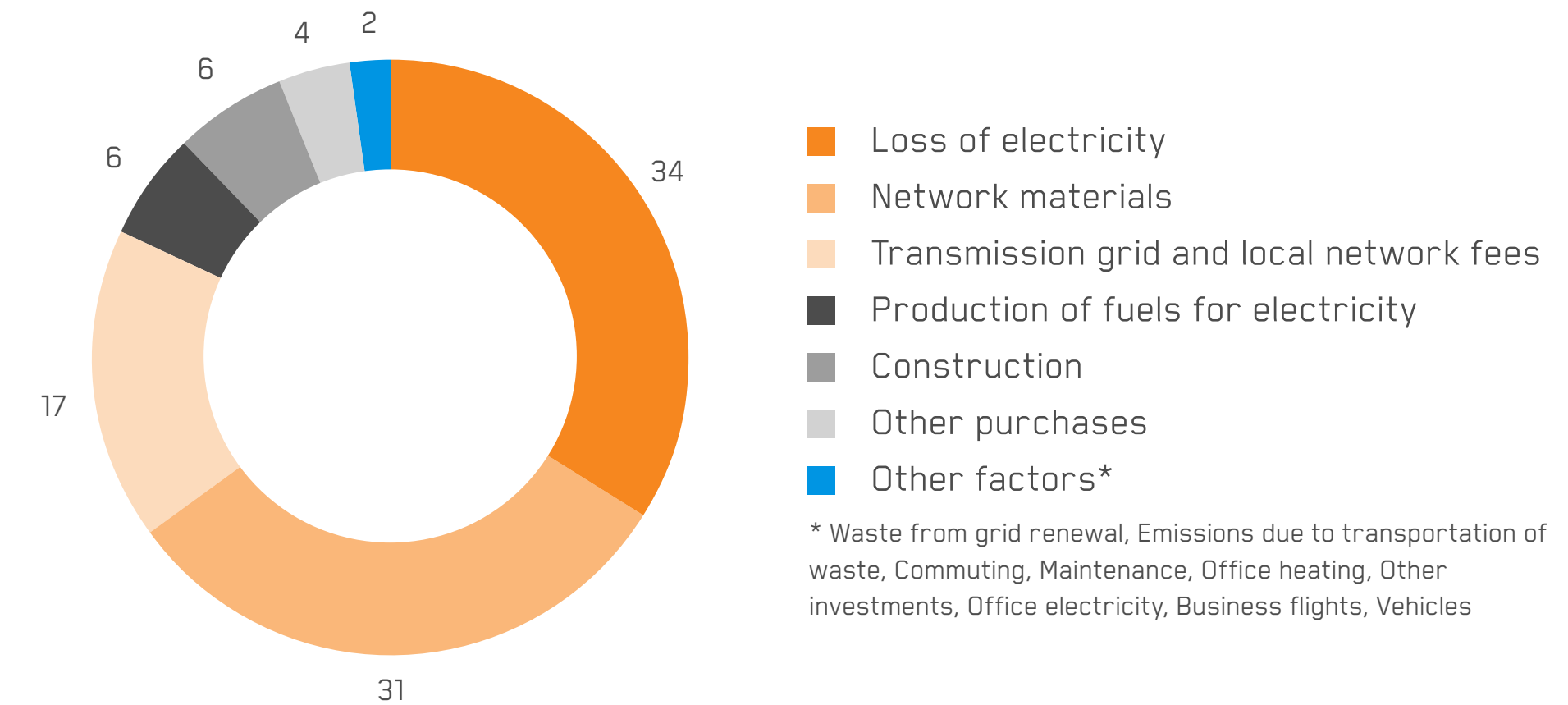
### Key indicators for climate impact

|   | 2019   | 2018       | 2017   |
|---|--------|------------|--------|
| Grid loss (GWh)   | 382.0  | 398.9      | 379.8  |
| Own electricity consumption* (GWh)                                | 1.53   | 1.86       | 2.06   |
| Own heat energy consumption* (GWh)                                | 1.33   | 1.61       | 1.76   |
| SF6 gas and leaks   |        |            |        |
| Volume of SF6 gas in Caruna's electricity network components (kg) | 32,000 | 26,600     | 14,400 |
| SF6 leaks (kg)  | 3.58   | 1.55       | 4.8    |
| SF6 leaks (CO <sub>2</sub> e*)                                    | 81.6   | 35.3       | 109.4  |
| Percentage of SF6 leaks of total volume of gas (%)                | 0.01   | under 0.01 | 0.03   |

\* The energy consumption of the restaurant operating in Caruna's main office has not been taken into account in the electricity and heat energy consumption figures.

\*\* CO<sub>2</sub>e = tonne of carbon dioxide equivalent = GWP value x weight; GWP = Global Warming Potential; the GWP value of SF6 gas is 22,800.

Key elements of Caruna's carbon footprint in 2019, (%)



\* Waste from grid renewal, Emissions due to transportation of waste, Commuting, Maintenance, Office heating, Other investments, Office electricity, Business flights, Vehicles

### Electricity network losses in relation to the total quantity of distributed energy

|                                      | 2019             | 2018             | 2017             |
|--------------------------------------|------------------|------------------|------------------|
| Caruna Oy regional network (110 kV)  | 0.6% (34.8 GWh)  | 0.6% (38.9 GWh)  | 0.6% (40.1 GWh)  |
| Caruna Oy distribution network       | 3.7% (263.8 GWh) | 3.9% (275.5 GWh) | 3.7% (262.0 GWh) |
| Caruna Espoo Oy distribution network | 2.6% (83.4 GWh)  | 2.6% (84.5 GWh)  | 2.5% (77.7 GWh)  |



We used this energy in our office. We also used geothermal cooling to generate 61 MWh of thermal energy to cool our building.

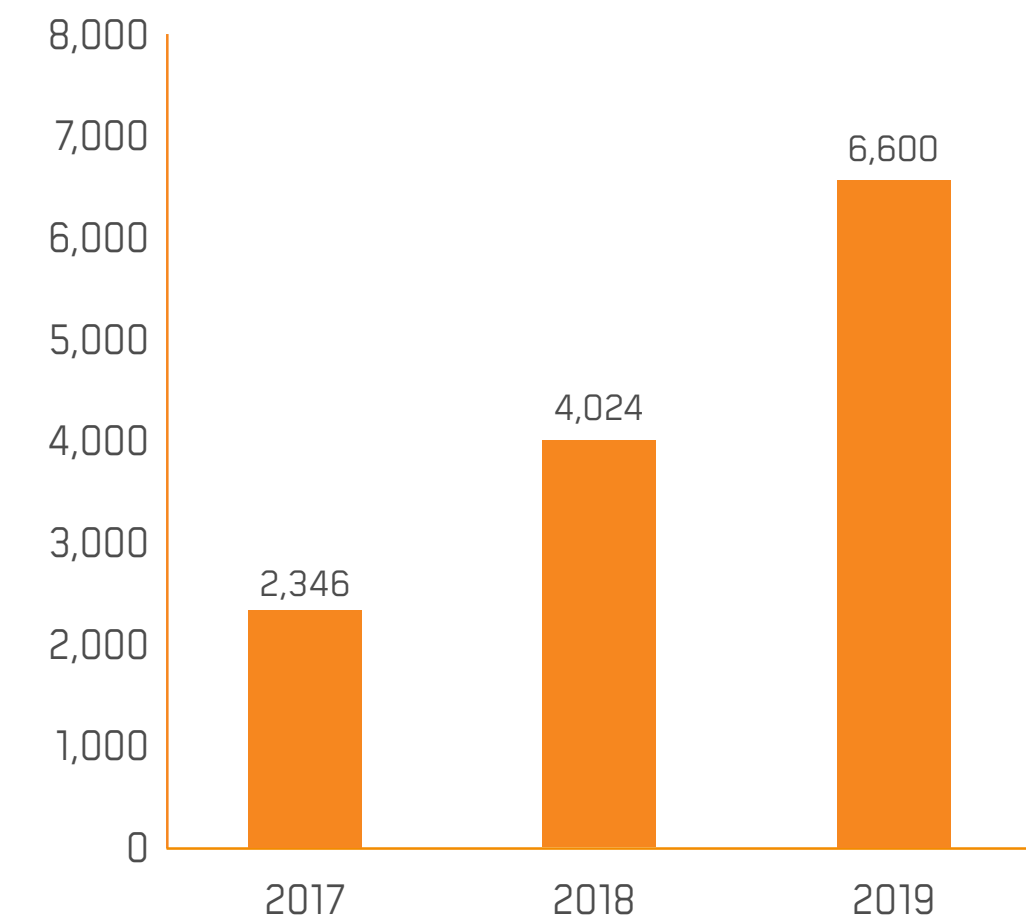
We have 119 solar panels on the roof of our substation in Keilaniemi, Espoo. In 2019, the solar panels generated approximately 25.1 MWh of energy. We used part of the energy at the substation, and we transferred the remainder to the distribution network to compensate for network losses.



### WE PILOTED AN ENERGY COMMUNITY TAILORED FOR FINNISH PEOPLE IN KARUNA

The test was conducted during the summer of 2019 in the village of Karuna in the municipality of Sauvo to investigate ways of transferring surplus solar power to the neighbourhood. The energy community makes use of the existing distribution network.

### Total number of solar power systems in Caruna's network areas, units



### WE HELPED OUR CUSTOMERS TO REDUCE THEIR CARBON FOOTPRINTS

As part of the study into our climate impact, we assessed our carbon handprint, which is the positive societal impact of our operations. To calculate our carbon handprint, we identified ways in which we have a positive impact on our stakeholders and selected the most interesting ones for closer examination.

Our most significant carbon handprint comes from the connection of renewable energy to the electricity network. Our smart electricity network enables renewable energy to be connected to the network and distributed to customers without

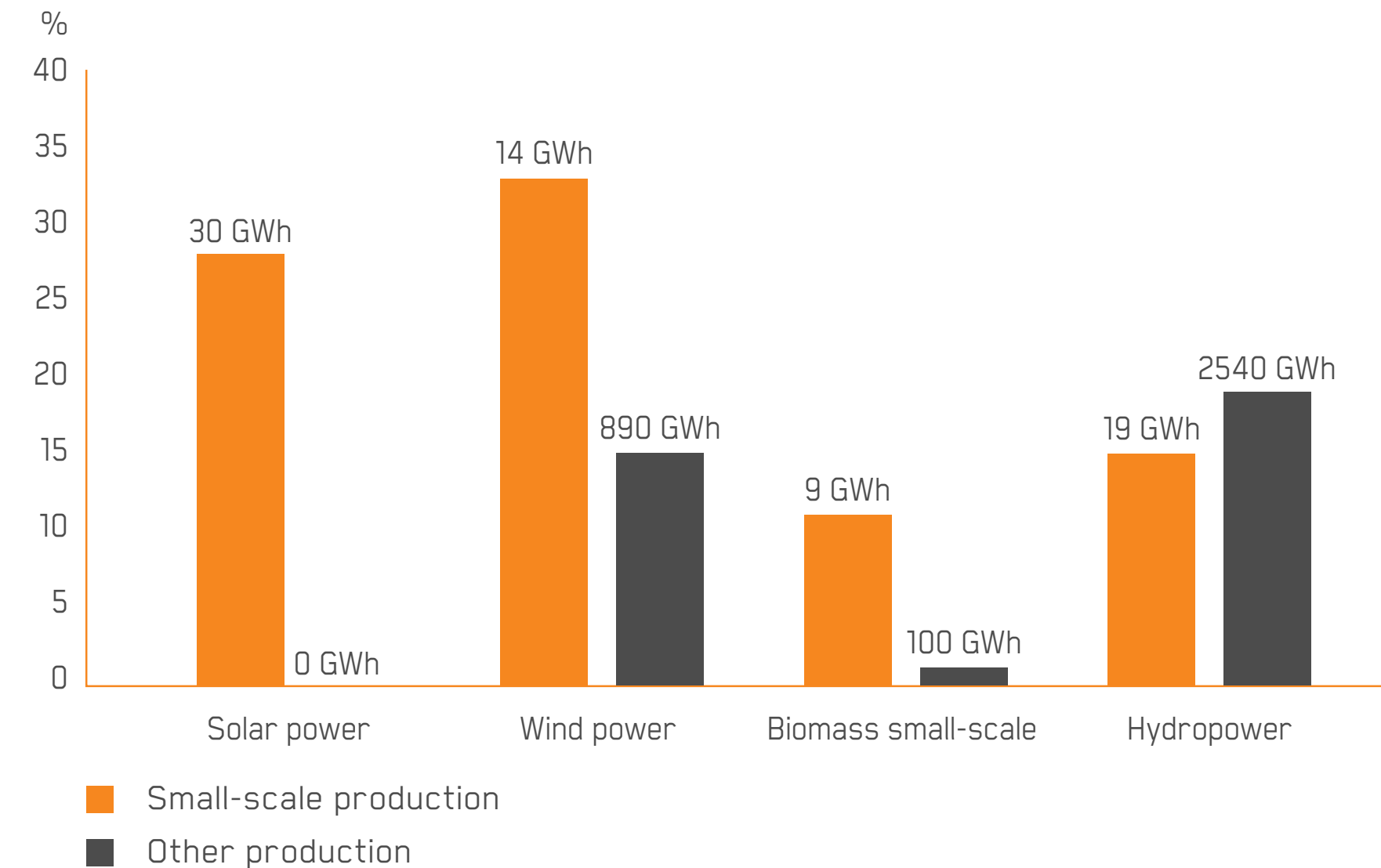
compromising the reliability of supply or losing renewable production. In 2019 Caruna's network generated approximately 3,400 GWh of renewable electricity and its positive climate impact is around 450 tnCO<sub>2</sub>e. This is equivalent to the average annual carbon footprint of approximately 44,000 average Finns.

