



Sustainability 2021

Highlights 2021



New reduction target for Scope 3 GHG emissions;

35%

by 2035 at the latest

Within less than one year, we have announced **accelerated coal phase-out** of six of our coal-fired power plants in Germany and the UK compared to the original timetable

Fortum and Uniper cooperation proceeds; **the joint solar and wind development team announced its first investment** to construct 380 MW of wind capacity in Finland

The safety of employees and contractors is Fortum's top priority; **Safety Ground Rules launched**

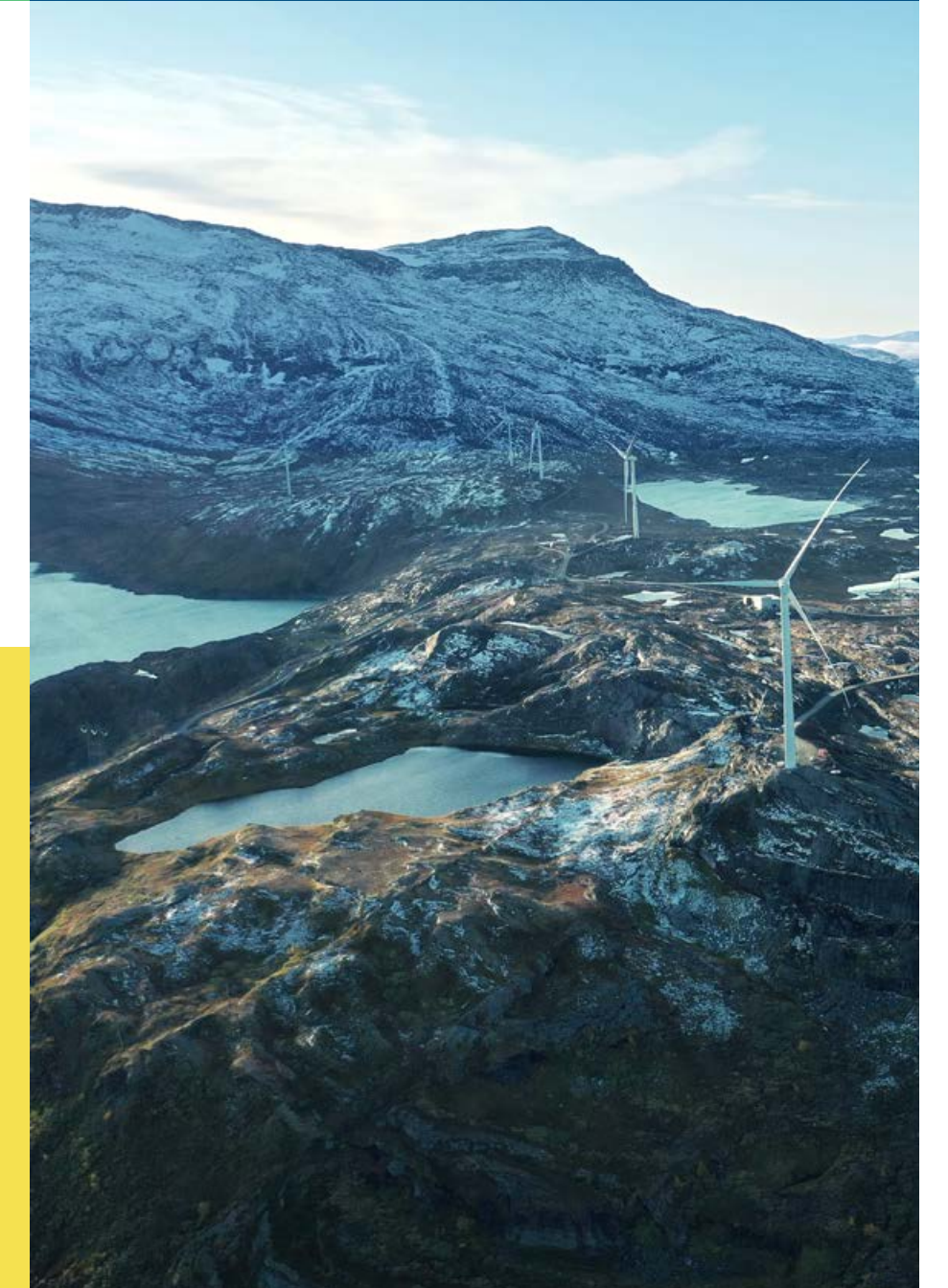
Biodiversity target achieved; Fortum conducted 13 major voluntary measures that improve the living conditions of species and strengthen populations

Increased corporate transparency is key; **Fortum published its first Climate Lobbying Review**

Fortum continued to support its personnel's wellbeing in pandemic conditions; 86% of survey respondents feel they can influence their work and 76% that their work is meaningful

Green light to the Loviisa Nuclear Power Plant Environmental Impact Assessment Report. Fortum to apply for a **new operating license for both units until the end of 2050**

Fortum was ranked 22nd overall and the best of the Finnish companies in the European Women on Boards Gender Diversity Index 2021



Sustainability 2021

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Notes:

- Fortum’s TCFD report for 2021 is included in the section Climate, pages: 27–41 and in Financials 2021, pages: 25–28 and 39–40.
- Fortum’s Non-Financial Information report is included in the Financials 2021, pages: 12 and 25–31.
- To make this Sustainability Report fully web accessible, Fortum has aligned all its visuals with the Web Accessibility Directive, (EU) 2016/2102. This allows also people with disabilities to perceive, understand, and navigate through the report.

Fortum’s 2021 reporting entity



CEO’s Business Review



Financials



Governance



Remuneration



Tax Footprint



Sustainability

Sustainability at Fortum

The entire energy sector is transforming, and Fortum is an integral part of this change. Climate change is accelerating the need for major structural changes in society. When writing this report, we have seen a war start in Ukraine. As a company with long business ties and broad operations in Russia, we at Fortum are devastated and sad by Russia's attack on Ukraine. Our management is following the constantly evolving situation with the highest attention.

Sustainability is at the heart of Fortum's strategy. Fortum is the third largest producer of CO₂-free electricity in Europe and a significant gas company. Our scale, competence, and resources enable further growth as we drive the energy transition towards a carbon-neutral economy. A successful transition must balance sustainability, affordability, security of supply, and in light of the current developments, also independence. This requires renewables, but also clean hydrogen, energy storage, and other flexible solutions. As greenhouse gas emissions need to be reduced in other sectors besides energy, we provide clean energy and sustainable solutions for our industrial and infrastructure customers.

In addition to climate and resources, we pay close attention to the impacts our operations can have on our personnel, contractors, and the society around us. Fortum has 7,000 colleagues in Russia and the recent developments have been distressing and challenging for all our employees. In this unprecedented situation, our primary focus and concern continues to be the health, safety, and wellbeing of our employees and contractors, and the security of supply of customers in all our operating countries.

With our strategy, we will continue to drive the clean energy transition and deliver sustainable financial performance. We want to drive the change for a cleaner world.



- ▶ [Fortum's strategy](#)
- ▶ [Fortum's values](#)
- ▶ [Fortum in sustainability indices](#)

Year 2021 in short

Year 2021 was characterised by a deepened cooperation with Uniper in the areas of sustainability, safety, security, health, and the environment. It was also the first full year with Uniper consolidated as a subsidiary of Fortum. We continued to implement our strategy at the heart of which is the transition to clean energy.

The exceptional conditions caused by the Covid-19 pandemic continued in 2021, and Fortum's top priorities were to ensure the health and safety of its employees and contractors and to maintain business continuity. This goal was well achieved, as there were no interruptions in Fortum's energy production. Employee wellbeing programmes highlighted topics related to mental energy, resilience, and physical health, and managers were supported in leading employees' wellbeing. Maintenance outages were also implemented as scheduled, with careful planning and by taking special measures to protect the health of our employees and contractors. Yet, the impact of the pandemic on our corporate ways of working has been substantial. Following the recommendations of local authorities, our office employees worked remotely for most of the year. We have continued to use new digital tools that make collaboration and remote work as smooth as possible. At power plants and other operational sites, where remote work is not possible, we have used special measures to protect the health and safety of our own and our contractors' employees.

Climate and resources

In 2021, we continued to implement our strategy to drive the clean energy transition forward. Fortum's strategic priority is to transform our own operations to carbon neutral. We have committed to the carbon-neutral (Scope 1, 2 and 3) target globally, in line with the goals of the Paris Agreement, by 2050, and in our European generation (Scope 1 and 2) by 2035. In 2021, we set a target to reduce our indirect Scope 3 greenhouse gas (GHG) emissions by 35% by 2035 at the latest.

Our coal-exit is proceeding well, and within less than one year, we have been able to announce accelerated coal phase-out of six of



our coal-fired power plants in Germany and the UK compared to the original timetable and will cease the use of coal in our Russia division by the end of 2022. By 2030, Fortum will phase out or exit about 8 GW of coal-fired power generation. We will also strengthen and grow in CO₂-free power generation. Our target is to build 1.5–2 GW of new renewable energy capacity by 2025.

In addition to the climate targets, Fortum had a biodiversity target for 2021, which was achieved by conducting 13 major voluntary measures that improve the living conditions of species and strengthen populations.

Fortum is a significant provider of flexible gas-fired generation and a major trader of gas in Europe. Natural gas is important to enable a reliable and affordable supply of energy in the medium-term, and will be replaced with increasingly green hydrogen and other clean gases over time. Fortum's strong position in gas creates good prerequisites to succeed in providing green hydrogen solutions in the future.

Personnel and society

The safety of own personnel and contractors remains Fortum's top priority, and in 2021 we launched the Safety Ground Rules to support the improvement of Fortum's safety performance. Together with Uniper, we also initiated the alignment of several key safety processes, and Uniper was included in the Group's incident notification system.



On the R&D front, Fortum continued to expand its battery recycling capacity with a major recycling plant investment. We continued to steer support to society and cooperation with local communities through our Corporate Social Responsibility (CSR) programme. In 2021, Fortum supported charity organisations in order to help its local communities during the Covid-19 pandemic.

Geopolitical environment in 2022

When writing this report, we have seen a war start in Ukraine. We at Fortum are devastated and sad by Russia's attack on Ukraine. In the first weeks of March 2022, we have already witnessed what great suffering the war has caused to people. There is no justification for this. The situation is very dynamic and keeps evolving constantly, and our management is following the situation with the highest attention. We have commented on the impacts on our operations, e.g., in our investor news releases on 3 March and 7 March 2022.

The current developments have also added a new variable to the equation of sustainability, affordability, and security of supply, which is independence. We are actively supporting this through our investments into clean power, increasingly clean gas and flexibility. Amongst all the uncertainty, one thing is absolutely clear: Europe's urgent need for an energy transition.

Value-creating strategy

Input

Human and intellectual capital

- Close to 20,000 energy sector professionals, focus on diversity
- Certified environment, health and safety management
- Corporate culture that encourages innovation and R&D; R&D expenses totalling EUR 61 million in 2021
- Robust corporate governance and ethical business conduct
- Brand and reputation

Supply chain

- Purchases EUR 99.5 billion, including investments

Sources of energy

- Hydro, solar, wind
- Natural gas, LNG, uranium, coal and lignite, biofuels, waste-derived fuels

Assets

- Operations in more than 40 countries
- ~47.1 GW power generation capacity
- ~16.9 GW heat production capacity
- Hydropower plants, CHP, condensing and nuclear power plants; growing in solar and wind
- Gas storages and pipelines
- Several waste-to-energy plants

Financial

- Financial net debt EUR 789 million
- Total assets EUR 149,661 million

Fortum

Purpose Statement

Our purpose is to drive the change for a cleaner world. We are securing a fast and reliable transition to a carbon-neutral economy by providing customers and societies with clean energy and sustainable solutions.

Strategy

- Transform own operations to carbon neutral
- Strengthen and grow in CO₂-free power generation
- Leverage strong position in gas to enable the energy transition
- Partner with industrial and infrastructure customers

Output

Products

- 188 TWh power generation
- 36 TWh heat sales
- Gas sales
- 64% of electricity generation CO₂-free in Europe, 40% in all countries

Services and solutions

- Power and heat sales
- Electricity and fuel trading services (e.g. gas)
- Engineering services for customers
- Nuclear expert services
- District heating and cooling
- Electricity retail sales
- Environmental management and material efficiency services, incl. plastic recycling and refining, battery recycling, metals recycling, and ash treatment
- Hydrogen
- E-mobility charging solutions

Our carbon footprint

- Coal-based power generation capacity, 9.3 GW
- Share of coal-based power generation of total power generation, 13%
- Share of coal-based revenue of total revenue, 1%
- CO₂-free power generation, 75 TWh
- Specific CO₂ emissions from total energy production, 312 gCO₂/kWh
- CO₂ emissions from total energy production, 68.7 Mt

Impact

Economic impact

- Profitability
- Increased shareholder value
- Dividends to shareholders
- Investments
- Taxes to the public sector
- Wages and benefits to employees
- Payments to suppliers and partners
- Interest to creditors

Social impact

- Reliable supply of electricity, heat, and gas
- Smart energy solutions for industrial and infrastructure customers
- Active customer participation in energy system
- Partnership opportunities for cities, start-ups, and research institutions
- Safe work environment and wellbeing for employees, contractors and suppliers
- Opportunities in career development for employees

Environmental impact

- Contribution to climate change mitigation through transforming own operations to carbon neutral
- Investments in renewable energy production and clean gas (e.g. hydrogen)
- Flexible generation enabling increasing use of intermittent renewable energy sources
- Improved resource efficiency, recycling and recovery through circular economy services
- Removing hazardous waste from circulation, treatment and safe final disposal
- Improving air quality e.g. through advanced nitrogen oxide reduction solutions
- Energy-efficiency improvements in operations
- Mitigation of environmental impacts in own operations



Strategy and carbon roadmap

Fortum's strategy is to drive the clean energy transition and deliver sustainable financial performance. Aligned with the goals of the Paris Agreement, Fortum targets carbon neutrality by 2050 with ambitious mid-term targets.

Fortum has transformed itself, having invested significantly over the years to become Europe's third largest CO₂-free power generator and a significant player in gas. Fortum is now well positioned to capture opportunities stemming from the energy transition and aimed at curbing climate change. To be successful, the energy transition must balance sustainability, affordability, and security of supply. It requires not only renewables, but increasingly also clean gas, energy storage, and other flexible solutions to provide security of supply and to decarbonise heating and cooling, industry, and transportation.

Fortum's purpose is to drive the change for a cleaner world. We are securing a fast and reliable transition to a carbon-neutral economy by providing customers and societies with clean energy and sustainable solutions.

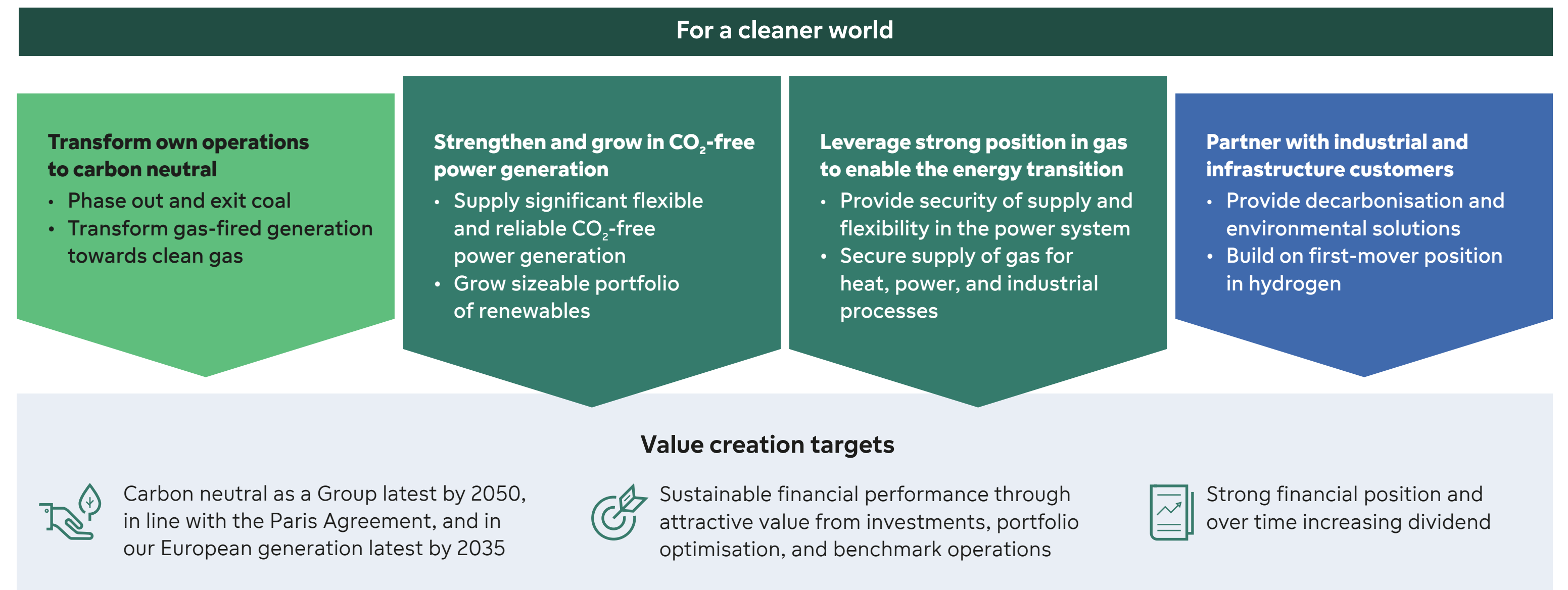
Fortum's strategy is based on four strategic priorities:

- Transform own operations to carbon neutral
- Strengthen and grow in CO₂-free power generation
- Leverage the strong position in gas to enable the energy transition
- Partner with industrial and infrastructure customers

Fortum's long-term financial targets are:

- Financial net debt/comparable EBITDA below 2x
- Hurdle rates for new investments of WACC
 - +100 bps for green investments
 - +200 bps for other investments

Fortum Strategy: Driving the clean energy transition and delivering sustainable financial performance

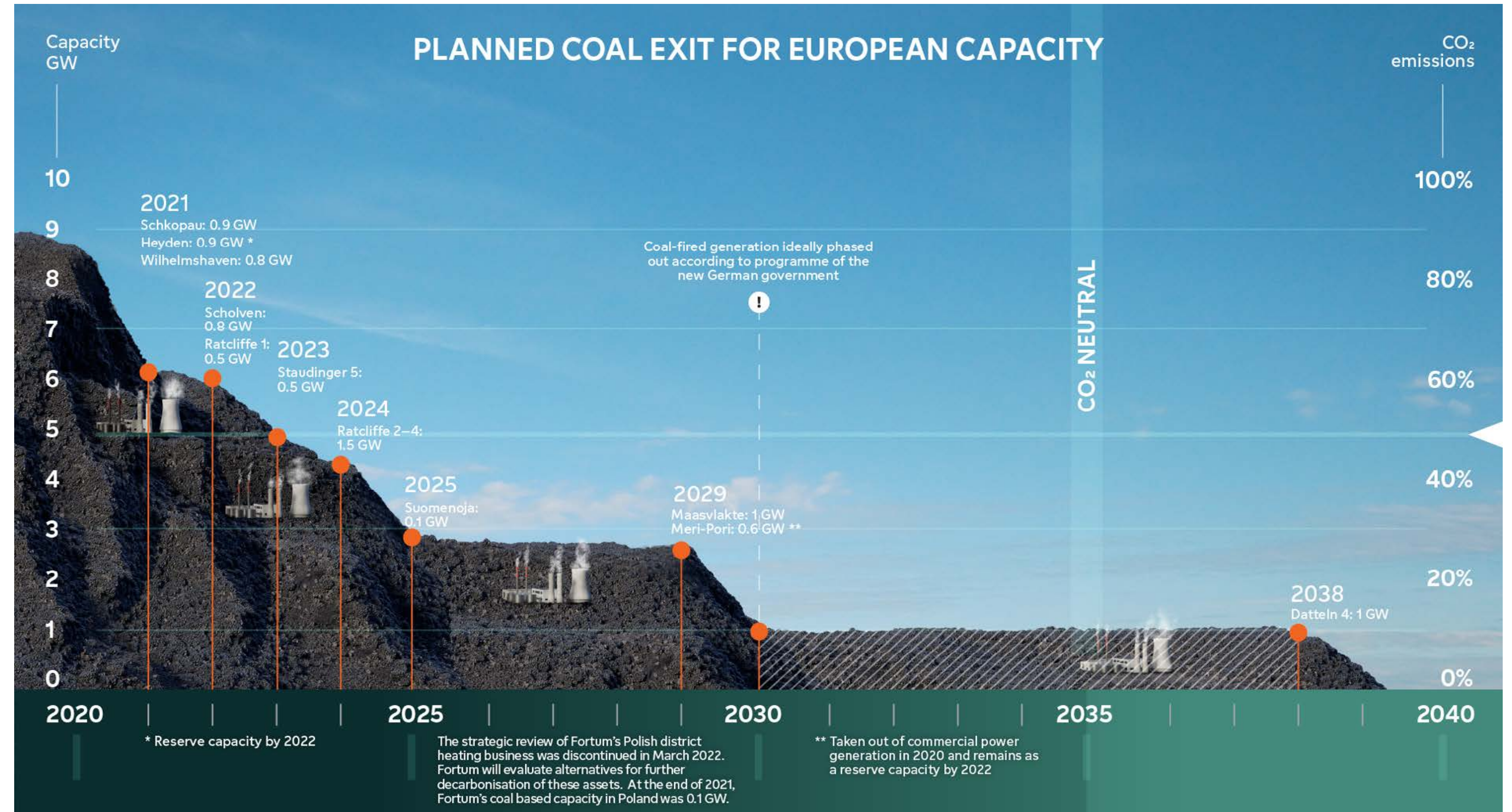


Transform our own operations to carbon neutral

Fortum focuses on reducing CO₂ emissions from its own operations, is committed to carbon neutrality, and aims to drive the clean energy transition. We have committed to the carbon neutral (Scope 1, 2, and 3) target globally, aligned with the goals of the Paris Agreement, by 2050 at the latest. In 2021, Fortum developed a new target for the reduction of indirect Scope 3 greenhouse gas (GHG) emissions which play a significant role in Fortum's total GHG emissions. Including the new Scope 3 reduction target, we have the following ambitious mid-term targets:

- Reduction of CO₂ emissions (Scope 1 and 2) in European generation by at least 50% by 2030 (compared to base-year 2019)
- Carbon neutral (Scope 1 and 2) in European generation by 2035 at the latest
- Reduction of Scope 3 indirect GHG emissions by 35% by 2035 at the latest (compared to base-year 2021)

The chart presents Fortum's coal-fired power generation capacity and its phase-out in Europe. By 2030, Fortum will phase out or exit about 8 GW of coal-fired power generation. Fortum has built a solid track record of its decarbonisation path to reach carbon neutrality while ensuring security of supply also in exceptional times. The coal-exit is proceeding even faster than anticipated: within less than one year, we have been able to announce accelerated coal phase-out of six of our coal-fired power plants in Germany and the UK compared to the original timetable. The chart also presents our CO₂ emissions reduction target and our commitment to carbon neutrality in European generation by 2035 at the latest. With these commitments, we aim to transform our own power plants and operations to carbon neutral in Europe.



Decarbonising society

Customers are expected to become increasingly active in the digitally interconnected energy system in the future, and industrial customers across different sectors are demanding scalable, competitive solutions to decarbonise their operations and mitigate their environmental impacts. Fortum is responding to this demand by offering **solutions and services for our industrial and infrastructure customers**, including those sectors that are challenging to decarbonise, such as the chemicals industry, the steel industry, and international shipping.

In the increasingly diverse and gradually changing energy system, fossil-fuelled generation will be replaced with CO₂-free power generation. Fortum aims to build 1.5–2 GW of new renewable electricity capacity by 2025, primarily in Europe. The new energy system requires new flexible energy sources to balance fluctuations, including, e.g., batteries and other storage solutions, as stable fossil-fuelled power generation is replaced with intermittent renewable energy sources, such as wind and solar power.

Replacing coal with natural gas in Central European energy production is one possible short-term to medium-term way to reduce CO₂ emissions in Europe. Natural gas enables the transition to a low-carbon energy system by enabling the growth of wind and solar power in the system, as well as by acting as fuel or feedstock for the industrial sectors. Fortum's strong position in the gas business also creates new business opportunities in providing clean gas solutions (e.g. hydrogen) and supporting industries in decarbonising their processes. Transitioning to a low-carbon energy system also enables the decarbonisation of other sectors through the coupling of CO₂-free power generation and green hydrogen. Over time, increasingly green hydrogen will replace natural gas by decarbonising hard-to-electrify sectors and will provide flexibility and security of supply for the energy system.

In short, the energy transition and the transition to carbon neutrality rely on clean power and gas (e.g. hydrogen). Fortum's strategy is designed to sustain Fortum's success in a decarbonised society.



We support the UN Sustainable Development Goals

Fortum as a provider of clean energy and sustainable solutions supports the UN Sustainable Development Goals (SDGs) on the journey towards a carbon-neutral economy. Through our strategy, we are driving the change for a cleaner world.

Sustainable Development Goals and Fortum

The **Sustainable Development Goals (SDGs)** adopted by the United Nations in 2015 are global goals set to solve economic, social, and environmental challenges by 2030. The 17 goals have been set based on science and research, and they aim to solve global-level social problems. Through the goals, the UN is calling for and inviting companies to take action to solve the challenges through innovations and collaboration.

We at Fortum want to do our part to promote the achievement of these goals in our own value chain. We take responsibility for and aim to prevent our adverse impacts related to the goals while also seeing business opportunities in them. Ten of the Sustainable Development Goals that are key for us are presented in the graphic. Through innovative products and services, we offer solutions for six of the goals on the right (Our opportunities). We are pursuing a carbon-neutral economy not only within the framework of our own operations, but also by offering solutions to our industrial and infrastructure customers.

Goals 5 and 8 on the left (Our responsibilities) are important to us from the social-society perspective, for our personnel, contractors, local communities and the entire supply chain. Our Corporate Social Responsibility (CSR) programme makes goal 17 also central to us. As for goal 15, we recognise the responsibility we have for our impacts on and dependency related to ecosystems and biodiversity.

Key UN Sustainable Development Goals for Fortum



Fortum supports the Sustainable Development Goals.

Examples of measures we implemented in 2021 that promote the achievement of the Sustainable Development Goals

Sustainable Development Goal (SDG)	Fortum and SDG	Measure
Climate and resources		
	13 CLIMATE ACTION Fortum supports an ambitious, market-driven climate policy and develops and provides customers with clean energy solutions that reduce CO ₂ emissions.	<ul style="list-style-type: none"> Fortum and Uniper ► set a target to reduce Scope 3 indirect greenhouse gas (GHG) emissions by 35% by 2035 at the latest (compared to base-year 2021). The Scope 3 target confirms our Group-level commitment to achieve carbon neutrality by 2050 in line with the goals of the Paris Agreement. Within less than a year, Fortum has also announced accelerated coal phase-out of six of our coal-fired power plants in Germany and the UK compared to the original timetable. Fortum published a ► Climate Lobbying Review to increase transparency around the company's advocacy related to climate change. Fortum Group's 757-MW Wilhelmshaven power plant in Germany is set to ► cease coal-fired power generation and the site will focus attention on hydrogen. The 345-MW Scholven C power plant in Germany will ► cease coal-fired commercial electricity generation at the end of October 2022. Fortum Group's ► coal phase-out is accelerated in the UK, as one of the four 500-MW units of the Ratcliffe hard coal-fired power plant will be shut-down as early as the end of September 2022 – two years ahead of the coal phase-out date announced by the UK government. Fortum's and Perstorp's ► project for sustainable methanol received funding of EUR 30 million from the Swedish Energy Agency. The project aims to create a large-scale, sustainable methanol plant that utilises a Carbon Capture and Utilisation (CCU) process.
	7 AFFORDABLE AND CLEAN ENERGY Fortum offers and develops affordable and reliable energy solutions for customers, improves the energy efficiency of production, and invests in renewable energy, e.g. solar power in India, and wind power in the Nordic countries.	<ul style="list-style-type: none"> Fortum has won the right to build two solar power plants with a total of ► 600-MW solar capacity in Karnataka, India. The projects are expected to be commissioned by 2024. The joint solar and wind development team of Fortum and Uniper is launching its first project, with the investment decision to start ► the construction of the 380-MW Pjälax-Böle and Kristinestad Norr wind parks in Finland in partnership with the Finnish energy company Helen Ltd. Uniper and Ørsted signed a memorandum of understanding (MoU) committing to the goal of jointly developing ► offshore wind power with hydrogen on a large scale in Germany.
	6 CLEAN WATER AND SANITATION Fortum aims to reduce the environmental impacts of its own operations on aquatic and terrestrial ecosystems and biodiversity. Fortum prevents customers' hazardous substances from ending up in water and land areas and treats contaminated materials safely.	<ul style="list-style-type: none"> Biodiversity target achieved with 13 conducted major voluntary measures that improve the living conditions of species and strengthen populations. In 2021, Fortum's annually updated ► Biodiversity Action Plan included, for the first time, also Uniper's projects in Sweden, Germany, and the UK. The ► Ecogain Biodiversity Index, which evaluates the largest Nordic companies on their reporting on biodiversity, ranked Fortum in second place, and first among Finnish companies. Ecogain reports that Fortum has, in a clearer way than in previous years, identified biodiversity as one of its priority issues. Fortum implemented a dam by-pass solution at the Leppikoski hydropower plant on the Hyrynsalmi route in the Oulujoki river system in Finland. The ► hydraulic Fishheart fishway is a Finnish innovation enabling fish to migrate past obstacles. In Sweden, Fortum removed three dams in River Limån to restore river continuum and to help re-establish stream water habitats. Uniper and Fortum also continued to take part in the Eel programme in Sweden, aiming to enhance the endangered eel population. Fortum and Oulun Energia conducted a ► breeding area study of migratory fish in the river Oulujoki in Finland. The study is linked to broader efforts aiming to strengthen the natural cycle of migratory fish populations in the Oulujoki water system. Fortum is taking part in the ► Kumla municipality's project in Sweden to build a landscape for butterflies in the area close to Fortum's waste treatment facility. The aim of the project is to increase the biodiversity in the area and to restore former grasslands to benefit plants and insects.
	15 LIFE ON LAND Fortum focuses on a circular economy and resource efficiency. Fortum offers solutions to promote waste material recycling and reuse and promotes efficient incineration as well as safe final disposal of waste.	<ul style="list-style-type: none"> Fortum is expanding its lithium-ion battery recycling capacity by building a ► new hydrometallurgical plant in Harjavalta, Finland. This will be a major step in increasing Fortum's hydrometallurgical recycling capacity and enabling the production of sustainable battery chemicals. Fortum has been granted ► funding of EUR 10 million from Business Finland for the construction of the plant. Fortum and Valmet Automotive entered into cooperation to ensure the safe and ► sustainable recycling of all non-conforming battery materials from Valmet Automotive's battery plants in Salo and Uusikaupunki, Finland. Fortum's recycling and waste business and Kiertokapula Oy extended their agreement on energy utilisation of municipal waste in Finland. As a result, municipal waste from 11 municipalities will be processed into energy at Fortum's waste-to-energy plant in Riihimäki at least until 2028. Fortum and the Finnish retailing conglomerate K-Ryhmä started a partnership to promote the use of Fortum Circo® recycled plastics in new products. Fortum and the plastic packaging producer association Suomen Uusiomuovi Oy extended their agreement on the recycling of plastic packaging at Fortum's Riihimäki plastic refinery.
	12 RESPONSIBLE CONSUMPTION AND PRODUCTION Fortum focuses on a circular economy and resource efficiency. Fortum offers solutions to promote waste material recycling and reuse and promotes efficient incineration as well as safe final disposal of waste.	<ul style="list-style-type: none"> Fortum is expanding its lithium-ion battery recycling capacity by building a ► new hydrometallurgical plant in Harjavalta, Finland. This will be a major step in increasing Fortum's hydrometallurgical recycling capacity and enabling the production of sustainable battery chemicals. Fortum has been granted ► funding of EUR 10 million from Business Finland for the construction of the plant. Fortum and Valmet Automotive entered into cooperation to ensure the safe and ► sustainable recycling of all non-conforming battery materials from Valmet Automotive's battery plants in Salo and Uusikaupunki, Finland. Fortum's recycling and waste business and Kiertokapula Oy extended their agreement on energy utilisation of municipal waste in Finland. As a result, municipal waste from 11 municipalities will be processed into energy at Fortum's waste-to-energy plant in Riihimäki at least until 2028. Fortum and the Finnish retailing conglomerate K-Ryhmä started a partnership to promote the use of Fortum Circo® recycled plastics in new products. Fortum and the plastic packaging producer association Suomen Uusiomuovi Oy extended their agreement on the recycling of plastic packaging at Fortum's Riihimäki plastic refinery.

Sustainable Development Goal (SDG)

Fortum and SDG

Measure

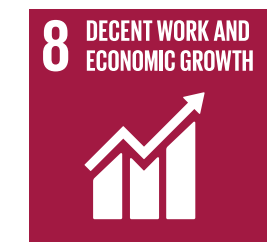
Personnel and society



11 SUSTAINABLE CITIES AND COMMUNITIES

Fortum impacts urban air quality by reducing flue-gas emissions at power plants. Fortum also develops flexible and low-CO₂ district heating and cooling solutions and develops e-mobility charging solutions.

- The Suomenoja power plant in Espoo commissioned a third heat pump, the largest in Finland, to replace the use of fossil fuels. The new pump increases the share of waste heat in district heating production in Espoo to 20% and the share of carbon-neutral production to over 50%.
- Fortum, together with the Finnish companies Advian and GridJet, launched a project to detect leaks in a district heating network faster and more accurately. Achieving Fortum’s goal of carbon-neutral district heating in Espoo during the 2020s requires significant emissions reductions, in which the reduction of water leakage in the district heating network plays an important role.
- Uniper and the Dutch energy supplier Eneco signed a district heating supply agreement for a 12-year period and are working together to make **▶ The Hague’s district heating network more sustainable.**
- Fortum, in collaboration with Volvo Cars and Comsys, created an **▶ innovative battery solution** at Fortum’s Landafors hydropower plant in Sweden. The solution will also use batteries from plug-in hybrid cars and other batteries to extend the life of the hydropower turbines and the batteries themselves.



8 DECENT WORK AND ECONOMIC GROWTH

Fortum promotes the good working conditions and safety of its own and contractors’ employees and requires service and goods suppliers to respect labour rights and adhere to anti-corruption principles. Fortum generates economic added value for its investors, suppliers, and the public sector.

- Fortum launched new Safety Ground Rules to help keep safety on everyone’s agenda at all times and to improve Fortum’s safety performance. Fortum’s divisions have also started work on roadmaps towards safety excellence during 2021–2025.
- In 2021, Fortum, excluding Uniper, conducted four on-site supplier audits covering working conditions and more.
- Both Fortum and Uniper are members of the Bettercoal Initiative and use the Bettercoal tools to improve sustainability in the coal supply chain.
- In 2021, Fortum’s taxes borne were EUR 1,398 million.



9 INDUSTRY, INNOVATION AND INFRASTRUCTURE

Fortum advances innovations related to energy, clean hydrogen, digitalisation, circular economy, biomaterials, and electricity storage solutions. Fortum also invests in start-ups and creates partnerships to gain synergy and scale.

- Fortum and Teollisuuden Voima Oy (TVO) carried out a joint test of the first **▶ valve featuring 3D printing technology** at the Olkiluoto nuclear power plant.
- Uniper started cooperation with the shipping service provider Liberty Pier and the engineering firm SDC (Ship Design & Consult) to develop and establish **▶ green methanol as a sustainable and carbon-neutral marine fuel.**
- Under the name **▶ “Green Wilhelmshaven”**, Uniper plans to establish a German national hub for hydrogen and is working on a corresponding feasibility study. An import terminal for green ammonia is also planned.
- Uniper and Shell signed a MoU to explore accelerating the development of a **▶ hydrogen economy in Europe.**
- Uniper and the Port of Rotterdam Authority entered into an agreement for developing the **▶ production of green hydrogen** at the Uniper’s site in Maasvlakte, the Netherlands.



5 GENDER EQUALITY

Fortum supports workplace diversity and provides equal opportunities to its personnel.

- Fortum and Uniper are both participants in the **▶ Equal by 30** campaign, a global effort to reach gender parity in the energy sector by 2030.
- Fortum was ranked the best of the Finnish companies, and 22nd overall, out of the 668 European listed companies included in the **▶ European EWoB Gender Diversity Index 2021.** Fortum also had the biggest improvement in gender diversity in top management positions among the Finnish companies. The study examined how gender diversity is realised in the boards and key management of European companies.
- The share of women in Fortum’s management in 2021 was 27%.
- Uniper is part of the **▶ Komm, mach MINT initiative** supported by the German Federal Ministry of Education and Research. It promotes young women in mathematics, information technology, natural sciences, and technology studies and professions.



17 PARTNERSHIPS FOR THE GOALS

Fortum cooperates with many civil society organisations in its operating countries. In addition, Fortum has joint projects with cities, municipalities, and universities.

- Fortum continued to support local communities and organisations through its **▶ Corporate Social Responsibility (CSR) programme.**
- Fortum donated EUR 50,000 to the Mannerheim League for Child Welfare (MLL). The donation was given for developing telephone and chat service for children and young people.
- Fortum donated EUR 100,000 to support **▶ Save the Children** organisation’s work to help children and families suffering from the Covid-19 crisis in India.
- Fortum cooperates with Miljøagentene (Eco Agents), an environmental organisation for children in Norway. Over 10,600 children participated in “The Green Researcher” programme.
- Fortum cooperates with Maskrosbarn, an organisation in Sweden that provides support services for children whose parents have mental challenges or substance abuse problems.
- Fortum supported local charity organisations in Russia: the Women’s Union in Chelyabinsk, the Dari Dobro foundation in Ulyanovsk, and the Russian Children’s Foundation in Tyumen.
- Uniper donated EUR 200,000 to support relief projects in flooded areas in Germany. In summer 2021, severe weather events caused flooding resulting in major damages.
- In March 2022, Fortum Group donated EUR 400,000 to the Red Cross. The donation is directed to support humanitarian relief actions in Ukraine and for refugees in the neighboring countries. We launched employees’ voluntary work programme with the aim of helping refugees from Ukraine.

Case | Aiming for a corporate culture in which future employees from different backgrounds thrive, develop, and always give their best

Fortum was the best among the Finnish listed companies in the European Women on Board (EWoB) Gender Diversity Index, ranking at 22/668. Fortum also had the biggest improvement in gender diversity in top management positions among the Finnish companies. Of all executive positions at Fortum, 44% are currently held by women, while 57% of the members of the Board of Directors and 33% of the members of the Management Team are women.

The EWoB Gender Diversity Index looked at 668 European listed companies in 2021. For the third year in a row, the survey looked at how gender equality is being achieved among the boards, management, and decision-makers of European companies.

“Appreciating experts from diverse backgrounds, rewarding performance, and providing equal opportunities for advancement are key principles for us at Fortum. I believe that we are more competitive and better able to meet the expectations of our customers and society when our management is also diverse. In the traditionally male-dominated energy industry, this is not a matter of course; our goal is to build a corporate culture in which our future employees from different backgrounds always feel comfortable, develop, and give their best,” says Markus Rauramo, President and CEO of Fortum.

In the 668 listed companies included in the study, 28% of all the different management positions were held by women. According to the study, gender equality has developed best in countries where it is promoted by law, such as Belgium, France, and Norway. In the Nordic countries, which have traditionally been known for their equality, such as Sweden and Finland, development has almost come to a halt.

The 2021 study included the same 16 Finnish listed companies that were part of the 2020 survey. Of these, 9 had improved and 7 had weakened their results compared to the previous year. 56% of the Finnish companies in the survey exceed the average of the Gender Diversity Index.



Sustainability priorities

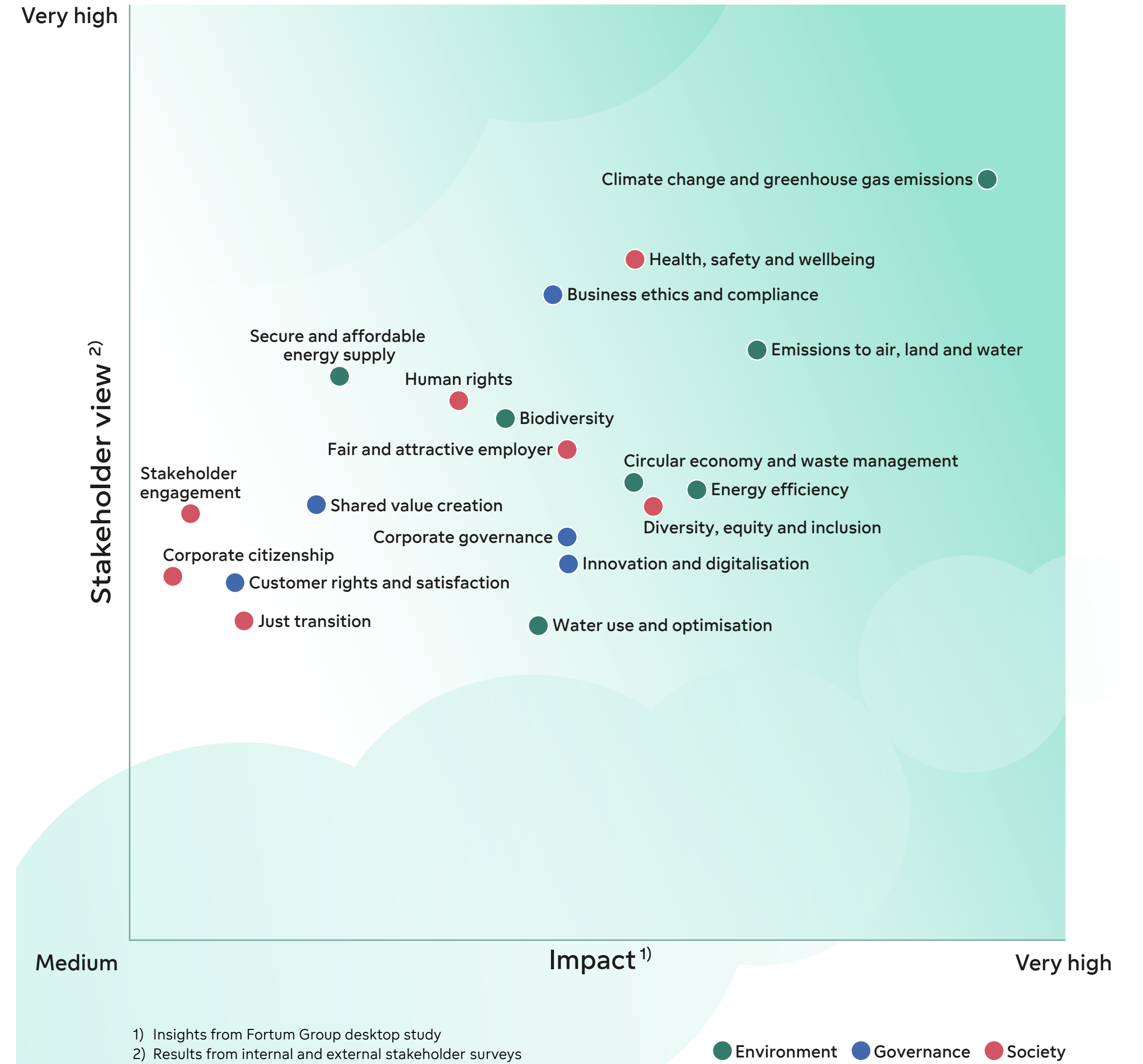
Sustainability priorities have been defined to support sustainable business. In our operations, we take into consideration climate and resource issues as well as our impacts on personnel and society.

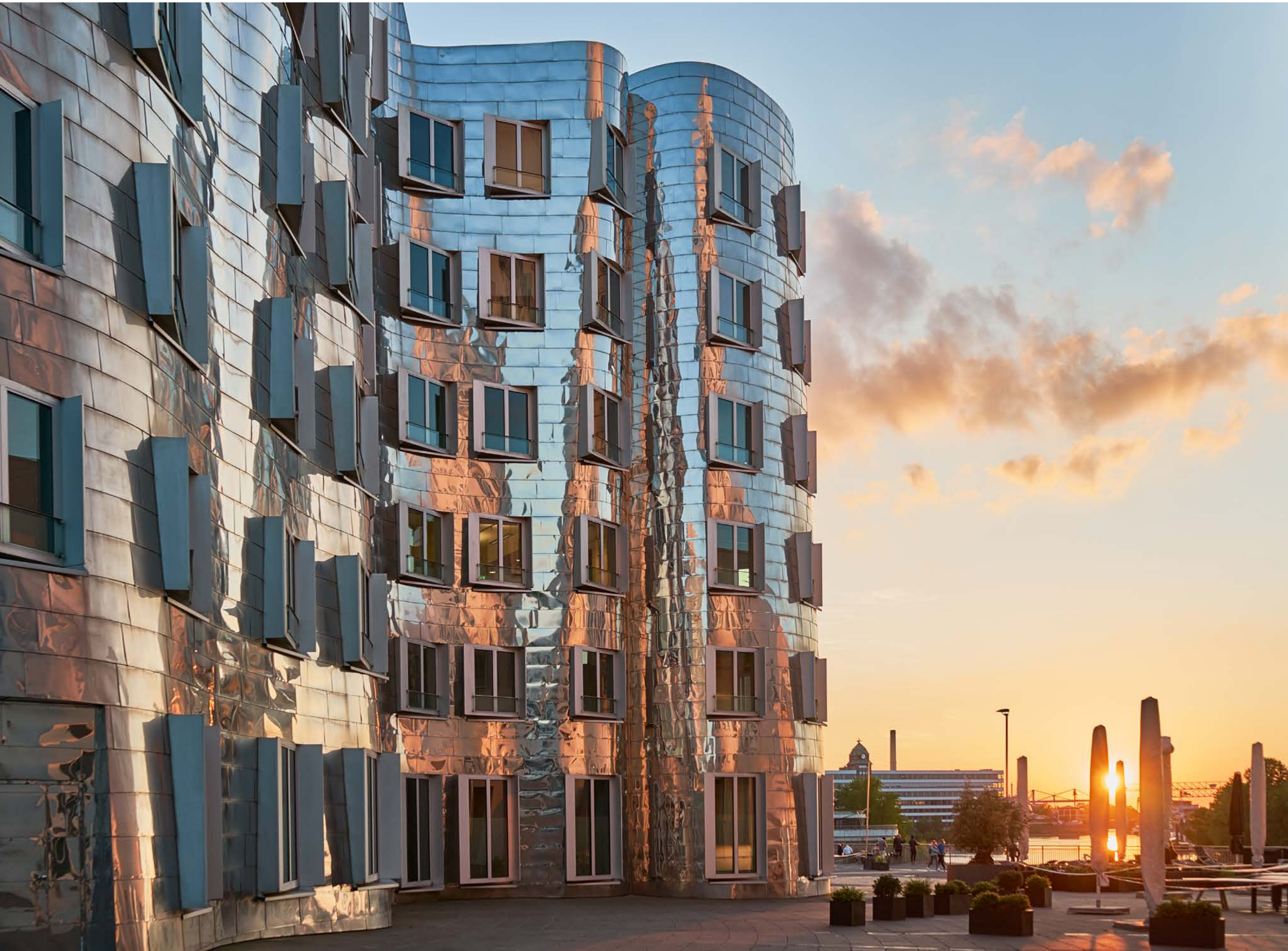
Fortum reassessed its sustainability priorities in 2021. A sustainability materiality analysis was conducted based on internal and external stakeholder surveys, including some 800 respondents, and an extensive desktop review of potential business impact with regard to regulation and expectations of capital markets. The desktop review also included an assessment of peers' material sustainability aspects and media analysis as well as an analysis of the correlation between the topics and the UN sustainable development goals (SDGs).

The materiality analysis applied a two-dimensional approach. It considered the sustainability impacts of Fortum's business activities on a number of sustainability issues as well as the impacts of these issues on Fortum.

The 2021 sustainability priorities for Fortum are presented in the materiality matrix.

Material sustainability topics





Sustainability targets affect every Fortum employee

Sustainability targets affect every Fortum employee, and safety-related targets are a part of Fortum’s short-term incentive (STI) programme. In addition to the Group-level targets, divisions have their own targets. Fortum’s Board of Directors annually decides on the Group-level sustainability targets to be included in the incentive programme. Realisation of the safety target, Lost Time Injury Frequency (LTIF) for own personnel and contractors, was a part of Fortum’s STI programme in 2021. However, the Board can, at its discretion, also take into consideration in the result other safety-related incidents and especially the number of severe occupational accidents. The target for severe occupational accidents is zero.

