



COMPANY PRESENTATION AND SOCIAL RESPONSIBILITY REPORT 2019

VISION

We are building the future of water,
energy and resource efficiency
services

– for our customers, employees and partners.

Electricity



Easy everyday life

Heat



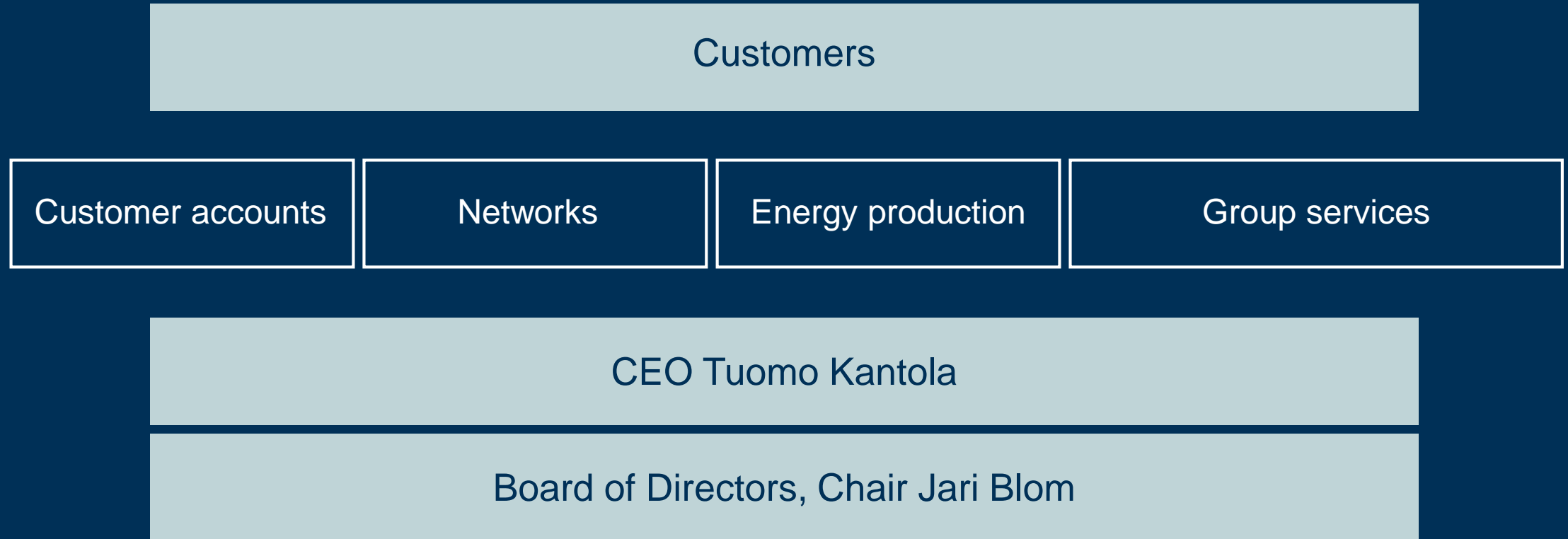
Right temperature
year round

Water

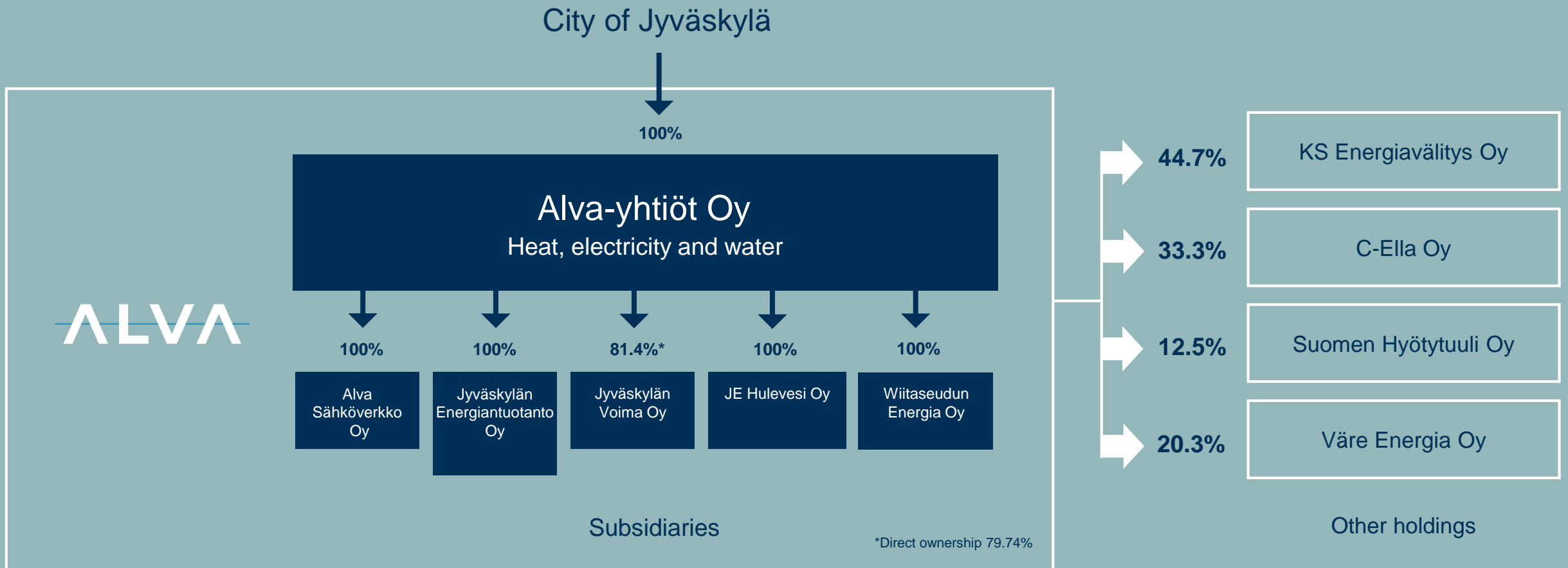


Fresh and pure

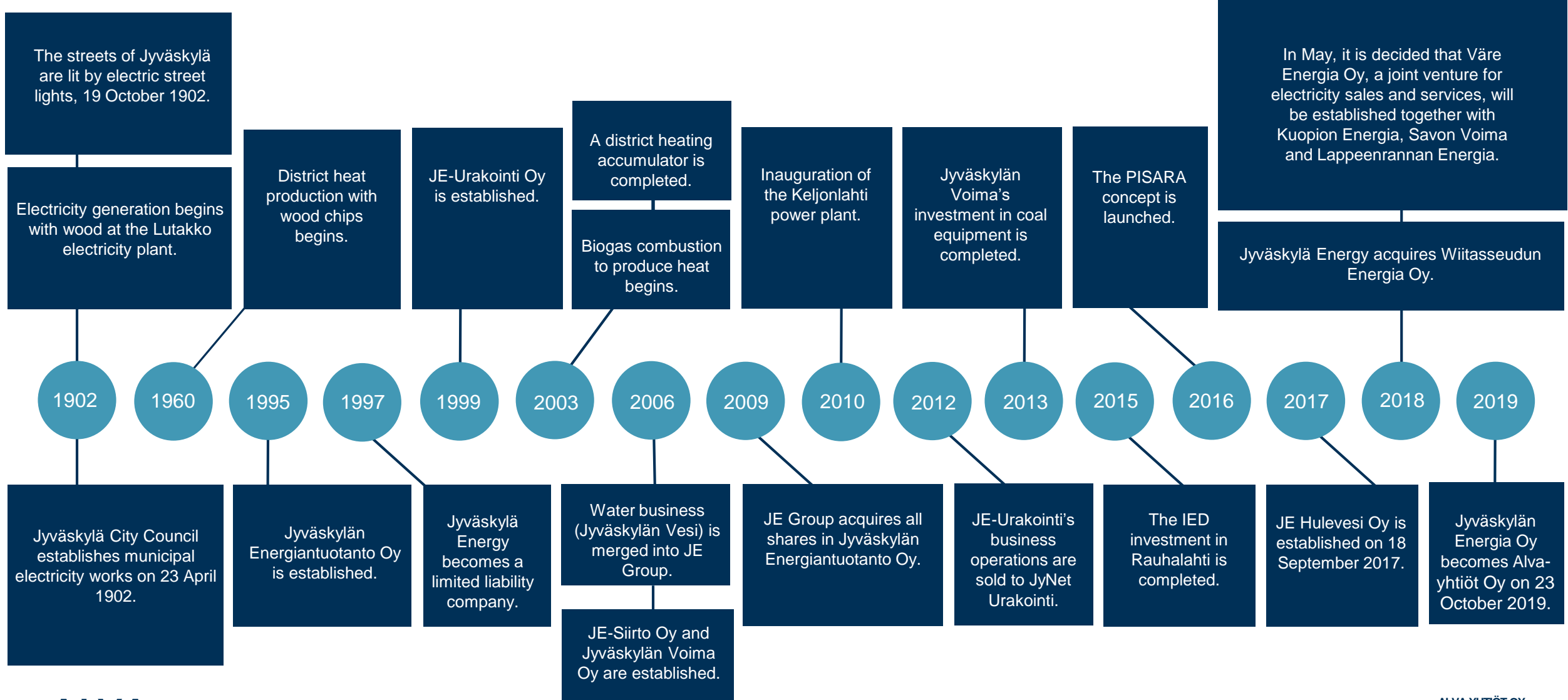
Our organisation



Company ownership structure



