Sustainability 2022

Highlights 2022

Biodiversity strategy work progressing well. Fortum mapped its own and its value chain's dependencies and impacts on biodiversity and ecosystem services to define its biodiversity footprint.

Investment in personnel mental wellbeing in the exceptional conditions: opportunities for personal meetings with a wellbeing professional, coaching sessions and more.

Fortum ranked best among large companies in the Helsinki Nasdaq category in the **Nordic Business Diversity Index.**

Fortum supports and participates in the development of the Solar Stewardship Initiative (SSI) **to increase traceability and sustainability of solar products, components and raw materials.**

Safety remains Fortum's top priority: **Safety Culture Programme launched, including trainings, webinars and workshops for all organisational levels.**

Collaboration to mitigate climate change: **Fortum and Microsoft announced world's largest collaboration to provide sustainable waste heat from new data centre region.**

Loviisa nuclear power plant had a good production year: **7.9 terawatt-hours of carbon-free power generated, about 10% of the electricity used in Finland.**

In February 2023, the Finnish Government granted a **new operating license for both units at Fortum's Loviisa nuclear power plant until the end of 2050.**

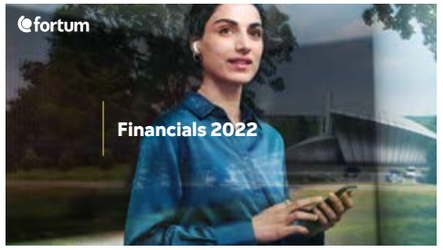
In March 2023, Fortum announced **considerably enhanced environmental targets**.

Fortum targets **carbon neutrality (Scopes 1, 2, 3) by 2030** and will **exit all coal-based generation by the end of 2027**. We will also commit to set **emission reduction targets based on climate science (SBTi 1.5°C)**. This commitment assumes full exit from Russia. **Mid-point targets for specific emissions** were also set. Fortum is also committing to **ambitious biodiversity targets.** See section ▸ **Climate and resources** for more information on the new targets.

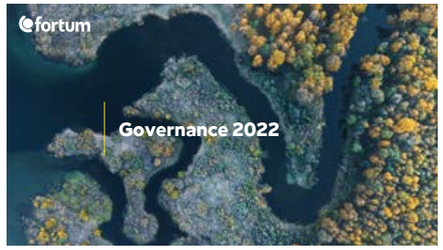
Sustainability 2022

Fortum's 2022 reporting entity

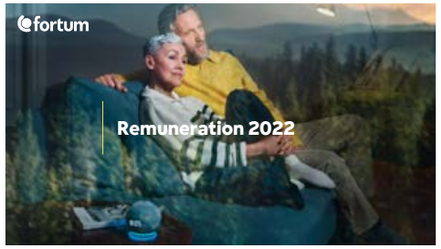
CEO's Business Review



Financials



Governance



Remuneration

Tax Footprint

Sustainability

Notes:

- Fortum's TCFD report for 2022 is included in the section Climate, pages: 28–38 and in Financials 2022, pages: 18–20 and 36.
- Fortum's Non-Financial Information report is included in the Financials 2022, pages: 9–14 and 18–28.
- 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.

Sustainability at Fortum

Fortum is today one of Europe's cleanest power generators. Our Nordic power generation is based on CO_2-free hydro and nuclear power. This business is complemented by onshore wind and solar, district heating and cooling operations, electricity retail business and circular economy.

Sustainability is essential to Fortum's strategy and we are committed to carbon neutrality by 2030. Our new strategy is designed to deliver on our new purpose: To power a world where people, businesses and nature thrive together. Fortum's biggest strength, and a continuing strategic priority for the company, is its ability to deliver reliable and clean energy at scale to customers and the Nordic energy system. Fortum will continue to decarbonise and modernise its existing operations to ensure optimal value creation and to reach its environmental targets. Additionally, as the development of technologies to replace fossil fuels in production processes is accelerating, Fortum will work to find solutions for industrial customers to lower their carbon footprint.

In addition to climate and resources, we pay close attention to the impacts of our operations on our personnel and the society around us. Diversity and equal opportunity contribute to competitiveness and innovation. Excellence in safety is the foundation of Fortum's business and an absolute prerequisite for efficient and interruption-free production.

The Nordic market provides clean and affordable electricity for decarbonisation, and with the new strategy Fortum is well positioned to drive this transition.

Fortum's strategy
Fortum's values
Fortum in sustainability indices

Year 2022 in short

For Fortum, 2022 was a year dominated by the brutal war Russia has been waging in Ukraine since February 2022, the effects from the ensuing European energy crisis, and the divestment of Uniper. In March 2023, Fortum announced a new strategy and considerably enhanced environmental targets.

The year started with managing Uniper's liquidity challenges. The rapidly increasing and volatile gas prices resulted in significantly higher margining requirements for Uniper. Within a month, in February, Russia attacked Ukraine, marking the beginning of shock-like effects of the war and a full-blown energy crisis in Europe that drastically changed our operating environment.

Our immediate step was to halt all new activities in Russia; we would not do any new investment projects or provide any financing to our Russian subsidiaries. The decision to pursue a controlled exit from Russia was made in May.

The dramatic year also ended our five-year journey with Uniper. The energy crisis escalated during the summer when Russia cut pipeline gas exports to Germany and most of Europe, causing massive losses to gas midstream companies. A long-term solution to rescue Uniper was required and in September Fortum agreed to sell its ownership to the German State. The divestment was completed in December.

The Fortum Board of Directors resolved on Fortum's new strategy at the beginning of March, 2023. A strong focus on sustainability is at the heart of our strategy and purpose – To power a world where people, businesses and nature thrive together.

Climate and resources

Fortum is today one of Europe's cleanest power generators. Almost 90% of the Group's EBITDA (year 2022 excluding Russian operations) originates from the company's Nordic 45 TWh outright power generation, which is based on CO_2-free hydro and nuclear power. In 2022, 97% of Fortum's power generation in Europe and 59% globally was CO_2-free.

As part of the new strategy, Fortum's Sustainability targets were also updated. Fortum has brought forward its target to reach carbon neutrality (Scopes 1, 2, 3) by several years to 2030 and will exit all coal-based generation by the end of 2027. Fortum will also commit to set emission reduction targets based on climate science (SBTi 1.5 °C). This commitment assumes full exit from Russia. To measure the progress, mid-point targets have also been set for specific emissions at below 20 gCO_2/kWh for total energy production and at below 10 gCO_2/kWh for power generation by 2028. Fortum is also committing to an ambitious biodiversity target to have no net loss of biodiversity (excluding aquatic impacts) from existing and new operations (Scopes 1, 2) from 2030 onwards. In addition, Fortum will reduce its negative dynamic terrestrial impacts in upstream Scope 3 by 50% by 2030 (base-year 2021). For more information, see section ▸ **Climate and resources**.

Personnel and society

The safety of own personnel and contractors remains Fortum's top priority; in 2022 we launched the Safety Culture Programme, which includes trainings, webinars and workshops for all organisational levels. We also concentrated on supporting personnel mental wellbeing in the exceptional conditions of the geopolitical situation and the prolonged Covid-19 pandemic, which still affected our ways of working. An inclusive culture also promotes the wellbeing of personnel, and in 2022 we provided Inclusive Leadership training for managers to enhance their knowledge and understanding of diversity, equity and inclusion. We continued to steer support to society and cooperation with local communities through our Corporate Social Responsibility (CSR) programme.

Value-creating strategy*

Input

Human and intellectual capital
- Approximately 5,000 of 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 55 million in 2022**
- Robust corporate governance and ethical business conduct
- Brand and reputation

Sources of energy
- Hydro, wind, solar
- Uranium, waste-derived fuels, natural gas, oil, biofuels

Assets
- Operations mainly in the Nordic countries and Poland
- ~8.6 GW power generation capacity
- ~2.1 GW heat production capacity
- Hydro power plants, nuclear power plants, CHP, condensing plants
- Growing in wind and solar
- Several waste-to-energy plants; material recovery and recycling plants

Financial**
- Financial net debt EUR 1,084 million
- Total assets EUR 23,642 million

Fortum

Purpose Statement

To power a world where people, businesses and nature thrive together.

Strategic priorities
- Deliver reliable clean energy
- Drive decarbonisation in industries
- Transform and develop

Output

Products
- 44.2 TWh power generation
- 5.3 TWh heat production
- 97% of electricity generation CO_2-free in Europe, 59% in all countries

Services and solutions
- Power and heat sales
- Electricity trading services
- 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
- Waste heat usage from data centres
- Hydrogen
- E-mobility charging solutions
- Engineering services for customers

Our carbon footprint
- CO_2-free power production, 42.8 TWh
- Specific CO_2 emissions from power generation excluding Russia 25.4 gCO_2/kWh
- CO_2 emissions from total energy production, 2.1 Mt
- Coal-based power generation capacity, 0.7 GW
- Share of coal-based power generation of total power generation, 3%
- Share of coal-based revenue of total revenue, 4%

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
- Security of supply; Reliable supply of electricity and heat
- 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
- 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

* Figures are mainly for Fortum continuing operations, excluding Russia.
** Continuing operations, including Russia.

New strategy – Power to renew

Fortum has unique ability to reliably deliver clean energy from sources at scale. With its energy Fortum helps its customers to decarbonise their processes and societies to reach carbon neutrality in balance with nature.

Fortum is today one of Europe's cleanest power generators. Almost 90% of the Group's EBITDA (year 2022 excluding Russian operations) originates from the company's Nordic 45 TWh outright power generation, which is based on CO_2-free hydro and nuclear power. This business is complemented by onshore wind and solar, district heating and cooling operations, electricity retail business and circular economy.

Fortum's new strategy does not include the Group's Russian operations and the company continues to actively pursue an exit from Russia, with a divestment as a preferred alternative. However, any potential transaction is subject to Russian regulatory and presidential approvals and is likely to take further time.

Fortum's new strategy is designed to deliver on the company's new purpose: To power a world where people, businesses and nature thrive together. It crystallises our value proposition to our stakeholders.

Fortum's strategy is based on three strategic priorities:
- Deliver reliable clean energy
- Drive decarbonisation in industries
- Transform and develop

Our two strategic business priorities indicate where we will focus our efforts. Our first priority is to deliver reliable clean energy, when needed and at scale, to our customers and the Nordic energy system. This means we will continue to develop our best-in-class operations for efficiency, flexibility and optimisation. We will also continue to decarbonise and modernise those operations that still have emissions, backed by ambitious environmental commitments.

Secondly, we drive decarbonisation and growth in Nordic industries. We achieve this by partnering with strategic customers, developing and building new clean power and driving the development of clean hydrogen. Together with our partners, we make selective growth investments to renewable energy and explore opportunities in clean hydrogen and new nuclear.

Our third strategic priority describes how we are going to develop and transform to succeed. We restructure our organisation to fit-for-purpose, and transform Fortum to a customer-oriented company. We improve how we manage our risk profile and strengthen our open leadership.

New more ambitious environmental targets

Fortum's position as a leading Nordic clean energy company is now complemented by considerably enhanced environmental targets with the aim to be a leader in sustainability. Fortum has brought forward its target to reach carbon neutrality (Scopes 1, 2, 3) by several years to 2030 and will exit all coal-based generation by the end of 2027. In addition we have the following targets:

- Fortum will commit to set emission reduction targets based on the climate science (SBTi 1.5 °C). This commitment assumes full exit from Russia
- Mid-point targets for specific emissions at below 20 g CO_2/kWh for total energy production and at below 10 g CO_2/kWh for power generation by 2028
- No net loss of biodiversity (excluding any aquatic impacts) from existing and new operations (Scopes 1, 2) from 2030 onwards. In addition, Fortum will reduce its negative dynamic terrestrial impacts in upstream Scope 3 by 50% by 2030 (base-year 2021). Fortum will also continue local initiatives, especially in hydropower production, and is committed to develop a science-based methodology to assess the company's aquatic impacts during 2023.

Fortum is already taking steps to reach the new environmental targets and examples of these include the Loviisa nuclear plant lifetime extension, increasing the use on hydro power and the ongoing decarbonisation projects in district heating.

Driving decarbonisation in industries

Decarbonisation of heavy industries is a key hurdle to address the way to carbon neutral and more sustainable societies. Development of technologies to replace fossil fuels in production processes is accelerating. With its strong position in clean power in the Nordics, Fortum will work to find solutions for industrial customers to lower their carbon footprint. The aim is to develop and build new clean power generation in partnerships with strategic customers and actively develop a project pipeline to enable future growth. Further, over time Fortum aims to explore opportunities in nuclear, for example in small modular reactors (SMRs), in cooperation with customers and partners. In order to drive the development of clean hydrogen in the Nordics, Fortum will explore projects together with industrial customers.

Fortum's growth initiatives will be selective and target clean energy and decarbonisation projects. To manage the balance between financial strength, growth and dividends, Fortum has estimated growth capital expenditure (excluding acquisitions) to be up to EUR 1.5 billion for the years 2023–2025. This includes ongoing investment projects, such as the Pjelax wind project and the lifetime extension of the Loviisa nuclear power plant in Finland.

As part of the strategic growth alternatives is the hydrogen economy, which offers the potential to switch from fossil to cleaner gases over time. Fortum believes that hydrogen will play an essential role in reaching climate neutrality in Europe by 2050. Fortum is well positioned in the energy transformation being one of the largest producers of clean electricity in the Nordic region to enable the development of the hydrogen economy.

We support the UN Sustainable Development Goals

Fortum supports the UN Sustainable Development Goals (SDGs). As one of the cleanest energy generators in Europe, we help societies to reach carbon neutrality, and our customers to grow and decarbonise their processes in a reliable and profitable way, in balance with nature.

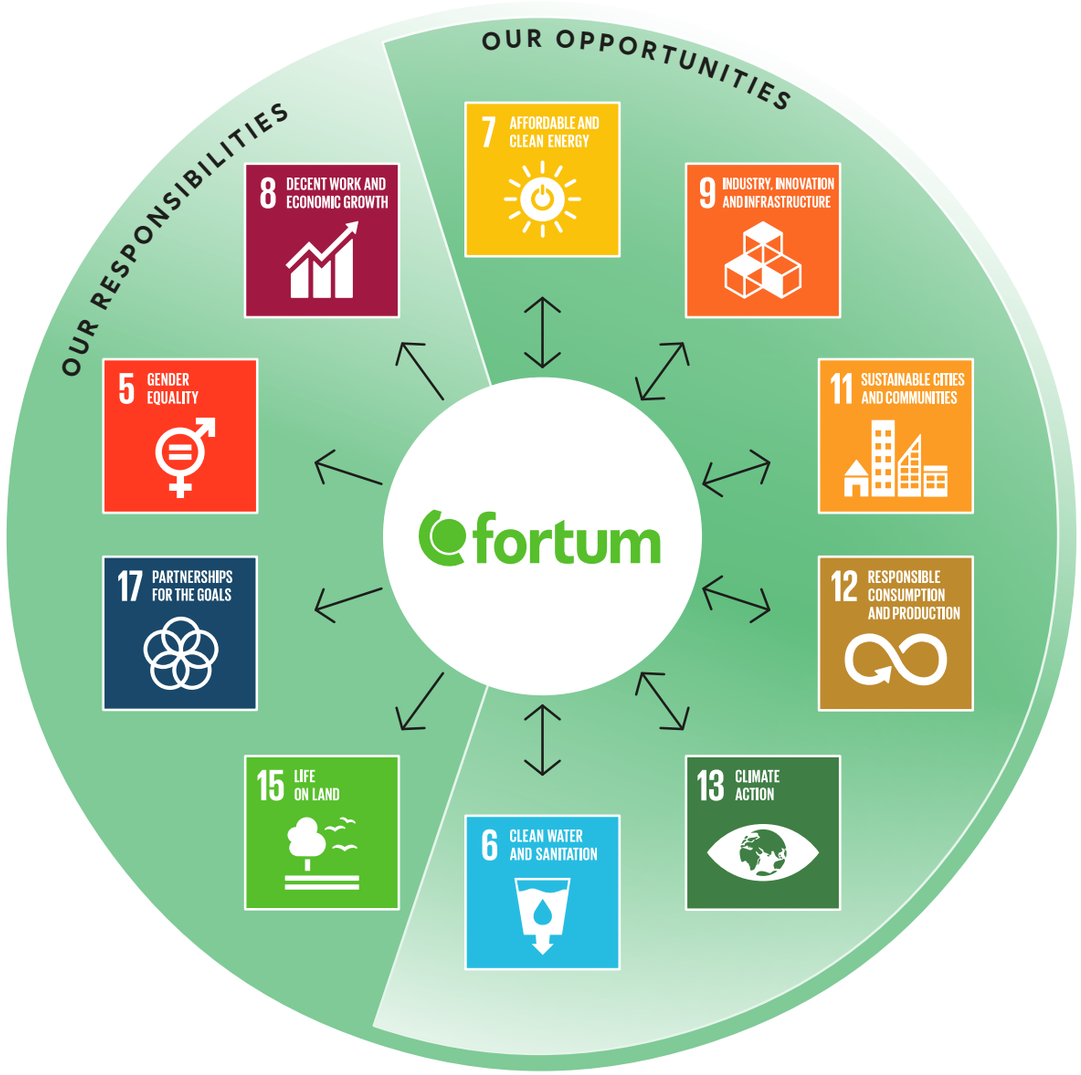
Sustainable Development Goals and Fortum

The **Sustainable Development Goals (SDGs)** adopted by the United Nations in 2015 are global goals to solve economic, social, and environmental challenges by 2030. The 17 goals have been set based on science and research, and they address 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 in the graphic (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.

Our responsibilities are presented on the left in the graphic. Goals 5 and 8 are important to us from the social and society perspectives, for our personnel, contractors, local communities and the entire supply chain. Because of our Corporate Social Responsibility (CSR) programme, goal 17 is 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



SUSTAINABLE DEVELOPMENT GOALS

Fortum supports the Sustainable Development Goals.

Examples of measures we implemented in 2022 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.	• Fortum published an update to its **Climate Lobbying Review**, originally published in 2021. 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 together with Danish Fjervarne Fun launched a **feasibility study on CO_2 capture for recycling**. • Fortum succesfully piloted **the capture and utilisation of CO_2 emissions of waste incineration** and moves forward with plans to produce fossil free plastics. • In March 2023, Fortum announced new considerably enhanced environmental targets including bringing forward its target to reach carbon neutrality (Scopes 1, 2, 3) by several years to 2030. For more information, see section **Climate and resources**.
 **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.	• The construction of the Pjelax wind farm started in January 2022 in Finland in partnership with Helen Ltd. According to the target schedule, the wind farm will be commissioned by summer 2024. When completed, it will produce approximately 1.1 TWh of renewable energy annually. • Fortum won the right to build solar power plants with a total capacity of **600 MW** in Karnataka, India, and **200 MW** in Gujarat, India. The plants are expected to be commissioned by 2024.
 **6** CLEAN WATER AND SANITATION  **15** LIFE ON LAND	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.	• At the start of 2022, Fortum committed to developing a science-based strategy to measure impacts on biodiversity and to work towards enhancing biodiversity in its operations and supply chain. To define its biodiversity footprint, Fortum mapped its own and its value chain's dependencies and impacts on biodiversity and ecosystem services. In March 2023, Fortum announced new ambitious biodiversity targets. For more information, see section **Biodiversity**. • Fortum's **Fisheart fishway** carried more than 12,500 fish over Fortum's Leppikoski hydropower plant in Finland. • Fortum along with the city of Imatra and the Centres for Economic Development, Transport and the Environment of Southeast Finland and Southwest Finland are carrying out a joint project on trout habitat restoration in the area upstream from the Tainionkoski hydropower plant in Vuoksi, Finland.
 **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.	• Fortum started a pilot at the Riihimäki waste incineration plant in Finland. The aim is to capture the CO_2 released from the waste incineration plant and use it as a raw material in the manufacture of new high-quality materials, such as plastic. With the help of the Carbon2x concept, the climate effects of waste incineration can be significantly reduced. • Fortum plans to expand its UK-based operations and is starting to build a new **Energy-from-Waste plant in Glasgow, Scotland**. The market entry is a major step forward in Fortum's ambition to transform the Energy-from-Waste sector with its novel Carbon2x concept. • Fortum founded **Fortum Batterie Recycling GmbH** in Germany to provide safe and sustainable electric vehicle (EV) battery recycling in central Europe.

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-CO_2 district heating and cooling solutions and develops e-mobility charging solutions.	• Fortum and Microsoft announced the world's largest collaboration to heat homes, services and businesses with ▸**sustainable waste heat from a new data centre region** in the Helsinki metropolitan area in Finland. • Fortum and Imatran Lämpö are starting a collaboration to utilise the waste heat of the Imatra hydropower plant in the district heating network of the city of Imatra, Finland. • Fortum and Aalto University are renewing the heating and cooling system of a block of 10 properties in Espoo, Finland, to be carbon neutral. The innovative implementation received Motiva's Energy Genius of the Year 2022 award.
 **8** DECENT WORK AND ECONOMIC GROWTH	Fortum promotes good working conditions and safety for 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 the Safety Culture Programme, which once completed will include trainings, webinars and workshops addressing all organisational levels. • Fortum conducted a total of six audits of potential new suppliers. One of the audits was conducted remotely due to local Covid-19 restrictions. • Fortum is a member of the Bettercoal Initiative and uses the Bettercoal tools to improve sustainability in the coal supply chain. • In 2022, Fortum's taxes borne were EUR 573 million.
 **9** INDUSTRY, INNOVATION AND INFRA-STRUCTURE	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.	• Development of Fortum Circo® recycled plastic as a sustainable solution to replace virgin plastics in plastic products continued in 2022 ▸**with a life-cycle and carbon footprint assessment**. Our new cellulose fibre-reinforced compound ▸**Fortum Circo® PP-CF 40** is carbon neutral. Fortum Circo® was also ▸**approved for the EU Toy Safety Standard**.
 **5** GENDER EQUALITY	Fortum supports workplace diversity and provides equal opportunities for its personnel.	• Fortum ranked best among large companies in the Helsinki Nasdaq category in the ▸**Nordic Business Diversity Index**. • Fortum is a participant in the Equal by 30 campaign, a global effort to reach gender parity in the energy sector by 2030. • The share of women in Fortum's management in 2022 was 31%. • In Sweden, Fortum takes part in the Female Leader Engineer (FLE) programme and Qraftsamling, Swedenergy's (Energiföretagen) change and leadership development programme.
 **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**. • Due to the devastating war in Ukraine, Fortum directed donations towards organisations helping the Ukrainian people. Early in the war, Fortum donated EUR 200,000 as part of a wider Emergency Appeal where the IFRC alongside its partner Red Cross and Red Crescent societies provided basic assistance to more than 5 million people. • Fortum cooperates with Miljøagentene (Eco Agents), an environmental organisation for children in Norway. • Fortum cooperates with Maskrosbarn, an organisation in Sweden that provides support services for children whose parents have mental challenges or substance abuse problems.

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 assessed its sustainability priorities in 2021 with a comprehensive materiality analysis, based on internal and external stakeholder surveys, and an extensive desktop review. The desktop review analysed, e.g., regulations, expectations of capital markets, peers' material sustainability topics, media coverage, and connections between the material topics and the UN Sustainable Development Goals (SDGs). In 2022, Fortum updated its materiality analysis based on a new desktop review and new stakeholder data.

Fortum's materiality analysis applied a two-dimensional approach, considering both the sustainability impacts of Fortum's business activities on different sustainability topics and the impacts of these topics on Fortum.

In 2022, due to Russia's brutal war in Ukraine and the effects of the consequent European energy crisis and all-time high gas and power prices across Europe, our operating environment changed rapidly and profoundly. A defining moment in our company's history was our decision to fully divest Uniper to the German State. Our materiality analysis was completed in summer 2022 and in the midst of all the turmoil; consequently, for some sustainability topics, it does not sufficiently reflect the changed situation towards the end of the year. Therefore, we are presenting our sustainability priorities in a table instead of a matrix, which we felt would unnecessarily highlight the order of importance of the different topics in a changing situation. All the topics from 2021 remained priorities for Fortum in 2022.