In the 2022 STI programme, the safety target contains the severity rate per Total Recordable Injuries (TRI) of own employees and contractors combined and the execution rate of safety leadership training. As in 2021, the Board has the option to take into consideration also other safety incidents. The weight of the target in the incentive programme is 10% (2021: 10%).

Climate-related targets aligned with Fortum’s strategy are a part of Fortum’s long-term incentive (LTI) programme. In the 2022–2024 LTI plan, the target is related to the reduction of absolute CO₂ emissions in the European fossil fleet, based on a fossil fleet review addressing the Group’s European generation portfolio and a pathway developed to reach Fortum Group’s 2030 and 2035 climate targets.

Uniper continues to follow its own STI and LTI plans. However, the safety metric (severity rate per TRI) in the STI 2022 programme and the carbon-related metric in the 2022–2024 LTI plan are applicable to both companies. Scaling of the STI/LTI metrics is company-specific.

Reporting principles

We report on sustainability in this Sustainability Report. Non-financial reporting, in line with the Accounting Act, is included in the Operating and Financial Review in the Financials. Additionally, we describe sustainability-related governance practices in the Corporate Governance Statement, and strategy and the CEO's view in the CEO's Business Review. Our reporting entity also includes the Tax Footprint.

We apply the specific disclosures of the GRI Sustainability Reporting Standards we have identified as material. We gain information about our stakeholders' views through the One Fortum Survey and other stakeholder collaboration. Our selection of sustainability priorities is based on the materiality analysis conducted in 2021. We report sustainability information annually in English and some sustainability information in Finnish. In our annual reporting, we describe Fortum's operations in 2021 as well as some information from January–March 2022. Fortum's Sustainability 2021 Report is available only in English. The previous Sustainability Report was published in April 2021, and our next report will be published in spring 2023. In addition to the annual reporting, we report our sustainability activities in Fortum's interim reports.



UN GLOBAL COMPACT

COMMUNICATION ON PROGRESS

This is our **Communication on Progress** in implementing the principles of the **United Nations Global Compact** and supporting broader UN goals.

We welcome feedback on its contents.



Reporting scope and boundaries

As the majority owner of Uniper, Fortum has consolidated Uniper as a subsidiary as of 31 March 2020. The reporting scope and reported figures include Uniper, unless otherwise stated.

In this Sustainability Report, selected sustainability key performance indicators that include Uniper are disclosed. Indicators following the same calculation principles have been consolidated and are disclosed as one figure representing Fortum Group. In cases where the definitions currently differ, only one figure for Fortum, excluding Uniper, is presented. No historical figures have been restated, unless otherwise noted.

Fortum's sustainability reporting covers functions under Fortum's operational control, including subsidiaries in all its operating countries, unless otherwise stated. The figures for power and heat generation and capacities also include figures from Fortum's share in associated companies and joint ventures that sell their production to the owners at cost. Possible deviations to these principles are reported in conjunction with information applying different boundaries. A list of Fortum's subsidiaries is included in the Financial Statements Note 40 Group companies by segment on 31 December 2021.

Information from previous years is mainly presented on the basis of the organisation and the functions of each year; the impacts of ownership changes in production facilities, for example, have not been retroactively updated in the previous figures.

Capacity changes

In summer 2021, Fortum sold its district heating and cooling businesses in the Baltic countries. Fortum had power, heat and cooling production in Pärnu and Tartu, Estonia, in Jelgava and Daugavpils, Latvia, and in Klaipeda, Lithuania.

In July 2021, Fortum sold its coal-fired Argayash CHP plant in Russia. The Argayash CHP plant has heat production capacity of 824 MW and power generation capacity of 256 MW. In October 2021, Uniper's 58% stake of the lignite-fired 900-MW Schkopau power plant in Germany was sold.

In March 2021, Fortum commissioned the 250-MW Jaisalmer solar power plant in the Rajasthan State in India. During the last part of 2021, Fortum divested the 250-MW Pavagada and the 250-MW Jaisalmer solar power plants in India. Fortum's investments in renewables, such as wind and solar power, are mainly done through partnerships (e.g. joint ventures and associates or other forms of cooperation).

Measurement and calculation principles

Data for economic performance indicators are collected from the audited Financial Statements and from financial accounting and consolidation systems.

The Sustainability Report's environmental information covers the plants for which Fortum is the legal holder of the environmental permit. In such cases, the plant information is reported in its entirety.

Fortum utilises a database with instructions for collecting site-level safety and environmental data. Additionally, Uniper utilises its data-gathering spreadsheets and system. Sites are responsible for data input, emissions calculations, and the accuracy of the information provided. The Corporate Sustainability unit compiles the data at the Group-level and is responsible for the disclosed sustainability information.

Fortum's CO₂ emissions subject to the EU and the UK emissions trading system (ETS) are annually verified at the site level by external verifiers. Direct and indirect greenhouse gas emissions have been reported in accordance with the Greenhouse Gas (GHG) Protocol on the basis of the Greenhouse Gas Analysis performed by an external consultant.

Fortum's, excluding Uniper, Human Resources (HR) management system is used in all Fortum's operating countries and is the main system for gathering employee-related data. In addition, Russian operations have their own, local data system. Other social responsibility data, such as occupational safety and health-related data, originates from various data systems. Uniper utilises its own systems for gathering HR and other social responsibility data. Designated individuals collect

the information and deliver it to the Corporate Sustainability unit primarily in the format recommended by the GRI Standards.

► Financials 2021

Assurance

Deloitte Oy has provided limited assurance in accordance with ISAE 3410 for the reporting period of 1 January 2021 to 31 December 2021 on GHG emissions calculations (Scope 1, 2 and 3) based on the Greenhouse Gas (GHG) Protocol.

Global Compact and Caring for Climate reporting

Fortum has been a participant of the United Nations Global Compact initiative since 2010. Uniper follows the ten principles of the UN Global Compact, but is not a formal participant.

In this 2021 Sustainability Report, we describe the realisation of the Ten Principles of the Global Compact initiative in our operations in the sections ► [Climate and resources](#), ► [Personnel and society](#), and ► [Business ethics and compliance](#). We use the GRI Sustainability Reporting Standards disclosures to measure compliance with the principles of human rights, labour standards, the environment, and anti-corruption.

Fortum joined the UN Caring for Climate initiative in 2013. Fortum meets the reporting requirements of the Caring for Climate initiative by annually participating in the assessment in the CDP Climate Change questionnaire and by publishing its response on the CDP website.

Business ethics and compliance

We believe there is a clear connection between high standards of ethical business practices and excellent financial results. As an industry leader, we obey the law, we embrace the spirit of integrity, and we uphold ethical business conduct wherever we operate.

Codes of Conduct set the basic requirements

The Fortum Code of Conduct and Uniper Code of Conduct are based on similar fundamentals, and they establish the basic principles of conduct that everyone must follow. They define how we treat each other, do business, and engage with the world. The Supplier Codes of Conduct, both based on the ten principles of UN Global Compact, outline the requirements for Fortum's and Uniper's suppliers and business partners.

Fortum's Board of Directors has approved the company's

▶ **Code of Conduct** and ▶ **Supplier Code of Conduct**. Uniper's Code of Conduct and Supplier Code of Conduct have been approved by the Uniper Management Board.

The Codes of Conduct are regularly reviewed in order to ensure compliance with evolving company and regulatory requirements. Fortum's updated Code of Conduct and Supplier Code of Conduct were published in early 2021 and training on the updated Codes was organised during the year. The Code of Conduct online training, launched in November 2021, is mandatory for all employees. Uniper's updated Code of Conduct was released in early 2020 and a new compliance eLearning module introduced for all Uniper employees in 2021. In addition, relevant individuals are regularly trained in policies and systems that prevent, e.g., corruption.

In line with the Codes of Conduct, Fortum and Uniper have zero tolerance for corruption and fraud and do not award donations to political parties or political activities, religious organisations, authorities, municipalities, or local administrations. In addition, separate instructions and guidelines have been created to address, e.g., anti-bribery, compliance management, the safeguarding of company assets, conflicts of interest, anti-money laundering, and competition law. Fortum also

requires its goods and service suppliers as well as its business partners to comply with a zero-tolerance policy towards corruption and bribery.

Compliance risks

The compliance risks related to our business operations include the potential risk of bribery or corruption, fraud and embezzlement, noncompliance with legislation or company rules, conflicts of interest, improper use of company assets, and regulatory compliance. Compliance risk management is an integrated part of business operations. Key compliance risks, including action plans, are identified, assessed, and reported annually. This applies also to the management of risks related to sustainability. Both Fortum and Uniper have in place a compliance management system (CMS) to mitigate risks.

Training

Training is a fundamental part of Fortum's compliance management. In 2021, the new Code of Conduct eLearning was launched and dedicated Business Ethics training sessions were organized for the Recycling & Waste personnel. Additionally Fortum, excluding Uniper, provides training on the Market Abuse Regulation, including insider regulations for newly hired individuals who need it based on their roles. New eLearnings were launched in competition law and privacy during 2021.

Uniper provided online and face-to-face training on preventing bribery, corruption, and money laundering, and on reinforcing awareness of whistleblowing for employees in roles most likely to expose them to such risks.

Reporting misconduct

Internal and external reporting channels are offered for reporting suspicions of misconduct. The channels are described in the Codes of Conduct and accessible on the companies' internal and external websites. Fortum, excluding Uniper, uses an external service provider's "SpeakUp" channel for reporting. The same channel is used for reporting any suspected misconduct relating to the environment, labour practices, or human rights violations, and it is available to all stakeholders.

In Russia, Fortum, excluding Uniper, has a separate compliance organisation in place, and employees there are encouraged to use the channels provided by the compliance organisation. However, they can also use the "SpeakUp" channel. Information about the reporting channels is provided to employees on the Intranet and in the Code of Conduct training and to suppliers in the Supplier Code of Conduct.

Suspected misconduct and measures related to ethical business practices and regulatory compliance are regularly monitored and assessed by Fortum's Audit and Risk Committee. This also includes cases reported in Uniper. Uniper's Compliance Management System includes quarterly compliance reports to the Uniper Management Board. Uniper's Audit and Risk Committee monitors compliance issues on a regular basis. Uniper Management Board's Compliance Commitment is published annually on the company's website in accordance with the German Governance Code.

Suspected cases of misconduct

For Fortum a total of 132 cases of suspected misconduct were reviewed and closed during 2021. There was no cause for action to be taken in 28 of the cases investigated. As a result of the investigations, four employment contracts were terminated and 14 written warnings were given.

Approximately half of the investigated cases were related to noncompliance with company rules. In these cases, corrective action was taken by reviewing and developing existing processes and instructions and by providing training for employees.

Fortum has zero tolerance towards alcohol and drug use, and thousands of random breathalyser tests are conducted annually. For Fortum, excluding Uniper, 13 cases related to alcohol or drug use during working hours were identified.

During 2021, two new cases of corruption or bribery were confirmed in Fortum Group's operations and one was closed as unfounded. We deal with potential cases of corruption in a professional manner, in accordance with the defined compliance investigation process, in line with applicable laws, and with respect to the rights and personal integrity of all parties involved.

The investigation initiated in 2020 was closed in 2021 when the Stockholm District Court found a former employee and a former consultant of the Fortum Consumer Solutions division guilty of serious criminal offences, including gross taking of a bribe, gross breach of trust, and gross accounting and money-laundering offences.

In 2021, four cases of potential breaches of Fortum's Supplier Code of Conduct were assessed. In three cases corrective actions were implemented and one case was closed as unfounded. In addition, Fortum paid special attention to assessing its suppliers in the solar sector, as a result of the alleged forced labour risk in polysilicate production. The conclusion of risk-based assessment was to put one supplier on hold. In 2021, there were no Supplier Code of Conduct breaches identified in our supplier audits. Supplier audit findings are described in the section ▶ [Supply chain](#).

Restricting competition

For Fortum, excluding Uniper, there were no cases related to restricting competition reported during the year.

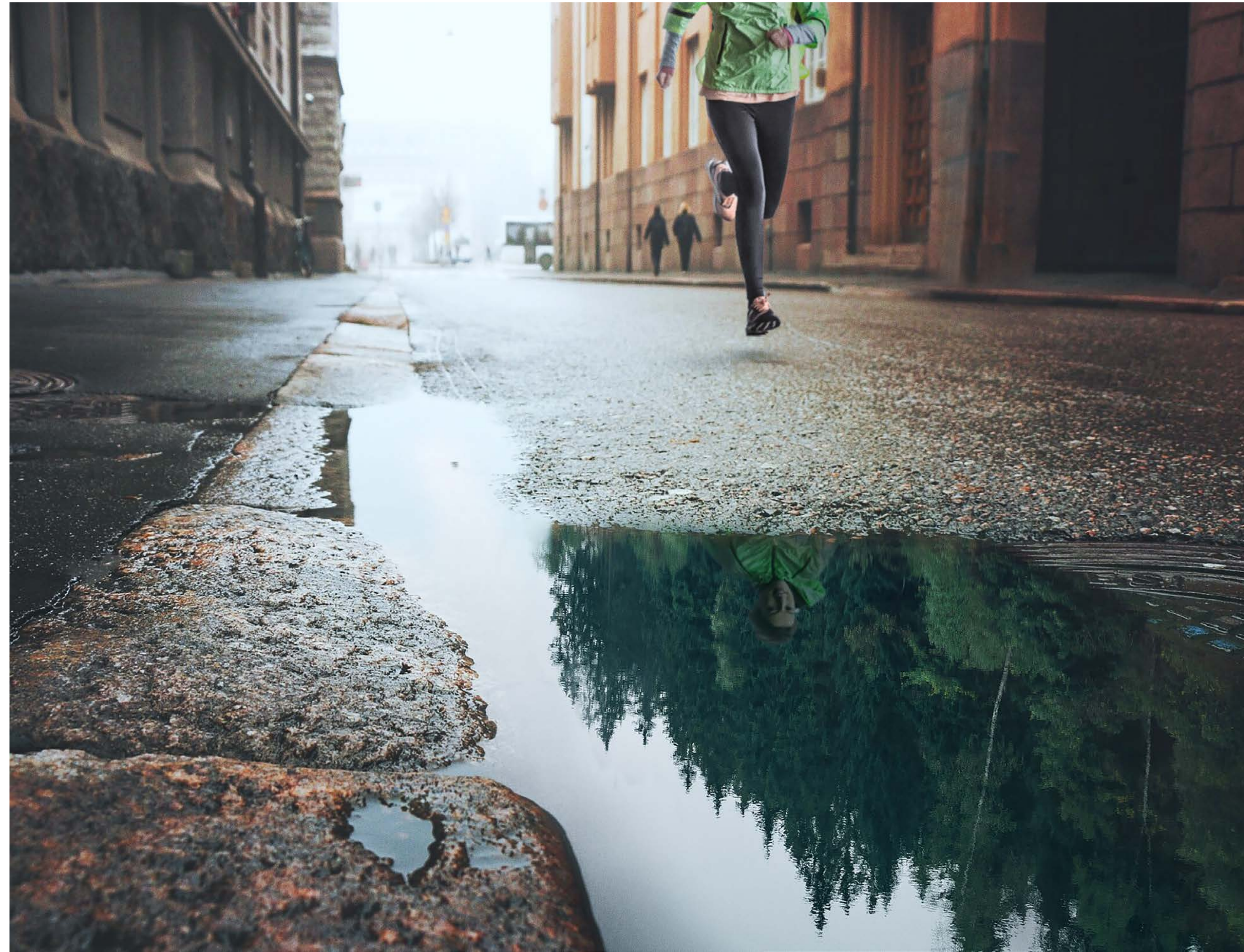
Significant fines

In 2018, untreated wastewater got into a trench and further into a waterway at the Kumla waste incineration and treatment site in Sweden, when the site's wastewater treatment capacity was exceeded. In 2021, the official investigation was completed; Fortum was imposed a fine of SEK 1 million (EUR 98,556).

Environmental enquiries and grievances

Power plants receive environmental enquiries and other contacts every year, and they are mainly handled locally. The aim is to communicate in advance, e.g. through local media and at public events, about upcoming measures that have possible environmental impacts. The external grievance channels described above can also be used by stakeholders to report problems possibly caused by our operations. For Fortum, excluding Uniper, there was one environmental-related grievance reported through these channels in 2021. The grievance was related to a minor oil spill in Russia and remediation action was taken accordingly.

- ▶ [Human rights-related grievances](#)
- ▶ [Incidents of discrimination](#)
- ▶ [Environmental fines](#)



100% of Fortum's electricity and heat production operations were ISO 14001 certified

Climate and resources

🎯 Targets

CLIMATE:

- Reduction of CO₂ emissions (Scope 1 and 2) in European generation by at least 50% by 2030 (compared to base-year 2019)
- Carbon neutral (Scope 1 and 2) in European generation by 2035 at the latest
- Carbon neutral globally (Scope 1, 2 and 3 emissions), in line with the goals of the Paris Agreement, by 2050 at the latest
- Reduction of Scope 3 greenhouse gas (GHG) emissions by 35% by 2035 at the latest (compared to base-year 2021)

BIODIVERSITY:

- Number of major voluntary measures enhancing biodiversity ≥12 in 2021

Contribution to the UN SDGs



Sustainability priorities related to climate and resources

In terms of Fortum’s operations, the sustainability priorities related to climate and resources are presented in the matrix.

Some of the environmental impacts of energy production and fuel sales are global or wide-reaching, some are regional or local. We manage and mitigate our environmental impacts with environmental management systems. Calculated in terms of sales, 100% of Fortum’s electricity and heat production worldwide were ISO 14001 environmentally certified at the end of 2021.

- ▶ Fortum’s energy production
- ▶ Uniper’s energy production
- ▶ Fuel purchasing

We measure the realisation of the environmental management with the key performance indicators, which are presented in the table.

Key performance indicators related to climate and resources ¹⁾

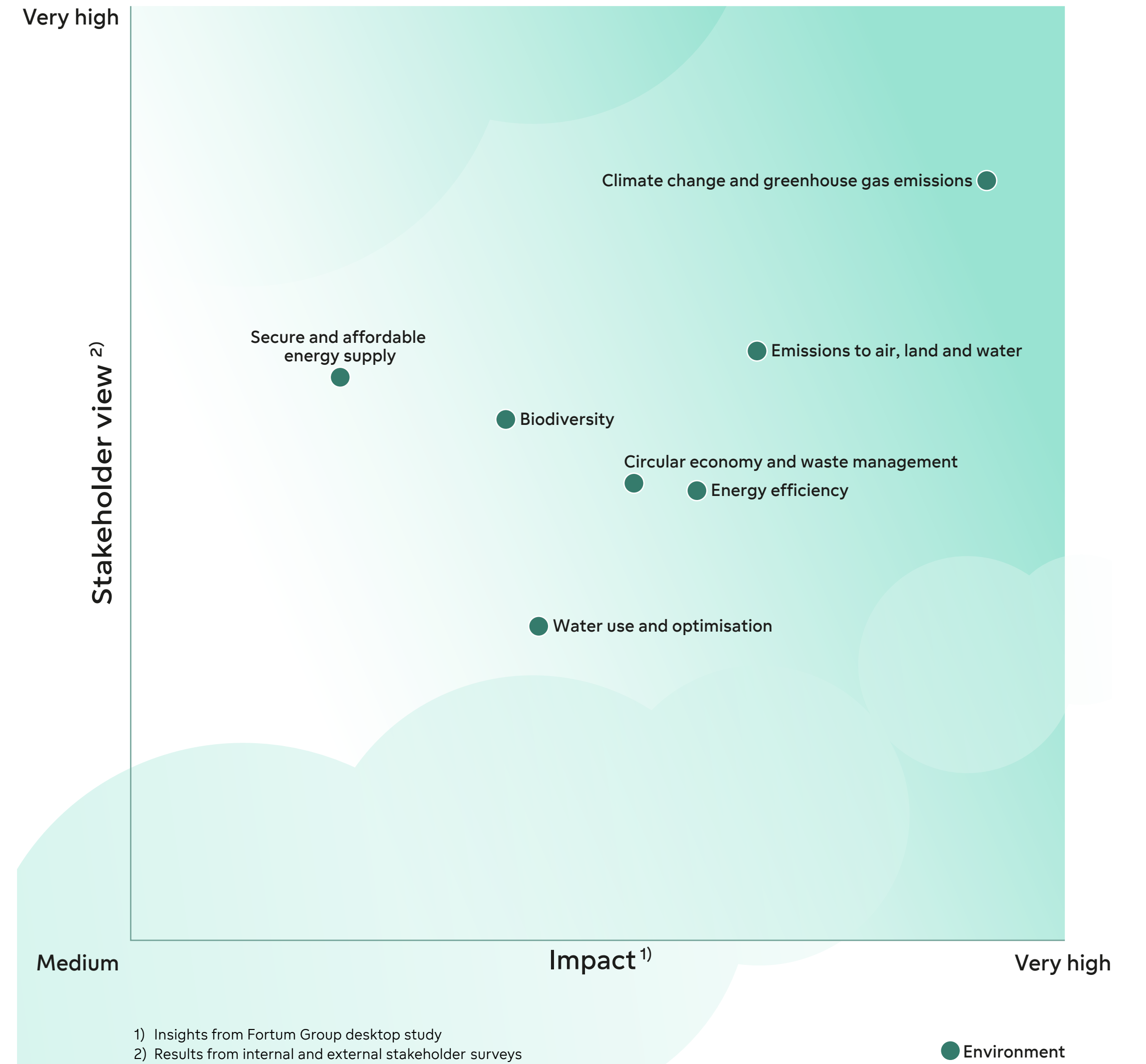
	2021	2020	2019
ISO 14001 certified operations in energy production, % of sales	100	99.9	99.8
CO ₂ emissions from total energy production, million tonnes	68.7	48.7	19.1
Nitrogen oxide emissions, 1,000 tonnes	63.9	50.2	24.9
Sulphur dioxide emissions, 1,000 tonnes	20.3	17.9	14.9
Particle emissions, 1,000 tonnes	8.0	9.6	11.7
Specific CO ₂ emissions from total energy production, gCO ₂ /kWh	312	287	189
Share of CO ₂ -free production in total power generation, %	40	45	59
Share of CO ₂ -free production in power generation in Europe, %	64	73	96
Energy-efficiency improvement, excluding Uniper, GWh/a	179	134	70
Asset availability of gas-fired and coal-fired power plants, % ²⁾	80.8	-	-
Total water withdrawal in production operations, million m ³	12,359	8,847	2,093
Utilisation of ash generated at power and heat plants, %	78	69	48
Major EHS incidents, no. ³⁾	8	16	11
of which major environmental non-compliances, no. ³⁾	1	1	2

1) Uniper consolidated as of Q2/2020

2) Calculation principle changed due to alignment with Uniper. Therefore, the figure for 2020 and 2019 is not available. The 2021 figure includes power generation from gas-fired and coal-fired power plants.

3) Excluding Uniper. The figure does not include the exceedances caused by possible changes in permit limits in Russia.

Sustainability priorities related to climate and resources



Energy

Fortum’s purpose is to drive the change for a cleaner world. We want to enable the energy transition by providing customers and societies a reliable and affordable supply of low-carbon energy and sustainable solutions. In the future, the energy system – and Fortum’s portfolio – will be based on renewable energy, increasingly clean gas (e.g., hydrogen), and nuclear power. By improving the energy efficiency of our power and heat production, we can also reduce flue-gas emissions to the environment relative to the produced energy and decrease production costs.

Energy production

Fortum’s power generation is mainly based on natural gas-fired generation, and carbon dioxide-free hydro and nuclear power. Fortum targets to rapidly reduce the share of coal in power generation. A minor share of Fortum’s power generation is currently based on solar and wind, but Fortum targets significant growth in the area over the next five years.

Fortum is also a large producer of district heat. The heat is mainly produced at natural gas-fired and energy-efficient combined heat and power (CHP) plants.

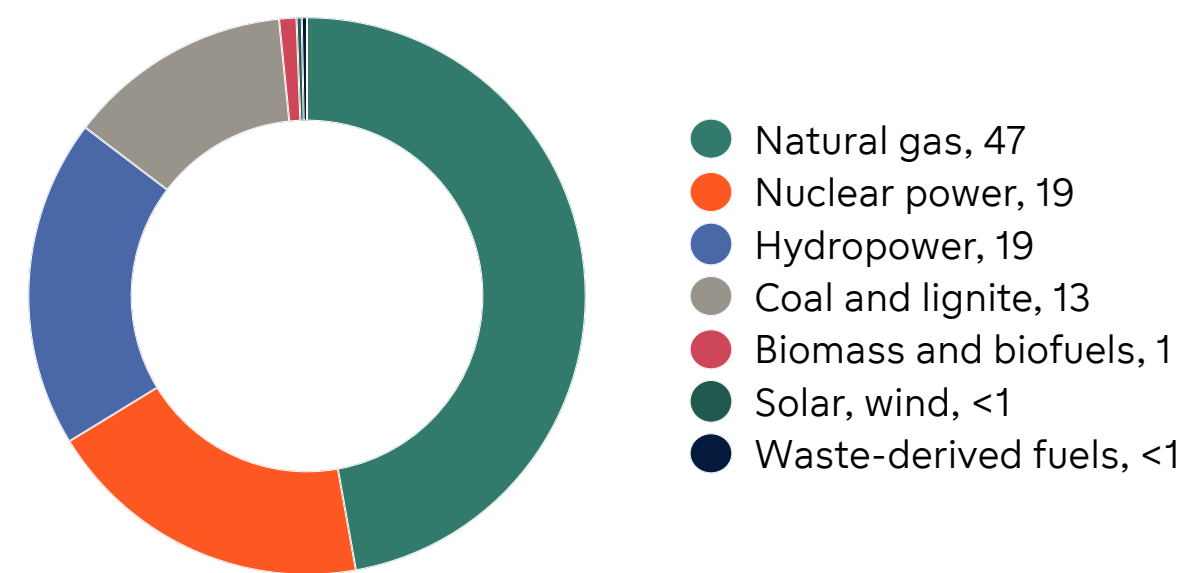
In summer 2021, Fortum divested its district heating and cooling businesses in the Baltic countries, where Fortum provided district heating in five cities: Tartu and Pärnu in Estonia, Jelgava and Daugavpils

in Latvia, and Klaipeda in Lithuania. In September 2021, Fortum also concluded the sale of its 50% ownership in the Swedish district heating and cooling company Stockholm Exergi.

In July 2021, Fortum sold its coal-fired Argayash CHP plant in Russia. The plant has a power generation capacity of 256 MW and a heat production capacity of 824 MW. In October 2021, Uniper’s lignite-fired 900-MW Schkopau power plant was sold in Germany.

In 2021, Fortum’s power generation was 188.1 (2020: 142.1) TWh and its heat and steam production 33.4 (2020: 29.6) TWh. 40% of our total power generation was CO₂-free. In Europe, 64% of our power generation was CO₂-free. The power and heat generation figures also include Fortum’s share in associated companies and joint ventures that sell their production to the owners at cost.

Power generation by energy source, %



Power generation by energy source in 2019–2021 (GRI 302-1) ¹⁾

TWh	2021	2020	2019
Natural gas	88.4	64.3	28.3
Nuclear power	36.4	28.6	23.5
Hydropower	36.3	32.5	20.3
Coal and lignite	24.1	13.4	2.3
Biomass and other biofuels	1.7	1.6	0.8
Solar, wind	0.6	1.1	0.7
Waste-derived fuels	0.5	0.6	0.5
Fuel oil, other	0.02	0.01	0.1
Total	188.1	142.1	76.3

¹⁾ Uniper consolidated as of Q2/2020

Heat production by energy source in 2019–2021 (GRI 302-1) ¹⁾

TWh	2021	2020	2019
Natural gas	19.5	16.6	15.6
Coal and lignite	8.3	7.7	4.7
Waste-derived fuels	2.5	2.6	2.6
Biomass and other biofuels	1.5	1.6	2.3
Heat pumps, electricity	1.0	0.8	0.6
Fuel oil, other	0.5	0.3	0.5
Total	33.4	29.6	26.4

¹⁾ Uniper consolidated as of Q2/2020



More renewable energy

In 2021, we invested in wind and solar power production. In March 2021, Fortum commissioned the 250-MW Jaisalmer solar power plant in Rajasthan State in India. During the last part of 2021, Fortum divested both the 250-MW Pavagada and the 250-MW Jaisalmer solar power plants in India. Fortum's investments in wind and solar power are mainly done through partnerships (e.g. joint ventures and associates or other forms of cooperation).

At the end of 2021, Fortum and Uniper announced the investment decision for the construction of the 380-MW wind farm in Närpes and in Kristinestad, Finland. The wind turbines are expected to be fully commissioned in 2024.

The refurbishments of Fortum's, excluding Uniper, own hydropower plants in Finland and Sweden produced 5 MW of new renewable electricity production capacity in 2021.

New low-carbon production

In 2021, the new 25-MW heat pump unit was commissioned at the Suomenoja plant in Espoo, Finland. Fortum will further increase its non-combustion-based heat production in Finland with the 11-MW air-to-water heat pump in Vermo and large-scale air-to-water heat pumps, e.g., in Kera and Otaniemi. Fortum is also developing data centre projects with data centre operators in the Espoo-Kirkkonummi area in Finland. Excess heat from data centres can be utilised in district heating networks. Fortum has set a goal to discontinue the use of coal in Espoo in 2025. The project for carbon neutrality in the 2020s is called ▶ **Espoo Clean Heat**.

Switch to green hydrogen and other clean gas

Uniper has power-to-gas (P2G) pilot sites in Falkenhagen and in Hamburg, Germany. The Falkenhagen wind-to-gas site also uses CO₂ captured from a nearby bio-ethanol plant to transform the green hydrogen (H₂) into carbon-neutral methane (CH₄). Since natural gas contains mainly methane, green methane has the same chemical properties and, therefore, it can be stored in unlimited quantities in the gas pipeline system.

In early 2021, Uniper announced the plans of large-scale production of green hydrogen at the Maasvlakte power plant in Rotterdam, the Netherlands. The aim is to realise a 100-MW hydrogen production capacity at the site by 2025 and to eventually expand the capacity to 500 MW. A final investment decision will be made in 2022.

Uniper has also joined in the Zero Carbon Humber partnership, a project to achieve net zero carbon by 2040 using blue and green hydrogen and CCUS (Carbon Capture, Utilisation and Storage) solutions in the UK. The gas-fired Killingholme power plant is planned to be used as the site for up to a 700-MW blue hydrogen production capacity, and a 100-MW green hydrogen production capacity. The project for the blue hydrogen facility is scheduled to start in 2022, and production of green hydrogen is estimated to begin in 2025.

Additionally, Uniper and Ørsted have announced a partnership to integrate wind power generation and a 70-MW electrolysis unit, which will be installed on the grounds of the decommissioned coal-fired Wilhelmshaven power plant in Germany. The unit is scheduled to begin producing green hydrogen in 2025. Uniper intends to expand Wilhelmshaven units' production capacity to 410 MW by 2030.

▶ **Fortum's energy production**

▶ **Uniper's energy production**



Energy efficiency

Improving energy efficiency at power plants refers to measures we implement to increase the efficiency of production processes or reduce the energy consumption of plants or equipment. This enables us to produce more electricity or heat for our customers without increasing fuel consumption and to reduce carbon dioxide and other flue-gas emissions into the environment in relation to the produced energy.

The energy efficiency of power plants can be increased through investments and technical improvements, preventive maintenance, and by training personnel in the optimal operation of the plant and in monitoring the plant's operating economy. Improving power plant availability also increases energy efficiency, as unplanned plant start-ups are reduced.

All Fortum's power plants in Finland are within the scope of the Energy-Efficiency Agreement period 2017–2025 between the Confederation of Finnish Industries and the Ministry of Economic Affairs and Employment of Finland. The participation in this Agreement helps Fortum on focusing in energy efficiency and strengthens its position as an energy-efficiency expert.

Uniper's gas-fired and coal-fired power plants and gas storage sites in Germany are certified to the ISO 50001 Energy management system standard.

Energy-efficiency investments

In fuel-based energy production, Fortum aims to utilise the fuel's energy as efficiently as possible. We can improve the energy efficiency of fuel use by increasing combined heat and power (CHP) production. In CHP production, up to 90% of the energy content of the fuels can be utilised. The efficiency of separate electricity generation is about 40–60%.

Fortum annually invests in refurbishments and modernisations at several power plants, which improves their energy efficiency and availability. In 2021, Fortum's, excluding Uniper, combined energy savings of the energy-efficiency improvement projects were 179 (2020: 134) GWh/a. As definitions of energy-efficiency improvement vary from that of the rest of the Fortum Group, the results of Uniper's

energy-efficiency improvement are not included in Fortum's total energy-efficiency figures.

In 2021, Fortum completed significant projects improving energy efficiency, including:

- the new heat pump at the Suomenoja plant in Finland, 104 GWh
- improvements in heat recovery and decreasing leakages in the district heat network in the Espoo–Kirkkonummi area in Finland, 11 GWh
- hydropower plant refurbishments in Finland and Sweden, 8 GWh
- upgrade of district heating make-up water deaeration and raw water preheat systems at the Tyumen CHP-1 plant in Russia, 46 GWh

Uniper is also investing in energy-efficiency improvement projects. In 2021, a project was implemented to improve the energy efficiency of the gas turbine in different production modes, especially at part load, at the 428-MW Gönyü CCGT (Combined Cycle Gas Turbine) power plant in Hungary.

In 2021, the energy-efficiency improvement project was also completed at the 442-MW Enfield CCGT plant in the UK. The improvement makes it possible to consume less fuel in relation to the produced electricity and thus, to achieve a fuel efficiency of nearly 60%.

Energy-efficiency services

Fortum has introduced energy-efficiency services for private customers, for example, in Finland and Sweden. Fortum's customers can, for instance, monitor and reduce their electricity consumption or control and optimise the heating of their homes based on energy price and use.

▶ Services for homes

▶ Services for businesses

Fuel consumption

Fortum uses various fuels, such as natural gas, coal, lignite, uranium, biomass fuels, and waste-derived fuels, to produce electricity, heat, and steam. The most significant fuel used in our energy production is natural gas. We use natural gas in, among others, Russia, the United Kingdom, Germany, Hungary, and the Netherlands. In 2021, our use of natural gas was about 61% of our total fuel consumption globally.

Fortum uses hard coal and lignite in Germany, Russia, the United Kingdom, the Netherlands, Poland, and Finland. In our energy production in 2021, coal and lignite accounted for about 21% of our total fuel consumption.

In 2021, Russia's share of our total fuel consumption was about 53%. Russia accounted for about 80% of our use of natural gas.

Our use of nuclear fuel (i.e. uranium) was about 16% of our total fuel consumption. We used about 45 kilotonnes of nuclear fuel at the Loviisa nuclear power plant in Finland and at the Oskarshamn nuclear power plant's unit 3 in Sweden.

In 2021, Fortum used biomass and other biofuels in the Netherlands, the Baltic countries, Finland, Poland, and Norway. In the Netherlands, biomass partly replaced the use of coal at the Maasvlakte power plant. In Finland and Norway, Fortum uses biomass and other biofuels at biofuelled heat plants.

In 2021, Fortum used waste-derived fuels at waste-to-energy plants in Klemetsrud, Norway; Riihimäki, Finland; Nyborg, Denmark; Kumla, Sweden; Zabrze, Poland; and Klaipeda, Lithuania.

The energy-specific fuel consumption has been calculated based on the usage volumes and fuel-specific caloric values measured at the power plants. Uranium consumption has been calculated from the thermal heat generation in the reactors.

Additionally, Uniper owns and operates the Fujairah oil refinery facility of low sulphur marine fuel oils in the United Arab Emirates, supplying products to local partners and large shipping companies.

Energy intensity

In 2021, our fuel consumption in electricity, heat, and steam production was a total of 353 (2020: 252) TWh, or 1,271 (2020: 908) PJ. Additionally, we acquired 1.8 TWh, or 6.4 PJ, of electricity from external electricity suppliers.

With these energy resources, our net electricity production was about 134 (2020: 88) TWh and our net heat, steam and cooling production about 33 (2020: 29) TWh. The total energy consumption, calculated as the difference between the procured energy resources and net energy production, was about 187 (2020: 136) TWh, or 672 (2020: 488) PJ.

Our average fuel-use efficiency was about 51%. The efficiency has been calculated by dividing the net energy produced with the energy content of the fuels used in the energy production.

In 2021, the energy intensity of our own energy production was 1.8. The intensity figure has been calculated by dividing the amount of used fuel resources by the total net energy production, including also hydropower, solar, and wind power globally.

► Origin of our fuels

► Production of marine fuels

Fuel use in 2019–2021, mass/volume (GRI 301-1) ¹⁾

	2021	2020	2019
Non-renewable fuels			
Natural gas, million m ³	22,204	16,738	7,596
Coal and lignite, 1,000 t	13,543	8,782	1,888
Waste-derived fuels, fossil, 1,000 t	809	894	867
Fuel oil and diesel, 1,000 t	72	24	14
Peat, 1,000 t	10	42	154
Nuclear fuel, t	45	40	22
Renewable fuels			
Biomass and biofuels, 1,000 t	1,324	1,426	1,302
Waste-derived fuels, renewable, 1,000 t	475	527	513
Biogas, million m ³	1	1	3

1) Uniper consolidated as of Q2/2020

Fuel use in 2019–2021, energy (GRI 302-1) ¹⁾

	2021	2020	2019
petajoules			
Natural gas	769.8	568.4	258.6
Coal and lignite	263.0	167.0	39.2
Nuclear fuel	201.3	138.8	84.2
Waste-derived fuels, fossil	8.7	9.7	8.8
Fuel oil and diesel	2.3	0.9	0.5
Peat	0.1	0.4	1.6
Non-renewable fuels	1,245	885.2	392.8
Biomass and biofuels	20.2	17.2	13.3
Waste-derived fuels, renewable	5.7	6.0	5.5
Renewable fuels	25.9	23.2	18.9
Fuels total	1,271	908.4	411.7

1) Uniper consolidated as of Q2/2020

Security of supply

A functional society requires an uninterrupted and reliable supply of energy. With hydropower, we are balancing the growing, but weather-dependent, fluctuating production of other renewable energy forms, like solar and wind, and we are enabling their growth. Hydropower’s flexibility is needed to secure the functionality of the energy system and the power grid also during energy consumption peaks and to balance fluctuations in the price of electricity.

If a sufficient supply of hydropower is not available, adjustable power production based on natural gas can be used to balance fluctuations in solar and wind power production and to secure the supply of electricity. Uniper’s gas-fired power plants, e.g., in Germany, can respond quickly to fluctuations in production, which is important for power grid stability. Additionally, Uniper’s natural gas supply, gas storage facilities, gas trading activities, and capacity for re-gasifying liquefied natural gas (LNG) enable a reliable and affordable supply of energy.

Uniper has planned a LNG terminal in Wilhelmshaven in Germany. This will be closely linked to the plans to make Wilhelmshaven a green energy hub, with green hydrogen production to fulfill more than 10% of the German hydrogen demand in 2030.

Gas storage facilities can store energy between seasonal variations, and storages can also respond to consumption demand peaks. Uniper has about 7.4 bcm of underground gas storage capacity in Germany, Austria, and the United Kingdom.

With planned preventive maintenance and condition monitoring, we ensure that our power plants operate reliably to produce the electricity, heat, and steam customers need. Fortum also offers engineering services that help power plants improve their performance, including high availability.

Asset availability at a good level

We measure the availability of power and heat plants with an energy availability indicator. In 2021, the asset availability of Fortum’s gas-fired and coal-fired power plants was, on average, 80.8%. The asset availability of power generation includes planned outages in addition

to unplanned technical unavailability. Each unavailability-related case of equipment failure is investigated to determine the causes, so that similar problems can be prevented at other power plants.

In 2021, the load factor of the Loviisa nuclear power plant was 92.9%. The load factor describing the availability of the Loviisa nuclear

power plant is among the best in the world for pressurised water reactor power plants.

In 2021, the load factor of the Oskarshamn nuclear power plant’s unit 3 was 89.6%. The Oskarshamn plant is a boiling water reactor power plant.



80.8%
Asset availability of gas-fired and coal-fired power plants



Climate

Changes in our operating environment are driven by global megatrends that remain valid: climate change, technology development, active customers, and resource efficiency. The European Union is aiming for climate neutrality by 2050, and Fortum has set its climate targets accordingly. Climate change mitigation and adaption require political commitment and ambitious actions from different players in society.

Greenhouse gas emissions need to be reduced in all sectors, not just in energy, but also, e.g., in heating, cooling, industry, and transport. Electrification and sector integration mitigate climate change when electricity, replacing other energy sources, is produced and supplied by low-emission and renewable energy sources. Transitioning to a low-emission power system also enables the decarbonisation of other sectors through the coupling of CO₂-free power generation and green hydrogen.

During the first quarter of 2021, both Fortum and Uniper became supporters of the Task Force on Climate-related Financial Disclosures (TCFD). Fortum has a long-standing focus on mitigating climate change and adopted the reporting recommendations of the TCFD already starting from the financial year 2019. Uniper disclosed its first TCFD report, as part of Uniper's non-financial reporting, in spring 2022.

The following Climate section is ▶ [Fortum's Task Force on Climate-related Financial Disclosures](#) (TCFD) report. Uniper's information is partially included in Fortum's current TCFD reporting, as the alignment of the TCFD-required disclosures is still ongoing between the two companies.

Governance

Sustainability is an integral part of Fortum's strategy. The highest decision-making authority on sustainability and climate-related matters is with the members of the Fortum Board of Directors, who share joint responsibility for these matters. The Board of Directors annually approves Group performance targets, including sustainability and climate-related targets. The Audit and Risk Committee (ARC), members of Fortum Executive Management (FEM), and other senior executives support the Board of Directors in the decision making in these matters, when necessary.

The Senior Vice President, Corporate Affairs, Safety and Sustainability, has the overall responsibility for sustainability, which also includes climate-related issues in Fortum, excluding Uniper. She is a member of Fortum Executive Management (FEM), and, as a C-suite officer, she has the executive-level responsibility for Fortum's TCFD reporting. Uniper is not represented in FEM. The Group also has an Executive Forum comprising executive managers of both companies. During 2021, climate-related matters, including Scope 3 target setting, were discussed in the Executive Forum.

The Uniper SE Management Board bears the overall responsibility for the adoption and implementation of Uniper's sustainability measures, including climate-related measures. All members of Uniper's Board hold joint responsibility for adoption and implementation of Uniper's sustainability measures. Uniper's Chief Operating Officer holds the role of Chief Sustainability Officer in the Board of Management and acts as the spokesperson on climate-related matters. Uniper's Supervisory Board monitors the management of climate-related risks and opportunities as well as approves and oversees Uniper's decarbonisation strategy. Uniper's Supervisory Board is supported by the Audit and Risk Committee, which also reviews Uniper's TCFD report, as part of [► Uniper's non-financial reporting](#).

Uniper's Sustainability Council oversees and challenges the implementation of Uniper's overall sustainability framework, including climate-related matters. It acts as an advisory body for the Board

of Management. As of the fourth quarter of 2021, Fortum has been represented in Uniper's Sustainability Council.

Both Fortum and Uniper have a specific review of the key climate-related risks by a group of experts from selected functions, including Sustainability, Strategy, Risk Management, Market Intelligence, Public Affairs, and Investor Relations. Fortum's key climate-related risks are reported to FEM and the ARC as part of the annual review of material risks and uncertainties for Fortum. Responsibility for providing a consolidated view of Fortum's production portfolio, its long-term development, and its alignment with the Group's strategy and climate-related targets falls under the Strategy function. Concrete actions are executed by the line management according to the annual planning.

Fortum's climate-related risks are described in the [► Financials 2021](#) report in the section Risk management.

Strategy

Climate change is one of the main drivers behind Fortum's strategy. Our strategy is designed to secure a fast and reliable transition to a carbon-neutral economy by providing customers and societies with clean energy and sustainable solutions.

The Paris Agreement aims at limiting the global warming to well below 2°C and pursuing efforts to limit it to 1.5°C by the end of the century. A central part of the Paris Agreement is to strengthen the global response to climate change mitigation and adaptation. Ambitious actions and investments are required to ensure the transition to the sustainable and low-carbon energy system needed to limit global warming.

Fortum believes that good progress is being made in the transformation of the electricity sector, and, e.g., the EU emissions trading system will increasingly steer operations and investments towards CO₂-free production technologies. This will accelerate the low-carbon transition in society and create new business opportunities, but it alone will not be sufficient for the EU to meet the goals of the Paris Agreement. The European Union has agreed on the goal to achieve climate neutrality by 2050. This requires a reduction of greenhouse gas

emissions in all sectors, not just in energy but also in heating, cooling, industry, and transport; at the same time, carbon capture, utilisation and storage, and negative emissions must be increased.

Fortum has four strategic priorities to drive the energy transition and enable decarbonisation, affordability, and security of supply:

1. Transform own operations to carbon neutral
2. Strengthen and grow in CO₂-free power generation
3. Leverage the strong position in gas to enable the energy transition
4. Partner with industrial and infrastructure customers

Transform own operations to carbon neutral

In our first strategic priority, we focus on our own operations and power plants and reducing emissions from these sources. Fortum has committed to become carbon neutral (Scope 1, 2, and 3 emissions) by 2050, which is aligned with the goals of the Paris Agreement. Additionally, Fortum has committed to reduce CO₂ emissions (Scope 1 and 2) in the European generation by at least 50% by 2030 compared to base-year 2019 and to become carbon neutral (Scope 1 and 2) in the European generation by 2035.

By 2030, Fortum will phase out or exit about 8 GW of coal-fired power generation. For natural gas-fired power generation, alternatives to decarbonise and transition to clean gas (e.g. hydrogen) are being assessed and pursued continuously, though not all technical solutions are known yet. In Russia, we aim to transform our business portfolio over time by reducing fossil exposure.

Strengthen and grow in CO₂-free power generation

Fortum is currently the third largest CO₂-free power generator in Europe. We will optimise and maintain benchmark operations in hydro and nuclear power and grow a sizeable portfolio of onshore wind and solar. Our target is to build 1.5–2 GW of new renewable energy capacity by 2025, primarily in Europe.