Alva throughout its history



EMPLOYEES



We take care of your basic needs. We ensure that water comes from your tap, electricity from your wall socket and your toes stay warm. Every single day.

WE EMPLOY

239

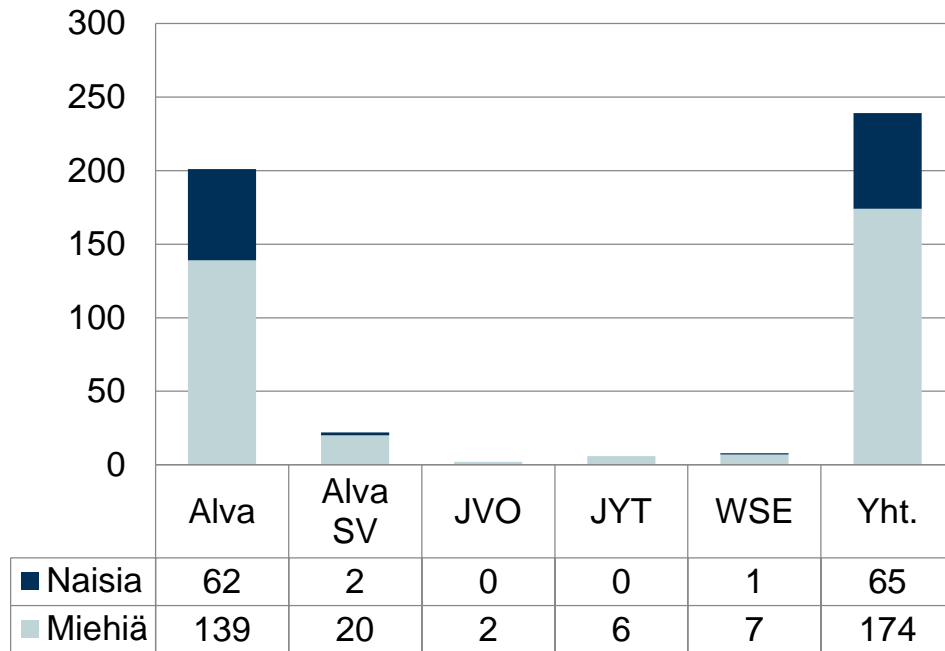
SPECIALISTS

Our entire chain carries out
some 1,000 person-years, every year.

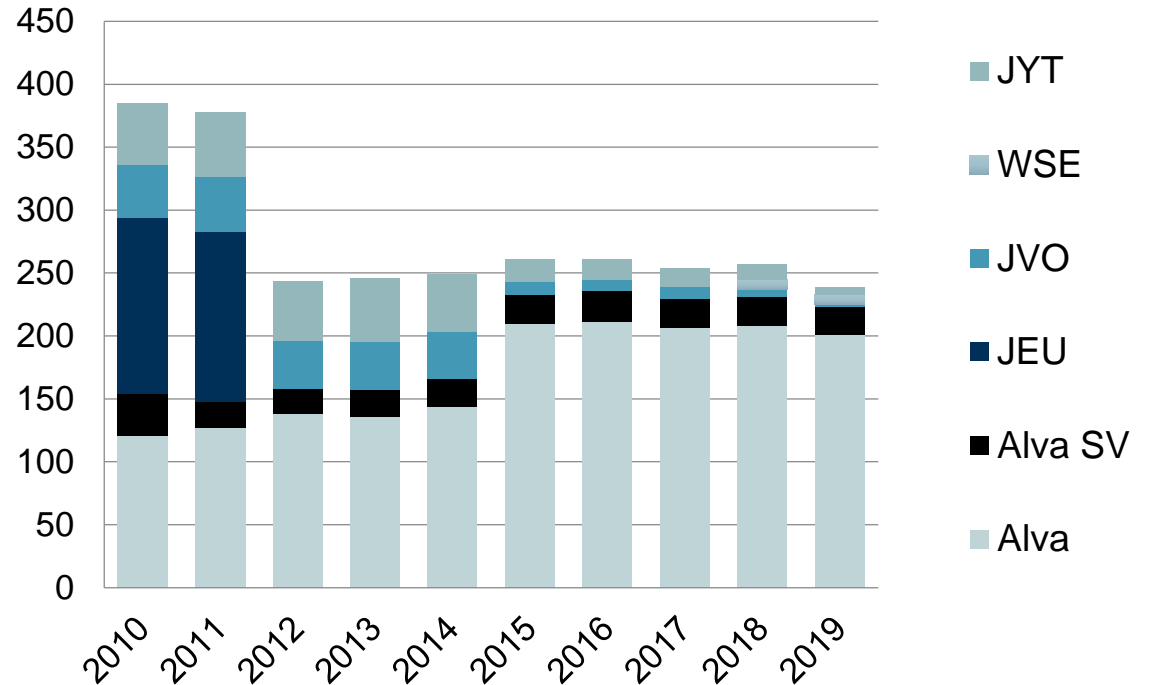
Cooperation with us provides tens of
millions of euros for Finnish companies,
such as transport and machine
contractors.