Fortum's 2022 sustainability priorities are presented in the table.

CLIMATE AND RESOURCES
Biodiversity
Circular economy and waste management
Climate change and GHG emissions
Emissions to air, land and water
Energy efficiency
Secure and affordable energy supply
Water use and optimisation

PERSONNEL AND SOCIETY
Corporate citizenship
Diversity, equity and inclusion
Fair and attractive employer
Health, safety and wellbeing
Human rights and supply chains
Just transition
Stakeholder engagement

GOVERNANCE
Business ethics and compliance
Corporate governance
Customer rights and satisfaction
Innovation and digitalisation
Shared value creation

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. In the 2022 STI programme, the safety target contained the following elements: severity rate per Total Recordable Injuries (TRI) of own employees and contractors combined, the execution rate of Safety Leadership Training and the execution rate of Safety eLearning. However, the Board can, at its discretion, also take into consideration other safety-related incidents and especially the number of severe occupational accidents. The target for severe occupational accidents is zero.

In the 2023 STI programme, the safety target includes participation in the Management Safety and Security Leadership Programme as well as identification and completion of key safety actions to improve safety culture. As in 2022, the Board has the option to take into consideration also other safety incidents. The weight of the safety target in the incentive programme is 10% (2022: 10%). In addition, in the 2023 STI programme customer satisfaction has been added as a new target with a weight of 10%.

Fortum's long-term incentive (LTI) programme includes an ESG target. In the 2021–2023 LTI plan, the set ESG target was linked to the reduction of Fortum's coal-based power generation capacity in line with Fortum's coal-exit path, with a minimum level requiring exceeding the communicated ambition level. In the 2022–2024 LTI plan, the ESG target is related to the reduction of the absolute CO_2 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. The ESG targets of both LTI plans were adjusted in early 2023 due to the divestment of Uniper.

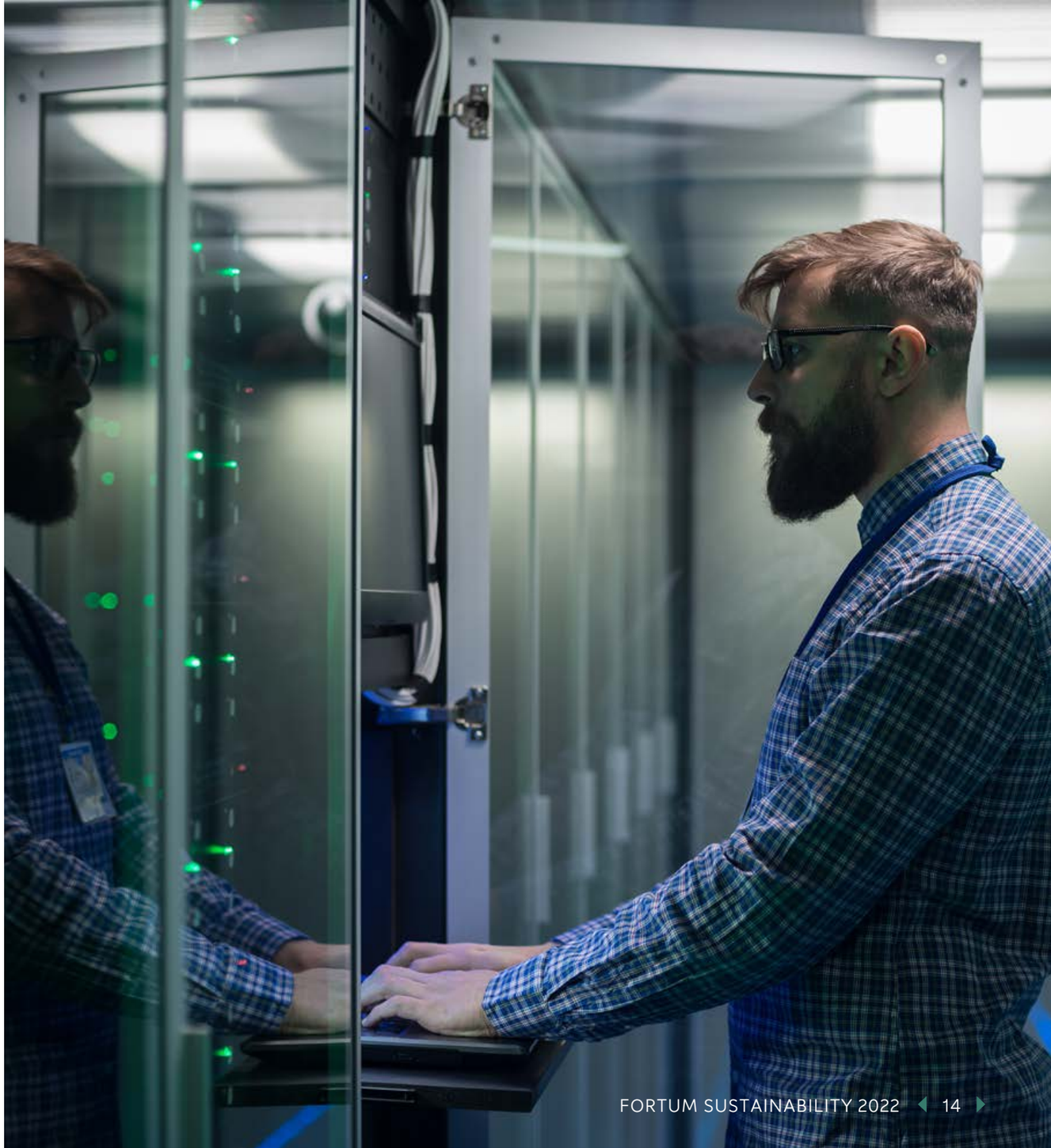
Innovation and digitalisation

Fortum's corporate culture encourages innovation to create value for the organisation and its stakeholders. Research and Development (R&D) for new technologies, digitalisation, knowledge and partnerships, as well as green products and services offerings are important for Fortum. We are open to and actively seeking ways of transforming business activities, processes and models through the use of digital technology. In 2022, Fortum's R&D expenses totalled EUR 55 (2021: 61) million, and 72% of employees considered Fortum to be an innovative company that seeks out new ideas.

Innovation

Fortum's corporate-level Innovation and Venturing Services is responsible for ideating, incubating and accelerating new business at Fortum. It is a crucial function in enabling Fortum's long-term competitiveness and strategic renewal by gaining unique strategic insight, supporting business renewal, building options for significant new businesses and fostering organisational learning. Innovation and Venturing drives innovation in all divisions throughout Fortum, starting from great ideas all the way to successful growth businesses, and supports business unit innovations in close collaboration with Fortum's divisions.

Innovation is closely linked to Fortum's sustainability agenda: through innovative products and services, we **offer solutions for several of the UN Sustainable Development Goals (SDGs)**. Early insight through venturing and selectively investing in technology innovations can also reveal key mitigation actions for climate-related risks. Fortum's 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, contributing to sustainable energy production and a circular economy.

Fortum also engages in collaboration with universities through different research and development 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. We also look for mutually beneficial partnership opportunities with cities, start-ups and research institutions.

More information on innovation and R&D is available on Fortum's ▸ **website**.

Digitalisation

Remote work remained common throughout 2022, despite the lifting of many Covid-19 related restrictions as the year progressed. We continued to use various digital tools to strengthen collaboration when working remotely and to make remote work as smooth as possible. We introduced multiple new online learning offerings, ensuring that employees can build their skills and expertise also when working remotely.

Digitalisation is increasingly relevant in one of Fortum's core businesses: hydropower production. For Fortum, ▸ **digitalisation in hydropower** has several purposes. In addition to using data to optimise production to balance different needs, we also use advanced condition monitoring of our hydropower plants to detect potential issues before they can cause disruptions. Digitalisation contributes to security of supply, making our already reliable hydropower production even more reliable and resistant to disruptions. Fortum is constantly developing the digitalisation of our power plants. With cloud-based data storage solutions, more and more data is available continuously and independent of physical location. Fortum's security program improves resilience of the production and strives to ensure the security of the information we handle, including data related to our energy production. A key incentive, in addition to ensuring reliable and uninterrupted production, is to ensure a safer workplace for our employees, which is also made easier by the accessible data. At the Loviisa nuclear power plant, virtual reality (VR) is used in training and supports the improvement of occupational safety. The power plant has its own digitalisation team and a VR classroom where virtual training sessions can be held.

In 2022, Fortum and Microsoft announced a unique ▸ **collaboration project**, taking place at the intersection of two megatrends: digitalisation and the energy transition. Fortum will capture the excess heat generated by a new data centre region to be built by Microsoft in the Helsinki metropolitan area in Finland. In this waste heat recycling concept, which will be the largest of its kind in the world, Fortum and Microsoft are bringing together leading expertise and innovation in heating, energy-efficiency solutions, and cloud technology.

Fortum's services to customers include, e.g., real-estate automation and smart EV charging solutions. See section ▸ **Customers** for more information.

Reporting principles

We report on sustainability in this Sustainability Report. Non-financial reporting, in line with the Finnish 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 2022. We report sustainability information annually in English and some sustainability information in Finnish. In our annual reporting, we describe Fortum's operations in 2022 and material information from events after the balance sheet date. Fortum's Sustainability 2022 Report is available only in English. The previous Sustainability Report was published in March 2022, and our next report will be published in spring 2024. 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

In this report, selected sustainability key performance indicators for continuing operations and continuing operations excluding Russia are disclosed. Comparative figures and information for 2021 have been restated to exclude Uniper as discontinued operations. Figures for 2020 have not been restated, unless otherwise stated. Selected key performance indicators for discontinued operations are presented in separate tables in the section ▸ **Climate** and ▸ **Non-financial report in the Financials 2022**.

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 2022.

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 December 2022, Fortum completed the sale of its ownership in Uniper SE to the German State. Uniper is reported as discontinued operations. Thus, Uniper's production capacity of 33,855 MW and power generation capacity of 6,227 MW have been excluded from Fortum's 2021 and 2022 reporting.

In May 2022, Fortum concluded the sale of its 50% ownership in the district heating company Fortum Oslo Värme AS in Norway. The company has heat production capacity of 888 MW and power generation capacity of 24 MW.

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. 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 CO_2 emissions subject to the EU 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 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. Designated individuals collect the information and deliver it to the Corporate Sustainability unit primarily in the format recommended by the GRI Standards.

In the incidents reporting, Fortum follows the principles of the United States Occupational Safety & Health Administration (OSHA) and ILO's Practices on Recording and Notification of Occupational Accidents and Diseases.

▸ **Financials 2022**

Assurance

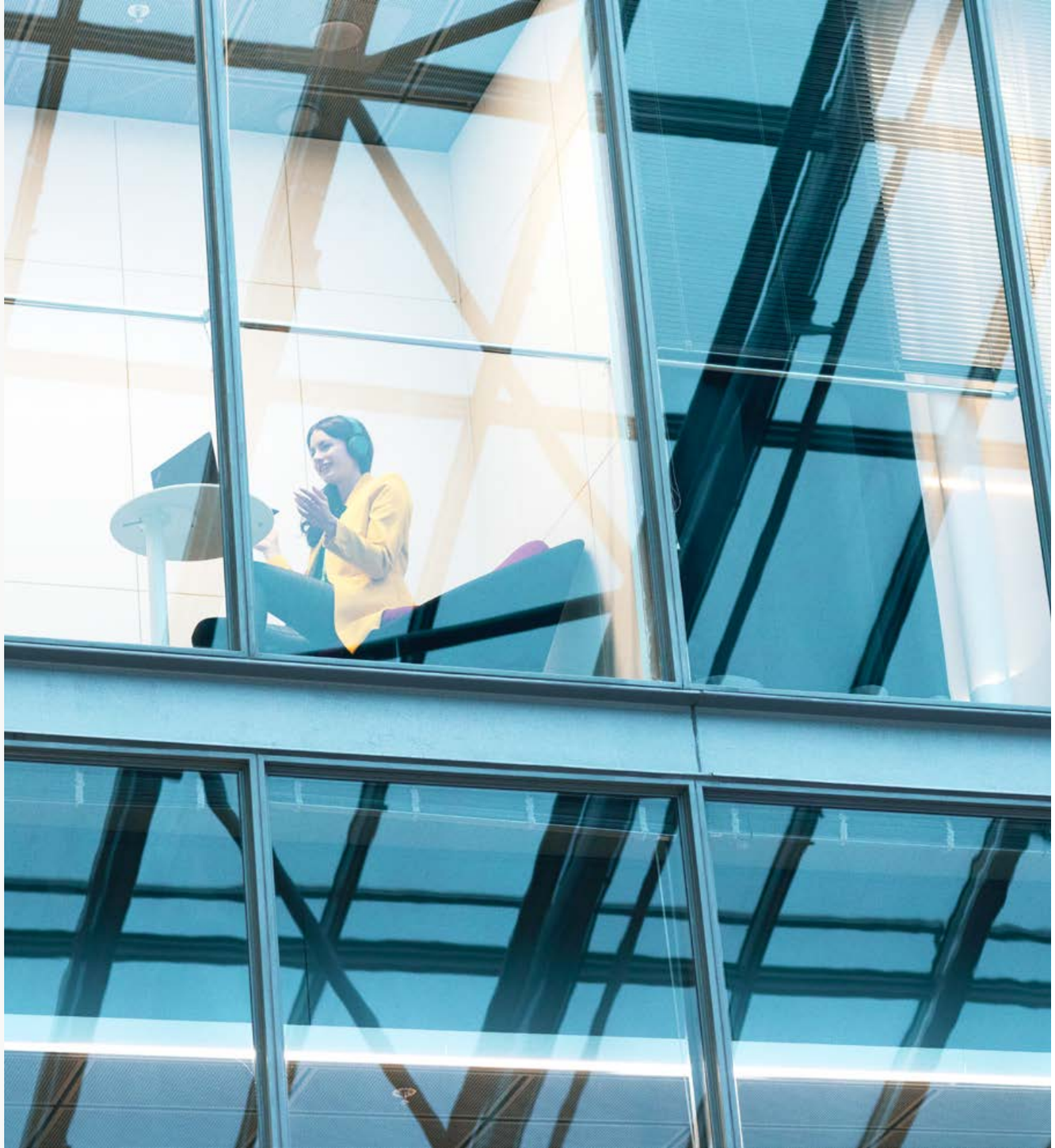
Deloitte Oy has provided limited assurance in accordance with ISAE 3410 for the reporting period of 1 January 2022 to 31 December 2022 on GHG emissions calculations (Scope 1, 2 and 3) based on the Greenhouse Gas (GHG) Protocol.

Global Compact and Caring for Climate reporting

Fortum has been a participant of the United Nations Global Compact initiative since 2010.

In this Sustainability 2022 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 establishes the basic principles of conduct that everyone must follow. It defines how we treat each other, do business and engage with the world. The Supplier Code of Conduct, based on the ten principles of UN Global Compact, outlines the requirements for Fortum's suppliers and business partners.

Fortum's Board of Directors has approved the company's **Code of Conduct** and **Supplier Code of Conduct**. The Code of Conduct is regularly reviewed in order to ensure compliance with evolving company and regulatory requirements. Fortum's Code of Conduct and Supplier Code of Conduct were updated in early 2021.

In line with the Code of Conduct, Fortum has zero tolerance for corruption and fraud and does 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. Fortum has in place a compliance management system (CMS) to mitigate risks.

Training

Training is a fundamental part of Fortum's compliance management. The Code of Conduct online training is mandatory for all employees. In addition, relevant individuals are regularly trained in policies and systems that prevent, e.g., corruption. In 2022, several training sessions of the Know Your Counterparty process were provided for relevant personnel in business operations and procurement. Dedicated Business Ethics training sessions for the Recycling & Waste personnel continued. Additionally, Fortum provides training on the Market Abuse Regulation, including insider regulations for newly hired individuals who need it based on their roles. New eLearnings on decision authorities were created and several cyber security eLearnings were provided during 2022.

Reporting misconduct

Internal and external reporting channels are offered for reporting suspicions of misconduct. The channels are described in the Code of Conduct and accessible on Fortum's internal and external websites. Fortum 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 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.

Suspected cases of misconduct

Fortum had a total of 73 cases of suspected misconduct that were reviewed and closed during 2022. There was no cause for action to be taken in 19 of the cases investigated. As a result of the investigations, six employment contracts were terminated and five 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. In 2022, nine cases related to alcohol or drug use during working hours were identified.

During 2022, no new cases of corruption or bribery were confirmed in Fortum's operations. One case was under investigation at year-end. 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.

In 2022, eight cases of potential breaches of Fortum's Supplier Code of Conduct related to potential new counterparties and new suppliers were assessed. All the cases, apart from one in Sweden, were closed as unfounded. A corrective action plan has been agreed with the respective company management. In 2022, 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

There were no cases related to restricting competition reported during the year.

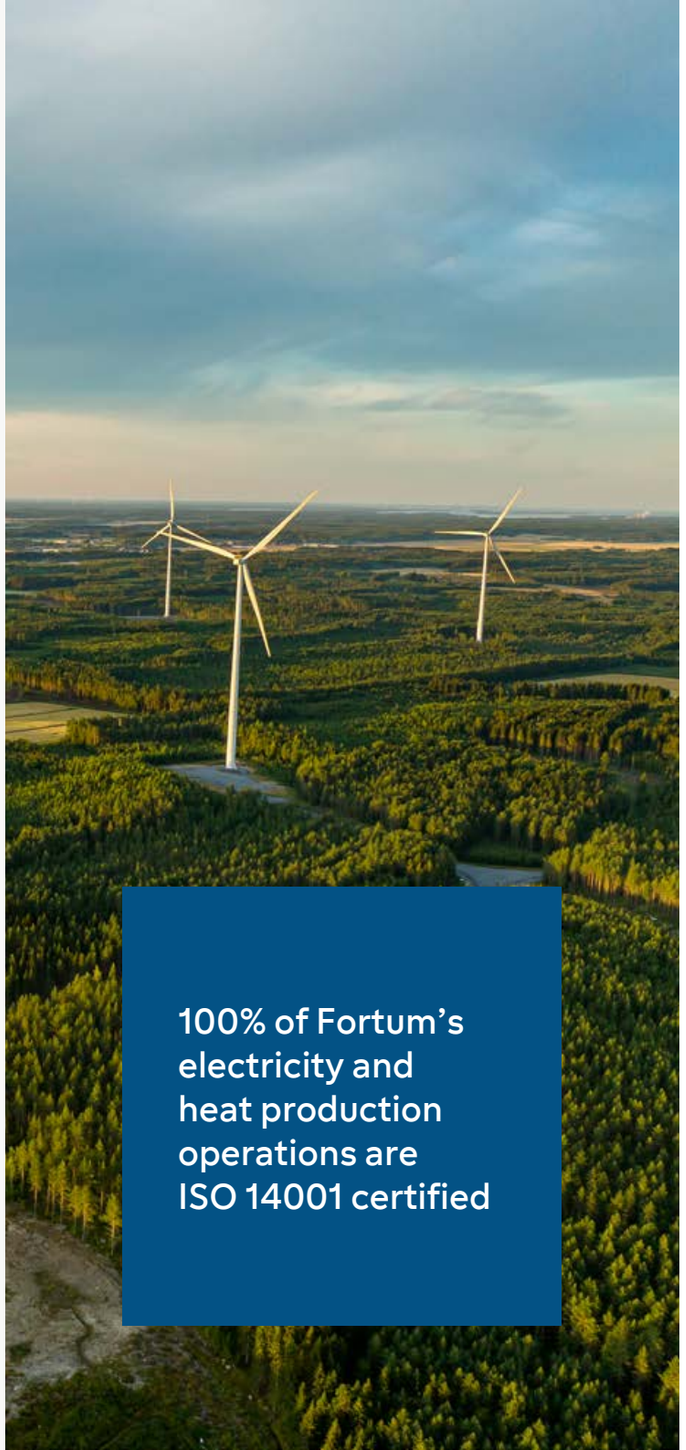
Significant fines

The Norwegian Energy Regulation Authority notified Fortum to stop the sales of a payment solution which the Authority considered to be in breach of the electricity invoicing regulation. Fortum was imposed a fine of NOK 6.29 million (EUR 0.62 million). Fortum has complied with the decision of the Authority.

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. There were no environmental-related grievances reported through these channels in 2022.

- **Human rights-related grievances**
- **Incidents of discrimination**
- **Environmental fines**



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

Climate and resources

Targets

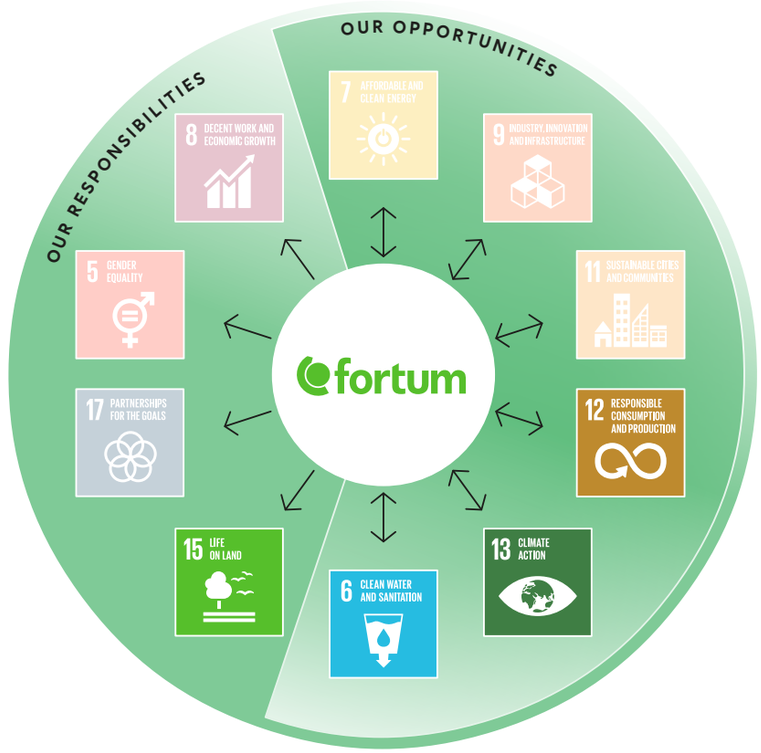
CLIMATE:

- Emissions reduction according to the SBTi 1.5 °C trajectory. This commitment assumes a full exit from Russia.
- Specific emissions of below 20 gCO_2/kWh for total energy production and below 10 gCO_2/kWh for power generation by 2028.
- Carbon neutrality by 2030 (all Scopes 1, 2 and 3).
- Coal-exit in our own operations by the end of 2027.

BIODIVERSITY:

- No net loss of biodiversity from direct operations 2030 onwards (excluding all aquatic impacts).
- 50% reduction in dynamic terrestrial impacts in upstream Scope 3 by 2030 vs. 2021.
- Commitment to continue local initiatives and develop science-based methodology to assess the aquatic impacts of hydropower.

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 include:

- Biodiversity
- Circular economy and waste management
- Climate change and GHG emissions
- Emissions to air, land and water
- Energy efficiency
- Secure and affordable energy supply
- Water use and optimisation

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 2022.