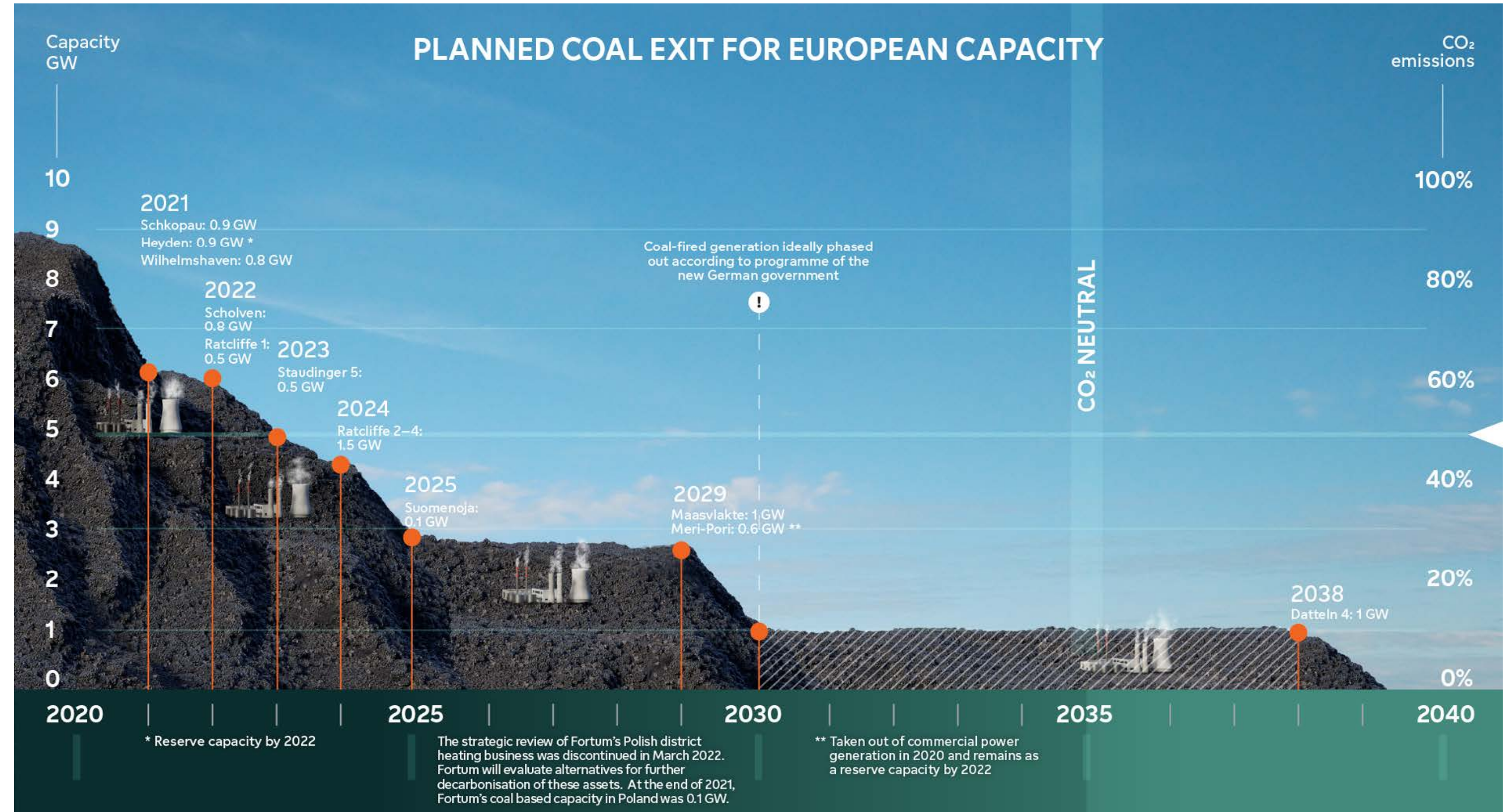
Leverage the strong position in gas to enable the energy transition

Fortum is a significant provider of flexible gas-fired generation and a major provider and trader of gas for European energy and industrial customers. We will decarbonise gas-fired power generation and transition to clean gases (e.g. hydrogen) over time, and we are actively assessing and pursuing opportunities for this. Examples of potential solutions include hydrogen conversion and carbon capture, utilisation and storage, though not all technical solutions are known yet or commercially available.

Partner with industrial and infrastructure customers

Fortum will utilise its competences to help customers reduce their carbon footprint and environmental impacts. Examples of services include grid stability services to TSOs (Transmission System Operators), waste-to-energy and recycling solutions, and low-carbon industrial solutions. We will also build on our first-mover position in hydrogen to support industries to decarbonise their processes.

In 2021, Fortum set a Scope 3 greenhouse gas (GHG) emissions target. Fortum has committed to reduce Scope 3 GHG emissions by 35% by 2035 at the latest (compared to base-year 2021). The Scope 3 target relates mainly to strategic priorities 3 and 4.



Scenario analysis

Fortum assesses external operating environment using four different scenarios, each describing a different degree of ambition in climate change mitigation, technological development, and evolution in the political landscape. We apply a scenario framework, where internal industry expertise is combined with assumptions derived from external benchmarks, such as the IEA (International Energy Agency), Bloomberg NEF, and IHS Markit.

The scenarios correspond to climate paths from below 2°C to over 3°C. Based on Fortum's assessment, the operating environment seems to be aligned with somewhat over 2°C global warming. It defines Fortum's base-scenario. All four scenarios are used in Fortum's risk assessment, in which 'well-below 2°C' is dominated by transition risks, whereas in higher temperature scenarios physical risks, both acute and chronic, are increasingly present.

The pricing of greenhouse gas emissions is at the centre of Fortum's scenarios. In Europe, the EU and the UK emissions trading systems (ETS) are expected to remain the key mechanism in reducing CO₂ emissions. Globally, we see a clear need for an increased ambition in both reducing emissions and improving resource efficiency, in order to be in line with the goals of the Paris Agreement.

Fortum Group's strategy is to transform own operations to carbon neutral, strengthen and grow in CO₂-free power generation, leverage strong position in gas to enable the energy transition, and partner with industrial and infrastructure customers. Most strategic actions going forward (e.g. coal phase-out, increase in renewables and clean gases) are largely resilient with 'well-below 2°C' scenario.

Uniper's scenario analysis and resilience tests are presented in Uniper's TCFD report, as part of [▶ Uniper's non-financial reporting](#).

Climate-related risks

The management of climate-related risks is integrated into Fortum's respective risk management frameworks and follows the same governance and processes as other material risks and uncertainties. Risks are regularly identified and assessed through a structured process. Risk owners are assigned for managing the risks and they are regularly reported and followed-up in various management teams and expert forums. As of 2022, Uniper will start to integrate the management of climate-related risks in its enterprise risk management (ERM) framework.

Climate-related risks are divided into two categories: transition risks and physical risks. The identified physical risks are generally found in the operational risk category, whereas transition risks are generally part of the strategic risk category.

Fortum's climate-related risks are also described in the [▶ Financials 2021](#) report in the section Risk management. As Uniper currently does not apply the same approach to climate-related risks, the transition risks and physical risks described below have been assessed for Fortum, excluding Uniper. Uniper's climate-related risks are described in Uniper's TCFD report, as part of [▶ Uniper's non-financial reporting](#).

Prevailing climate-related risks in Fortum's different temperature scenarios and risk assessment

FORTUM'S SCENARIO			RISK IMPACT ASSESSMENT IN 'WELL-BELOW 2°C' SCENARIO	KEY MITIGATING ACTIONS	
+1.5–+2°C	+2–+2.5°C	+2.5–+3.5°C			
PREVAILING TRANSITION RISKS IN THE SCENARIO					
Policy and legal risks	<ul style="list-style-type: none"> Highly ambitious EU and national climate and energy targets introduce inefficient, overlapping policies and non-market-based mechanisms, negatively impacting wholesale energy prices 	<ul style="list-style-type: none"> Ambitious EU climate policy and regulation frameworks maintained, but misalignment between revised EU targets and national climate ambitions leading to policy overlaps and diluting the EU ETS 	<ul style="list-style-type: none"> National and uncoordinated climate policies and regulation frameworks in the EU leading to, e.g., the EU ETS losing its relevance 	Hundreds of MEUR ¹⁾	Fortum's strategy is the priority to turn climate-related risks into opportunities. Fortum's four strategic priorities drive the energy transition and enable decarbonisation. Fortum is lobbying for: <ul style="list-style-type: none"> Coherence of targets and policies Carbon pricing as the main instrument in decarbonisation Holistic investment framework for all system services (clean energy, flexibility and capacity) Equal treatment of technologies in sustainable finance taxonomy Strengthening and enlarging the EU ETS
	<ul style="list-style-type: none"> Implementation of ambitious global climate targets through non-market-based and heavily regulated policies with high compliance costs, e.g., in Russia Risk of lower commodity prices and/or volumes 	<ul style="list-style-type: none"> Current ambitious level of climate targets prevails, but the risk of unforeseen changes may increase in regulatory framework 	<ul style="list-style-type: none"> Lack of ambitious climate targets for the globally largest emitters of greenhouse gases, meaning less growth opportunities in clean energy 		
	<ul style="list-style-type: none"> Strict sustainability requirements in the EU, impacting costs and availability of financing 	<ul style="list-style-type: none"> Discrepancy and unequal treatment of CO₂-free technologies, impacting costs and availability of financing 	<ul style="list-style-type: none"> Limited willingness to pay for clean energy and green products 		
	<ul style="list-style-type: none"> Strict biodiversity regulations limiting utilisation and new investments in CO₂-free energy sources, e.g., hydropower 	<ul style="list-style-type: none"> Biodiversity regulations, limiting hydropower production and new investments, e.g., in wind power 	<ul style="list-style-type: none"> Biodiversity constrains overcome climate credentials 		
	<ul style="list-style-type: none"> Climate-related litigation or lawsuits against states and companies 	<ul style="list-style-type: none"> Climate-related litigation or lawsuits against states and companies 	<ul style="list-style-type: none"> Climate-related litigation or lawsuits against states and companies 		
Technology risks	<ul style="list-style-type: none"> Speed of technological developments resulting in accelerated decrease in costs, and eroding the value of existing assets 		<ul style="list-style-type: none"> Technological developments not proceeding as anticipated, resulting in failure to achieve renewables business growth targets 	Hundreds of MEUR ¹⁾	<ul style="list-style-type: none"> Monitoring technological developments to ensure correct timing of investments and divestments Early insight through venturing and selectively investing in technology innovations Project participation in technological developments
	<ul style="list-style-type: none"> Technological and economical challenges, negatively impacting growth in green hydrogen Some other disruptive technology limits the anticipated hydrogen market growth 	<ul style="list-style-type: none"> Anticipated declines in costs, especially in green hydrogen, do not materialise, resulting in poor competitiveness of European green hydrogen 	<ul style="list-style-type: none"> Hydrogen market does not take off, resulting in failure to achieve growth ambitions 		
Market risks [impacts on supply and demand]	<ul style="list-style-type: none"> More volatile electricity and gas prices due to an increase in variable renewables production in the energy system 	<ul style="list-style-type: none"> Lower or stagnating electricity prices due to a low price of CO₂ emissions or lower than anticipated electricity demand growth due to, e.g., higher energy-efficiency gains 	<ul style="list-style-type: none"> Low market prices of electricity due to a low or inadequate price of CO₂ emissions, and low electricity demand 	Hundreds of MEUR ¹⁾	<ul style="list-style-type: none"> Adjust lobbying message to support fair remuneration for existing system-relevant capacity generation Improved modelling of market volatility to be able to take advantage of opportunities in hedging and trading Partnering with industrial customers to find new revenue streams from heating and cooling business
	<ul style="list-style-type: none"> Limited investments in dispatchable capacity, endangering security of supply Oversupply of renewable production due to non-market-based subsidies 	<ul style="list-style-type: none"> Limited investments in dispatchable capacity, endangering security of supply 	<ul style="list-style-type: none"> Share of fossil-fuelled power generation remains at a high level and stagnating renewable investments 		
	<ul style="list-style-type: none"> Lower heating demand due to, e.g., competing heating technologies and heat recovery 				
Reputation risks	<ul style="list-style-type: none"> Failure to decarbonise Fortum's business in line with goals of the Paris Agreement, and as requested by stakeholders such as investors, lenders and NGOs 	<ul style="list-style-type: none"> Failure to decarbonise Fortum's business as requested by stakeholders such as investors, lenders and NGOs 	<ul style="list-style-type: none"> Failure to decarbonise Fortum's business as requested by stakeholders such as investors, lenders and NGOs 	Reputation and brand impact	<ul style="list-style-type: none"> Constant evaluation of asset base Providing evidence of successful strategy implementation to investors Climate targets aligned with the goals of the Paris Agreement (Scope 1, 2 and 3) Structured approach for interactions with NGOs
	<ul style="list-style-type: none"> Failure to increase taxonomy-aligned economic activities, potentially impacting financing 	<ul style="list-style-type: none"> Failure to increase taxonomy-aligned economic activities 			
	<ul style="list-style-type: none"> Inability to provide adequate proof points to stakeholders supporting Fortum's decarbonisation strategy 				
	<ul style="list-style-type: none"> NGO activities targeting large emitters of greenhouse gases 	<ul style="list-style-type: none"> NGO activities targeting large emitters of greenhouse gases due to fossil-fuelled power generation 	<ul style="list-style-type: none"> NGO activities increasingly targeting large emitters of greenhouse gases due to fossil-fuelled power generation 		

1) Uniper has not been included in Fortum's impact assessment

FORTUM'S SCENARIO			RISK IMPACT ASSESSMENT IN 'WELL-BELOW 2°C' SCENARIO	KEY MITIGATING ACTIONS	
+1.5–+2°C	+2–+2.5°C	+2.5–+3.5°C			
PREVAILING PHYSICAL RISKS IN THE SCENARIO					
Acute risks	Extreme weather conditions leading to local damages, production losses, and supply constraints, e.g.:	Extreme weather conditions leading to local damages, production losses, and supply constraints, e.g.:	Extreme weather conditions leading to local damages, production losses, and supply constraints, e.g.:	Tens of MEUR ¹⁾	<ul style="list-style-type: none"> Increased preparedness for local flooding, storms, and forest fires, e.g., reviewing and updating business continuity plans Ensuring investments in long-term dam safety are included in climate change risk assessments
	<ul style="list-style-type: none"> Extreme heat waves and dry spells Intense storms with heavy wind, rain, and flash floods 	<ul style="list-style-type: none"> Increasing frequency of extreme heat waves and dry spells, causing, e.g., forest fires Increasing frequency of intense storms with heavy wind, rain, and flash floods, increasing the risk of dam breaches 	<ul style="list-style-type: none"> High frequency of extreme heat waves and dry spells, causing, e.g., forest fires High frequency of intense storms with heavy wind, rain, and flash floods 		
Chronic risks [change in long-term weather patterns]	Changes in long-term weather patterns impacting electricity supply via, e.g., hydropower and wind production, electricity, gas and heat demand, and the availability of cooling / process water needed at production facilities, e.g.:	Changes in long-term weather patterns impacting electricity supply via, e.g., hydropower and wind production, electricity, gas and heat demand, and the availability of cooling / process water needed at production facilities, e.g.:	Changes in long-term weather patterns impacting electricity supply via, e.g., hydropower and wind production, electricity, gas and heat demand, and the availability of cooling / process water needed at production facilities, e.g.:	Tens of MEUR ¹⁾	<ul style="list-style-type: none"> Improve modelling of climate change scenarios Investments in power generation flexibility Partnering with industrial customers to find new revenue streams from heating and cooling business Preparations for changes in the sourcing of cooling and process water Ensuring climate change scenarios are included in investment decisions in new businesses
	<ul style="list-style-type: none"> Increase in average temperatures (incl. water) 	<ul style="list-style-type: none"> Increase in average temperatures (incl. water) higher in the Nordics than the global average 	<ul style="list-style-type: none"> Increase in average temperatures (incl. water) higher in the Nordics than the global average 		
	<ul style="list-style-type: none"> Increased average precipitation in the Nordics and changes in seasonality (i.e. long wet and dry periods) 	<ul style="list-style-type: none"> Increased average precipitation in the Nordics and changes in seasonality (i.e. longer wet and dry periods) 	<ul style="list-style-type: none"> Increased average precipitation in the Nordics and changes in seasonality (i.e. longer wet and dry periods) 		
	<ul style="list-style-type: none"> Less or later precipitation as snow and earlier spring floods Changed wind patterns 	<ul style="list-style-type: none"> Low or later precipitation as snow and earlier spring floods Accelerated changes in wind patterns 	<ul style="list-style-type: none"> Low or later precipitation as snow and earlier spring floods Accelerated changes in wind patterns 		

1) Uniper has not been included in Fortum's impact assessment



Climate-related opportunities

Fortum believes that the growing awareness and concern about climate change will increase the market demand for low-carbon and resource- and energy-efficient products and services. We also believe that the electrification of transportation, industry, and services will increase the consumption of low-carbon electricity in particular. Business opportunities creating climate benefits are further supported by our business area-specific targets. The transition underway leads to structural changes in various industrial sectors, opening up new opportunities, energy sources, and markets.

Fortum has announced an indicative growth capex of EUR 3 billion for 2021–2025. The actual amount will depend on market conditions, asset rotation, and balance sheet strength. The growth capex will be used to finance investments in four focus areas:

- Renewables (50–55%)
- Hydrogen and clean gas (about 15%)
- Environmental and security of supply solutions
- Other (e.g., venturing, innovation, digitalisation)

Renewable and carbon-neutral energy sources

As the market transforms towards climate neutrality and Europe decarbonises its energy system, coal-fired power generation will be largely replaced by renewable energy sources, i.e. wind and solar power. This will also increase the demand and value of flexible hydropower as well as base-load production, such as nuclear power. As the third largest CO₂-free power generator in Europe, Fortum is well positioned to capture these opportunities.

In 2021, Fortum's CO₂-free power generation, including renewable energy and nuclear power, was 75 TWh. 64% of power generation in Europe, and 40% of total power generation globally was CO₂-free.

Fortum targets to build 1.5–2 GW of new renewable power generation by 2025, primarily in Europe. Fortum's investments in renewables, such as wind and solar power, are mainly done through partnerships (e.g. joint ventures and associates or other forms of cooperation). At the end of 2021, Fortum and Uniper announced the

investment decision for the construction of the 380-MW wind farm in Närpes and in Kristinestad, Finland. The wind turbines are expected to be fully commissioned in 2024.

In 2021, the refurbishments of Fortum's own hydropower plants in Sweden and Finland produced 5 MW of new renewable electricity production capacity, excluding Uniper.

In Finland, the **► Espoo Clean Heat** project is transforming the City of Espoo's district heating to carbon neutral by 2029. In 2021, the new 25-MW heat pump unit was commissioned at the Suomenoja plant. In 2022, Fortum will also increase its non-combustion-based heat production with the 11-MW air-to-water heat pump in Vermo, Espoo.

Carbon Capture and Storage (CCS) and Carbon Capture and Utilisation (CCU) are also key technologies in reaching climate neutrality. Fortum Oslo Varme's CCS project has been a full-scale pilot to test CO₂ capture at the Klemetsrud Waste-to-Energy plant in Norway since 2019. The project consists of a full CCS value chain, from capture to transport and storage of CO₂, and includes several industrial actors.

Uniper has joined in the Zero Carbon Humber partnership, a project to achieve net zero carbon by 2040 using blue and green hydrogen and CCUS (Carbon Capture, Utilisation and Storage) solutions in the UK.

In 2021, Fortum invested EUR 335 (EUR 372) million in CO₂-free energy production. Projects and investments under construction and decisions on new investments, as well as energy-efficiency and resource-efficiency improvements, are described in more detail in the sections **► Energy** and **► Circular Economy**.

Fortum's research and development (R&D) activities also aim at building a platform for future growth in, e.g., wind and solar power, demand response, and resource-efficient material recovery of batteries. In 2021, Fortum spent EUR 61 (EUR 56) million on research and development.

Energy markets and resilience during the transition

Fortum's climate advocacy is strongly based on climate science. In the Nordic countries, we are balancing with hydropower the growing, but

weather-dependent, fluctuating production of other renewable energy forms, like solar and wind power, and we are enabling their growth.

The role of gas-fired power plants as a source of flexibility will also grow during the transition, especially in Central Europe. Gas-fired power plants also ensure a reliable supply by balancing out the fluctuations in wind and solar power to keep the electricity grid stable. For example, two Combined-Cycle Gas Turbines (CCGTs) will be commissioned at the Scholven power plant in Germany in the fourth quarter of 2022. This reduces carbon dioxide emissions into the environment in relation to the produced energy.

In the longer-term, natural gas-fired power generation will be replaced by the use of increasingly clean gases, e.g., green hydrogen. Fortum and Uniper have one joint team focusing on the opportunities of hydrogen. We are looking forward to the possibilities to utilise our know-how of hydrogen and existing infrastructure at the power plants for hydrogen production, as the coal-fired power generation will be decommissioned.

Uniper also has cooperation with several plant suppliers to evaluate the feasibility of using hydrogen at power plants. For example, Uniper and its partner Ørsted will integrate wind power generation and a 70-MW electrolysis unit, which will be installed on the grounds of the decommissioned coal-fired Wilhelmshaven power plant in Germany. The unit is scheduled to begin producing green hydrogen in 2025. Uniper intends to expand Wilhelmshaven's production capacity to 410 MW by 2030.

In Russia, the majority of our energy production is based on natural gas. Fortum has completed major investment programmes over the past decade and has transformed inefficient power units to more efficient power units that mainly use CCGT technology, which represents the best available technology in natural gas combustion (efficiency 80–85%).

Accelerated coal-exit for power generation

In Fortum's first strategic priority, we focus on our own operations and power plants and reduce emissions from these sources. By 2030,

Fortum will phase out or exit about 8 GW of coal-fired power generation, mainly in Europe.

In Finland, Fortum's coal-fired Meri-Pori power plant has been selected for 440 MW of power generation capacity for the national peak-load reserve capacity system from July 2020 to June 2022. Fortum has also set a goal to discontinue the use of coal at the Suomenoja power plant in Espoo by 2025.

Fortum will phase out or exit its coal-fired power generation in Germany, with the exception of the coal-fired Datteln 4 power plant, by 2025, in the United Kingdom by 2024, and in the Netherlands by 2029.

In Germany, Uniper's 58% stake of the lignite-fired 900-MW Schkopau power plant was sold in 2021. The 757-MW Wilhelmshaven power plant ceased coal-fired power generation at the end of 2021, and the focus will be on hydrogen. The coal-fired 875-MW Heyden power plant was taken out of commercial power generation at the end of 2020, and the power plant remains as a reserve capacity from July 2021 to September 2022, by the announcement of the German Federal Network Agency.

The coal-fired 345-MW Scholven C plant unit will cease commercial power generation at the end of October 2022, by the announcement of the German Federal Network Agency, and will be permanently decommissioned then. There is an ongoing construction project of two new CCGTs to replace the existing coal-fired Scholven power plant. The coal-fired 510-MW Staudinger 5 plant unit will be closed in May 2023.

In the United Kingdom, one of four 500-MW units of the coal-fired Ratcliffe power plant will be closed at the end of September 2022, which is two years earlier than the date announced by the UK Government for the coal phase-out.

In Poland, the old coal-fired Zabrze and Bytom CHP plants have been decommissioned and will be removed completely from operating capacity in 2022 onwards.

In July 2021, Fortum sold its coal-fired Argayash CHP plant. Following the decision earlier in 2021 to transition from coal to gas at the Chelyabinsk CHP-2 plant, this transaction will reduce annual CO₂ emissions by approximately 2 million tonnes and allow the Russia

division to discontinue its use of coal by the end of 2022. This leaves only Uniper’s Berezovskaya power plant without a clear coal-exit path in Fortum Group’s Russian operations.

Coal-fired generation capacity per asset, MW ¹⁾

Meri-Pori, Finland	565*
Suomenoja CHP, Finland	85
Datteln 4, Germany	1,052
Heyden, Germany	875**
Scholven, Germany	760
Staudinger 5, Germany	510
Maasvlakte, the Netherlands	1,070
Zabrze and Czestochowa CHP, Poland	94
Berezovskaya, Russia	2,263
Chelyabinsk CHP-2, Russia	74
Ratcliffe, the UK	2,000
Total	9,348

1) As of year-end 2021

* Reserve capacity by 2022

** Taken out of commercial power generation in 2020; remains as a reserve capacity by 2022

Products and services

We offer our customers a range of energy products and services to help them improve their energy efficiency and reduce their carbon footprint, among others:

- CO₂-free electricity products and carbon-neutral heat products
- Real-time monitoring and optimisation of electricity consumption
- Electric vehicle (EV) charging solutions

Additionally, we are expanding our offering by investing in start-ups that are developing new technologies.

▶ Customers

Climate engagement lobbying

Fortum’s climate policy advocacy is strongly based on climate science, and support for the Paris Agreement is the core principle underpinning Fortum’s climate advocacy. Fortum has expressed its support for the EU 2050 climate-neutrality goal and the revised 2030 target of at least 55% emission reduction, and we continue to lobby for legislation and policy instruments that will facilitate a cost-efficient transition towards a climate-neutral Europe by 2050.

Since the early 2000s, Fortum has been a firm supporter of ambitious EU climate policy with the EU emissions trading system (ETS) as the main instrument to implement and drive the climate policy objectives in the sectors covered by the tool, i.e. energy and industries. We believe that market-based, technology-neutral, and flexible carbon pricing is the most efficient and cost-effective way to drive decarbonisation in Europe.

In parallel with lobbying for tighter targets and a more extensive EU ETS system, Fortum has advocated for the establishment of a global carbon pricing and carbon market in the context of various EU level and international initiatives. Fortum, excluding Uniper, is participating in a number of international initiatives promoting the role of business in climate change mitigation. These include, for example, the UN Global Compact’s Caring for Climate initiative and the World Bank’s Carbon Pricing Leadership Coalition.

In line with Fortum’s updated strategy, climate lobbying is in the core of Fortum’s public affairs. Fortum pursues transparent, solution-driven, constructive, pro-active, forward-looking, and fact-based lobbying based on robust governance procedures. Corporate Affairs and Communications has the main responsibility for political engagement.

Fortum actively contributes to various public consultations at the EU level and at the national level, and we publish all our position papers on our website. We also share our views and knowledge through other means of communication, such as through Fortum’s Corporate blog. Fortum’s core climate message has systematically been consistent: the EU climate policy ambition should be increased, the steering effect

of the EU ETS should be strengthened, and more sectors should be brought into the scope of the EU ETS.

In addition to its own direct lobbying, Fortum is involved in several industry associations and company coalitions doing joint climate engagement lobbying. We publish information about our memberships in key industry associations on our website. The key industry associations include, among others, Eurelectric, Euroheat and Power, IETA, Finnish Energy, and Swedenergy. These organisations work on a consensus principle, and, therefore, their positions sometimes remain at a more general level than the individual company positions. The alignment of industry associations with our positions varies case by case, recognising that associations differ in terms of the profile of their members and the scope of their activities.

Fortum, excluding Uniper, never uses third parties to lobby for it. We strive for continuous development of our lobbying skills and practices with the aim to become a benchmark in lobbying among energy industries. Fortum does not make payments to political parties, organisations, or their representatives. Fortum is registered in the EU Transparency Register, ID: 03501997362-71. Respectively, Uniper’s number in the Register is 285977820662-03.

Climate Lobbying Review

Fortum wants to be a forerunner in driving greater corporate transparency and accountability relating to climate change advocacy and to lobbying in general. In addition, we strive to meet the increasing expectations of the investor community regarding corporate climate actions and transparency in climate lobbying. As we are committed to the goals of the Paris Agreement, we want to ensure that the associations where we are a member are also lobbying in line with the Paris Agreement and our climate advocacy principles.

On this basis, Fortum carried out its first Climate Lobbying Review in 2021. The review was conducted by a third-party consultant. The review included the assessment of 15 industry associations and the assessment of Fortum’s own climate policy positions. We selected the associations based on a couple of criteria: we consider them to be

influential in climate-related public policy, they operate in regions or countries where we have significant business activities, and Fortum is considered influential in those industry associations. The selected associations represent the geographical coverage of our operations: Europe, Russia, and India.

The review included a thorough desktop review of the associations' climate policy priorities and positions from 2019 until now through publicly available materials. When information was not available publicly, complimentary interviews were conducted directly with the associations.

The review showed that seven of the 15 associations reviewed are already fully aligned with the Paris Agreement and Fortum's climate advocacy principles. Eight associations are partially aligned, including one misalignment on a key principle. When misalignments occur, they are often partial and explained by differences in preferred policy options or priorities.

According to the review, Fortum's own climate lobbying positions are well aligned with the Paris Agreement. A key milestone still ahead is establishing a roadmap for our long-term target of carbon neutrality globally by 2050. In order to increase transparency and dialogue, we should also aim to make information on key climate principles and lobbying positions more readily and aggregately available to external stakeholders.

We consider this Climate Lobbying Review a continuously developing process and dialogue with our industry associations. Based on the current review, we will monitor and address misalignment whenever the associations' current positions differ from our climate advocacy principles. We will have bilateral discussions with those associations that are partially aligned or misaligned and encourage them to take development actions. We will report on the progress of this dialogue and explain the actions we took as a result of this first review in our next Climate Lobbying Review in 2022.

► Fortum's Climate Lobbying Review

Metrics and targets

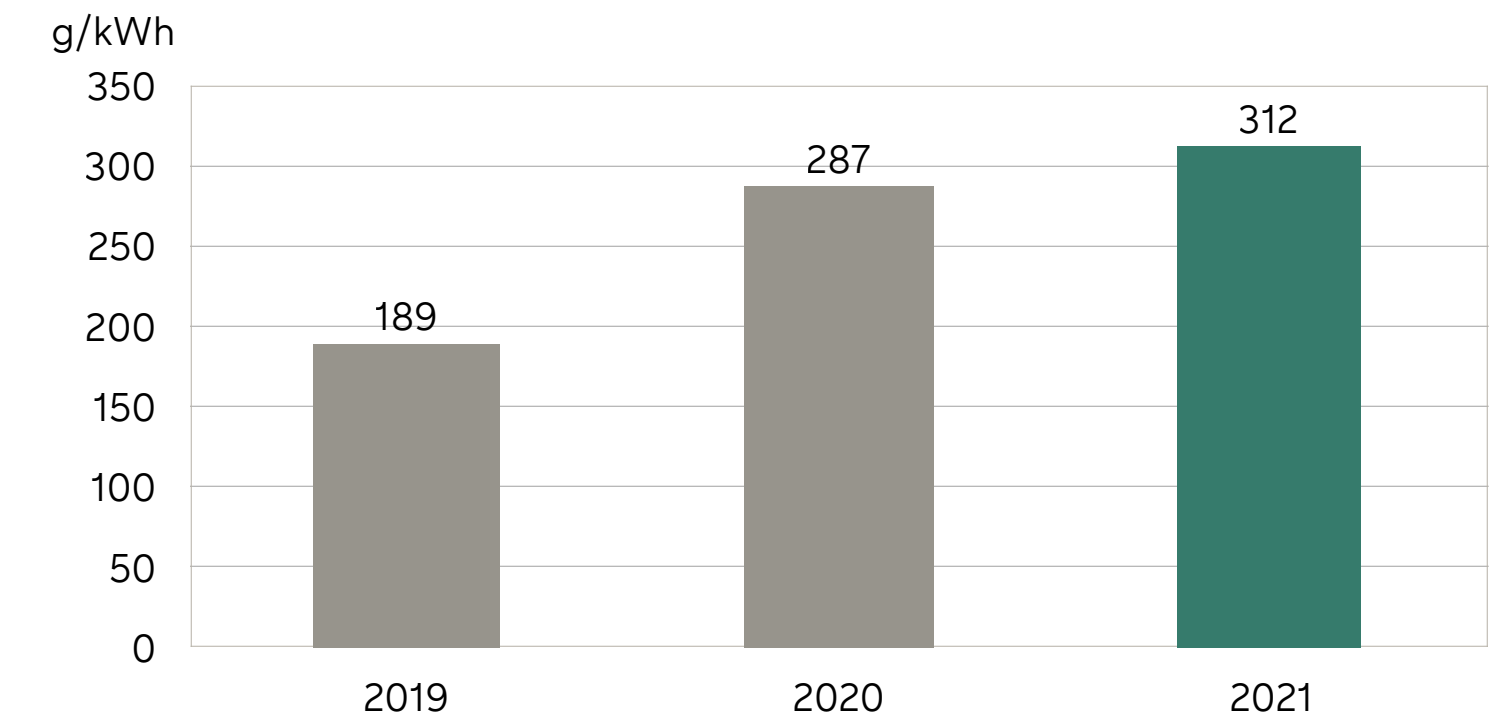
Transforming our own energy production and operations to carbon neutral is a strategic priority for us. In 2021, we also developed a new target for the reduction of indirect Scope 3 greenhouse gas (GHG) emissions, which play a significant role in our total greenhouse gas emissions.

To accelerate the development, we have committed to the following ambitious climate targets:

- Reduction of CO₂ emissions (Scope 1 and 2) in European generation by at least 50% by 2030 (compared to base-year 2019)
- Carbon neutral (Scope 1 and 2) in European generation by 2035 at the latest
- Reduction of Scope 3 GHG emissions by 35% by 2035 at the latest (compared to base-year 2021)
- Carbon neutral (Scope 1, 2, and 3 emissions) globally, in line with the goals of the Paris Agreement, by 2050 at the latest

Fortum's long-term incentive (LTI) programme includes a climate-related metric. In the 2021–2023 LTI plan, the target is linked to the reduction of Fortum's coal-fired power generation capacity in line with Fortum's coal-exit path. In the 2022–2024 LTI plan, the target is related to the reduction of absolute CO₂ emissions in the European fossil fleet, based on a fossil fleet review addressing the Group's European generation portfolio and a pathway developed to reach Fortum Group's 2030 and 2035 climate targets. Uniper continues to follow its own LTI plans. However, the carbon-related metric in the 2022–2024 LTI plan is applicable to both companies. Scaling of LTI metric is company-specific.

Specific carbon dioxide emissions from total energy production in 2019–2021 ¹⁾



¹⁾ Uniper consolidated as of Q2/2020

312 gCO₂/kWh

Specific CO₂ emissions from total energy production

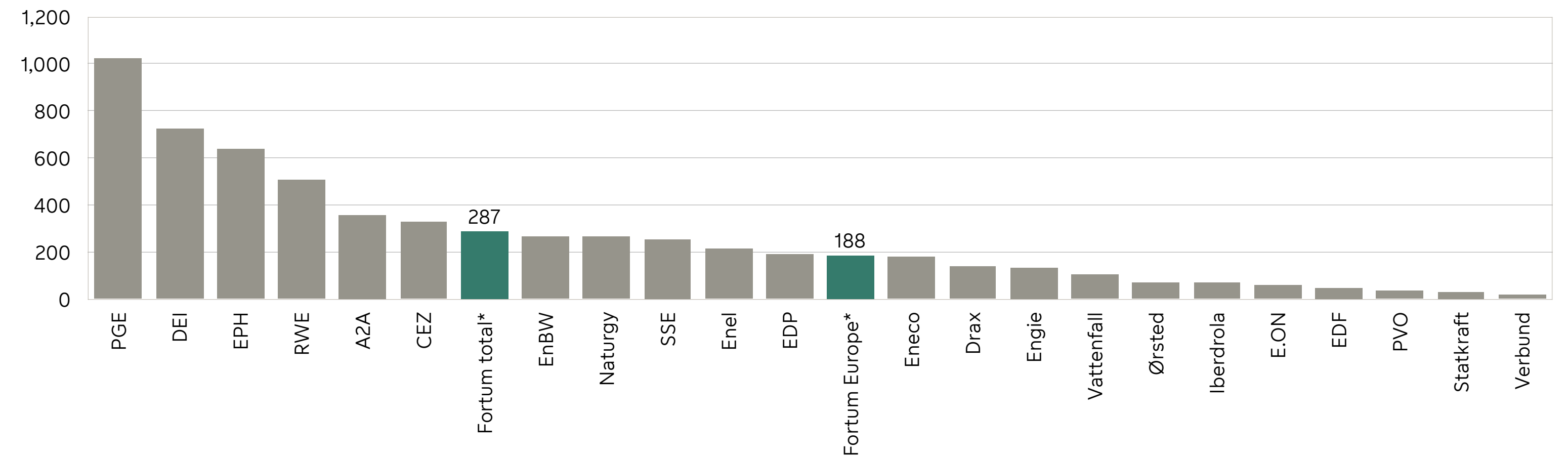
Fortum’s specific carbon dioxide emissions (Scope 1) from total energy production in 2021 were 312 (2020: 287) gCO₂/kWh. Our carbon dioxide emissions from total energy production in Europe were 231 (2020: 188) gCO₂/kWh.

The boundary for specific carbon dioxide emissions generated from energy production differs from other environmental [reporting principles](#). The figures include also figures from Fortum’s share in associated companies and joint ventures that sell their production to the owners at cost. This electricity production is based on hydro, wind, and nuclear power, and the production doesn’t cause direct carbon dioxide emissions.

In calculating the specific carbon dioxide emissions, CHP plant emissions have been allocated for electricity and heat using the efficiency method presented in the Greenhouse Gas (GHG) Protocol guidelines, with heat production efficiency of 90% and electricity production efficiency of 40%.

Our power and heat production as well as our energy-efficiency improvements are described in the section [Energy](#), and our water withdrawal at power plants located in high and extremely high water-stressed areas is described in the section [Water](#).

Specific CO₂ emissions of major utilities in Europe, gCO₂/kWh electricity, 2020



* “Fortum total” and “Fortum Europe” include specific carbon dioxide emissions from power and heat production in 2020. “Fortum total” and “Fortum Europe” include Uniper from the second-quarter of 2020. All other figures, except “Fortum total” and “Fortum Europe”, include European power generation in 2020. For some companies the PwC figures might also include heat production. Source: PwC, October 2021, Climate change and Electricity, Fortum

Greenhouse gas emissions

Fortum’s greenhouse gas emissions are defined and reported according to the Greenhouse Gas (GHG) Protocol guidelines. Our greenhouse gas emissions in 2021 totalled 190.2 (2020: 77.7) million tonnes. Scope 1 emissions were 69.1 (2020: 49.0) million tonnes, Scope 2 emissions 0.8 (2020: 0.8) million tonnes, and Scope 3 emissions 120.2 (2020: 27.8) million tonnes.

The figures for the comparison years for greenhouse gas emissions have not been adjusted or restated, due to insufficient data.

Direct greenhouse gas emissions – Scope 1

Fortum’s Scope 1 greenhouse gas emissions accounted for about 36% of total greenhouse gas emissions. In 2021, our Scope 1 direct greenhouse gas emissions were 69.1 (2020: 49.0) million CO₂-eq tonnes. The share of carbon dioxide emissions from our direct greenhouse gas emissions was 99%.

The majority of Fortum’s direct CO₂ emissions, 68.7 (2020: 48.7) million tonnes, are generated from the use of fossil fuels in energy production. Of our direct carbon dioxide emissions, 57% originated from the Russian operations, 20% from Germany, 12% from the United Kingdom, 6% from the Netherlands, and 1% from Hungary as well as from Finland.

Of the direct carbon dioxide emissions in 2021, 28.9 (2020: 17.5) million tonnes were within the EU and the UK emissions trading system (ETS). About 42% of CO₂ emissions from our energy production in Europe were within the sphere of the EU and the UK ETS. In 2021, Fortum was granted free emission allowances corresponding to 0.4 (2020: 0.9) million tonnes. In terms of emission allowances, we had a deficit and purchased the shortfall of emission allowances from the markets.

In 2021, Fortum’s direct biogenic carbon dioxide emissions were about 2.5 (2020: 2.3) million tonnes.

Fortum’s Scope 1, 2, and 3 greenhouse gas emissions

Scope 3

Indirect greenhouse gas emissions from Fortum Group’s value chain

The majority of Scope 3 emissions are caused by customers’ use of fossil fuels (i.e. natural gas, LNG, coal) provided by Fortum Group, the procurement of fuels for Fortum Group’s own use, electricity retail for customers, as well as Fortum Group’s upstream transportation and distribution, purchased goods and services, and capital goods, i.e. investments.

Scope 2

Indirect greenhouse gas emissions

Fortum Group’s Scope 2 emissions are generated from the production of electricity and heat purchased for Fortum Group’s own use, for example, at offices and during maintenance shutdowns at power plants.

Scope 1

Direct greenhouse gas emissions

The majority of Fortum Group’s direct CO₂ emissions are generated from the use of fossil fuels in energy production. Additionally, quite a small amount of direct emissions are generated from the use of company vehicles.



Direct greenhouse gas emissions (Scope 1) in 2019–2021 (GRI 305-1) ¹⁾

Mt CO ₂ -eq	2021	2020	2019
CO ₂	68.7	48.8	19.1
CH ₄	0.1	0.08	0.01
N ₂ O	0.3	0.2	0.1
HFCs	0.00	0.00	0.00
SF ₆	0.00	0.00	0.00
Total	69.1	49.0	19.3

1) Uniper consolidated as of Q2/2020

Direct carbon dioxide emissions by country in 2019–2021 (GRI 305-1) ¹⁾

Mt	2021	2020	2019
Russia	39.0	30.5	16.3
Germany	13.6	9.0	-
United Kingdom	8.6	3.3	-
Netherlands	4.4	3.1	-
Hungary	0.8	0.6	-
Finland	0.8	0.8	1.3
Poland	0.8	0.7	0.8
Other countries	0.7	0.8	0.8
Total	68.7	48.8	19.1

1) Uniper consolidated as of Q2/2020

The calculation of greenhouse gas emissions covers carbon dioxide (CO₂), methane (CH₄), nitrous oxide (N₂O), fluorinated hydrocarbons (HFCs), and sulphur hexafluoride (SF₆). Carbon dioxide emissions as well as methane and nitrous oxide emissions have been calculated on the basis of plant-specific fuel data. The amounts of HFC compounds and SF₆ are mainly reported on the basis of the amounts of gas added to the equipment. Specific emission factors of gases are based on IPCC publications (IPCC Fifth Assessment Report, 2014 (AR5), 100-year time horizon).

Indirect greenhouse gas emissions – Scope 2

Fortum’s Scope 2 greenhouse gas emissions accounted for less than 1% of total greenhouse gas emissions. Our market-based Scope 2 greenhouse gas emissions from the production of electricity purchased for our own use were 0.8 (2020: 0.8) million CO₂-eq tonnes.

Market-based and location-based indirect greenhouse gas emissions (Scope 2) in 2019–2021 (GRI 305-2) ¹⁾

t CO ₂ -eq	2021	2020	2019
Market-based, Total	842,200	811,700	84,200
Location-based, Total	650,700	632,000	134,100

1) Uniper consolidated as of Q2/2020

Scope 2 greenhouse gas emissions in Russia have been estimated based on a country-specific breakdown of electricity production and specific emission factors for both a market-based and a location-based approach.

Other indirect greenhouse gas emissions – Scope 3

Fortum’s Scope 3 greenhouse gas emissions accounted for about 63% of our total greenhouse gas emissions. Our Scope 3 greenhouse gas (GHG) emissions in 2021 were estimated to be 120.2 (2020: 27.8) million tonnes. Our Scope 3 emissions originate mainly from fossil energy sources.

During 2021, Fortum together with Uniper conducted an in-depth review of the Scope 3 GHG emissions inventory. Where possible, also the accounting methodologies of Scope 3 GHG emissions were aligned. As part of the review, and to offer a full transparency of greenhouse gas emissions, Scope 3 category 11 was expanded to include not only emissions from the use of fossil fuels sold to end-users, but also sold to resellers. This expansion of the accounting scope resulted in a significant increase of Scope 3 category 11 GHG emissions.

Uniper’s GHG emissions of upstream transportation and distribution of natural gas, and downstream transportation and distribution of fossil

fuels were included in 2021, as well as Uniper’s GHG emissions of waste and gypsum treatment.

The majority of our Scope 3 greenhouse gas emissions are caused by the use, transportation and distribution of sold products, such as natural gas, LNG and coal, the procurement of fuels and electricity retail, the purchase of goods and services, and capital goods, i.e. investments. Residual mix emissions of electricity retail have been included since 2020.

Indirect greenhouse gas emissions (Scope 3) in 2019–2021 (GRI 305-3) ¹⁾

t CO ₂ -eq	2021	2020	2019
Use of sold products (category 11)	79,174,300*	10,422,900	-
Fuel procurement and electricity retail (category 3) ²⁾	22,285,400	15,408,900	5,195,700
Upstream transportation and distribution (category 4)	17,170,800**	767,300	200
Purchased goods and services (category 1)	930,400	688,300	319,900
Capital goods (category 2)	380,800	381,100	273,300
Processing of sold products (category 10)	140,900***	100****	400
Upstream leased assets (category 8)	56,900	153,100	-
Downstream transportation and distribution (category 9) ³⁾	54,600	-	-
Other activities (categories 5–7)	33,900	14,700****	19,800
Total	120,228,000	27,836,400	5,809,300

1) Uniper consolidated as of Q2/2020

2) Electricity retail not included in 2019

3) Data not available in 2020. Category 9 not applicable in 2019

* Fossil fuels sold to resellers included

** Upstream transportation and distribution of natural gas included

*** Processing of Uniper’s gypsum included

**** Uniper has not included Scope 3 categories 5 and 10 in its GHG emissions.

The use of sold products, i.e. sales of fossil fuels to end-users and resellers, accounted for 66%, and the production, and transportation of fuels and electricity retail accounted for 19% of Scope 3 greenhouse gas emissions.

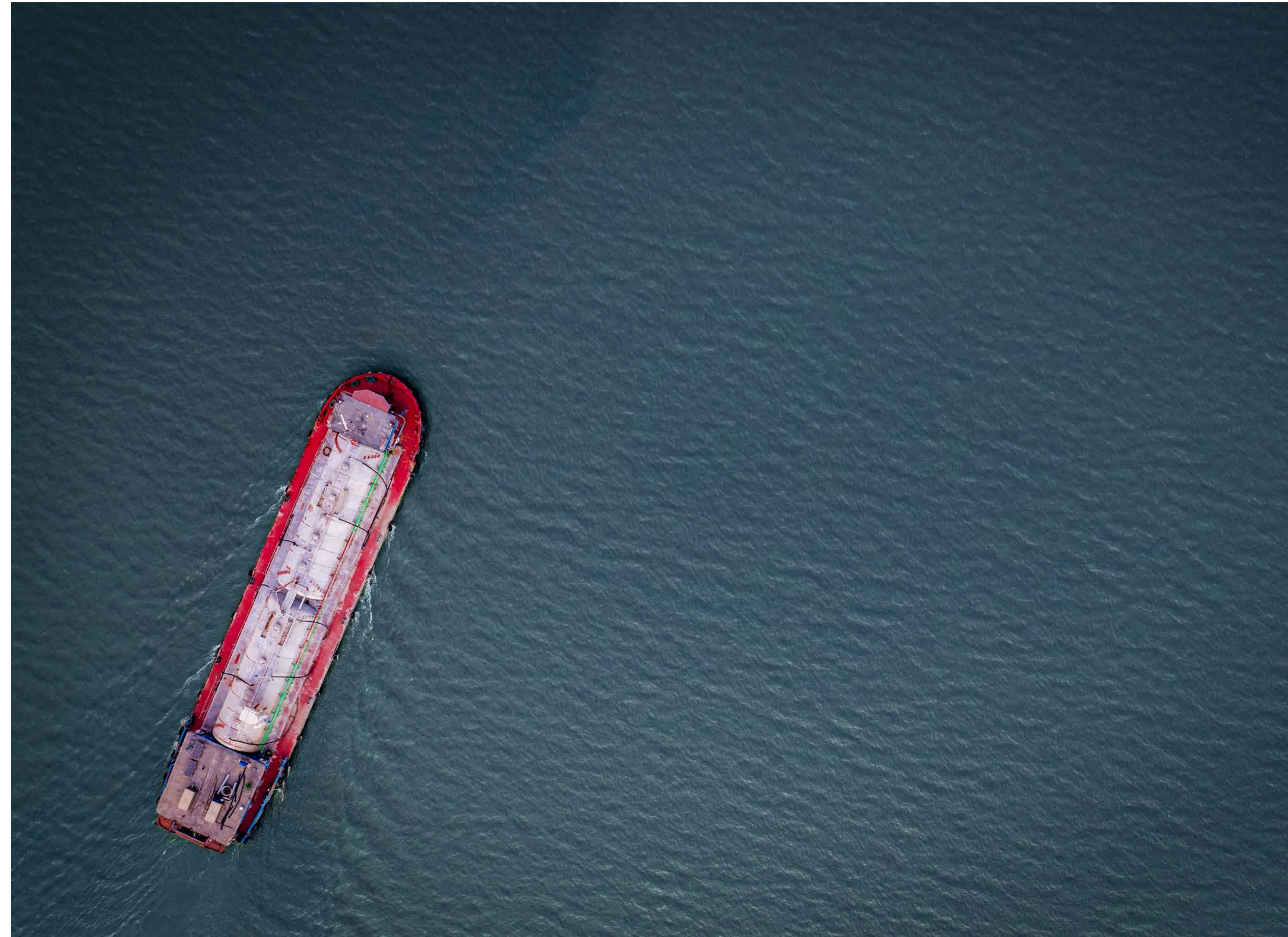
Fortum reports Scope 3 greenhouse gas emissions in accordance with the requirements of the Corporate Value Chain Accounting and Reporting standard. The volumes describing the scope of the various activities have been obtained from our monitoring and reporting systems.

The specific emission factors used in calculating the greenhouse gas emissions are based on different literature sources.

Compensation of emissions from air travel

Fortum's, excluding Uniper, GHG emissions from employee air travel have been compensated for since 2007. In 2021, Fortum's GHG emissions of employee air travel were about 1,000 (2020: 1,900) CO₂-eq tonnes. Fortum has used the Certified Emission Reduction (CER) units received earlier from the World Bank's Prototype Carbon Fund (PCF) to compensate for GHG emissions generated by employee air travel.

▶ [Fortum's CDP Climate Change 2021 response](#)



EU Taxonomy

The EU Taxonomy Regulation is a classification system for defining economic activities that can be considered environmentally sustainable. The regulation provides specific key performance indicators (KPIs) that entities are required to report for their environmentally sustainable economic activities. The regulation is being implemented with a phased entry into force with simplified reporting requirements.