Employees by group company

Employees by company



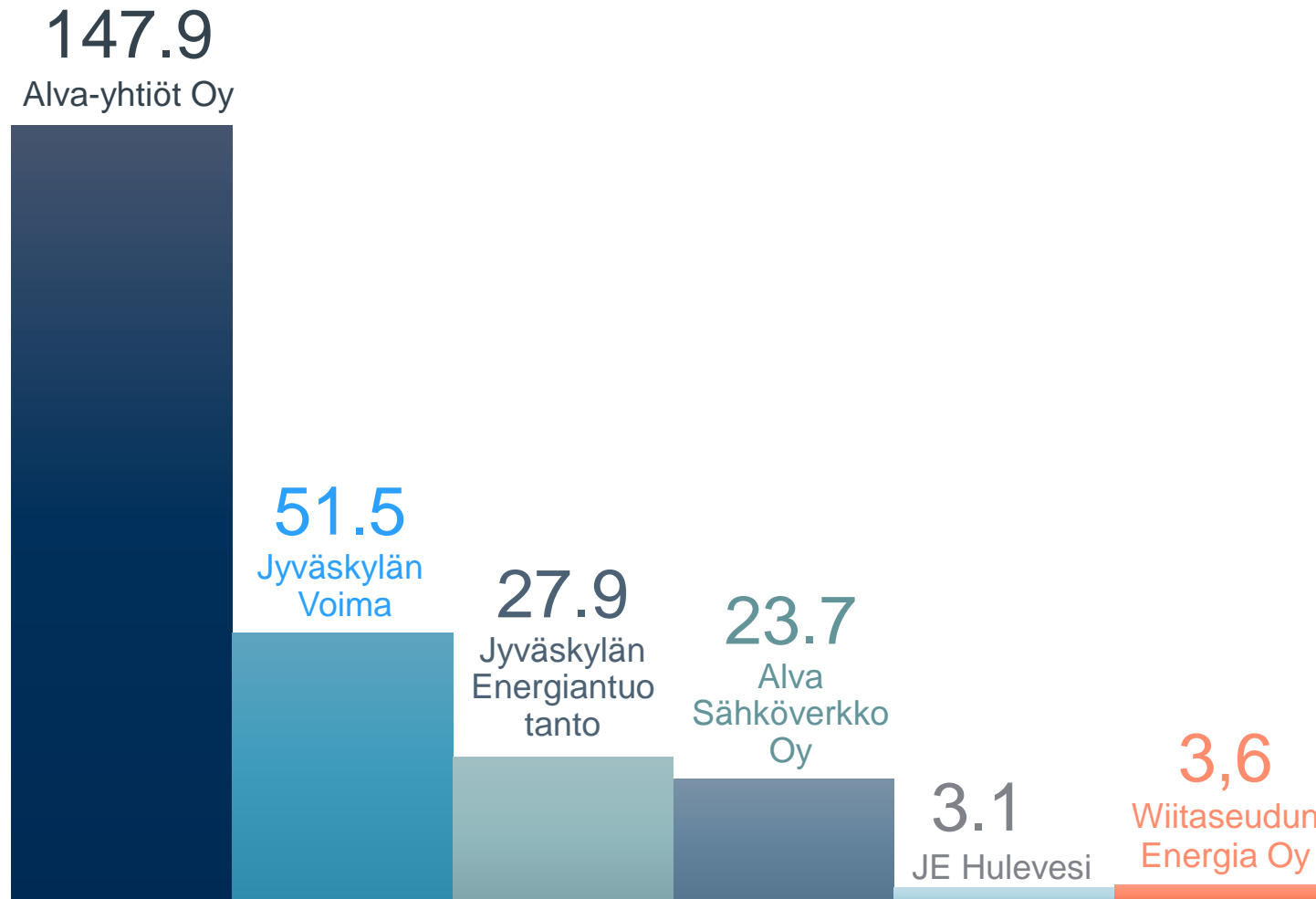
Change in the number of employees



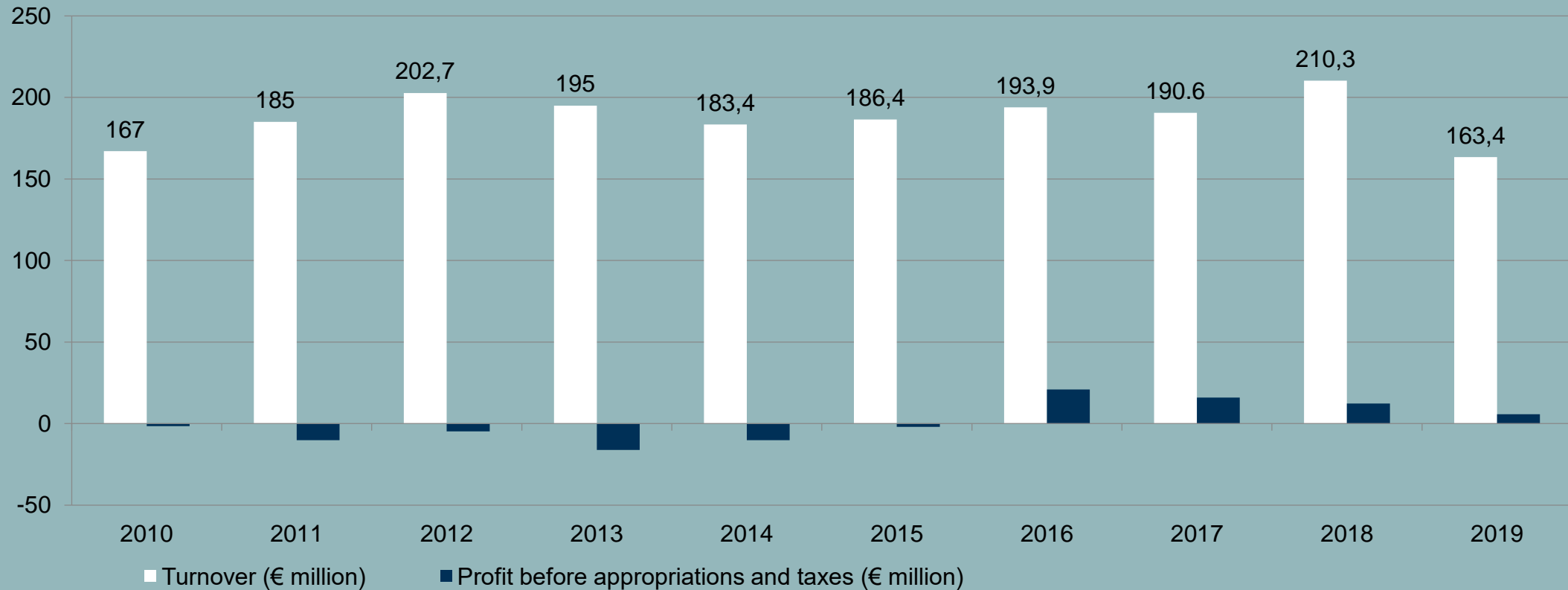
- All JE-Urakointi (JEU) employees transferred to JyNet Urakointi Oy in an acquisition on 1 March 2012.
- At the beginning of 2015, operating employees of JVO and JYT transferred to Jyväskylän Energia.
- Eight employees from Wiitaseudun Energia transferred to Jyväskylän Energia Group on 1 December 2018.
- Alva SV = Alva Sähköverkko

FINANCES

Turnover of group companies in 2019 (€ million)



Group's turnover and result in 2010–2019



NETWORKS

Electricity, heat, water

Electricity network

Alva Sähköverkko Oy, a company wholly owned by Alva, is responsible for the electricity network in the city of Jyväskylä. It designs, builds, maintains and operates the electricity network, connects customers to it and carries out electricity measurements.

Alva Sähköverkko maintains a network of 1,355 kilometres in total. In 2019, some 654 GWh of electricity was transmitted to more than 10,200 connections.

On a national scale, Alva Sähköverkko is among the electricity network companies with the lowest rates.

More information: alva.fi/sahkoverkko



Heat network

Alva generates district heating at power plants, from where it is transmitted to customers via a heat network. The same network can also be used for district cooling.

Alva's heat network is in a good condition, which has also helped to keep the prices of district heating reasonable. Prices have not increased between 2015 and 2019.

Maintaining the heat network is important, as many homes and workplaces in Jyväskylä are heated using district heating. Heat generated in Jyväskylä is also transmitted to most Jyväskylä-based schools, daycare centres, hospitals and health centres. Alva is also responsible for the district heating network in Viitasaari.

Alva's district heating network totals 482 kilometres in the Jyväskylä region and 39 kilometres in Viitasaari.



Water supply network

Our obligation and responsibility is to distribute clean, safe and analysed tap water to our customers via a well-functioning supply network.

In 2019, investments in water supply networks and water production totalled €14.8 million. These investments were funded by operating income.

In 2019, significant investments in water supply included the modernisation of Sulkula water mains, the modernisation project in Niitynpää in Vaajakoski, the construction of a water supply system on Paperitehtaankatu in the Kangas area, the construction of a water supply system in the Kauramäki industrial and residential area, and the relocation of water mains between Kirri and Tikkakoski along highway 4.

We maintain 873 kilometres of water supply networks in the Jyväskylä region and 95 kilometres in Viitasaari.