▸ **Fortum'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

	2022	2021	2020
ISO 14001-certified operations in energy production, % of sales	100	100	99.9
CO_2 emissions from total energy production, million tonnes	16.9	17.8	48.7
Nitrogen oxide emissions, 1,000 tonnes	17.1	20.6	50.2
Sulphur dioxide emissions, 1,000 tonnes	1.6	8.2	17.9
Particle emissions, 1,000 tonnes	1.7	6.8	9.6
Specific CO_2 emissions from total energy production, gCO_2/kWh	184	175	287
Share of CO_2-free energy production in power generation, %	59	61	45
Share of CO_2-free energy production in power generation in Europe, %	97	97	73
Energy efficiency improvement, GWh/a [1]	5	179	134
Asset availability of power generation plants, %	90.3	90.3	-
Water withdrawal in production operations, million m^3	1,763	1,931	8,847
Utilisation of ash generated at power and heat plants, %	79	65	69
Major environmental incidents, no. [2]	2	-	-
of which environmental permit violations, no. [2]	1	-	-

1) 2020 Excluding Uniper

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

Energy

Fortum's purpose is to power a world where people, businesses and nature thrive together. We help societies to reach carbon neutrality and our customers to grow and decarbonise their processes in a reliable and profitable way, in balance with nature. Fortum is today one of Europe's cleanest power generators. Our energy production is based on CO_2-free hydro- and nuclear power and is complemented by onshore wind and solar, district heating and cooling operations, electricity retail business and circular economy. 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

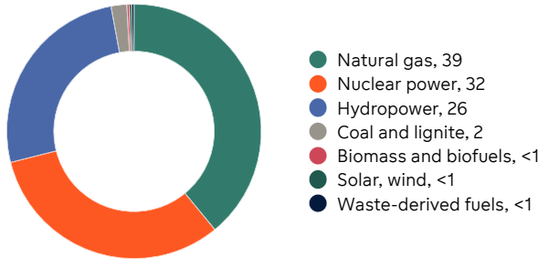
Fortum's power generation in the Nordic countries is mainly based on CO_2-free hydro and nuclear power. A minor share of Fortum's power generation is currently based on solar and wind. Fortum also has generation of district heating and cooling. Heat is mainly produced at energy-efficient combined heat and power (CHP) plants. In the Russian operations, Fortum has mainly natural gas-fired generation. Fortum's target is to end all coal-based generation by the end of 2027.

In May 2022, Fortum sold its 50% ownership in the district heating company Fortum Oslo Värme AS in Norway to an investor consortium comprising Hafslund Eco, Infranode and HitecVision.

In September 2022, Fortum signed an agreement to sell its shares in Uniper SE to the German State. The Uniper divestment was completed in December 2022.

In 2022, Fortum's power generation was 72.8 (2021: 78.0) TWh and its heat and steam production 20.9 (2021: 24.9) TWh. 59% of our total power generation was CO_2-free. In Europe, 97% of our power generation was CO_2-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 2020–2022 (GRI 302-1)

TWh	2022	2021	2020
Natural gas	28.5	28.1	64.3
Nuclear power	23.4	23.5	28.6
Hydropower	19.1	23.3	32.5
Coal and lignite	1.2	1.4	13.4
Waste-derived fuels	0.4	0.5	0.6
Biomass and other biofuels	0.1	0.5	1.6
Solar, wind	0.1	0.6	1.1
Fuel oil, other	0.00	0.02	0.01
Total	**72.8**	**78.0**	**142.1**

Heat production by energy source in 2020–2022 (GRI 302-1)

TWh	2022	2021	2020
Natural gas	15.7	16.9	16.6
Coal and lignite	1.7	2.9	7.7
Waste-derived fuels	1.6	2.5	2.6
Biomass and other biofuels	0.9	1.5	1.6
Heat pumps, electricity	0.6	1.0	0.8
Fuel oil, other	0.3	0.07	0.3
Total	**20.9**	**24.9**	**29.6**

More renewable energy

Fortum's investments in wind and solar power are mainly done through partnerships (e.g. joint ventures and associates or other forms of cooperation).

Fortum is investing in a new wind farm in Närpes and in Kristinestad, Finland, together with Helen, an energy company owned by the City of Helsinki. When completed, the 380-MW farm is expected to produce approximately 1.1 TWh of renewable electricity annually. Construction of the wind farm started in January 2022, and it's expected to be in operation in Q2 2024 at the latest.

Fortum won the right from Solar Energy Corporation of India (SECI) to build two solar power parks with a total capacity of 600 MW in Karnataka, India. Fortum also won the right from Gujarat Urja Vikas Nigam Limited (GUVNL) to build a solar project with a total capacity of 200 MW in Gujarat, India. These projects can be developed together with a partner and would be commissioned by 2024.

New low-carbon production

In 2022, Fortum and Microsoft announced a collaboration project, whereby Fortum will capture the excess heat generated by a new data centre region to be built by Microsoft in the Helsinki metropolitan area in Finland. Once the waste heat capture is in operation, it will produce heating energy for homes, services and businesses and will supply a total of about 40% of the area's heating demand. 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**.

In Wrocław, Fortum announced the plan to build Poland's biggest heat pump supplying heat to the city's district heating system. It will be the first non-fossil heat source in Wrocław's heating system. The project will be completed in 2024. The project is being carried out in cooperation with the Municipal Water and Sewage Company in Wrocław (MPWiK), which is a city-controlled entity. MPWiK will provide Fortum's installation with raw sewage from the central and southern part of the city and Fortum will generate heat for Wrocław citizens. The district heating system in Wrocław requires fundamental changes, as it is 100% based on burning hard coal. The large-scale district heating pump is the first step

towards decarbonisation. When completed in 2024, it will cover up to 5 per cent of the annual demand of district heating customers in Wrocław.

In 2022, Fortum submitted the Loviisa nuclear power plant operating licence application to the Finnish Government for a lifetime expansion for both nuclear power plants until the end of 2050. At the end of 2022, Fortum launched a two-year feasibility study to explore prerequisites for new nuclear. As part of the study, Fortum will examine commercial, technological and societal, including political, legal and regulatory, conditions both for small modular reactors (SMRs) and conventional large reactors. The study's geographic focus is on Finland and Sweden. As a part of the study, Fortum announced collaboration with the Swedish Kärnfull Next, the French Electricité de France (EDF) and the Finnish Helen to explore opportunities in nuclear power and SMRs.

Fortum'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. Participation in this Agreement helps Fortum to focus on energy efficiency and strengthens its position as an energy efficiency expert.

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 2022, Fortum's combined energy savings of the energy efficiency improvement projects were 5 (2021: 179) GWh/a.

Energy efficiency services

Fortum has introduced energy efficiency services for private customers 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 and lignite, waste-derived fuels and biomass fuels, to produce electricity, heat and steam in our plants in the Nordic countries and in Poland. Uranium is also used at the Loviisa nuclear power plant in Finland. In the Russian operations, Fortum has mainly natural gas-fired generation.

In 2022, the share of natural gas in the total energy content of the fuels was 69% and the share of nuclear fuel 23%, which makes these two the most significant fuels in our energy production. Natural gas was almost exclusively used in Russia, which accounted for about 99% of our use of natural gas. 23 tonnes of nuclear fuel were used at the Loviisa nuclear power plant in Finland.

Smaller amounts of other fuels were also used: coal and lignite (4%), waste-derived fuels (3%) and biomass fuels (1%). Hard coal and lignite were used in Russia, Poland and Finland.

Fuel use in 2020–2022, mass/volume (GRI 301-1)

	2022	2021	2020
Non-renewable fuels			
Natural gas, million m^3	7,759	7,777	16,738
Coal and lignite, 1,000 t	730	1,141	8,782
Waste-derived fuels, fossil, 1,000 t	625	813	894
Fuel oil and diesel, 1,000 t	35	11	24
Nuclear fuel, t	23	23	40
Peat, 1,000 t	0	10	42
Renewable fuels			
Biomass and biofuels, 1,000 t	368	792	1,426
Waste-derived fuels, renewable, 1,000 t	301	494	527
Biogas, million m^3	1	1	1

Fuel use in 2020–2022, energy (GRI 302-1)

	2022	2021	2020
petajoules			
Natural gas	265.0	203.2	568.4
Nuclear fuel	87.5	88.1	138.8
Coal and lignite	15.9	23.3	167.0
Waste-derived fuels, fossil	6.7	8.7	9.7
Fuel oil and diesel	1.2	0.4	0.9
Peat	0.0	0.1	0.4
Non-renewable fuels	**376.2**	**323.7**	**885.2**
Biomass and biofuels	4.3	9.0	17.2
Waste-derived fuels, renewable	3.7	5.7	6.0
Renewable fuels	**8.0**	**14.7**	**23.2**
Fuels total	**384.2**	**338.4**	**908.4**

Biomass and other biofuels were used to generate heat mostly in Finland. Waste-to-energy plants in Riihimäki, Finland; Nyborg, Denmark; Kumla, Sweden; and Zabrze, Poland used waste-delivered fuels in energy production.

In 2022, Russia's share of our total fuel consumption was about 69%.

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.

Energy intensity

In 2022, our fuel consumption in electricity, heat and steam production was a total of 107 (2021: 111) TWh, or 384 (2021: 401) PJ. Additionally, we acquired 0.6 TWh, or 2.3 PJ, of electricity from external suppliers.

With these energy resources, our net electricity production was about 38 (2021: 39) TWh and our net heat, steam and cooling production about 21 (2021: 25) TWh. The total energy consumption, calculated as the difference between the procured energy resources and net energy production, was about 48 (2021: 49) TWh, or 174 (2021: 176) PJ.

Our average fuel-use efficiency was about 55%. The efficiency has been calculated by dividing the net energy produced by the energy content of the fuels used in the energy production. In 2022, the energy intensity of our own energy production was 1.4. The intensity figure has been calculated by dividing the amount of used fuel resources by the total net energy production, including also hydro-, solar- and wind power globally.

Origin of our fuels

Security of supply

A functional society requires an uninterrupted and reliable supply of energy. Wind and solar power play a constantly increasing role, but, due to their intermittent nature of production, other sources of CO_2-free power generation are also needed. With hydropower and nuclear power, we are balancing the fluctuating production of solar and wind, 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. Likewise, we can count on nuclear power because electricity is generated at a consistent rate regardless of weather conditions.

Both hydropower and nuclear power greatly help to improve energy self-sufficiency and security of supply. In February 2023, the Finnish Government granted ▸ **a new operating licence** for both units at Fortum's Loviisa nuclear power plant until the end of 2050. Over the course of the new licence period, the plant is expected to generate up to 170 terawatt hours of CO_2-free electricity. Hydropower can be also supported with batteries to reduce the response time significantly. Batteries can be combined with hydropower to produce a balancing solution that can respond quickly to fluctuations in demand. Fortum is piloting such projects in Sweden, at the Landafors and Forshuvud hydropower plants, with great results.

In the future, small nuclear reactors and their innovative technical solutions may have an increasingly important role in producing self-sufficient, reliable and safe energy, and increasing security of supply. In 2022, Fortum decided to start a two-year feasibility study to explore prerequisites for new nuclear, and initiated multiple collaborations on the same front with the French energy company ▸ **EDF**, the Swedish ▸ **Kärnfull Next**, and the Finnish ▸ **Helen**. Small modular reactors (SMRs) in particular are looking increasingly interesting, as they, depending on the plant type, can produce energy for several years without having to be refuelled. In addition to electricity production, SMRs, which can be dispersed to consumption sites around the country, can offer a heating solution for population centres or a solution for the needs of energy-intensive industry, therefore contributing to security of supply in multiple ways.

In addition to electricity, the secure supply of heat is also crucial for society. The ideal mix of energy solutions and optimised operation modes ensure a high security of heat supply in a sustainable and economical way. A good example of this is district heating, as it can use waste heat from data centres and industry to heat buildings. Fortum is a major player in these energy systems. When it comes to fuels, Fortum is working towards further diversifying our procurement sources to improve security of supply.

If a sufficient supply of CO_2-free power is not available, adjustable power production based on natural gas can also be used to balance fluctuations in power production and to secure the supply of electricity. In 2022, a decision was made to place Finland's first floating LNG terminal in Fortum's Inkoo port. On 28 December, the floating LNG terminal vessel Exemplar arrived to Inkoo. Implemented under the leadership of Gasgrid Finland, the LNG floating terminal project will secure the supply of gas to industry, energy production and households and will safeguard Finland's security of supply from the winter of 2023 onwards. This solution also replaces the earlier Russian gas supplies through the Imatra entry point that were stopped in May.

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 2022, the asset availability of Fortum's gas-fired and coal-fired power plants was, on average, 90.3%. 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 2022, the load factor of the Loviisa nuclear power plant was 89.4%. 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.

Case | **Fortum and Microsoft announce world's largest collaboration to heat buildings with sustainable waste heat from a new data centre region**

In March 2022, Fortum and Microsoft announced a unique collaboration project, whereby Fortum will capture the excess heat generated by a new data centre region to be built by Microsoft in Finland. The data centres will use 100% emission-free electricity, and Fortum will transfer the clean heat from the server cooling process to homes, services and business premises that are connected to its district heating system. The waste heat recycling concept from the data centre region will be the largest of its kind in the world.

The concept is unique in that the location for the data centre region was chosen specifically with waste heat recycling in mind. It makes use of Fortum's existing district heating infrastructure, the second largest in Finland, for heat capture and distribution. The infrastructure includes about 900 km of underground pipes that transfer heat to approximately 250,000 users in the cities of Espoo and Kauniainen and the municipality of Kirkkonummi. Fortum has collaborated with the local cities and municipalities for several years in order to pave the way for these investments.

"Developing solutions for the global climate challenge in collaboration with partners is a strategic priority for Fortum, and we are proud to embark on this exceptional journey together with Microsoft. Sometimes the most sustainable solutions are the simple ones: by tapping into waste heat from data centres, we can provide clean heat for homes, businesses and public buildings in the Espoo and neighbouring communities' district heating network in Finland and reduce about 400,000 tonnes of CO_2 emissions annually," says **Markus Rauramo,** President and CEO of Fortum.

District heating is the most popular method of heating premises in Finland. A district heating system is an infrastructure that is used in cities to generate, capture and distribute heat to buildings on a large scale. Heat is transferred via hot water that is pumped through pre-insulated underground pipes. The new generation of district heating is based on replacing fossil fuels with smart and flexible solutions, such as renewable electricity, heat pumps, heat accumulators, electric boilers and waste heat utilisation. Artificial intelligence will optimise the operations of the entire system.

Once the new data centre region's waste heat capture is in operation, a total of about 60 percent of the area's heating will be generated by climate-friendly waste heat. Of this, 40 percent is from the data centre region and the rest from other waste heat sources, such as purified waste water.

"If we are to limit global climate warming to 1.5 °C as required by the Paris Agreement, we need innovative thinking to drive change at a higher pace and bigger scale. This investment in the data centre region is a flagship example of climate action and circularity. The project is the first of its kind of this size, but we hope to inspire further development in the use of waste heat to deliver clean energy," says **Nebahat Albayrak,** Senior Vice President, Sustainability and Corporate Relations at Fortum.

Climate

Changes in our operating environment are driven by global megatrends that remain valid: climate change, biodiversity loss, technology development, active customers, and resource efficiency. The European Union is aiming for climate neutrality by 2050 and is committed to a 55% reduction in greenhouse gas emissions by 2030. Fortum is committed to carbon neutrality by 2030 in its own operations as well as in the emissions created in the value chain. 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 in, e.g., heating, cooling, industry and transport. Reducing greenhouse gas emissions is also critical when trying to reduce impacts on biodiversity. Electrification and sector integration mitigate climate change when electricity, replacing other energy sources, is produced and supplied by low-carbon and renewable energy sources. Transitioning to a low-carbon power system also enables the decarbonisation of other sectors through the coupling of CO_2-free power generation and green hydrogen.

Fortum became a supporter of the Task Force on Climate-related Financial Disclosures (TCFD) during the first quarter of 2021. 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. The following Climate section is Fortum's ▸ **Task Force on Climate-related Financial Disclosures (TCFD)** report.

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 Leadership Team (FLT) and other senior executives support the Board of Directors in the decision making in these matters, when necessary.

The Senior Vice President, Sustainability and Corporate Relations, has the overall responsibility for sustainability, which also includes climate-related issues in Fortum. She is a member of Fortum Leadership Team (FLT), and, as a C-suite officer, she has executive-level responsibility for Fortum's TCFD reporting.

Fortum has a specific process in place for the assessment of the key climate-related risks. The process utilises the expertise of selected Group functions, including Sustainability, Strategy, Risk Management, Market Intelligence, Public Affairs and Investor Relations. Fortum has also followed the requirements set in EU Taxonomy regulation to assess the key physical climate risks together with taxonomy-relevant businesses on an asset level. Fortum's key climate-related risks are reported to FLT and 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 2022** report in the section Risk management.

Strategy

Fortum is today one of Europe's cleanest power generators. Almost 90% of the Group's EBITDA (year 2022 excluding Russian operations) originates from the company's Nordic 45 TWh outright power generation, which is based on CO_2-free hydro and nuclear power. This business is complemented by onshore wind and solar, district heating and cooling operations, electricity retail business and circular economy. Fortum's new strategy does not include the Group's Russian operations and the company continues to actively pursue an exit from Russia.

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. The recent IPCC report (March 2023) indicates that the global temperature has increased 1.1 °C and the 1.5 degree scenario will likely materialize between 2030 and 2035. This highlights the need to accelerate efforts to reduce emissions and increase carbon sinks. In order to stay within 1.5 degrees, the world's emissions have to be halved by 2030 and reach net zero in the early 2050's.

Fortum's strategy is designed to deliver on the company's new purpose: To power a world where people, businesses and nature thrive together. Fortum has set strategic priorities to drive the energy transition and to enable decarbonisation, affordability and security of supply.

Deliver reliable clean energy

Fortum's biggest strength, and a continuing strategic priority for the company, is its ability to deliver reliable and clean energy at scale to customers and the Nordic energy system. Building on its assets and strong competence to optimise the highly competitive power generation fleet, Fortum continues to maintain and develop its best-in-class operations to constantly secure top efficiency and flexibility. Fortum will also continue to decarbonise and modernise its existing operations to ensure optimal value creation and to reach the environmental targets. Partnering with customers to deliver the power volumes they require with a stable price will also enable Fortum to better manage the impact of the volatile wholesale power prices in the Nordics.

Drive decarbonisation in industries

Fortum drives decarbonisation and growth in Nordic industries. Decarbonisation of heavy industries is a key hurdle to address along the way to carbon neutral and more sustainable societies. Development of technologies to replace fossil fuels in production processes is accelerating. With its strong position in clean power in the Nordics, Fortum will work to find solutions for industrial customers to lower their carbon footprint. The aim is to develop and build new clean power generation in partnerships with strategic customers and actively develop a project pipeline to enable future growth.

▸ **New strategy**

Scenario analysis

Fortum has assessed the external operating environment using three 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 in-house industry expertise is combined with assumptions derived from external benchmarks, such as the International Energy Agency, BloombergNEF, S&P Global Commodity Insights and Aurora Energy Research. The scenarios correspond to climate paths from below 2 °C to roughly 3 °C of global warming by the end of the century.

Based on Fortum's assessment on the current state of affairs, the operating environment seems to be aligned with somewhat over 2 °C global warming. Hence, this defines our current reference scenario. Other scenarios and tools 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.

Fortum Group's strategy is to deliver reliable clean energy and drive decarbonisation in industries. We help societies to reach carbon neutrality and our customers to grow and decarbonise their processes in a reliable and profitable way. In the strategy, we also define the following Group-level targets and related actions: emissions reduction according to SBTi 1.5 °C trajectory, carbon neutrality by 2030, coal-exit in own operations by the end of the year 2027, and a new biodiversity target, among other financial and non-financial targets.

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, which are regularly reported and followed up on in various management teams and expert forums.

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. Operational and strategic risks are further described in the ▸ **Financials 2022** report in the section Risk management.

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

	FORTUM'S SCENARIO +1.5–+2 °C	+2–+2.5 °C	+2.5–+3.5 °C	Risk impact assessment	Key mitigating actions
	PREVAILING TRANSITION RISKS IN THE SCENARIO				
Policy and legal risks	• Highly ambitious EU and national climate and energy targets introduce inefficient and overlapping policies negatively impacting wholesale energy prices • Electricity customers locating outside EU due to policy, leading to lower electricity market size growth • Strict sustainability requirements in the EU, impacting costs and availability of financing • Energy demand reduction is accelerated through policy incentives due to climate ambitions	• 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. Risk of unforeseen climate-related events e.g. forest fires, drought or floods, may impact the regulatory framework • Higher focus on security supply due to geo-political situation delaying energy transition • Industries being relocated to countries outside the EU due to more favourable regulatory frameworks • Electricity customers locating outside EU due to policy, leading to lower electricity market size growth • Unequal treatment of CO_2-free technologies in legislation and financing	• National and uncoordinated climate policies and regulation frameworks in the EU leading to, e.g., the EU ETS losing its relevance • Lack of ambitious climate targets for the globally largest emitters of greenhouse gases, meaning less growth opportunities in clean energy • Electricity customers locating outside EU due to policy, leading to lower electricity market size growth • Unequal treatment of CO_2-free technologies in legislation and financing • Limited willingness to pay for clean energy and green products	Hundreds of MEUR	Our priority is to turn climate-related risks into opportunities. Fortum's two strategic priorities: • to deliver reliable clean energy • to drive decarbonisation in industries Fortum is lobbying for: • 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
Technology risks	• Speed of technological developments resulting in accelerated decrease in costs, and eroding the value of existing assets • Technological and economical challenges, negatively impacting growth in green hydrogen • Some other disruptive technology limits the anticipated hydrogen market growth	• Speed of EU boost for new technologies and availability of critical raw materials • High dependency on components from third countries • Anticipated declines in costs, especially in green hydrogen, do not materialise, resulting in poor competitiveness of European green hydrogen	• Technological developments not proceeding as anticipated, resulting in failure to achieve renewables business growth targets • Hydrogen market does not take off, resulting in failure to achieve growth ambitions	Hundreds of MEUR	• Monitoring technological developments to ensure the correct timing of investments and divestments • Early insight through venturing and selectively investing in technology innovations • Project participation in technological developments • Partnering with industrial customers
Market risks [impacts on supply and demand]	• More volatile electricity and gas prices due to an increase in variable renewables production in the energy system • Limited investments in dispatchable capacity, endangering security of supply • Oversupply of renewable production due to non-market-based subsidies, leading to lower wholesale energy prices • No new demand to Nordics, green capacity locating elsewhere because of massive subsidies • Lower heating demand due to, e.g., competing heating technologies and heat recovery	• Lower or stagnating electricity prices due to a low price of CO_2 emissions or lower than anticipated electricity demand growth due to, e.g., higher energy efficiency gains • Limited investments in dispatchable capacity, endangering security of supply • No new demand to Nordics, green capacity locating elsewhere because of massive subsidies	• Low market prices of electricity due to a low or inadequate price of CO_2 emissions, and low electricity demand • Share of fossil-fuelled power generation remains at a high level and stagnating renewable investments • No new demand to Nordics, less green investments because of lack of policy drivers/demand	Hundreds of MEUR	• 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 the heating and cooling business • Partnering with industrial customers in low electricity price areas

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

	FORTUM'S SCENARIO +1.5–+2 °C	+2–+2.5 °C	+2.5–+3.5 °C	Risk impact assessment	Key mitigating actions
	PREVAILING TRANSITION RISKS IN THE SCENARIO				

Reputation risks	• Failure to decarbonise Fortum's business in line with the goals of the Paris Agreement, and with Fortum's own climate commitments as requested by stakeholders such as investors, lenders and NGOs
	• Failure to increase taxonomy-aligned economic activities, potentially impacting financing
	• Inability to provide adequate proof points to stakeholders supporting Fortum's decarbonisation strategy
		• Failure to decarbonise Fortum's business as requested by stakeholders such as investors, lenders and NGOs
		• Failure to increase taxonomy-aligned economic activities, potentially impacting financing
			• Failure to decarbonise Fortum's business as requested by stakeholders such as investors, lenders and NGOs	Reputation and brand impact	• Climate targets aligned with the goals of the Paris Agreement:
					  • Carbon neutrality by 2030, Scopes 1, 2 and 3
					  • Coal-exit by end of 2027
					  • Commitment to SBTi 1.5 °C pathway
					  • Specific emission target of below 10 g/kWh by 2028 (power)
					  • Specific emission target of below 20 g/kWh by 2028 (total)
					• Providing evidence of successful strategy implementation to investors
					• Structured approach for interactions with NGOs

	PREVAILING PHYSICAL RISKS IN THE SCENARIO				
Acute risks	Extreme weather conditions leading to local damages, production losses, and supply constraints, e.g.:			Tens of MEUR	• Increased preparedness for local flooding, storms, and forest fires, e.g., reviewing and updating business continuity plans • Ensuring investments in long-term dam safety include climate change risk assessment
	• Extreme heat waves and dry spells • Intense storms with heavy wind, rain, and flash floods	• 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	• 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.:			Tens of MEUR	• Improve modelling of climate change scenarios • Investments in power generation flexibility • Partnering with industrial customers to find new revenue streams from the 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
	• Increase in average temperatures (incl. water) • Increased average precipitation in the Nordics and changes in seasonality (i.e. long wet and dry periods) • Less or later precipitation as snow and earlier spring floods • Changed wind patterns	• Increase in average temperatures (incl. water) higher in the Nordics than the global average • Increased average precipitation in the Nordics and changes in seasonality (i.e. longer wet and dry periods) • Low or later precipitation as snow and earlier spring floods • Accelerated changes in wind patterns	• Increase in average temperatures (incl. water) higher in the Nordics than the global average • Increased average precipitation in the Nordics and changes in seasonality (i.e. longer wet and dry periods) • Low or later precipitation as snow and earlier spring floods • Accelerated changes in wind patterns		

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's growth initiatives will target clean energy and decarbonisation projects, and growth capital expenditure is estimated to be up to EUR 1.5 billion for the years 2023–2025. 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).