Fortum’s disclosure has been prepared in accordance with the EU Taxonomy Regulation Delegated Act of 6 July 2021. For the financial year ending on 31 December 2021, Fortum reports the proportion of Taxonomy eligible activities and Taxonomy non-eligible activities in relation to the three KPIs (Sales, Operating expenses and Capital expenditure). Reporting on Taxonomy alignment will be done for the financial year ending on 31 December 2022. The reporting scope includes Fortum’s subsidiaries consolidated to the Group as of 31 December 2021.

► Financials 2021

In 2021, Fortum classified its economic activities to eligible and non-eligible corresponding to economic activities described in the Climate Delegated Act. Fortum’s business operations were evaluated according to the descriptions of economic activities listed in Annex I (climate change mitigation) and Annex II (climate change adaptation) and the related NACE codes provided in these descriptions. The review was done at power plant or individual business activity level. Fortum assessed climate change mitigation to be the most relevant objective against which the eligibility of economic activities was reviewed.

Fortum’s most relevant eligible activities are:

- Electricity generation from hydropower
- Storage of electricity
- District heating/cooling distribution
- Material recovery from non-hazardous waste
- Production of heat/cool from bioenergy
- Production of heat/cool using waste heat
- Electricity generation from wind power

Non-eligible economic activity does not correspond to any activity description provided in the Climate Delegated Act. Fortum’s non-eligible

activities include electricity and commodities trading, fossil-based power and heat generation, engineering services related to non-renewable assets, as well as administrative overheads.

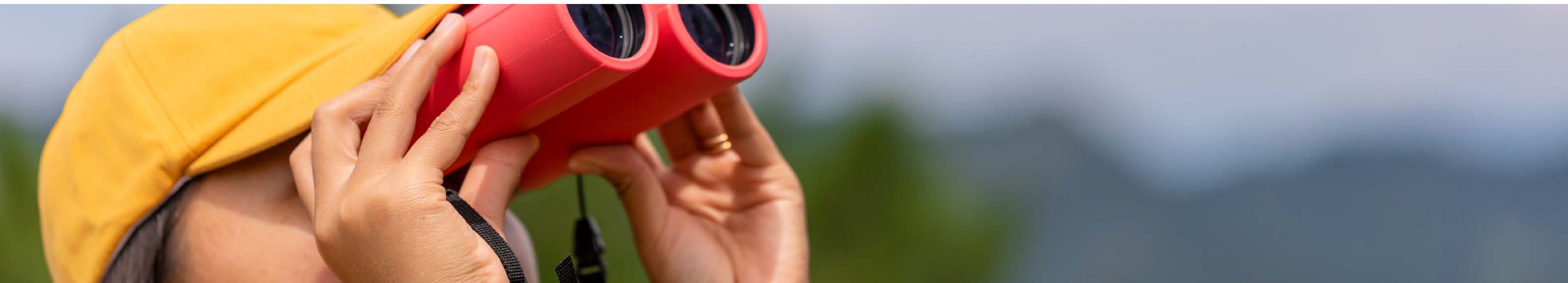
In addition, Fortum has economic activities that are not currently covered by the EU Taxonomy, such as nuclear energy and natural gas, as well as waste-to-energy and circular economy activities.

KPIs for climate change mitigation

	Total MEUR	Eligible, %	Non-eligible*, %
Sales	112,400	2	98
Operating expenses	1,809	11	89
Capital expenditure	1,391	23	77

* Includes non-eligible activities, activities currently not covered by the taxonomy, as well as the impact from divestments made during 2021.

The most significant eligible economic activity in Fortum Group is electricity generation from hydropower with an installed capacity of 8.4 GW (18% of total power generation capacity) in the Nordics and Germany.



Emissions

Energy production and other production operations generate emissions to the environment, such as to air and water. We aim to control emissions caused by our operations and to reduce their environmental impacts by using technological solutions and flue-gas cleaning technologies.

Emissions to air

Greenhouse gases that accelerate global climate change are generated primarily from the use of fossil fuels and the combustion of fossil-based waste. Flue-gas emissions causing local environmental and health impacts are generated from all combustion.

We aim to reduce impacts on air quality

Nitrogen oxides (NO_x) are generated from the nitrogen contained in the fuel and in the combustion air. Sulphur dioxide (SO₂) is generated from the sulphur that is an impurity in, for example, coal, peat, and oil. Particle emissions are fine-grained ash generated primarily in the combustion of solid fuels and waste. Depending on the origin of the fuel and waste, the particles contain various heavy metals. It is possible to decrease nitrogen oxide, sulphur dioxide, and particle emissions through fuel choices, combustion technology, and various flue-gas cleaning technologies.

We have reduced flue-gas emissions in Poland with the commissioning of the new multi-fuelled Zabrze CHP plant, which has implemented Best Available Techniques (BAT), and, correspondingly, with the decommissioning of the old coal-fired Zabrze and Bytom CHP plants.

Fortum's waste incineration plants located in Riihimäki, Finland, in Kumla, Sweden, in Nyborg, Denmark, and in Oslo, Norway, are equipped with efficient flue-gas cleaning systems. Harmful emissions to air are minimised through the use of various filters and scrubbers selected on the basis of the waste to be incinerated.

Our carbon dioxide emissions are reported in the section ▶ [Climate](#).

Flue-gas emission requirements

The EU has set very strict limits for flue-gas emissions; meeting the requirements necessitates the use of Best Available Techniques (BAT). The BAT Reference (BREF) document sets stricter emission standards that European power plants must meet unless they obtain a formal derogation.

All Fortum's power plants operate in compliance with the terms of their environmental permits, and, for the most part, the plants also meet the new emissions requirements in Europe. In Germany, e.g., the Datteln 4 power plant is equipped with an advanced multi-step flue-gas cleaning system for controlling and reducing nitrogen oxide, sulphur dioxide, and particle emissions.

In 2021, new investments were made, e.g., in a flue-gas cleaning system at the Czestochowa CHP plant in Poland. Additionally, an upgrading project was carried out to reduce NO_x emissions at the Kirchmöser power plant in Germany.

Emissions at Russian power plants are limited in accordance with Russian legislation. At the lignite-fired Berezovskaya GRES plant, all three units have electrostatic precipitators installed to enable the efficient removal of particle emissions.

Our flue-gas emissions

Our nitrogen oxide (NO_x) emissions were 63,900 (2020: 50,200) tonnes, our sulphur dioxide (SO₂) emissions 20,400 (2020: 17,900) tonnes, and our particle emissions 8,000 (2020: 9,600) tonnes. 75% of nitrogen oxide, 69% of sulphur dioxide, and 95% of particle emissions originated from Russian operations in 2021.

The reporting of at least nitrogen oxide, sulphur dioxide, and particle emissions from our European power plants is based on continuous measurements. Other flue-gas emissions data are based on discontinuous measurements or are calculated using fuel consumption data and specific emission factors. Specific emission factors are based on measurements taken at regular intervals, on information from the equipment supplier, or on regulatory norms.

Flue-gas emissions in 2019–2021 (GRI 305-7) ¹⁾

	2021	2020	2019
NO _x , t	63,900	50,200	24,900
SO ₂ , t	20,300	17,900	14,900
Particles, t	8,000	9,600	11,700
Mercury, kg	369*	248*	116

¹⁾ Uniper consolidated as of Q2/2020

* The figure is a calculated estimation.

Emissions to water

Wastewater generated at power plants and other production facilities is treated either at the plant's own wastewater treatment plant and discharged into a water system or it is piped to a municipal wastewater treatment plant for further processing. Even after treatment, plant wastewater may contain solids, nutrients, like nitrogen and phosphor, and heavy metals.

Wastewater effluents can impact local water quality as well as the nutrient and oxygen balance of the water system. In 2021, about 1.8 (2020: 1.0) tonnes of oil were released into water systems through wastewater generated in Fortum's operations, excluding Uniper.

At the Chelyabinsk CHP-2 plant and the Argayash CHP plant in Russia, the wet method is used to pump ash from the power plants into ash ponds. Some of the water from the ponds is recycled back to the power plants and some is released into a water system after sedimentation.

Investment plans for the Chelyabinsk CHP-2 plant and the Chelyabinsk CHP-3 plant have been made to improve the wastewater treatment and to ensure that wastewater discharges comply with the permit limits in Russia. The Chelyabinsk CHP-3 plant investment project is estimated to be completed in 2023 and the Chelyabinsk CHP-2 plant project in late 2025.

In addition, in 2021, the water treatment process was improved to reduce wastewater emissions at Karlshamn power plant in Sweden.



Environmental incidents

Fortum regularly monitors the major EHS (Environmental, Health and Safety) incidents. These, in part, reflect the quality of environmental management. As Uniper's definitions of major EHS incidents vary from the rest of the Fortum Group, Uniper's EHS incidents were not included in Fortum's reporting in 2021.

Major environmental incidents include major spills and leaks of over 100 litres into the environment, significant environmental permit violations, and other major environmental non-compliances that have a significant impact on the environment. In 2021, major environmental incidents excluded the exceedances of wastewater emissions limits in Russia, arising from environmental permit change.

In 2021, there were eight (2020: 16) major EHS incidents, excluding Uniper; four (2020: 9) of them were classified as major environmental incidents. Three (2020: 8) were major spills and leaks into the environment, and one (2020: 1) was a major environmental non-compliance.

Additionally, the major EHS incidents consisted of two (2020: 6) major fires, one (2020: 0) explosion, and one (2020: 1) INES (International Nuclear Event Scale) level 1 incident.

Spills and leaks into the environment

In 2021, there were three major spills and leaks into the environment, excluding Uniper. Major spills and leaks are defined as over 100 litres of harmful material, such as oil, hazardous chemicals, wastewater, or flammable gas, into the ground, water, or air.

Two of major leaks occurred in the recycling and waste operations in Finland. Additionally, there was an oil leak at a hydropower plant in Sweden. All incidents have been investigated to determine the corrective actions. The spills and leaks did not have significant environmental impacts.

Environmental non-compliances

There was one (2020: 1) major environmental non-compliance in 2021, excluding Uniper. At the Riihimäki waste incineration plant in Finland, the mercury emission limit was exceeded in flue-gas emissions. The incident has been investigated to determine the corrective actions. The incident did not have significant environmental impacts, and no employees or contractors were exposed to mercury.

Environmental fines

In 2018, untreated wastewater got into a trench and further into a waterway at the Kumla waste incineration and treatment site in Sweden, when the site's wastewater treatment capacity was exceeded. In 2021, the official investigation was completed, and Fortum was imposed a fine of SEK 1 million (EUR 98,556).

In 2021, Fortum paid a fine of SEK 25,000 (EUR 2,464) for deviation from the minimum flow requirement at a hydropower plant in Sweden in 2018. Fortum also paid fines totalling PLN 7,865 (EUR 1,723) for exceeding flue-gas emissions limits at the old and new Zabrze CHP plants in 2018–2020.

In Russia, Fortum paid fines totalling RUB 150,000 (EUR 1,721) in 2021 for exceeding the wastewater emissions limits at the Argayash CHP plant. In July 2021, Fortum sold its coal-fired Argayash CHP plant. Fortum also paid fines of RUB 300,000 (EUR 3,442) for contamination of the soil near the ash dump of the Chelyabinsk CHP-1 plant.

- ▶ Business ethics and compliance
- ▶ Occupational and process safety

Water

We use water mainly as cooling water in our condensing power plants. Water is also a prerequisite for Fortum’s hydropower production. Our responsibility for water use is related not only to water volume and availability, but also to its quality and to the aquatic habitat. We are improving the efficiency of our own water use, and we also offer services to our customers for the treatment, analysis, purification, and utilisation of their waste and sludge waters, and other severely polluted waters.

We use water within the limits set by our plants’ environmental and other permits. Permit regulations affect, e.g., the water intake volume, the quality of discharged water, as well as discharges and water levels at hydropower plants. Additionally, we carry out water-related measures locally in order to take into consideration the needs of other water users as well. ▶ **Collaboration** with local communities, municipalities, authorities, and research institutes is important in the implementation of these measures.

In addition to our own water use, we recognise that water use also has impacts in our supply chain, especially in fuel production.

Risks and opportunities related to water use

The majority of our water withdrawal is used for cooling at condensing power plants. In most cases, we don’t consume water in our operations; it is discharged into the same water system from which it was withdrawn. Fortum has production operations using water in water-stressed areas in Germany, the UK, Russia, Poland, and the UAE, based on water-stress screening using the WRI Aqueduct Water Risk Atlas. In water-stressed areas, water use is, by definition, generally large compared to the water resources available. In these areas, the risks may be related to, e.g., water availability, increased cost of water, or restrictions in power production.

Efficient water management in hydropower production allows us to produce electricity at the right time and manage the impacts on the environment and on stakeholders. Hydropower is a good regulating power that enables other renewable energy sources, like wind and solar power, to be added to the grid. In Sweden, a national plan for the reassessment of hydropower for modern environmental conditions, implementing the EU Water Framework directive and targets for renewable energy, has the ambition to keep production losses at a minimum and limited to 1.5 TWh/a. Fortum is a participant in the joint hydropower environmental fund (Vattenkraftens miljöfond AB), the purpose of which is to fund environmental measures linked to the national plan and to compensate for production losses.

Fortum is systematically reducing risks related to dam safety. A long-term programme is in place for improving the surveillance of the condition of dams and for securing the discharge capacity in extreme flood situations.

Climate change is likely to change weather patterns and hydrological conditions in the regions where we operate. Warmer climate and water scarcity are likely to affect the amount of cooling water available for some of our thermal power plants and lead to the need for new cooling or process water sources. We have already experienced some cooling water shortage at some of our power plants due to an increase in water temperature, especially in Central Europe. Climate change may reduce or increase the amount of water and change the timing of water availability for hydropower plants, depending on the location.

In our operations we are preparing for changes in water availability and hydrological conditions. The preparations are related to, for example, production planning, investments, dam safety, flood protection, and the rise in the cooling water temperature.

In hydropower production planning we are preparing for climate change by taking into consideration changes in precipitation and temperature and extreme weather phenomena, which can cause droughts or flooding. We are also monitoring the need for adjustments to regulation permits with changes in seasonal variation as a result of climate change.

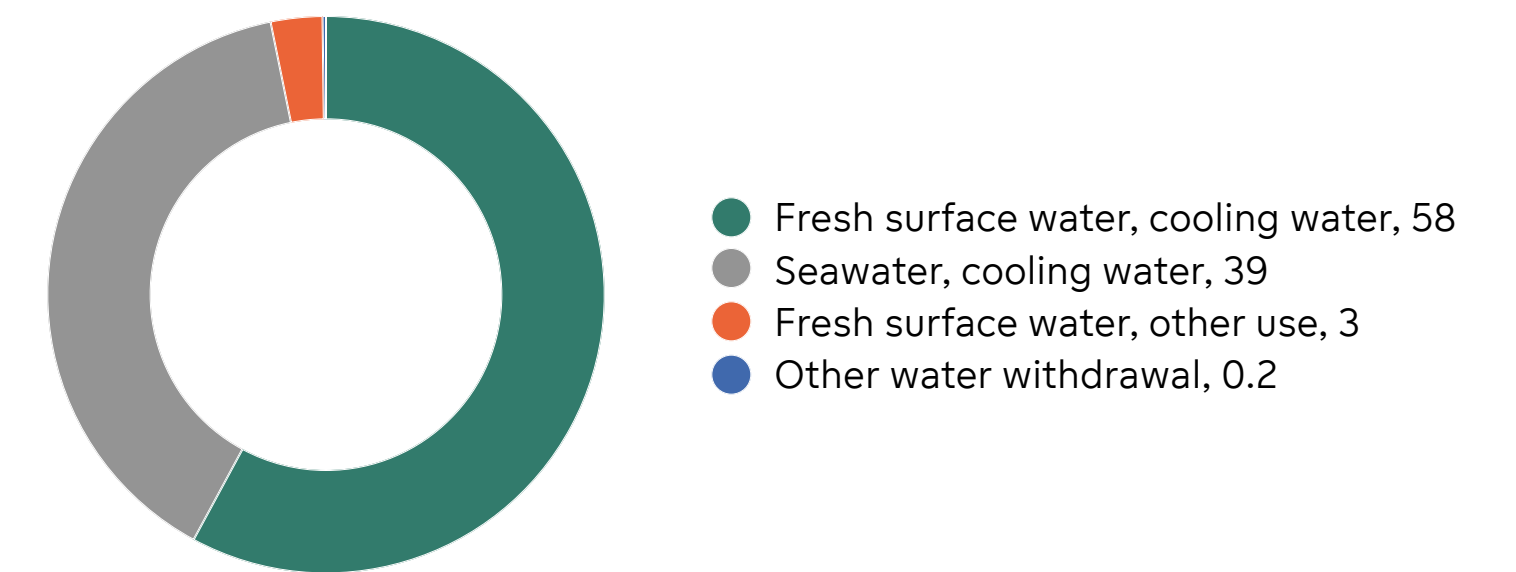
Improving the efficiency of water use in our operations can reduce environmental impacts, generate cost savings, ensure the acceptance of our operations, and also ensure the supply of water for other purposes and for other users.

Water withdrawal and forms of water use

The majority of our power and heat production using water is located in Russia, the Nordic countries, Central Europe, and the UK. The Baltic Sea, the North Sea, and local freshwater systems are our most important water sources. Brackish water of the Baltic Sea is reported here as seawater. In some cases, we also collect and use rainwater, which is included in fresh surface water in our reporting. Additionally, small amounts of municipal water and fresh groundwater are used at power plants and in waste treatment services. The reported water withdrawal, water use, and discharge volumes are based on measurements and on calculations of water consumption.

In 2021, our total water withdrawal was about 12,359 (2020: 8,847) million m³, of which fresh surface water accounted for 61% in total and seawater accounted for 39%.

Water withdrawal in production operations, %



Water withdrawal in production operations in 2019–2021 (GRI 303-3) ¹⁾

million m ³ , i.e. 1,000 megalitres	2021	2020*	2019
Fresh surface water for cooling	7,145	4,821	535
Seawater for cooling	4,836	3,746	1,456
Municipal water for cooling	6	5	0.06
Groundwater for cooling	0.2	0.1	0
Total water withdrawal for cooling	11,987	8,573	1,991
Fresh surface water, other use	355	262	99
Municipal water, other use	7	5	2
Groundwater, other use	4	2	0.2
Seawater, other use	1	1	0.4
Other external water supplier, fresh water, other use	6	3	0.3
Total water withdrawal for other use	373	274	102
Total water withdrawal	12,359	8,847	2,093

1) Uniper consolidated as of Q2/2020. The figures also include the separately reported water withdrawal in water-stressed areas.

* Uniper's data revised

Cooling water in energy production

Condensing power production requires large volumes of cooling water. Fortum's cooling water withdrawal in 2021 was about 11,987 (2020: 8,573) million m³. Cooling water accounts for about 97% of our water withdrawal.

Cooling water is used at several condensing and CHP plants. The cooling water is, in almost all cases, withdrawn from a local water system, such as a sea, lake, or river. Several power plants, e.g., in Russia and Germany, use cooling towers in which some of the cooling water evaporates into the atmosphere.

26% of Fortum's total cooling water use takes place at two nuclear power plants, at Loviisa in Finland and at Oskarshamn in Sweden. Both use direct seawater cooling. No water is consumed in the cooling process, and water withdrawn from the sea is discharged back into the sea, albeit at a warmer temperature within permit limits.

Process water

A thermal power plant needs water in the water-steam cycle when electricity is generated with a steam turbine. Because of leaks in the pipes, occasionally water must be added to the water-steam cycle.

Water is also needed in power plant auxiliary processes, for example in flue-gas cleaning with wet scrubber technology, and in radioactive waste handling and storage at nuclear power plants. Water is also used in processes at waste treatment facilities, e.g., for ash treatment.

District heating water

Fortum is a supplier of district heat in Russia, the Nordic countries, the Netherlands, Germany, and Poland. Water is used as the heat transfer medium in district heating. Because of leaks in district heating pipelines, make-up water must be occasionally fed into district heating networks.

Fortum has increased condition monitoring and maintenance at the district heating network in Espoo-Kirkkonummi area in Finland. This has

significantly decreased leakages, thus reducing the need for additional water in the network by 30,000 m³/a, which corresponds to an energy saving of approximately 2,200 MWh. Fortum is currently investigating the possibility to use machine learning and geographic dataset analytics to pinpoint heat loss and leakages in 2022. The target for 2022 is to further reduce the need for additional water by 27,000 m³ from the previous year.

Hydropower production

Fortum produces hydropower from water flowing in rivers in Sweden, Germany, and Finland. Our hydropower production in the Nordic countries is not in water-stressed areas. Water is not consumed in hydropower production, the water quality is not significantly changed, and it is not typically directed to another water system. However, the water system is often regulated for hydropower production, and the regulation changes the water flow and level patterns compared to their natural state. The water use-related projects implemented with stakeholder groups are reported in the section ▶ **Corporate citizenship**.

We have precise knowledge of the water situation in those waterways where we produce hydropower, and we use real-time hydrological forecasts in production planning. Fortum doesn't report river flows as a hydropower production-related water withdrawal.

We stock fish to offset the impacts of hydropower production. Some of the fish are farmed at our own fish farms in Finland and Sweden. The majority of the fresh water withdrawn for fish farming is returned into the bodies of water with only a slight change in its properties. Discharged water is purified, when necessary, and its nutrient content is monitored in line with permit conditions.

In addition to storage and run-of-river hydropower, Uniper has pumped-storage hydropower plants in Germany. These plants are a type of hydroelectric energy storage used by electric power systems for load balancing.

Water use in water-stressed areas

According to the [WRI Aqueduct Water Risk Atlas](#), accessed on 2 December 2021, the operations in areas with a high (40–80%) water-stress level include 12 thermal power plants in Russia, Germany, Poland, and the UK, hydropower plants on the River Main (37) and in other locations (8) in Germany, as well as an oil production facility in the UEA. The classification of water-stressed locations is based on the WRI Aqueduct data, not on actual issues of water scarcity experienced in our operations. Our water use figures still include water use in the Pavagada solar power plant in India, divested in 2021, which is located in an area with an extremely high (>80%) water stress, as well as data of other divested power plants in areas of high water-stress level.

Our water withdrawal in water-stressed areas was about 408 million m³, which was about 3% of our total water withdrawal. 58% of the water withdrawal in water-stressed areas was in Russia, 41% in Germany, 0.1% in the UAE, 0.04% in Poland, 0.01% in the UK, and 0.0003% in India. 88% of the water withdrawal in water-stressed areas was used for cooling.

In the areas of extremely high water stress in India, we reduce water use by, e.g., robotic waterless cleaning solutions and rain water harvesting at our partly-owned solar power plants. In 2021, about 82% of Fortum’s solar capacity (including co-owned plants) in India was cleaned using robotic waterless cleaning; the target is to install waterless cleaning in all future solar plants that we commission in India.

The Kirchmöser power plant in Germany abstracts water for cooling from Lake Plauer, in an area of high water stress. Uniper has investigated a number of options for partially replacing the volume of abstracted water. The most ecological and economical option was found to be abstraction of groundwater from existing wells some distance away and pumping this groundwater into Lake Heiliger, one of the sources that feed Lake Plauer. In this way, an overall balance is achieved and the ecological condition of the lake can be maintained.

Water discharge

We pipe the majority of cooling water back into the same water system from which the water was withdrawn. In 2021, 99% of the cooling water withdrawn was discharged back to the environment; the corresponding figure in water-stressed areas was 93%.

In addition to the cooling water discharge, Fortum discharges process water and wastewater. In 2021, Fortum’s total water discharge was about 12,009 (2020: 8,660) million m³; only about 2% of it was process and wastewater, the rest was cooling water. The process and wastewater is purified, when needed, before release into the environment; some water is piped to municipal treatment plants. The discharged water is mainly cooling water released into fresh surface water. Emissions into water are reviewed in the section [Emissions to water](#).

Water withdrawal in production operations in water-stressed areas in 2019–2021 (GRI 303-3) ¹⁾

million m ³ , i.e. 1,000 megalitres	2021	2020	2019
Fresh surface water for cooling	221	265	274
Seawater for cooling	137	91	0
Municipal water for cooling	0.04	0.07	0.06
Total water withdrawal for cooling	358	356	274
Fresh surface water, other use	49	49*	48
Municipal water, other use	0.5	0.4*	0.5
Groundwater, other use	0.2	0.003*	0.0001
Total water withdrawal for other use	50	49*	49
Total water withdrawal	408	405*	323

¹⁾ Uniper consolidated as of Q2/2020
 * Excluding Uniper’s water withdrawal for other use

Water discharge by recipient in 2019–2021 (GRI 303-4) ¹⁾

million m ³ , i.e. 1,000 megalitres	2021	2020*	2019
Fresh surface water, cooling water	7,092**	4,768**	507
Sea, cooling water	4,733**	3,745**	1,456
Total cooling water discharge	11,825**	8,513**	1,963
Fresh surface water, process water	175	139	51
Municipal sewage	8	6	2
Sea, process water	1	1	1
Other recipient	0.2	0.3	0.1
Total process and wastewater discharge	184	147	54
Total water discharge	12,009	8,660	2,017

¹⁾ Uniper consolidated as of Q2/2020. The figures include the separately reported water discharge in water-stressed areas.
 * Uniper’s data revised
 ** Cooling water discharge may contain some process water discharge.

Water discharge by recipient in water-stressed areas in 2019–2021 (GRI 303-4) ¹⁾

million m ³ , i.e. 1,000 megalitres	2021	2020	2019
Fresh surface water, cooling water	198*	241*	257
Sea, cooling water	137*	91*	0
Total cooling water discharge	334*	332	257
Fresh surface water, process water	12	13**	14
Municipal sewage	0.2	0.3**	0.4
Sea, process water	0.1	0**	0
Other recipient	0.1	0.1**	0.1
Total process and wastewater discharge	13	14**	14
Total water discharge	347	346**	271

¹⁾ Uniper consolidated as of Q2/2020
 * Cooling water discharge may contain some process water discharge.
 ** Excluding Uniper’s process and wastewater discharge

Water consumption

Our water consumption includes, e.g., cooling water that has evaporated from cooling water towers, water leakage from district heating networks, water used in power plant and other production plant processes, ▶ **water used to move ash**, e.g. at power plants in Russia, and water used to clean solar panels. In 2021, our own water consumption was about 344 million m³. In water-stressed areas, our water consumption was about 54 million m³.

We estimate water consumption as the difference between water withdrawal and discharge. Fortum's own water consumption doesn't include about 6 million m³ of water supplied to external customers and water leaked from the district heating networks owned by external parties.

- ▶ **Our water responsibility in terms of the aquatic habitat**
- ▶ **Our water responsibility in terms of emissions to water**
- ▶ **Water treatment services for customers**



Biodiversity

The degradation of biodiversity is one of the biggest environmental problems globally. We need to know our impacts and dependencies on biodiversity and ecosystem services to be able to assess the related risks and opportunities.

Biodiversity rising on global, EU, and Fortum agenda

In 2021, biodiversity was increasingly a focus of public discussion. We actively follow the development of concrete actions in implementing the EU Biodiversity Strategy for 2030 as well as the anticipated post-2020 global biodiversity framework within the global Convention on Biological Diversity. The EU is expected to publish nature restoration targets and targets for protected areas to meet the 30% of land and sea areas protected by 2030. In addition, the EU is expected to propose new taxonomy criteria for biodiversity and a target for free flowing rivers. Biodiversity loss and the degradation of ecosystems are a severe global concern that has to be tackled. Fortum supports the global and EU targets for biodiversity.

In Fortum’s materiality analysis, biodiversity is identified as one of Fortum’s sustainability priorities. For the year 2021, we set our first Group-level target for biodiversity. In 2021, we also increased our internal communication on biodiversity; e.g., we had a presentation open to all employees on biodiversity and its relevance to Fortum. During 2022, we are committed to develop a science-based strategy to measure and enhance the biodiversity impacts of the Group’s operations and the new developments.

Impacts on biodiversity

Our operations, such as hydropower production in Sweden, Germany, and Finland, impact local biodiversity. Construction of hydropower and the water regulation related to hydropower alter the conditions in water systems and thus impact the diversity of the local aquatic habitat and, in particular, the fish population. However, hydropower is important in

13 Number of major voluntary measures enhancing biodiversity

the fight against climate change, which is globally one of the greatest threats to biodiversity. Emissions from fossil fuel-based energy production may decrease biodiversity also locally. Increasing CO₂-free production mitigates the biodiversity loss caused by climate change. Construction of all facilities may have impacts on biodiversity.

Indirect impacts may be caused by, for example, procurement of biomass for use as fuel or raw material, as well as the procurement of other fuels.

Our responsibility for biodiversity

Fortum’s **Biodiversity Manual** defines the company’s, excluding Uniper, principles related to biodiversity. According to the manual, biodiversity issues are systematically considered as part of our environmental management processes and our operations. The manual contains specific instructions for biodiversity issues in current operations, new projects, and the supply chain, as well as for reporting and communication. We annually update our **Biodiversity Action Plan**, which contains ongoing and planned voluntary biodiversity-related measures. In 2021, we included also biodiversity measures in Uniper in the Action Plan. The Biodiversity Action Plan describes Fortum’s goals, responsibilities, timelines, and partners for biodiversity projects.

We aim to improve biodiversity in connection with our operations, we carry out biodiversity-related projects, and we collaborate with our stakeholders in projects. We also assess the biodiversity impacts of our new projects and aim to mitigate them. We offset and reduce

our biodiversity impacts in, e.g., hydropower production. In 2021, Fortum, excluding Uniper, carried out fish obligations, valued at about EUR 2.2 million in hydropower production. In 2021, we also worked increasingly with surveys and the removal of invasive species.

Managing impacts in the supply chain

We manage the biodiversity impacts of our fuel procurement by using international certification and assessment systems. We pay special attention to the procurement of wood-based biomass and coal. Under the Fit for 55 legislative package published in July 2021, the European Commission made a proposal for the new renewable energy directive, which includes new stricter requirements for sustainable biomass. Fortum is closely following the development of regulations and guidelines and is preparing to implement the required additions to our current biomass sourcing processes. The impact on Fortum Group is expected to be limited.

Certified wood-based biomass fuel originates from sustainably managed forests in which the preservation of biodiversity has been a focus. In 2021, we used wood-based biomass fuel in our power plants in Finland, Norway, Poland, and the Netherlands. 86% of the wood-based biomass fuel purchased by Fortum originated from certified or controlled sources.

Fortum and Uniper are members of the Bettercoal initiative and use the Bettercoal Code and tools in assessing the sustainability of the coal supply chain. Biodiversity aspects related to coal mining are covered in Bettercoal assessments. Assessment criteria are related to, e.g., preventing the disappearance or fragmentation of habitats, combating invasive species, and preventing adverse hydrological changes, nutrient accumulation, and environmental pollution. At year-end 2021, 67% of coal volume purchased via direct contract was from Bettercoal suppliers.

► Fuel purchasing

Projects improving biodiversity

Most of our projects improving biodiversity are related to hydropower production. Additional information about our projects supporting biodiversity is available in the Biodiversity Action Plan and [▶ on our website](#). In addition to voluntary projects, biodiversity-related measures are often carried out as license obligations.

Fortum Group's biodiversity target

Fortum achieved its biodiversity target for year 2021: at least 12 major voluntary measures enhancing biodiversity. We implemented [▶ 13 major voluntary measures](#). These measures, focusing on threatened species or habitats, improve the living conditions of species and strengthen populations. The measures are related to hydropower production and include restoring aquatic and terrestrial habitats, improving fish migration, and strengthening migratory fish populations, as well as projects combating invasive species. In addition to the physical measures counted in the target, we carried out a number of other improvements in several types of operations, both concrete projects and investigations.

During 2022, Fortum's target is to develop a science-based strategy to measure and enhance the biodiversity impacts of the Group's operations and the new developments. We will also continue with measures enhancing biodiversity in 2022.

Improving fish migration and migratory fish populations

To strengthen the lifecycle of fish, we use a number of solutions, like fish stocking, habitat improvements, various types of fishways, and trap and transport systems for fish to pass the dams.

In Finland, we increased the number of fish transported to restored spawning areas in tributaries from our trap and transport device in Montta. In the Oulujoki area, we are improving the lifecycle of threatened Oulujärvi lake trout by installing a hydraulic dam bypass solution, Fishheart, at Leppikoski and participating in habitat restorations and juvenile fish stockings.

We have continued our programme of dismantling small dams in Sweden. The programme has a total of about 80 dams that are no longer significant

for water regulation and energy production. In conjunction with the dam removal work, the river continuum is restored and stream water habitats can be re-established. The projects are implemented in close collaboration with local actors and residents. In 2021, three dams were removed.

In Germany, with the construction of the three fish ladders at Uniper's Prittriching (finalisation of the outdoor works in 2022), Scheuring, and Schwabstadl power plants, fish can once again migrate along 20 km of the River Lech, from Kaufering to Merching.

Fortum is constructing three fishways allowing fish to migrate both up- and downstream of the hydropower plants in River Dalälven, Sweden, based on a decision by the environmental court. The fishways at the Spjutmo, Blyberg and Väsa hydropower plants will be operational in 2023–2025.

Uniper has also continued its voluntary trap and transport programme of endangered eels in the River Main in Germany and the stocking of young eels in the River Ätran in Sweden.

Restoring and improving habitats

Our habitat improvements related to hydropower production in 2021 include continuation of Uniper's project with the local water management authority to improve habitats at the Litzauer Schleife (Litzau Loop) in Germany.

In partnership with the Munkfors Fishery Conservation Association in Sweden, Fortum has implemented [▶ a biotope preservation project](#) downstream of the Munkfors power plant to improve the flowing water environment for salmonids, particularly graylings.

We also restored or improved several terrestrial habitats in order to support threatened species or habitats, often in cooperation with other parties. In addition to the terrestrial improvements around Fortum's hydropower plants, these included creating a meadow in Inkoo, Finland, and continuation of the restoration of the Kumla butterfly landscape in Sweden. In Germany, at the Franken power plant, several species of trees were planted creating a habitat for a wide variety of flora and fauna. A wildflower meadow was created around the trees to attract insects.

▶ Environmental impacts of hydropower production

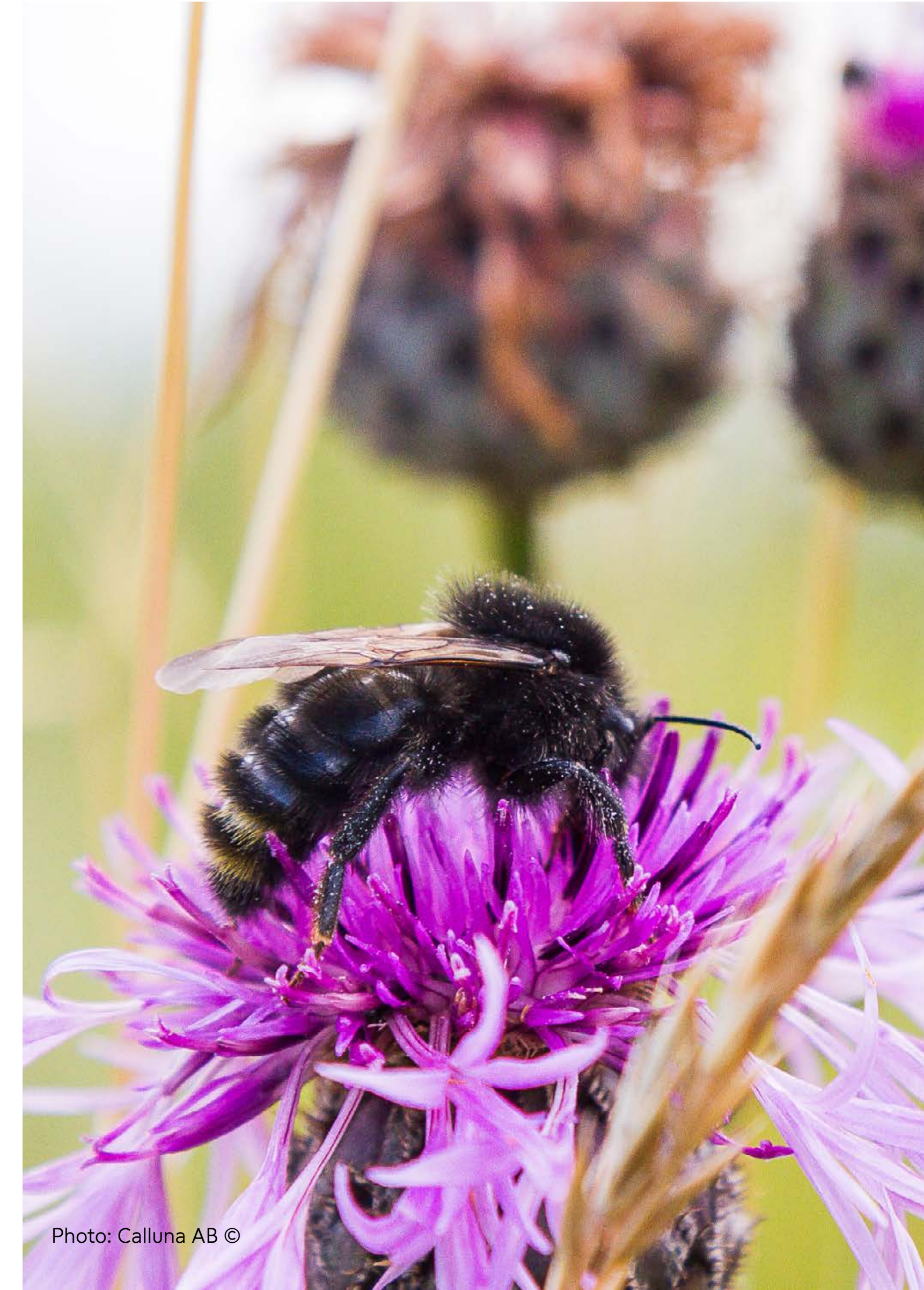


Photo: Calluna AB ©

The major voluntary measures implemented in 2021 and included in the Group's biodiversity target for 2021

Several of the measures are cooperation with stakeholders; see the Biodiversity Action Plan and Uniper's Sustainability Report for further information.

Measure	Location	Waterway, country	Description of actions in 2021
▶ Habitat improvement of flood plains and flood forests near Untra hydropower plant	Untra natural area	River Dalälven, Sweden	Forestry management, clearing of young spruce on an island. Creating space for old deciduous trees and removing old spruce in the area of flooding forest. Both actions according to the nature restoration plan.
Dam removal project Ejen	Ejen	River Limån, Sweden	The Limån river is recognised as a potentially valuable spawning ground for the endangered trout population of Lake Siljan, freshwater pearl mussel, and migrating whitefish. These dam removals open up a significant part of the River Limån. In combination with other dam removals, finalised and scheduled, tens of kilometres of free-flowing river is created and the connection with Lake Siljan is re-established.
Dam removal project Stordraggen	Stor-Druggen	River Limån, Sweden	
Dam removal project Kollsjön	Kollsjön	River Limån, Sweden	
Habitat improvements around Fortum hydropower plants	a. Dejefors, Edsforsen, Forshaga, Forshult, Krakerud, Munkfors and Skoga HPPs* b. ▶ Avesta HPP c. Tainionkoski HPP	a. River Klarälven, Sweden b. River Dalälven, Sweden c. River Vuoksi, Finland	a. Forest clearing in favour of broad-leaved trees, managing vegetation and invasive species, and installing birdhouses to benefit red-listed species. b. A controlled fire to enhance the vegetation and insects. Sand banks were built to support wild bees, and dead wood piles as fauna depots were created for insects for habitat and nourishment. c. Transforming a lawn area into a meadow through soil cultivation and seeding with the aim to improve habitats for insects, including pollinators, birds, and butterflies.
Releases of young salmon and sea trout in the tributaries of the River Oulujoki	Muhos, Utajärvi, and Vaala	River Oulujoki, Finland	5,500 one-year-old salmon and 4,900 one-year-old sea trout were stocked in River Kutujoki, 11,500 salmon in River Utosjoki, and 15,000 sea trout in River Muhosjoki.
▶ Montta fish trap operation and development	Montta HPP	River Oulujoki, Finland	Trapped mature salmon were transported to River Kutujoki, Oulujoki's tributary. The trap's collection basins were reduced in size and the control gates of the entrance improved in order to facilitate the fish trap's operation.
▶ Fishheart solution for upstream passage of fish at Leppikoski hydropower plant	Leppikoski HPP	River Emäjoki, Finland	Construction of a hydraulic dam bypass solution, Fishheart. During the first operation season, nearly 2,500 fish passed the dam through the Fishheart.
Krafttag ål (Eel programme)		Rivers Göta älv, Motala Ström, Lagan, Ätran, Sweden	Trap and transport of silver eels from lakes to areas downstream of hydropower plants. A joint project with several Swedish hydropower companies.
Collecting and distributing elvers in River Ätran through new and modern elver traps at Ätrafors hydropower plant	Ätrafors HPP	River Ätran, Sweden	Voluntary stocking of elvers in River Ätran. Elvers ascending from the sea are collected and distributed above the dam in Ätrafors.
Higher level of ecological flow	Schönmühl HPP	River Loisach, Germany	After expiration of the agreement with the district administration Bad Toelz - Wolfratshausen, in which the minimum flow (e-flow) was regulated, Uniper voluntarily agreed to an e-flow higher than formally requested to improve the habitats of river animals.
Catch & Carry: Safe migration for eels on the River Main		Rivers Main and Regnitz, Germany	Uniper sponsors the project enabling eels to migrate downstream, by collecting eels in the Main and providing transportation into the Rhine.
Litzauer Loop: Improved passage to the Riesner Bach	Litzauer Loop, Burggen	River Lech, Germany	Improved connectivity of Riesner Bach was achieved due to a shift of the estuary, creating many habitats for juvenile fish.

* HPP=Hydropower plant

Case | Artificial intelligence and hydraulic pressure enable fish to migrate upstream at Leppikoski hydropower plant in Finland

The hydraulic Fishheart fishway is a Finnish innovation enabling fish to migrate past obstacles. Fishheart is a floating, mobile system installed in the power plant's tailrace channel; the system has an attraction flow that guides fish into the opening of the device. Fishheart uses artificial intelligence to detect fish that swim in and then moves the fish via pipes over the dam. During the transfer, fish are constantly surrounded by water to ensure their safe ride.

Fortum's goal is to strengthen the natural cycle of the threatened Oulujärvi lake trout in the vicinity of the Leppikoski hydropower plant in the Hyrynsalmi waterway in the Oulujoki water shed. National Fish Way Strategy's key sites in the Oulujoki water shed for restoring fish migration are located in the Hyrynsalmi waterway, which has breeding areas and habitats vital to the natural life cycle of migrating fish.

The Fishheart fishway at the Leppikoski hydropower plant in Finland was installed in August 2021. During the first season Fishheart was used to successfully transfer many 60+ centimetre mature lake trout. Overall, the Fishheart fishway has transferred nearly 2,500 fish upstream from the Leppikoski power plant dam. In addition to trout, Fishheart has registered other fish species, including perch, lamprey, bream, vendace, whitefish, and pike perch. Leppikoski's Fishheart is one of Fortum's voluntary measures advancing biodiversity with the aim to reinforce migratory fish populations.

Each river and hydropower plant is unique

Fortum is looking for effective solutions that both support the strengthening of fish stocks and enable the production of renewable hydropower. Each river and hydropower plant is unique, and thus solutions vary by river and hydropower plant. To enable fish migration, a variety of different tools and measures are needed. The Fishheart fishway is a viable alternative for hydropower plants with a tightly built environment, such as Leppikoski.

Fishheart in Leppikoski is part of a set of measures being implemented to strengthen the natural life cycle of lake trout. The tributaries upstream from the Leppikoski power plant provide potential habitats and breeding grounds essential for the life cycle of the trout population; this year there have been habitat restorations in tributaries Torvenkoski and Tolosenjoki. Moreover, Fortum is annually stocking lake trout fry on the Hyrynsalmi route in an effort to strengthen the fish population that imprints to the river.





Circular economy

Reliable waste management and resource efficiency are important in a sustainable society. We offer customers sustainable circular economy services and expert solutions for waste recycling. We also recover by-products and waste generated in our own energy production whenever possible.

Waste received from customers

Fortum's aim is to promote resource efficiency, for example, through its recycling and waste business, and the transition towards a more extensive circular economy. By circular economy, we mean that materials are utilised as efficiently as possible and hazardous materials are removed from circulation. The aim is to make new raw material from waste whenever possible and to keep valuable materials in circulation.

Our circular economy business evolves

In 2021, Fortum decided to invest in a new **► hydrometallurgical plant** in Harjavalta, Finland, where Fortum had a pilot facility earlier. The investment is a major step in increasing our hydrometallurgical recycling capacity and enabling the production of sustainable battery chemicals. The new facility will help to meet the rising demand for recycled battery materials and enable the safe and sustainable recovery of lithium, nickel, cobalt, and manganese, all of which are essential in the manufacturing of new electric vehicle (EV) batteries.

We also opened a new mechanical **► EV battery recycling process** line in Ikaalinen, Finland. Fortum has the special expertise needed in handling lithium-ion batteries at the end of their life. Lithium-ion batteries are classified as hazardous waste, as they can pose a high risk for people and for the environment if not treated properly. We use a combination of mechanical and low-carbon hydrometallurgical technologies to recycle the batteries as sustainably as possible and with a low carbon footprint. The lithium-ion batteries are first disassembled and treated in a mechanical process at our plant in Ikaalinen. The battery's black mass, containing valuable metals, is collected and taken to Harjavalta for hydrometallurgical processing. Together these two

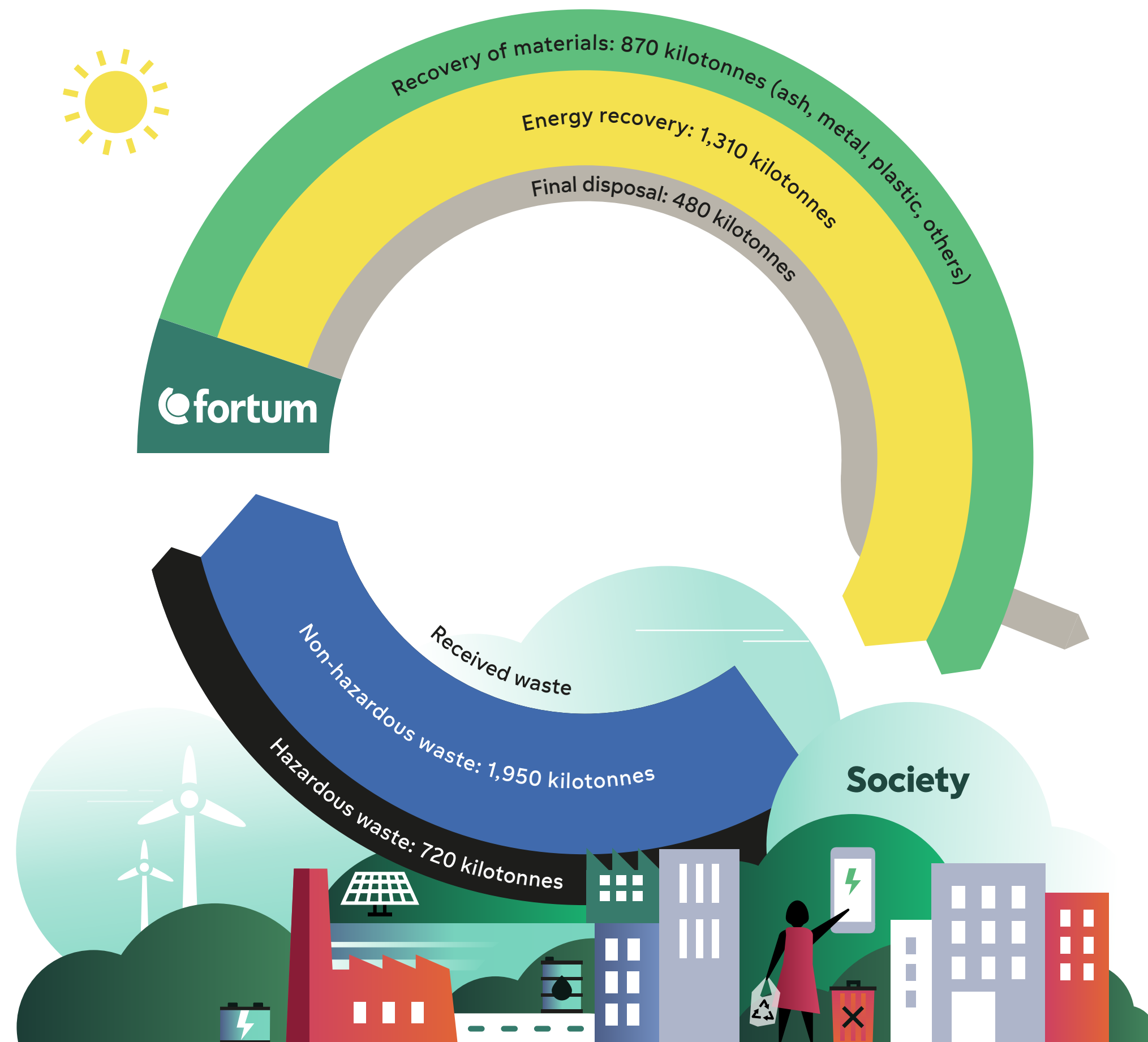
processes are estimated to reach a recovery rate of up to 95% of the metals included in the valuable materials of a battery's black mass.