Customers can reduce their carbon footprint through their own choices regarding small-scale production, heating, moving, home automation and consumption control. Our online market-

place provided customers with alternative energy solutions and enabled them to compare the features and pricing of alternative solutions. Our Marketplace is a platform that enables customers to compare climate-friendly technology, such as heat pumps and solutions related to electric motoring.

Underground cabling frees up forest area and increases Finland's carbon sinks. Our operations in 2019 led to 3,500 hectares of land being freed up; 1,800 hectares of this total was forest land.

### Caruna's share of the overall renewable electricity production in Finland



This graph shows the amounts of renewable energy by energy source connected to Caruna's electricity network from the year 2018. The numbers for 2019 will be ready by June 2020 and will be published on our website.





We aim to be a safe, attractive operating environment where our employees and partners can develop. We aim to be one of Finland's best workplaces. We employ 313 people directly and around 1,000 people indirectly in Finland. In addition to the competences of our personnel we also actively develop the competences of our partner network. With them we make our safety even better. We ensure the safety of our electricity networks and operations for both people and the environment, and aim for zero accidents

## ACHIEVEMENTS IN 2019

0

SERIOUS ACCIDENTS IN 2019

**BEST RATING**

IN THE ZERO ACCIDENTS FORUM AND AMONG THE BEST IN THE WORLD



**GREAT PLACE TO WORK CERTIFICATION**

WE ARE ONE OF THE BEST WORKPLACES IN FINLAND



**OUR FEEDBACK SYSTEM WORKS**

Onni is Caruna's new system for managing success and development. Onni's most popular feature is the ability to give feedback to anybody, at any time and in any place.



## KÄRKIRYHMÄ

### WORK THROUGH EDUCATION

Caruna Academy started its Kärkiryhmä pilot project together with recruitment agency Barona, the Seinäjoki Joint Municipal Authority for Education Sedu and Caruna's network contractors. The project offers further training for electricians and aims for their employment.

### THE HANDBOOK DESCRIBES OUR CULTURE

The new and first Caruna culture handbook describes our working community and how we work together to our current and future employees. The handbook also presents our updated values.



# Our goal was to offer a safe and motivating work environment

In 2019, we continued to develop our corporate culture to ensure that we have a safe and motivating working environment for our own personnel and our partners.

No significant changes occurred in the number of personnel in the year under review. The employee turnover rate was 6.6 per cent in 2019. We hired 26 new permanent employees and 16 fixed-term employees. There were 23 employees on fixed-term contracts, constituting 7.3 per cent of the total, and 12 employees on part-time contracts, constituting 3.8 per cent of the total.

We had about two dozen summer interns in 2019. They worked in various roles, substitutes, working on projects or compiling material for these or final year projects. Caruna had 17 temporary agency workers at the end of 2019. They were working in customer service and documentation positions as well as in IT projects in busy periods.

## OUR RATE OF EMPLOYEE SATISFACTION INCREASED

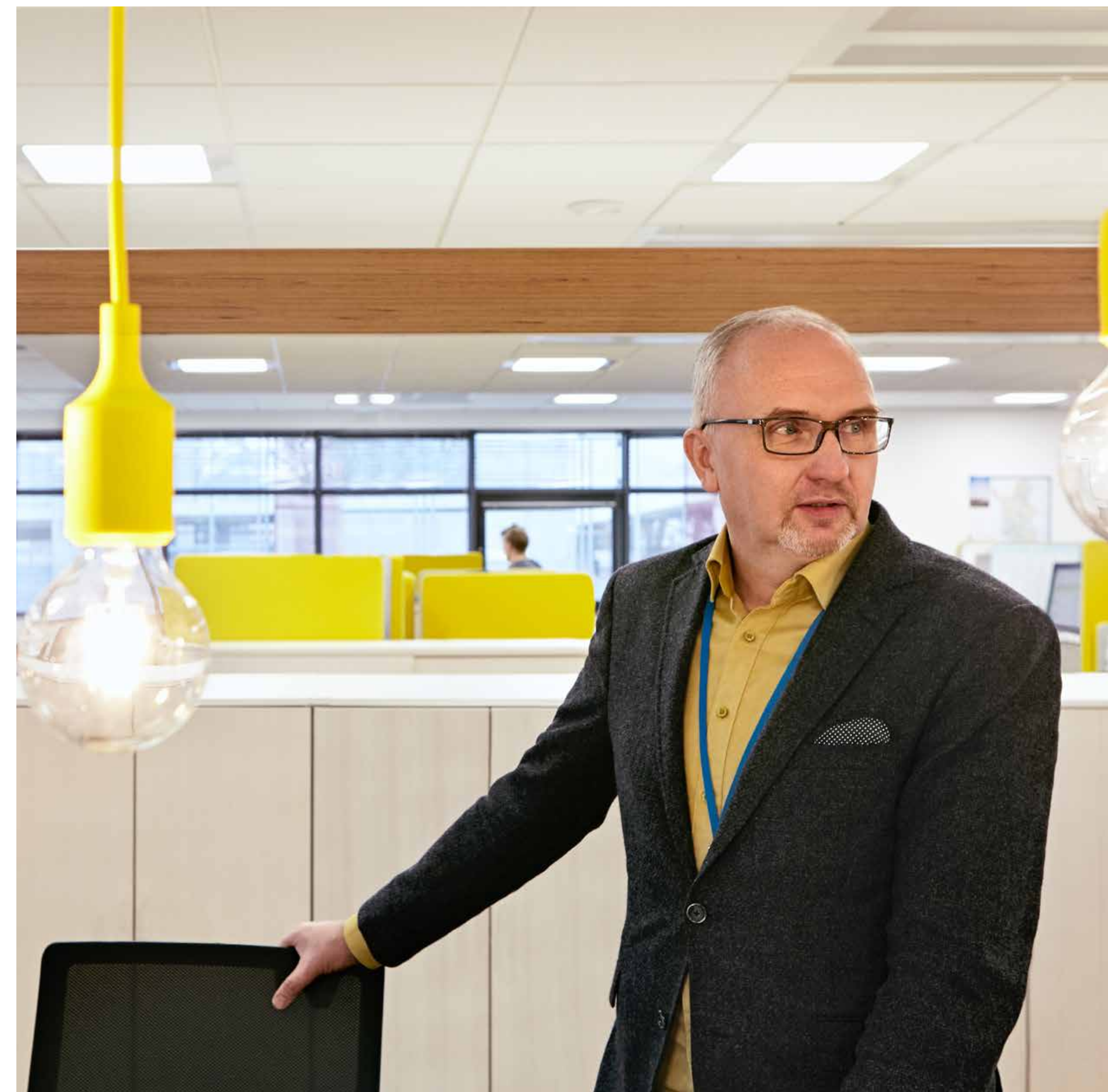
We measured the job satisfaction of our personnel by taking part in the Great Place to Work competition for the second time. We also measured job satisfaction using Pulssi surveys. Three Pulssi surveys were conducted. These surveys allow Caruna employees to give feedback and suggest developments that would improve their job satisfaction.

The Great Place to Work survey consists of the Trust Index employee survey and the Culture Audit management questionnaire. The survey showed

### GREAT PLACE TO WORK CERTIFICATION

Based on the Trust Index results for the 2019 Great Place to Work survey, Caruna was certified as one of Finland's best places to work in the Medium-Sized Organisations category.

[Read more](#) →





## Employee turnover

|  | Number | Share of employees (%) |
|--|--------|------------------------|
| New employees in total*                                      | 42     | 13                     |
| Gender structure of new employees                            |        |                        |
| Share of women   | 18     | 6                      |
| Share of men   | 24     | 8                      |
| Age structure of new employees                               |        |                        |
| Under 30 years of age  | 19     | 6                      |
| 30-50 years of age   | 21     | 7                      |
| Over 50 years of age   | 2      | 0.6                    |
| All discontinued employment contracts (excl. summer interns) | 45     | 14                     |
| Discontinued permanent employment contracts                  | 10     | 3.0**                  |

\* Employees hired during the year and with an employment contract at year-end, incl. fixed-term contracts.

\*\* Permanent employment contracts discontinued during the reporting period divided by the total number of personnel at the end of the year (Turnover of permanent employees (%))

that our strengths are an excellent team spirit, a sense of community and good benefits, as well as pride in our work and our team. Our employees value the great working environment and flexible working arrangements. Room for improvement was identified in the way work tasks are coordinated, the development of collaboration and the way we communicate the company's direction. The survey also indicated that we should improve our feedback culture and provide more opportunities to participate in decision-making. In the 2019 survey, the Trust Index and the employee engagement index, which is also a part of the survey, increased significantly.

We continued to develop our corporate culture by updating our values. Our new values are to work boldly, energetically, together. These values more clearly support the implementation of our

strategy and the desired corporate culture. Every Caruna employee discusses the significance of the strategy within their teams, as well as at Suunta discussions, which were held on an electronic platform. Participants were able to join from any location and discuss how to behave in line with our values and culture.

Alongside the development of our corporate culture, we also investigated the safety culture within our partner network. We will continue working together to develop safety culture on the basis of our findings.

### WORK IS DONE SAFELY

During the year under review, none of our personnel were involved in occupational accidents. However, four accidents occurred during work-related

## Employee key indicators

|   | 2019   | 2018   | 2017   |
|---|--------|--------|--------|
| Total number at the end of year                           | 313    | 289    | 276    |
| Number on average   | 313    | 289    | 274    |
| Age structure of the employees (%)                        |        |        |        |
| Under 30 years of age                                     | 18     | 19     | 21     |
| 30-50 years of age  | 61     | 58     | 58     |
| Over 50 years of age                                      | 21     | 23     | 21     |
| Employee turnover* (%)                                    | 6.6    | 8.3    | 8.7    |
| Number of fixed-term employment contracts**               |        |        |        |
| Men   | 13     | 8      | -      |
| Women   | 10     | 11     | -      |
| Number of part-time employment contracts**                |        |        |        |
| Men   | 3      | 7      | -      |
| Women   | 9      | 1      | -      |
| Share of fixed-term employment contracts (%)              | 7.3    | 6.6    | 8.3    |
| Share of part-time employment contracts (%)               | 3.8    | 2.8    | 5.5    |
| Women in workforce (%)                                    | 41     | 40     | 40     |
| Women in governing bodies (%)                             | 30     | 25     | 12.5   |
| Governing bodies age structure (%)**                      |        |        |        |
| Under 30 years of age                                     | 0      | 0      | -      |
| 30-50 years of age  | 60     | 62     | -      |
| Over 50 years of age                                      | 40     | 38     | -      |
| Share of employees under collective agreements (%)        | 90     | 91     | 92     |
| Share of employees entitled to performance appraisals (%) | 100    | 100    | 100    |
| Employee average age                                      | 39     | 40     | 39     |
| Employee job satisfaction (0-100)                         | 72     | 72     | 68     |
| Number of training hours per person***                    | 18     | 22     | 24.5   |
| Salaries and wages (EUR 000s)                             | 20,593 | 19,231 | 16,681 |

\* Turnover describes the percentage of employees departing on their own initiative. \*\* New indicator taken in use in 2018

\*\*\* Hours per person-year.