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 for and value of flexible hydropower as well as base-load production, such as nuclear power. As one of cleanest power generators in Europe, Fortum is well positioned to capture these opportunities.

In 2022, Fortum's CO_2-free power generation, including renewable energy and nuclear power, was 42.9 TWh. 97% of its power generation in Europe and 59% of total power generation globally was CO_2-free.

In 2022, Fortum continued its investment in a new 380-MW wind farm in Närpes and in Kristinestad, Finland. The wind turbines are expected to be fully commissioned in 2024.

The Espoo Clean Heat project is transforming the district heating in the City of Espoo in Finland to carbon neutral. The use of coal will be discontinued in 2025. Fossil fuels are being replaced with smart and flexible solutions that are largely based on renewable electricity: waste heat utilisation, heat pumps, heat accumulators and electric boilers. Demand side response (DSR), or the smart control of district heating, optimises heat production and the heating of buildings at differing intervals to allocate heat where it is most needed at a given time. In 2022, Fortum and Microsoft announced a collaboration project whereby Fortum will capture the excess heat generated by a new data centre region to be built by Microsoft in the Helsinki metropolitan area in Finland. Once the waste heat capture is in operation, it will produce heating energy for homes, services and businesses and will cover a total of about 40% of the area's heating demand.

In 2022, Fortum submitted the Loviisa nuclear power plant operating licence application to the Finnish Government for a lifetime expansion for both nuclear power plants until the end of 2050.

In 2022, Fortum invested EUR 266 (EUR 227) million in CO_2-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 2022, Fortum spent EUR 55 (54) million on research and development.

Accelerated coal-exit

In line with Fortum's strategic priorities, we focus on delivering reliable clean energy and driving decarbonisation in industries. Fortum is committed to exit all coal generation by the end of 2027 and is also working to find solutions for industrial customers to lower their carbon footprint and to decarbonise their processes and products.

In Finland, Fortum's coal-fired Meri-Pori power plant was part of the peak-load reserve system from 2017–2022. Since November 2022, the plant has been operating on the electricity market on a commercial basis; the produced electricity helps to maintain security of supply in Finland during the ongoing energy crisis. The deployment of actual electricity production at the plant depends on the electricity market situation at that time. Fortum has also set a goal to discontinue the use of coal at the Suomenoja power plant in Espoo by 2025.

In Poland, the strategic review of the district heating business was discontinued in March 2022. Fortum will evaluate alternatives for further decarbonisation of the these assets. The old coal-fired Zabrze and Bytom CHP plants have been decommissioned and were removed completely from operating capacity in 2022 onwards. Coal-fired capacity of 94 MW still remains in the existing CHP plants in Poland.

Coal-fired generation capacity per asset, MW [1)]

Meri-Pori, Finland	565
Suomenoja CHP, Finland	85
Zabrze and Czestochowa CHP, Poland	94
Total	**744**

1) As of year-end 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 environmental impacts and carbon footprint, among others:

- CO_2-free and guarantee-of-origin-labelled electricity and carbon-neutral heat products
- Real-time monitoring of consumption of electricity, water and heat
- Heating optimisation and improvement of energy efficiency and indoor air quality

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 to reduce emissions by at least 55%, and we continue to lobby for legislation and policy instruments – in particular carbon pricing – 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 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, lobbying for more ambitious climate targets is at 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. In 2022, Fortum published Business Ethics Guidelines for Lobbying. These are discussed more in the section ▸ **Transparent and ethical lobbying**.

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, 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 represents itself in stakeholder relations. 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 provide financial support for party-political purposes.

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 few 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 review in 2021 showed that seven of the 15 associations assessed were already fully aligned with the Paris Agreement and Fortum's climate advocacy principles. Eight associations were 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.

An **update to the 2021 Climate Lobbying Review** was published in December 2022. During 2022, we continued to monitor and address misalignment whenever the associations' positions differ from Fortum's climate advocacy principles as concluded in the 2021 review. We have had a dialogue with four European associations in order to encourage them to take development actions.

Fortum's corporate structure has undergone major changes during 2022, including the decision to divest our Russian energy production assets and to sell the entire stake in Uniper to the German Government. As a consequence of this, the Russian associations have been left outside the scope of the update of our Climate Lobbying Review.

Fortum is committed to ensuring that the industry associations it is a member of lobby for policies that are in line with the goals of the Paris Agreement. Based on the dialogue with the four associations during 2022, we found that progress had been made in line with this commitment. The review in 2022 showed that two of the associations reviewed are currently fully aligned with the Paris Agreement and Fortum's climate advocacy principles, while two associations are still partially aligned with our climate advocacy principles. In the next review round, we will define a time-bound escalation process to address these industry associations assessed as being partially aligned with the Paris Agreement.

Our next Climate Lobbying Review, to be published in 2023, will also take into account Fortum's new company strategy and possible changes in our memberships in industry associations.

Metrics and targets

Transforming our own energy production and operations to carbon neutral is a strategic priority for us. To accelerate the development, the following climate targets were valid in 2022:

- Reduction of CO_2 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

In March 2023, Fortum committed to new ambitious carbon neutrality targets:

- Emissions reduction according to the SBTi 1.5 °C trajectory. This commitment assumes a full exit from Russia
- Specific emissions of below 20 gCO_2/kWh for total energy production and below 10 gCO_2/kWh for power generation by 2028
- Carbon neutrality by 2030 (all Scopes 1, 2 and 3)
- Coal-exit in our own operations by the end of 2027

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 ESG target is related to the reduction of the absolute CO_2 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. The ESG targets of both LTI plans were adjusted in early 2023 due to the divestment of Uniper.

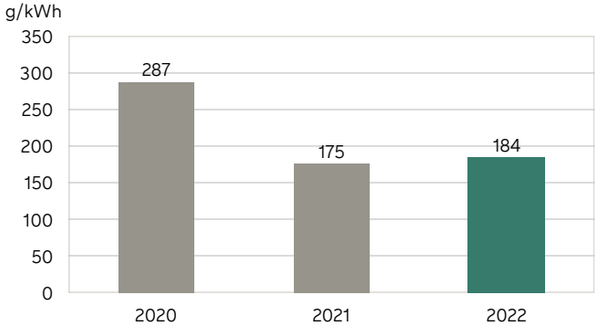
Fortum's specific carbon dioxide emissions (Scope 1) from total energy production in 2022 were 184 (2021: 175) gCO_2/kWh. Our carbon dioxide emissions from total energy production in Europe were 45 (2021: 39) gCO_2/kWh.

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.

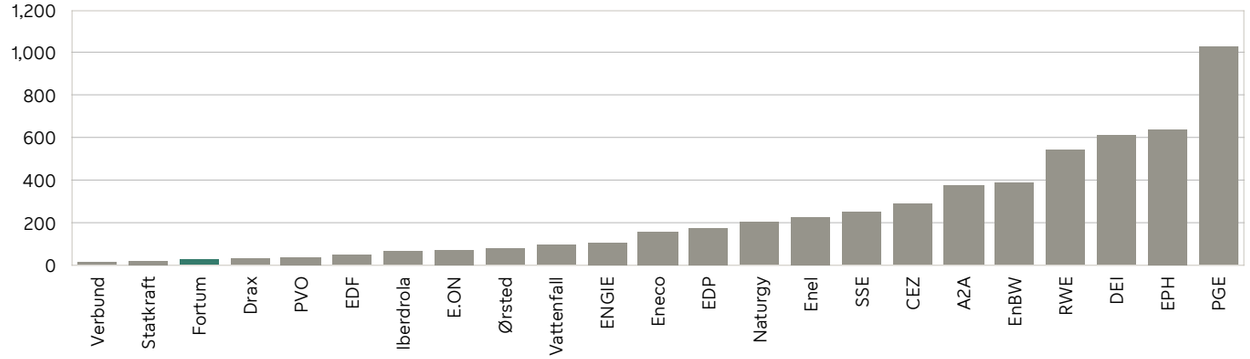
In calculating the specific carbon dioxide emissions, CHP plant emissions have been allocated for electricity and heat using the efficiency method presented in the Greenhouse Gas (GHG) Protocol guidelines, with a heat production efficiency of 90% and electricity production efficiency of 40%.

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**.

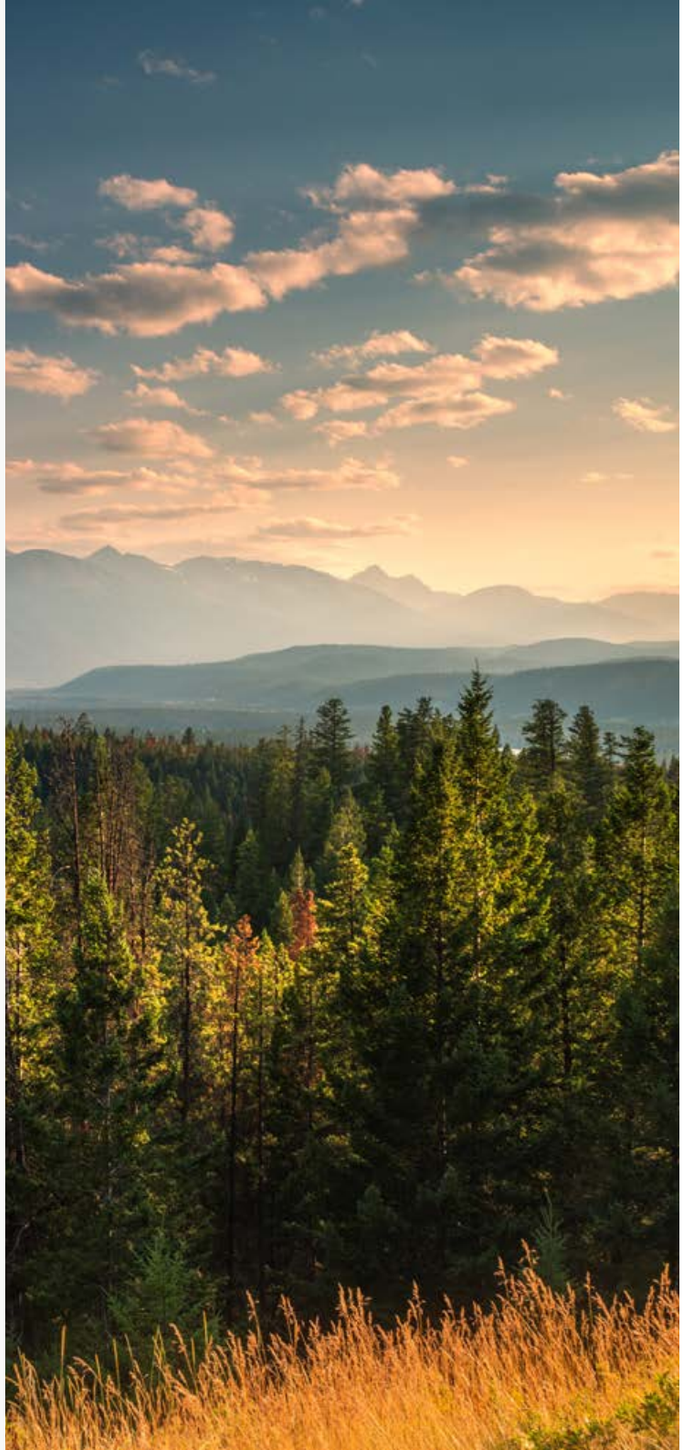
Specific carbon dioxide emissions from total energy production in 2020–2022



Specific CO_2 emissions of major utilities in Europe, gCO_2/kWh electricity, 2021



Fortum's data includes specific carbon dioxide emissions from power generation in Europe in 2022.
All other figures, except Fortum, include European power generation in 2021. For some companies the PwC figures might also include heat production.
Source: PwC, October 2022, 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 2022 totalled 30.2 (2021: 31.7) million tonnes of CO_2-eq. Scope 1 emissions were 17.0 (2021: 17.9) million CO_2-eq tonnes, Scope 2 market-based emissions 0.03 (2021: 0.04) million CO_2-eq tonnes, and Scope 3 emissions 13.2 (2021: 13.8) million CO_2-eq tonnes.

Direct greenhouse gas emissions – Scope 1

Fortum's Scope 1 greenhouse gas emissions accounted for about 56% of total greenhouse gas emissions. In 2022, our Scope 1 direct greenhouse gas emissions were 17.0 (2021: 17.9) million CO_2-eq tonnes. The share of carbon dioxide emissions from our direct greenhouse gas emissions was 99%.

The majority of Fortum's direct CO_2 emissions, 16.9 (2021:17.8) million tonnes, are generated from the use of fossil fuels in energy production. Of our direct carbon dioxide emissions, about 87% originated from the Russian operations, 6% from Finland, 5% from Poland and 2% from other countries.

Of the direct carbon dioxide emissions in 2022, 1.6 (2021: 1.5) million CO_2 tonnes were within the EU emissions trading system (ETS). About 75% of CO_2 emissions from our energy production in Europe were within the sphere of the EU ETS. In 2022, Fortum was granted free emission allowances corresponding to 0.2 (2021: 0.2) million tonnes. In terms of emission allowances, we had a deficit and purchased the shortfall of emission allowances from the markets.

In 2022, Fortum's direct biogenic carbon dioxide emissions were about 0.8 (2021: 1.5) million CO_2 tonnes.

The calculation of greenhouse gas emissions covers carbon dioxide (CO_2), 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).

Direct greenhouse gas emissions (Scope 1) in 2020–2022 (GRI 305-1)

Mt CO_2-eq	2022	2021	2020
CO_2	16.9	17.8	48.8
CH4	0.01	0.01	0.08
N2O	0.1	0.1	0.2
HFCs	0.00	0.00	0.00
SF6	0.00	0.00	0.00
Total	**17.0**	**17.9**	**49.0**

Direct carbon dioxide emissions by country in 2020–2022 (GRI 305-1)

Mt	2022	2021	2020
Russia	14.8	15.6	30.5
Finland	1.1	0.8	0.8
Poland	0.7	0.8	0.7
Other countries	0.3	0.6	16.8
Total	**16.9**	**17.8**	**48.8**

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 0.03 (2021: 0.04) million CO_2-eq tonnes.

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.

Market-based and location-based indirect greenhouse gas emissions (Scope 2) in 2020–2022 (GRI 305-2)

tCO_2-eq	2022	2021	2020
Market-based, Total	31,300	42,800	811,700
Location-based, Total	38,800	53,800	632,000

Other indirect greenhouse gas emissions – Scope 3

Fortum's Scope 3 greenhouse gas emissions accounted for about 44% of our total greenhouse gas emissions. Our Scope 3 greenhouse gas emissions in 2022 were estimated to be 13.2 (2021: 13.8) million CO_2-eq tonnes. Our Scope 3 emissions originate mainly from fossil energy sources.

The majority of our Scope 3 greenhouse gas emissions are caused by fuel procurement and electricity retail as well as by the use of sold products. The transportation of fuels and electricity retail accounted for 88%, and the use of sold products, i.e. sales of fossil fuels to end-users and resellers, accounted for 7% of Scope 3 greenhouse gas emissions.

Fortum reports Scope 3 greenhouse gas emissions in accordance with the requirements of the GHG Protocol Corporate Value Chain (Scope 3) 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 Scope 3 greenhouse gas emissions are based on different literature sources.

Indirect greenhouse gas emissions (Scope 3) in 2020–2022 (GRI 305-3)

tCO_2-eq	2022	2021	2020
Fuel procurement and electricity retail (category 3)	11,639,800	11,761,300	15,408,900
Use of sold products (category 11)	868,900	1,097,100	10,422,900
Purchased goods and services (category 1)	268,400	469,400	688,300
Capital goods (category 2)	199,200	206,900	381,100
Upstream transportation and distribution (category 4)	186,800	235,500	767,300
Other activities (categories 5–10)	14,200	11,000	167,900*
Total	**13,177,300**	**13,781,300**	**27,836,400**

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

Offsetting emissions from air travel

Fortum has been offsetting GHG emissions from employee air travel since 2007. In 2022, Fortum's GHG emissions from employee air travel were about 2,900 (2021: 700) CO_2-eq tonnes. Fortum has used the Certified Emissions Reduction (CER) units received earlier from the World Bank's Prototype Carbon Fund (PCF) to offset GHG emissions generated by employee air travel.

▸ **Fortum's CDP Climate Change 2022 response**

Discontinued operations (Uniper)

Fortum lost control of Uniper at the signing of the agreement in principle to sell the shares in Uniper SE to the German State on 21 September 2022. Thus, Uniper was deconsolidated on 30 September 2022. The following tables present selected key performance indicators for discontinued operations:

Climate and resources	2022 [1)]	2021
Total GHG emissions, Scope 1–3, million CO_2-eq tonnes	145.8	158.1
Direct Scope 1 CO_2 emissions, million tonnes	41.2	51.0
Indirect location-based Scope 2 GHG emissions, million CO_2-eq tonnes	0.7	0.6
Scope 3 GHG emissions, million CO_2-eq tonnes	89.5	106.3
Scope 3 GHG emissions caused by the use of fossil fuels sold both to end-users and resellers, million CO_2-eq tonnes	67.4	78.1
Specific CO_2 emissions from total energy production, gCO_2/kWh	454	428
Asset availability of power generation plants [2)], %	70.3	78.0
Major environmental incidents [3)], no.	0	-
Power generation [4)], TWh	-	110
Heat and steam production [4)], TWh	-	8.4
CO_2-free share of total power generation, %	20.7	23.5
Power and heat production covered by a certified ISO 14001 environmental management system worldwide, %	100	100

1) The figures are for I–III 2022, as Uniper was deconsolidated on 30 September 2022. The figures for Total GHG, Scope 2 and Scope 3 emissions are for full-year 2022, as Scope 2 and 3 emissions have been calculated only for full-year 2022.

2) Excluding Unipro, Russia.

3) Number of environmental incidents that resulted in significant harm to the environment (ground, water, air) or an environmental non-compliance with legal or regulatory requirements. Uniper did not report the figure in 2021.

4) Data not available for 2022.

Direct CO_2 emissions (million tonnes, Mt)	2022 [1)]	2021
Total emissions	41.2	50.9
Emissions subject to ETS	19.0	27.5
Free emission allowances	-	0.3
Emissions not subject to ETS in Europe	0.03	0.05
Emissions in Russia	22.1	23.4

1) The figures are for I-III 2022, as Uniper was deconsolidated on 30 September 2022.

EU Taxonomy

The EU Taxonomy Regulation is a classification system for defining economic activities that can be considered as environmentally sustainable. The regulation provides specific key performance indicators (KPIs) that entities are required to report for their environmentally sustainable economic activities. The EU Taxonomy Regulation establishes six environmental objectives, two of which, the climate change mitigation (CCM) and climate change adaptation (CCA) criteria, were published on 4 June 2021 in the Climate Delegated Act. Inclusion of the Complementary Climate Delegated Act on nuclear and gas energy activities was approved on 5 July 2022. The Commission is expected to adopt the Delegated Act for the other four objectives in 2023.

Fortum reports the proportion of Taxonomy-aligned activities, Taxonomy-eligible (not aligned) activities and Taxonomy-non-eligible activities in relation to the three KPIs (Sales, Operating expenses and Capital expenditure) and the plan (Capital expenditure plan) that aims either to expand Fortum's Taxonomy-aligned economic activities or to upgrade Taxonomy-eligible economic activities to render them Taxonomy-aligned within a period of five years.

Financials 2022

In 2022, Fortum classified its economic activities to eligible and non-eligible corresponding to the economic activities described in the Climate Delegated Act and Complementary Climate Delegated Act. Fortum's eligible activities were also assessed and classified as aligned if: 1) it complies with the technical criteria of contributing substantially to one of the six environmental objectives, 2) it does not significantly harm the other environmental objectives (do no significant harm, DNSH criteria), and 3) it is carried out in compliance with the minimum safeguards (MS) relating to human rights and fundamental labour rights.

KPIs for climate change mitigation for continuing operations

EUR million	Sales		Operating expenses		Capital expenditure	
A.1 Environmentally sustainable activities (Taxonomy-aligned)	3,905	44%	-129	51%	285	51%
A.2 Taxonomy-eligible but not environmentally sustainable activities (not Taxonomy-aligned)	1,185	13%	-37	15%	93	17%
A. Total Taxonomy-eligible activities	**5,089**	**58%**	**-166**	**66%**	**378**	**68%**
B. Taxonomy-non-eligible activities	**3,715**	**42%**	**-86**	**34%**	**175**	**32%**
Total (A+B)	**8,804**	**100%**	**-252**	**100%**	**553**	**100%**

Fortum's most relevant environmentally sustainable (taxonomy-aligned) activities are:

- Electricity generation from hydropower
- Electricity generation from nuclear energy in existing installations
- District heating/cooling distribution
- Electricity generation from wind power

The most significant eligible (not aligned) economic activities are electricity generation and high-efficiency co-generation of heating/cooling and power from fossil gaseous fuels (natural gas) in Russia. Fortum has announced that it is preparing for a controlled exit from Russia. Therefore, Fortum has not assessed compliance with DNSH criteria for the Russian eligible assets.

Non-eligible economic activity does not correspond to any activity description provided in the Climate Delegated Act or the Complementary Delegated Act. Fortum's non-eligible activities include electricity wholesale (Consumer Solutions segment), electricity and commodities trading, coal-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 currently not covered by the EU Taxonomy, such as waste-to-energy and circular economy activities.

Capital expenditure plan

Total planned capital expenditure meeting the EU Taxonomy definition amounts to EUR 0.7 billion on 31 December 2022 and is expected to be incurred over the next 5 years, with the exception of the Loviisa lifetime extension for which 10 years' capital expenditure is included in the reported capital expenditure plan due to the long-term nature of the investment. Planned capital expenditure includes the Pjelax wind project, the Loviisa nuclear power plant lifetime extension and projects increasing production at existing hydro plants, as well as district heating/cooling decarbonisation investments. The majority of the projects included in the capital expenditure plan will be completed during the next four years, but the Loviisa lifetime extension project will continue until 2050.

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 (SO_2) 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, and in Nyborg, Denmark, 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 (CO_2) and other greenhouse gas 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.

Our flue-gas emissions

Our nitrogen oxide (NO_X) emissions were 17,100 (2021: 20,600) tonnes, our sulphur dioxide (SO_2) emissions 1,600 (2021: 8,200) tonnes and our particle emissions 1,700 (2021: 6,800) tonnes. 88% of nitrogen oxide, 36% of sulphur dioxide and 98% of particle emissions originated from Russian operations in 2022. The decrease in SO_2 emissions and particles was mainly due to the divestment of the Argayash power plant in Russia in 2021, as well as a coal-exit in the Chelyabinsk CHP-2 plant in Russia in 2022.