The new Harjavalta plant will enable Fortum to recycle the majority of the EV batteries reaching their end-of-life in Europe. In 2021, Fortum was granted special transport permits that allow Sweden and Norway to export **► lithium-ion batteries** to Finland for recycling. We aim to ramp up our battery recycling operations and to increase the recycling capacity significantly in the coming years. We also pilot several 'second-life' solutions, such as the reuse of batteries for energy storage in power plants.

In 2021, Fortum and Suomen Uusiomuovi Oy signed a long-term contract prolongation for recycling of consumer plastic packaging at our Riihimäki plant in Finland. Prolongation of the existing contract enables the planning of recycling capacity investments at the Riihimäki plant, which is important, as the plant is currently operating at full capacity. The new planned investment would eventually replace the current mechanical plastic recycling plant. Besides investigating possibilities for a next-generation mechanical recycling plant, Fortum is also looking into new technologies beyond mechanical recycling, such as chemical recycling and CCU (Carbon Capture and Utilisation) solutions, in order to achieve a circular economy and a better recycling rate. Furthermore, in order to advocate for a circular economy, we started cooperation with K-Group with the aim to promote Fortum Circo® – recycled plastic granulates used as raw material for various consumer products in the grocery business.

At **► BauMineral** in Central Europe, Uniper receives and treats power generation customers' by-products, such as bottom ash, fly ash, and gypsum. BauMineral recycles by-products from power plants into new building materials. The ongoing energy transition to decarbonise societies is affecting the availability of power generation plants' traditional by-products, which have been re-used as low-carbon building materials replacing cement. BauMineral is actively working on how to sustainably replace the traditional by-products so that the energy transition doesn't negatively impact the carbon emissions produced by other industries.

Received and treated waste from customers in 2021



Our waste management services

Fortum offers waste management services for customers in the Nordic countries, Central Europe, and Poland. Of the waste stream received from customers, as much as possible is recycled, reused, or recovered as raw material.

Waste that is unsuitable for recycling or reuse as a material is incinerated in our waste-to-energy plants in the Nordic countries and Poland. This reduces the use of virgin fossil or renewable fuels in electricity and heat production. Waste that is unsuitable for recovery is disposed of at landfill sites.

In 2021, we received a total of 2.7 (2020: 2.7) million tonnes of waste from our customers, about 48% (2020: 55%) of which was recovered in waste-to-energy plants. Of the waste received from our customers, about 1.9 (2020: 2.0) million tonnes was non-hazardous waste, with ash accounting for 26% (2020: 21%) and contaminated soil for 9% (2020: 15%). We also received about 720,000 (2020: 640,000) tonnes of hazardous waste from our customers, with ash accounting for 10% (2020: 10%) and contaminated soil for 19% (2020: 15%).

Recovery of materials

Various types of waste can be reused as raw materials. In 2021, of the waste received from our customers, we recovered about 870,000 (2020: 800,000) tonnes as materials; various environmental construction materials accounted for 52% (2020: 41%) of that amount, recoverable ash 25% (2020: 39%), and processed raw materials and products 7% (2020: 11%). In addition, about 1.6 (2020: 1.0) million tonnes of recoverable materials originated at Fortum’s own power and heat plants globally.

We are continuously developing activities that increase the proportion of waste materials kept in circulation, among others:

- We produce ► **recycled plastic** out of plastic packaging waste received from customers
- We process and ► **recycle metals** separated from customers’ waste and from ash and slag generated in customers’ energy production. We also recycle scrap metals generated in the maintenance activities of our own power and heat plants
- We treat and process ash, slag, dredging masses, slurry, and contaminated water from energy production and other industries for reuse in various types of products, environmental construction, and earthwork projects
- We treat contaminated soil received from our customers, and we direct metal, rocks, concrete, and wood sieved from the soil for reuse as raw materials. Soil that is suitable for environmental construction is used at construction sites and at our own industrial waste treatment centres.

Hazardous waste treatment

We offer solutions to treat ► **hazardous waste**. We take hazardous waste out of circulation in a sustainable manner, and we clean the hazardous substances from materials that end up in recycling. At the same time, we produce energy and ensure the safe final disposal of waste. High-temperature incineration is the best available solution to deactivate most hazardous substances. Additionally, some other waste types are treated with other processes, such as a physico-chemical process.

We have three high-temperature incineration plants producing electricity and district heating for the surrounding areas: in Riihimäki, Finland; Nyborg, Denmark, and Kumla, Sweden. In addition, the Klemetsrud waste-to-energy plant in Oslo, Norway, treats also special waste, e.g., hospital waste and goods confiscated by customs and police officials. In 2021, about 344,800 (2020: 357,300) tonnes of hazardous waste and, additionally, about 614,300 (2020: 631,000) tonnes of non-hazardous waste were incinerated at these facilities.

83%

of own energy production plants' by-products and waste recovered

Waste and by-products from our energy production

Ash is a by-product generated in the incineration of solid fuels in power and heat production. Gypsum and other desulphurisation products are by-products of flue-gas desulphurisation. Ash and desulphurisation products together account for the majority of the by-products and waste from our energy production.

The maintenance of power and heat plants generates scrap metal, other conventional industrial waste and, to a smaller extent, waste oil and other hazardous waste. We aim for the highest possible utilisation and recovery of our own by-products and waste. The waste management service providers we use are properly licensed and reliable waste management companies.

The total volume of by-products and waste generated at all Fortum's power and heat plants in 2021 was about 2.2 (2020: 1.7) million tonnes. Of this volume, about 83% (2020: 75%) was recovered.

Ash and gypsum as by-products

About 78% (2020: 69%) of the ash from our plants operating in Europe is utilised as a raw material, for example, for the construction industry, road construction, and soil improvement, and as backfill. Coal-fired power plants can also generate either a wet or semi-dry desulphurisation by-product in the flue-gas cleaning systems. Ash from the coal-fired power plants in Russia is stored, e.g., in ash basins, because there is no industrial solution for the use of wet ash sludge in Russia.

In 2021, about 1.5 (2020: 1.2) million tonnes of ash and 574,600 (2020: 366,500) tonnes of gypsum were generated. By-products that cannot be utilised are transported to the appropriate final disposal sites at landfills or, e.g., to ash basins in Russia. The reported volumes of ash and gypsum from our European power plants are mainly based on the weighing of the truckloads. Ash volumes at our Russian power plants are calculated on the basis of the ash content of the coal.

Conventional and hazardous waste

Conventional waste generated during the operation and maintenance of power and heat plants is sorted, and waste that can be recycled, such as metal, is sent for further processing. Hazardous waste is delivered to licensed hazardous waste treatment facilities. In 2021, the power and heat plants generated a total of about 97,300 (2020: 87,700) tonnes of waste, about 8,700 (2020: 12,300) tonnes of which was hazardous waste.

The reported volumes of non-hazardous and hazardous waste are based mainly on the information provided by the waste management companies.

Ash and gypsum handling in energy production plants in 2019–2021 (GRI 306-3, GRI 306-4, GRI 306-5) ¹⁾

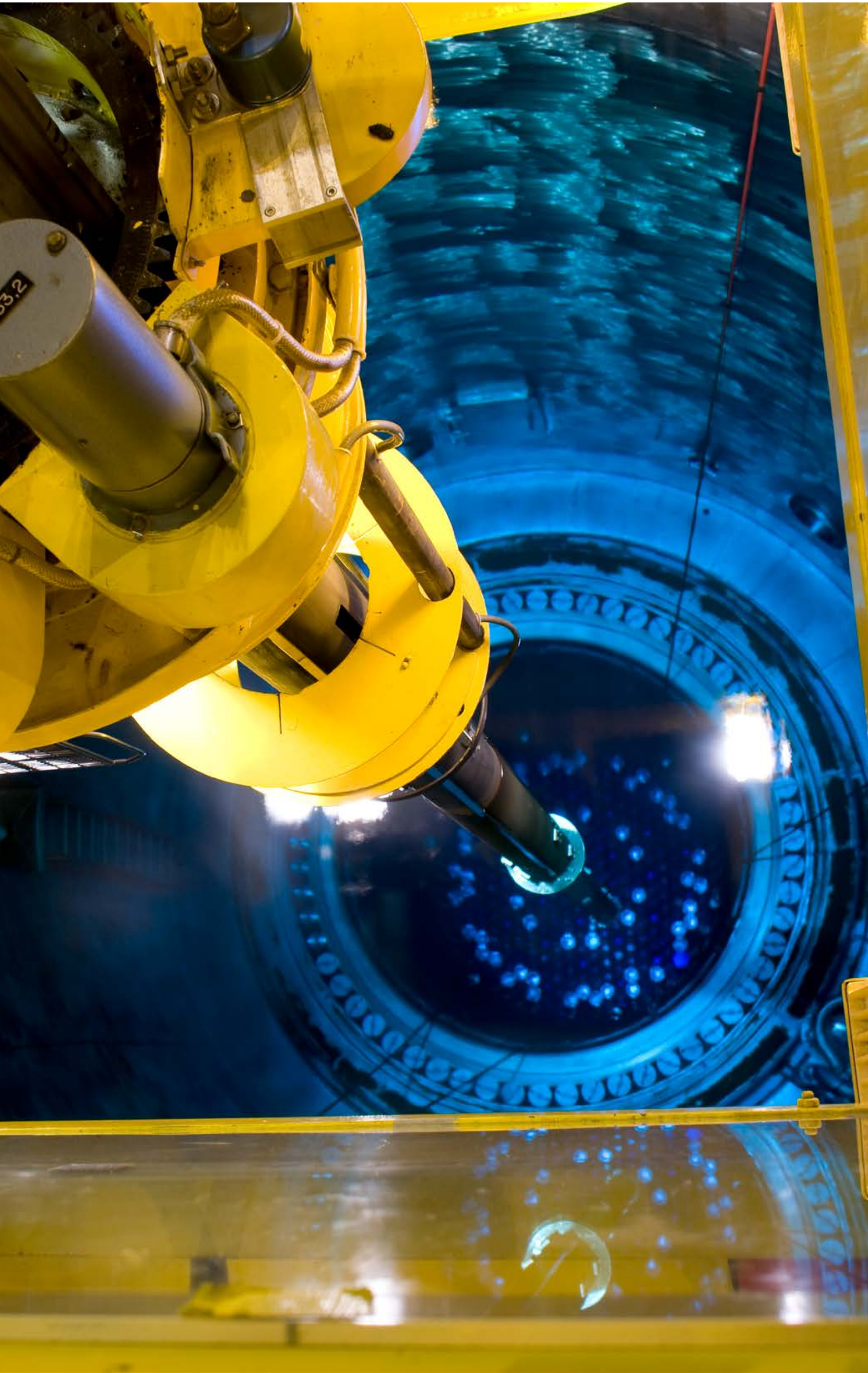
t	2021	2020	2019
Ash recovery	1,161,000	850,600	340,000
Ash disposal	318,100	375,700	360,000
Gypsum recovery	570,500	361,700	1,600
Gypsum disposal	4,100	4,800	0

¹⁾ Uniper consolidated as of Q2/2020

Waste handling in energy production plants in 2019–2021 (GRI 306-3, GRI 306-4, GRI 306-5) ¹⁾

t	2021	2020	2019
Material recovery of non-hazardous waste	37,900	33,300	6,100
Energy recovery of non-hazardous waste	3,100	1,600	600
Final disposal of non-hazardous waste	47,600	40,400	24,500
Material recovery of hazardous waste	2,200	1,200	500
Energy recovery of hazardous waste	4,600	1,800	300
Disposal of hazardous waste	1,900	9,300	500
Total	97,300	87,700	32,400

¹⁾ Uniper consolidated as of Q2/2020



Radioactive waste

In addition to conventional industrial waste, the Loviisa nuclear power plant in Finland and the Oskarshamn nuclear power plant in Sweden generate radioactive waste, which we treat in accordance with the requirements of national nuclear energy legislation. According to Finnish legislation, nuclear waste generated in Finland has to be finally disposed of in Finland, and nuclear power plant companies are responsible for their respective nuclear waste management. Swedish legislation is similar with regard to responsibilities. The volume of radioactive waste generated is small, but special solutions are needed in its treatment and final disposal.

High-level radioactive waste from spent nuclear fuel is stored in an interim storage at the Loviisa power plant site. In Finland, Fortum and Teollisuuden Voima have established Posiva Oy to handle the technical implementation of the final disposal of spent nuclear fuel, and final disposal is scheduled to begin at Olkiluoto in Eurajoki around the mid-2020s. The final disposal of Loviisa's spent nuclear fuel will begin in the 2040s.

The high-level radioactive waste from spent nuclear fuel at the Oskarshamn nuclear power plant is transported to the Clab, Central Interim Storage Facility for Spent Nuclear Fuel, pending final disposal. The Clab is located near the Oskarshamn plant at Simpevarp in Sweden. The spent nuclear fuel will be eventually transported to the future Spent Fuel Repository near the Forsmark nuclear power plant in Sweden. In 2021, 45 (2020: 40) tonnes of spent nuclear fuel was removed from nuclear power plant reactors in Finland and Sweden.

Intermediate-level radioactive liquid is generated mainly from spent ion-exchange resins and wastewater from the controlled area at the Loviisa nuclear power plant. Liquid waste is processed into solid form at the solidification plant for liquid radioactive waste before final disposal in Loviisa's repository. In 2021, 111 (2020: 510) m³ of intermediate-level radioactive waste from the Loviisa plant went to final disposal. The Oskarshamn nuclear power plant's intermediate-level radioactive waste will be transported to the final repository near the Forsmark nuclear power plant, Sweden.

The Loviisa nuclear power plant's low-level radioactive maintenance waste is disposed of in Loviisa's repository in Finland. In 2021, 80 (2020: 29) m³ of low-level radioactive waste from the Loviisa plant went to final disposal. The Oskarshamn nuclear power plant's low-level radioactive maintenance waste will be disposed of using the latest landfill technology at the Simpevarp landfill site near the Oskarshamn power plant, Sweden.

In 2021, 72 m³ of radioactive maintenance waste from the Loviisa and the Oskarshamn nuclear power plant went to interim storages waiting for final disposal.

In addition to radioactive waste from nuclear power plants in operation, the decommissioning and dismantling projects at the Barsebäck unit 1 and unit 2, and the Oskarshamn unit 1 and unit 2 nuclear power plant generate radioactive waste in Sweden. In 2021, 1,969 (2020: 1,521) tonnes of low-level and 301 (2020: 154) tonnes of intermediate-level radioactive waste from the decommissioning projects went into the interim storage waiting for final disposal in Sweden.

▶ **Nuclear waste management at Loviisa in Finland**

▶ **Final disposal of spent nuclear fuel in Finland**

▶ **Nuclear waste management at Oskarshamn in Sweden**

▶ **Spent nuclear fuel and radioactive waste management in Sweden**

57% of Fortum's Board members female



Personnel and society

🎯 Targets

SAFETY:

- Total Recordable Injury Frequency (TRIF) <1.0 by the end of 2025
- Lost Time Injury Frequency (LTIF), for own personnel and contractors: ≤1.2 in 2021
- 0 Severe accidents

Contribution to the UN SDGs



Sustainability priorities related to personnel and society

In terms of Fortum's operations, the sustainability priorities for personnel and society are presented in the matrix.

Our key figures for personnel and society are presented in the table.

Key figures for personnel and society

	2021	2020	2019
Average number of employees	19,796*	17,304**	8,248
Number of employees, 31 December	19,140*	19,933*	8,191
Departure turnover ¹⁾ , % of permanent employees	11.2	7.4	11.2
Female employees ²⁾ , %	28	27	32
Females in management ²⁾ , %	27***	27***	30
Sickness-related absences ³⁾ , %	3.6	2.9	2.9
Total Recordable Injury Frequency (TRIF) ^{1) 4)} , own personnel and contractors	2.2	2.3	3.1
Lost Time Injury Frequency (LTIF) ^{1) 5)} , own personnel and contractors	1.5	1.3	1.7
Severe occupational accidents ^{1) 6)} , own personnel and contractors	3	1	1
of which fatalities, own personnel	0	1	0
of which fatalities, contractors	1	0	0
Safety-certified ^{1) 7)} operations in power and heat production, % of sales	99.3	98.8	96.5
Supplier audits ³⁾ , number	4	6	14
Support to society ³⁾ , EUR million	1.8	2.5	3.0

1) Uniper consolidated as of Q2/2020

2) Uniper consolidated at year-end 2020

3) Uniper consolidated as of Q1/2021

4) TRIF = Total Recordable Injury Frequency, injuries per million working hours

5) LTIF = Lost Time Injury Frequency, injuries per million working hours

6) Fatality or an accident leading to permanent disability or an accident with severe and life-threatening injuries

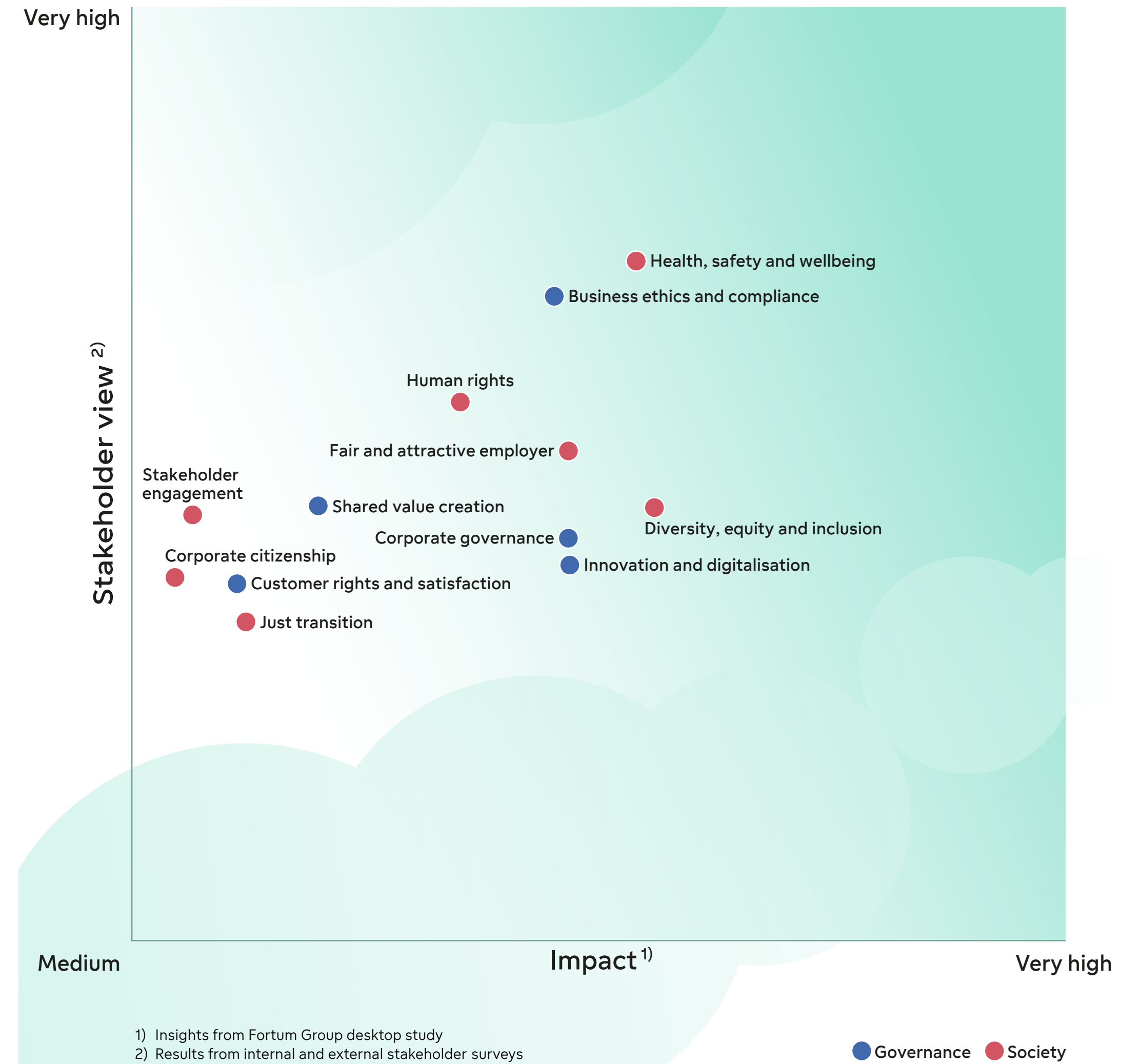
7) OHSAS 18001 or ISO 45001

* For Uniper, the figures do not include board members, managing directors, apprentices, work-study students and interns

** 2020 comparative figure was revised to reflect the consolidation of Uniper from March 31, 2020

*** Calculation principle changed due to alignment with Uniper

Sustainability priorities related to personnel and society



1) Insights from Fortum Group desktop study

2) Results from internal and external stakeholder surveys

Personnel

We aspire to be a responsible employer that offers a diverse and motivating work environment and invests in personnel development and wellbeing.

For Fortum, the People Policy and Leadership Principles guide personnel-related matters, excluding Uniper. For Uniper, the Uniper Way describes the core elements and guiding statements for leadership, teamwork and individual contribution and thus forms the basis for the corporate culture.

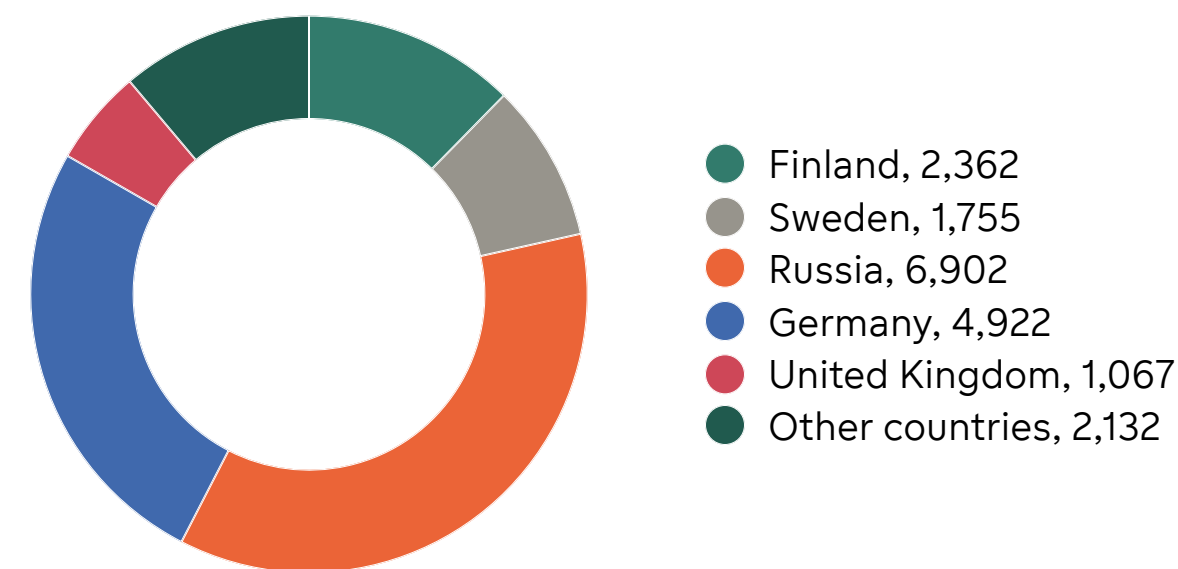
In 2021, Fortum and Uniper together started analysing their existing cultures and related strengths and improvement potential, and identifying potential roadblocks impacting further co-operation. The analysis investigates the companies' values, what kinds of principles guide their work and what the companies have in common.

Our employees

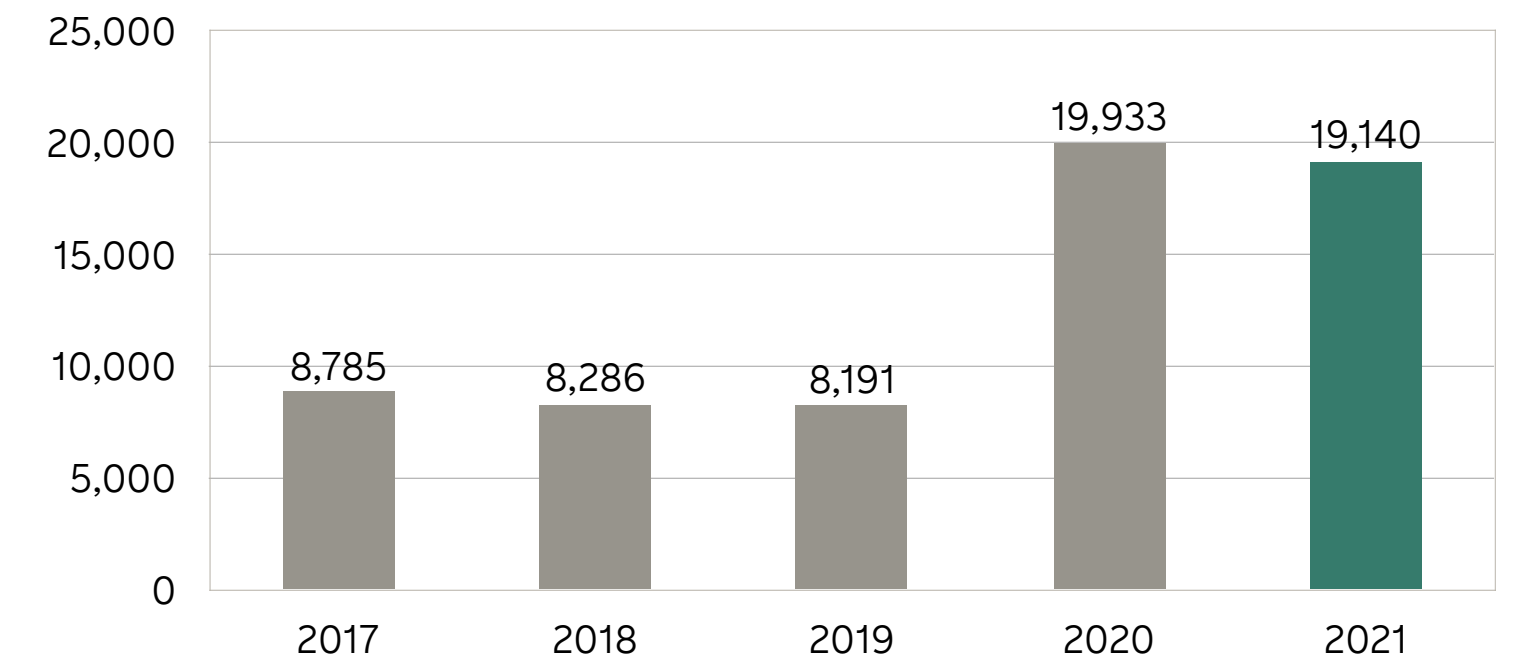
At the end of 2021, 19,140 (2020: 19,933) employees worked at Fortum. The highest number of employees, 6,902, was in Russia. Permanent employees accounted for 95% of the personnel. The share of full-time employees was 97%. During the year, 1,496 new permanent employees joined Fortum and 2,023 employment relationships were terminated. Departure turnover in 2021 was 10,4%. Voluntary departure turnover was 6,8%.

Contractors' employees worked at Fortum sites for a total of approximately 2,603,621 days during the year. The figure is based on contractors' hourly logs and on estimates made on the basis of job costs and average hourly rates. The figure has been calculated on the basis of an 8-hour work day.

Number of employees by country, 31 December 2021



Number of employees, 31 December



Personnel statistics from 2021, by country

	Finland	Sweden	Russia	Germany	United Kingdom	Other countries	Total
Personnel at year-end, by gender ¹⁾							
male	2,362	1,755	6,902	4,922	1,067	2,132	19,140
female	1,631	1,252	5,073	3,619	883	1,375	13,833
Personnel at year-end, by type ²⁾							
white collar	731	503	1,829	1,303	184	757	5,307
blue collar	2,015	1,643	3,060	4,132	795	1,653	13,298
Personnel expenses, million euros	361	114	3,855	1,118	272	460	6,180
	244	172	151	670	135	189	1,561

1) For Uniper, the figures do not include board members, managing directors, apprentices, work-study students, and interns

2) For Uniper, the figures include board members, managing directors, apprentices, work-study students, and interns

Workforce by employment contract and employment type, by country and gender (GRI 102-8)

	Finland		Sweden		Russia		Germany		United Kingdom		Other countries		Total	
	M	F	M	F	M	F	M	F	M	F	M	F	M	F
Employment contract ¹⁾	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.
Permanent	1,598	695	1,239	497	4,831	1,606	3,426	1,181	831	169	1,330	726	13,255	4,874
Fixed-term	43	40	13	6	241	224	174	102	52	15	30	25	553	412
Employment type ²⁾	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.
Full-time	1,627	716	1,239	477	5,081	1,827	3,722	1,039	869	148	1,342	719	13,880	4,926
Part-time	14	19	15	26	2	5	142	347	14	36	20	32	207	465

1) For Uniper, the figures do not include board members, managing directors, apprentices, work-study students and interns

2) For Uniper, the figures include board members, managing directors, apprentices, work-study students and interns

Total number and rate of new permanent employee hires and employee turnover by age group, gender and country (GRI 401-1)

	Finland		Sweden		Russia		Germany		United Kingdom		Other countries		Total	
	M	F	M	F	M	F	M	F	M	F	M	F	M	F
New employee hires	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.
age group														
≤20	4	0	1	2	15	2	2	0	0	0	0	0	22	4
21–30	24	16	46	27	160	20	40	30	7	3	60	51	337	147
31–40	61	26	34	19	175	50	82	29	16	2	45	32	413	158
41–50	40	15	25	16	67	26	30	14	12	6	23	19	197	96
51–60	13	5	17	9	30	2	15	2	7	1	11	3	93	22
>60	0	0	1	0	1	0	0	1	1	0	3	0	6	1
New recruits, %	8.7	8.4	9.9	14.5	8.8	5.5	4.4	5.5	4.9	6.5	10.4	14.0	7.6	7.9

	Finland		Sweden		Russia		Germany		United Kingdom		Other countries		Total	
	M	F	M	F	M	F	M	F	M	F	M	F	M	F
Employees leaving	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.
age group														
≤20	0	0	2	0	2	0	0	0	0	0	0	0	4	0
21–30	30	10	35	17	99	21	22	4	7	2	41	28	234	82
31–40	49	27	32	13	220	38	46	15	8	3	87	28	442	124
41–50	41	20	22	12	162	47	37	12	11	1	58	36	331	128
51–60	19	10	6	7	147	67	34	12	17	2	45	26	268	124
>60	33	11	28	14	73	16	30	1	10	1	57	12	231	55
Departure turnover, %	10.5	10.6	10.0	12.5	13.8	10.3	4.4	3.2	6.0	4.9	21.1	17.3	10.7	9.5

	Finland		Sweden		Russia		Germany		United Kingdom		Other countries		Total	
	M	F	M	F	M	F	M	F	M	F	M	F	M	F
Employees leaving, employee's initiative	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.
age group														
≤20	0	0	0	0	2	0	0	0	0	0	0	0	2	0
21–30	24	10	33	15	76	16	21	4	6	2	26	24	186	71
31–40	44	18	30	11	154	31	34	15	8	3	36	20	306	98
41–50	28	17	18	11	95	23	25	11	11	1	11	12	188	75
51–60	12	8	5	4	85	40	10	10	15	2	4	5	131	69
>60	31	6	25	9	53	9	27	0	9	1	29	3	174	28
Voluntary departure turnover, %	8.5	8.0	8.9	9.9	9.1	6.5	3.0	2.9	5.5	4.9	7.8	8.5	7.0	6.3

Diversity and equal opportunity

We understand that diversity and inclusion are key to our long-term success as a company in all our markets. We value diversity and foster fair treatment and equal opportunity in the recruitment, remuneration, development, and advancement of employees, regardless of ethnicity, religion, political opinion, gender, age, national origin, language, sexual orientation, marital status, disability, or any other factor. Discrimination and unfair treatment are not tolerated.

Flexible work schedules, remote work, and parental leave arrangements support the work-life balance of employees. Parental leave is granted as prescribed by law. The exception to this is India, where we offer an additional four weeks of leave on top of what is stipulated by law. We offer flexible work schedules and remote working in positions that do not require presence at the workplace. Remote working remained at a high level in 2021 due to the Covid-19 pandemic.

In Finland, Fortum annually drafts company-specific gender equality plans in collaboration with personnel representatives. Using various statistics, the gender equality plans examine the realisation of equality between men and women in the company's Finnish operations. Additionally, the plans lay out measures to further improve equality, such as promoting minority gender in different job grades, ensuring equal opportunities in training and career development, and correcting unjustified pay gaps between women and men if detected. In addition, separate equality promotion plans address various forms of equality, such as age, sexual orientation, ethnicity, religion etc. Equality promotion plans are drafted annually at the corporate level for units operating in Finland. Their purpose is to assess the realisation of equality at the workplace and to develop working conditions and ways of operating to be followed when selecting employees and when making decisions affecting employees.

In 2021, Fortum joined a newly launched initiative, the Diversity Roundtable of Finnish companies and universities. Managers and employees of Fortum corporate functions and all managers in divisions (excluding Fortum Russia and Uniper) were encouraged to participate in the diversity, equity and inclusion (DEI) survey conducted by Boston



Consulting Group and United Nations Women; the aim was to listen to our employees' voices, to understand where we are currently compared to other Finnish companies, and to identify key areas to advance. The results showed that 93% of Fortum respondents see DEI as critical for future competitiveness, 84% report that our culture is inclusive and 56% believe that Fortum has a clear diversity and inclusion strategy and objectives. Overall, most obstacles were seen in the recruitment process. More women, by approximately 10 percentage points, see obstacles in each DEI area of the organisation. Compared to peer companies in the survey, women at Fortum have benefited more from diversity initiatives and women show slightly more ambition for career advancement.

Diversity, equity and inclusion are important for Uniper also. In 2021, the company broadened its existing DEI plan to include as new element equity: providing equal opportunity and development possibilities to everyone by ensuring that processes and programmes are fair and unbiased. Uniper's Management Board decided to adopt a new company-wide DEI strategy, which was communicated in early 2022. The strategy clarifies Uniper's DEI ambitions, creates a common framework for all DEI activities, establishes a governance structure, and enhances analytics, measurability, and transparency. Uniper expanded its offering of online training modules on DEI and unconscious bias for managers and employees and seeks to hire and promote minorities and people with disabilities.

Fortum and Uniper are both participants in the ▶ **Equal by 30** campaign, a global effort to reach gender parity in the energy sector by 2030. The initiative includes 12 governments and more than 130 participating organisations worldwide. Fortum, excluding Uniper, also takes part in the Female Leader Engineer (FLE) programme in Sweden. The programme aims to strengthen the role of women in the corporate world and especially in engineering-dominated sectors where men are in the clear majority. Through the programme, female engineering students compete for internships in industrial companies. In order to advance diversity, Fortum takes part in Qraftsamling, Swedenergy's (Energiföretagen) change and leadership development programme for

a more attractive energy industry. The main purpose of Qraftsamling is to increase the ability of the entire energy industry, and the individual companies, to attract and retain the best talent, regardless of age, gender, or background in general.

Uniper participates in several initiatives promoting diversity in various operating countries. The company is a signatory of the German Diversity Charter and is taking part in the "Komm, mach MINT" nationwide programme that aims to attract and support women and girls in the area of STEM (science, technology, engineering, and mathematics). In Sweden, Uniper sponsors "Kraftkvinnorna Powerwoman of the year" and "Women in Nuclear" and is a participant in an induction programme for young females in the energy sector (BRIP).

In 2021, females accounted for 28% of total personnel and 27% of Fortum Group's management. Fortum's target is to comply with the principles issued in the Finnish Government Resolution on equal gender representation on the boards of listed companies with the aim of the board consisting of at least 40% of women and men each by 2020. At the end of 2021, Fortum's Board of Directors comprised seven members, four (57%) of them were women. Fortum ranked the best of the Finnish companies included and 22nd at the European level in the ▶ **European Women on Boards 2021** study and Uniper ranked 363rd. The study examined gender diversity on the boards and key management of European companies.

In accordance with the German "Law on Equal Participation of Women and Men in Leadership Positions in the Private and Public Sector," Uniper has set a target for women to account for 25% at the first and second management levels below the Management Board by the end of June, 2022. It intends to achieve this target through more diverse selection and recruitment procedures, mentoring, and flexible work arrangements for all employees. As of year-end 2021, Uniper had not yet achieved the target: the figure was 20,6%.

Fortum is committed to zero tolerance of any form of discrimination and harassment. This is clearly expressed in both Fortum's and Uniper's Codes of Conduct. The Codes of Conduct also include guidelines

for employees on how to report possible violations. All compliance concerns are reviewed according to the established internal processes. Fortum's, excluding Uniper, operations in Finland, Sweden, and India, for example, also have separate guidelines in place for workplace harassment and discrimination.

There were three harassment or discrimination incidents in Finland and one in Sweden reported to Fortum's, excluding Uniper, reporting channels in 2021. The cases were resolved through discussions with the relevant parties. No further actions were needed.

The average age of Fortum Group employees was 44 years. The share of employees over 50 years old was 32% for the entire Group.

Fair and attractive employer

We aim to attract and retain employees by providing good working conditions, development opportunities and competitive remuneration.

Fortum, excluding Uniper, has continued the work to enhance our image as fair and attractive employer. In 2021, we updated our employer value proposition (EVP) to better highlight the core aspects that make us a great place to work, and that helps us to attract new talents to Fortum. The EVP combines our strategy and culture, how we care for our employees, create a culture of mutual trust, collaborate with each other, develop our people and strive to foster a sense of belonging. The EVP is something all our employees demonstrate in our daily interactions with other people. The EVP is comprised of characteristics to attract new talent to Fortum. The different value proposition themes were introduced internally and externally via our renewed career website, new job board, and in social media.

Fortum, excluding Uniper, implemented a new recruiting system to put even more focus on candidate experience. All stakeholders involved

in the recruiting and hiring process are trained on topics such as unconscious bias in decision making and using gender neutral language in job ads. We are committed to our diversity, equity and inclusion promise in building diverse teams, where everyone feels included and is treated equally.

Fortum, excluding Uniper, continued collaboration with schools, universities, and student associations. We offer various traineeships and thesis opportunities for students. In Finland, over 170 summer trainees worked with us during 2021. We also retained our top ten place in the employer branding survey for students, ranking 9th in the Engineering category on the list of the 100 Most Attractive Employers in Finland. Uniper offers a Graduate Trainee programme and internships opportunities.

Fortum India was certified as a 'Great Place to Work' by Great Place to Work® Institute. Great Place to Work® Institute conducted a cultural audit followed by a survey and audit among the employees of the organization.

Management by age and gender (GRI 405-1)

age group	Male	Female
≤20	0	0
21–30	10	3
31–40	128	50
41–50	209	84
51–60	161	54
>60	20	4

Personnel age distribution by country and gender (GRI 405-1) ¹⁾

age group	Finland		Sweden		Russia		Germany		United Kingdom		Other countries		Total	
	M	F	M	F	M	F	M	F	M	F	M	F	M	F
≤20	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.
≤20	7	1	0	3	14	4	117	18	14	1	5	1	157	28
21–30	225	104	138	92	652	122	474	254	114	21	201	179	1,804	772
31–40	477	221	269	110	1,674	518	773	422	188	53	363	281	3,744	1,605
41–50	450	194	312	152	1,353	600	927	380	242	67	324	181	3,608	1,574
51–60	371	172	385	125	1,165	519	1,413	284	272	37	352	92	3,958	1,229
>60	111	43	150	21	225	69	160	28	53	5	117	17	816	183

1) For Uniper, the figures include board members, managing directors, apprentices, work-study students and interns

Rewarding

Competitive remuneration is essential for attracting and retaining talented people. Salary levels at Fortum are in compliance with established industry practices in each country, local legislation, and sector-specific labour market and other agreements. The key objective of rewarding is to encourage and recognise high performance, professional development, and behaviour that align with our strategy and values. Employee compensation includes variable components that reflect both the company’s financial and sustainability performance as well as the employees’ individual performance.

Fortum, excluding Uniper, offers its employees a share savings programme. The purpose of the programme is to encourage employees to become Fortum shareholders and to strengthen their commitment to increasing shareholder value. Participation in the share savings programme is voluntary and is offered to all employees, except in countries where prohibited by local legislation or other similar reasons, such as Russia.

For Fortum, excluding Uniper, the harmonised job classification system enables the evaluation of pay equality for the base salary in all our operating countries. All personnel groups, except individuals working in blue-collar positions (around 34% of total personnel), are included. In 2021, the total number of personnel included in the evaluation was 3,929, of which 1,417 (36%) were female. The base salaries of female employees were, on average, 7% (2020: 5%) lower than the male base salaries. The average number of years of service for female employees was nine and for male employees ten. The change in the salary gap average is related to the change in the set of Fortum’s operating countries, due to the sale of businesses in the Baltic countries. Within each individual operating country, there was no change or only a minor change in the salary gap average compared to the previous year. The biggest gap in pay equality was in Russia.

Uniper publishes annually a gender pay gap report in line with the UK legal requirements for its two legal entities employing around 250 people: Uniper UK Ltd and Uniper Technologies Ltd. The report can be found on Uniper’s website and on the UK Government’s [website](#).



Employee-employer relations

Fortum’s business operations are developed and strengthened in good collaboration with employees. We believe that the successful management of business is built on relationships of trust between management and employees and on the active flow of information.

Fortum respects employees’ freedom of association and the right to collective bargaining. In most of our operating countries, freedom of association and collective bargaining are guaranteed by law. The exceptions to this are India, the United Arab Emirates, and the USA, which have not ratified the International Labour Organisation’s (ILO) Convention on the right to freedom of association and collective bargaining. In these countries, we comply with the same practices as in other countries of operation, and we do not limit or prohibit the right to freedom of association.

We apply local collective bargaining agreements in compliance with the scope of each respective agreement in our operating countries. Collective bargaining agreements cover around 82% of Fortum’s employees in our main operating countries. There are no applicable collective bargaining agreements in, e.g., Hungary, India, Poland, Estonia, the United Arab Emirates, and the USA. In these countries, employment contracts are based on local legislation and on the company’s human resources policies.

European Works Councils

Fortum’s and Uniper’s European employees are represented by the companies’ European Works Councils (EWC). Through the councils, workers are informed and consulted by management on the progress of the business and on any significant decision at the European level that could affect their employment or working conditions.

In 2021, the Fortum European Council (FEC) held a hybrid on-site or virtual plenary meeting, in which personnel representatives from Finland, Sweden, Norway, Poland, Estonia, and Denmark participated. The Council’s meeting focused on, among other topics, Fortum’s strategy and business outlook, the impact of the Covid-19 pandemic on Fortum’s personnel, and hybrid work as a new way of working. Occupational safety and personnel wellbeing topics were also on the FEC meeting agenda, as they always are. For the first time, Uniper SE Works Council’s Executive Committee members also participated the FEC plenary meeting as guests. In addition, local-level employee-employer meetings are held several times a year in different countries as needed.

Several virtual meetings of the SE Works Council of Uniper SE and of the Executive Committee of the SE Works Council took place in 2021, in which representatives from Germany, the Benelux countries, Sweden, the United Kingdom, and Hungary participated. In addition to some cross-border projects and initiatives, the main topics discussed were the corporate and people strategy, the impact of Brexit, the impact of Covid-19, and the future way of working after the pandemic (“New Normal”).

Employees are also represented in Uniper’s twelve-member Supervisory Board, in which six members are elected by the employees in accordance with the agreement on employee participation laid down in the SE Uniper election procedures.

The dialogue between Fortum’s management and Uniper employee representatives was active during 2021. The adaptation negotiations to create a common EWC for Fortum and Uniper were also conducted during the year.

Restructuring situations

In situations of organisational restructuring, we negotiate with personnel representatives in compliance with each country’s local legislation and contractual procedures. In situations involving personnel reductions, the minimum notice period is based on local legislation, collective labour agreements, or employment contracts, which are in harmony with the local legislation and agreements.

In situations involving personnel reductions, we want to primarily support the reemployment of the personnel. We offer outplacement services on a per-case and per-country basis, and, in cooperation with local unemployment authorities or service providers, we investigate the possibilities to arrange vocational or other training that enhances employability. The content of the offered support package is decided based on local needs. The financial compensation of the package is usually based on years of employment.

Case | The importance of occupational healthcare services in a pandemic situation

Measures conducted by the occupational healthcare services have helped to ensure that there have been no closures of Fortum’s facilities due to Covid-19, thus guaranteeing a safe working environment for our employees. There have not been pandemic-related interruptions in our energy production or challenges in maintaining process safety. Maintenance outages were, in general, also implemented as scheduled with careful planning and special measures to protect the health of our own and contractors’ employees.

The wellbeing of our employees has been increasingly supported during the Covid-19 pandemic by investing in different activities, such as virtual exercises, coaching, and coffee breaks. This has been possible through solid cooperation between different corporate functions, namely the occupational healthcare services and people function. Fortum’s leading physician in occupational health acted as a member of the global pandemic steering group and provided continuous medical updates in Covid-related townhall meetings.

Fortum’s subsidiary Uniper has also worked actively during the pandemic to provide high-standard occupational healthcare services and support to its employees. Uniper was able to offer all employees in Germany the opportunity to be vaccinated. Vaccination centres were established at Uniper’s Düsseldorf headquarters and in the Ruhr area. More than 1,300 people received a Covid-19 vaccination via Uniper’s external company medical services, at 13 locations.

Covid-19 vaccinations for our employees in Finland

In 2021, Fortum’s occupational healthcare services was one of the largest private providers of employee Covid-19 vaccinations among non-health care companies in Finland. A significant number of Covid-19 vaccinations have been provided to employees at their respective work locations – both at power plants and office sites. Earlier in the autumn, as is traditional every year, occupational healthcare services also provided vaccinations against the seasonal influenza.

Fortum’s occupational healthcare services are located at the Loviisa nuclear power plant, the Riihimäki waste-to-energy plant, and the head office in Espoo. At other locations, we provide healthcare services to our employees in partnership with other healthcare operators. Our occupational healthcare services have been able to function normally throughout the Covid-19 pandemic. Healthcare services’ receptions have remained open, and statutory responsibilities, such as radiation surveys, have been taken care of in spite of the additional duties the Covid-19 pandemic has caused for occupational healthcare professionals. This has been achieved through careful planning and additional remote consultations, avoiding unnecessary human contact, and with meticulous use of face masks and high standards of hygiene. Occupational healthcare services representatives have been actively participating in the site-specific steering groups, for example in communications actions, in the practical risk management duties aimed at preventing infections, and in tracking Covid-19 infection chains. During the yearly maintenance of the Loviisa nuclear power plant, occupational healthcare services helped by carrying out case-by-case PCR testing.



Employee health and wellbeing

By improving work wellbeing, we support a work environment and business culture that promotes our employees' health, occupational safety, and the functionality of the work community. In 2021, our efforts continued to focus on safeguarding personnel from the effects of the Covid-19 pandemic and on supporting their physical and mental wellbeing in the exceptional conditions.

Covid-19 response

Fortum and Uniper share a similar approach in protecting their employees and operations from the effects of the Covid-19 pandemic. At the beginning of the pandemic, coordination teams consisting of senior management were established in both companies to closely monitor the development of the pandemic and to agree on related actions. These teams continued their work in 2021.

At Fortum, excluding Uniper, the Covid-19 Task Force comprises experts from the Corporate Security, Occupational Healthcare, People Function, Corporate Communications, Corporate Risk and Compliance, Public Affairs, Corporate Procurement, and Business Technology units. The Task Force is led by the Vice President of the Security unit. Fortum Executive Management support is provided by the Senior Vice Presidents of People and of Corporate Affairs, Safety and Sustainability.