### DEVELOPING A CORPORATE SAFETY CULTURE IS A JOINT EFFORT – YOU MATTER

A culture of safety is embedded in Caruna’s corporate culture. Our safety activities are guided by one target above all others: we want to prevent all accidents from occurring. With this goal in mind, we investigated what we need to do to reach our objective. We measured the standard of our safety culture and set targets. One of these is: we work as a team, together. Any accident is one accident too many, because you matter.

[Read the whole story](#) →  
[Read more about safety](#) →

travel but, fortunately, none of the accidents had severe repercussions.

Safety Walk goals were set for our employees in 2019. A record number of Safety Walks were conducted to monitor safety on our work sites – a total of 1,062, which is an all-time high.

### STILL SOME ROOM FOR IMPROVEMENT IN TERMS OF ELECTRICAL SAFETY ON WORK SITES

Our network partners monitor their safety performance and report to us regularly. Our work sites are mainly controlled by our contractors and project supervisor partners, which report on safety and ensure that any shortcomings are addressed. In 2019, our project supervisors and contractors reported almost 3,500 site inspections.

One of our key indicators is lost workday injury frequency (LWIF), which measures the safety of our contractors and subcontractors. It reflects the ratio of occupational injuries to contractors, subcontractors, trainees and temporary workers, while working for Caruna or at Caruna’s work sites, leading to a disability of at least one working day and the number of hours worked (incidents per million working hours). Our long-term safety work and our programme to improve our culture of safety has borne fruit, and the injury frequency within our partner network has remained very low by industry standards.

In 2019, the injury frequency was 5.3 (occupational accidents leading to at least one day of sick leave per million working hours).

The number of occupational accidents on our work sites decreased significantly in 2019, but because the number of hours worked on sites

### Occupational safety key indicators

|  | 2019  | 2018  | 2017  |
|--|-------|-------|-------|
| Safety walks by own personnel* (no)  | 1,062 | 904   | 422   |
| Safety walks, work site inspections and work site visits by Caruna’s contractors and other partners in total | 3,448 | 3,295 | 2,930 |
| Injury Frequency of own personnel (TRIF)**   | 0     | 0     | 0     |
| Injury Frequency of contractors (LWIF)***  | 5.3   | 4.7   | 9.5   |
| Serious injuries to contractors**** (no of incidents)  | 0     | 1     | 4     |
| Fatalities related to work   | 0     | 0     | 0     |
| Share of sick absence of theoretical working days (%)  | 2.3   | 2.6   | 1.8   |

\* Safety walks carried out by Caruna’s employees on worksites and offices.

\*\* The TRIF (Total Recordable Injury Frequency) reflects the ratio of occupational accidents to Caruna’s employees, leading to absences from work or requiring medical treatment visits, in relation to working hours (incidents/million realised working hours).

\*\*\* The LWIF (Lost Workday Injury Frequency) reflects the ratio of work-related injuries to contractors or subcontractors, including trainees and temporary workers, while they work for Caruna or are within Caruna’s work sites, leading to a disability of at least one working day, in relation to working hours (incidents/million realised working hours).

\*\*\*\* An injury leading to a disability of over 30 days or a permanent disability.

### Electrical safety key indicators

|  | 2019 | 2018 | 2017 |
|--|------|------|------|
| Electricity-related injuries to third parties and reported to Tukes (no of incidents)          | 0    | 3    | 8    |
| Near misses involving outsiders and reported to Tukes (no of incidents)                        | 12   | 15   | 1    |
| Reported overvoltage events caused by network faults (so-called zero faults) (no of incidents) | 482  | 235  | 384  |





also decreased from the record high in 2018, the injury frequency remained at the previous year's level. In 2019, no serious occupational accidents occurred on our work sites.

The number of accidents and near misses associated with electrical safety has been increasing on our work sites for a couple of years. In some cases, the principles of electrical safety at work had not been observed, while some accidents were down to a lack of expertise. Improving electrical safety was one of the focal points of our safety activities in 2019, and we will continue to focus on improving electrical safety and expertise in the coming years.

### PROMOTING WORKING CAPACITY TO HELP PEOPLE COPE WITH THEIR WORK

We continued to work closely with our occupational healthcare partner, Terveystalo, in 2019. The updated action plan highlights the need for more proactive occupational health care measures. All in all, the health and wellbeing of our employees is very good overall. Those who have higher health risks are supported with targeted measures, such as lifestyle courses during which they receive both group and personal guidance in adopting healthier exercise and dietary habits.

Our wellbeing at work team coordinates the wishes of employees and strives to bring good energy to each working day with a wide range of services. In 2019, the most popular options included sports, cultural and commuting benefits, the use of our own gym, yoga, bicycle maintenance, theatre visits, various occupational wellbeing lectures and Firstbeat assessments.

### EVERYONE HAS THE CHANCE TO DEVELOP

We want to offer our current and future employees a good place to work and develop as skilled workers, experts or managers. In 2019, Caruna employees made use of internal training or training offered by external providers for an average of 18 hours per employee.

Competence and capability development was one of the key themes of employee development in 2019. We updated our competences to support the implementation of our strategy, and we supplemented our competence library with competences that support practical work. We ensured the adoption of competences in team and performance discussions.

Employees continued to make good use of the internal career change opportunities, coaching programmes and the opportunity for a day of familiarisation with a colleague's work. A coaching programme helped with the development of management and supervisory work by focusing on our



We offer our customer service team many ways of boosting their occupational wellbeing.

updated values, strategy and corporate culture.

Our other training themes in 2019 included electrical engineering, preparations for major disturbances, occupational wellbeing, project management, ICT, invoicing, and communication and advocacy skills. The popular Caruna Academy lectures are open to all employees, and they

### Employee training hours

|   | 2019 | 2018 | 2017 |
|---|------|------|------|
| Average training hours for all employees per person                 | 18   | 22   | 24.5 |
| Average training hours for office workers per person                | 8.3  | 19   | 22.4 |
| Average training hours for senior workers and management per person | 24.7 | 24   | 26   |
| Average training hours for women per person                         | 13.4 | 14   | 26   |
| Average training hours for men per person                           | 21.3 | 26   | 23   |

### RADIO CARUNA WENT ON AIR – A REFRESHING 15-MINUTE PROGRAMME EVERY WEEK

At the initiative of one Caruna employee, Radio Caruna began broadcasting. Listeners were able to relax and hear about upcoming events and the latest news for the week. We also heard some interesting interviews – and all of this in just 15 minutes, once a week. Radio Caruna will continue in 2020.

### DEVELOPING SUBCONTRACTOR SAFETY

Improving the occupational safety of subcontractors in collaboration with main contractors has been one of our priorities in our safety activities. Some of the key measures have included:

- The operations of the HSE cooperation network together with our main contractors
- Developing our safety inspections
- Developing the management of safety incidents throughout the supply chain
- Training subcontractors



## CARUNA HANDED OUT SAFETY AWARDS TO NETEL OY, N3M OY AND JAKI-MATIK OY

Safe on-site conditions, identifying and managing risks affecting electrical safety, and professional employees are the fundamentals required to build the electricity network. When they are in good order, we are able to avoid personal injury and hazards, as well as electricity distribution outages.



“The three partners who received awards today have shown outstanding expertise in these areas,” says Kosti Rautiainen, Head of Electrical Network Unit. This year, the first award was given to Netel Oy, a long-term partner of Caruna’s. The company’s commitment to safety runs through the entire organisation. The second award went to N3M Oy, which is based in Karjaa. The award justification includes the following comments: Professional work that has received a lot of good feedback. The overall safety management, including project documentation, is excellent. The third award was given to Jaki-Matik Oy from Naantali. The attitude of their technician towards safety is first-class, as is the quality of his work.

[Read more](#) →

provide wide-ranging insights into topics such as the changes in our business and operating environment, theses and final year projects completed for our company, and occupational wellbeing. The regular safety licence training courses are an essential part of our employee training programme.

### WE ALSO HELPED TO DEVELOP THE OPERATIONS OF OUR PARTNERS

We also looked after our partners’ competences. In 2019, we updated our competence requirements for contractors in key roles.

In 2019, we also arranged Caruna Card training courses for subcontractors who are not electrical professionals. The training provides a basic understanding of the safety factors related to our operating environment and helps our contractors to meet their own induction obligations. During the year under review, 297 people took part in Caruna Card training.

An online course in safety and environmental matters is obligatory for everyone working on our work sites. In addition, an online course in electrical safety at the work site is recommended for those working on our sites.

The qualifications are valid for three years, and approximately 1,200 people now hold valid qualifications. In 2019, approximately 430 people completed both the safety and environmental matters course and the electrical safety course.

We also provide our partners with different types of training in safety and environmental matters, such as on-duty service, fault detection, land-use planning, major disturbance situations and forest operations near power lines. More than 500 people attended these courses in 2019.

In 2019, we began implementing an entirely new training cooperation model under the Caruna Academy Kärkirymmä pilot project in collaboration with Barona (a recruitment agency), Sedu (the Seinäjoki Joint Municipal Authority for Education) and Caruna’s network contractors. New electricity network technicians will graduate in 2020.

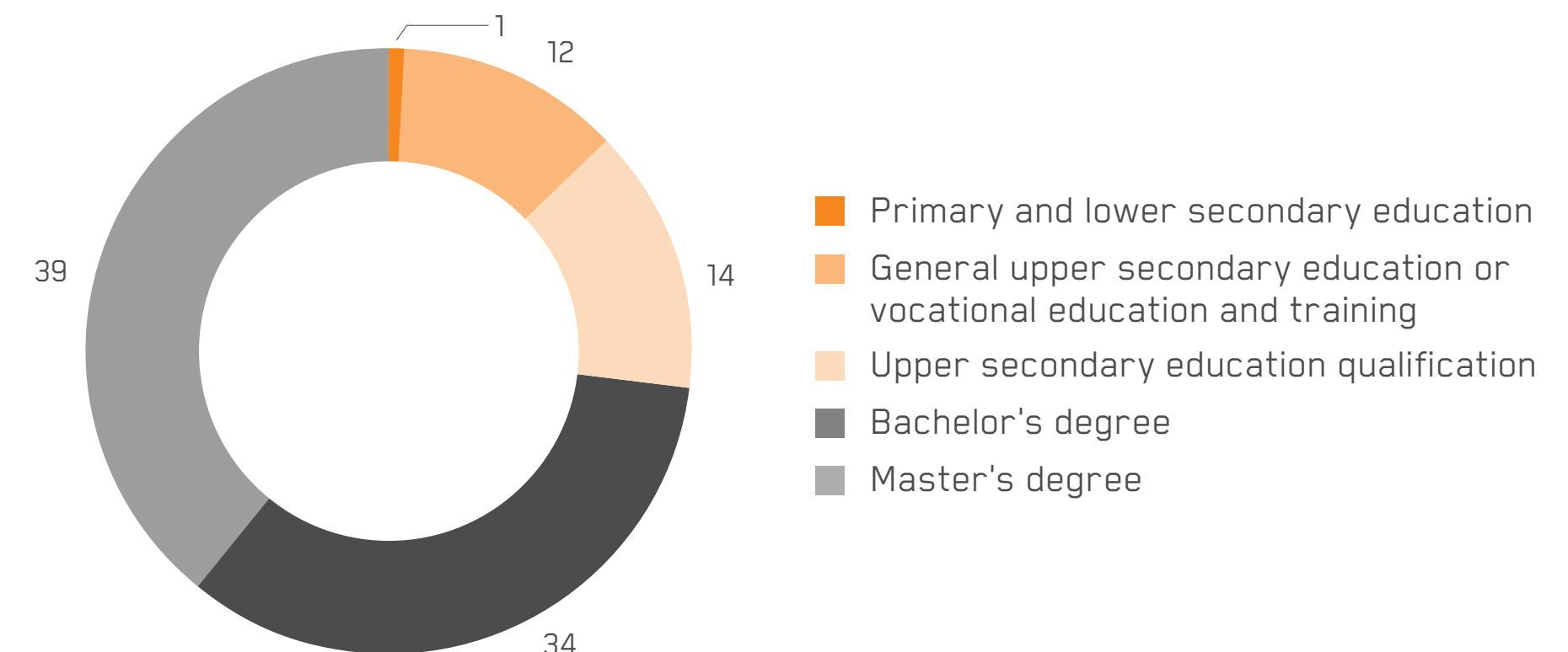
### KNOWLEDGE IS MANAGED

In accordance with our employee performance development model, we continued to emphasise one-to-one discussions between supervisors and employees that take place regularly but following a flexible cycle, along with performance appraisals and feedback provision that support the employee’s comprehensive performance, development and wellbeing at work. We also encouraged every Caruna employee to be active in developing their own responsibilities and skills.