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 2020–2022 (GRI 305-7)

	2022	2021	2020
NO_X, t	17,100	20,600	50,200
SO_2, t	1,600	8,200	17,900
Particles, t	1,700	6,800	9,600
Mercury, kg	112*	150*	248*

* 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 phosphorus) and heavy metals.

Wastewater effluents can impact local water quality as well as the nutrient and oxygen balance of the water system. In 2022, about 0.9 (2021: 1.8) tonnes of oil were released into water systems through wastewater generated in Fortum's operations.

According to Russian legislation, by the end of 2024, it is necessary to obtain an integrated environmental permit based on the best available technologies. After the development and approval of the best available technologies at the legislative level, an efficiency improvement programme for CHP-3 will be developed.

Environmental incidents

Fortum regularly monitors major environmental incidents. These, in part, reflect the quality of environmental management.

In 2022, the definition of major environmental incidents was revised. The figure now includes environmental incidents that resulted in significant harm to the environment (ground, water, air) or environmental non-compliances with legal or regulatory requirements.

In 2022, there were two major environmental incidents: a breach of minimum discharge at the Untra hydropower plant in Sweden and a landfill water leakage of 200 m^3 caused by over floating of the pool in Valkeakoski, Recycling and Waste Finland. Both incidents have been investigated to determine the corrective actions. Further investigations showed that the environmental impacts caused by these incidents were not remarkable.

In 2022, major environmental incidents excluded the exceedances of wastewater emissions limits in Russia, arising from an environmental permit change.

Environmental fines

In 2022, Fortum paid a fine of PLN 500 (EUR 107) for the lack of a water permit for an emergency outlet of industrial and rainwater sewage at the Zabrze CHP plants in Poland.

Fortum also paid fines totalling RUB 50,000 (EUR 671) in 2022 for untimely emissions inventory and updating of information at the Chelyabinsk CHP-3 plant in Russia.

▸ **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 also offer services to our customers for the treatment, analysis, purification, utilisation and increased recycling of their waste and sludge waters and other severely polluted waters.

Fortum is committed to responsible water management. 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. We monitor our use of water and aim for efficient use of it by, e.g., decreasing water consumption and recycling water, where feasible. 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. Water use also has connections to our biodiversity impacts.

Risks and opportunities related to water use

With production located mostly in the Nordic countries, Fortum's risks related to water availability are, based on our assessment, relatively small in the medium term. The majority of our water withdrawal is seawater for cooling at condensing power plants. In most cases, we do not consume water in our

operations; it is discharged into the same water system from which it was withdrawn.

3% of Fortum's water withdrawal in production operations is in water-stressed areas in Russia and Poland, based on water-stress screening using the WRI Aqueduct Water Risk Atlas. In water-stressed areas, water use is, by definition, 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.

In addition to the ▸ **WRI Aqueduct Water Risk Atlas**, we have used site-level basin physical risk data from the ▸ **WWF Risk Filter Suite's Water Risk Filter** tool in the assessment of our physical water risks. The basin physical risks include aspects of water scarcity, flooding, water quality and ecosystem services status. Both the baseline situation and future scenarios were analysed with both tools.

Risks

Fortum's water risks are related to dam safety, climate change impacts on hydrology, availability of water, leakages of chemicals and water-related regulation.

The risks related to dam breaches are systematically being reduced. 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 will have impacts on our physical water risks. Changes in precipitation, inflows and temperatures, and extreme weather events may affect power production. Climate change may reduce or increase the amount of water and change the timing of water availability for hydropower plants, depending on the location. Intense storms with flash floods, for example, could increase the risk of dam breaches, as well as local damages and production outages. A warmer climate may also lead to the need for new cooling or process water sources or systems.

We are adapting our operations to the changes in water availability and hydrological conditions, and we take climate change into consideration in production and maintenance planning, in dam safety, and in evaluating growth and investment projects. In hydropower production planning, we are preparing for climate change by, e.g., taking into consideration changes in precipitation, 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.

Water-related legislation, such as the EU Nature Restoration Regulation, could have unforeseen negative consequences for the energy system, including for hydropower.

Opportunities

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. In addition to the possible increase of production in some locations due to climate change, early adaptation to climate change can also create a competitive advantage for Fortum.

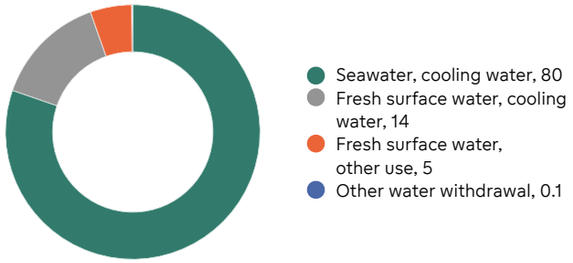
Improving the efficiency of water use in our operations can reduce environmental impacts, generate cost savings, ensure the acceptance of our operations, and also ensure the supply of water for other purposes and for other users.

Water withdrawal and forms of water use

Our power and heat production using water is located in the Nordic countries, Russia and Poland. The Baltic 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 2022, our total water withdrawal was about 1,760 (2021: 1,930) million m^3, of which seawater accounted for 80%. We recycled 14 (2021: 13) million m^3 of water.

Water withdrawal in production operations, %



Water withdrawal in production operations in 2020–2022 (GRI 303-3) [1)]

million m^3, i.e. 1,000 megalitres	2022	2021	2020
Seawater for cooling	1,415	1,423	3,746
Fresh surface water for cooling	252	410	4,821
Municipal water for cooling	0.05	0.03	5
Groundwater for cooling	0	0	0.1
Total water withdrawal for cooling	**1,667**	**1,833**	**8,573**
Fresh surface water, other use	93	95	262
Municipal water, other use	2	2	5
Seawater, other use	0.4	0.3	1
Groundwater, other use	0.2	0.2	2
Other external water supplier, fresh water, other use	0.2	0.3	3
Total water withdrawal for other use	**96**	**98**	**274**
Total water withdrawal	**1,763**	**1,931**	**8,847**

1) The figures also include the separately reported water withdrawal in water-stressed areas.

Cooling water in energy production

Condensing power production requires large volumes of cooling water. Cooling water accounts for 95% of our water withdrawal. Cooling water is used at several condensing and CHP plants. In almost all cases, the cooling water is withdrawn from a local water system, such as a sea, lake or river. Several

power plants in Russia and Poland use cooling towers in which some of the cooling water evaporates into the atmosphere.

79% of our total cooling water withdrawal takes place at the Loviisa nuclear power plant in Finland. It uses seawater for 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. The thermal load of cooling water discharged into the sea from the Loviisa power plant was 15 (2021: 16) TWh. Temperature measurements indicate that the discharged water raises the temperature of the seawater during the growing season by about 1–2.5 degrees within a 1–2 kilometre range from the discharge point.

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 heating in Russia, Finland and Poland. Fortum has a total of about 1,700 kilometres of district heating pipes. 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 of the district heating network in the Espoo-Kirkkonummi area in Finland. This led to significant decreases in leakages in 2021. In 2022, despite the development work, the amount of leakages in the network increased due to changes in production. However, the development of condition monitoring methods, such as machine learning, has helped to detect leakages earlier, and the loss of water decreased towards the end of the year. We did not reach the target to reduce the need for additional water in 2022. We have set a new target to decrease leakages: water consumption rate at below 1.6 times/year of the district heating network's current water volume.

Hydropower production

Fortum produces hydropower from water flowing in rivers in Sweden and Finland. Our hydropower production is not in water-stressed areas. Water is not consumed in hydropower production, the water quality is not significantly changed, and water 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 does not report river flows as a hydropower production-related water withdrawal.

We stock fish to offset the impacts of hydropower production. Most 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.

Water use in water-stressed areas

According to the ▸ **WRI Aqueduct Water Risk Atlas**, accessed on 4 January 2023, Fortum's power plants located in an area with a high (40–80%) water-stress level are the four Chelyabinsk CHP plants in Russia and the Czestochowa CHP plant in Poland. The classification of water-stressed locations is based on the WRI Aqueduct data, not on actual issues of water scarcity experienced in our operations.

At the Chelyabinsk CHP plants, water is used as process water and for cooling. All the Chelyabinsk CHP plants use cooling water towers, which reduces the amount of water withdrawal needed for cooling. At the Chelyabinsk CHP-2 plant, the wet method is used to pump ash from the power plant into an ash pond. The water from the ash pond is returned to the power plant cycle. At the Czestochova CHP plant water is used as process water and, in summer, for cooling. Also air cooling is used. In Czestochova, water is also used in the district heat network.

Our water withdrawal in water-stressed areas was 58 (2021: 238) million m^3, which was about 3% (2021: 12%) of our total water withdrawal. The decrease was mainly due to the divestment of the Argayash CHP plant in Russia. 99.7% of the water withdrawal was in Russia and 0.3% in Poland, and 28% was used for cooling, the rest as process water and in district heating networks.

In water-stressed areas in Russia and Poland, we recycled 6 (2021: 6) million m^3 of water.

We are developing solar power in India. The sites are located in areas of extremely high water-stress. We therefore strive to reduce water usage through robotic waterless cleaning solutions, rain water harvesting and water efficiency measures, such as carefully planned cleaning schedules, at our partly-owned solar power plants. The target is to install robotic waterless module cleaning in all future solar plants that we commission in India.

Water withdrawal in production operations in water-stressed areas in 2020–2022 (GRI 303-3)

million m^3, i.e. 1,000 megalitres	2022	2021	2020
Fresh surface water for cooling	16	192	265
Municipal water for cooling	0.05	0.03	0.07
Seawater for cooling	0	0	91
Total water withdrawal for cooling	**16**	**192**	**356**
Fresh surface water, other use	42	46	49*
Municipal water, other use	0.4	0.4	0.4*
Groundwater, other use	0	0.001	0.003*
Total water withdrawal for other use	**42**	**46**	**49***
Total water withdrawal	**58**	**238**	**405***

* Excluding Uniper's water withdrawal for other use

Water discharge

The discharged water is mainly cooling water released into the sea. We pipe the majority of cooling water back into the same water system from which the water was withdrawn. In 2022, 98% of the cooling water withdrawn was discharged back to the environment.

In addition to the cooling water discharge, Fortum discharges process water and wastewater. In 2022, Fortum's total water discharge was about 1,680 (2021: 1,850) million m^3; only about 3% of it was process and wastewater, the rest was cooling water. 57% of the process water and wastewater is discharged water from fish farms. The process and wastewater is purified, when needed, before release into the environment; some water is piped to municipal treatment plants. In water-stressed areas, the discharged water is almost entirely process water released into fresh surface water; no cooling water is discharged. Emissions into water are reviewed in the section ▸ **Emissions to water**.

Water discharge by recipient in 2020–2022 (GRI 303-4) [1)]

million m^3 , i.e. 1,000 megalitres	2022	2021	2020
Sea, cooling water	1,415	1,423	3,745*
Fresh surface water, cooling water	220	380	4,768*
Total cooling water discharge	**1,636**	**1,803**	**8,513***
Fresh surface water, process water	44	46	139
Municipal sewage	1	1	6
Sea, process water	0.8	0.8	1
Other recipient	0.1	0.1	0.3
Total process and wastewater discharge	**46**	**48**	**147**
Total water discharge	**1,681**	**1,851**	**8,660**

1) The figures include the separately reported water discharge in water-stressed areas.

* Cooling water discharge may contain some process water discharge.

Water discharge by recipient in water-stressed areas in 2020–2022 (GRI 303-4)

million m^3 , i.e. 1,000 megalitres	2022	2021	2020
Fresh surface water, cooling water	0	175	241*
Sea, cooling water	0	0	91*
Total cooling water discharge	**0**	**175**	**332***
Fresh surface water, process water	9	12	13**
Municipal sewage	0.2	0.2	0.3**
Other recipient	0.06	0.1	0.1**
Total process and wastewater discharge	**9**	**12**	**14****
Total water discharge	**9**	**187**	**346****

* 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 in Russia and Poland, water leakage from district heating networks, water used in power plant and other production plant processes, and water used to move ash, e.g., at power plants in Russia. In 2022, our own water consumption was about 75 (2021: 74) million m^3. In water-stressed areas, our water consumption was about 43 (2021: 45) million m^3.

We estimate water consumption as the difference between water withdrawal and discharge. Fortum's own water consumption does not include the water supplied to external customers.

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

Biodiversity

Biodiversity supports all systems of life on earth and is a vital factor for all wellbeing and for the economic prosperity of all people and businesses. We as a society depend on it for food, medicine, energy, clean air and water. In addition, biodiversity provides security and resilience towards natural disasters and challenges caused by climate change. The degradation of biodiversity is one of the greatest environmental problems globally. We at Fortum acknowledge that we need to know our impacts and dependencies on biodiversity and ecosystem services to be able to assess the related opportunities and risks.

Addressing biodiversity issues has become one of the key elements in sustainable business. As stated, biodiversity is a crucial part of the effort to combat challenges arising from climate change; at the same time, climate actions have a positive effect on biodiversity. Biodiversity can help to adapt and mitigate climate change, as healthy ecosystems are more resilient. Biodiversity and ecosystem services can be seen also as an enabling factor to businesses, as we rely on the resources and services nature provides. Fortum recognises the importance of protecting biodiversity and respecting our planetary boundaries. It is not only the right thing to do, it is a fundamental component of long-term business survival.

Biodiversity rising on global, EU and Fortum agenda

In 2022, biodiversity was increasingly in focus on the policy and regulatory agenda and in the public discussion. We have actively followed the development of concrete actions in implementing the EU Biodiversity Strategy for 2030 as well as the post-2020 global biodiversity framework. The main achievement on the global agenda was the agreement

on halting biodiversity loss by 2030 at the UN Biodiversity Conference (COP 15). In the EU, the European Commission published a proposal for a Nature Restoration Law, which combines an overarching restoration objective for the long-term recovery of nature in the EU's land and sea areas with binding restoration targets for specific habitats and species. In addition, the EU is expected to propose new taxonomy criteria for the protection and restoration of biodiversity and ecosystems. Fortum recognises the degradation of biodiversity as one of the biggest environmental challenges globally. We support the EU Biodiversity Strategy and its high ambitions to protect and restore species and habitats. Biodiversity loss and the degradation of ecosystems are a severe global concern that must be tackled. Combating climate change is one of the most effective ways to stop the degradation of nature. Biodiversity regulation should be aligned with climate change mitigation, renewable energy and security of supply goals.

In Fortum's materiality analysis, biodiversity is identified as one of Fortum's sustainability priorities. For years, Fortum has carried out voluntary and license-related biodiversity measures to prevent negative impacts and, where possible, to implement biodiversity measures for improvement, as outlined in our ▸ **Biodiversity Manual** and ▸ **Biodiversity Action Plan**. However, in order to further support the international call to action on biodiversity, Fortum has stepped up its ambition.

At the start of 2022, Fortum committed to developing a science-based strategy to measure impacts on biodiversity and to work towards enhancing biodiversity in its operations and supply chain. The strategy follows the principles of the Science Based Targets for Nature (SBTN) framework. Fortum has used the internationally recognised Global Biodiversity Score tool® to map its dependencies and impacts, as well as those of its value chain, on biodiversity and ecosystem services in order to define its biodiversity footprint. This sets a baseline from which targets and measures are set to reduce Fortum's biodiversity impact and, where possible, to enhance biodiversity in line with the principles of the updated Global Biodiversity Framework agreed at COP 15 in December 2022, in Montreal.

Impacts on biodiversity

Our operations, just as any other, have an impact on biodiversity. While we are working to reduce our impact, we must accept that our operations have caused and will cause changes in the natural environment. For example, while hydropower is important in the fight against climate change, which globally is one of the greatest threats to biodiversity, hydropower operations affect migratory fish as well as the natural state of the river system as a whole. The production of the fuel (both bio- and fossil-based) used in our power and heat production affects biodiversity through land use. These local-scale impacts are most evident and recognisable. Also, emissions from energy production accelerate climate change, and while the impact mechanism is global, the effect on biodiversity is local.

According to the biodiversity footprint assessment (excluding hydropower aquatic impacts), on a global scale Fortum's main biodiversity impacts are related to the impacts from GHG emissions, land use and fuel procurement.

Our responsibility for biodiversity

Fortum's Biodiversity Manual defines the company's 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. The Biodiversity Action Plan describes Fortum's goals, responsibilities, timelines and partners for local-scale 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 reduce and offset our biodiversity impacts in, e.g., hydropower production by implementing biodiversity measures. In 2022, Fortum carried out hydropower-related fish obligations, valued at about EUR 2.1 million. In addition, we implemented investigations on environmental improvements in preparation for the Swedish national plan on modern environmental conditions and carried out hands-on biodiversity actions around our hydropower plants, totalling approximately EUR 0.4 million.

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. Fortum is closely following the development of regulations and guidelines and is preparing to implement the required additions to our current biomass sourcing processes.

Certified wood-based biomass fuel originates from sustainably managed forests in which the preservation of biodiversity has been a focus. In 2022, the majority of the wood-based biomass fuel purchased by Fortum originated from certified or controlled sources; all biomass purchased is assessed for the legality of the source of origin.

Fortum is a member of the Bettercoal initiative and uses 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, combatting invasive species, and preventing adverse hydrological changes, nutrient accumulation and environmental pollution.

As mentioned on our Supplier Code of Conduct, we expect Fortum suppliers to support a precautionary approach to environmental challenges and to undertake initiatives that promote greater environmental responsibility. Suppliers should identify the environmental impacts of their operations and implement mitigation actions when required; they are expected to strive to continuously reduce the use of energy and water, minimise waste and emissions to the air, water and land in their operations, and mitigate impacts on biodiversity. Read more about fuel purchases in the section ▸ **Supply chain**.

Fortum's biodiversity target

Fortum is committing to an ambitious biodiversity target to have no net loss of biodiversity (excluding any aquatic impacts) from existing and new operations (Scopes 1, 2) addressing dynamic terrestrial impacts from 2030 onwards. In addition, the company will reduce its negative dynamic terrestrial impacts in upstream Scope 3 by 50% by 2030 (base-year 2021). In 2023, Fortum will continue local initiatives, especially in hydropower production, and is committed to developing a science-based methodology to assess the company's aquatic impacts.

We will continue working with our biodiversity strategy development to identify actions needed to achieve the Group's biodiversity targets. Fortum has set targets to reduce its GHG emissions by following the SBTi 1.5 °C trajectory, which will also play a key role in our efforts to reduce Fortum's impacts on biodiversity. During 2023 business-specific measures also will be proposed, as we continue our work on local-scale biodiversity-enhancing projects. Our initiatives will be updated to the ▸ **Biodiversity Action Plan**.

Projects improving biodiversity

In addition to strategy work, Fortum has continued working with voluntary biodiversity projects. These measures, focusing on threatened species or habitats, improve the living conditions of species and strengthen populations. Most of our projects improving biodiversity are related to hydropower production and include restoring aquatic and terrestrial habitats, improving fish migration and strengthening migratory fish populations, as well as projects combatting invasive species. In addition to voluntary projects, biodiversity-related measures are often carried out as licence obligations.

Improving fish migration and migratory fish populations

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

In Sweden, Fortum is investing in a high-tech fish stocking facility. The new plant for compensatory fish stocking is built with a Recirculating Aquaculture System (RAS), which is the first of its kind in Sweden. The system has several environmental advantages, including a cost-efficient way of cooling the water and a reduction of emissions from nutrients.

In Klarälven, Sweden, we continued with the trap and transport of fish, which makes it possible for migrating salmon and trout to pass eight hydropower plants and reach their spawning areas. This efficient solution also reduces the stress on the fish. Fortum was able to transport more than 2,000 wild trout and salmon during 2022. The past three years have been characterised by a sharply increasing trend with all-time high historical catch records of wild spawners in the river.

In Finland, we increased the number of fish transported to restored spawning areas in tributaries from our trap and transport device in Montta. In May 2022, we did voluntary spillages at the Ala-Utos hydropower plant to ensure the downstream migration of the smolts. In the Oulujoki area, we are improving the lifecycle of the threatened Oulujärvi lake trout by installing a hydraulic dam-bypass solution, Fishheart, at Leppikoski and participating in habitat restorations and juvenile fish stockings.

An increase in the minimum flow was carried out in the River Gullspång during 20 days in late autumn 2022. The purpose was to support the spawning of Gullspång salmon. This freshwater salmon population is unique for its fast growth and large size.

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 2022, three dams were removed (Röjdåfors mill, Östra Harasjön and Bredsjön).

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.

Restoring and improving habitats

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.

In Finland, we participated in a river habitat restoration project in Tainionkoski, River Vuoksi, together with the city of Imatra and authorities.

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.

Restored habitats and other major voluntary measures implemented in 2022 and included in the Group's biodiversity action plan for 2022 are presented in the accompanying table. Additional information about our projects supporting biodiversity is available in the Biodiversity Action Plan and on our website.

Restored habitats and other major voluntary biodiversity measures implemented in 2022

Measure	Location	Waterway, country	Description of actions in 2022
Habitat improvements	Ambricka, a wetland 13 km north-east of the Untra power plant	River Dalälven, Sweden	Removing tall grass and small trees in order to keep the area clear to prevent the overgrowth of the river meadows and pastures. and with that enhancing certain specific in the area. Ambricka is part of the nature conservation plan facilitated in cooperation with the Uppland Foundation, which extends for another ten years.
Habitat improvements around Fortum hydropower plants	Property around eight hydropower plants	River Klarälven, Sweden	A nature maintenance plan covering 115 hectares was produced for a systematic way of working with biodiversity in this large river stretch. Actions include recreating meadows through mowing, creating dead wood by ring-barking spruce and natural development of the forest. Other actions included freeing deciduous trees and regenerating deadwood.
Habitat improvements	Avesta hydropower plant	River Dalälven, Sweden	A controlled burn in a nearby meadow to benefit the area's biodiversity is one of several important means of maintaining high natural value. The project was done in collaboration with the Avesta municipality.
Releases of young salmon and sea trout in the tributaries of the River Oulujoki	Muhos, Utajärvi, and Vaala	River Oulujoki, Finland	7,160 one-year-old salmon and 8,000 one-year-old sea trout were stocked in River Kutujoki; 7,740 salmon and 6,500 sea trout in River Utosjoki; and 7,700 salmon and 7,000 sea trout in River Muhosjoki.
Montta fish trap operation and development	Montta HPP	River Oulujoki, Finland	Trapped mature salmon were transported to River Utosjoki, Oulujoki's tributary. In addition, the Oulujoki salmon brood stock maintained by Natural Resources Institute Finland was replenished with the roe of female fish caught by the Montta fish trap. Fixed cranes were installed to lift the trap's collection basins, thereby improving the usability and trapping result.
Fishheart solution for upstream passage of fish at the Leppikoski hydropower plant	Leppikoski HPP	River Emäjoki, Finland	The Fishheart solution was in operational use for the whole upstream migration season. 13,300 fish passed the dam through the Fishheart, 22 of the fish were endangered lake trout.
River habitat restoration project in the River Vuoksi	Tainionkoski HPP	River Vuoksi, Finland	A voluntary habitat restoration project for trout was carried out in the River Vuoksi. The project was done in collaboration between Fortum, the City of Imatra and ELY centres.
Voluntary spillage to ensure downstream migration of smolts	Ala-Utos HPP	River Oulujoki, Finland	In May, we did voluntarily spillages at the Ala-Utos hydropower plant to ensure the downstream migration of smolts. The turbine was stopped for about three weeks to ensure downstream migration.
Voluntary increase of minimum flow	Gullspång hydropower plant	River Gullspång	An increase in the minimum flow was carried out during 20 days to support the spawning of Gullspång salmon.
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.
Landscaping an old landfill area/storage field	Old Inkoo power plant site	Finland	Monitoring of the growth of the meadow built and sown in the autumn of 2021, and uprooting of the lupine plants that have spread there in connection with the construction of the meadow. The germination of meadow plants was quite low, so additional sowing was done in autumn.
Kumla butterfly landscape	Kumla, near Fortum site	Sweden	Restoration measures were implemented in some meadows to further benefit insects and butterflies in the landscape established in 2020.
Local biodiversity measures	Kumla, Recycling & Waste site	Sweden	Approximately 3 hectares of landfill has been planted with grasses and meadow flowers. In addition, on top of the landfill, sand beds and small water bodies have also been created, and old oak and birch trunks have been laid as deadwood to support biodiversity. The work started in 2022 and will proceed continuously in connection with the final covering of the landfill. In December 2022, a housing box for the Eurasian eagle owl was placed on one of the roofs of the Kumla site. In addition, numerous nesting houses for smaller birds were placed at the site to support local hole-nesting avifauna.