PRODUCTION

Our annual production (2019)

1.1

TWh of heat

0.6

Twh of electricity

8.8

Mm³ of water

ENERGY PRODUCTION

Heat and electricity

Our ecological energy production

- Keljonlahti and Rauhalahti, our two power plants, are combined heat and power plants. Combined production saves one third of fuel compared with separate production.
 - We also produce heat and power from biogas at our micro-CHP plant.
 - We are constantly increasing the use of wood fuels. Correspondingly, the aim is to use less and less peat. The fuel distribution is shown on page 24 of this presentation.
 - We are also investing in energy savings by developing solutions to use waste heat and to balance the consumption of heat.
- As a result of our holdings in Suomen Hyötytuuli Oy, the use of wind power in our electricity production has increased significantly in recent years.
 - We can provide our heating customers with green heat, produced wholly using renewable and emission-free energy sources. Our green heat is certified by Kiwa.
 - The reuse of ash is already high – nearly 100% of ash generated at our plants is already being reused.
 - In Viitasaari (WSE) the fuels used in district heating production are 99 % wood.

Keljonlahti power plant

- Main fuels: peat and wood
- Coal and oil as auxiliary fuels when necessary
- Two operating principles:
 - combined heat and power production (CHP)
 - condensing power production
- Boiler power: 495 MW
- Electric output in condensing power production: 215 MW
- Electric output in combined production: 163 MW
- District heating output: 260 MW
- Year of commissioning: 2010



ENERGY PRODUCTION

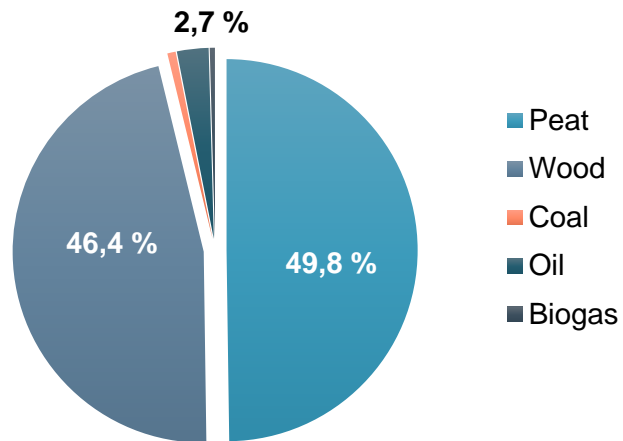
Rauhalahti power plant

- Main fuels: peat and wood
- Oil as an auxiliary fuel when necessary
- Operating principle: combined heat and power production (CHP)
- Electric output: 85 MW
- District heating output: 200 MW
- New flue gas scrubber and electric filter installed in 2015
- Year of commissioning: 1986



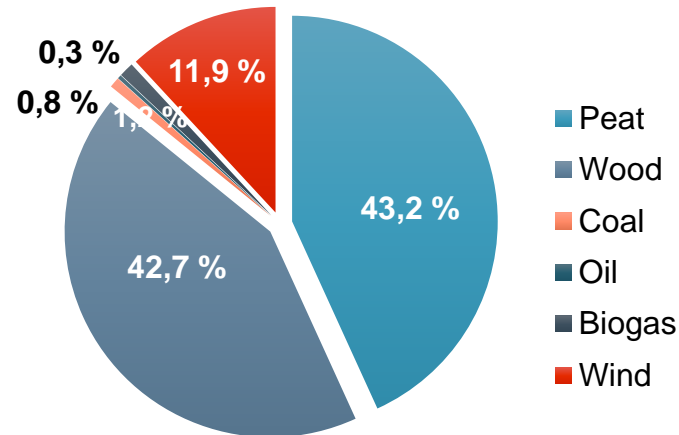
Energy production / fuels 2019

Fuel distribution in district heating production

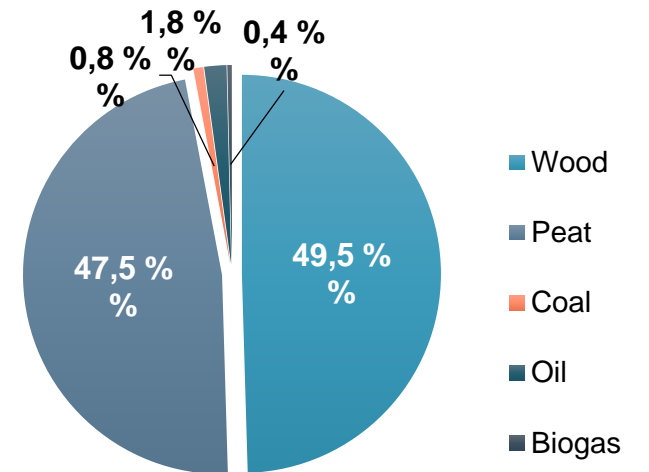


In Viitasaari (WSE) the fuels used in district heating production are 99 % wood.

Distribution in electricity production



Fuel distribution in total production



WATER PRODUCTION

Safe high-quality water

We make sure that everyone living in the area covered by our water supply network has access to clean high-quality water.

The quality of the tap water we produce is monitored constantly. In addition to quality control carried out in our laboratory, the health authority monitors the quality of water regularly.

The quality of water is not only monitored at power plants, but water samples are regularly taken from different parts of the network.