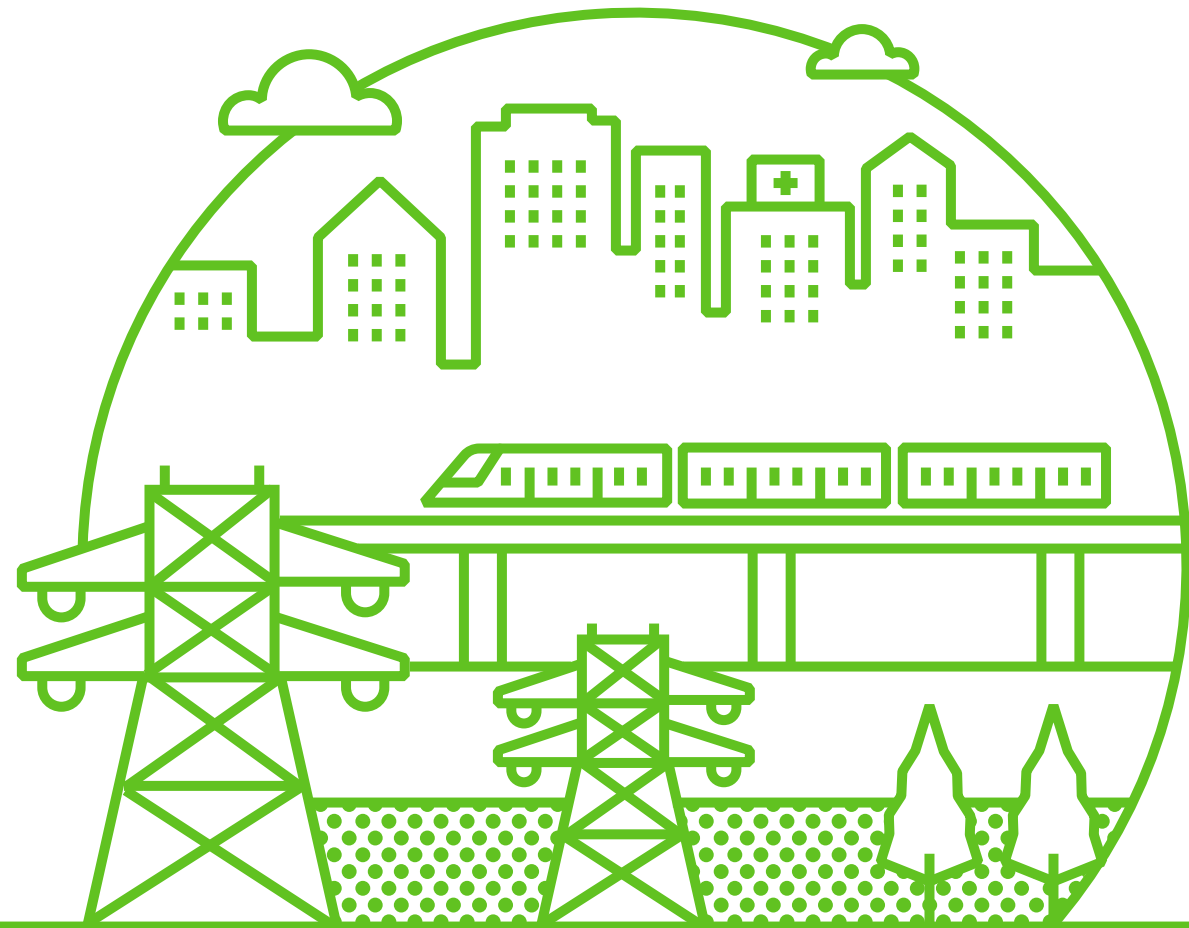
We continued developing the employee performance management model and support system, which were introduced in 2018. We introduced a new operating model – Success Management – in 2019. This change will promote business coaching: continuous feedback, skill and competence development and comprehensive performance appraisals (i.e., feedback for success).

The regular safety licence training courses are an essential part of our employee training programme.

Personnel educational background, (%)







## SUPPLY CHAIN AND ENVIRONMENT

We are building a smart, sustainable and competitive network for our customers that also addresses the needs of the future. Improving our reliability and resistance to weather are among our key measures. Our electricity network is being built from the most environmentally friendly, long-lasting and high-quality materials available. We avoid environmental detriments and our construction works do not place significant burden on the environment.

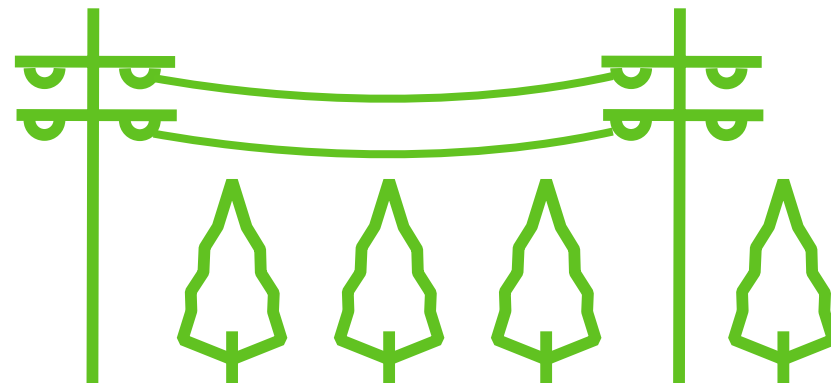
## ACHIEVEMENTS IN 2019

0

SERIOUS ENVIRONMENTAL DEVIATIONS

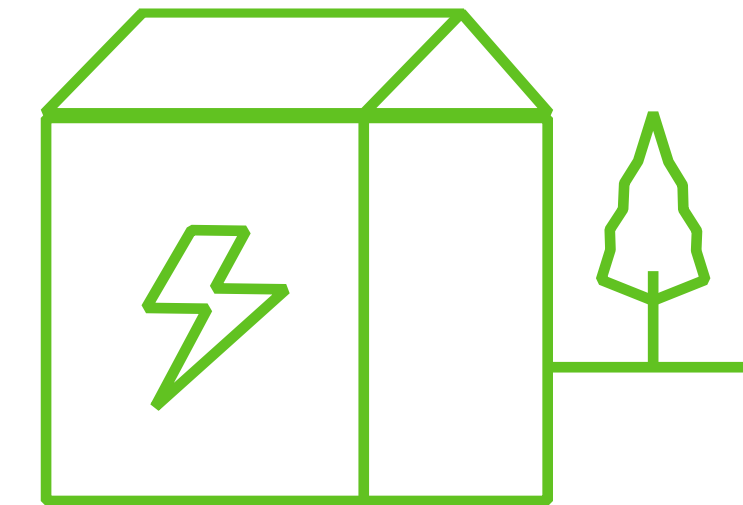
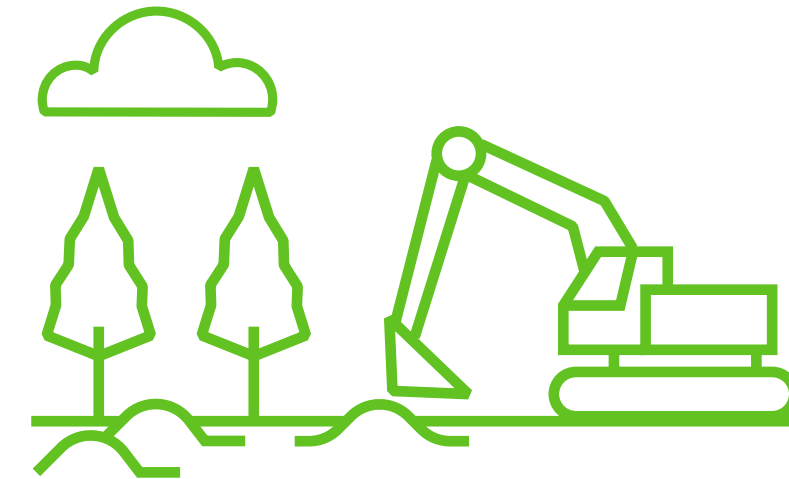
95%

RECYCLING LEVEL FOR THE MATERIALS FROM DEMOLISHED ELECTRICITY NETWORKS THROUGH OUR COOPERATION PARTNER



4,100km

OF REDUCTIONS IN OVERHEAD NETWORKS AS PART OF ENSURING THE SECURITY OF ENERGY SUPPLY



### REDUCED ENVIRONMENTAL RISKS

The last pole-mounted transformers are replaced by pad-mounted transformers in Spring 2020. This reduces the risk of environmental accidents substantially as the oil in the transformers can no longer find its way into the environment.



### SAY GOODBYE TO ELECTRICITY POLES

We enhanced the process for handling dismantled electricity poles. We added instructions to the poles regarding the collection times and processing methods. Poles are not handed over to private customers.

### AUDITS REVEAL ROOM FOR IMPROVEMENT

We improved our work with partners through regular auditing. The audits revealed a small number of irregularities, and corrective measures were initiated.



# Responsible procurement ensured that our operations were efficient and environmentally friendly

We operate responsibly as we design, build and maintain a reliable electricity network, dismantle the old network, and procure new goods and services.

Our activities were visible and influential in our network areas in many ways. We operated, maintained and built our electricity network, while dismantling the decommissioned parts. Every day we consider the impacts of our operations on customers' everyday lives and on the environment throughout the lifecycle of our electricity network.

We improved the energy and material efficiency of our operations, reduced the harmful environmental impacts and enhanced our positive environmental effects. Our operations have held environmental certification (ISO 14001:2015) since 2000.

The following table summarises the key impacts of our operations in terms of the use of materials and land, biodiversity and leakages that impact the environment

## Key Indicators for environmental Impact

|   | 2019  | 2018  | 2017    |
|---|-------|-------|---------|
| Volume of disposed electricity poles (tonnes)               | 3,062 | 3,060 | 2,732** |
| Volume of dismantled overhead cables (km)                   | 4,100 | 4,000 | 3,200   |
| Recycling rate of disposed electricity network material (%) | 95    | 81*** | 32      |
| Number of pole transformers within groundwater areas        | 115   | 350   | 800     |
| Number of significant (≥ 100kg) oil spills                  | 8     | 3     | 1       |
| Number of oil spills in total                               | 34    | 28    | 29      |
| Cost of treatment of oil spills* (EUR 000s)                 | 204   | 168   | 174     |
| Volume of decontaminated soil* (tonnes)                     | 277   | 179   | 226     |

\* Partly estimated

\*\* The target for 2018 was reported erroneously in the report for 2017.

\*\*\* The share of material taken to Kuusakoski for sorting and further processing of all material dismantled from electricity networks (%)

## WE IMPROVED THE WAY WE COOPERATE WITH LANDOWNERS

We are committed to using land responsibly as we design, build and maintain a reliable electricity network. The environmental impacts of the electricity network are taken into consideration throughout the network's lifecycle so as to ensure that they are as minor as possible or potentially even positive for the environment, landowners and other stakeholders. In 2019, we continued to reform our land use principles and procedures, taking several steps such as developing grounds for compensation.