The Task Force assists Fortum's business divisions and support functions by

- Maintaining situational awareness regarding the pandemic
- Following up on the requirements and recommendations issued by the local authorities in different countries
- Issuing instructions for safe work arrangements at offices and sites, as well as guidance for remote working
- Giving medical updates regarding testing and vaccines
- Communicating best practices and lessons learnt in tackling the pandemic at the workplace

During the year, the Task Force organised three virtual townhall meetings with Q&A sessions for Fortum employees. In addition, nine Management Letters were sent to all Fortum managers. Information on the pandemic has also been available on the corporate intranet for all employees in six languages.

The practices taken into use to combat Covid-19 and safeguard the health of personnel at Fortum offices and sites include the requirement or recommendation, depending on guidelines given by the local authorities, to work remotely in those positions where a physical presence is not required. At sites where remote work is not possible, we have implemented special precautionary measures, such as arranging staggered arrivals, breaks and lunch hours, maintaining physical distance, encouraging the use of face masks following the guidelines of local authorities and organising enhanced cleaning. Hand disinfectants, face masks, protective gloves, and disinfectant cleaning wipes are provided at Fortum offices and sites.

Remote working remained at a high level in 2021 due to the Covid-19 pandemic, as Fortum employees were either required or recommended to work remotely in line with local guidelines set by the authorities. As of November, excluding Uniper, a hybrid work model, meaning a minimum of two days in the office environment, started in countries and locations where the pandemic situation allowed. In some offices, like at the Espoo Head Office, the hybrid work model was put on hold as the pandemic situation worsened later in the year.

The travel restrictions that had been in place since the beginning of the pandemic were lifted at the beginning of October, and business travel for a mandatory business reason, with approval from a line manager, resumed.

Fortum Group has also implemented several measures to support employees working remotely; examples include cloud-based IT solutions and HR processes that support flexible, mobile work arrangements.

Occupational safety and health care

Occupational safety and health care are organised in our operating countries in line with local legislative requirements. Occupational safety committees or similar bodies represent all personnel groups, and they regularly address issues related to occupational safety and workplace wellbeing.

All our employees are within the sphere of occupational health care. We emphasise the significance of preventive activities in promoting health and wellbeing in the company. We conduct regular medical examinations of our personnel in accordance with local laws. Employees whose work exposes them to, e.g., noise, dust, radiation, or those who perform shift work, are within the sphere of the examinations.

The percentage of sickness-related absences was 3.6 in 2021. The sickness absence rate is calculated based on the theoretical working hours. Reducing sickness-related absences is a priority for us, and we address the issue with the so-called early-support model. We increase open communication between employees and supervisors by discussing and mapping the reasons for absences. Supervisors receive training in the management of working capacity and work wellbeing.

Fortum supported vaccination programmes by providing Covid-19 vaccinations to our employees, for whom a vaccination was medically appropriate and who wished to receive one. Vaccination was started in countries where decisions by local officials made this possible; this work continues in 2022.

Wellbeing programmes and surveys

Fortum, excluding Uniper, runs the Energise Your Day Wellbeing programme, which encourages employees to maintain their wellbeing and to take care of themselves. The programme offers ideas and tools for self-management, stress management, recovery, nutrition, and physical activity.

The focus areas of the programme are defined based on the employee wellbeing surveys and other wellbeing KPIs. The focus areas in 2021 were

on supporting wellbeing during the Covid-19 pandemic and on the hybrid work model. Within this scope, mental energy and physical health topics were highlighted, including, e.g., stress management and resilience skills, ergonomics, physical activity during the workday, and managing sickness absences. Supporting managers in leading employees' wellbeing during the challenging pandemic period was also a focus. We continued large-scale cooperation with a wellbeing service provider, which includes individual and team-level wellbeing coaching and other wellbeing services that are available to employees on a weekly basis.

Due to the Covid-19 pandemic, the focus was on organising and developing virtual events and services. Our employees were offered a virtual break exercise programme focused especially on remote working; the weekly Take a Break sessions had 4,300 participants. In addition, nearly one thousand employees participated in individual and team coaching sessions. In May, we organised a Stronger Together wellbeing campaign that encouraged more walking; during the campaign, our employees collected 69 million steps in total. Remote consultation with an occupational physiotherapist was available for teams and individuals.

The goal of wellbeing programmes is to improve the quality of life and performance level of the people at Fortum. We introduced a new tool for this, and more than two thousand employees, excluding Uniper, conducted the holistic wellbeing assessment. The survey gives a wide overview of the wellbeing status at the individual level but it's also a tool for developing the wellbeing at the different levels of the organisation. The results of this survey were strong in the areas of life enjoyment, work performance, and core wellbeing at work; e.g., 76% of the respondents feel that the work they do is meaningful to them and 86% feel they can influence their work. Based on the responses, special attention should be paid to everyday activity, breaks during the day, and ergonomics. Some challenges with sleep and recovery and with mental energy topics were also identified; e.g., 39% of employees often feel tired during the day.

Fortum, excluding Uniper, conducts an annual Wellbeing Pulse Survey. Based on the feedback, despite the exceptional year, wellbeing was at a good level. 94% of respondents feel that they are managing the mental demands of their own work role. According to the personnel, wellbeing can

be further improved by, e.g., focusing more on increasing personal energy levels after the workday. According to the survey, 28% of respondents feel that they don't have enough energy left after the workday to do personal activities. In 2022, we will continue to pay attention to the holistic wellbeing and resilience of our employees.

Uniper's integrated health approach offers all employees access to a wide range of services, from medical check-ups and extensive exercise programmes to mental wellbeing campaigns. Health management continued to make progress in 2021. Functional teams continued to implement actions defined in their units' health action plans. The 2021 Voice of Uniper survey indicated high satisfaction with Uniper's health support. The average score on the health-related questions remained stable at 89% positive in 2021, the same level as in 2020. There was a small decrease, 2 percentage points, in the responses on mental health, specifically relating to the ability to cope with the mental demands of their role during the pandemic.

Employee development

Our goal is to be a forerunner in the future energy system. This means we must continuously invest in the development of leadership and personnel competence and in the support of an open and flexible corporate culture.

In 2021, special emphasis was put on supporting the managers and teams in remote and virtual working. Fortum, excluding Uniper, continued Workforce 2.0, a strategic initiative to analyse what structural long-term changes we need to implement in our ways of working. The long-term changes and scenarios will be combined with short-term adaptations and actions. The initiative continued throughout 2021 and collaborated to some extent with Uniper's equivalent initiative called NeNo – New Normal. The Workforce 2.0 team collected data from our employees through employee pulse surveys and navigated according to employee preferences as much as possible. This eventually led to the design of the hybrid work principles in which we recommend our workforce to work and collaborate at least two days in the office and the rest of the workweek based on the team's decision and preferences.

Flexibility is the key in the model, and we believe in collaboration and physical meetings.

The key deliveries and outcome of the Workforce 2.0 initiative were the design, launch, and implementation of Fortum's Hybrid Work Model and the supporting Hybrid Work Handbook for the workforce. Fortum's Hybrid Work Model implementation consisted of training and coaching more than 800 managers and employees in the hybrid work principles and in understanding how the leadership style and performance expectations are different when working partly in the office and partly remote. We offered managers a Leadership Booster Programme.

We offer our personnel a variety of online training modules. Fortum, excluding Uniper, has in place five online trainings that are mandatory for all employees. These trainings are related to the Code of Conduct, occupational safety, safety, corporate security, and privacy. Uniper has three mandatory online trainings that address compliance, data protection, and IT security.

The digital learning offering was reinforced, giving employees a wide range of possibilities to build their expertise also when working remotely. Fortum, excluding Uniper, continued developing the portfolio of online training courses, mainly in the area of Fortum Open Leadership and culture. We also created new eLearning courses in several business-related topics and introduced digital nano-learning courses on topics related to leadership training, different processes, and IT tools. The nano-learning courses take only 2–3 minutes per lesson.

Our Navigator talent programme was run completely virtually due to the pandemic. We continued to arrange virtual Fortum Talks events addressing strategically important topics relevant for the future success of the company.

In addition to a variety of training courses mandated by law, Uniper offers its employees also voluntary training possibilities. In 2021, Uniper continued with Digital Skills Compass, a learning programme encompassing topics like data science, industrial cybersecurity, digital business transformation, agile project management, and digital trading. Furthermore, the company launched a cross-functional

programme called #evolve for developing high-potential employees. The New Normal learning initiative focused on virtual collaboration and communication, wellbeing, the digital workplace, and hybrid leadership. The aim was to prepare employees to be leaders in the new normal. For experienced leaders, deep-dive modules on topics like inclusive, agile, and remote leadership are part of the Leadership curriculum at Uniper and accessible to all managers.

In 2021, training costs for Fortum, including Uniper, totalled EUR 12.8 million.

Performance and development discussions

We support employee development through performance management. For Fortum, excluding Uniper, all employees are within the scope of performance and development discussions. The main objective of the discussion is to ensure that the employee has clear targets that align with the business as well as the competencies supporting the achievement of the targets and professional growth. The achievement of the targets forms the basis for payment of the short-term incentive (STI). All permanent employees who have a minimum of three months of employment in Fortum, excluding Uniper, are within the scope of Fortum's incentive scheme. In addition, we perform so-called 360 degree assessments, which are based on Open Leadership principles, to supervisors excluding Uniper.

Performance management is an integral part of the Uniper culture, setting the direction based on the strategy and ensuring that everyone strives towards clearly defined annual objectives. Uniper has in place several targeted variable STI programmes to support the company's annual success. Part of Uniper's culture is to provide systematic feedback on employee performance, which promotes continuous self-reflection and improvement.

Feedback from personnel

We place significant emphasis on an open and trusting corporate culture, and we highly value our employees' feedback. Fortum, excluding Uniper, uses a real-time and flexible feedback pulse tool to

track the level of employee engagement and wellbeing in the company. The global engagement survey is conducted twice a year. In addition, managers always have the possibility to conduct short surveys with a couple of questions whenever necessary. The tool allows managers and employees to see the results as soon as the feedback is given.

For Fortum, excluding Uniper, the response rate of the global engagement survey carried out in 2021 was a record high of 79%. The Total Engagement Index reached the same level as the previous year, and the results improved or stayed the same in seven out of ten areas. Compared to the previous year's results, improvement was seen in open and honest two-way communication, trust in management's decisions, and in decisions made without unnecessary levels of approval. 81% of employees are proud to work at Fortum and consider Fortum to be an innovative company. While these two areas scored the highest in the survey, a slight decrease was seen in both areas compared to the previous year's results. The area that scored the lowest (56%) was collaboration between the divisions and units, although there was a slight increase compared to the previous year. We will continue measures to promote and strengthen collaboration across the organisation.

In the Voice of Uniper, an annual survey for Uniper employees excluding Unipro, employees have the opportunity to provide feedback and opinions on various topics like Diversity, Equity and Inclusion, Health and Wellbeing, and Uniper strategy and leadership. The participation rate in the 2021 survey was high at 66%. Employee satisfaction with Uniper as an employer remained high. Employees indicated support for Uniper's progress in sustainability and praised the company's handling of the Covid-19 pandemic situation. Employees particularly appreciate the flexible working hours and the opportunity to work from home, which makes it easier for employees to have a healthy work-life balance.

The survey results related to employee wellbeing are discussed in the section ▶ **Wellbeing programmes and surveys.**



Safety and security

For Fortum, excellence in safety is the foundation of the company’s business and an absolute prerequisite for efficient and interruption-free production. Fortum strives to be a safe workplace for the employees, contractors, and service providers who work for the company.

Occupational and process safety

Maintaining high-standard health and safety practices is essential for Fortum. We believe that all work injuries and EHS incidents are preventable when competence and the right attitude prevails, when potential risks are addressed, and when measures are taken to safeguard against them. Our commitment to safety also extends to people who live near our facilities.

Occupational safety management

Safety is developed systematically in all our operations. For Fortum, excluding Uniper, the Sustainability Policy, the Minimum Requirements for EHS Management, and more detailed EHS manuals steer the work. We regularly update the requirements, and we assess the divisions’ performance in complying with the revised requirements. Safety development plans are made as part of the annual business planning and they are based on the principle of continuous improvement.

For Uniper, the most important tools guiding safety efforts are the HSSE & Sustainability Policy Statement and the HSSE and Sustainability Improvement Plan. Based on the improvement plan, the operating entities design their own annual improvement plans, which include health and safety targets and improvement measures.

Calculated in terms of sales, a certified ISO 45001 safety management system covered 99.3% of Fortum Group’s power and heat production worldwide at the end of 2021. Internal audits and external audits by independent auditors are regularly conducted at our power plants to improve operations.



Occupational safety targets

Fortum’s safety target is measured as Total Recordable Injury Frequency (TRIF), for own personnel and contractors, and the ambitious goal is to be below 1.0 by the end of 2025. In 2021, Fortum also had a target of 0 severe accidents and a target for Lost Time Injury Frequency (LTIF): ≤1.2.

Realisation of the safety target (LTIF, own employees and contractors combined) was a part of Fortum’s short-term incentive (STI) programme in 2021. In the 2022 STI programme, the safety target contains the severity rate per Total Recordable Injury (TRI) of own employees and contractors combined and the execution rate of safety leadership training. The safety metric (Severity rate per TRI) in the STI 2022 programme is applicable to both Fortum and Uniper. Scaling of STI metrics are company specific.

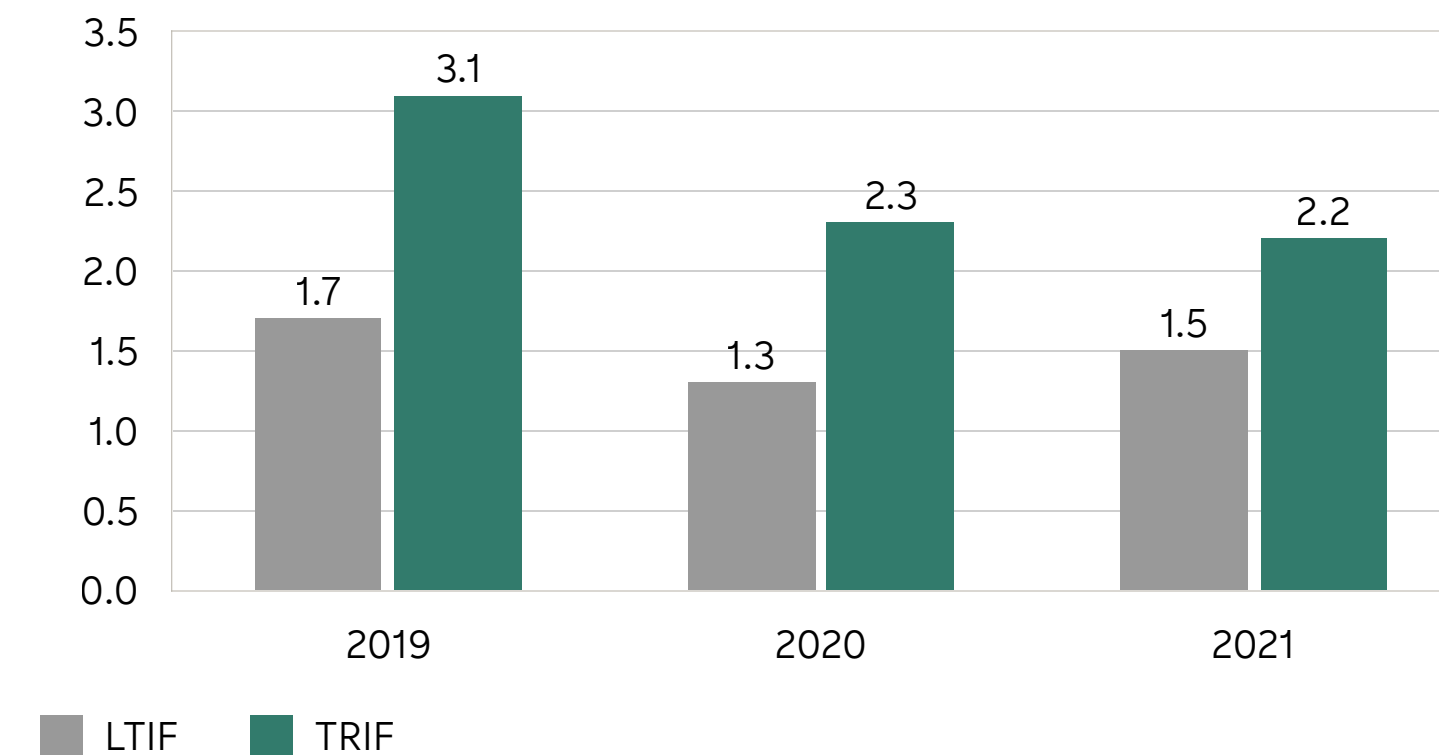
Safety performance

In 2021, Fortum’s TRIF for own personnel and contractors was 2.2 (2020: 2.3), and the LTIF for own personnel and contractors was 1.5 (2020: 1.3). Unfortunately we did not meet the STI target (≤1.2) set for LTIF. In Fortum, excluding Uniper, the LTIF increased in 2021 by 12% compared to 2020 and in Uniper by 38%.

Fortum strives for zero severe occupational accidents. In 2021, there were three (2020: 1) severe occupational accidents in the operations, one resulting in a fatality. The fatally injured person was working for a contractor company to reconstruct a guardhouse at Unipro’s power plant site in Russia.

Fortum, excluding Uniper, applies three internal control points covering its EHS processes. These include the quality of the investigation process of occupational accidents, major EHS incidents, and serious near misses; the GAP index; and the Contractor Safety Improvement index, all measured on a scale of 1–5, with five indicating the highest maturity level.

Injury Frequencies LTIF ¹⁾ and TRIF ²⁾, own personnel and contractors ³⁾



1) LTIF = Lost Time Injury Frequency, injuries per million working hours
 2) TRIF = Total Recordable Injury Frequency, injuries per million working hours
 3) Uniper consolidated as of Q2/2020

In 2021, Fortum’s, excluding Uniper, quality of the investigation process of occupational accidents, major EHS incidents, and serious near misses was at the very good level of 4.0 (2020: 4.0). In 2021, the GAP index was at the very good level of 4.0 (2020: 3.0). The GAP index measures how well Fortum’s, excluding Uniper, EHS minimum requirements are realised at the power plant level.

The Contractor Safety Improvement index was at the very good level of 4.0 (2020: 4.0) in 2021. This index measures how well Fortum, excluding Uniper, has managed to implement measures targeting improvements in contractor safety.

Occupational safety risk assessment and incident investigation

Occupational risk management includes all levels, from strategic risks and business planning to daily work. A risk management plan is drafted on the basis of a risk assessment. Assessments and plans are made together with those working at the worksites, and they are updated at agreed intervals and when conditions change.

At Fortum, e.g. work in confined spaces, working at heights, heavy lifting work, and the handling of hazardous chemicals have been classified as high-risk work. Requirements related to, e.g., personnel training and experience, the provision of instructions, and the pre-job verification to be performed have been defined for performing high-risk work.

The risk management process is developed based on continuous improvement principles and takes into consideration learnings and findings from incidents and deviations at Fortum and other companies. During incident investigations it is concluded whether the risk assessments are correct and the preventive actions sufficient.

Fortum’s incidents and findings of investigations are reported in the incident management system FRIDA. Fortum’s, excluding Uniper, learnings are shared with the organisations through digital safety bulletins. The quality of conducted investigations is verified by the divisions with quarterly process maturity assessments.

In addition, Uniper has in place the incident management system Synergi Life to systematically document and analyse incidents and near misses and to ensure effective communications and corrective measures to prevent their recurrence.

Key safety figures in 2019–2021 (GRI 403-9) ¹⁾

	2021	2020	2019
Total recordable injury frequency (TRIF) ²⁾ , own personnel and contractors	2.2	2.3	3.1
Lost time injury frequency (LTIF) ³⁾ , own personnel and contractors	1.5	1.3	1.7
Lost time injury frequency (LTIF) ³⁾ , own personnel	0.8	0.7	0.8
Lost time injury frequency (LTIF) ³⁾ , contractors	2.5	2.2	3.3
Lost time injuries, own personnel	28	20	11
Lost time injuries, contractors	53	43	28
Severe ⁴⁾ occupational accidents	3	1	1
of which fatalities, own personnel	0	1	0
of which fatalities, contractors	1	0	0
Major EHS incidents ^{5) 6)}	8	16	11

1) Uniper consolidated as of Q2/2020

2) TRIF = Total Recordable Injury Frequency, injuries per million working hours

3) LTIF = Lost Time Injury Frequency, injuries per million working hours

4) Fatality or an accident leading to permanent disability or an accident that with severe and life-threatening injuries

5) Excluding Uniper. Includes major fires, leaks, explosions, dam safety incidents, environmental non-compliances, and INES events level ≥1.
INES = International Nuclear Event Scale

6) The figure does not include the exceedances caused by possible changes in permit limits in Russia.

Occupational accidents, accident frequency, and absence days due to occupational accidents in 2021, by country (GRI 403-9)

	Finland	Sweden	Russia	Germany	United Kingdom	Other countries
Own personnel						
Occupational accidents causing absence	9	6	4	6	0	3
LTIF ¹⁾	2.1	2.0	0.3	0.7	0.0	0.8
Absence from work due to occupational accidents, days	65	52	173	265	0	112
Contractors						
Occupational accidents causing absence	15	12	4	8	1	13
LTIF ¹⁾	9.3	5.3	0.6	1.6	0.7	4.1
Absence from work due to occupational accidents, days	252	198	348*	102	7	251

1) LTIF = Lost Time Injury Frequency, injuries per million working hours

*Fatal accident calculated as 180 absence days according to Fortum's internal instructions

Training and development projects related to occupational safety

In 2021, Fortum launched new Safety Ground Rules to help keep safety on everyone's agenda at all times and to improve Fortum's safety performance. Fortum's divisions have also started work on roadmaps towards safety excellence during 2021–2025 and will continue to plan their activities in line with the new Safety Ground Rules and targets.

In 2021, Fortum and Uniper established common working groups for the development of several aligned processes covering reporting practices and safety key performance indicators, leadership training, contractors' EHS management, and sharing of learnings. Among the aims of this cooperation are ensuring the use of best practices across the whole Fortum Group, creating a set of minimum requirements to be fulfilled in both companies, providing aligned safety leadership trainings for executives and safety eLearning courses for all employees, and improving contractors' EHS performance and awareness. The cooperation will continue in 2022 with implementation phase.

During autumn 2021, the Generation Division launched a new approach – Beyond Zero – that should help to reach and exceed high-level goals in areas including the environment and safety. The Beyond Zero concept originally comes from Uniper, where it was launched within the COO's (Chief Operating Officer) area. Beyond Zero is the umbrella for a variety of initiatives to foster continual and innovative improvements in safety, e.g. nuclear and dam safety, sustainability, environment, security, and compliance.

In order to improve safety performance in the Recycling and Waste business area, City Solutions initiated the SafetyDNA for Leaders project. The project started at the end of 2021, and the implementation will continue in 2022.

Safety culture surveys conducted in the Russia division in October 2021 revealed the main improvements areas for the Safety road map.

Occupational hygiene

Fortum is expanding its business in the recycling and waste management sector including metal and battery recycling. This has subjected our operating environment to new kinds of exposure agents, like chemicals that are used in the metal recycling process.

Additionally, chemical wastes processed in hazardous waste treatment plants, and microbes related to the handling of mixed waste may adversely impact employees. For us to work safely and without harm to health, safety, or the environment, we must be aware of the risks related to exposure agents and follow best practices. Occupational hygiene risk assessments are done at the site level as a part of workplace risk assessments.

Occupational hygiene measurements are taken, if the risks cannot be evaluated otherwise. Personnel whose work could expose them to, e.g., noise or chemicals are subject to regular medical examinations. At Fortum, excluding Uniper, the corporate occupational hygienist is responsible for coordinating the work in cooperation with occupational health care. For Uniper, health managers in core countries also cover occupational hygiene-related topics.

For Fortum, excluding Uniper, the occupational hygiene work in 2021 focused particularly on supporting Fortum's Recycling and Waste business area, especially the recently acquired metal recycling operations. During the ongoing Covid-19 pandemic, an occupational hygienist is supporting business areas, the pandemic task force, and procurement, e.g. when conducting Covid-19 risk assessments, virtual safety walks, and selecting suitable certified surgical masks and respirators.

Process safety

In the exceptional conditions caused by the Covid-19 pandemic, Fortum's top priorities were to ensure the health and safety of its employees and contractors and to maintain business continuity. This goal was well achieved; there were no pandemic-related interruptions in Fortum's energy production or challenges in maintaining process safety. Maintenance outages were, in general, also implemented as scheduled with careful planning and special measures to protect the

health of own and contractors' employees. In some cases, the duration of maintenance periods was extended to reduce the number of workers on site at the same time.

Major EHS incidents are monitored, reported, and investigated regularly in Fortum's operations, and corrective actions are implemented as required. In 2021, there were eight (2020: 16) major EHS incidents in Fortum's operations, excluding Uniper. The major EHS incidents are reported in more detail in the [► Environmental incidents](#) section.

Dam safety

Fortum is systematically reducing risks related to dam safety. A long-term programme is in place for improving the surveillance of the condition of dams and for securing the discharge capacity in extreme flood situations.

In 2021, Fortum, excluding Uniper, focused on operational issues, such as improving the cooperation with our outsourcing partner in Sweden, and managing the impacts of Covid-19 with respect to emergency preparedness. Fortum had no significant operative challenges related to dam safety in 2021, despite the Covid-19 pandemic.

Major efforts have been put into supporting the Nordic Optimisation project, in which Fortum's and Uniper's hydro teams are merged into one team. Actions in preparation for the "One Team" organisation launch in the first quarter of 2022 have included, e.g., updating of the Dam Safety Policy and its guiding principles, functional Dam Safety organisation, and ways of working.

During the year, we actively participated in the updating of Sweden's dam safety guidelines (RIDAS).

In 2021, the preparation and implementation of dam safety investments proceeded as planned. Our extensive dam safety project at the Trängslet dam in the Dalälven water system in Sweden is progressing as scheduled. The Tainionkoski dam safety project (phase 1) in Finland was finalised. During 2021, two large-scale projects were started at Forshuvud and Dejefors. The Untra dam safety project was postponed and split into two phases.

In 2022, large-scale dam safety projects totalling more than EUR 3 million each are planned to be started at Letten (phase 1) in the Klarälven river system, Untra (phase 1) in the Dalälven river system, and Åtorp in the Gullspång river system.

Significant dam safety projects (>EUR 3 million) are expected to be started during 2023–2024 at the following dam sites: Lanforsen (phase 2) in the Dalälven river system, Ljusnefors in the Ljusnan river system, Gråda in the Dalälven river system, and Letten (phase 2) in the Klarälven river system. The most important goals of the projects are to bring the safety of the dams up to a good level by increasing discharge capacity and refurbishing structures and to extend the useful life of the dams.

Nuclear safety

The most important task of our nuclear power operations is to produce electricity safely, reliably, and competitively, in the short and long term, while complying with the principles of nuclear and radiation safety, waste management safety, and nuclear material control. Our operations are based on a high-level safety culture and quality and on continuous improvement. Our own world-class expertise is a prerequisite for safety and competitiveness.

Loviisa nuclear power plant's electricity production avoids about 6 million tonnes of carbon dioxide emissions into the atmosphere in Finland each year compared to the equivalent amount of fossil fuel-based electricity.

Fortum has submitted its Environmental Impact Assessment (EIA) Report to Finland's Ministry of Economic Affairs and Employment (MEAE) in September 2021. The two primary alternatives in Fortum's EIA process are either continuing the use of both units until about 2050 or decommissioning the nuclear power plant after the expiration of the current licenses. The operating licenses of Loviisa plant units 1 and 2 expire at the end of 2027 and at the end of 2030, respectively. This was the first time in Finland that an Environmental Impact Assessment was made for a nuclear power plant in operation.

The [EIA report](#) includes assessments of the project’s impact on people’s living conditions, wellbeing and health, as well as the environment, waters, groundwater, fisheries, nature sites, landscape, and cultural environment. In addition, its impact on community structure and regional economy has been assessed. The operations of the Loviisa nuclear power plant are very stable, the environmental impacts are well known and there are techniques, processes and the means by which to mitigate the impacts. Fortum has decided to apply for new operating licence for both units at the Loviisa nuclear power plant until the end of 2050.

Several plant modifications were implemented at the Loviisa nuclear power plant in 2021 to improve the safety and operation of the plant. The emergency diesel generator automation renewal at the Loviisa unit 1 continued in 2021 and the second diesel generator was renewed. The first diesel generator was renewed in 2020. The task of the emergency diesel generator system is to ensure the automatic supply of electricity to safety-critical equipment in situations where the normal supply of electricity has been disrupted. The goal of the renewal is to secure the design service life at the Loviisa unit 1 and to ensure the operational reliability, safety, and availability of the system. The renewal will free up spare parts for emergency diesel systems at the Loviisa unit 2. Renewals will continue in 2022–2023.

The plant protection system was partly renewed during 2021. The purpose of the renewal is to secure the safety and the operation of the Loviisa nuclear power plant by replacing the old system with a new one. The emergency diesel generators and the plant protection system are among the plant’s most important safety systems.

Uniper owns and operates the Oskarshamn nuclear power plant (OKG) in Sweden. Nuclear safety has the highest priority in OKG’s operations. There is more about OKG’s nuclear safety policy and safety culture on the OKG website.

- ▶ [Nuclear safety at Loviisa in Finland](#)
- ▶ [Nuclear safety at Oskarshamn in Sweden](#)



Corporate security

Corporate security processes ensure the uninterrupted continuity of business and the safety of our assets, people, information, and processes, in normal and exceptional situations. Uninterrupted energy production and other services are important – both for Fortum’s business operations and for an energy-dependent society.

Securing personnel and business

Compliance with the minimum security requirements improves our operational ability to withstand and recover from disruptions and thus improves productivity. Risks impacting the company and business operations may be directly or indirectly related to political situations, terrorism, crime, conflicts, and business partners. Security is also improved by gaining a deeper understanding of the security situation, which is provided to support business decision-making. Fortum assesses risks related to people, business, and information in all operating countries and in countries where we have potential operations or business travel.

Cooperation with Uniper has strengthened security capabilities in both companies.

Cyber security

Fortum, excluding Uniper, has in place a cyber security programme to ensure the security of the information we handle and the security of our IT and Operational Technology (OT) systems. The aim is to ensure the production and distribution of power and heat and the functioning of digital services offered to customers. Therefore, we are focusing on OT system resilience. We also aim to secure partner-related risks to the extent that they relate to the company’s assets. The cyber security programme also includes securing the confidentiality, integrity, and availability of the information we handle.

Uniper has implemented an Information Management System based on ISO/IEC 27001 standards to manage assets. Quality Management ensures improvement of the critical IT and Operational Technology (OT) systems. Uniper has fully implemented security catalogues for their German critical infrastructure sites and continues implementation process on other sites. Uniper strives to ensure compliance with regulations and best practices relevant to the industry. In addition, Uniper has built and continues to strengthen its cyber defense and response capabilities in accordance with the changes of the threat landscape to effectively manage ever-evolving threats.

Fortum actively engages in collaboration with authorities and other stakeholders to identify and prevent increasing and evolving cyber threats. The cyber security awareness of employees is improved through training and instructions, including renewed eLearning tools. Completion of cyber security and business security eLearnings are mandatory for all Fortum employees. Fortum and Uniper are collaborating and aligning common cyber awareness improvement for employees.

Customer data protection is discussed in the [▶ Product responsibility](#) section.

Contingency planning

Political uncertainty, climate change, and the growing dependence on partners may cause disruptions to Fortum Group’s operations. For this reason, we have invested in preparing for disaster and emergency situations. Due to the Covid-19 pandemic, in 2021 we concentrated heavily on ensuring remote connections and operations as well as on substitute locations for critical functions.

For Fortum, excluding Uniper, crisis and emergency management instructions are prepared for Group, division and site levels. Crisis management and crisis communication instructions have been prepared for, e.g., power and heat outages, for the Loviisa nuclear power plant, and for hydropower production.

In 2021, the annual emergency preparedness exercise related to a nuclear power accident was held at the Loviisa power plant. Part of the rehearsal involved also testing cooperation between the power plant and Fortum’s headquarters. Additionally, crisis management rehearsals have been organised during the year in relevant businesses, such as in the IT organisation.

Uniper has set up appropriate crisis-prevention measures, and emergency plans have been created that also take into account environmental risks. In addition, there is an effective business continuity management system in place for cases where people or process risks arise.

Regulatory compliance

In recent years, safety- and security-related regulations have increased, and Fortum has initiated supplementary measures required by these regulations. For dam and nuclear safety, emergency preparedness obligations in Finland, Sweden, and Germany are based on regulatory provisions; likewise, there are terrorism-related preparedness obligations in many of our operating countries. Regarding other areas, Fortum independently defines, based on its own risk assessments, the crisis and non-compliance situations for which it prepares action plans. Fortum has started a regulation mapping programme to be able to set Group-level requirements for Fortum’s compliance with the security-related regulations.

Human rights

Fortum follows and respects internationally recognised human rights that are included in key human rights treaties. Our operations have a direct or indirect impact on the realisation of the human rights of our own personnel, those working in the supply chain, and members of local communities around production sites and supply chains.

Respect for human rights is expressed in both Fortum's and Uniper's Codes of Conduct and Supplier Codes of Conduct, which are approved by Fortum's Board of Directors and Uniper's Board of Management, respectively. Fortum follows and respects the International Bill of Human Rights, the United Nations Convention on the Rights of the Child, and the core conventions of the International Labour Organisation (ILO). The UN Guiding Principles on Business and Human Rights are taken into account in our own operations and in supply chain management, and we recognise in our operations the Bettercoal initiative's Code on responsible coal mining. More information on external initiatives, commitments, and guidelines, as well as internal policies and instructions relevant for managing human rights are listed in the section ▶ **Policies and commitments**. Fortum is committed to identifying, mitigating, and monitoring any actual or potential human rights-related risks in its business operations and its sphere of influence.

Management of human rights issues and personnel training

Fortum Executive Management decides on the sustainability approach, including human rights, and Group-level sustainability targets that guide annual planning. Fortum's line management is responsible for the implementation of Fortum Group policies and instructions and for day-to-day sustainability management and improvement plans. Fortum's Corporate Sustainability unit is responsible for conducting human rights impact assessments and supplier audits, as well as Group-level coordination and development of other human rights issues. Fortum's

subsidiary Uniper is a separate company, listed in Germany, and has its own sustainability governance and processes.

The online training on Fortum's Code of Conduct covers human rights-related issues. The online training is part of the induction programme for new employees and is continuously available to all employees. All personnel undertakes mandatory training in conjunction with Code of Conduct updates.

Human rights requirements for suppliers are described in Fortum's Supplier Code of Conduct. The human rights requirements are also addressed as part of the Supplier Code of Conduct training.

Fortum's updated Code of Conduct and Supplier Code of Conduct were published in early 2021. Related training materials were also updated, and training on the updated Codes was carried out during 2021. Completing Fortum's Code of Conduct training is mandatory for all employees. Uniper's updated Code of Conduct was released in early 2020. A new compliance eLearning module on the Uniper Code of Conduct was introduced in 2021 for all active Uniper Group employees.

Assessment of human rights impacts and mitigation measures

For Fortum, excluding Uniper, a human rights impact assessment is part of investment project planning, especially in new operating countries. It is also part of a country and counterparty risk assessment. Depending on the project, we either assess risks based on public sources or we conduct a more in-depth assessment. The public information sources considered in country risk assessments include the ILO conventions and their ratification, Transparency International's Corruption Perceptions Index, the UN Human Development Index, the World Bank's Worldwide Governance Indicators, and human rights reports issued by human rights organisations and states. An assessment based on public sources is always completed for all new countries to which one of our business units is planning to sell products or services. In 2021, we performed two such assessments. For investment projects targeting risk countries, we perform an in-depth assessment in which we often also use external

local experts. As there were no new investment projects targeted in risk countries, no in-depth assessments were carried out in 2021.

Fortum, excluding Uniper, defines measures for projects to manage human rights risks, in order to comply with our own policies and requirements and, e.g., with lender requirements. Examples of measures include attaching specific contract clauses in joint venture agreements or purchase contracts, paying special attention to Code of Conduct implementation and safety training of personnel and contractors, and consultations with local communities. We also aim to support favourable impacts in collaboration with local communities and other stakeholders. In India, for example, we have implemented community projects, which are described in the section ▶ **Corporate citizenship**.

On an annual basis, Uniper performs a worldwide assessment, which is based on a combination of economic and social indexes, to map key potential country-specific issues, such as working conditions, violation of political rights and civil liberties, as well as security threats, that may directly affect Uniper. The assessment's findings resulted in the implementation of modified due diligence requirements and mitigation measures, such as the inclusion of specific contract clauses, particularly when negotiating with new counterparties operating in medium- or high-risk countries.

In 2021, Uniper launched a project to develop central coordination of due diligence processes and human right risk assessments. One of the key tasks of the project is to identify improvement areas across existing processes.

Identified impacts on human rights and corrective measures

Fortum's, excluding Uniper, main direct human rights impacts are related to, e.g., the health and safety of its employees, equality and non-discrimination of personnel, and the right to freedom of association and collective bargaining of our personnel. Support for employees' right to freedom of association and collective bargaining are discussed in the section ▶ **Employee-employer relations** and the equal treatment of personnel in the section ▶ **Diversity and equal opportunity**. Occupational safety is addressed in the section ▶ **Safety and security**.



Our indirect human rights impacts are related to, e.g., supply chains of fuel purchasing. The human rights risks in supply chains are described in the section ▶ [Supply chain](#).

All forms of child and forced labour are strictly prohibited and in violation of Fortum's and Uniper's Codes of Conduct and Supplier Codes of Conduct. We have not identified risks related to the use of child or forced labour in our own operations. In 2021, Fortum paid special attention to assessing its suppliers in the solar sector, as a result of the alleged forced labour risk in polysilicate production. The conclusion of Fortum's risk-based assessment was to put one supplier on hold.

Fortum's supplier qualification process and supplier audits cover the most important human rights aspects related to purchases. The human rights impacts of the coal supply chain are addressed in the Bettercoal assessments. These practices are described in more detail in the section ▶ [Supply chain](#).

Human rights-related grievances and stakeholder discussions

Internal and external reporting channels are offered for the reporting of any suspected misconduct relating to labour conditions or human rights violations. The channels are described in Fortum's and Uniper's Codes of Conduct and are accessible on the companies' internal and external websites. In 2021, there were zero grievances related to human rights filed through Fortum's formal grievance channels, nor were there any grievances carried over from the previous year.

Fortum and Uniper had an active dialogue with non-governmental organisations (NGOs) on topics such as coal phase-out and human rights issues along the coal supply chain. The NGOs were invited to several virtual meetings, and both Fortum and Uniper also responded directly to specific questions raised by the organisations regarding coal purchases and regarding Fortum's and Uniper's due diligence processes with respect to coal supply chains.

Just transition

Just transition is a framework to encompass a range of social interventions needed to secure workers' rights and livelihoods when economies are shifting to a more sustainable economy, primarily combating climate change and protecting biodiversity.

Based on the principles of just transition as defined in the ILO and COP 26 agreements, Uniper has developed master plans for all coal sites scheduled for closure. These aim to ensure a responsible and fair transition from coal to a greener economy. The principles consider, amongst others, support for workers in the transition to new jobs and the promotion of social dialogue and stakeholder engagement.

Fortum addresses the topic of just transition in the supply chain, e.g., in our work with the Bettercoal initiative. Climate protection policies and the resulting changes in the demand for and production of coal will significantly impact employment, the economy, and public revenues in coal mining regions. Bettercoal works with stakeholders (government, companies, trade unions, and local communities) to support the transition of Colombian mining regions towards a more diversified local economy and to reduce the potential negative impacts of a decline in coal demand.

An element of just transition is also the affordable and reliable supply of energy to societies. This is addressed in the section ▶ [Energy](#).

Modern Slavery Statements

Fortum's and Uniper's UK subsidiaries annually publish a Modern Slavery Statement, as required by the Modern Slavery Act. Fortum's statement is available on Fortum's ▶ [website](#). Respectively, the Modern Slavery Statement of Uniper's UK subsidiaries can be found on Uniper's ▶ [website](#). The statements set out the steps that the companies have taken to ensure that slavery and human trafficking are not taking place in any of their supply chains or in any part of their own business.

Stakeholders

Our way of operating responsibly includes open dialogue with our stakeholders and continuously identifying their views and needs. Good collaboration and transparency are the key ways to promote trust and mutual understanding. Our efforts to mitigate climate change benefit all our stakeholders. Payment of taxes, employee wages, dividends, investments and procurements from suppliers of goods and services are our ways to distribute added value to our various stakeholders.

Stakeholder collaboration

Collaboration with different stakeholder groups helps Fortum to assess and meet the expectations that the groups have towards the company. We have an open and regular dialogue with different stakeholders and annual stakeholder surveys are conducted to systematically monitor our stakeholders' views of us. We follow the public dialogue in the countries where we operate, and we have dialogue with our stakeholders also through social media channels. Feedback from customers drives the development of our products and services. Our membership in national and international organisations helps to deepen our understanding of global sustainability issues and their connections to our business.

Management of stakeholder collaboration at Fortum, excluding Uniper, is assigned particularly to communications, public affairs, corporate sustainability, and the functions responsible for electricity and heat sales and energy production. Responsibilities for managing stakeholder collaboration are primarily determined by stakeholder group or interaction themes. Key interaction areas have annual plans that guide the activities. At Uniper, a Stakeholder Management Policy stipulates how the company interacts with its stakeholders. It defines the company's objectives for internal and external communications and assigns roles and responsibilities.

Fortum, excluding Uniper, has an informal Advisory Council consisting of representatives of Fortum's key stakeholder groups as invited by the Board of Directors. The Advisory Council aims to increase the dialogue and the exchange of views between the company and its

Fortum's stakeholder surveys

Survey	Target groups	Target countries	Frequency
One Fortum Survey ¹⁾	Customers General public Public administration Capital markets Non-governmental organisations Opinion leaders Personnel Media	Finland, Sweden, Norway, Poland, Germany, Russia, India	Customer satisfaction is measured semi-annually Reputation is measured annually
Media tracking	Media	All operating countries	Daily
Brand tracking ¹⁾	General public and customers	Finland, Sweden, Norway, Poland, Germany	Continuously in Finland, Sweden and Norway, annually in other countries
Pulse survey ¹⁾	Own personnel	All operating countries	Monthly
Stakeholder survey as part of the sustainability materiality analysis	Customers General public Public administration Non-governmental organisations Capital markets Media Personnel	Finland, Sweden, Norway, Denmark, Germany, Russia, other countries	Latest in 2021, again when needed
Voice of Uniper ²⁾	Personnel	All operating countries, excluding Russia	Annually

1) Excluding Uniper

2) Uniper only

stakeholders. Uniper periodically invites relevant NGOs to attend a Uniper Sustainability Roundtable, a forum for NGOs and representatives of relevant Uniper departments to discuss and share opinions in order to establish a transparent dialogue. Fortum's and Uniper's engagement with Bettercoal and stakeholder cooperation in the coal supply chain is discussed separately in the section ▶ [Supply Chain](#).

Information through surveys

In collaboration with third parties, Fortum, excluding Uniper, annually conducts surveys regarding stakeholders' expectations towards us and opinions about us. These surveys help Fortum assess and respond to the important stakeholder groups' expectations and measure the success of our stakeholder collaboration. The surveys also provide

information about sustainability trends and risks. The results are also used in business planning and in identifying priorities for sustainability.

Fortum, excluding Uniper, uses the extensive One Fortum Survey to annually measure the company reputation as well as customer satisfaction and its development at different business units. The survey is conducted yearly in spring in most countries where Fortum has operations. The survey results for customer satisfaction are presented in the section ▶ [Customers](#).

Uniper, excluding Unipro, conducts an annual employee survey called Voice of Uniper. It measures employees' awareness of the Uniper Way, a corporate culture, and how it is brought to life by employees.

Fortum also conducted a stakeholder surveys to reassess its material sustainability topics in 2021 ▶ [Sustainability priorities](#).

Most important expectations stakeholders have towards Fortum and our actions in response in 2021

Stakeholder expectations	Our actions in 2021
 <p>Lenders and shareholders</p> <ul style="list-style-type: none"> • Long-term value creation • High-yield share • Responsible operations 	<ul style="list-style-type: none"> • We achieved our long-term financial target of financial net debt/comparable EBITDA below 2x. • We reached our objective to have a solid investment-grade rating of at least BBB to preserve financial flexibility and good access to capital markets. • We increased our dividend to EUR 1.14 per share for the year 2021 with the target to further increase the dividend going forward.
 <p>Customers</p> <ul style="list-style-type: none"> • High price value of products and services • Understanding customer needs • Offering useful additional services • High personnel expertise 	<ul style="list-style-type: none"> • Develop Sales and Commercialisation Excellence was one of Fortum's, excluding Uniper, four Must-Win Battles for 2019–2021. The initiative brought a considerable change within the areas of strategic customer management, online marketing, value sales, and sales training. Partnering with industrial and infrastructure customers was a strategic priority of the project, and was well achieved. The project's implementation continues in Fortum's business units and business functions. • Fortum started sales cooperation with Uniper, e.g., in areas of nuclear decommissioning and dismantling services, battery recycling, and hydrogen projects. • Fortum, excluding Uniper, interviewed over 9,200 customers in the yearly One Fortum Survey.
 <p>Personnel</p> <ul style="list-style-type: none"> • Occupational safety and work wellbeing • Equal treatment and open interaction • Securing retention and incentivising compensation • Opportunities for professional development 	<ul style="list-style-type: none"> • Fortum launched new Safety Ground Rules to help keep safety on everyone's agenda at all times and to improve Fortum's safety performance. Fortum's divisions have also started work on roadmaps towards safety excellence during 2021–2025. • Fortum and Uniper established common working groups for the development of several aligned processes covering, e.g., reporting practices and safety key performance indicators. • Employee Share Savings programme forShares, excluding Uniper, continued with quarterly savings periods. • Fortum, excluding Uniper, continued the Workforce 2.0 strategic initiative to analyse what structural long-term changes we need to implement in our ways of working. The initiative continued throughout 2021 and collaborated to some extent with Uniper's equivalent initiative called NeNo ▶ New Normal. • Fortum, excluding Uniper, continued developing the portfolio of online training courses, mainly in the area of Fortum Open Leadership and culture. We also created new eLearning courses in several business-related topics. Uniper continued with Digital Skills Compass, a learning programme encompassing a variety of topics. • In 2021, Fortum joined a newly launched initiative, the Diversity Roundtable of Finnish companies and universities. We participated in the diversity, equity and inclusion (DEI) survey conducted by Boston Consulting Group and United Nations Women. The results showed that 93% of Fortum respondents see DEI as critical for future competitiveness.
 <p>Future talent</p> <ul style="list-style-type: none"> • Attractive employer brand • Interesting career opportunities and diverse job responsibilities • Competitive compensation for work • Company values and operating culture • Business ethics and responsibility 	<ul style="list-style-type: none"> • Clean energy and the promotion of a CO₂-free energy system are increasingly on the agenda when we recruit new workforce. • We updated our employer value proposition (EVP) to better highlight the core aspects that make us a great place to work, and that help us to attract new talents. • Fortum, excluding Uniper, implemented a new recruiting system to put even more focus on candidate experience. • Fortum, excluding Uniper, continued collaboration with schools, universities, and student associations. We offer various traineeships and thesis opportunities for students. Uniper offers a Graduate Trainee programme and internships opportunities. • Fortum retained its top ten place in the employer branding survey for students, ranking 9th in the Engineering category on the list of the 100 Most Attractive Employers in Finland. Fortum India was certified as a 'Great Place to Work' by Great Place to Work® Institute.
 <p>Service and goods suppliers</p> <ul style="list-style-type: none"> • Good financial position and the ability to take care of agreed obligations • Fair and equal treatment of suppliers • Long-term business relations and collaborative development of business and products/services • Responsible operations 	<ul style="list-style-type: none"> • Fortum and Uniper continued cooperation in procurement to identify and implement synergy benefits for both companies. We have, e.g., developed common spend visibility solutions, conducted joint procurement cases, and supported the One Team strategic cooperation areas of Nordic hydropower, physical trading optimisation, wind and solar development, and hydrogen. • In development collaboration, Fortum, Volvo Cars and Comsys created an innovative battery solution that was installed at Fortum's Landafors hydropower plant on the river Ljusnan in Sweden in 2021. The solution uses batteries from plug-in hybrid cars and other batteries to extend the life of the hydropower turbines and the batteries themselves.