* HPP=Hydropower plant

Case | **Setting a biodiversity strategy and aiming towards nature positivity**

Fortum is committed to developing a science-based strategy to measure and act upon its impacts on biodiversity across its operations and supply chain. Throughout 2022, work has been carried out to develop the strategy. As climate change is one of the biggest threats to biodiversity, promoting carbon neutrality and CO_2-free energy production is crucial. However, all energy production, even carbon-free, has impacts on nature.

To ensure the credibility and verifiability of our Biodiversity Strategy, we chose to follow the principles of the Science Based Targets for Nature (SBTN) framework. SBTN is an internationally recognised framework and process for businesses to align their individual sustainability actions with globally agreed environmental goals. In addition to the SBTN framework, we are also closely following and aligning our strategy with the global- and EU-level goals and legislation. For example, in December 2022, COP 15 (UN Biodiversity Conference) agreed to goals that aim to halt and reverse the loss of biodiversity by 2030. At the same time, the EU is developing further legislation regarding biodiversity through the Nature Restoration Law and is also expected to propose new taxonomy criteria for the protection and restoration of biodiversity and ecosystems.

Measuring our biodiversity footprint

The first step in developing our Biodiversity Strategy was to map our dependencies and impacts on biodiversity and those of our value chain. For this, we used the internationally recognised Global Biodiversity Score® (GBS) tool. While it is relatively simple for companies to calculate carbon emissions, measuring biodiversity impacts is complex, data hungry and multifaceted.

The footprint sets a baseline from which targets and measures can be set to reduce Fortum's biodiversity impact and, where possible, enhance biodiversity. Based on the initial footprint results, Fortum's main biodiversity impacts are caused by fuel procurement in Fortum's supply chain through GHG emissions.

Due to the complexities of measuring biodiversity impacts, the GBS tool still has its limitations and is not currently able to assess impacts from marine environments and invasive alien species. Further work is also required to measure the aquatic impacts of our hydropower operations. We are supporting this by participating in a new Energy Utilities working group set up by CDC Biodiversité.

"While measuring our impacts on biodiversity is complex and multifaceted, we at Fortum are fully committed to playing our part in this vital global call for action. We are working to find solutions where nature can thrive alongside people and business," says **Nebahat Albayrak,** Senior Vice President, Sustainability and Corporate Relations.

In the beginning of 2023, we published our ambitious Group-wide biodiversity targets. We are committed to no net loss of biodiversity from existing and new operations in Scopes 1 and 2 from 2030 onwards, excluding all aquatic impacts, and 50% reduction in dynamic terrestrial impacts in upstream Scope 3 by 2030 compared to 2021.

As the tool we are using has limitations we have further committed to continue local initiatives and develop science-based methodology with partners to assess the aquatic impacts of hydropower during 2023.

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. Our mission is to transform waste streams back to essential raw materials. Our role is to find solutions for our customers' challenging environmental and waste problems to enable circularity of materials.

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 the utilisation of materials as efficiently as possible and the removal of hazardous materials 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 2022, Fortum's new hydrometallurgical plant in Harjavalta, Finland, was under construction. 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. The new plant will start commercial operations in April 2023.

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

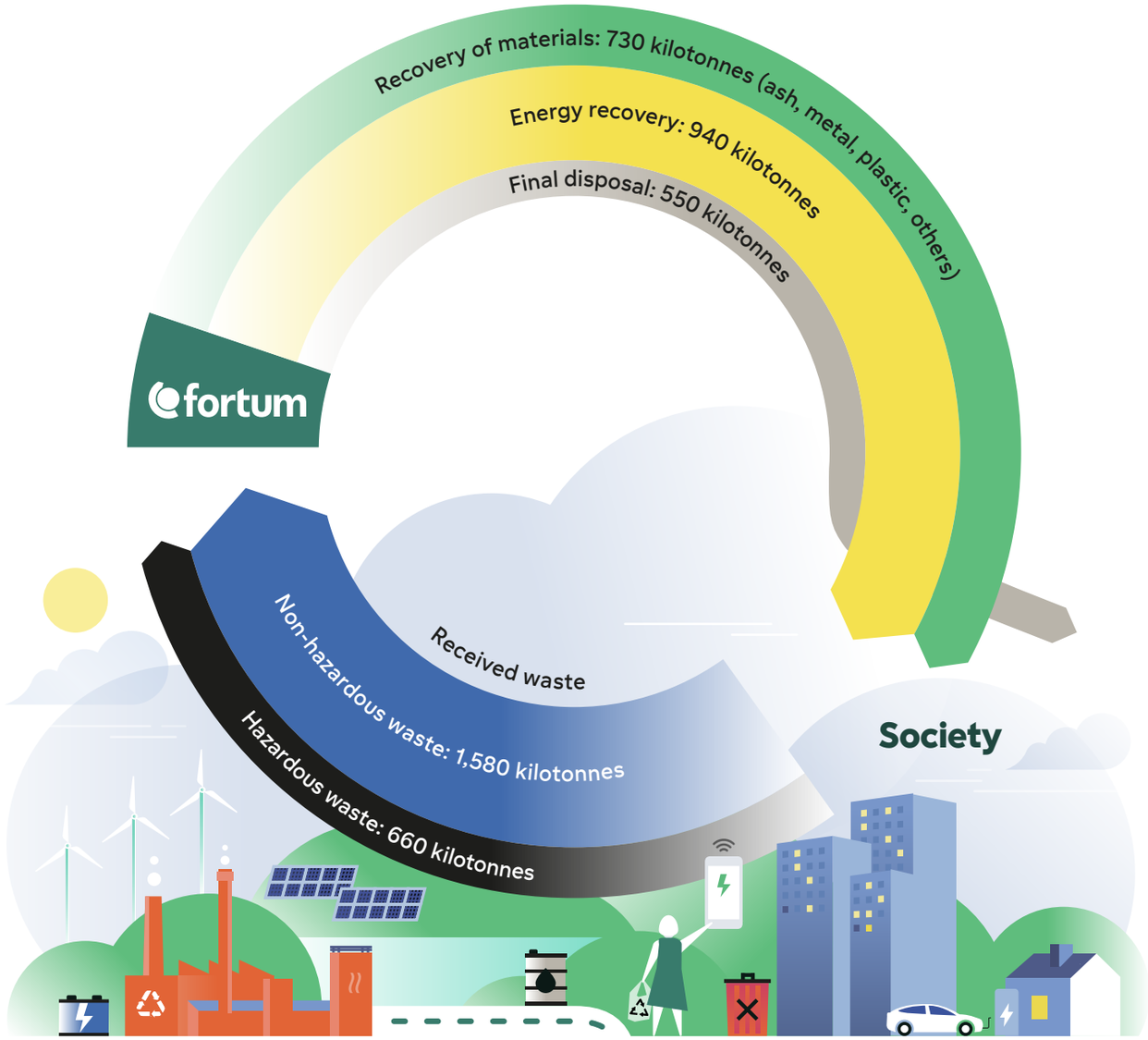
a high risk for people and for the environment if not treated properly. We use a combination of mechanical and low-carbon hydrometallurgical technologies to recycle the batteries as sustainably as possible and with a low-carbon footprint. The lithium-ion batteries are first disassembled and treated in a mechanical process at our plant in Ikaalinen, Finland and at our pre-treatment facility in Kirchardt/Baden-Württemberg, in southern Germany. The battery's black mass, containing valuable metals, is collected and taken to Harjavalta for hydrometallurgical processing. 95% of the valuable metals from the battery's black mass can be recovered with our cutting-edge hydrometallurgical recycling process.

The new Harjavalta plant will significantly increase the recycling capacity of battery materials in Europe. We aim to ramp up our battery recycling operations and to increase the recycling capacity significantly in the coming years. We are also piloting several 'second-life' solutions, such as the reuse of batteries for energy storage in power plants.

Fortum has developed Fortum Circo® recycled plastic as a sustainable substitute for virgin materials. The origin of the plastic is post-consumer recycled plastic waste, which is separately collected and delivered to our plastic recycling process. In 2022, Fortum's plastic recyclate Fortum Circo® was approved to be compliant with the EU Toy Safety Standard and can be used in the manufacturing of toys in the EU.

Fortum is also looking into new technologies and next-generation circular economy solutions to complement 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. The Carbon2x concept, launched by the company in April 2022, is a pilot project that aims to capture emissions from waste incineration and turn them into CO_2-based, high-quality raw materials. It will help reduce dependence on fossil-based raw materials, improve Europe's self-sufficiency, and decarbonise waste incineration.

Received and treated waste from customers in 2022



Our waste management services

Fortum offers waste management services for customers in the Nordic countries, Central Europe and Poland. In 2022, Fortum and Green Investment Group (GIG) made a decision to jointly invest in a new Waste-to-Energy plant in Glasgow, Scotland.

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 2022, we received a total of 2.2 (2021: 2.6) million tonnes of waste from our customers, about 41% (2021: 50%) of which was recovered in waste-to-energy plants. Of the waste received from our customers, about 1.6 (2021: 1.8) million tonnes was non-hazardous waste, with ash accounting for 27% (2021: 23%) and contaminated soil for 25% (2021: 10%). We also received about 659,000 (2021: 719,000) tonnes of hazardous waste from our customers, with ash accounting for 12% (2021: 10%) and contaminated soil for 19% (2021: 19%).

Recovery of materials

Various types of waste can be reused as raw materials. In 2022, of the waste received from our customers, we recovered about 733,000 (2021: 723,000) tonnes as materials; various environmental construction materials accounted for 60% (2021: 63%) of that amount, recoverable ash for 12% (2021: 19%), and processed raw materials and products for 8% (2021: 8%). In addition, about 149,000 (2021: 141,000) 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.
- We use a combination of mechanical and hydrometallurgical technologies to recycle the battery materials. The recovered battery chemicals – lithium, cobalt, manganese and nickel – can be used by battery manufacturers in the production of new batteries.

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 2022, about 332,500 (2021: 344,800) tonnes of hazardous waste and, additionally, about 408,300 (2021: 614,300) tonnes of non-hazardous waste were incinerated at these facilities.

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 2022 was about 380,000 (2021: 530,000) tonnes. Of this volume, about 73% (2021: 62%) was recovered.

Ash and gypsum as by-products

About 79% (2021: 65%) of the ash from our plants operating in Europe is utilised as a raw material, for example, in the construction industry and road construction, and as soil improvement and 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 2022, about 0.3 (2021: 0.5) million tonnes of ash and 4,200 (2021: 3,000) 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 2022, the power and heat plants generated a total of about 39,000 (2021: 33,300)

tonnes of waste, about 1,600 (2021: 2,200) 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 2020–2022 (GRI 306-3, GRI 306-4, GRI 306-5)

t	2022	2021	2020
Ash recovery	264,200	317,700	850,600
Ash disposal	69,900	172,200	375,700
Gypsum recovery	2,900	0	361,700
Gypsum disposal	1,300	3,000	4,800

Waste handling in energy production plants in 2020–2022 (GRI 306-3, GRI 306-4, GRI 306-5)

t	2022	2021	2020
Material recovery of non-hazardous waste	4,800	4,400	33,300
Energy recovery of non-hazardous waste	400	1,600	1,600
Final disposal of non-hazardous waste	32,200	25,100	40,400
Material recovery of hazardous waste	700	100	1,200
Energy recovery of hazardous waste	600	600	1,800
Disposal of hazardous waste	300	1,500	9,300
Total	**39,000**	**33,300**	**87,700**

Radioactive waste

In addition to conventional industrial waste, the Loviisa nuclear power plant in Finland also generates radioactive waste, which we treat in accordance with the requirements of Finnish nuclear energy legislation. According to the requirements, 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. The volume of radioactive waste generated is small, but special solutions are needed in its treatment and final disposal. Radioactive waste is categorised into high-, intermediate- and low-level waste according to the activity level.

High-level radioactive waste from spent nuclear fuel is stored in an interim storage at the Loviisa power plant site. In 2022, 23 (2021: 23) tonnes of spent nuclear fuel was removed from the Loviisa power plant reactors.

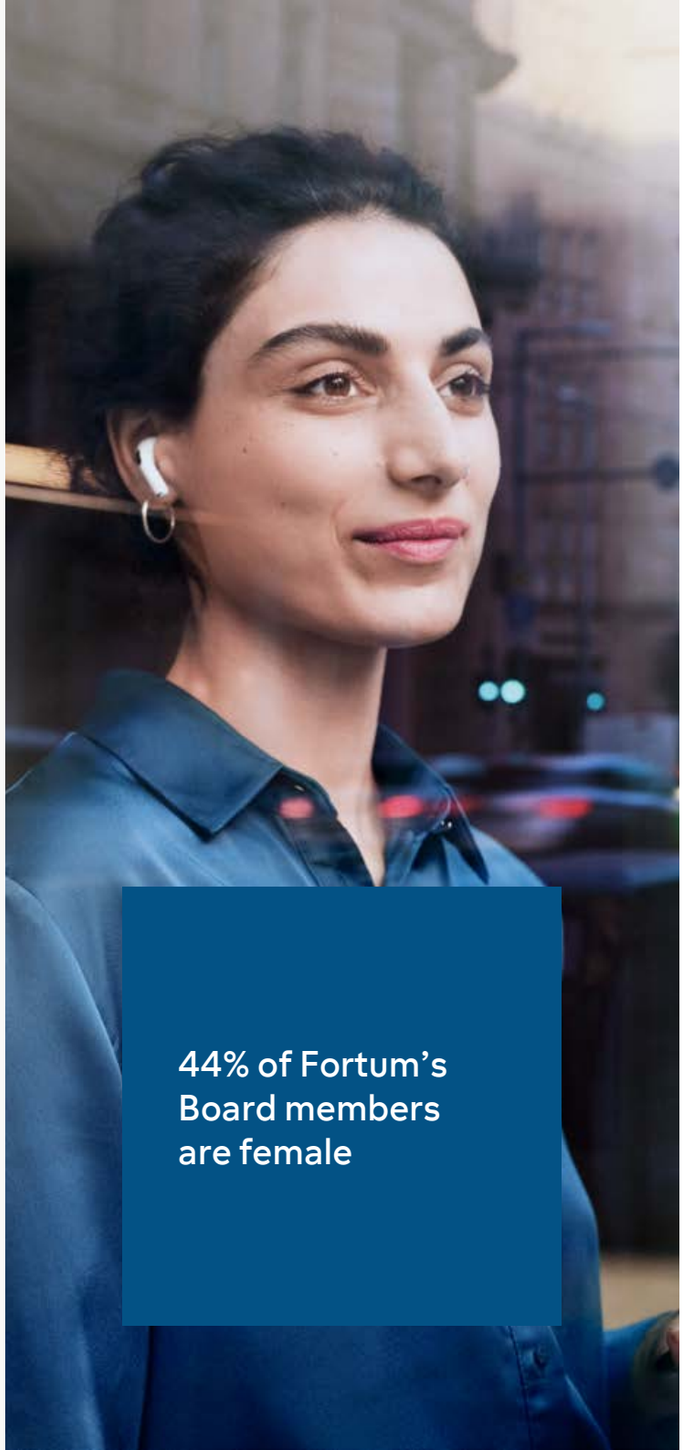
Fortum and Teollisuuden Voima have established Posiva Oy to handle the technical implementation of the final disposal of spent nuclear fuel, and final disposal is scheduled to begin at Olkiluoto in Eurajoki, Finland around the mid-2020s. The final disposal of Loviisa's spent nuclear fuel will begin in the 2040s.

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 2022, 157 (2021: 111) m^3 of intermediate-level radioactive waste from the Loviisa plant went to final disposal.

The Loviisa nuclear power plant's low-level radioactive maintenance waste is disposed of in Loviisa's repository in Finland. In 2022, 31 (2021: 37) m^3 of low-level radioactive waste from the Loviisa plant went to final disposal and 22 m^3 of radioactive maintenance waste was stored to wait for final disposal.

Fortum applied for a licence to use the low- and intermediate-level radioactive waste final disposal facility located in Loviisa's current power plant area until 2090. This licence process is ongoing at the Finland's Ministry of Economic Affairs and Employment (MEAE) and the Finnish Government will decide on it during the spring 2023.

- **Nuclear waste management**
- **Final disposal of spent nuclear fuel**



Personnel and society

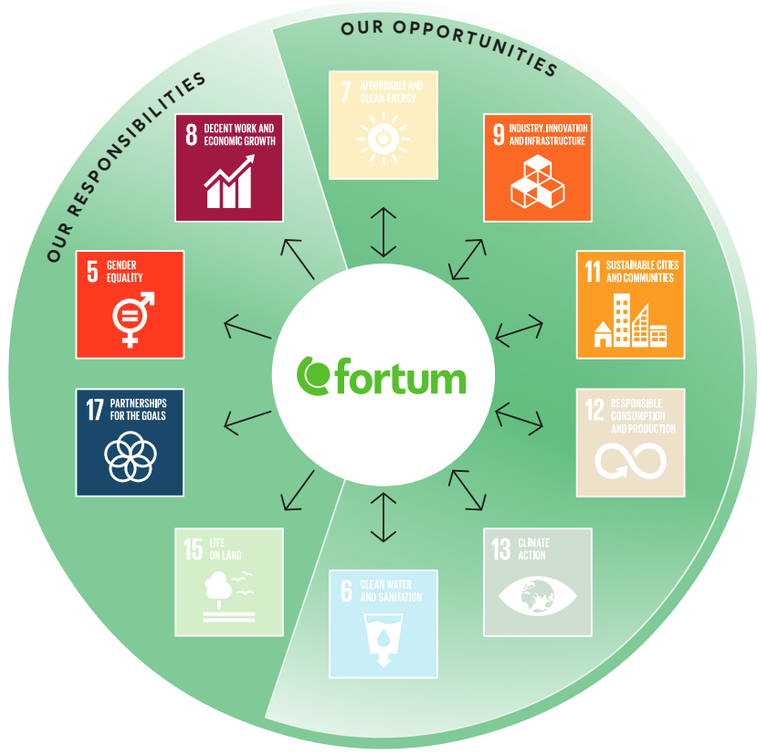
Safety targets for 2022

- Total Recordable Injury Frequency (TRIF), for own personnel and contractors, <1.0 by the end of 2025,
- No severe accidents,
- A severity rate per TRI ≤11, and
- 85% execution rate for both the Safety leadership training and the new Safety eLearning.

New safety targets for 2023

- Total Recordable Injury Frequency (TRIF), for own personnel and contractors, <1.0 by the end of 2030,
- Zero severe or fatal injuries,
- 95% execution rate for the Safety leadership training, and
- 60% execution rate for safety improvement plans.

Contribution to the UN SDGs



Sustainability priorities related to personnel and society

In terms of Fortum's operations, the sustainability priorities related to personnel and society include:

- Corporate citizenship
- Diversity, equity and inclusion
- Fair and attractive employer
- Health, safety and wellbeing
- Human rights and supply chains
- Just transition
- Stakeholder engagement

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

Business ethics and compliance

Key figures for personnel and society

	2022	2021	2020
Average number of employees	7,826	8,045	17,304 [1]
Number of employees, 31 December [2]	7,712	19,140	19,933
Number of employees, 31 December, excluding Uniper	7,712	7,646	8,182
Departure turnover, % of permanent employees	19.1	18.9	7.4
Female employees, %	31.3	31.2	27.0
Females in management, %	31.0	29.0	27.0
Sickness-related absences , %	3.2	2.9	2.9
Total Recordable Injury Frequency (TRIF) [3], own personnel and contractors	2.7	3.1	2.3
Severity rate per TRI [4], own personnel and contractors	12.0	13.1	-
Lost Time Injury Frequency (LTIF) [5], own personnel and contractors	1.6	2.2	1.3
Severe occupational accidents [6], own personnel and contractors	2	2	1
of which fatalities, own personnel	1	0	1
of which fatalities, contractors	0	0	0
Safety-certified [7] operations in power and heat production, % of sales	100	99.3	98.8
Supplier audits, number	6	4	6
Support to society, EUR million	2.3	1.8	2.5

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

2) The figures for 2020 and 2021 include Uniper. For Uniper, the figures do not include board members, managing directors, apprentices, work-study students and interns.

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

4) Severity rate per TRI, number of lost days divided by number of Total Recordable Injuries (TRI).

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) ISO 45001.

Personnel

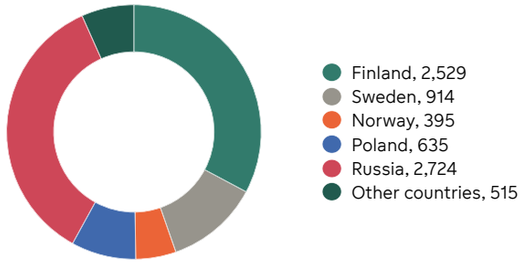
We aspire to be a responsible employer that offers a diverse and motivating work environment and invests in personnel development and wellbeing. Personnel related matters are guided by the People Policy and Leadership Principles.

Our employees

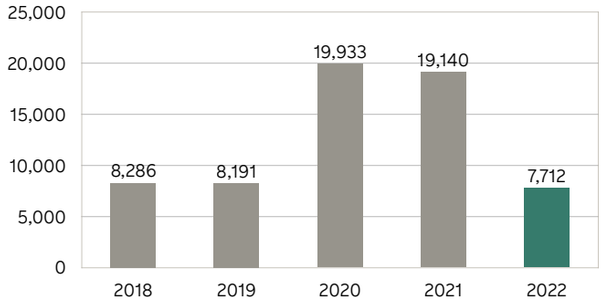
At the end of 2022, 7,712 (2021: 19,140) employees worked at Fortum. Permanent employees accounted for 97% of the personnel. The share of full-time employees was 99%. During the year, 1,174 new permanent employees joined Fortum and 1,427 employment relationships were terminated. Departure turnover in 2021 was 19.1%. The transfers of business outside Fortum, e.g. the divestment of Fortum Oslo Värme and Plugsurfing, are included in the departure turnover figure. Voluntary departure turnover was 12.4%.