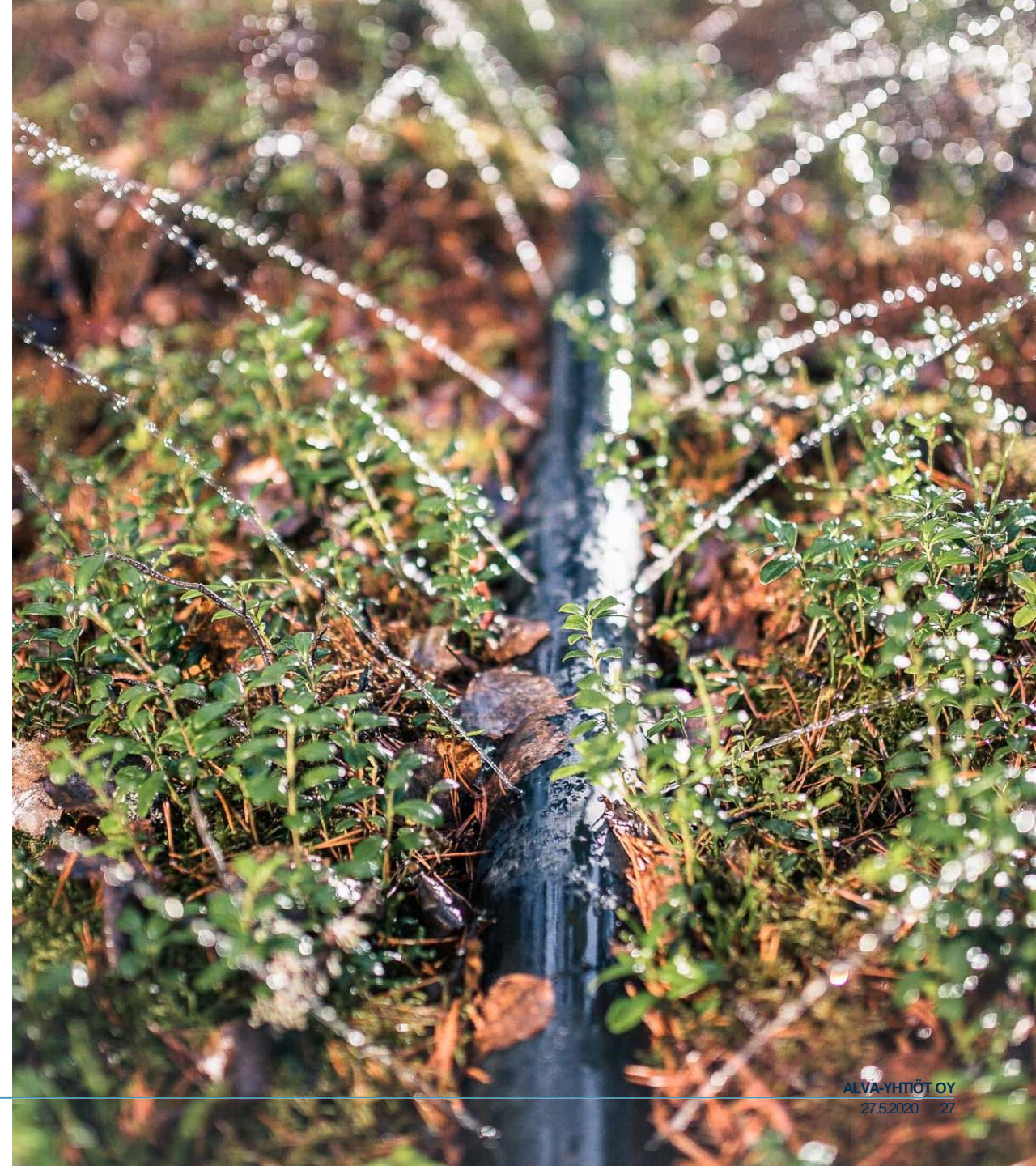


Tap water produced at several plants

Our most important tap water production plants are:

- Viitaniemi surface water treatment plant
- Vuontee artificial groundwater recharge plant in Laukaa
- Janakka–Kaivovesi water supply plant in Vaajakoski

We also produce water at Vihtakangas (Korpilahti), Liinalampi and Köntyslampi (Tikkakoski), Pekonniemi (Keljonkangas) and Vesanka groundwater intake plants, and in Viitasaari at Kokkolanniemi and Luukkaanniemi groundwater intake plants.



SOCIAL RESPONSIBILITY

Our ecological, social and financial responsibilities steer our operations. Our goal is to operate in line with the principles of sustainable development, addressing our relationship with nation, people and life as a whole.

ECOLOGICAL RESPONSIBILITY

Certified environmental system

Our group's environmental responsibilities are fulfilled in compliance with the certified ISO 14001 environmental management system.

Our environmental policy is guided by the principles approved by Alva's Board of Directors:

- We aim to reduce and prevent the adverse environmental impact of our operations.
- We aim to promote the sensible use of energy and water resources.
- In line with the principles of sustainable development, our energy sourcing is primarily based on regional renewable fuels and the combined production of power and heat.



Wastewater treatment while respecting nature

Wastewater treatment is an integral part of water supply. Our responsibility is to ensure that the wastewater we receive from our customers is conducted to wastewater treatment plants. We also monitor the quality of the wastewater.

Jyväskylän Seudun Puhdistamo Oy, a limited company owned by the City of Jyväskylä and the municipalities of Laukaa and Muurame, is responsible for wastewater treatment processes in Jyväskylä area. Our wastewater treatment plants are located in Nenäinniemi and Korpilahti. In Viitasaari WSE (Wiitaseudun Energia) takes care of the wastewater in Mustasuo wastewater treatment plant.

The treatment plants serve to ensure that water can be safely recirculated, while respecting nature and in line with the principles of sustainable development.



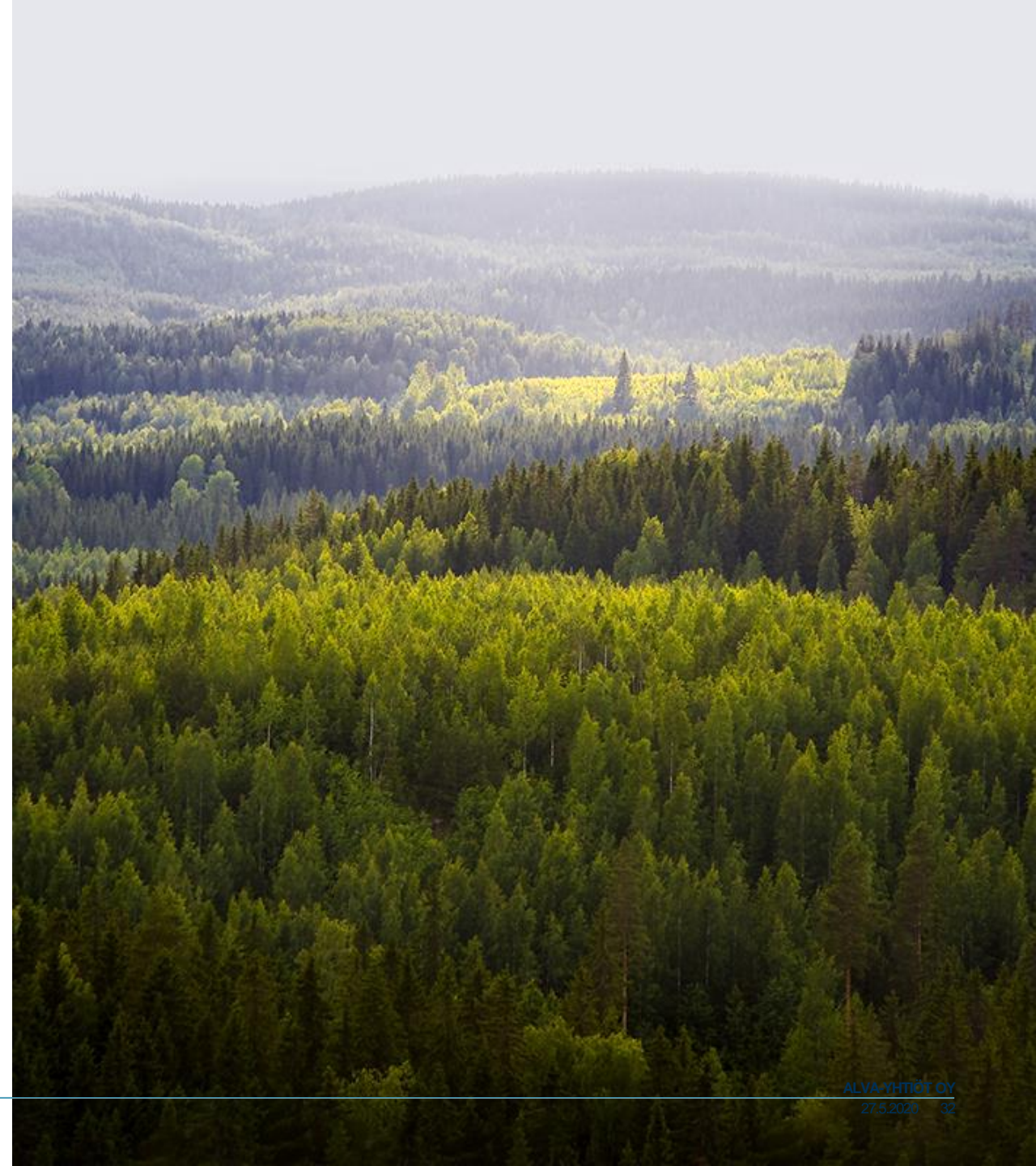
Towards carbon neutrality

Our operations and the activities of our partnership network are steered by circular economy solutions and carbon neutrality.

Our key goal regarding ecological responsibility is that at least 80% of our energy production will be CO₂-neutral by 2025 and 100% will be CO₂-neutral by 2030.