[Read more about the responsible use of land](#) →

[Find out more about our land use principles and land use agreements](#) →



## Environmental impact

### Target

### Means of management

### Indicator

## USE OF MATERIALS →

- Ensuring safety throughout the lifecycle of materials
- The quality and durability of new materials
- Improving the recycling rate of dismantled materials
- A watertight waste management and accounting process

- Using materials that comply with material regulations and take into consideration the impacts throughout their lifecycles
- Ensuring the composition and properties of new materials, as well as safe use and disposal methods
- Appropriate treatment, exploitation and disposal of dismantled materials
- Selecting contractual partners and ensuring that operations conform to requirements
- Guidelines, monitoring and control

- Quantities of new material (units of each type)
- Waste accounting (tons and euros)
- Recycling rate for dismantled material (%)
- Contractor and supplier audits (number of audits)

## RESPONSIBLE LAND USE BIODIVERSITY →

- Minimising harmful impacts on the environment and landscapes during the planning phase and reinforcing the positive effects
- Reducing land use restrictions

- Planning and constructing the electricity network, routes and structures for underground cabling
- Systematically paying consideration to environmental conditions, conservation areas and other special areas in all electricity network operations in every phase of the lifecycle
- Effective collaboration with landowners and other stakeholders in land use and permit matters
- Ensuring environmental care on project sites during and after work
- Managing customer feedback and developing operations on the basis of feedback

- Cabling rate (%)
- Land released for agricultural and forestry uses (ha)
- Electricity network located in Natura areas (km)
- Observations made during work site inspections (number)
- Customer feedback (number of pieces)
- Stakeholder satisfaction (NPS, number of pieces of feedback)

## LEAKS INTO THE ENVIRONMENT

- Preventing oil leaks
- Absolute prevention of severe and permanent environmental damage

- Eliminating high-risk sites by replacing pole-mounted transformers in groundwater areas
- Preventing oil from leaking into the environment by using oil basins in transformer substations, as well as in real estate and park transformers
- Systematic processing of environmental damage and ensuring that adequate measures are taken

- Pole-mounted transformers/all transformers in groundwater areas and other areas
- Number of oil leaks





### THE PROGRAMME OF WORK TO REPLACE POLE-MOUNTED TRANSFORMERS IN GROUNDWATER AREAS IS NEARING COMPLETION

In 2016, we began a multi-year programme to overhaul pole-mounted transformers in groundwater areas with the aim of minimising the risk of the groundwater becoming contaminated by oil leaks. We are replacing all pole-mounted transformers in groundwater areas with pad-mounted transformers, which are equipped with oil basins to prevent leakages into the environment. From 2016 to 2019, we removed approximately 1,150 pole-mounted transformers from groundwater areas. The remaining pole-mounted transformers covered by the overhaul will be removed in early spring 2020. We will gradually remove the pole-mounted transformers in areas other than groundwater areas as our investment programme proceeds.

### THE MOST COMMON TYPE OF ACCIDENT WAS AN OIL SPILL

Typical incidents of environmental damage in our business involve transformer oil leaking into the environment if a transformer is damaged. In Finland, lightning strikes cause more than half of all incidents of damage to distribution transformers.

In 2019, 34 oil leaks occurred on our electricity network, eight of which were over 100 kilogram. There were no large oil leaks or environmental impacts caused by oil leaks.

### RESPONSIBILITY IS A FOCAL POINT OF MATERIAL PROCUREMENT

We set precise requirements for material procurements during the competitive tendering phase, with a major weighting on environmental, quality, safety and corporate responsibility aspects.

In 2019, we connected approximately 1,600 new distribution transformers to our electricity network. In terms of raw materials, this equates to almost 160 tons of aluminium, 600 tons of steel and approximately 240 tons of mineral oil. The new distribution transformers we use conform to the ECO Directive.

We use aluminium as the conductive material in our electricity cables. In 2019, we procured more than 2,200 kilometres of cable containing approximately 2,000 tons of aluminium.

Deliveries of the main network construction materials (substations, distribution transformers, cables) went well in 2019. There were some problems with deliveries of cable cabinets due to the very high delivery volumes. In 2019, we installed almost

8,000 cable cabinets in our network. At substations, we continued the reactive power compensation that we initiated in 2018 with regard to deliveries and installations of 20 kV and 110 kV reactors.

### THE DEMOLITION AND RECYCLING OF THE OLD NETWORK CONTINUED

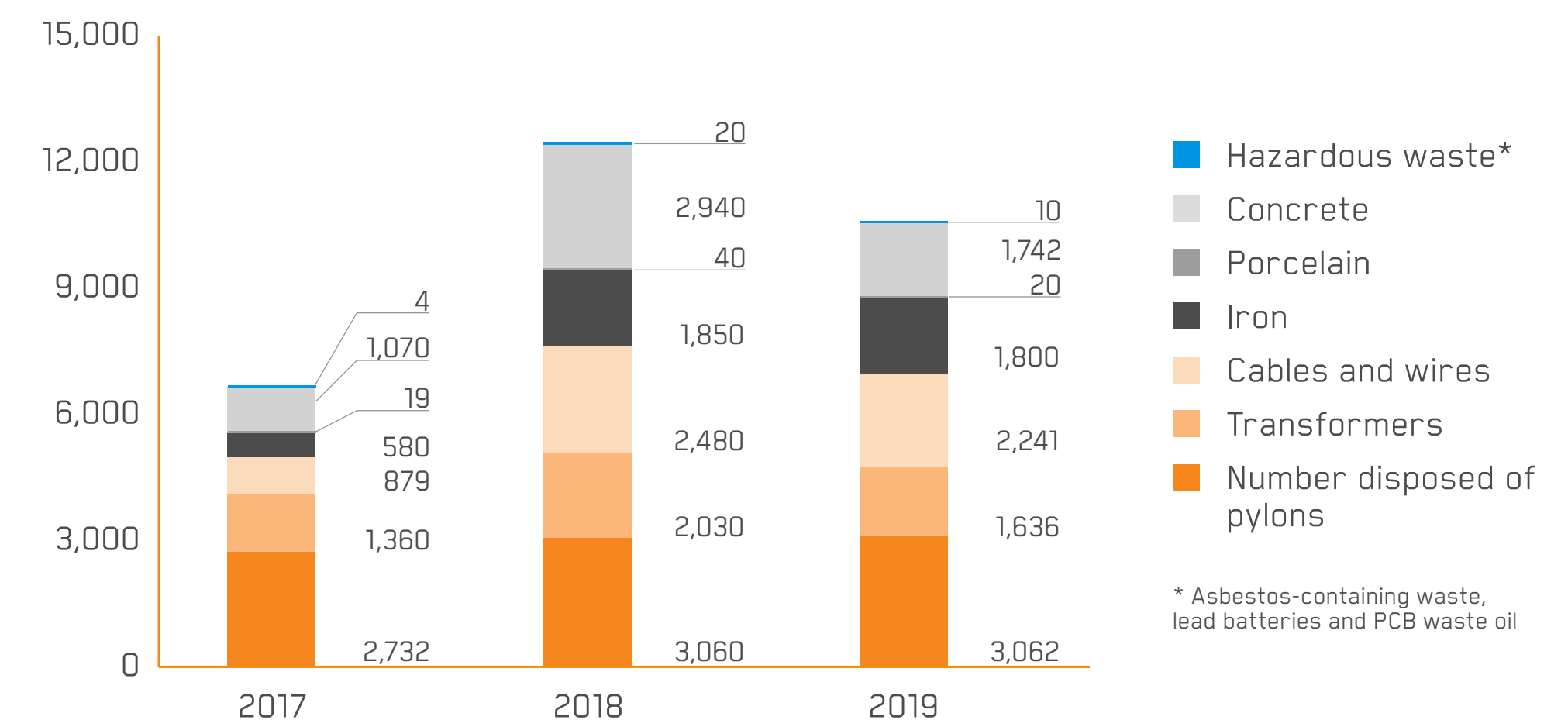
We dismantled 4,100 kilometres of old, decommissioned overhead lines. The parts of the dismantled network contained large amounts of various materials such as transformers, iron, cables, impregnated timber poles and copper. Kuusakoski Oy was responsible for processing the dismantled material. Kuusakoski collected the material from

work sites and processed it. For impregnated timber poles, Kuusakoski handled the transportation, but Fortum Waste Solutions Oy and Demolite Oy processed the poles.

In 2019, Kuusakoski processed approximately 95 per cent of the scrap material created in our network projects, which amounts to circa 11,000 tons. In 2019, more than 97 per cent of the material from transformers and cables was recycled and reused.

In 2019, more than 3,000 tons of impregnated timber poles were demolished from our electricity network. The vast majority of this material was sent to Fortum and Demolite for use in energy generation.

Amounts of network materials recycled by Caruna, in tons





## WE TAKE CARE OF ELECTRICITY DISTRIBUTION TOGETHER WITH OUR PARTNERS

We work with several contractors and their subcontractors to build and repair our electricity network. Service providers, including our project supervision partner, ensure that we have adequate human resources and expertise to monitor the construction and maintenance work on our electricity network.

In 2019, we had 13 main contractors for network construction work and an additional 560 subcontractors. Because our projects are so large, our main contractors are all large and medium-sized companies, and their subcontractors must also be approved by Caruna.

The project supervisor monitors operations during construction and also conducts inspections during our network's warranty period. We report any identified irregularities and document them in detail. We inspect the cable installation depth to ensure that cables have been installed in compliance with our requirements and that the environment is tidy once the construction project is complete.

## OPERATING MODELS ARE DEVELOPED TOGETHER WITH OUR PARTNERS

We work in close collaboration with our suppliers throughout the year. Among other things we developed our operations four times during 2019 in SRM-meetings (supplier relationship management)

with our the most critical suppliers. These meetings involved analysing how well the operations had gone during the contractual period, ensuring that the parties work effectively together and reviewing the aspects of collaboration where there is room for improvement. We shared information about our operations and relevant themes, such as occupational safety, construction quality and responsibility. These events also provided us with insight into how we can develop our own activities.

## OUR PROCUREMENT PROCESS IS ELECTRONIC FROM START TO FINISH

We handle every phase of procurement, from preparing contract details to competitive tendering, finalised contracts and material orders, using an electronic procurement portal. Suppliers of goods and services can see the competitive tendering processes on the Tarjouspalvelu.fi website, which also forwards data to the national HILMA notification channel and the EU-level TED portal.

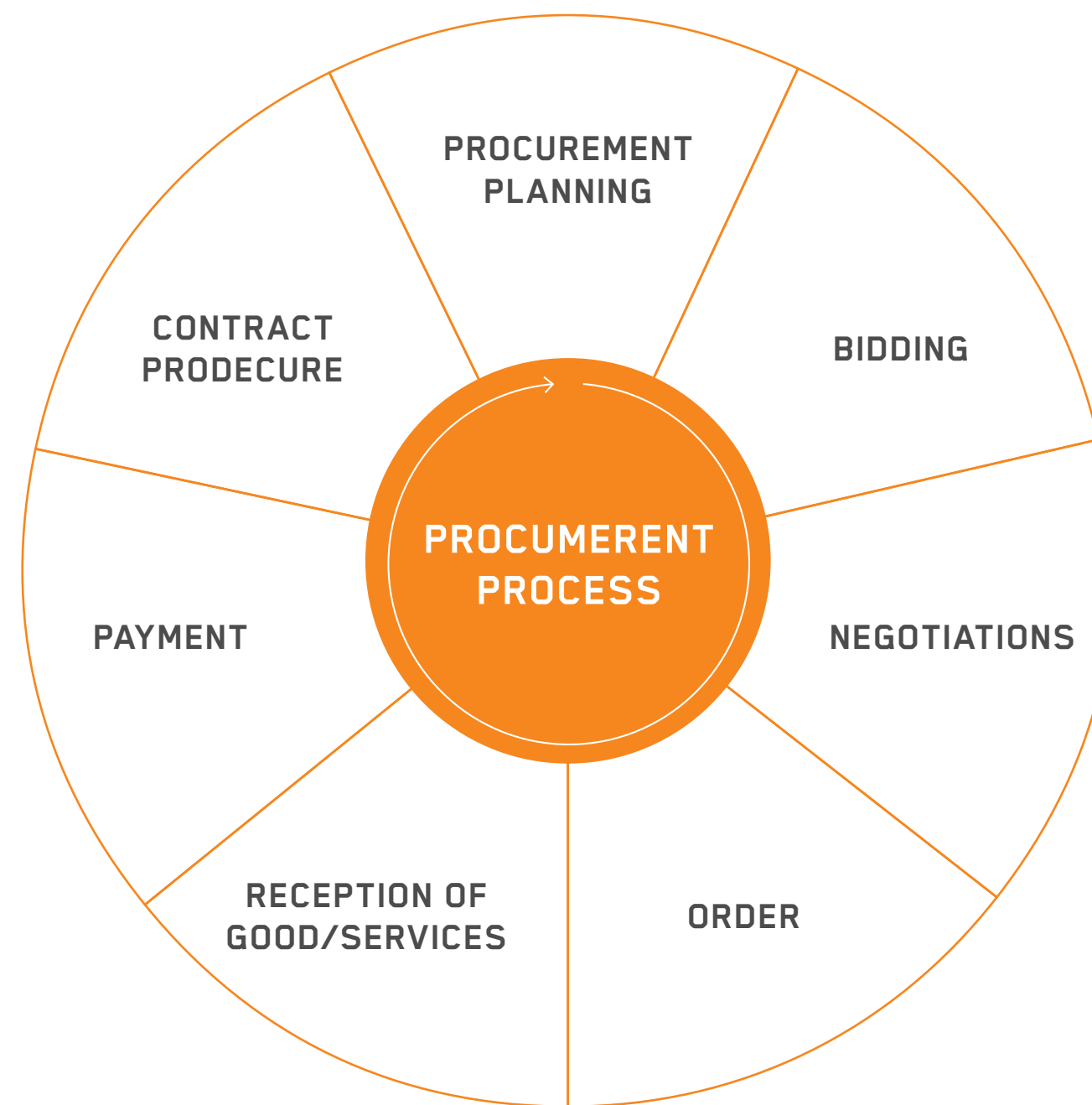
## DECOMMISSIONED ELECTRICITY POLES ARE DANGEROUS

Every year, thousands of impregnated timber poles are removed from our electricity network. Old impregnated timber poles often contain chromated copper arsenate (CCA) or creosote, which may be hazardous to human, animal and environmental safety if handled incorrectly. Laws restrict how impregnated timber poles can be used and disposed of. Impregnated timber poles must not find their way to consumers, nor may they come into contact with people, animals or food.