Stakeholder expectations

Our actions in 2021



Authorities and decision makers

- Compliance
- Integration of sustainability with strategy and business, risk management
- Transparency and reliable reporting
- Maintaining dialogue
- Constructive, knowledgeable and open lobbying, reliable partner in policy development

- Fortum **communicates openly and engages actively** in dialogue with authorities and decision makers: in 2021, among other things, we actively participated on the Fit for 55 debate, supported higher EU emissions reduction targets and were involved in the debate on the EU sustainable finance taxonomy. We also prepared ground for a broader Nordic power market design discussion and activated political debate on hydro and nuclear power.
- Fortum's first **Climate Lobbying Review** is a continuation of our efforts to increase transparency around our advocacy related to climate change.
- Fortum and Uniper are listed in the **European Union Transparency Register** of organisations engaged in influencing the making and implementation of EU policy.



Media

- Reliable corporate communications that understands media's needs

- The guiding principle of our communications is to always communicate fairly, proactively and openly.
- In 2021, our focus was increasing understanding of our new strategic priorities through continuous dialogue with media.
- Fortum provided the media with a number of interesting news topics that attracted media attention both domestically and internationally.
- An increasing number of our experts and members of the leadership team were in dialogue with media in 2021, highlighting our views on strategically important areas, such as the EU Taxonomy.
- For the last part of the year, media interest was dominated by the volatility of electricity prices and we responded and gave background information in a timely and open manner.



Energy sector organisations

- Advocating on behalf of the shared interests of the sector
- Dialogue and expertise

- Fortum actively participates in organisational activities of our sector: in 2021, we were represented in several dozen organisations at the EU level and in our operating countries.
- In addition to sector organisations, Fortum, excluding Uniper, is involved in international initiatives promoting market-driven energy and climate policy: UN Caring for Climate, the World Bank's Carbon Pricing Leadership Coalition and the Finnish Climate Leadership Coalition (CLC).
- Fortum participates in the international Corporate Responsibility and Sustainability Council, part of The Conference Board of Europe. Uniper is a member of **Econsense**, a Forum for Sustainable Development of German Business.
- Both Fortum and Uniper are members of Bettercoal and promote the continuous improvement of sustainability performance in their coal supply chains in cooperation with other European energy companies.
- Fortum is a member of the European solar industry association SolarPower Europe. In 2021, we joined and sponsored its working group aiming to improve the transparency and sustainability of supply chains in the industry.



NGOs

- Responsibility for operations and risk management
- Promoting renewable energy production and discontinuing the use of coal
- Reliable and open reporting

- In 2021, Fortum invested EUR 335 million in CO₂-free energy production.
- Fortum and Uniper had an active dialogue with NGOs on coal phase-out, human rights issues along the coal supply chain and migrating fish in connection with hydropower.
- Fortum has published the TCFD (Task Force on Climate-related Financial Disclosures) report starting from the financial year 2019. In spring 2022, Uniper published its first TCFD report. Both companies are supporters of TCFD.
- Fortum has developed climate risk management as part of the company's risk management process.



Local communities

- Process safety
- Developing employment, infrastructure and recreational use
- Reducing emissions, noise and other detriments

- Emergency preparedness exercises were held in 2021 at the Loviisa nuclear power plant and crisis management rehearsals in relevant businesses. Additionally, an Environmental Impact Assessment (EIA) was made for the Loviisa nuclear power plant, first time in Finland for a nuclear power plant in operation.
- Due to the Covid-19 pandemic, in 2021 Fortum concentrated heavily on ensuring remote connections and operations as well as on substitute locations for critical functions.
- Fortum's cooperation with Uniper has strengthened security capabilities in both companies in 2021. The continued cooperation focused in prioritised areas of corporate security: cyber and business security.
- Fortum, excluding Uniper, collaborates with local communities in our operating countries through our **Corporate Social Responsibility (CSR) programme**.

Increased dialogue with environmental NGOs and investors

The discussion on climate change mitigation and particularly phasing out coal in energy production has continued actively throughout the year. Uniper, seeking judgement for the future of the coal-fired Maasvlakte power plant in the Netherlands, was a focus of attention of environmental NGOs in Europe in April 2021. Stakeholders voiced their concerns directly with Fortum, e.g., through open letters, on social media, at demonstrations, and by organising various public events and webinars.

Fortum has responded to the concerns raised by these organisations on social media, at several virtual meetings, and at the Annual General Meeting (AGM). In Finland, Fortum organised several virtual meetings with representatives of different migrating fish-related organisations. Fortum’s experts have also responded to presented questions through blog postings and by giving numerous media interviews.

Working with investors

Fortum’s dialogue with investors also continued to be active during the year with an increasing focus on environmental topics. The Group-wide climate targets and pathways to reach those targets, including clear coal-exit plans and overall decarbonisation, were central in these discussions. During the year, Fortum met with 600 professional equity investors individually or in group meetings and at investor conferences mostly virtually and maintained regular contact with equity research analysts at investment banks and brokerage firms. Also at the AGM, Fortum shareholders voiced their climate agenda with many questions on Fortum’s strategy implementation, decarbonisation, phase-out plan for the coal-fired power plants and biodiversity targets.

In the dialogue with investors, Fortum highlights how the company’s strategic priorities are centered around the ambition to drive the energy transition and enable decarbonisation, affordability, and security of supply, and how the company is systematically implementing its strategy. Investors have varying views on climate-related topics, and Fortum is actively engaged in the dialogue with a broad range of different investors and investor coalitions. These dialogues are valuable

for Fortum and the company utilises their input to constantly develop business operations and its strategic decarbonisation agenda to reflect also the requirements of the capital markets. Investor dialogue is constructive, and Fortum appreciates investor support in driving the energy transition. In addition to setting Group-wide climate targets, Fortum is working on increasing transparency on related areas, such as lobbying activities.

Fortum lobbies for tighter climate targets

Fortum’s climate policy advocacy is strongly based on climate science, and support for the Paris Agreement is the core principle underpinning Fortum’s climate advocacy. In 2021, Fortum executed and published a review of its lobbying activities and practices. Fortum’s lobbying activities are discussed more in the section

▶ [Climate engagement lobbying.](#)





Reputation

Fortum’s, excluding Uniper, annual reputation study One Fortum Survey conducted in 2021 shows that Fortum’s reputation decreased slightly among most stakeholder groups compared to the 2020 results. Fortum’s reputation is strongest among our own employees with a reputation index score of 80 (2020: 82) on a scale 0–100. Reputation among decision makers stayed on a very good level at 76 (2020: 77). Among capital market representatives the score was on a good level at 74 (2020: 76). Reputation among media representatives decreased slightly to 69 (2020: 73). Among NGOs the result remained stable at 68 (2020: 68). We continued to have the weakest reputation among the general public, with a score of 56 (2020: 60).

The stakeholders jointly feel that Fortum’s strength in terms of reputation is connected to its operations – competent employees, high reliability, and safe production. On the other hand the study indicates that we have most room for improvement in terms of climate, environment, and social responsibility. Our stakeholders are to some

extent worried about our ambition and ability to reduce emissions in line with our targets, with a special concern around our assets in Russia. They also feel that Fortum could offer more support to the local communities in places we operate. As a new feature in the survey, we also inquired about the awareness of and thoughts on Fortum’s updated strategy among stakeholders. Many of the responses were positive saying that we are on the right track and in a good position to execute our strategy. However, the responses also showed that some stakeholders have rather low awareness of the strategy and understanding where the company is heading.

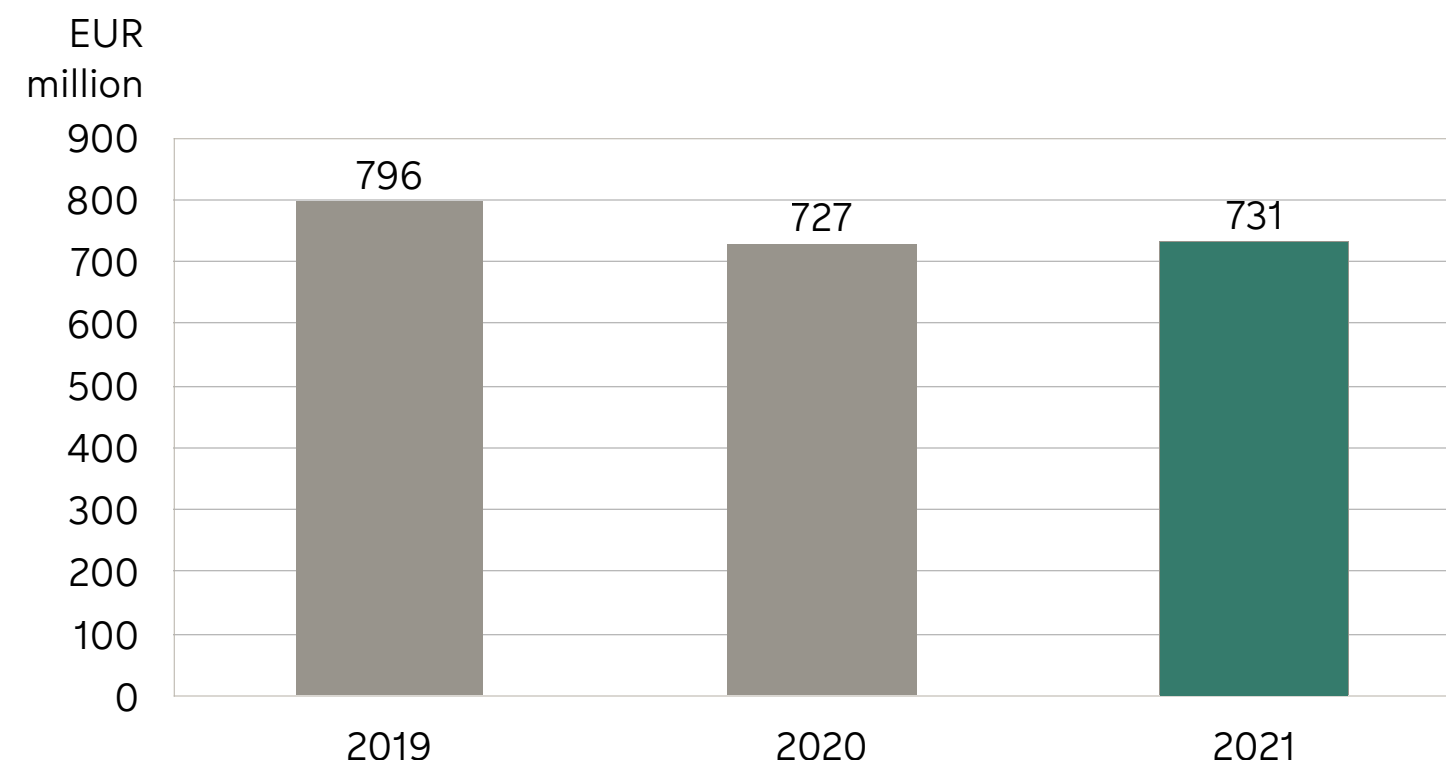
The target for Fortum’s reputation, excluding Uniper, in 2021 was ≥ 72.5 in the One Fortum Survey, measured as the average rating by all stakeholders included in the survey. The target was not reached but the average reputation index score was 70.5 (2020: 72.5).

Brand

We continuously monitor the development of the Fortum brand, i.e. the image of our company. Brand tracking includes the measurement of, e.g., brand awareness, preference and brand attributes.

We also monitor the development of Fortum’s brand value and strength with a yearly brand study performed by Brand Finance, an independent business valuation consultancy. According to the most recent study, Fortum’s brand value in 2021 was EUR 731 million, compared to EUR 727 million in 2020.

Brand value development in 2019–2021 ¹⁾



¹⁾ Excluding Uniper

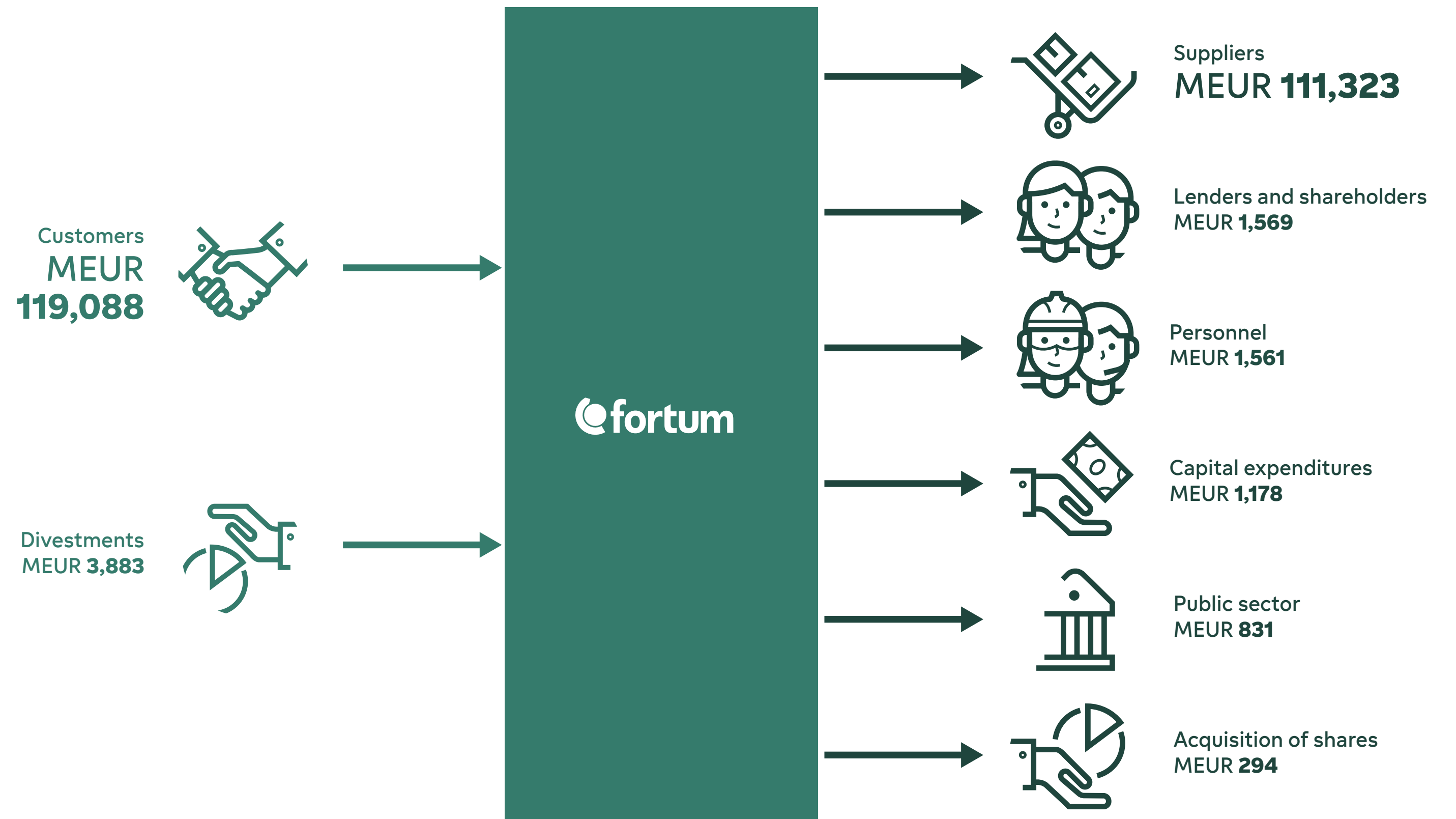
Economic impacts

Fortum is a European energy company with activities in more than 40 countries. We continuously monitor the impact and added value generated by our operations to our stakeholders. The key stakeholders include lenders and shareholders, customers, personnel, suppliers of goods and services, and the public sector.

Direct and indirect impacts

The most significant direct monetary flows of Fortum’s operations come from revenue from customers, procurements of goods and services from suppliers, compensation to lenders, dividends to shareholders, growth and maintenance investments, employee wages and salaries, and taxes paid. Our operations also have indirect economic impacts. The Finnish State owns 50.8% of Fortum’s shares, and we contribute to a functioning society by, among other things, paying taxes and dividends. These secure society’s basic functions and build wellbeing. Investments and the procurement of goods and services provide employment both locally and outside our operating areas. New investment proposals are assessed against sustainability criteria. In terms of suppliers of goods and services, we also assess the global impacts, paying particular attention to suppliers of goods and services operating in risk countries. The wages and taxes paid have a positive impact on local communities.

Distribution of added value



Personnel

Safety and security

Human rights

Stakeholders

Customers

Corporate citizenship

Supply chain

Monetary flows by stakeholder group in 2019–2021 (GRI 201-1) ¹⁾

EUR million		2021	2020	2019
Generation of added value				
Income from customers *	Income from customers on the basis of products and services sold and financial income	119,088	52,878	5,876
Divestments	Income from divestment of shares, business activities or plants	3,883	1,260	88
Purchases from suppliers *	Payments to suppliers of raw materials, goods and services	-111,323	-48,699	-3,365
Fortum produced added value		11,648	5,439	2,599
Distribution of added value				
Compensation to employees	Wages, salaries and remunerations, and other indirect employee costs	-1,561	-1,195	-480
Compensation to lenders and shareholders	Dividends paid to investors, interest, realised foreign exchange gains and losses, and other financial expenses	-1,569	-1,081	-1,170
Public sector	Income and production taxes paid, support for society and donations	-831	-484	-298
Distributed to stakeholders, total		-3,961	-2,760	-1,948
Surplus/deficit cash *		7,688	2,679	651
Capital expenditures		-1,178	-1,101	-695
Acquisitions of shares		-294	-1,801	-107
Surplus/deficit including investments		6,216	-224	-151

1) Uniper consolidated as of Q2/2020

* In 2020 monetary flows related to net margin liabilities and nuclear funds have been reclassified. Comparatives have been reclassified accordingly. For more information, see Note 1 Significant accounting policies in the Financial Statements.

In 2021, the difference between added value generated and distributed to stakeholders was EUR 7,688 (2020: 2,679) million for the development of own operations.

The distribution of the economic added value generated by our operations to the most significant operating areas is disclosed in the following parts of the annual reporting:

- ▶ **Sales by geographical area based on customer locations:**
Financial Statements, Note 6
- ▶ **Employee costs by country**
- ▶ **Tax Footprint 2021**

We have included investments in our own assessment of economic impacts, as their annual volume and impact on society is significant. In 2021, we invested EUR 335 (2020: 372) million in CO₂-free energy production. Capital expenditure by country and by production type is presented in the Financials 2021, in the section Key figures 2012–2021, Capital expenditure.

Provisions related to nuclear power are covered in the Financial Statements, Note 29 Nuclear-related assets and liabilities. Financial implications and other risks and opportunities due to climate change, as well as emissions trading, are reported in the section ▶ **Climate**. Our pension arrangements conform to the local regulations and practices in each operating country; the arrangements are discussed in the Financial Statements, Note 31 Pension obligations.

Customers

As a responsible actor in the electricity, gas and heating business, Fortum offers customers environmentally friendly and cost-efficient products and services. It also ensures the reliability of its marketing and communications. Through customer satisfaction, Fortum reflects the responsibility of its business among various stakeholders.

Product responsibility

Together with our subsidiary Uniper, we are the third largest producer of CO₂-free electricity in Europe and a significant player in gas. Fortum is the largest electricity retailer in the Nordic countries and a significant producer of district heating in several cities. As part of our business as an energy merchant, we purchase energy commodities and sell them to end-users and resellers.

Furthermore, Fortum provides industrial and infrastructure customers with decarbonisation and environmental solutions, such as grid stability, waste-to-energy, and low-carbon industrial solutions, and aims to capture the opportunities in hydrogen as they become commercially available.

CO₂-free and guarantee-of-origin-labelled electricity

Fortum is one of the Nordic countries' leading sellers of CO₂-free and guarantees-of-origin-labelled electricity. We sell CO₂-free electricity to our customers in the Nordic countries and Poland, as well as in Germany. The origin of the electricity produced from renewable energy sources, such as hydropower, wind and solar power, was guaranteed with European guarantees of origin (GoO). Some of the electricity we sell is also guaranteed with, e.g., the pan-European Eko Hydro and Eko Wind label granted by environmental organisations and, in Sweden, with the Bra Miljöval label.

Services for customers

In recent years, Fortum has introduced many new [services](#) that reduce environmental impacts and carbon footprint, and give customers

better opportunities to control their electricity consumption and costs. The sustainable solutions we offer in energy production, traffic, and waste management also support a circular economy. The number of customers participating in energy production is growing. The solutions offered by Fortum are related to real estate automation, smart EV charging solutions, local energy production and storage, and flexible demand. Additionally, we offer diverse expertise services for energy systems, electricity and heat production, and for the process industry. We utilise our competences to also help industrial and infrastructure customers reduce their environmental and carbon footprint, see the sections [▶ Climate](#) and [▶ Energy](#).

Marketing communications

Our goal is to present products and services truthfully in all our marketing and communications materials. We follow responsible marketing communication guidelines, and we do not present misleading statements. In statements regarding environmental issues, we follow the regulations for environmental marketing.

In 2019, Fortum received from the Finnish Energy Authority a decision regarding notifications to consumers and the pricing practices of certain electricity products. Fortum has implemented the decision and, in order to seek further certainty on the interpretation of the decision, appealed to the Market Court in 2020. The Market Court rendered its decision, in which it provided clarity on the interpretation and returned the case to be re-decided by the Energy Authority. The Energy Authority is expected to give their decision at the beginning of 2022. In addition, Fortum has received certain inquiries from the Consumer Dispute Board regarding a couple of complaints received from specific consumers. Fortum has replied to these inquiries. The cases are still pending in the Consumer Dispute Board, waiting for the final decisions.

In Sweden, the Swedish Consumer Agency enquired about the pricing information given to consumers of Fortum's electric vehicle charging offering. The enquiry follows a supervisory matter from 2020 where Fortum and several other companies providing services related to the charging of electric vehicles were given guidance on how pricing



information should be displayed to consumer customers. Fortum has given its written reply to the inquiry.

In Norway, Fortum's appeal against the 2020 decision from the Norwegian Energy Authority ordering Fortum to discontinue its payment solution service was denied by the Energy Appeals Board. The service includes an account for payment of electricity bills that provides a flexible payment solution to Fortum's customers. Other Norwegian electricity suppliers offering similar payment solution services have also been ordered to discontinue their services. Fortum is challenging the legal basis for the decision and has submitted a lawsuit to the

Oslo District Court. In addition, Fortum received from the Norwegian Consumer Authority certain inquiries and instructions relating to marketing and sales processes with consumer customers. Fortum has been in dialogue with the Consumer Authority and has implemented the requested changes.

In Poland, Fortum has received a commitment decision from the Office of Competition and Consumer Protection (OCCP) after the enquiry regarding engagement in practices infringing on collective consumer interests from the previous year. The decision includes several obligations towards specific consumers including compensation and the right to terminate contracts without consequences. Fortum has complied fully with the decision. The second inquiry from the OCCP regarding the use of contractual templates containing prohibited provisions is ongoing. Fortum has provided the authority with all the required information and documents and has declared its willingness for further dialogue in the matter.

Customer data protection

Fortum, excluding Uniper, has in place the Fortum Privacy Programme. The programme ensures that Fortum has the appropriate processes in place to protect the rights of our customers and that our businesses can utilise and process personal data in accordance with laws. Privacy and data protection training is mandatory for all Fortum's employees. Uniper has similar practices in place to ensure the secure handling of personal data. In 2021, Uniper conducted e-learning trainings on Data Protection requirements for all employees with customer interaction.

In Norway, Fortum notified the Data Protection Authority of one personal data breach. The Norwegian Data Protection Authority has closed the case based on the information Fortum provided. In Finland, Fortum notified the Data Protection Authority of two personal data breaches. The Finnish data protection authority has not contacted Fortum with any further questions and the matter is still pending with the authority.

In Poland, Fortum notified the Data Protection Authority of one personal data breach in 2020. The authority made several inquiries

throughout 2020 and 2021 about this breach, and Fortum has provided the authority with all the necessary information. The Authority has now closed its inquiry and Fortum is waiting for a decision. In 2021, Fortum notified the Data Protection Authority in Poland of five personal data breaches. The Polish Data Protection Authority has closed two of the matters based on the information Fortum provided and three are still pending with the authority.

In 2021, 33 data protection complaints were made against Uniper. 17 of them were rated as data breaches, and 16 were not rated as breaches. No data breaches had to be reported to the responsible data protection authority.

Customer satisfaction

For Fortum, customer satisfaction is a top priority in implementing the company's strategy and in growing the business. We have set a target for customer satisfaction (≥ 70 , on a scale of 0–100), with the exception of Uniper, which was not part of the target setting and survey scope in 2021. Compared to 2020, the scope of Fortum's business has changed due to the divestment of district heating plants in the Baltic countries.

Fortum, excluding Uniper, measures customer satisfaction as part of the extensive One Fortum Survey. The customer satisfaction index (CSI) varied by business area between 58 and 83 points (2020: 61–81), on a scale of 0–100. Fortum's customer satisfaction is overall on a very good level among business-to-business customers. The customer satisfaction levels remained excellent for both Nuclear Services, with a CSI of 83 (2020: 80), and Recycling and Waste Solutions, with a CSI of 81 (2020: 81). The customer satisfaction within the business unit eNext decreased to 73 (2020: 75). The CSI among district heating customers decreased slightly among business to business customers to 74 (2020: 77) and to 66 (2020: 72) among business-to-consumer customers. Satisfaction among electricity retail customers decreased somewhat for most business-to-consumers brands to 67 (2020: 70) and among business customers to 63 (2020: 64). The customer satisfaction levels were slightly lower of our electric vehicle charging service provider

brands Charge & Drive 58 (2020: 61) and Plugsurfing 62 (2020: 67) compared to 2020, respectively.

Interruption-free customer service during the pandemic was ensured by, e.g., remote work and the successful use of modern IT solutions. Fortum was able to maintain good quality of services for customers.

Other public customer satisfaction results

The international and independent EPSI Rating annually surveys the level of satisfaction of electricity retail company customers in Finland, Sweden and Norway.

Customer satisfaction in 2019–2021 ¹⁾

	2021	2020	2019
Finland			
Fortum	64.0	64.3	63.4
Sweden			
Fortum	60.2	62.7	64.6
Göta Energi	63.7	68.5	66.5
SverigesEnergi	-	-	-
Norway			
Fortum	-	-	68.8
Hafslund Strøm	56.2	62.1	65.0
NorgesEnergi	61.3	64.6	68.4

¹⁾ In Finland and Norway, the survey is conducted by EPSI Rating. In Sweden, the survey is conducted by Svenskt Kvalitetsindex, which is part of the international EPSI Rating Group.

Uniper's customer satisfaction

Uniper's current customer portfolio consists of around 1,000 customers from various industries, as well as energy partners such as municipal utilities. Uniper carries out periodic surveys that give the company's customers the opportunity to express their expectations, interests, and concerns. Uniper uses the customer feedback to jointly develop its products. For example, the Uniper Digital energy portal was successfully revised together with customers in 2021 to align even more closely with customer needs.

Case | **Cooperation in nuclear decommissioning and dismantling services**

In 2021, Fortum and Uniper entered into close cooperation to offer nuclear decommissioning and dismantling services for nuclear sector. Through this cooperation, Fortum and Uniper combine decades of nuclear experience and a wide variety of competencies, creating world-class value to customers.

Nuclear power plants around Europe are in different phases of their life cycle. At the same time, as new reactors are being planned and built, there are also plants that will be decommissioned and dismantled.

Uniper is developing strong decommissioning competencies and has a unique reference with their decommissioning programme in Sweden. Fortum brings to the cooperation complementary competencies in the waste and decommissioning area, as well as a customer-centric way of working. Fortum's Nuclear Services business has served customers for many years with excellent customer satisfaction results.

Essential for energy transition

The cooperation is initially focused on the on-going decommissioning and dismantling of four reactors in Uniper's Swedish nuclear power fleet in a safe and efficient manner. These are Barsebäck units 1 and 2, and Oskarshamn units 1 and 2, which are co-owned by Fortum and Uniper. The four reactors are integrated into a common decommissioning portfolio to create logistical and economic coordination benefits.

Looking ahead and into the European decommissioning market together is a natural next step. It will also enable Fortum Group to retain nuclear competence in each country and offer nuclear experts long-term career and development opportunities. Performing cost-efficient decommissioning gives legitimacy to a new generation of nuclear power that supports and is essential for efficient decarbonisation and the energy transition.

[▶ Fortum's Nuclear services](#)





Corporate citizenship

Social responsibility is a cornerstone of Fortum’s operations. Our operations impact the local communities where our plants are located, and we engage in many kinds of collaboration with local stakeholders.

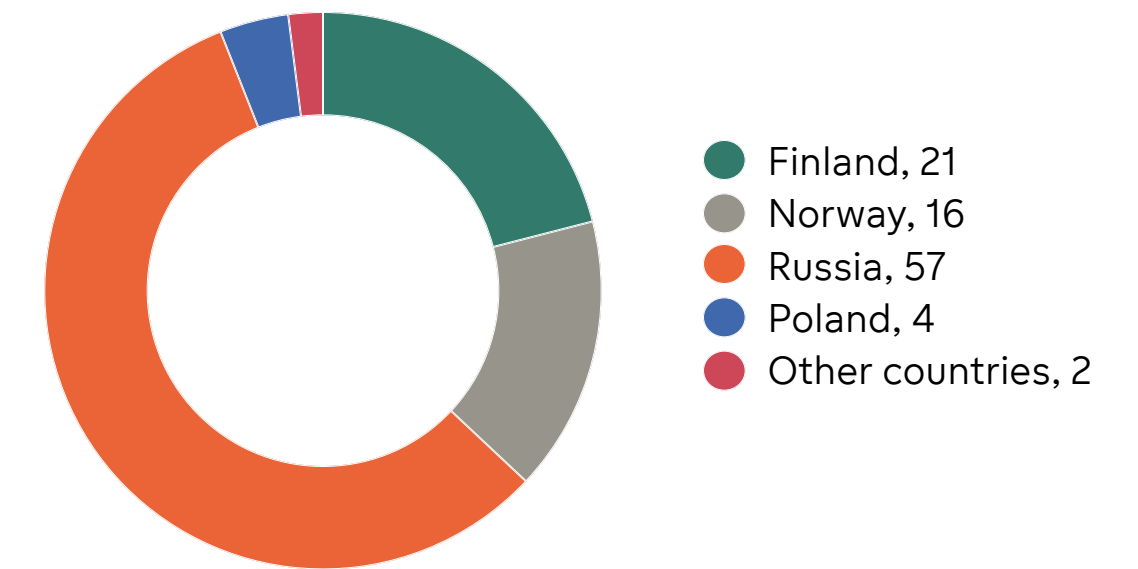
We support activities promoting the common good in society, including the work of organisations and communities in our operating countries. Fortum also engages in collaboration with universities through different research and development projects. In 2021, Fortum’s, excluding Uniper, support for activities promoting the common good totalled about EUR 1.8 (2020: 2.5) million. In addition, we supported the Consumer Solutions division’s “Good Cause Partners”.

Corporate Social Responsibility Programme

We cooperate with communities and organisations through Fortum’s Corporate Social Responsibility (CSR) programme, which covers societal initiatives undertaken by Fortum, excluding Uniper, in our local communities worldwide. The programme’s focus areas, aligned with our strategic priorities, are the following: (i) Climate, including environment- and water-related topics, (ii) Material revolution, including material use, recycling, and waste management topics, and (iii) People, with a particular emphasis on children, youth, and education. We continue to have ongoing collaboration commitments related to other themes also, but our target is to gradually align all our projects with the CSR programme themes.

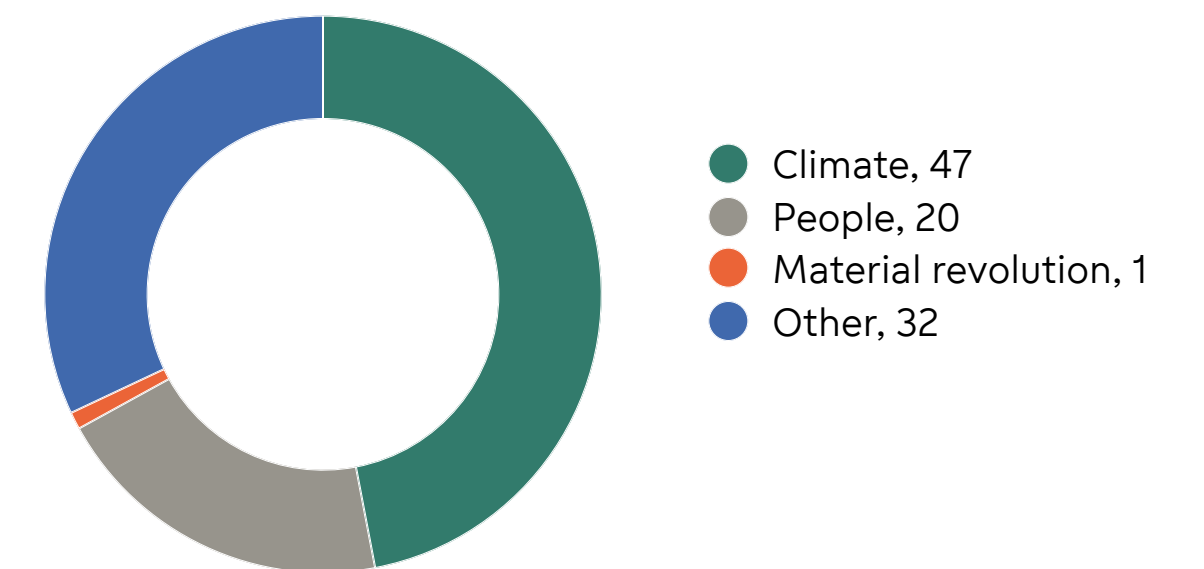
In 2021, the CSR programme initiatives concentrated on people, as the Covid-19 pandemic has created an increased need for help and we want to offer our support during difficult times. We want to do our share and help to make the situation easier for those most vulnerable; therefore, we support community relief programmes working especially with children.

Support to society by country, % ¹⁾



¹⁾ Figures excluding Uniper

Support to society by target, % ¹⁾



¹⁾ Figures excluding Uniper

Collaboration under the CSR programme, examples from different countries:

Country	Partner organisation	Type of engagement
Finland	▶ Yrityskylä	Yrityskylä is a learning concept offering school children experiences with working life, the economy, and society, and encouraging entrepreneurship. The Fortum miniature company located in Yrityskylä's learning environment in Espoo is teaching sixth-graders how to work in a profession and earn money credits. Activities relate to heating and cooling, e.g. the ▶ Espoo Clean Heat project, and provide education on climate change mitigation actions. Fortum has participated in the initiative since 2017.
Finland	▶ The Mannerheim League for Child Welfare	With our financial support, the Mannerheim League for Child Welfare (MLL) extended the hours of their free-of-charge phone and chat support services for children and youth. In addition, MLL was able to arrange additional training for volunteers working in these channels. Approximately 1,000 children every month receive support and advice through MLL's phone and chat line services. We hosted a recreational day for less privileged families at a water sports centre in collaboration with MLL and the Laguuni sports centre.
Sweden	Städa Sverige	The river clean-up event Älvstädningen, which has been ongoing since 2013, was organised with youth sports organisations. In 2021, 132 youth sports clubs with over 3,600 participants collected 22 tonnes of litter from more than 30 locations. The initiative provides young people an opportunity to do something concrete for the environment while raising money for their sports club. The river clean-up events were organised along five rivers where Fortum has hydropower plants, and the event also increases the participants' awareness of hydropower and Fortum. Uniper Sweden also participated in the event for the first time, at river Ljungan.
Sweden	Maskrosbarn	We collaborate with Maskrosbarn (Dandelion Children), an organisation that provides support services like chats, discussions, and camps for children whose parents have mental challenges or substance abuse problems. Our cooperation with Maskrosbarn also includes environmental education for young people. We also initiated a Christmas fundraiser for the benefit of Maskrosbarn.
Norway	Miljøagentene (Eco Agents)	We cooperate with Miljøagentene (Eco Agents), an environmental organisation for children. The Eco Agents have more than 10,000 members and their goal is to engage children in environmental issues. Please read more about our cooperation in the ▶ case . We sponsored a local running event called Sørmila in the area next to Fortum's waste-to-energy plant in Klemetsrud, Oslo.
Germany	SOS Kinderdorf Düsseldorf	Uniper's Helping Hands initiative supported many good causes, for example SOS Kinderdorf Düsseldorf's sports programmes for children. Uniper's "Green Office" employee team organised an annual summer clean-up of the Rhine River and its shores in Düsseldorf, with record attendance of over 70 participants in the team. Uniper's employees collected bottles, plastic straws, cigarette butts, and other litter during the clean-up event. The "Green Office" team's activities in 2021 included reducing waste, encouraging better waste segregation, and finding sustainable ways to dispose of old IT devices at the Uniper work environment. In summer 2021, the severe weather events causing a flood disaster created great damage, both material and immaterial in Germany. Uniper helped in this difficult situation by donating 200,000 euros to support relief projects in the flooded areas.
Russia		Fortum continued the About Energy programme, which is run in 106 educational institutions and reaches about 14,000 students in the Tyumen, Chelyabinsk, Nyagan and Ulyanovsk regions. The programme aims to teach students about the efficient use of natural resources and engages them in taking environmental issues into consideration in their thinking. In line with the programme's tradition, students continued writing essays and painting illustrations that were published in a book called "Energy Tales". In addition, students took part in a competition to make figures from recycled materials. Fortum supported local charity organisations in 2021: the Women's Union in Chelyabinsk, the Dari Dobro foundation in Ulyanovsk, and the Russian Children's Foundation in Tyumen.
India	▶ Save the Children	Unipro's employees participated in several voluntary environmental improvement campaigns in local communities in Russia. We kicked off a two-year CSR project to support community activities near our Pavagada solar plant in Karnataka. We will provide essential equipment to the local school (including furniture, toilets, and drinking water facilities) and local hospital (including electrocardiogram (ECG), blood count and X-ray machines, and cold storage units). The project will also implement training programmes to develop youth skills and empower women. We continued our support for community development near our Kapeli solar power plant by building a small library and gym for the local community. In June 2021, Fortum donated one hundred thousand euros to support the ▶ Save the Children organisation's efforts to help children and families suffering from the Covid-19 crisis in India. Save the Children uses the donation to help children and families in India to survive in the midst of the crisis. In particular, the aid targets those children whose parents or caregivers have become ill or have died by offering them psychosocial support, identifying these children, and supporting the arrangements for their alternative care.

All our Consumer Solutions customers are given the option of including a sustainability-themed value-adding service as an add-on to their electricity contract. With funds accrued through the value-adding service, we support the "Good Cause Partners" that are aligned with our Corporate Social Responsibility strategy, such as the ▶ **Rainforest Foundation**, ▶ **John Nurminen Foundation**, ▶ **Håll Sverige Rent** and ▶ **Water Aid**. The level of support is based on the volume of customers choosing to purchase the value-adding service.

Local impacts

We are an important employer and significant tax payer in our operating areas. In addition, our investments improve the local infrastructure.

Among our energy production forms, hydropower, e.g., impacts local communities and local land use. Hydropower construction and use may alter the fluctuation range and rhythm in the discharge and water level in waterways as well as the fish populations. These changes impact fishing, recreational use, and boating. We mitigate and compensate the adversities caused by hydropower production through numerous measures, such as stocking fish and building boat launch ramps.

We communicate openly, honestly, and proactively, and we engage in a dialogue with the stakeholder groups located in the vicinity of our power plants. We carry out collaboration projects with local communities. We conduct environmental impact assessments (EIA) for our projects in accordance with legislative requirements. A hearing of stakeholders is part of the EIA process. In addition, relevant stakeholders are heard in all permit procedures.

Examples of city collaboration

We continued publishing the Naapurina ydinvoimala (Nuclear power plant as a neighbour) magazine in Loviisa, Finland, and maintained active dialogue with local residents and Loviisa city representatives. We engage with local decision-makers, associations, and residents in Riihimäki and Hausjärvi through, e.g., collaboration meetings that



convene twice a year regarding the local impacts of the Fortum Recycling & Waste Solutions business operations.

In Nyborg, Denmark, Fortum Recycling & Waste supported a local municipal job centre in strengthening young people’s environmental and resource awareness by financially supporting youth internships in construction businesses.

In Wrocław, Poland, Fortum continued “Clean energy for Wrocław”, a programme that primarily aims to develop the district heating network in the city centre to improve air quality.

Examples of community collaboration

► **Projects** aiming to mitigate the adverse environmental impacts of hydropower production were under way in Finland and Sweden in collaboration with municipalities, research institutes, fishermen, and universities. We continued our long-term collaboration with local actors in the Oulujoki water system; in Sotkamo, a kayaking pier with unobstructed access and a pier for fuelling boats were constructed to enhance the possibilities for water sports and boating in the vicinity of the city centre. Several other projects to improve the recreational use of the river and lakes in different parts of the Oulujoki water system are in the planning phase.

In Poland, Fortum launched two nationwide projects promoting a circular economy. “Turn clean energy on for Poland” was a project implemented together with the Polish Employers Union (Pracodawcy RP), engaging businesses, NGOs, and local governments to develop and promote circular economy solutions. “The land of circular economy” (Kraina GOZ) was directed at schoolchildren. Online lessons on circular economy were prepared and teachers were invited to utilise them in their teaching. The project included podcasts and communication in social media.

University collaboration and R&D cooperation projects

The goal of our collaboration with universities and colleges is to develop and ensure growth for Fortum’s business by supporting our strategic research needs, promote energy-sector research and development, gather new innovative ideas and insights to support our future business, and foster our recruiting and training opportunities. Fortum, excluding Uniper, collaborated with about 40 universities, universities of applied sciences, and research institutions in different countries in 2021. As an example, Fortum participated in the SPRINT Innovation Festival organised by Tampere University in Finland, by providing ► **a recycling-themed challenge** to be solved by five multidisciplinary teams of students.

In Finland, Fortum and Metsä Group, with financing from Business Finland (a Finnish government organisation for innovation funding and promotion), continued the ► **ExpandFibre** project launched in 2020. ExpandFibre is an R&D collaboration and an ecosystem to accelerate the development of sustainable bioproducts. It focuses on upgrading pulp fibres, hemicellulose, and lignin from renewable and sustainable sources of straw and northern wood into new bioproducts. Its ambition is to meet the growing demands for sustainable textile fibres and other added value biomaterials. Fortum’s ► **Bio2X** programme, which is partly funded by Business Finland, continued the project to evaluate the possibilities for building a biorefinery in Germany that would utilise straw as raw material. Straw can offer a new source of raw material for the production of sustainable materials and chemicals.

In addition, we support research, education, and development in the natural, technical, and economical sciences in the energy sector through Fortum and Neste Foundation (earlier Fortum Foundation). The grants awarded by the Foundation in 2021 totalled about EUR 701,250 (2020: 612,500). Fortum and Neste Foundation is not part of Fortum Group.

Sponsorships and brand cooperation

Fortum is one of the key partners at the Dubai World Expo, which runs from October 2021 until March 2022. We exhibit our products and services with scale models and videos in the Finland pavilion.

In Finland, we continued our cooperation with Art Centre Salmela by offering its visitors the possibility to charge their electric vehicles and mobile phones with renewable energy. We also wanted to thank local health care personnel for their work during the pandemic and invited them to a concert at Salmela.

Fortum was also, for the second year, the main partner of water sports centre Laguuni’s Baltic Sea plogging project from spring to fall. Through the project, Fortum provided kayaks at no charge to kayakers in several locations in Finland in exchange for their commitment to collect trash from the sea.

Case | Fortum collaborated with Miljøagentene to teach children in Norway about renewable energy

In 2021, Fortum collaborated with the children’s environmental organisation called Miljøagentene (The Eco-Agents) to develop De Grønne Forskerspirene (The Green Researchers), a teaching programme for all third-graders in Norway. During the programme, around 10,600 children in the participating 475 school classes carried out fun experiments and learned about renewable energy. The children were also provided with practical guidelines for additional voluntary experiments to be done at home. The goal of the programme was to give the children a passion for research and environmental commitment and to show how new technology and renewable energy can contribute to solving climate challenges.

The third-graders completed different experiments and competed with other school classes. At the end of the competition, three winners were chosen and each received EUR 500 for their classes.

According to Fortum’s representatives in the project, “Miljøagentene gives insight into energy on the children’s terms. The 8-year-olds have researched the mysteries of energy and have thus become more energy-smart than many adults. We’re happy to continue and further develop the collaboration in 2022.”

The impact of the programme was measured through a survey of participating teachers. The result showed that 95% were happy with the project, 96% noted that the project increased knowledge on renewable energy, and 86% thought that the project increased children’s engagement in climate and environmental topics.

Fortum supported Miljøagentene financially, but also contributed to the teaching programme.

Feedback from Miljøagentene: “Through De Grønne Forskerspirene we have been able to give the third-graders a unique understanding of what energy actually is. The classes have reported back that it has been both fun and exciting to be a part of the competition. Hopefully we have inspired them to lifelong environmental engagement.”

Miljøagentene’s aim is to stimulate the children’s interest and love for nature and to help them realise that the way we live our lives impacts the environment. Miljøagentene has more than 10,000 members and 59 local groups all over Norway.

10,600
participants

475
school
classes



Supply chain

Fortum is a significant purchaser of goods and services. Suppliers are an important part of a successful business. Through responsible supplier selections and close collaboration with our partners we support the achievement of sustainability targets.

Purchases and supply chains

Fortum's total purchasing volume in 2021 was EUR 99.5 billion (2020: 42.8). Main reason for the increase is the rise in commodity prices. Large part of the purchasing volume is related to our business as an energy merchant, we purchase energy commodities and sell them to end-users and resellers. The rest of the purchases consist of fuels, investments, and other goods and services related to operation and maintenance as well as to other functions, such as IT solutions, marketing, and consulting.

Over half, i.e. about 62% (2020: 64%), of the purchasing volume, excluding Uniper, was purchased from suppliers operating in Europe, mostly in Finland, Sweden, and Norway. This does not include electricity purchased from the Nordic wholesale market.

About 40% (2020: 35%) of Fortum's purchases, excluding Uniper, were from risk countries. The majority of these purchases were from Russia. Violations related to work conditions and human rights are more likely in risk countries than in non-risk countries. Fortum's risk-country classification is based on the World Bank's Worldwide Governance Indicators and ILO's Country profiles. The risk-country list was last updated in 2022.

In 2021, Fortum, excluding Uniper, had about 12,000 (2020: 13,000) suppliers of goods and services. About 1,500 (2020: 1,300) of these suppliers were in risk countries. Excluding the Russia Division's local suppliers, there were about 500 (2020: 300) suppliers in risk countries.

Fortum and Uniper continued cooperation in procurement to identify and implement synergy benefits for both companies. We have, e.g., developed common spend visibility solutions, conducted joint procurement cases, and supported the One Team strategic cooperation

areas of Nordic hydropower, physical trading optimisation, wind and solar development, and hydrogen.

For the time being, both companies continue to use their own procurement systems, and therefore fully consolidated figures for specific areas, e.g. purchasing countries, are not yet available. Information on Uniper's approach to analysing country risks in supply chains can be found in the section ▶ [Human rights](#).

Fuel purchasing

The most significant environmental impacts of our supply chain are related mainly to fuels, particularly to coal, natural gas, and biomasses. Among the significant environmental aspects associated with coal mining and natural gas production are the use of natural resources, greenhouse gas and other emissions to air, water and soil, and impacts on biodiversity. In both industries, occupational health and safety of personnel is a significant social aspect. The sustainability aspects of biomass sourcing are related primarily to biodiversity, but in risk countries can also include, for instance, illegal logging or human rights violations. In fuel purchasing, special attention is paid to the origin of the fuel and to responsible production. Information about the fuel use at Fortum Group can be found in the section ▶ [Energy](#). The most significant countries of origin of the main fuels are presented in the table.