Sustainable examples in our energy production include:

- Combined heat and power production (CHP)
- 100% green heat -product, produced using regional eco-friendly wood fuels and biogas from Mustankorkea
- Our holdings in Suomen Hyötytuuli Oy, as a result of which the use of wind power in our electricity production has increased for several years now

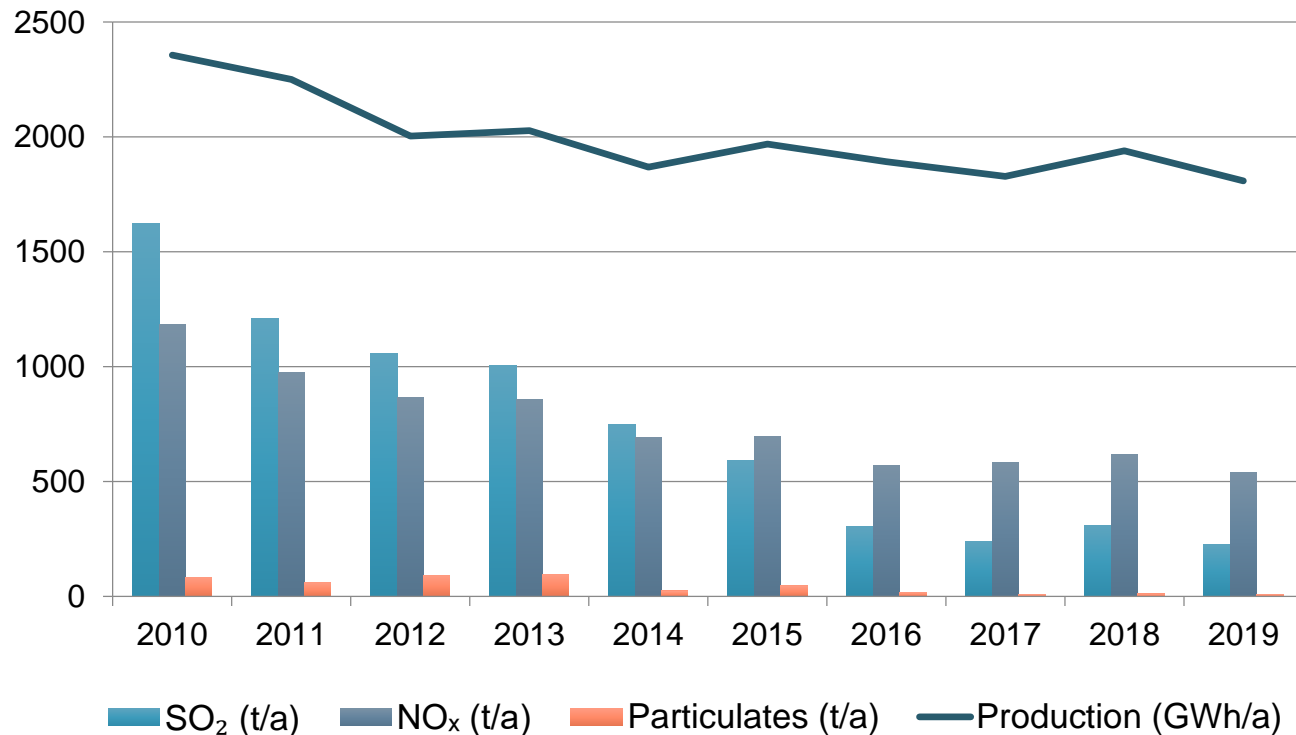


ENERGY PRODUCTION

Emissions: Sulphur dioxide, nitrogen oxides, particulates

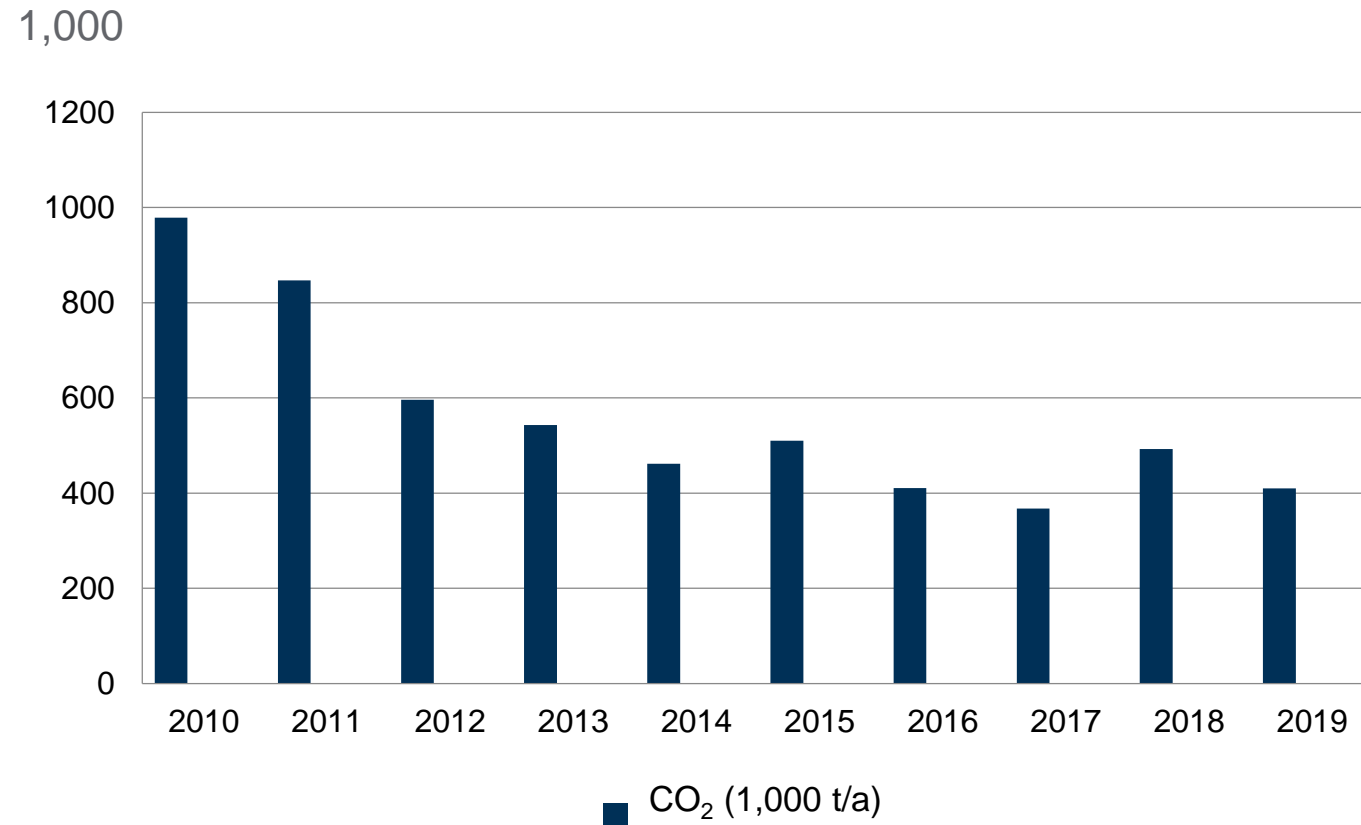
SO₂ = Sulphur dioxide

NO_x = Nitrogen oxides



The Rauhalahki flue gas scrubber has significantly reduced sulphur dioxide and particulate emissions since 2016.

Emissions: Carbon dioxide CO₂



CO₂ emissions from fossil fuels, such as peat, coal and oil, have decreased, while the amount of wood fuels at power plants has increased.

Ecological responsibility: key figures

	2019	2018	2017	2016	2015	2014	2013	2012
Share of green heat from electricity sold (%)	4.33	3.96	3.94	1.25	*	*	*	*
Share of green electricity from electricity sold (%)	**	48.0	44.8	36.5	32.7	32.0	2.3	4.5
Network losses, electricity (%)	2.7	2.5	2.2	2.2	2.4	2.5	2.7	2.7
Network losses, district heating (%)	6.5	8.0	8.4	8.3	7.9	8.6	7.1	8.4
Make-up water in district heating (m ³)	10,500	9,990	9,292	11,110	6,690	9,960	3,673	10,311
Consumption of pumping electricity, district heating (MWh)	9,067	7,946	7,442	7,378	7,221	8,531	8,395	9,057
Wastewater leaks to waterways/soil (m ³)	390	280	657	1,442	543	248	874	2,995
Wastewater leaks to waterways/soil (percentage of wastewater)	0.003%	0.002%	0.005%	0.011%	0.004%	0.002%	0.006%	0.023%
Repaired leaks in water mains (quantity)	27	31	37	29	25	31	42	26
Share of biofuels from all fuels (%)	47.8	49.3	53.8	51.9	51.7	50.9	44.8	40.5

* The amount of green heat was not reported at the time.