We handle dismantled poles by following an operating model that meets legal requirements. Poles are either taken to a processing plant with an environmental permit for disposal as hazardous waste or handed over for professional or industrial re-use to parties that meet the relevant legal requirements. Our network partners handle deliveries in accordance with our operating model, and we monitor their activities by conducting spot checks.

Every year, we identify some individual cases in which poles are processed in contravention of our operating model or poles are stolen from work sites. We take the strictest action in the event of irregularities, including reporting losses to the police and sanctioning our network partners for failing to comply with the operating model.

Caruna's procurement process





## Procurement key indicators

|  | 2019 | 2018 | 2017 |
|--|------|------|------|
| Working hours reported by network contractors* (million hours) | 1.68 | 2.56 | 2.09 |
| Number of supplier audits                                      | 8    | 6    | 6    |
| Share of audited members of new suppliers (%)                  | >80  | >80  | -    |
| Number of main contractor companies                            | 13   | 13   | 13   |
| Number of subcontractor companies                              | 560  | 560  | 480  |

\* Includes the working hours of Caruna's main contractors and their subcontractors. Subcontractor working hours are partly estimates.

**The construction quality contract service – known as project supervision – involves monitoring, reviews, inspections, quality control, and safety and environmental coordination in our network areas.**

In 2019, our procurement and purchasing organisation conducted competitive tendering processes for items including the cables and distribution transformers required for network construction and services such as construction quality control and ICT procurements, including Caruna's agile development and related maintenance services. We also used a competitive tendering process to choose our first ever advertising agency partner during the period under review.

In 2019, we worked on the comparison criteria for the competitive tendering processes related to our high-voltage network. Quality and safety will be given a stronger weighting in future procurements.

## AUDITING IS AN ESSENTIAL ASPECT OF COOPERATION

We audit our suppliers annually according to our auditing plan. The plan enables us to audit and improve our most important contractual suppliers.

In 2019, we audited eight suppliers: two construction contractors, two material suppliers, three ICT suppliers and one project supervision partner.

The audits revealed a small number of irregularities, and corrective measures were initiated to address the irregularities. There was no need for any repeat audits in 2019.

In addition to supplier audits, we audited the capacity of our new maintenance partners to operate according to the agreements they had signed in four operating areas.

From 2016 to 2019, we audited nearly 20 of Caruna's largest contractual suppliers. Together, these suppliers account for more than 80 per cent of Caruna's procurement value.

## CORPORATE RESPONSIBILITY IS REQUIRED IN THE SUPPLY CHAIN

We aim to continuously improve the transparency and management of our supply chain. Corporate responsibility is a part of our contracts and supplier management. During the year under review, we updated our ethical guidelines and introduced an online course based on our updated guidelines. We require everyone who works for us to complete the course and pass it.



## IN 2019, WE HELD OUR SECOND CORPORATE RESPONSIBILITY DAY.

This time, it was held with Prysmian Group Oy, our cable supplier. More than 60 Caruna employees attended the event along with our most important contractual suppliers. During the event, we familiarised our contractual suppliers with the key themes in our corporate responsibility programme. There was plenty of discussion during the event because we aim to improve the corporate responsibility of our supply chain together with our contractual suppliers. The most important thing is that we are all heading in the same direction, with joint targets for corporate responsibility.





## ACHIEVEMENTS IN 2019

AROUND  
**1,300**  
PEOPLE EMPLOYED DIRECTLY  
AND INDIRECTLY IN FINLAND

APPROXIMATELY  
**100%**  
OF OUR WORK IS DONE  
DOMESTICALLY

IN THE FALL OF  
**2019**  
WE BEGAN TO COLLABORATE  
WITH THE FLOORBALL WFC  
2020 SPORTS ORGANISATION



### SPORTS EQUIPMENT FOR YOUNG PEOPLE

We participated in the Equal Opportunity charity campaign, which collected children's and teens' sports clothes and equipment. The aim of the campaign was to ensure that every child and young person who needs help could receive suitable sports equipment, irrespective of the family's financial position.



### OPPORTUNITIES FOR ALL

The 2020 World Floorball Championships has chosen the value of 'enabling exercise for all'. The partner is Hope ry, which wants everyone to have an equal opportunity to engage in sports and hobbies.

### MORE CORPORATION TAX THAN BEFORE

Caruna's tax footprint has continued to grow, making it one of the biggest tax contributors among Finland's top 100 taxpaying companies. Caruna is also one of the largest tax contributors out of all of the electricity distribution companies.

We aim to be a good corporate citizen in Finnish society. Our operations are based on ethical business principles and good corporate governance. We communicate openly on matters related to our business and we listen to our stakeholders. We support local sports and cultural events and other projects in our network areas. Our projects employ about 1,300 people, and we pay taxes in Finland.



# Every day, we work to earn society's consent

We are a significant economic operator and employer in Finland. We maintain an open dialogue with our stakeholders. We support responsible Finnish actors in our network areas.

Our reliable electricity network ensures that our customers have electricity every day of the year. In 2019, we spent EUR 167.3 million on renovating and building out our electricity network.

## WE ARE AN EMPLOYER AND TAXPAYER IN FINLAND

We are a Finnish company, and we pay all of our taxes to Finland. Our operations had direct and indirect economic impacts, both locally and nationally. We are investing in Finland, and the impact is particularly visible in our network areas.

In 2019, our net sales amounted to EUR 466 million, an increase 2.7 per cent on the previous year. The number of customers increased by approximately 1.3 per cent to more than 690,000 by the end of 2019.

At the end of 2019, we had 313 employees. We paid our employees salaries, pension contributions and social security levies totalling EUR 25 million. In 2019, we directly employed 13 contractors on projects around Finland. Our projects indirectly employed approximately 1,000 people. The amount of Finnish work as a proportion of our total work is approximately 100 per cent.

We paid our suppliers EUR 143 million in 2019. This figure includes procured materials and services, costs incurred from the loss of electricity, Fingrid's national grid fees, fault repair and maintenance costs and other smaller items of expenditure.

In compensation for the use of capital, we paid EUR 56 million in interest to the first-in-line creditors, and EUR 75 million in interest on the shareholder loan that the owners have invested in the company.

**Our local economic impacts include job creation.**

## Direct economic value generated and distributed (EUR 1,000s)

|  | 2019    | 2018    | 2017    |
|--|---------|---------|---------|
| Income from customers                              |         |         |         |
| Net sales  | 466,360 | 454,069 | 426,427 |
| Other operating income                             | 4,971   | 7,386   | 6,013   |
| Fair value adjustments                             | 1,732   | -899    | -1,112  |
| Income from customers in total                     | 473,064 | 460,552 | 431,328 |
| Payments to suppliers                              |         |         |         |
| Acquired materials and services                    | 87,232  | 92,496  | 88,116  |
| Other expenses                                     | 55,737  | 58,521  | 54,147  |
| Tax on property                                    | -210    | -223    | -212    |
| Donations and sponsoring                           | -225    | -211    | -192    |
| Payments to suppliers in total                     | 142,534 | 150,583 | 141,859 |
| Contributions to personnel                         |         |         |         |
| Wages, remuneration and social security costs      | 25,058  | 22,949  | 20,362  |
| Contributions to personnel in total                | 25,058  | 22,949  | 20,262  |
| Contributions to lenders and shareholders          |         |         |         |
| Financing costs to shareholders                    | 75,052  | 79,810  | 80,462  |
| Financing costs to others                          | 55,972  | 53,939  | 48,720  |
| Contributions to lenders and shareholders in total | 131,025 | 133,749 | 129,182 |
| Support in public interest and taxes               |         |         |         |
| Income tax from the financial period               | 12,220  | 10,349  | 6,338   |
| Tax on property                                    | 210     | 223     | 212     |
| Donations and sponsoring                           | 225     | 211     | 192     |
| Support in public interest and taxes in total      | 12,656  | 10,783  | 6,742   |
| Economic value generated                           | 161,791 | 142,488 | 133,183 |



## WE PAID A TOTAL OF EUR 12.2 MILLION IN CORPORATION TAX IN 2019

The term 'tax footprint' refers to the income society receives from a company's corporate taxes and tax-like payments. In addition to direct and indirect taxes, our tax footprint includes the income tax withheld from employees' salaries and social security contributions. The summary includes the taxes and tax-like payments that we are legally obliged to pay or collect from customers. The summary does not include taxes for which we do not have a legal reporting obligation.

## CARUNA'S CODE OF CONDUCT LAYS THE FOUNDATION FOR OUR WAY OF WORK

Every employee who began working at Caruna in 2019 completed an online course covering the



The Energy for the Future 2019 event involved discussions of climate change, digitalisation and the energy revolution.

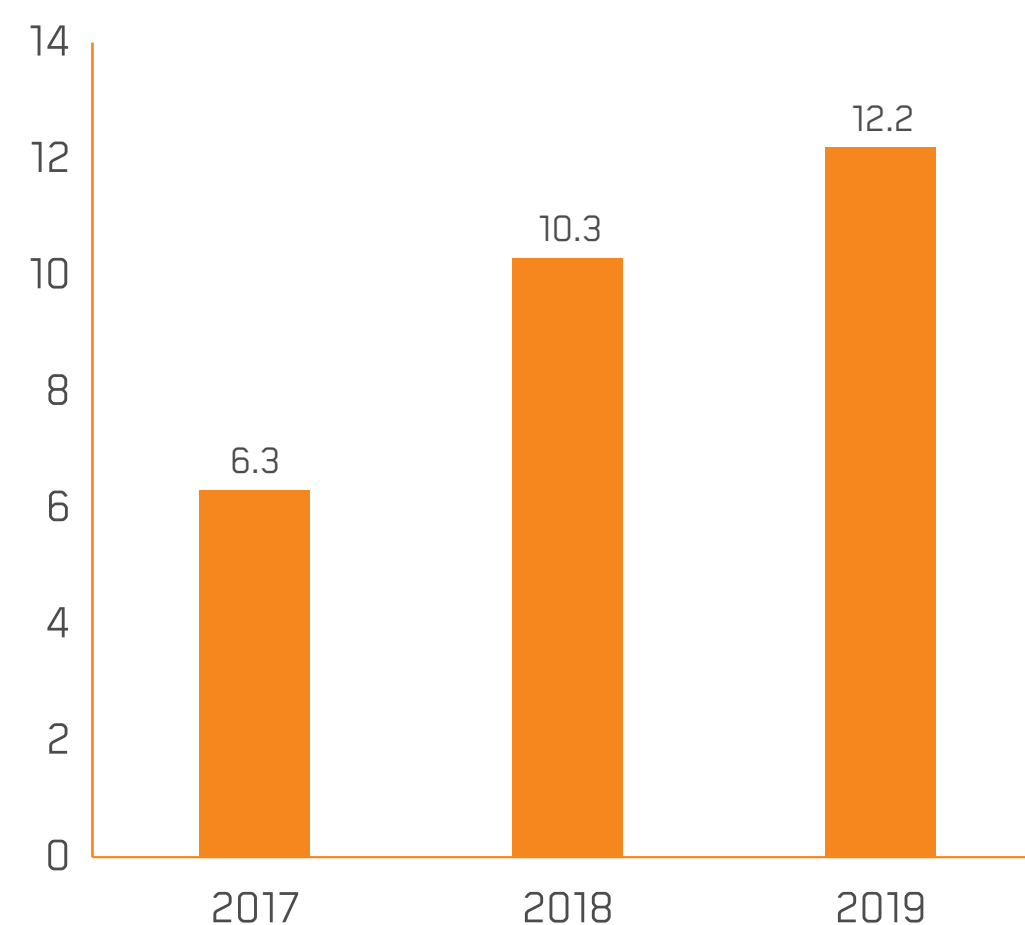
Code of Conduct. The Code of Conduct specifies how we look after Caruna's assets, cooperate with other parties, treat each other and engage in the electricity distribution business.