Contractors' employees worked at Fortum sites for a total of approximately 871,950 days during the year. The figure is based on the 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 2022



Number of employees, 31 December



Personnel statistics from 2022, by country

	Finland	Sweden	Russia	Poland	Norway	Other countries	Total
Personnel at year-end, by gender	2,529	914	2,724	635	395	515	7,712
Male	1,757	607	2,060	291	211	365	5,291
Female	772	307	664	344	184	150	2,421
Personnel at year-end, by type							
white collar	2,108	856	1,546	578	394	370	5,852
blue collar	419	56	1,178	58	0	142	1,853
Personnel expenses, million euros	234	87	72	21	47	43	504

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

	Finland		Sweden		Russia		Poland		Norway		Other countries		Total	
	M	F	M	F	M	F	M	F	M	F	M	F	M	F
Employment contract	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.
Permanent	1,719	733	599	304	1,992	625	291	341	209	181	358	134	5,168	2,318
Fixed-term	37	38	7	2	68	39	1	3	2	2	7	13	122	97
Employment type	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.
Full-time	1,743	744	593	296	2,060	661	291	339	202	173	361	141	5,250	2,354
Part-time	13	27	13	10	0	3	1	5	9	10	4	6	40	61

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

	Finland		Sweden		Russia		Poland		Norway		Other countries		Total	
New employee hires	**M**	**F**	**M**	**F**	**M**	**F**	**M**	**F**	**M**	**F**	**M**	**F**	**M**	**F**
Age group	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.
≤20	1	0	9	5	2	0	0	1	0	0	0	0	12	6
21–30	64	20	54	29	93	8	14	37	31	15	12	8	268	117
31–40	64	39	43	26	157	20	14	26	11	12	28	15	317	138
41–50	48	30	24	11	53	15	6	14	5	3	15	4	151	77
51–60	16	10	13	4	14	6	3	2	2	2	8	2	56	26
>60	1	1	1	0	0	0	0	0	0	0	3	0	5	1
New recruits, %	**11.3**	**13.6**	**24.0**	**24.7**	**16.0**	**7.8**	**12.7**	**23.5**	**23.4**	**17.7**	**18.4**	**21.6**	**15.7**	**15.7**

	Finland		Sweden		Russia		Poland		Norway		Other countries		Total	
Employees leaving [1)]	**M**	**F**	**M**	**F**	**M**	**F**	**M**	**F**	**M**	**F**	**M**	**F**	**M**	**F**
Age group	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.
≤20	1	0	0	0	1	0	0	0	0	0	0	0	2	0
21–30	19	12	43	20	50	8	7	15	29	15	8	7	156	77
31–40	60	23	59	21	126	26	11	14	60	30	38	27	354	141
41–50	41	23	54	17	65	17	3	3	42	16	22	9	226	85
51–60	15	14	58	19	33	15	3	0	47	11	5	2	161	61
>60	34	22	34	7	25	6	1	3	25	2	4	1	123	41
Departure turnover, %	**9.8**	**12.8**	**41.4**	**27.6**	**15.1**	**11.5**	**8.6**	**10.3**	**97.1**	**40.9**	**21.5**	**34.3**	**19.8**	**17.5**

1) Figures include employees transferred as part of a transfer of business.

	Finland		Sweden		Russia		Poland		Norway		Other countries		Total	
Employees leaving, employee's initiative	**M**	**F**	**M**	**F**	**M**	**F**	**M**	**F**	**M**	**F**	**M**	**F**	**M**	**F**
Age group	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.
≤20	0	0	0	0	1	0	0	0	0	0	0	0	1	0
21–30	15	11	31	11	48	9	7	15	14	12	4	5	119	62
31–40	53	17	27	14	120	26	11	14	17	18	23	20	251	109
41–50	31	20	9	6	60	17	3	2	8	7	16	7	127	59
51–60	9	9	12	5	31	14	2	0	2	0	4	2	60	30
>60	33	20	15	7	23	6	1	3	2	0	3	1	77	37
Voluntary departure turnover, %	**8.2**	**10.5**	**15.7**	**14.1**	**14.2**	**11.4**	**8.2**	**10.0**	**20.6**	**20.4**	**14.0**	**26.1**	**12.3**	**12.8**

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 six weeks of unpaid maternity leave on top of what is stipulated by law and two weeks of paid paternity leave. 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 2022 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 2022, Fortum continued to promote and develop the culture of Diversity, Equity and Inclusion (DEI). Inclusive Leadership trainings were provided for managers to enhance their knowledge and understanding of Diversity, Equity and Inclusion. Fortum also continued to participate in the Diversity Roundtable of Finnish companies and universities.

Employee perceptions of the DEI culture at Fortum were also addressed in the &Frankly survey. The results show that 79% of our employees feel valued and included, and 91% think their managers handle DEI matters appropriately. 90% know how to report harassment or discrimination and trust that Fortum will take appropriate actions. However, 5% of the respondents said they have experienced harassment or discrimination in the last 12 months.

Fortum is committed to zero tolerance of any form of discrimination and harassment. This is clearly expressed in Fortum's Code of Conduct. The Code of Conduct also includes guidelines for employees on how to report possible violations. All compliance concerns are reviewed according to the established internal processes. Fortum's operations in Finland, Sweden and India, for example, also have separate guidelines in place for workplace harassment and discrimination.

There were no harassment or discrimination incidents reported to Fortum's reporting channels in 2022. The average age of Fortum Group employees was 42 years. The share of employees over 50 years old was 27% for the entire Group.

Fortum participates 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 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 2022, females accounted for 31% of total personnel and 31% of Fortum Group's management. Fortum's target is to comply with the principles of Finnish Government's action plan for gender equality 2020–2023 and the Women on Board Directive 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. At the end of 2022, Fortum's Board of Directors comprised nine members, four (44%) of them were women.

Fair and attractive employer

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

Talent acquisition and employer branding are one of Fortum's priorities. Fortum is implementing new HR and recruitment systems and new solutions to harmonise and improve the candidate experience. We also highlight our employees' voices by publishing diverse employee stories related to our culture, purpose and ways of working. We are committed to our diversity, equity and inclusion promise in building diverse teams where everyone feels included and is treated equally.

Fortum continued collaboration with schools, universities and student associations. We offer various traineeships and thesis opportunities for students. In Finland, we recruited around 150 summer trainees for summer 2022. We are LUT University's recruitment partner for 2022–2023. Fortum ranked 18th in the Engineering category on the list of the 100 Most Attractive Employers in Finland.

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 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, 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 24% of total personnel), are included. In 2022, the total number of

Management, by age and gender (GRI 405-1)

Age group	Male	Female
≤20	0	0
21–30	6	2
31–40	118	54
41–50	160	65
51–60	98	55
>60	19	4

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

	Finland		Sweden		Russia		Poland		Norway		Other countries		Total	
	M	F	M	F	M	F	M	F	M	F	M	F	M	F
Age group	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.
≤20	5	0	9	5	3	0	0	1	0	0	2	1	19	7
21–30	250	106	114	75	243	31	36	84	75	42	39	21	757	359
31–40	479	240	154	89	779	207	84	145	72	70	120	63	1,688	814
41–50	494	216	144	73	534	207	64	85	44	41	87	29	1,367	651
51–60	405	169	129	48	395	189	85	24	12	25	84	29	1,110	484
>60	123	40	56	16	106	30	23	5	8	5	33	4	349	100

personnel included in the evaluation was 3,939, of which 1,533 (39%) were female. The base salaries of female employees were, on average, 6% (2021: 7%) lower than the male base salaries. The average number of years of service for female employees was nine and for male employees ten. 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. The average pay gap excluding Russia was 4%.

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 exception to this is India, which has not ratified the International Labour Organisation's (ILO) Convention on the right to freedom of association and collective bargaining. In India, 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 84% of Fortum's employees in our main operating countries. There are no applicable collective bargaining agreements in, e.g., India, Poland and Estonia. In these countries, employment contracts are based on local legislation and on the company's human resources policies.

Fortum European Council

Fortum European Council (FEC) is Fortum's Europe-level cooperation function in which personnel and employer representatives meet. Through the council, employees 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 June 2022, Fortum and Uniper signed the new European Works Council Agreement (EWC) and FEC held the first official plenary meeting with Uniper employee representatives in Sigtuna, Sweden. According to the agreement there was also one full-day virtual meeting for employee representatives. FEC Council members came from Denmark, Estonia, Finland, Germany, the Netherlands, Norway and Poland. The Council's plenary meeting focused on topics such as Fortum's strategy and business outlook and the impact of the ongoing severe turbulence on energy markets. In addition, local-level employee-employer meetings are held several times a year in different countries as needed. Since the divestment of Uniper, the agreement remains effective for Fortum's employees.

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 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.

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 2022, our efforts concentrated on supporting mental wellbeing in the exceptional conditions of the geopolitical situation and the prolonged Covid-19 pandemic. The wellbeing programmes highlighted mental wellbeing, resilience, stress and physical health.

Occupational 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 3.2 in 2022 (2021: 2.9%). 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.

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 sanitisers, face masks, protective gloves, and disinfectant cleaning wipes are provided at Fortum offices and sites, and Covid-19 rapid tests are provided at sites for employees and subcontractors.

Fortum supported Covid-19 vaccination programmes by providing Covid-19 vaccines to our employees for whom a

vaccination was medically appropriate and who wished to receive one. Vaccinations were provided in countries where decisions by local officials made this possible.

Remote working remained at a high level in 2022 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 March, a hybrid work model, meaning a minimum of two days in the office environment, started in countries and locations where the pandemic situation allowed. Fortum 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.

Wellbeing programmes and surveys

Fortum 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 employee wellbeing surveys and other wellbeing KPIs. The focus area in 2022 was on supporting mental wellbeing in the exceptional conditions of the geopolitical situation and the prolonged Covid-19 pandemic. Within this scope, the wellbeing services highlighted mental wellbeing, resilience, stress and physical health. Examples of measures taken to support mental wellbeing include providing the opportunity for personal online meetings with a mental wellbeing professional. Wellbeing coaching sessions for individuals and teams were widely offered. In addition, different events and activities were organised to raise awareness of mental wellbeing and the services available.

Due to the hybrid work model, we published a wellbeing and ergonomics handbook to support hybrid work. Our employees were offered a virtual break exercise programme focused especially on remote working; including wellbeing webinars with over 1,800 participants and the weekly Take a Break sessions. In addition, 1,128 employees participated in individual and team coaching sessions. Remote consultation with an occupational physiotherapist was available for teams and individuals.

The goal of the wellbeing programmes is to improve the quality of life and performance level of the people at Fortum. In May, we organised a wellbeing month with a theme Wellbeing for everyone, aiming to promote an inclusive wellbeing culture for all our employees. We also encouraged physical activity by participating in the Wings for Life charity run and the HeiaHeia challenge.

Fortum conducts the Wellbeing Pulse Survey twice a year. Based on the feedback, despite the exceptional and challenging 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, 25% of respondents feel that they don't have enough energy left after the workday to do personal activities. Also, team-level cooperation has been challenged during the pandemic. 68% of respondents feel that there is a strong team spirit at work. In 2023, we will utilise a new survey tool and continue to pay attention to holistic wellbeing, particularly the mental wellbeing and resilience of our employees.

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.

We offer our personnel a variety of online training modules. Fortum has in place five online trainings that are mandatory for all employees. These trainings are related to the Code of Conduct, safety, corporate security, cyber security and privacy.

The digital learning offering was reinforced, giving employees a wide range of possibilities to build their expertise also when working remotely. Fortum continued developing the portfolio of online training courses, mainly in the area of communication skills, project management, 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.

We actively promote job rotation and short-term assignments as a way to achieve professional growth and to expand our employees' view of the business. Our leadership and coaching programmes, such as Navigator, which is our future leader development programme, target different employee groups.

To develop the future competences needed, Fortum offers talent programmes for employees in all levels of our organisation. We continued to arrange virtual Fortum Talks events, which address strategically important topics relevant for the future success of the company.

In 2022, training costs for Fortum totalled EUR 4.4 million.

Performance and development discussions

We support employee development through performance management. All Fortum 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 and the competencies needed to support 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 with Fortum are within the scope of Fortum's incentive scheme. In addition, for supervisors we perform so-called 360-degree assessments that are based on Open Leadership principles.

Feedback from personnel

We place significant emphasis on an open and trusting corporate culture, and we highly value our employees' feedback. Fortum 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.

The response rate of the global engagement survey carried out in 2022 was the highest ever, 82%. The results reflect that the year has been challenging for the personnel. Compared to the previous year's results, there was a slight decrease in the results in nine out of ten areas. The Total Engagement Index was 67, which is slightly lower than previous year. According to the survey, 80% of employees see a clear link between their work and the objectives of the division or function, and 77% feel empowered to achieve their objectives. 72% of employees are proud to work at Fortum, and 74% consider Fortum to be an innovative company. The area that scored the lowest (52%, which was a slight decrease from the previous year) was collaboration between the divisions and units. We will continue measures to promote and strengthen collaboration across the organisation.

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

Case | **Mental wellbeing in focus**

We had a challenging and uncertain year at Fortum. A focus on wellbeing has been critical in protecting the overall health of our employees. As we were recovering from the pandemic, we recognised that this long period had created short- and long-term stress and a lot of uncertainties for many of us.

In addition to this, Russia's attack on Ukraine brought the stress of war and human suffering close to many of us. The war also further resulted in an energy crisis throughout Europe and a significant liquidity crisis for our company. Our whole operating environment was turned upside down within a matter of months. Our employees faced new situations in their private lives, like increasing consumer prices and uncertainties in their working lives. Stress and uncertainty were prominent on various fronts.

Lotta Autio, Fortum's Leading Occupational Physician, has been busy helping those struggling during the year.

"This year has been really challenging for all of us. We came back from the effects of the pandemic, and then the war hit us with the crisis within the energy sector and our company. In addition, the climate crisis is as urgent as ever. Supporting the mental wellbeing of our employees has been even more critical than before," Lotta says.

Mental wellbeing also means taking care of others

At Fortum, we support our employees' mental wellbeing in a variety of ways. For example, our global wellbeing programme, Energise Your Day, supports employees by offering ideas and tools for self-management, stress management, recovery, nutrition and physical activity. Also wellbeing coaching via Hintsa Performance is one of the services we have had available for some time.

However, the stress caused by the war demanded more action. In 2022, we decided to offer further low-threshold conversational support to cope with anxiety and worry. Support is available in several languages and includes video conversations and counselling via phone, video or in-person sessions.

Healthy mind, healthy body

Altogether around 1,000 employees utilised the different wellbeing coaching services during the year, individually or via team sessions. Focusing on one's wellbeing has been in demand, and employees have found wellbeing coaching helpful. The recommendation rate for the coaching services has been 100%.

In addition, we also had 50 Take-a-break sessions to encourage employees to take a break during the day and 15 webinars regarding various wellbeing-related topics with 1,800 participants.

It is extremely important to us to protect the health of our employees and to promote a healthy and safe work environment and a well-functioning work community. For this to be possible, paying attention to both physical and mental wellbeing is essential. The past year we saw a clear need to focus on mental wellbeing, and we also wanted to avoid the stigma and discrimination caused by mental health issues. 2022 was a tough year, but we will keep up the excellent work and continue to care for each other.

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 and the environment nearby our facilities.

Occupational safety management

Safety is developed systematically in all our operations. 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.

Calculated in terms of sales, a certified ISO 45001 safety management system covered 100% of Fortum Group's power and heat production worldwide at the end of 2022. Internal audits and external audits by independent auditors are regularly conducted at our power plants to improve operations.

Occupational safety targets

Fortum's safety targets for 2022 were:

- Total Recordable Injury Frequency (TRIF), for own personnel and contractors, <1.0 by the end of 2025,
- Zero severe accidents,
- A severity rate per TRI of ≤11, and
- 85% execution rate for both the Safety Leadership Programme for Executives and the new Safety eLearning.

As part of the strategy work, also Fortum's safety targets were updated. Due to the changes in the company structure, the time span to reach the ambitious safety target of TRIF <1 was extended until 2030.

Fortum's new safety targets for 2023 are:

- Total Recordable Injury Frequency (TRIF), for own personnel and contractors, <1.0 by the end of 2030,
- No severe or fatal injuries,
- 95% execution rate for the Management Safety and Security Leadership Programme, and
- 60% execution rate for Safety improvement plans.

Safety performance

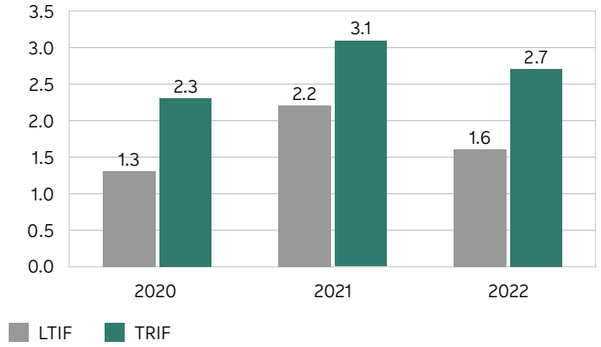
At the end of 2022, Fortum's TRIF for own personnel and contractors was 2.7 (2021: 3.1), a 13% improvement compared to the situation in 2021. LTIF for own personnel and contractors was 1.6 (2021: 2.2), a 30% improvement compared to the situation in 2021. The improvement was mostly due to improved safety performance in Recycling & Waste business area.

Fortum strives for zero severe occupational accidents. In 2022, there were 2 (2021: 2) severe occupational accidents in the operations, one of them resulting in a fatality. A Fortum employee at a customer's power plant in Rwanda fell from height when installing barricading around floor grating that had been removed.

In 2022, the severity rate per Total Recordable Injury (TRI) for own employees and contractors combined was 12.0 (13.1), which did not meet our target.

The execution rate of the Safety Leadership Programme for Executives and the new Safety eLearning was 96.3% and 91.2%, respectively. Both exceeded our targets.

Injury Frequencies LTIF [1] and TRIF [2], own personnel and contractors



1) LTIF = Lost Time Injury Frequency, injuries per million working hours
2) TRIF = Total Recordable Injury Frequency, injuries per million working hours

Fortum applies three internal control points covering its EHS processes.

- The quality of the investigation process of occupational accidents, major environmental incidents and serious near misses.
- The GAP index; measures how well Fortum's EHS minimum requirements are realised at the power plant level. The Gap index focused on high-risk lifting works in 2022.
- The Contractor Safety Improvement index; measures how well Fortum has managed to implement measures targeting improvements in contractor safety.

These are assessed bi-annually and measured on a scale of 1–5, with five indicating the highest maturity level.

In 2022, all three EHS control points were at a very good level 4 (average), the same as in the previous year.

Occupational safety risk assessment and incident investigation

Occupational risk management covers 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 in collaboration 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. Incident investigations also determine whether the risk assessments are correct and the preventive actions sufficient.

Fortum's incidents and the findings of the investigations are reported in the incident management system FRIDA. Learnings are shared with the organisations through digital safety bulletins.

Key safety figures in 2020–2022 (GRI 403-9)

	2022	2021	2020
Total recordable injury frequency (TRIF) [1], own personnel and contractors	2.7	3.1	2.3
Severity rate per TRI [2], own personnel and contractors	12.0	13.1	-
Lost Time Injury Frequency (LTIF) [3], own personnel and contractors	1.6	2.2	1.3
Lost Time Injury Frequency (LTIF) [3], own personnel	0.7	1.3	0.7
Lost Time Injury Frequency (LTIF) [3], contractors	3.2	3.9	2.2
Lost time injuries, own personnel	10	18	20
Lost time injuries, contractors	22	31	43
Severe [4] occupational accidents	2	2	1
of which fatalities, own personnel	1	0	1
of which fatalities, contractors	0	0	0
Major environmental incidents [5]	2	-	-

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

2) Severity rate per TRI, number of lost days divided by number of Total Recordable Injuries (TRI)

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

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

5) Environmental incidents that resulted in significant harm to the environment (ground, water, air) and environmental non-compliances with legal or regulatory requirements

Occupational accidents, accident frequency, and absence days due to occupational accidents in 2022, by country (GRI 403-9)

	Finland	Sweden	Russia	Poland	Other countries	Total
Own personnel						
Occupational accidents causing absence	5	2	0	0	3	10
LTIF [1]	1.2	1.1	0.0	0.0	0.0	0.7
Absence from work due to occupational accidents, days	18	9	0	0	199	226
Contractors						
Occupational accidents causing absence	11	7	0	1	3	22
LTIF [1]	5.6	4.7	0.0	1.0	9.6	3.2
Absence from work due to occupational accidents, days	213	120	0	10	90	433

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

Training and development projects related to occupational safety

Fortum employees are committed to being actively involved in creating a new joint safety culture. For that purpose, in 2022 Fortum launched the Safety Culture Programme, which includes trainings, webinars and workshops for all organisational levels. A new Safety eLearning training for all Fortum employees was launched in the second quarter of 2022. The Safety Leadership Programme for Executives, including workshops for 132 Fortum Executives, was launched in the third quarter of 2022 and will be continued with the Management Safety and Security Leadership Programme in 2023.

The Generation division continued work on the “Beyond Zero” safety programme, which helps to reach and exceed high-level goals in areas including the environment and safety. 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.

City Solutions’ Recycling & Waste business area started a comprehensive safety improvement programme called SafetyCORE, which will continue in 2023. The programme consists of six different workstreams to develop safety leadership and culture, process safety, learning organisation and risk management.

In 2022, we started several initiatives to improve contractor safety management. As a result of a joint project of Procurement and Sustainability teams, the number and quality of supplier post-evaluations increased in Generation and City Solution segments. Post-evaluations are used for supplier selection in tender evaluations.

A project was launched to acquire a new chemical management system. The new tool will be released in May 2023, and all Fortum functions in the Nordic countries will use the same system.

Occupational hygiene

In 2022, occupational hygiene work focused on improving chemical safety. To support the risk assessment of chemicals, new guidelines were prepared. Two new eLearnings were prepared to improve the safe handling of chemicals. The eLearnings were published in early 2023 and implementation will continue in 2023. In 2022, a focus was also on Fortum's Recycling & Waste business area; e.g., 10 site visits and several workplace surveys were carried out in close cooperation with occupational health care.

Process safety

Fortum's top priorities are to ensure the health and safety of its employees and contractors and to maintain business continuity. In 2022, maintenance outages were, in general, also implemented as scheduled with careful planning and special measures to protect the health of own and contractors' employees.

Major process safety incidents are monitored, reported, and investigated regularly in Fortum's operations, and corrective actions are implemented as required.

In 2022, four major process safety incidents occured, which were fires. They caused material damage, but no personal injuries or significant environmental damage.

Dam safety projects

Project	Description	Country	River
Major dam safety projects (>3 M€), started before the end of 2021			
Trängslet	progressing	Sweden	Dalälven river
Forshuvud	progressing but have delayed the finalisation of the project by approximately one year	Sweden	Dalälven river
Dejefors	progressing but is slightly delayed compared with initial plan	Sweden	Klarälven river
Major dam safety projects (>3 M€), started during 2022			
Letten	Embankment dam stability	Sweden	Klarälven river
Sveg	Dam safety erosion repairs	Sweden	Ljusnan river
Untra	Dam safety actions	Sweden	Dalälven river
Åtorp	Dam safety actions	Sweden	Gullspång river
Major dam safety projects (>3 M€), planned to be started during 2023			
Tainionkoski	Dam Safety actions	Finland	Vuoksi river
Ljusnefors	Dam Safety actions	Sweden	Ljusnan river
Major dam safety projects (>3 M€), expected to be started during 2024–2025			
Lanforsen	Dam Safety actions	Sweden	Dalälven river
Gråda	Dam Safety actions	Sweden	Dalälven river
Sveg	Dam Safety actions, arch dam	Sweden	Ljusnan river

Dam safety

Fortum is systematically reducing risks related to dam safety. Long-term programmes are in place to ensure that good dam safety is upheld and improved over time. The programmes cover several aspects of dam safety, such as surveillance of the condition of dams, competence assurance, emergency preparedness, operation, maintenance and investments. The investments cover a vast array of action types to secure the reliability and capacity of the dams, as well as refurbishment actions to extend the useful lifetime of the dams and their subsystems.

In 2022, Fortum focused on operational issues and had no significant operative challenges related to dam safety in 2022.

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 and safety requirements of nuclear and radiation safety, nuclear waste management and nuclear material control.

Our operations are based on a high-level safety culture, quality and continuous improvement. Our own world-class expertise is a prerequisite for safety and competitiveness.

The 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 applied for new operating licences for both units at the Loviisa power plant untill the end of 2050. The application was submitted to Finland's Ministry of Economic Affairs and Employment (MEAE) in March 2022 and the Finnish Government has granted a new operating license in February 2023. The lifetime extension of the Loviisa units ensures safe, stable and reliable energy production until 2050. Fortum also applied for a licence to use the low- and intermediate-level radioactive waste final disposal facility located in Loviisa's current power plant area until 2090. This licence process is ongoing at the MEAE and the Finnish Government will decide on it during the spring of 2023. In accordance with the plans, the operation of the final disposal facility is expected to come to an end no later than during the 2080s. The final disposal of spent nuclear fuel is scheduled to start in Eurajoki in the middle of the 2020s; the repository is the first in the world for spent fuel.