** Electricity sales transferred to Väre on 1 January 2019.

SOCIAL RESPONSIBILITY

When employees feel well, the company feels well

- We take care of the occupational safety and health of our employees.
- We encourage our employees to develop their professional skills and provide them with opportunities for development.
- We want to build an open working community and an innovative work culture, where everyone values their own work and that of others.
- Equality and non-discrimination are basic values for us.
- The development of wellbeing at work and employee experiences is an integral part of our personnel strategy.



Smother living for every customer

We work hard every day to ensure that our networks and services operate to the maximum and our customers can enjoy their everyday life. Furthermore, we ensure that any interruptions due to improvements and repairs cause the minimum of inconvenience for our customers. Similarly, we aim to solve different disturbances as quickly as possible.

Using up-to-date fault notifications, customers obtain information about planned interruptions in their area beforehand and about any disturbances via email or text messages. More information:

alva.fi/asiakaspalvelu

We are also constantly developing our services to meet our customers' needs and wishes.



Annual support

We provide various support every year. We select the recipients of our support so that they are in line with our goals and values. We have supported, for example, the following through different projects and parties:

- low-income families
- the elderly, children and young people
- nature conservation projects
- sports clubs and teams
- culture



Social responsibility: key figures

	2019	2018	2017	2016	2015	2014
Personnel						
Average number of employees	239	257	254	261	261	249
of which those on fixed-term contracts	18	23	25	31	28	24
Average age of employees	45	45	45	44.4	43.9	44
Sick leave rate (%)	2.7	3	1	1.6	1.8	2.2
Number of occupational accidents *	2	4	2	0	4	4
Lost time injury frequency (LTIF) **	5.0	9.8	4.5	0	9.5	9.8
Customers						
Electricity transmission, SAIDI ¹⁾ (h/customer)	0.21	0.08	0.05	0.14	0.06	0.25
Electricity transmission, SAIFI ²⁾ (quantity/customer)	0.73	0.39	0.24	0.39	0.23	0.58
Interruption time experienced by the customer: district heating (h)	2.3	2.1	1.58	1.12	1.44	1.08
Disruptions in water supply (h/customer)	0.38	0.36	0.14	0.35	0.23	0.08
Associations/recipients of support						
Support for associations (€ million)	0.02	0.02	0.023	0.02	0.012	0.008

* Occupational accidents that have caused at least one day of incapacity to the group's own employees

** The number of occupational accidents per million hours worked

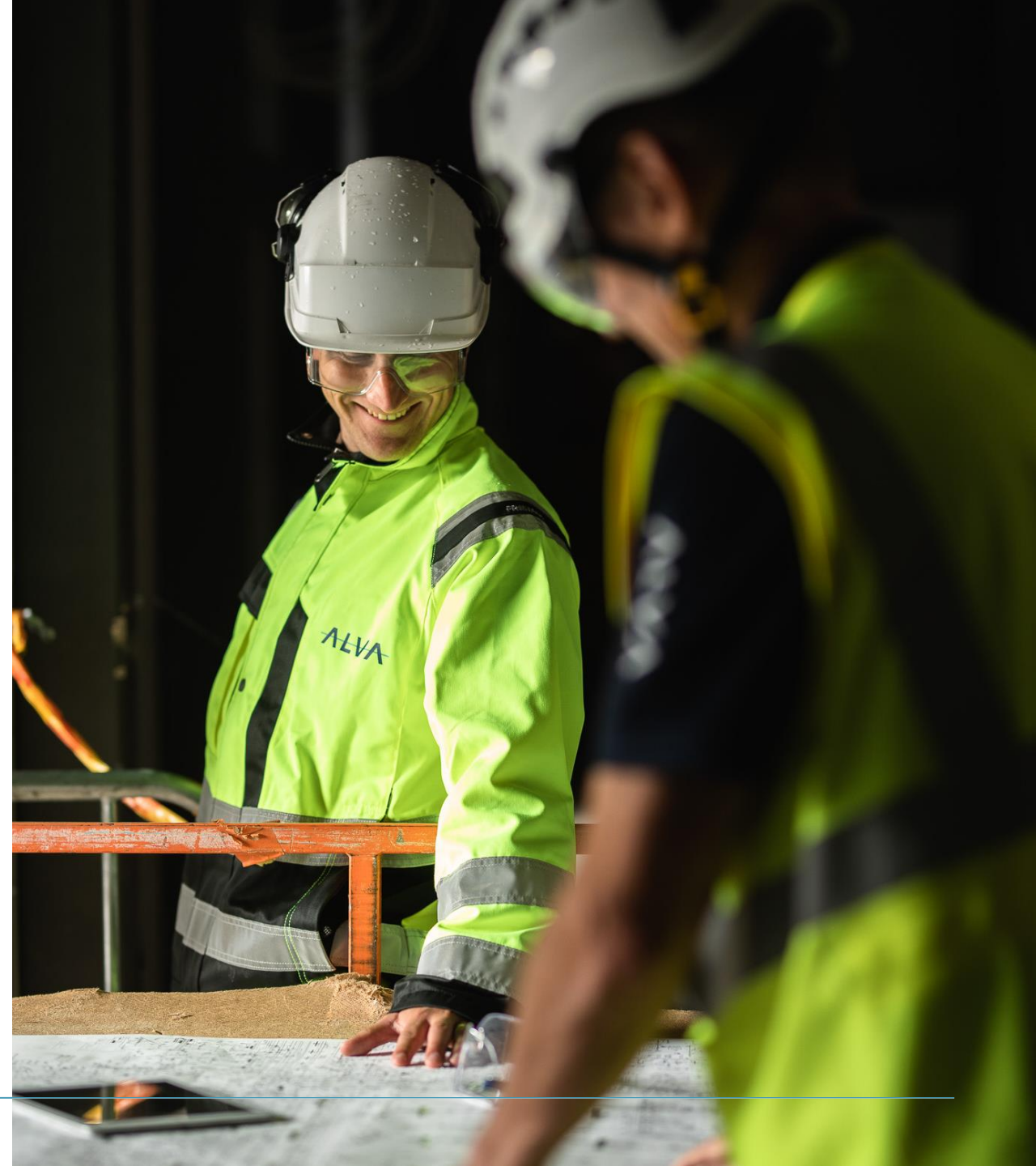
¹⁾ SAIDI = total average interruption duration, h/customer