Most significant origin countries of main fuels used in 2021

Fuel	Fortum	Uniper
Natural gas	Russia, Norway	Russia, Norway, Netherlands, Germany, UK
Coal	Poland, Russia, Kazakhstan	Russia, Colombia, USA, Kazakhstan, South Africa, Australia
Uranium	Russia	Kazakhstan
Wood-based biomass ¹⁾	Finland, Baltic countries, Russia, Norway, Poland	Canada, USA, Baltic countries, Benelux countries

¹⁾ For Fortum, excluding use in the Baltic countries, where Fortum completed the sale of its power plants in July 2021

Natural gas

Uniper is actively working to make the energy supply more secure by driving further diversification of the company's gas procurement sources. To support this and to help meet the predicted growing demand for gas, Uniper is expanding its LNG business and is currently looking at the potential of building an LNG terminal in Wilhelmshaven in Germany.

Uniper has worked with strategic gas suppliers to mitigate ESG risks along the value chain, focusing especially on greenhouse gas (GHG) emission transparency, including methane monitoring. Although gas molecules are inherently not fully traceable, there are increasing opportunities to minimise and offset the estimated GHG emissions from gas and LNG transportation.

In 2020, Uniper became a member of the Oil and Gas Methane Partnership (OGMP) 2.0, a voluntary initiative to help oil and gas companies report and reduce methane emissions, foster transparency, and share best practices. Its aim is for the industry as a whole to reduce its methane emissions by 45% by 2025. Promoted by the European Commission and various NGOs, OGMP 2.0 fosters industry-wide collaboration, including with strategic upstream suppliers.

In 2021, OGMP recognised Uniper Energy Storage's methane reporting as the "gold standard", which is the highest level of reporting requirements set by OGMP. In October 2021, Uniper joined fourteen European gas infrastructure operators and gas associations in a project led by the European Gas Research Group (GERG) and gas grid operator Enagás. The project's purpose is to improve and deploy new technologies to curb methane emissions in midstream gas infrastructure.

Coal

Both Fortum and Uniper are members of the Bettercoal initiative and use Bettercoal tools to improve sustainability in the coal supply chain. At year-end 2021, Fortum Group's coal volume purchased via direct contract from Bettercoal suppliers was 67%. There is more about Bettercoal assessments in the section ▶ [Bettercoal](#).

Fortum, excluding Uniper, has published the names of its significant coal suppliers on its [website](#). We are actively working towards diversification of our coal procurement sources to our power plants in Europe to improve the security of supply.

Uranium

The fuel assemblies used at the Loviisa nuclear power plant in Finland are of Russian origin. The fuel supplier acquires the uranium used in the fuel assemblies from Russian mines in accordance with Fortum's agreement. In 2021, the uranium originated from the Krasnokamensk, Khiagda, and Dalur mines. All three uranium mines have ISO 14001 environmental certification. ARMZ Uranium Holding Co., a uranium producer, and TVEL, the company responsible for refining and manufacturing the uranium, have certified environmental and occupational safety systems in place in all their plants, as do the plants manufacturing zirconium material, uranium oxide pellets, and fuel assemblies. Additionally, TVEL's conversion and enrichment plants have in place a certified system for energy management. We regularly assess the quality, environmental, and occupational health and safety management systems of our nuclear fuel suppliers and the manufacturing of nuclear fuel assemblies, and we visit the suppliers on an annual basis. However, this was not possible in 2021 due to the Covid-19 pandemic. We secure the supply of nuclear fuel in Loviisa by stocking enough fuel reserves and by evaluating alternative sources of supply.

Uniper operates the Oskarshamn nuclear power plant (OKG) in Sweden. OKG has contracts with several suppliers of uranium. In 2021, the uranium was purchased from Kazakhstan. The environmental requirements OKG places on uranium suppliers are very extensive, and the company conducts its own audits at every step in the fuel chain. OKG evaluates and reviews the suppliers based on aspects such as environment, health, and quality. Evaluations are supported by visiting the mines and production plants and by meeting with local stakeholders. Certifications, such as ISO 9001 and ISO 14001, are also taken into account, and suppliers are encouraged to continuously improve their operations.

Biomass

In 2021, nearly 86% of the wood-based biomass fuel purchased by Fortum Group originated from certified sources; certified wood-based biomass fuel originates from sustainably managed forests. This percentage excludes biomass purchases in the Baltic countries, where Fortum completed the sale of its power plants in July 2021.

The biofuel sustainability criteria defined in the EU Renewable Energy Directive (RED II) in 2018 are being implemented by EU member states. In the context of the Fit for 55 package that revises all EU climate legislation, the EU Commission proposes to tighten the sustainability criteria for biomass, e.g., by introducing a cascading principle for biomass use. Fortum is closely following the development of the regulation and guidelines set by national authorities and is prepared to implement the required additions to our current biomass sourcing processes.

Waste-derived fuel

Fortum uses waste-derived fuels at waste-to-energy plants in Klemetsrud, Norway; Riihimäki, Finland; Nyborg, Denmark; Kumla, Sweden, and Zabrze, Poland. The fuel used in 2021 was mainly locally collected municipal and industrial waste.

Supply chain management

Fortum and Uniper expect their business partners to act responsibly and to comply with the requirements set forth in their respective Codes of Conduct and Supplier Codes of Conduct. The key tools in supply chain management for both companies are counterparty risk assessments, supplier qualifications and supplier audits.

Codes of Conduct cover basic requirements

The Fortum Code of Conduct and Uniper Code of Conduct are based on similar fundamentals, and they establish the basic principles of conduct that everyone must follow. They define how we treat each other, do business, and engage with the world. The Supplier Codes of Conduct, both based on the ten principles of the UN Global Compact, outline the requirements for Fortum's and Uniper's suppliers and business partners.

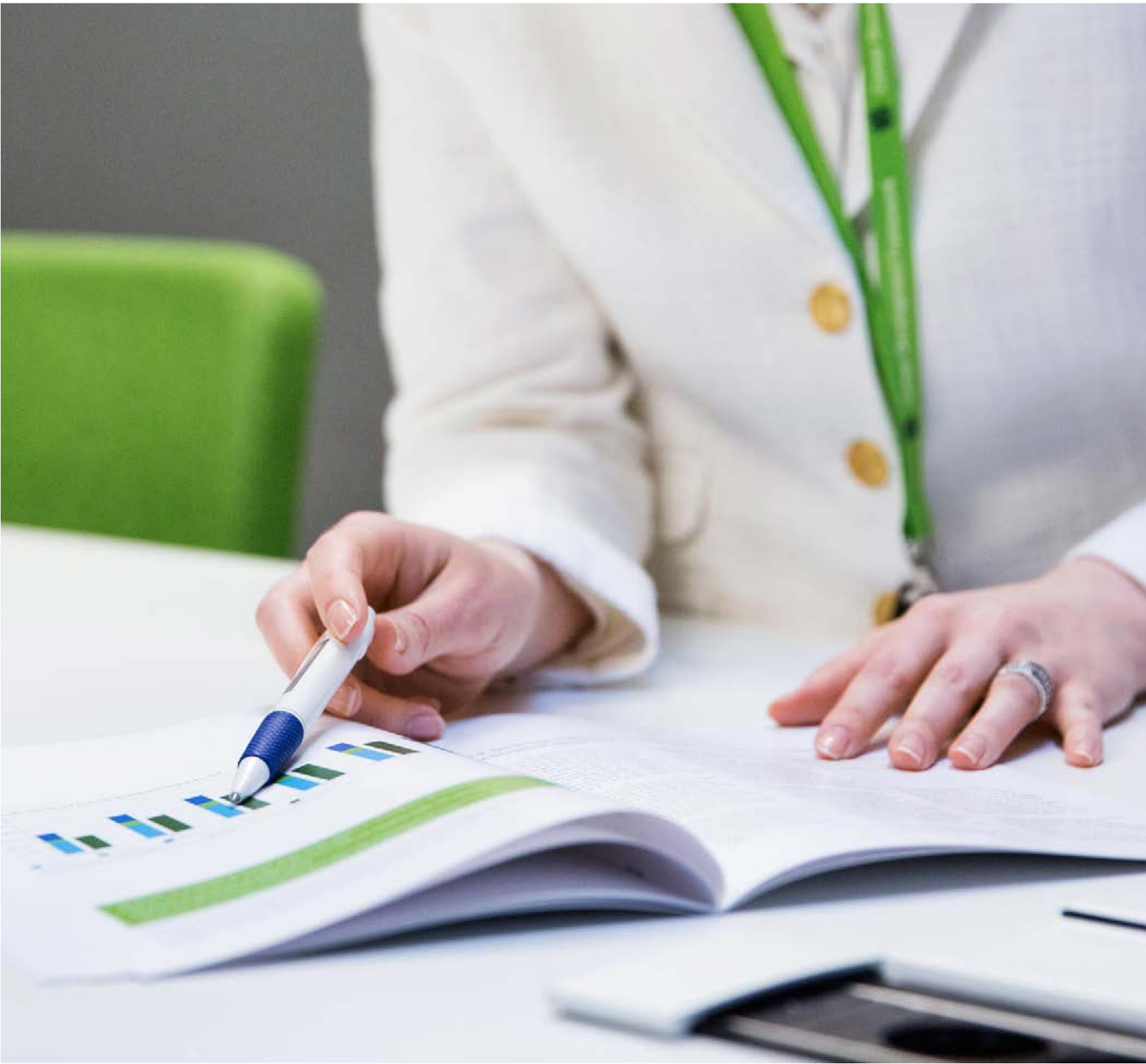
The Fortum Supplier Code of Conduct is included in purchase agreements with a contract value of EUR 100,000 or more. Uniper's standard supplier agreements require suppliers to comply with Uniper's Supplier Code of Conduct. Both companies reserve the right to monitor whether their suppliers observe the Supplier Codes of Conduct by requesting information and conducting on-site audits. Suppliers who fail to observe the Supplier Codes of Conduct are expected to take immediate corrective action, and both companies reserve the right to terminate relationships with suppliers who cannot demonstrate adherence to the Codes of Conduct.

Supplier qualification

Fortum, excluding Uniper, requires suppliers to complete a supplier qualification process, when the contract value is EUR 100,000 or more. In the qualification process, we determine and assess, among other things, the supplier's possible operations in risk countries, certified management systems, and the occupational safety performance of the contractors. We also pay special attention to anti-corruption practices. In 2021, we strengthened the questions related to the prohibition of forced labor.

In January 2022, we added to the supplier qualification questionnaire a new mandatory question related to the respondent's greenhouse gas emissions reduction target. When potential risks are identified, the supplier is asked to provide more information or a supplier audit is performed. Depending on the supplier's responses, we may continue the qualification process, impose corrective actions, or decide not to qualify the supplier. Once completed, the qualification is valid for three years. At the end of 2021, 81% (2020: 77%) of Fortum's purchasing volume, excluding Russia Division and Uniper, came from qualified suppliers.

Fortum's Russia Division uses its own supplier qualification process that is based on Russian procurement law. In the Russian operations, we set supplier requirements for business principles, ethics, environmental management, and occupational health and safety practices. Uniper applies its own supplier qualification process for suppliers with a significant expected annual purchase volume or those that have been identified as having a high or medium health and safety risk.



Uniper’s and Fortum’s qualification processes follows similar principles and steps. Uniper has set a target of using the ESG screening process to assess 100% of all material counterparties within the scope of Uniper’s procurement policies by 2022. At the end of 2021, 59% of them had been assessed. In addition, Uniper applies its own processes for Know Your Counterparty.

Supplier sustainability audits

In supplier sustainability audits, Fortum, excluding Uniper, assesses the supplier’s compliance with the requirements in Fortum’s Supplier Code of Conduct. Audits are done on-site, and they include site inspections, management and employee interviews, and reviews of documents.

Due to the Covid-19 pandemic and travel restrictions, the possibilities to conduct on-site supplier audits have been limited since the year 2020. Consequently, Fortum, excluding Uniper, conducted a total of four on-site audits in India and China during 2021.

If non-compliances are found in audits, the supplier makes a plan for corrective actions and we monitor their implementation. In case of severe non-compliances, the supplier can be qualified or the cooperation can be continued only if the corrective actions are implemented and confirmed. Fortum uses an international service provider for conducting audits, especially in risk countries. In Fortum’s main operating countries, or in the case of remote audits, the audits are performed by own personnel. In 2021, no audits conducted by own personnel were carried out.

In 2021, the majority of the non-compliances identified in the audits were related to overtime hours, pay, and occupational safety. No severe non-compliances related to freedom of association and employee collective bargaining rights, child labour, or discrimination were identified. One supplier was issued a recommendation related to employment contracts to strengthen its practices for the prohibition of forced labor.

Bettercoal

Fortum and Uniper are members of the Bettercoal initiative and use the Bettercoal Code and tools to monitor and improve sustainability in the coal supply chain. The Bettercoal Assessment Programme includes the suppliers’ Letter of Commitment, self-assessment, and site-assessment. Site-assessment is based on the principles of the Bettercoal Code and covers legal compliance, sustainability policies and management systems, business ethics, human rights and social performance, and environmental performance. The Bettercoal Code was renewed during 2020, and the revised Code was published in March 2021. Based on the site-assessment, a continuous improvement plan is drafted for the suppliers, and its implementation is monitored regularly. Site assessments are always performed by an external assessor approved by Bettercoal. In 2021, no Bettercoal site-assessments were conducted,

due to the Covid-19 pandemic. All coal suppliers participating in the Bettercoal programme and their status in the assessment process are listed on the [Bettercoal website](#).

Bettercoal has established working groups to support its operations in two significant coal procurement countries: Russia and Colombia. The purpose of the working groups is to support the continuous improvement of the suppliers participating in the Bettercoal Assessment Programme and to increase the number of suppliers participating in the programme, identify country risks and find ways to address them, and improve communications between the different stakeholders. Both Fortum and Uniper participate in the Russia and Colombia working groups’ activities, and Uniper chairs the Colombia working group.

Despite the limitations imposed by the Covid-19 pandemic, the Bettercoal Russia working group continued its stakeholder engagement activities in 2021. It conducted two virtual conferences on mine closure and land restoration, health and safety, and environmental monitoring.

Bettercoal Colombia working group continued to implement its work programme in 2021. The working group continued to monitor the three major Colombian coal mining companies’ continuous improvement plans and to actively engage with stakeholders. In an online event, the group met with relevant Colombian stakeholders, including suppliers, governmental agencies, dialogue institutions, NGOs, and trade unions. The working group exchanged prioritised issues in the work plan, identified opportunities for specific actions where Bettercoal can have a positive impact in the region, and addressed other issues relevant in the Colombian mining context.

Climate protection policies and the resulting changes in the demand for and production of coal will significantly impact employment, the economy, and public revenues in Columbia’s coal mining regions. Bettercoal works with stakeholders (government, companies, trade unions, and local communities) to support the transition in mining regions from coal mining dominance towards a more diversified local economy and to reduce the negative impact of a declined coal demand.

Governance and management

Sustainability management at Fortum is strategy-driven and based on our Values, Code of Conduct, Supplier Code of Conduct, sustainability-related policies and other Group policies and their specifying instructions.

We comply with laws and regulations. All of our operations are guided by good governance, effective risk management, adequate controls and the internal audit principles supporting them.

Fortum's goal is a high level of environmental and safety management in all business activities. Calculated in terms of sales, 100% of Fortum's electricity and heat production operations at the end of 2021 were ISO 14001 environmentally certified and 99.3% were ISO 45001 safety-certified. The divisions and sites develop their operations with internal and external audits required by environmental, occupational safety and quality management systems.

Responsibilities

As sustainability is an integral part of Fortum's strategy, the highest decision-making on sustainability and climate-related matters falls within the duties of the members of the Board of Directors, who share joint responsibility in these matters. Therefore, Fortum has not established a specific Sustainability Committee for the decision making on economic, environmental and social matters. The Audit and Risk Committee, members of the Fortum Executive Management, and other senior executives support the Board of Directors in the decision-making in these matters, when necessary.

Fortum Executive Management decides on the sustainability approach and Group-level sustainability targets that guide annual planning. The Group's performance targets, including sustainability and

climate-related targets, are approved by Fortum's Board of Directors. Fortum Executive Management monitors the achievement of the targets in its monthly meetings and in quarterly performance reviews. The achievement of the targets is also regularly reported to Fortum's Board of Directors. Fortum's line management is responsible for the implementation of Fortum Group's policies and instructions and for day-to-day sustainability management and improvement plans.

Fortum's Corporate Sustainability unit is responsible for the coordination and development of sustainability at the Group-level and for maintaining an adequate situation awareness and oversight regarding sustainability.

Fortum's subsidiary Uniper remains a separate company, listed in Germany, and has its own sustainability governance, processes and reporting. The Uniper SE Management Board bears the overall responsibility for the adoption and implementation of Uniper's sustainability measures. Uniper's highest governance board, the Supervisory Board, monitors the fulfilment of Uniper's sustainability obligations. Four of Fortum's Executive Managers, including the President and CEO of Fortum are members of Uniper's Supervisory Board. The President and CEO of Fortum act as the Chairman of Uniper SE Supervisory Board. New candidates will be nominated for election at the Uniper AGM, to be held in May 2022.

Realisation of the safety target (LTIF, own employees and contractors combined) was a part of Fortum's short-term incentive (STI) programme in 2021. In the 2022 STI programme, the safety target contains the severity rate per Total Recordable Injuries (TRI) of own employees and contractors combined and the execution rate of safety leadership training. Fortum's long-term incentive (LTI) programme includes a climate-related metric. In the 2021–2023 LTI plan, the target is linked to the reduction of coal-fired power generation capacity in line with

Fortum's coal-exit path. In the 2022–2024 LTI plan, the target is related to the reduction of absolute CO₂ emissions in the European fossil fleet, based on a fossil fleet review addressing the Group's European generation portfolio and a pathway developed to reach Fortum Group's 2030 and 2035 climate targets. Uniper continues to follow its own STI and LTI plans. However, the safety metric (severity rate per TRI) in the STI 2022 programme and the climate-related metric in the 2022–2024 LTI plan are applicable to both companies. Scaling of STI and LTI metrics are company-specific.

- ▶ [Corporate Governance Statement 2021](#)
- ▶ [Remuneration Statement 2021](#)
- ▶ [Code of Conduct](#)
- ▶ [Supplier Code of Conduct](#)
- ▶ [Sustainability Policy](#)

Sustainability management by topic

Sustainability management in the areas of economic responsibility, environmental responsibility and social responsibility is described in more detail in the accompanying table. Additionally, more detailed information about the management of different aspects and impacts and about measures, processes and projects is presented by topic in this Sustainability Report. Fortum's grievance channels have been described in the section ▶ [Business ethics and compliance](#). The purpose of the sustainability management approach is to ensure our operational compliance and to avoid, mitigate and offset the adverse impacts from our operations and to increase the positive impacts.

Management of economic responsibility

	Description
Targets and approach	<p>For Fortum, economic responsibility means competitiveness, performance excellence and market-driven production that creates long-term value for our stakeholders and enables sustainable growth. Satisfied customers are key to our success, and active consumers will have a crucial role in the future energy system. Fortum has indirect responsibility for its supply chain. We conduct business with companies that act responsibly.</p> <p>Each new research and development project is assessed against the criteria of carbon dioxide emissions reduction and resource efficiency. Likewise, new investment proposals are assessed against sustainability criteria as part of Fortum’s investment assessment and approval process. In our investments, we seek economically profitable alternatives that provide the opportunity to increase capacity and reduce emissions.</p> <p>Our financial targets include a target for capital structure (financial net debt / comparable EBITDA below 2x) and two different hurdle rates for new investments (WACC +100 BPS for green investments and WACC +200 BPS for other investments). Accordingly, Fortum aims to provide good returns for its owners and its dividend policy stipulates to pay a stable, sustainable and overtime increasing dividend. The realisation of financial targets in 2021 is reported in the Financial performance and position section of the ► Financials 2021.</p>
Policies and commitments	<p>The financial management system is based on Group-level policies and their specifying instructions, and on good governance, effective risk management, sufficient controls and the internal audit principles supporting them. Other key elements steering financial management are presented in the section ► Policies and commitments.</p>
Responsibilities	<p>The CFO and the Group’s Financial unit, division management, and ultimately the CEO and the Board of Directors are responsible for issues related to finances and financial statements and for broader financial responsibility issues. Our sustainability responsibilities are presented in the section ► Governance and management.</p>
Monitoring and follow-up	<p>The Board decides on the company’s financial targets as a part of the annual business planning process. Realisation of the targets is monitored on monthly basis both at the division level and by Fortum Executive Management. Fortum’s management monitors the realisation of financial targets quarterly as part of the business performance assessment, and key indicators are regularly reported to Fortum’s Board of Directors. Financial key indicators related to investments are monitored in divisions’ investment forums and by Fortum Executive Management.</p> <p>We report regularly on the direct and indirect financial impacts on our most important stakeholder groups. Fortum also uses the GRI Sustainability Reporting Standards indicators to measure economic responsibility.</p>

Management of environmental responsibility

	Description
Targets and approach	<p>Fortum wants to enable the energy transition by providing customers and societies a reliable and affordable supply of low-carbon energy. In the future, the energy system – and Fortum’s portfolio – will be based on renewable energy, increasingly clean gas (e.g. hydrogen) and nuclear power. In addition, we will continue to offer industrial and infrastructure solutions, e.g., waste-to-energy, grid stability services, as well as energy sales and storage. We strive to continuously reduce the environmental impacts of our operations by using best available practices and technologies. We measure the realisation of the environmental responsibility with the following key performance indicators, for which we have set ► Group-level targets:</p> <ul style="list-style-type: none"> • CO₂ emissions reduction (Scope 1 and 2) in European generation by at least 50% by 2030, and carbon neutral (Scope 1 and 2) in European generation by 2035 at the latest • Carbon neutral globally (Scope 1, 2 and 3 emissions), in line with the goals of the Paris Agreement, by 2050 at the latest • 35% reduction in Scope 3 greenhouse gas emissions by 2035 at the latest • Number of major voluntary measures enhancing biodiversity ≥12 in 2021
Policies and commitments	<p>Environmental management is based on Fortum’s, excluding Uniper, Sustainability Policy together with the Minimum Requirements for EHS Management. Uniper has its HSSE & Sustainability Policy Statement and HSSE and Sustainability Improvement Plan. Other key principles steering environmental management are presented in the section ► Policies and commitments. Fortum reviews and reports environmental risks as part of its risk assessment process. The risk assessment process is reported in the section Operating and financial review/Risk management of the ► Financials 2021. Climate-related risks are reported in the section ► Climate and resources: Climate.</p>
Responsibilities	<p>Our sustainability responsibilities are presented in the section ► Governance and management.</p>
Monitoring and follow-up	<p>The Group’s key indicators are reported regularly to Fortum’s Board of Directors and are published in Fortum’s interim reports. Carbon dioxide emissions and specific CO₂ emissions are reported quarterly, and number of major voluntary measures enhancing biodiversity is reported annually (in 2021) to Fortum Executive Management.</p> <p>The divisions and sites follow and develop their operations with audits required by environmental management systems. Internal and external auditors regularly audit the ISO 14001 standard-compliant management system. The CO₂ emissions of plants within the sphere of the EU and the UK emissions trading system (ETS) are audited annually on a per plant basis by an external verifier accredited by the emissions trading authority. The verification addresses the reliability, credibility and accuracy of the monitoring system and the reported data and information relating to CO₂ emissions. The plants must annually submit to the authorities a verified emissions report of the previous calendar year’s CO₂ emissions.</p> <p>► Independent limited assurance on Fortum’s Greenhouse gas emissions in 2021 has been provided by Deloitte Oy.</p> <p>Fortum’s and Uniper’s supply chain monitoring systems also cover environmental responsibility. The approach is described in the section ► Personnel and society: Supply chain.</p> <p>Fortum, excluding Uniper, maps its stakeholders’ views annually with the One Fortum Survey and Fortum group with separate sustainability survey.</p>

Management of social responsibility: Employees

	Description
Targets and approach	<p>We aspire to be a responsible employer who invests in the development and wellbeing of our employees. We aim to be a safe workplace for our employees and for the contractors and service providers working for us. We measure the realisation of occupational safety with the following indicator, for which we have set ► Group-level target:</p> <ul style="list-style-type: none"> • Total Recordable Injury Frequency (TRIF), own personnel and contractors <1.0 by the end of 2025 • Lost time injury Frequency (LTIF), for own personnel and contractors: ≤1.2 in 2021
Policies and commitments	<p>Safety management is based on Fortum's, excluding Uniper, Sustainability Policy together with the Minimum Requirements for EHS Management. Uniper has its HSSE & Sustainability Policy Statement and HSSE and Sustainability Improvement Plan. Other key principles steering labour practices and safety management are presented in the section ► Policies and commitments. Fortum reviews and reports operational and safety risks as part of its risk assessment process. The risk assessment process is reported in Operating and financial review/Risk management of the ► Financials 2021.</p>
Responsibilities	<p>Our sustainability responsibilities are presented in the section ► Governance and management.</p>
Monitoring and follow-up	<p>Fortum personnel and contractor injury frequencies and the number of severe occupational accidents are reported monthly to Fortum Executive Management. The Group's key indicators are reported regularly to Fortum's Board of Directors and are published in Fortum's interim reports. The divisions and sites follow and develop their operations with audits required by safety and quality management systems. Internal and external auditors regularly audit our ISO 45001 standard-compliant management system.</p> <p>Work wellbeing indicated as a percentage of sickness-related absences, is reported to the Fortum Executive Management every quarter. In addition, work wellbeing is monitored through other indicators, such as the ratio between actual retirement age and the statutory start of the retirement pension.</p> <p>Feedback about the personnel's wellbeing and job satisfaction is also obtained from personnel surveys.</p> <p>Fortum, excluding Uniper, maps its stakeholders' views annually with the One Fortum survey and Fortum group with separate sustainability survey.</p>

Management of social responsibility: Human rights

	Description
Targets and approach	<p>Fortum follows and respects internationally recognised human rights, which are included in key human rights treaties. Our goal is to operate in accordance with the UN Guiding Principles on Business and Human Rights.</p> <p>Our social responsibility includes taking care of our own personnel and the surrounding communities. We advance responsible operations in our supply chain and more broadly in society. Targets related to our own personnel are presented in the ► Personnel and society: Personnel.</p>
Policies and commitments	<p>Key elements steering human rights management are presented in the section ► Policies and commitments.</p>
Responsibilities	<p>Our responsibilities related to human rights are presented in the section ► Personnel and society: Human rights.</p>
Monitoring and follow-up	<p>The key tools for monitoring the impacts of human rights are country and partner risk assessments, supplier qualification, and supplier audits.</p> <p>Fortum, excluding Uniper, conducts a human rights assessment for investment projects – especially in new operating areas – and also for new countries where Fortum plans to expand the sales of products and services. The assessments are presented to Fortum Executive Management and to the Board of Directors when needed.</p> <p>Uniper annually performs a worldwide assessment, which is based on a combination of economic and social indexes, to map key potential country-specific issues that may directly affect the company. The assessment findings contribute to the implementation of modified due diligence requirements and mitigation measures, such as the inclusion of specific contract clauses.</p> <p>For Fortum, excluding Uniper, supplier audits that are conducted are reported in our interim reports.</p> <p>Both Fortum and Uniper are members of the Bettercoal Initiative and use the Bettercoal tools to improve sustainability in the coal supply chain.</p> <p>Monitoring systems related to our own personnel are presented in the section ► Personnel and society: Personnel.</p> <p>Fortum, excluding Uniper, maps its stakeholders' views annually with the One Fortum survey and Fortum Group with separate sustainability survey.</p>

Management of social responsibility: Business ethics (incl. anti-corruption and anti-bribery)

	Description
Targets and approach	<p>We believe that an excellent financial result and ethical business are intertwined. We follow good business practices and ethical principles defined in Fortum's and Uniper's Codes of Conduct. We work within the framework of competition laws and competition instructions. We avoid all situations where our own personal interests may conflict with the interests of the Fortum Group. Notably, we never accept or give bribes or other forms of improper payment for any reason.</p> <p>Our customer relations are based on honesty and trust. We treat our suppliers and subcontractors fairly and equally. We select them based on their merit and we expect them to consistently comply with our requirements and with Fortum's and Uniper's Supplier Codes of Conduct.</p>
Policies and commitments	<p>Key elements steering social and compliance management are presented in the section ► Policies and commitments.</p>
Responsibilities	<p>Our sustainability responsibilities are presented in the section ► Governance and management.</p>
Monitoring and follow-up	<p>Suspected misconduct and measures related to ethical business practices and compliance with regulations are regularly monitored and assessed by Fortum's Audit and Risk Committee. Uniper's Compliance Management System includes quarterly compliance reports to the Uniper Management Board. Uniper's Audit and Risk Committee monitors compliance issues on a regular basis.</p> <p>Internal and external reporting channels are offered for reporting suspicions of misconduct. The channels are described in the Codes of Conduct and accessible on the companies' internal and external webpages. Monitoring systems related to the supply chain are presented in the section ► Personnel and society: Supply chain.</p>

Management of social responsibility: Product responsibility

	Description
Targets and approach	<p>An uninterrupted supply of energy is necessary for a functioning society. We ensure the reliable operation of our power plants with preventive maintenance and continuous monitoring.</p> <p>Our goal is to present products and services truthfully in all our marketing and communication materials. We strictly follow responsible marketing communication guidelines and the regulations for environmental marketing. We assume responsibility for customer data protection and comply with the valid regulations related to the handling of customer data.</p>
Policies and commitments	<p>Key elements steering product responsibility management are presented in the section ► Policies and commitments.</p>
Responsibilities	<p>Our sustainability responsibilities are presented in ► Governance and management.</p>
Monitoring and follow-up	<p>The figures related to asset availability of power plants are reported regularly to Fortum's Board of Directors and are published in Fortum's interim reports. The figures are reported quarterly to Fortum Executive Management.</p> <p>Customer satisfaction, excluding Uniper, is monitored annually with the One Fortum survey. The results of the survey are presented to Fortum's management and they are used to develop the business.</p>

Policies and commitments

We follow and respect several international initiatives and national and international guidelines addressing different aspects of sustainability. They guide our operations in the areas of economic, environmental, and social responsibility.

Fortum follows and respects the International Bill of Human Rights, the United Nations Convention on the Rights of the Child, and the core conventions of the International Labour Organisation (ILO). Additionally, Fortum recognises in its operations the UN Guiding Principles on Business and Human Rights, the OECD Guidelines for Multinational Enterprises, the International Chamber of Commerce’s anti-bribery and anti-corruption guidelines, and the Bettercoal initiative’s Code on responsible coal mining.

Fortum is a participant of the UN Global Compact initiative and the UN Caring for Climate initiative. Uniper follows the ten principles of the UN Global Compact, but is not a formal participant.

Sustainability management at Fortum is strategy-driven and based on its Values, Code of Conduct, Supplier Code of Conduct, sustainability related policies and other Group policies and their specifying instructions. For now, Uniper continues to have its own separate Code of Conduct and Supplier Code of Conduct. Both companies’ Codes of Conduct are based on similar fundamentals and they establish the basic principles of conduct that everyone must follow. They define how we treat each other, do business and engage with the world. The companies’ Supplier Codes of Conduct, both based on the ten principles of UN Global Compact, outline the requirements for Fortum’s and Uniper’s suppliers and business partners.

Fortum’s Sustainability Policy and Uniper’s Health, Safety, Security and Environment (HSSE) & Sustainability Policy Statement define the companies’ ambitions and priorities for sustainability. Both companies have sound policies and specifying instruction guiding the operations in the areas of environmental matters, social and personnel matters, human rights, and anti-corruption and bribery, listed in the tables.

Fortum’s, excluding Uniper, main policies and instructions guiding sustainability

	Economic matters	Environmental matters	Social and personnel matters	Human rights	Anti-corruption and bribery
Values	X	X	X	X	X
Code of Conduct	X	X	X	X	X
Supplier Code of Conduct	X	X	X	X	X
Sustainability Policy (including environmental, and health and safety policies)	X	X	X	X	X
Disclosure Policy	X		X		
Group Risk Policy	X	X	X	X	X
Minimum Requirements for EHS Management		X	X	X	
Biodiversity Manual		X			
Group Manual for Sustainability Assessment		X	X	X	X
Group Instructions for Corporate Social Responsibility (CSR) Programme Governance Model	X	X	X	X	X
People Policy	X		X	X	
Leadership Principles			X	X	
Accounting Manual	X	X	X		
Fortum Insider Rules	X		X		X
Investment Manual	X	X	X	X	X
Tax Principles	X		X		X
Group Instructions for Compliance Management	X	X	X	X	X
Group Instructions for Anti-Bribery	X		X		X
Group Instructions for Safeguarding Assets	X		X		X
Group Instructions for Conflict of Interest	X		X		X
Anti-Money-Laundering Manual	X		X		X
Competition Law Compliance Guidelines	X		X		X
Security Guidelines		X	X	X	
Group Privacy Policy	X		X	X	

Fortum's, excluding Uniper, EHS minimum requirements are updated annually. In 2021, updates were related to the learnings from the accidents that happened during the year. We report on the training related to the updated instructions in the sections ▶ **Business ethics and compliance**, and ▶ **Occupational and process safety**.

The highest level policies at Fortum are approved by the Board of Directors. Similarly, the highest level instructions are approved by either the President and CEO or Fortum Executive Management. The highest level policies at Uniper are approved by the Management Board.

Uniper's main policies and instructions guiding sustainability

	Economic matters	Environmental matters	Social and personnel matters	Human rights	Anti-corruption and bribery
Uniper Way			X		
Code of Conduct	X	X	X	X	X
Supplier Code of Conduct	X	X	X	X	X
HSSE & Sustainability Policy Statement	X	X	X	X	X
Enterprise Risk Management Policy	X	X	X	X	X
ESG Risk Management Policy	X	X	X	X	X
Governance & Asset Project Risk Management Policy	X	X	X		
HSSE, Process Safety & Information Security Incident Reporting, Alerts, Investigation and Learning Business Process		X	X		
HSSE Managing Incidents, Emergencies and Crises		X	X		
ESG Due Diligence Business Process	X	X	X	X	X
Know-Your-Counterparty Policy	X	X	X	X	X
Uniper Procurement Policy	X	X	X	X	X
Stakeholder Management Business Policy	X	X	X	X	X
Group Finance Policy	X				X
Preventing Insider Trading Business Policy	X				X
Economic Sanctions Business Policy	X				X
Trading Compliance Policy	X				X
Group Tax Guidelines	X				X
Mergers & Acquisitions Business Policy	X				
Compliance Business Policy	X				X
Physical Asset Policy	X	X	X		
Information Security Business Policy	X		X		
Data Protection Business Policy	X		X		

Reported GRI disclosures

This Sustainability Report 2021 references the following Disclosures from the GRI Topic-specific Standards presented in the table. All other standards except Water and Effluents (GRI 303), Waste (GRI 306), Occupational Health and Safety (GRI 403) and Tax (GRI 207) follow version 2016. Standards GRI 303 and GRI 403 follow version 2018. Standard GRI 207 follows version 2019. Standard GRI 306 follows version 2020.

The table includes Disclosures reported in full or partly. Due to the consolidation of Uniper, some Disclosures are reported only partly.

DISCLOSURE	DESCRIPTION	SECTION
GRI 103: MANAGEMENT APPROACH		
103-1	Explanation of the material topics	<ul style="list-style-type: none"> ▶ Sustainability at Fortum / Sustainability priorities ▶ Governance and management / Sustainability management by topic Additionally reported by topic
103-2	The management approach and its components	<ul style="list-style-type: none"> ▶ Governance and management ▶ Policies and commitments ▶ Governance and management / Sustainability management by topic ▶ Sustainability at Fortum / Business ethics and compliance ▶ Climate and resources / Emissions / Environmental incidents ▶ Personnel and society / Human rights
103-3	Evaluation of the management approach	<ul style="list-style-type: none"> ▶ Governance and management / Sustainability management by topic Additionally reported by topic
ECONOMIC RESPONSIBILITY		
GRI 201: Economic performance		
201-1	Direct economic value generated and distributed	▶ Personnel and society / Stakeholders / Economic impacts
201-2	Financial implications and other risks and opportunities due to climate change	<ul style="list-style-type: none"> ▶ Climate and resources / Climate ▶ Financials 2021 / Operating and financial review / Risk management
201-3	Defined benefit plan obligations and other retirement plans	<ul style="list-style-type: none"> ▶ Financials 2021 / Notes to the consolidated financial statements / 31 Pension obligations
GRI 205: Anti-corruption		
205-1	Operations assessed for risks related to corruption	▶ Sustainability at Fortum / Business ethics and compliance
205-2	Communication and training about anti-corruption policies and procedures	▶ Sustainability at Fortum / Business ethics and compliance
205-3	Confirmed incidents of corruption and actions taken	▶ Sustainability at Fortum / Business ethics and compliance

DISCLOSURE	DESCRIPTION	SECTION
GRI 206: Anti-competitive Behavior		
206-1	Legal actions for anti-competitive behavior, anti-trust, and monopoly practices	▶ Sustainability at Fortum / Business ethics and compliance
GRI 207: Tax		
207-1	Approach to tax	▶ Tax Footprint 2021
207-2	Tax governance, control, and risk management	<ul style="list-style-type: none"> ▶ Tax Footprint 2021 ▶ Financials 2021 / Operating and financial review / Risk Management ▶ SpeakUp channel ▶ Financials 2021 / Auditor's report
207-3	Stakeholder engagement and management of concerns related to tax	<ul style="list-style-type: none"> ▶ Tax Footprint 2021 ▶ SpeakUp channel
Nuclear plant decommissioning		
103	Management Approach	▶ Financials 2021 / Notes to the consolidated financial statements / 29 Nuclear-related assets and liabilities
System efficiency		
EU11	Average generation efficiency of thermal plants	▶ Climate and resources / Energy / Fuel consumption / Energy intensity
ENVIRONMENTAL RESPONSIBILITY		
GRI 301: Materials		
301-1	Materials used by weight or volume	▶ Climate and resources / Energy / Fuel consumption
301-2	Recycled input materials used	<ul style="list-style-type: none"> ▶ Climate and resources / Energy / Fuel consumption ▶ Climate and resources / Circular economy
GRI 302: Energy		
302-1	Energy consumption within the organisation	<ul style="list-style-type: none"> ▶ Climate and resources / Energy / Energy production ▶ Climate and resources / Energy / Fuel consumption
302-3	Energy intensity	▶ Climate and resources / Energy / Fuel consumption / Energy intensity
302-4	Reduction of energy consumption	▶ Climate and resources / Energy / Energy efficiency

Governance and management

Policies and commitments

Reported GRI disclosures

Limited assurance report on GHG emissions

DISCLOSURE	DESCRIPTION	SECTION
GRI 303: Water and effluents		
303-1	Interactions with water as a shared resource	▶ Climate and resources / Water ▶ Personnel and society / Corporate citizenship
303-3	Water withdrawal	▶ Climate and resources / Water
303-4	Water discharge	▶ Climate and resources / Water / Water discharge ▶ Climate and resources / Emissions / Emissions to water ▶ Climate and resources / Emissions / Environmental incidents
303-5	Water consumption	▶ Climate and resources / Water / Water consumption
GRI 304: Biodiversity		
304-3	Habitats protected or restored	▶ Climate and resources / Biodiversity
GRI 305: Emissions		
305-1	Direct (Scope 1) GHG emissions	▶ Climate and resources / Climate / Greenhouse gas emissions
305-2	Energy indirect (Scope 2) GHG emissions	▶ Climate and resources / Climate / Greenhouse gas emissions
305-3	Other indirect (Scope 3) GHG emissions	▶ Climate and resources / Climate / Greenhouse gas emissions
305-4	GHG emissions intensity	▶ Climate and resources / Climate / Metrics and targets
305-7	Nitrogen oxides (NO _x), sulfur oxides (SO _x), and other significant air emissions	▶ Climate and resources / Emissions / Emissions to air
GRI 306: Waste		
306-1	Waste generation and significant waste-related impacts	▶ Climate and resources / Circular economy
306-3	Waste generated	▶ Climate and resources / Circular economy / Waste and by-products from our energy production
306-4	Waste diverted from disposal	▶ Climate and resources / Circular economy / Waste and by-products from our energy production
306-5	Waste directed to disposal	▶ Climate and resources / Circular economy / Waste and by-products from our energy production
GRI 307: Environmental Compliance		
307-1	Non-compliance with environmental laws and regulations	▶ Sustainability at Fortum / Business ethics and compliance ▶ Climate and resources / Emissions / Environmental incidents
GRI 308: Supplier Environmental Assessment		
308-2	Negative environmental impacts in the supply chain and actions taken	▶ Personnel and society / Supply chain / Supply chain management

DISCLOSURE	DESCRIPTION	SECTION
SOCIAL RESPONSIBILITY		
102-8	Information on employees and other workers	▶ Personnel and society / Personnel
102-41	Collective bargaining agreements	▶ Personnel and society / Personnel / Employee-employer relations
GRI 401: Employment		
401-1	New employee hires and employee turnover	▶ Personnel and society / Personnel
GRI 403: Occupational Health and Safety		
403-1	Occupational health and safety management system	▶ Personnel and society / Safety and security / Occupational and process safety
403-2	Hazard identification, risk assessment, and incident investigation	▶ Personnel and society / Safety and security / Occupational and process safety
403-3	Occupational health services	▶ Personnel and society / Personnel / Employee health and wellbeing
403-5	Worker training on occupational health and safety	▶ Personnel and society / Safety and security / Occupational and process safety
403-6	Promotion of worker health	▶ Personnel and society / Personnel / Employee health and wellbeing
403-9	Work-related injuries	▶ Personnel and society / Safety and security / Occupational and process safety
403-10	Work-related ill health	▶ Personnel and society / Personnel / Employee health and wellbeing
GRI 404: Training and Education		
404-2	Programs for upgrading employee skills and transition assistance programs	▶ Personnel and society / Personnel / Employee development
404-3	Percentage of employees receiving regular performance and career development reviews	▶ Personnel and society / Personnel / Employee development
GRI 405: Diversity and Equal Opportunity		
405-1	Diversity of governance bodies and employees	▶ Personnel and society / Personnel / Diversity and equal opportunity ▶ Governance 2021 / Corporate Governance Statement / Board of Directors
405-2	Ratio of basic salary and remuneration of women to men	▶ Personnel and society / Personnel / Rewarding

Governance and management

Policies and commitments

Reported GRI disclosures

Limited assurance report on GHG emissions

DISCLOSURE	DESCRIPTION	SECTION
GRI 406: Non-discrimination		
406-1	Incidents of discrimination and corrective actions taken	▶ Personnel and society / Personnel / Diversity and equal opportunity
GRI 407: Freedom of Association and Collective Bargaining		
407-1	Operations and suppliers in which the right to freedom of association and collective bargaining may be at risk	▶ Personnel and society / Personnel / Employee-employer relations ▶ Personnel and society / Supply chain / Supply chain management
GRI 408: Child Labor		
408-1	Operations and suppliers at significant risk for incidents of child labour	▶ Personnel and society / Human rights
GRI 409: Forced or Compulsory Labor		
409-1	Operations and suppliers at significant risk for incidents of forced or compulsory labour	▶ Personnel and society / Human rights
GRI 412: Human Rights Assessment		
412-1	Operations that have been subject to human rights reviews or impact assessments	▶ Personnel and society / Human rights
412-2	Employee training on human rights policies or procedures	▶ Personnel and society / Human rights
412-3	Significant investment agreements and contracts that include human rights clauses or that underwent human rights screening	▶ Personnel and society / Human rights
GRI 413: Local Communities		
413-2	Operations with significant actual and potential negative impacts on local communities	▶ Personnel and society / Corporate citizenship
GRI 414: Supplier Social Assessment		
414-2	Negative social impacts in the supply chain and actions taken	▶ Personnel and society / Supply chain / Supply chain management
GRI 415: Public Policy		

DISCLOSURE	DESCRIPTION	SECTION
415-1	Political contributions	▶ Sustainability at Fortum / Business ethics and compliance
GRI 417: Marketing and Labeling		
417-3	Incidents of non-compliance concerning marketing communications	▶ Personnel and society / Customers / Product responsibility
GRI 419: Socioeconomic Compliance		
419-1	Non-compliance with laws and regulations in the social and economic area	▶ Sustainability at Fortum / Business ethics and compliance ▶ Personnel and society / Personnel / Diversity and equal opportunity ▶ Personnel and society / Human rights ▶ Personnel and society / Customers / Product responsibility
Disaster/Emergency planning and response		
103	Management Approach	▶ Personnel and society / Safety and security / Corporate security
Access		
EU30	Average plant availability factor	▶ Climate and resources / Energy / Security of supply

Independent limited assurance report on Fortum's Greenhouse Gas Emissions 2021

To the Management of Fortum Corporation

We have been engaged by Fortum Corporation (Business ID 1463611-4, hereinafter: Fortum) to provide a limited assurance on Fortum's selected Greenhouse Gas Emissions disclosures (Scope 1, 2 and 3) based on Fortum's Reporting principles according to the requirements published by CDP (Verification of Climate Data) for the reporting period of January 1, 2021 to December 31, 2021 (hereinafter: GHG Emissions Disclosures). The disclosures subject to the assurance engagement are presented on pages 38-40 in the section "Climate" of Fortum's Sustainability Reporting 2021 (hereinafter: GHG Reporting).

Management's responsibility

Management is responsible for the preparation of the GHG Reporting in accordance with the reporting criteria as set out in Fortum's Reporting principles and the Greenhouse Gas Protocol (hereafter: Reporting criteria). This responsibility includes: designing, implementing and maintaining internal control relevant to the preparation and fair presentation of the GHG Reporting that are free from material misstatement, whether due to fraud or error, selecting and applying appropriate criteria and making estimates that are reasonable in the circumstances.

Assurance provider's responsibility

Our responsibility is to express a limited assurance conclusion on the reported GHG Emissions Disclosures within Fortum's GHG Reporting based on our engagement. Our assurance report is made in accordance with the terms of our engagement with Fortum. We do not accept or assume responsibility to anyone other than Fortum for our work, for this assurance report, or for the conclusions we have reached.

We conducted our assurance engagement in accordance with International Standard on Assurance Engagements (ISAE) 3410 to provide a limited assurance on GHG Emissions Disclosures. This Standard requires that we comply with ethical requirements and plan and perform the assurance engagement to obtain a limited assurance whether any matters come to our attention that cause us to believe that

the GHG Emissions Disclosures have not been presented, in all material respects, in accordance with the reporting criteria.

We did not perform any assurance procedures on the prospective information, such as targets, expectations and ambitions. Consequently, we draw no conclusion on the prospective information.

A limited assurance engagement with respect to the GHG Emissions Disclosures involves performing procedures to obtain evidence about the reported GHG Emissions. The procedures performed depend on the practitioner's judgment, but their nature is different from, and their extent is less than, a reasonable assurance engagement. It does not include detailed testing of source data or the operating effectiveness of processes and internal controls and consequently they do not enable us to obtain the assurance necessary to become aware of all significant matters that might be identified in a reasonable assurance engagement.

Our procedures on this engagement included:

- A review of management systems, reporting and data compilation processes related to the calculations presented on pages 38 and 39 in the Fortum's Sustainability Reporting 2021.
- Selected interviews of persons conducting Scope 1, 2 and 3 analysis and data owners
- Review of assumptions and emission factors used in calculations
- Analytical testing of consolidated data
- Testing of source data on spot check basis

We believe that the evidence we have obtained is sufficient and appropriate to provide a basis for our conclusion.

Our independence, quality control and competences

We complied with Deloitte's independence policies which address and, in certain cases, exceed the requirements of the International Ethics Standards Board for Accountants' Code of Ethics for Professional Accountants in their role as independent assurance providers and in particular preclude us from taking financial, commercial, governance and ownership positions which might affect, or be perceived to affect,

our independence and impartiality and from any involvement in the preparation of the report. We have maintained our independence and objectivity throughout the year and there were no events or prohibited services provided which could impair our independence and objectivity.

Deloitte Oy applies International Standard on Quality Control 1 and accordingly maintains a comprehensive system of quality control including documented policies and procedures regarding compliance with ethical requirements, professional standards and applicable legal and regulatory requirements. This engagement was conducted by a multidisciplinary team including assurance and GHG Reporting expertise with professional qualifications. Our team is experienced in providing reporting assurance.

Conclusion

On the basis of the procedures we have performed, nothing has come to our attention that causes us to believe that the information subject to the assurance engagement is not prepared, in all material respects, in accordance with the Reporting criteria.

Our assurance statement should be read in conjunction with the inherent limitations of accuracy and completeness of the GHG Reporting.

Espoo, 23 March 2022

Deloitte Oy

Jukka Vattulainen
Authorized Public Accountant

Teemu Jaatinen
Authorized Public Accountant