## WE ENGAGED IN OPEN DIALOGUE WITH OUR STAKEHOLDERS

We have identified our key stakeholders and their expectations, so we collect feedback from them annually by means such as the reputation survey. We also conducted a relevance assessment among our stakeholders in 2019, and we will use the results to update our corporate responsibility themes.

Our key stakeholders and the forms of stakeholder dialogue are listed on the next pages.

## Development of corporate tax, MEUR



## Caruna's tax footprint (EUR 1,000s)

|                                    | 2019           | 2018           | 2017           |
|------------------------------------|----------------|----------------|----------------|
| <b>Tax due</b>                     |                |                |                |
| Income tax                         | 12,220         | 10,349         | 6,338          |
| Unemployment insurance payments    | 464            | 772            | 671            |
| Social security contributions      | 128            | 143            | 194            |
| Tax on property                    | 210            | 223            | 212            |
| Transfer tax                       | 2              | 18             | 2              |
| <b>Tax due in total</b>            | <b>13,025</b>  | <b>11,506</b>  | <b>7,417</b>   |
| <b>Collected and accounted tax</b> |                |                |                |
| Value-added tax (net accounted)    | 84,547         | 59,105         | 51,804         |
| Electricity tax                    | 202,476        | 199,236        | 202,192        |
| Withheld tax                       | 5,474          | 4,883          | 5,315          |
| <b>Accounted tax in total</b>      | <b>292,479</b> | <b>263,224</b> | <b>259,311</b> |

## Corporate taxes

EUR **12.2** million  
Paid corporation taxes increased by 18% during 2019.

## Taxes collected

EUR **287** million  
This amount covers the electricity tax collected from our customers and accounted to the government and value added tax.

## Investments

EUR **167.3** million



## Stakeholder

### Expectations of Caruna

### Caruna's actions in 2019

## EMPLOYEES →

- Professional development
- Maintaining wellbeing and motivation
- Occupational safety

- Caruna Day: a strategy and development day for all employees
- Switch job rotations and a Great Place to Work employee survey
- The first coaching sessions and 360-degree appraisals
- Diverse training opportunities, such as the Caruna Academy, Sähköri Academy, presentation and interaction skills, safety and project management training, and language training
- Promoting remote working and flexible work arrangements
- Targeted measures for developing teams and the organisation
- Working on Caruna's culture with the personnel, creating a cultural handbook, developing management in line with the culture
- Planned activities to promote occupational wellbeing, such as sports, wellbeing lectures, fitness assessments, Firstbeat assessments and lifestyle courses
- Developing a new model for performance management and succession planning
- Development of management and the competency model

## CUSTOMERS

- Professional, friendly and multichannel customer service
- Hassle-free service
- Communicating changes and disturbances
- Timely fault repair
- Reliable invoicing
- Transparent pricing

- Developing digital services, utilising artificial intelligence and data for the management of customer relationships and partnerships
- An online Marketplace where customers can compare the prices of solar panels, electric vehicle charging services and electricity contracts
- The launch of the Caruna+ mobile app and offering of new services, such as payment solutions, postponement of the due date for payments, energy monitoring services
- Developing the Chatbot service for private customers and electricity retailers
- Creating a new digital ordering pathway for private customers taking out new electricity connections
- Processing complaints more quickly and controlling quality
- Marketing new services to specific target groups
- Deploying an electronic service for electricity retailers
- Holding retailer events for representatives of electricity retailers
- Chatbot for the debt collection partner and deploying a phone call robot
- Regular meetings with municipal customers and more effective communication by means such as a newsletter for municipalities

## CONTRACTORS, SUPPLIERS AND PARTNERS →

- Building open and predictable partnerships
- Keeping promises
- Actively developing collaboration
- Maintaining non-discrimination and well-functioning markets
- Extensive projects

- Caruna's stakeholder events and regular meetings, Caruna's Contractor Day, Caruna's Contractor Day for Network Builders and subcontractor events, Caruna's Corporate Responsibility Day with contractual suppliers
- Maintaining and developing collaboration in accordance with the management model for supplier relations
- Systematically collating ideas for development at supplier meetings, continued focus on development in operations, development workshops
- Complying with and making use of the principles laid out in the Act on public procurement in specialised sectors (1398/2016)
- Audits of contractual suppliers



## Stakeholder

## Expectations of Caruna:

## Caruna's actions in 2019

### AUTHORITIES AND DECISION-MAKERS

(ministries, the Energy Authority, the Finnish Competition and Consumer Authority, political decision-makers and municipalities)

- Maintaining the reliable operation of the electricity network
- Operating responsibly and transparently
- Maintaining an active dialogue
- Open and reliable partnership in energy matters
- Developing the industry
- Complying with legislation and regulations

- Regular contact with various authorities and decision-makers, stakeholder events
- Providing decision-makers with background information about current matters in the industry and raising awareness of Caruna's business
- Contributing to the development of the energy system and suggesting solutions
- Reporting to the authorities, including structural information about the network, financial statements and technical indicators for the Energy Authority
- Complying with legislation and regulations and contributing to their development

### INDUSTRY ORGANISATIONS, PARTNERS, INTEREST GROUPS AND NGOS

- Developing the industry
- Providing expertise
- Maintaining an active dialogue

- Increasing public awareness of the industry and Caruna's business, stakeholder events
- Contributing to the development of the energy system, offering solutions and sharing expertise
- Working with various other parties and contributing to industry lobbying
- Wielding influence within industry organisations (Finnish Energy, Eurelectric, EDSO) and working on the committees and in the working groups of such organisations
- Collaboration with organisations such as the Association of Energy Users in Finland (ELFI), the Federation of Finnish Enterprises, the Confederation of Finnish Industries (EK), the Finnish Home Owners' Association, the Central Union of Agricultural Producers and Forest Owners (MTK) and the Central Union of Swedish-speaking Agricultural Producers in Finland (SLC)
- We also hold project meetings with representatives of key environmental organisations and landowners relevant to Caruna's operations.

### EMERGENCY SERVICES

(the rescue services, the police, the National Emergency Supply Agency, the Finnish Defence Forces)

- Helping to ensure municipalities are better prepared for power interruptions by working with the emergency services
- Providing the rescue services and the police with details of the designated contact persons
- Drawing up the contingency and emergency plan for the Energy Authority
- Participating in stakeholder seminars and exercises
- Participating in and giving presentations on regional defence courses (basic, advanced and specialist courses)

- Communicating with the emergency services and other authorities on the Krivat system about matters such as preparedness for outages caused by abnormal weather conditions
- Reminding the emergency services and police of the contact details and telephone numbers reserved for the authorities
- Updating the electricity network company's contingency and emergency plans and submitting them to the supervisory authority
- Participating in four preparedness exercises arranged by the authorities: the meetings of regional Voimatalouspooli committees organised by the National Emergency Supply Agency in Greater Helsinki, South Finland and North Finland, and the meetings of the regional preparedness committees run by the Confederation of Finnish Industries (known as ELVAR) in South and West Finland
- Contributing to the work of Traficom's incident collaboration group (HÄTY)



**Stakeholder**

**Expectations of Caruna**

**Caruna's actions in 2019**

**SHAREHOLDERS**

- Increasing the company's value in a sustainable way
- Implementing the chosen strategy
- Good corporate governance

- Participating in six meetings of the Board of Directors and nine committee meetings as part of governance
- Regular personal contacts
- Observing Caruna's guidelines and policies

**LENDERS**

- Complying with legislation and regulations
- Complying with the UN Declaration of Human Rights, the International Labour Organization's (ILO) conventions, the UK anti-corruption principles and the UN Global Compact initiative
- Maintaining a strong credit rating
- Open communications and disclosure of information about the company's financial standing

- Bi-annual and annual reporting
- Compliance certificates
- Maintaining effective operations and a strong cash flow
- Holding around 30 meetings with credit rating agencies, banks and other financial institutions

**MEDIA**

- Open and proactive communications
- Raising media awareness of themes of relevance to the energy industry
- Ensuring that managers and experts are available for interviews
- Timely and easy access to information

- Press releases, articles, websites, blogs
- National and regional meetings with media representatives
- Media training for management and other employees
- Responding to media enquiries for interviews and contacts
- Communicating about disturbances through the website, social media channels, the media and text messages
- Media background meetings
- Developing and expanding the social media content and channels



## We support responsible Finnish actors and associations in our network areas



### WE SUPPORT RESPONSIBLE FINNISH ACTORS AND ASSOCIATIONS IN OUR NETWORK AREAS

Our collaboration with the Finnish Ice Hockey Association continued until June 2019. We were able to show our support for the successful Finnish women's and men's teams.

We initiated a principal partnership with the World Floorball Championships 2020 organisation in autumn 2019. The next floorball world championships will be held in Helsinki in December 2020.

In addition to our partnership with the Floorball World Championships organisation, we annually support local sports and cultural events and other responsible Finnish events and projects in our network areas.

### SUITABLE SPORTS EQUIPMENTS TO CHILDREN

In August 2019, Caruna employees participated in the Equal Opportunity campaign arranged by Hope ry in cooperation with the 2020 World Championships partners. The campaign sought to collect equipment and clothing for the hobbies of children and young people.

Find out more about the [Equal Opportunity charity campaign](#) →



### PEDALLING SOME POSITIVE ENERGY INTO ESPOO ON ESPOO DAY

Visitors to our booth on Espoo Day, which takes place in August, collected money for local associations by cycling. We donated the money accumulated by cycling to the Espoo SOS Children's Village, Espoo Lifeboat Association and Espoon Lähimmäispalveluyhdistys, a charity for elderly people.



### THE SALO PALLOSEURA SPORTS CLUB ENCOURAGED ITS JUNIORS TO CYCLE TO THEIR TRAINING SESSIONS

We are one of the principal partners of the Salon Palloilijat sports team's junior activities. Salon Palloilijat (known as SalPa) wanted to encourage its juniors to cycle to training sessions in August and September. More than 600 juniors attended approximately 300 training sessions in one month. We paid a sponsorship to the junior activities of SalPa's football team based on the number of recorded trips made by bicycle to training sessions. Cycling is a way of preserving nature while also improving fitness. We ran a prize draw to award an electric bicycle to one of the participants. The winner was Oskari, who cycled several of his five-kilometre trips to training sessions.



# CORPORATE RESPONSIBILITY REPORTING PRINCIPLES AND GRI

- Our corporate responsibility reporting principles
- GRI Content Index



# Our corporate responsibility reporting principles

This is the fifth time that we are reporting on the corporate responsibility of our operations, and the second time the report has complied with the GRI standards. The financial results are a part of our annual reporting.

This Annual Report covers our operations from 1 January to 31 December 2019. We report on our operations annually. We will publish our next report in Spring 2021.

## DEFINING THE REPORT CONTENTS

Our corporate responsibility report for 2019 complies with the Global Reporting Initiative's GRI

Sustainability Reporting Standards. Our report has been prepared in accordance with the guidelines of the GRI Standards and its Core option. The report covers the standard disclosures of the GRI Standards and the Electric Utilities Sector Disclosures as well as the sustainability topics considered material in our operations.

In Summer and Autumn 2015, we identified the key corporate responsibility themes for our business. The process covered the economic, environmental and social aspects of our activities regarding stakeholders and our business operations. We began by internally defining the framework of our operations from the perspective of corporate responsibility. This stage also involved identifying a wide range of themes related to responsibility.

The second stage consisted of a materiality analysis, for which we asked our internal and external stakeholders to share their views on our operations, corporate responsibility and key development areas. We collected our stakeholders'

views by conducting a survey of the following stakeholders: corporate customers, private customers, contractors and other partners, municipal decision-makers, government authorities, regional administration, rescue services, higher education institutions, industry organisations and our employees.

We processed the results of the stakeholder survey with Caruna's HSE development team, Management Team and HSE Committee, which

is appointed by the Board of Directors. In the last stage of the process, we summarised and grouped the sustainability themes and topics into four areas.

In 2019, we validated our corporate responsibility focal areas and updated the key themes, which will be confirmed in early 2020. The new focuses will be introduced in the 2020 corporate responsibility programme and report.