²⁾ SAIFI = average number of interruptions per customer

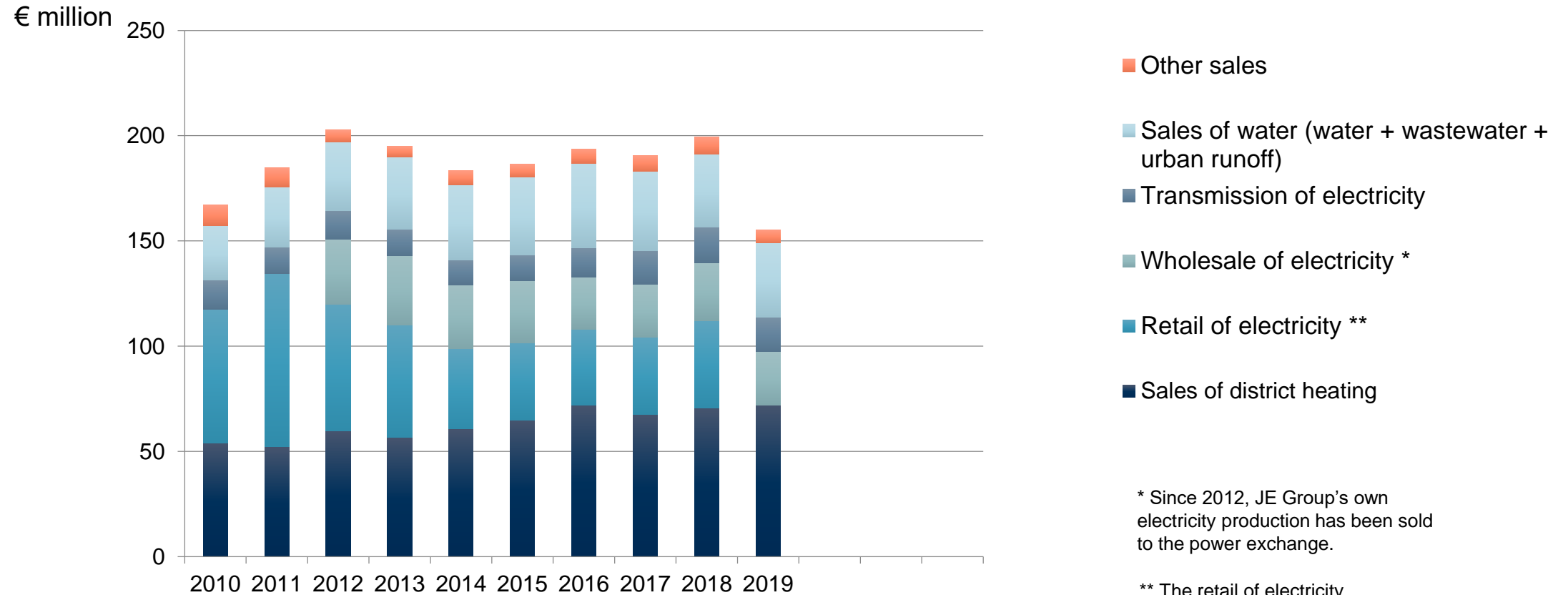
FINANCIAL RESPONSIBILITY

Development and more efficiency

- We are working constantly to improve the efficiency of all our operations.
- We are developing new competitive energy and water solutions that help our customers to improve the efficiency of their operations and that also materialise through savings.
- Our pricing is based, for example, on general price levels and any restrictions and requirements set by laws and our owner.
- Our operations produce value for different stakeholders, including our customers and our owner, the City of Jyväskylä.



Sales trend



- Other sales
- Sales of water (water + wastewater + urban runoff)
- Transmission of electricity
- Wholesale of electricity *
- Retail of electricity **
- Sales of district heating

* Since 2012, JE Group's own electricity production has been sold to the power exchange.

** The retail of electricity transferred to Väre in 2019.

Financial responsibility: key figures

	2019	2018	2017	2016	2015	2014	2013	2012
Turnover (€ million)	163.4	210.3	190.6	193.9	186.4	183.4	195	202.7
Operating profit (€ million)	20.2	26.8	31.8	36.4	17.7	8.7	6.2	16.3
Income tax (€ million)	1.26	0.74	2.11	3.19	0	1.03	0	0.07
Dividends (€ million)	4.0	4.0	4.0	1.6	0	0	0	0
The owner's interest expenses (€ million)	8.9	8.9	8.9	9.1	12.9	13.1	16.5	16.5
Investments (€ million)	28.2	32.2	27.6	26.1	28.2	29.9	37.9	32.6
Return on equity (%)	3.3	7.7	10.3	15.3	neg	neg	neg	neg
Equity ratio (%)	22.7	22.4	22.1	20.0	17.0	6.5	8.4	1.1
Wages and salaries ¹⁾ (€ million)	14.1	13.9	14.1	13.8	13.7	13.3	13.1	12.7
Purchases from suppliers (€ million)	101	136	107	105	119	138	139	140

¹⁾ The wage and salary costs include capitalised wages and salaries

2019

Positive and negative aspects

Positive aspects in 2019

- The group's strategy was revised during the financial period. The new strategy focuses on building solutions for the future in four key themes: 1) diverse customer expectations and technological options; 2) climate change; 3) structural changes in society – ageing, urbanisation and sustainable public economy; and 4) analytics and AI.
 - As a result of rebranding, the name of the group's parent company changed to Alva-yhtiöt Oy, and JE-Siirto Oy was renamed Alva Sähköverkko Oy. Alva is a marketing name used by the group's all business units. The significance of water supply operations and services has increased in the group's new strategy. As a result, the new name better serves the group's all operations.
 - On 1 January 2019, Alva transferred its electricity sales operations to Väre Oy, a new electricity sales and service company. Alva established Väre together with Kuopion Energia Oy, Savon Voima Oy and Lappeenrannan Energia Oy, and holds 20.3% of the company.
- The organisation adopted a more customer-driven operating model, in which multi-talented teams, consisting of specialists from different group functions, focus on customer account development. A growing number of Alva employees work to develop customer experiences and the service range. At the same time, the operating model for product management and service development was enhanced to meet diverse customer expectations.
 - System projects (Salesforce, M-Files) provided tools for data management and customer account development.
 - The incorporation of Wiitaseudun Energia has proceeded as planned. The solid professional skills and engagement of the company's personnel has played an important part in the merger with Alva Group. Operating results for the 2019 financial period were turned onto a positive track.

Negative aspects in 2019

- Compared to the previous financial period, results decreased by EUR 5.5 million and the operating profit by EUR 6.6 million. The most significant factors that reduced the results were the increase in wood fuel prices and peat tax, higher prices of emission allowances, lower subsidies for forest chips, higher costs of wastewater treatment, fewer connection fees and development costs from new business operations.
 - In August, the Board of Directors decided to initiate co-operation negotiations regarding the group's support functions (ICT, sourcing, HR administration and assistant services). The need to reduce the number of employees resulted from the significant decrease in the group's turnover after electricity sales transferred to Väre, the improved efficiency of working methods through digital tools and the reorganisation of tasks due to changes in the group's operations. As a result of the co-operation negotiations, five employees were discharged and two employees retired.
- The legal dispute between Alva-yhtiöt and Jyväskylän Voima, its majority-owned group company, and certain minority shareholders resulted in legal processes during the financial period. The company was party to arbitration proceedings and a legal action. In one process, one shareholder of Jyväskylän Voima and, in the other, two shareholders demanded certain interpretations based on cost distribution principles to be confirmed on the basis of agreements between shareholders. In Alva's view, the claims presented against it are unfounded, and the company will defend its rights.

Research and development in 2019

- In the “Strategic scenarios” project, Alva and AFRY (former Pöyry) defined potential scenarios extending to 2030 and analysed how the operating environment will change from the perspectives of customer needs, energy markets and political decision-making. The project’s conclusions were also used when revising Alva Group’s strategy.
 - The development of Pisara, service operations for water supply, continued. In Finland, investments focused on the “Digiaalto” (Digital wave) project, in which subsidies granted by the Ministry of Agriculture and Forestry and the Centre for Economic Development, Transport and the Environment of Central Finland are allocated to digitise network data of smaller water supply plants.
 - The development of the Smart Water Cycle concept, designed for international markets, continued with the partnership network. Alva signed a strategic cooperation agreement with Uros Ltd.
- Alva participated in Jyväskylä University’s KITA project (Research platform for the circular economy: towards self-sufficiency in raw materials through the circular economy), in which Jyväskylä University’s expertise and analytics were developed regarding the recovery of critical elements from waste material, such as waste electrical and electronic equipment.
 - Furthermore, Alva participated in the “Hiilimetsätalous” (Carbon forestry) project launched by VTT Technical Research Centre of Finland. The project’s key goal is to identify the impact of carbon forestry on forest operators and the opportunities offered by carbon sequestering in Central Finland.
 - Preparations for the construction of a WEEE test facility continued with Tapojärvi Oy and Elker Oy on the basis of pre-planning completed in the autumn of 2018. The goal is to build a full-scale recovery process, which would be able to process one ton of printed circuit boards separated from WEEE per day and recover critical and valuable raw materials from them.

The ALVA logo is centered on the page. It consists of the word "ALVA" in a bold, white, sans-serif font. A thin, light blue horizontal line passes through the middle of the letters, extending slightly beyond the left and right edges of the text.

ALVA