## Materiality assessment process





# Caruna's corporate responsibility priorities

| Caruna's priorities   | Material GRI topics  | Topic boundaries  |
|---|--|---|
| <b>Working environment</b><br>Good management<br>Expertise<br>Occupational wellbeing and health<br>Equality<br>Safety of employees and contractors<br>Network and public safety   | Employment<br>Training and education<br>Diversity and equal opportunity<br>Caruna's own topic: Occupational wellbeing<br>Occupational health and safety<br>Customer health and safety (EU)                                       | Caruna's own operations, contractors, customers and society |
| <b>Supply chain and the environment</b><br>Procurement practices and equal treatment of contractors<br>Responsibility in material procurement<br>Working conditions of subcontractors<br>Minimising environmental damage<br>Environmental safety<br>Impacts on land use and landscape | Supplier environmental assessment<br>Supplier social assessment<br>Materials<br>Emissions<br>Wastewater and waste<br>Biodiversity<br>Compliance  | Caruna's own operations, contractors and supply chain       |
| <b>Corporate citizenship</b><br>Customer satisfaction<br>Non-discrimination of customers and reasonable pricing<br>Local economic impacts<br>Stakeholder engagement<br>Openness, ethical business principles and corporate governance   | Financial performance<br>Indirect economic impacts<br>Customer privacy<br>Caruna's own topic: Non-discrimination of customers<br>Anti-corruption<br>Anti-competitive behaviour<br>Compliance                                     | Caruna's own operations, customers and society              |
| <b>Climate change</b><br>Investments in network development<br>Emergency preparedness and rapid fault rectification<br>Sustainable and effective use of natural resources   | Availability of electricity and reliability of supply (EU)<br>System efficiency (EU)<br>Research and development (EU)<br>Disaster/emergency planning and response, the related plans and training (EU)<br>Energy<br>Biodiversity | Caruna's own operations, customers and society              |



# GRI Content Index

| Disclosure                  | GRI content  | Location  | Comments   |
|-----------------------------|--|---|--|
| GRI 102: General Disclosure |  |   |  |
| Organisational profile      |  |   |  |
| 102-1                       | Name of the organization                                     | Corporate governance: p. 3, GRI content index                       | Caruna Networks Oy   |
| 102-2                       | Activities, brands, products, and services                   | Annual report: p. 14  |  |
| 102-3                       | Location of headquarters                                     | Back cover  |  |
| 102-4                       | Location of operations                                       | Annual report: p. 4   |  |
| 102-5                       | Ownership and legal form                                     | GRI content index   | Caruna is owned by Finnish employment pension companies Elo (7.5%) and Keva (12.5%), as well as international infrastructure investors OMERS Infrastructure (40%) and First State Investments (40%). |
| 102-6                       | Markets served   | Annual report: p. 4   |  |
| 102-7                       | Scale of the organisation                                    | Annual report: p. 4, p. 9, p. 38 Financial Statements p. 3-6        |  |
| 102-8                       | Information on employees and other workers                   | Annual report: p. 28 and p. 36-41                                   | Partially reported.  |
| 102-9                       | Supply chain   | Annual report: p. 46-47   |  |
| 102-10                      | Significant changes to the organization and its supply chain | Financial Statements, p. 5-7  |  |
| 102-11                      | Precautionary Principle or approach                          | Corporate governance: p. 10   |  |
| 102-12                      | External initiatives   | Annual report: p. 27-29, p. 36, p. 43 and Corporate Governance p. 9 |  |
| 102-13                      | Membership of associations                                   | Annual report: p. 52  |  |
| Strategy                    |  |   |  |
| 102-14                      | Statement from senior decision-maker                         | Annual report: p. 6-7   |  |



| Disclosure             | GRI content   | Location   | Comments   |
|------------------------|---|--|--|
| 102-15                 | Key impacts, risks, and opportunities   | Annual report: p. 11-14 and <a href="#">Corporate governance, p. 10</a>                  |  |
| Ethics and integrity   |   |  |  |
| 102-16                 | Values, principles, standards, and norms of behaviour                         | Annual report: p. 11-12, p. 26   |  |
| Governance             |   |  |  |
| 102-18                 | Governance structure  | <a href="#">Corporate governance: p. 4, p. 9</a>   |  |
| 102-20                 | Executive-level responsibility for economic, environmental, and social topics | <a href="#">Corporate governance: p. 5, p. 7-8</a>                                       |  |
| 102-22                 | Composition of the highest governance body and its committees                 | <a href="#">Corporate governance: p. 5</a>   |  |
| 102-26                 | Role of highest governance body in setting purpose, values, and strategy      | <a href="#">Corporate governance: p. 4-5</a>   |  |
| Stakeholder engagement |   |  |  |
| 102-40                 | List of stakeholder groups  | Annual report: p. 51-52  |  |
| 102-41                 | Collective bargaining agreements  | Annual report: p. 38   |  |
| 102-42                 | Identifying and selecting stakeholders  | GRI content index  | Caruna's stakeholders include a wide variety of parties that utilise network services and participate in their provision and affect their operation, as well as the surrounding society in a broader capacity. |
| 102-43                 | Approach to stakeholder engagement  | Annual report: p. 50   |  |
| 102-44                 | Key topics and concerns raised  | Annual report: p. 51-53  |  |
| Reporting practice     |   |  |  |
| 102-45                 | Entities included in the consolidated financial statements                    | <a href="#">Financial Statements, p. 3</a> and <a href="#">Corporate Governance p. 3</a> |  |
| 102-46                 | Defining report content and topic Boundaries                                  | Annual report: p. 56   |  |
| 102-47                 | List of material topics   | Annual report: p. 26, p. 56  |  |
| 102-48                 | Restatements of information   | GRI content index  | No changes.  |
| 102-49                 | Changes in reporting  | GRI content index  | No significant changes.  |



| Disclosure  | GRI content  | Location   | Comments  |
|---|--|--|---|
| 102-50  | Reporting period   | Annual report: p. 56   |   |
| 102-51  | Date of most recent report                               | GRI content index  | March 11, 2019  |
| 102-52  | Reporting cycle  | Annual report: p. 56   |   |
| 102-53  | Contact point for questions regarding the report         | GRI content index  | <a href="https://www.caruna.fi/en/contact">https://www.caruna.fi/en/contact</a> |
| 102-54  | Claims of reporting in accordance with the GRI Standards | Annual report: p. 56   |   |
| 102-55  | GRI content index  | Annual Report: p. 58–63  |   |
| 102-56  | External assurance                                       | The information in this report has not been externally assured.  |   |
| GRI 103: Management Approach                              |  |  |   |
| 103-1   | Explanation of the material topic and its Boundary       | Annual report: p. 57   |   |
| 103-2   | The management approach and its components               | Annual report: p. 9, p. 11–12, p. 16, p. 20, p. 22, p. 24, p. 29, p. 33, p. 37, p. 39–41, p. 43, p. 46 |   |
| 103-3   | Evaluation of the management approach                    | Annual Report: p. 27–28, p. 37, p. 43, p. 50 and<br><a href="#">Corporate governance: p. 11</a>        |   |
| Economic responsibility                                   |  |  |   |
| GRI 201: Economic Performance                             |  |  |   |
| 201-1   | Direct economic value generated and distributed          | Annual report: p. 14, p. 49–50   | Partially reported.   |
| GRI 203: Indirect Economic Impacts                        |  |  |   |
| 203-2   | Significant indirect economic impacts                    | Annual report: p. 49–50  |   |
| EU: Availability of electricity and reliability of supply |  |  |   |
|   |  | Annual report: p. 16–20  |   |
| EU: System efficiency                                     |  |  |   |
| EU12  | Transmission and distribution losses                     | Annual report: p. 34   |   |



| Disclosure                                 | GRI content  | Location                       | Comments            |
|--|--|--------------------------------|---------------------|
| EU: Research and development               |  |                                |                     |
| <a href="#">Financial Statements, p. 5</a> |  |                                |                     |
| GRI 205: Anti-corruption                   |  |                                |                     |
| 205-2                                      | Communication and training about anti-corruption policies and procedures         | Annual report: p. 27           | Partially reported. |
| 205-3                                      | Confirmed incidents of corruption and actions taken                              | GRI content index              | No cases.           |
| GRI 206: Anti-competitive Behaviour        |  |                                |                     |
| 206-1                                      | Legal actions for anti-competitive behaviour, anti-trust, and monopoly practices | GRI content index              | No violations.      |
| Environmental responsibility               |  |                                |                     |
| GRI 301: Materials                         |  |                                |                     |
| 301-1                                      | Materials used by weight or volume   | Annual report: p. 45           |                     |
| GRI 302: Energy                            |  |                                |                     |
| 302-1                                      | Energy consumption within the organization                                       | Annual report: p. 4            | Partially reported. |
| 302-4                                      | Reduction of energy consumption  | Annual report: p. 34-35        | Partially reported. |
| GRI 304: Biodiversity                      |  |                                |                     |
| 304-2                                      | Significant impacts of activities, products, and services on biodiversity        | Annual report: p. 14, p. 42-45 |                     |
| GRI 305: Emissions                         |  |                                |                     |
| 305-1                                      | Direct (Scope 1) GHG emissions   | Annual report: p. 14, p. 34    | Partially reported. |
| 305-5                                      | Reduction of GHG emissions   | Annual Report: p. 30-35        | Partially reported. |
| GRI 306: Effluents and Waste               |  |                                |                     |
| 306-2                                      | Waste by type and disposal method  | Annual report: p. 45           |                     |
| 306-3                                      | Significant spills   | Annual report: p. 34, p. 44-45 | Partially reported. |
| GRI 307: Environmental Compliance          |  |                                |                     |



| Disclosure                                 | GRI content  | Location                    | Comments            |
|--|--|-----------------------------|---------------------|
| 307-1                                      | Non-compliance with environmental laws and regulations   | GRI content index           | No violations.      |
| GRI 308: Supplier Environmental Assessment |  |                             |                     |
| 308-1                                      | New suppliers that were screened using environmental criteria  | Annual report: p. 27        |                     |
| Social responsibility                      |  |                             |                     |
| GRI 401: Employment                        |  |                             |                     |
| 401-1                                      | New employee hires and employee turnover   | Annual Report: p. 38        | Partially reported. |
| EU17                                       | Days worked by contractor and subcontractor employees involved in construction, operation & maintenance activities | Annual report: p. 47        |                     |
| GRI 403: Occupational Health and Safety    |  |                             |                     |
| 403-2 (2016)                               | Hazard identification, risk assessment, and incident investigation   | Annual report: p. 39        | Partially reported. |
| EU18                                       | Percentage of contractor and subcontractor employees that have undergone relevant health and safety training.      | Annual report: p. 39, p. 41 | Partially reported. |
| GRI 404: Training and Education            |  |                             |                     |
| 404-1                                      | Average hours of training per year per employee  | Annual report: p. 40        |                     |
| 404-2                                      | Programs for upgrading employee skills and transition assistance programs  | Annual report: p. 40-41     |                     |
| 404-3                                      | Percentage of employees receiving regular performance and career development reviews                               | Annual report: p. 38        | Partially reported. |
| GRI 405: Diversity and Equal Opportunity   |  |                             |                     |
| 405-1                                      | Diversity of governance bodies and employees   | Annual report: p. 38        |                     |
| GRI 414: Supplier Social Assessment        |  |                             |                     |
| 414-1                                      | New suppliers that were screened using social criteria   | Annual report: p. 27        |                     |
| GRI 418: Customer Privacy                  |  |                             |                     |



| Disclosure                                   | GRI content  | Location             | Comments                            |
|--|--|----------------------|-------------------------------------|
| 418-1  | Substantiated complaints concerning breaches of customer privacy and losses of customer data | GRI content index    | One complaint from the authorities. |
| GRI 419: Socioeconomic Compliance            |  |                      |                                     |
| 419-1  | Non-compliance with laws and regulations in the social and economic area                     | GRI content index    | No violations.                      |
| EU: Disaster/emergency planning and response |  |                      |                                     |
| Annual report: p. 20                         |  |                      |                                     |
| EU: Customer health and safety               |  |                      |                                     |
| EU25   | Number of injuries and fatalities to the public involving company assets                     | Annual report: p. 39 |                                     |
| EU: Access                                   |  |                      |                                     |
| EU28   | Power outage frequency   | Annual report: p. 19 |                                     |
| EU29   | Average power outage duration  | Annual report: p. 19 |                                     |



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