Several plant modifications were implemented at the Loviisa nuclear power plant in 2022 to improve the safety and operation of the plant. The emergency diesel generator automation renewal at Loviisa unit 1 continued in 2022 with the third diesel generator. The first two generators had been renewed in earlier years. 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 Loviisa unit 1 and to ensure the operational safety, reliability and availability of the system. The renewal will free up spare parts for emergency diesel systems at Loviisa unit 2. The renewals will be completed in 2023.

Reviewers from the World Association of Nuclear Operators (WANO) visited the Loviisa power plant monitoring the annual outage, observing an emergency preparedness drill, and operator performance in the simulator. These activities were part of the more extensive peer review that is carried out every four years, next in spring 2023. The nuclear sector's international peer reviews are an important part of improving nuclear safety.

- **Nuclear safety at Loviisa in Finland**
- **Nuclear safety at Oskarshamn in Sweden**

Case | **Involvement is crucial to safety: top-level site safety at Pjelax wind farm**

Fortum is constructing a 380-megawatt wind farm in Ostrobothnia, Finland, in partnership with the energy company Helen Ltd. Construction of the wind farm started in January 2022.

The construction project achieved the site safety reporting target (2,000 reports per million hours worked) just five months after the start of construction. The good results were achieved particularly by investing in raising the safety awareness of workers through employee involvement. The target of the site safety reporting is to encourage all employees to proactively report not only near misses or incidents but also improvement ideas and safety observations, also positive ones.

In December 2022, one year after the construction phase started, the site safety level remains high. The construction work has progressed without any serious incidents.

"We are very pleased that the main contractor, Suvic, has managed to achieve the same safety level as in our Kalax wind park a couple of years ago. The most challenging aspect of this project, as with all construction projects, has been building a safety culture and awareness among all employees, including subcontractors. We have found different ways to do this," says **Juha Tella,** Head of Construction and Project Manager for the project.

Safety culture is important for good site safety

The starting point for developing site safety is the identification of risks and preventive measures, and a strong safety culture helps to maintain it.

To ensure that the most relevant risks and procedures are known on site, eLearning induction training is in place and mandatory for all employees and site visitors. This way, our objectives and requirements are known by all employees, stakeholders and partners.

One of the most important factors in achieving a high level of safety in the Pjelax project has been the focus on a safety culture and everything contributing to it, like the active reporting of observations made on site by employees. All employees have the opportunity to report near misses, other potential incidents, positive safety observations and improvement ideas by name or anonymously to the FRIDA reporting system. Employees are strongly encouraged to make use of this possibility, as there is a clear correlation between the number of reports and the number of accidents and incidents within a project: the more reports that are made, the fewer the occurrence of accidents and incidents.

There are two obvious reasons for this. Firstly, reports provide information on risks that can be prevented and mitigated. Secondly, reporting itself increases safety awareness among employees and thus builds a safety culture within a project.

"We conducted a safety workshop with the main contractor, which was decisive in achieving the safety objectives so far and in building a safety culture within the project. Together we came up with ideas on how to encourage all workers to actively report from the site. The principle was to find a positive and encouraging way. Since then, the progress on the KPIs has been excellent," says **Juhani Kamila,** Head of HSSEQ and Safety Coordinator for the project.

The key areas of contractor management are expectation management, risk management and safety culture on site.

"A continuous dialogue with the contractor is a precondition for safety success. It is not enough to simply communicate our requirements to the contractor; we must ensure that Fortum's and the contractor's expectations and target level meet, are consistent and mutually agreed," Kamila says.

ABOUT THE PROJECT:

Fortum is building the 380-megawatt Pjelax wind farm in Närpes and Kristinestad, Finland. Fortum has a 60% majority and Helen a 40% minority ownership in the project. Fortum and Helen have also signed a long-term electricity sales agreement, according to which Helen is to purchase approximately half of the power generation from the Pjelax wind farm. According to the target schedule, the wind farm will be commissioned by summer 2024. When completed, it will produce around 1.1 TWh of renewable energy annually from 56 wind turbines.

Corporate security

The geopolitical situation is tense. This is particularly evident in the energy sector. Due to this, Fortum has conducted a security threat assessment and has determined that Fortum is prepared for possible security threats. Corporate security processes strive to 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 critical – 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 or 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.

Cyber security

Fortum 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.

Fortum actively engages in collaboration with authorities and other stakeholders to identify and prevent emerging 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 physical security eLearnings is mandatory for all Fortum 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 geopolitical tension, in 2022 we concentrated heavily on ensuring contingency arrangements and continuity management as well as on substitute locations for critical functions.

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

In 2022, 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, authorities, communities and Fortum's headquarters. Additionally, crisis management rehearsals were organised during the year in the relevant businesses, such as in IT and in some business organisations.

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, especially in Finland and Sweden, are based on regulatory provisions. Regarding other areas, Fortum conducts its own risk assessments and independently defines 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 security-related regulations.

Human rights

Fortum follows and respects internationally recognised human rights that are included in key human rights treaties. We recognise that our operations potentially 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.

Our respect for human rights is expressed in Fortum's Code of Conduct, Supplier Code of Conduct and Sustainability Policy, which are approved by Fortum's Board of Directors. 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).

Fortum's approach to human rights due diligence is based on the UN Guiding Principles on Business and Human Rights and follows the six steps outlined in the OECD Guidelines for Multinational Enterprises. Human rights due diligence is an ongoing process where risks and impacts are assessed continuously as part of various processes. Fortum's approach to human rights and the due diligence process is disclosed on ▸ **Fortum's website**.

More information on external initiatives, commitments and guidelines, as well as internal policies and instructions relevant to managing human rights are listed in the section ▸ **Policies and commitments**.

Management of human rights issues and personnel training

Fortum Leadership Team 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.

The online training on Fortum's Code of Conduct covers human rights-related issues. Completing Fortum's Code of Conduct training is mandatory for all employees; it is part of the induction programme for new employees and is continuously available to all employees.

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.

Assessment of human rights impacts and mitigation measures

Fortum includes a human rights risks and impacts assessment in various processes. A human rights 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 2022, 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 2022.

Supplier and counterparty related risks are assessed as part of supplier selection in the supplier qualification process and Know Your Counterparty process, which was renewed in the beginning of 2022. The supply chain risk assessment is described in more detail in the section ▸ **Supply chain**.

Fortum 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, 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.

Identified impacts on human rights and corrective measures

We have identified the actual and potential human rights impacts and right-holder groups that our operations directly or indirectly impact. The identification of our key human rights impacts is based on, e.g., reports and studies by various organisations and authorities, country-specific risk assessments, dialogue with stakeholders and information obtained from supplier audits.

Fortum's main direct human rights impacts are related to, e.g., the health and safety of its employees and contractors working at Fortum's production sites. Our potential direct impacts also include the impacts on local communities around sites. Other potential direct impacts are related to equality and non-discrimination of personnel, the right to freedom of association and collective bargaining of our personnel, as well as the right to privacy of our customers and employees. 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**.

In 2022, a particular concern was the safety and wellbeing of the employees of our subsidiary in Russia. Since Russia's attack on Ukraine, we have continuously monitored and analysed the situation and the conflict to understand the operating context. Fortum is preparing for a divestment of all our operations in Russia and aims to complete the exit from the Russian market in a controlled manner as quickly as possible. The Russian subsidiary was segregated from the rest of Fortum's operations in spring 2022 and operates independently.

Our operations may also have indirect impacts on those working in the supply chain, as well as on members of local communities in supply chains. Our most significant potential indirect human rights impacts are related to excess working hours, compromised occupational health and safety, insufficient salaries, forced labour, discrimination, violations of freedom of association, and child labour.

All forms of child and forced labour are strictly prohibited and in violation of Fortum's Code of Conduct and Supplier Code of Conduct. We have not identified risks related to the use of child or forced labour in our own operations. In 2022, Fortum continued to pay special attention to assessing and auditing its suppliers in the solar sector, as a result of the alleged forced labour risk in polysilicate production. Fortum also continued to sponsor and participate in the development of the ▸ **Solar Stewardship Initiative**, aiming to improve the transparency and sustainability of supply chains in the industry.

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 Code of Conduct and Supplier Code of Conduct and are accessible on the company's internal and external websites. In 2022, there were no grievances related to human rights filed through Fortum's formal grievance channels, nor were there any grievances carried over from the previous year.

Fortum had an active dialogue with non-governmental organisations (NGOs) on topics such as the coal phase-out and Fortum's presence in Russia. Stakeholder dialogue is discussed in more detail in the section ▸ **Stakeholders**. Fortum also responded directly to specific questions raised by the organisations regarding enhanced due diligence taken since Russia's attack on Ukraine.

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 combatting climate change and protecting biodiversity.

In March 2023, Fortum joined the ▸ **Energy for a Just Transition** collaboration facilitated by BSR in partnership with The B Team which aims to bring together committed energy, utilities, and related companies and critical stakeholders to help the energy industry to better plan for and implement a just, fair, and inclusive transition.

Just transition in the supply chain is addressed also 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 sections ▸ **Energy** and ▸ **Customers**.

Modern Slavery Statement

Fortum's UK subsidiaries annually publish a Modern Slavery Statement, as required by the Modern Slavery Act. Fortum's statement is available on the company's ▸ **website**. The statement sets out the steps that the company has taken to ensure that slavery and human trafficking are not taking place in its supply chains or in any part of its own business.

Stakeholders

Our way of operating responsibly includes an 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. Through the payment of taxes, employee wages and dividends, and through investments and the procurement of goods and services from suppliers, we distribute added value to our various stakeholders.

Stakeholder collaboration

Collaboration with different stakeholder groups helps Fortum to assess and meet the expectations 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 participate in providing relevant information to our stakeholders through different 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 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.

Fortum 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 stakeholders. Fortum'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 annually conducts surveys regarding stakeholders' expectations towards us and opinions about us. These surveys help Fortum to assess and respond to stakeholder groups' expectations and to 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 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 autumn in most countries where Fortum has operations. The survey results for customer satisfaction are presented in the section ▸ **Customers**.

Stakeholders' most important expectations towards Fortum and our actions in response in 2022

	Stakeholder expectations	Our actions in 2022
 **Leaders and shareholders**	• In 2022, Russia's attack on Ukraine marked the beginning of shock-like effects of the war and a full-blown energy crisis in Europe • Stabilise operations after drastically changed operating environment	• Fortum announced to pursue a controlled exit from Russia. The divestment process is still ongoing, but any major divestment in the Russian energy sector requires approval by the Russian Government Commission and the President. • Fortum's hedged power volumes on the Nasdaq exchange were affected through the unprecedentedly rapidly increasing and historically high power future prices that led to unforeseen margining requirements. We agreed with the Finnish State on a bridge financing facility of EUR 2.35 billion to be able to manage our liquidity in case of further power price hikes during the winter period. As a condition for the loan, Fortum's EGM resolved on a directed share issue to the Finnish State-owned holding company, Solidium, without payment. • Fortum agreed to sell our ownership in Uniper to the German State. The divestment of Uniper was completed at the end of 2022. • Fortum worked hard to realign the company and updated our strategy to the new realities. The new strategy includes new financial targets and dividend policy and more ambitious environmental targets.
 **Customers**	• High price value of products and services • Understanding customer needs • Offering useful additional services • Personnel expertise • Reliability, as indicated through open feedback from customers	• The Fortum Duo electricity contract encourages smart consumption, as the consumption profile impact rewards the consumer for timing their consumption to more affordable hours. Fortum Duo is available for consumer customers in Finland and Sweden. • Fortum's new Smart Charging value-adding service enables customers to charge their electric vehicle during the most affordable hours – fully automatically. • The My Fortum app for consumers and the Enterprise Online service for businesses enables customers to see their consumption, follow the market prices and thus also better plan their electricity consumption. The number of monthly users of these digital services grew significantly during 2022. We continued to develop the services and introduced new features, like the My Fortum widget and the possibility to add My Fortum to Apple Watch.
 **Personnel**	• Occupational safety and work wellbeing • Equal treatment and open interaction • Securing retention and incentivising compensation • Opportunities for professional development	• Fortum launched the Safety Culture Programme, which includes trainings, webinars and workshops for all organisational levels. • The Employee Share Savings programme forShares continued with quarterly savings periods. • Fortum 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. • Fortum continued to promote and develop the culture of Diversity, Equity and Inclusion (DEI). Inclusive Leadership trainings were provided for managers to enhance their knowledge and understanding of Diversity, Equity and Inclusion. Fortum also continued to participate in the Diversity Roundtable of Finnish companies and universities.
 **Future talent**	• Attractive employer brand • Interesting career opportunities and diverse job responsibilities • Company values and operating culture • Business ethics and responsibility	• Talent Acquisition and Employer Branding as one of the People Function (HR) priorities. We are implementing a new HR and recruitment system and new solutions to harmonise and improve the candidate experience. • Highlighting our employees' own voices by publishing diverse employee stories related to our culture, purpose and ways of working. • Continued collaboration with schools, universities and student associations. Offering various traineeships and thesis opportunities for students. In Finland, we recruited around 150 summer trainees for summer 2022. We are LUT University's recruitment partner for 2022–2023. • Continuous focus on Diversity, Equity and Inclusion. Participants of Navigator, our internal talent programme, are working on several projects around DEI, including a project on how we can attract even more diverse talent to our employee community. In Sweden, we are a member of the Female Leader Engineer Programme, a development programme for female engineering students at the end of their studies.
 **Service and goods suppliers**	• 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	• Fortum launched the renewed Know Your Counterparty (KYC) process to assess compliance risks, including legal, reputational, ethical, sustainability and security risks, related to suppliers and other counterparties that Fortum has a contractual relationship with. • Fortum and Microsoft announced a collaboration project, whereby Fortum will capture the excess heat generated by a new data centre region to be built by Microsoft in the Helsinki metropolitan area in Finland. The data centres will use 100% emission-free electricity, and Fortum will transfer the clean heat from the server cooling process to homes, services and business premises that are connected to its district heating system. The waste heat recycling concept from the data centre region will be the largest of its kind in the world.

	Stakeholder expectations	Our actions in 2022
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 2022, we actively participated in the debates on resolving the EU energy crisis, the Fit for 55 package, the EU sustainable finance taxonomy and corporate sustainability. We also prepared the ground for a broader power market design and initiated a political debate on hydro- and nuclear power and the financial power market regulation (EMIR). • Transparency is an inbuilt principle in all of Fortum's operations. Fortum's Business Ethics Guidelines for Lobbying, published in December 2022, outline principles relating to our lobbying practices and external stakeholder relationship management. Fortum's update to the 2021 Climate Lobbying Review is a continuation of our efforts to increase transparency around our advocacy related to climate change. • Fortum is 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. • Our focus in 2022 was on issues management, providing media with timely and accurate information on events as they unfolded. • At the beginning of the year, media criticism towards Fortum was high in Finland due to Fortum's continued operations in Russia. • Finnish media reported widely and critically on the Fortum-Uniper divestment story; the main focus of the criticism was on the perceived cost to Finnish taxpayers from the divestment. • Positive media stories in 2022 were generated by the Fortum-Microsoft data centre heat capture announcement, the Loviisa nuclear power plant operating licence extension application and the launch of the new nuclear feasibility study in Finland and Sweden.
Energy sector organisations	• Advocating on behalf of the sector's shared interests • Dialogue and expertise	• Fortum actively participates in organisational activities of our sector: in 2022, we were represented in several dozen organisations at the EU level and in our operating countries. • In addition to sector organisations, Fortum 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. • Fortum is a member of Bettercoal and promotes the continuous improvement of sustainability performance in coal supply chains in cooperation with other European energy companies. • Fortum is a member of the European solar industry association SolarPower Europe. In 2022, we continued to sponsor and participate in the development of the Solar Stewardship Initiative, 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 • Aligned with the targets of the EU Climate Pact and the Paris Agreement • Reliable and open reporting	• Fortum had dialogue with NGOs on coal phase-out, human rights issues along the coal supply chain and migrating fish in connection with hydropower. • In two stakeholder discussions with NGOs, Fortum discussed the impacts of Russia's attack on Ukraine, Fortum's presence in Russia and Russian fossil fuel imports. In late 2022, Fortum discussed its future direction with a group of Finnish NGOs. • NGO criticism of Fortum particularly targeted Uniper's gas imports from Russia and migratory fish issues. • Fortum's measures to mitigate the negative impact of its operations on biodiversity are explained in more detail in the Biodiversity manual and the Biodiversity action plan. • Fortum implemented and continued working on voluntary measures enhancing biodiversity. • Fortum carried out a project to create a science-based biodiversity strategy.
Local communities	• Process safety • Developing employment, infrastructure and recreational use • Reducing emissions, noise and other detriments	• Emergency preparedness exercises were held at the Loviisa nuclear power plant and crisis management rehearsals in the relevant businesses. • Due to the Covid-19 pandemic, Fortum concentrated heavily on ensuring remote connections and operations as well as on substitute locations for critical functions. • Fortum collaborates with local communities in our operating countries through our ▸ **Corporate Social Responsibility (CSR) programme**.

Unprecedented media interest

Media interest in Fortum was unprecedented in 2022. The catalyst was Russia's brutal attack on Ukraine and the ensuing events that affected Fortum in dramatic ways. The key topics of media interest were Fortum's Russia exit, the events leading up to Fortum's eventual divestment of Uniper and the high price of electricity and electricity contracts. In Finland, the amount of coverage generated exceeded 17,000 articles, compared with just over 3,400 in 2021. The tone of coverage was barely neutral to positive – over 40% of the coverage in Finland was negative in tone. In Sweden, we also reached new heights in the amount of coverage, but the tone was overwhelmingly neutral to positive. Germany saw an unprecedented number of stories mentioning Fortum, due to the extensive coverage around Uniper. International media, such as Reuters, Bloomberg and Financial Times, also reported on the unfolding Fortum-Uniper story.

NGOs emphasised social responsibility and had positive expectations towards Fortum's future

The dialogue with NGOs took a new direction after Russia's attack on Ukraine in February 2022. NGOs raised their concerns about the social impact of the war on Ukraine and the ethical unacceptance of continuing business operations in Russia as well as buying Russian energy, especially fossil fuels.

Fortum and Uniper met jointly with German, Finnish and Ukrainian NGOs to discuss the extremely difficult situation and the impacts of the war.

In December 2022, Fortum met with Finnish NGOs to discuss Fortum's future direction after the exit from Russia and the Uniper divestment.

Working with investors

In 2022, the energy sector operating environment changed drastically on account of Russia's brutal attack on Ukraine and the effects of the consequent energy crisis in Europe. Fortum's dialogue with investors was very active during the year; however, due to the circumstances related to the geopolitical tensions, investors had less focus on topics that had previously been very central, such as climate issues and operational items. The capital markets concentrated on the effects of the Russian energy supply disruptions – especially gas, the impacts of the sanctions set by the EU and the mitigation actions, such as the long-term solution and rescue package for Uniper. Following the completion of the Uniper divestment, Fortum gained a lot of new investor attention due to the complete turnaround as one of Europe's cleanest energy generators. Also, the company's announcement to pursue a controlled exit from Russia was positively noted by the capital markets, as it reduces both geopolitical risk and fossil exposure. Investors have also noted Fortum's actions to shift its fuel supply, for example in procurement of nuclear and fossil fuels, outside Russia. In general, the Russia-Ukraine war is seen as accelerating the transition to clean power with a faster build out of renewables, even though CO_2 emissions are expected to increase in the short term. Investors see the urgency to accelerate the transition to CO_2-free and clean energy, and they want to understand Fortum's contribution and participation in this, in investment plans in renewables and in the framework of REPowerEU.

During the year, Fortum met approximately 680 times with investors from 195 various firms – either individually, in group meetings or at investor conferences – and maintained very frequent contact with equity and credit research analysts at investment banks and brokerage firms. The majority of the investor activities were held virtually, but towards the end of the year there were more physical meetings.

Considering the changed operating environment, uncertainties and the energy crisis in Europe, Fortum conducted a thorough strategy review with the main focus on sustainable, clean power generation. In this context, Fortum's CO_2-free generation assets are now needed more than ever. Fortum's new ambitious environmental targets were launched at the beginning of March 2023. The environmental targets are of significant importance for the equity and capital markets. Fortum is engaged in an active dialogue with a broad range of different investors and investor coalitions. These dialogues on climate-related topics are valuable for Fortum, and the company considers investor feedback in its continuous business development and strategic decarbonisation agenda to reflect also the requirements of the capital markets. Fortum appreciates investor support in driving the energy transition forward.

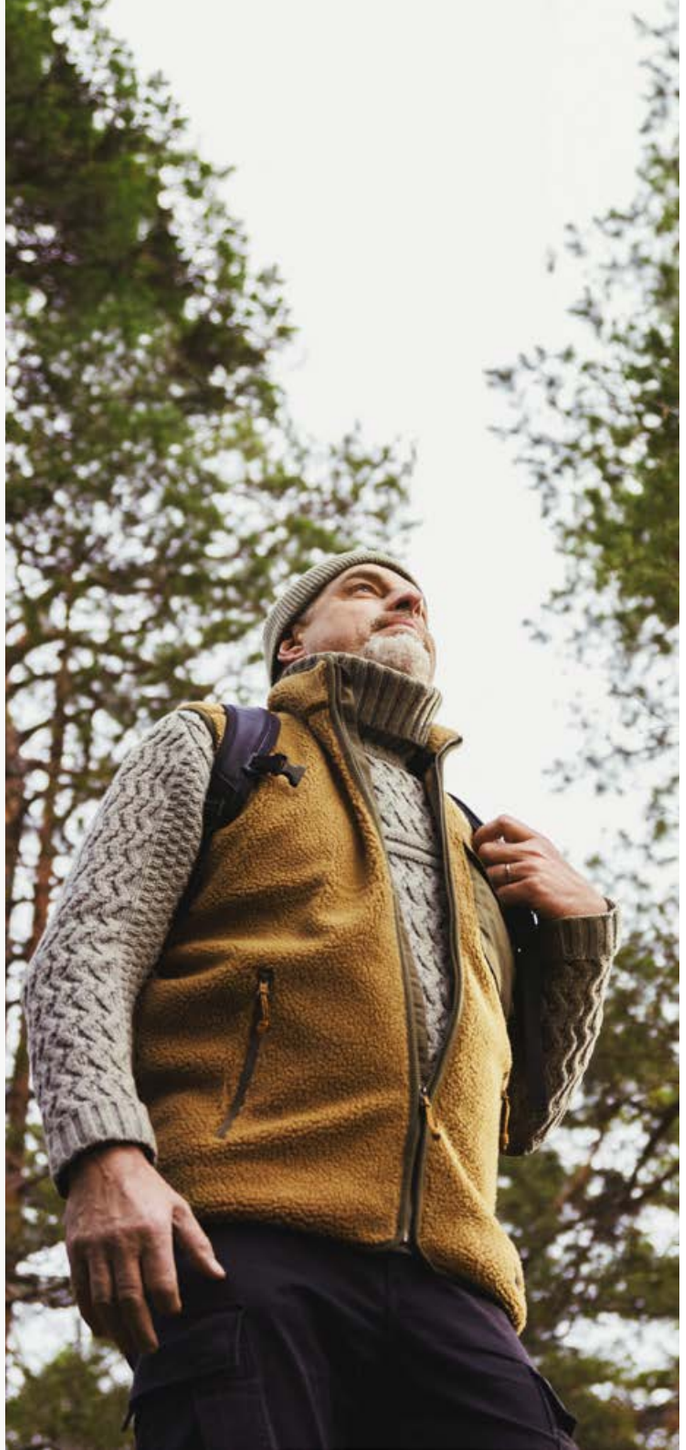
Transparent and ethical lobbying

In 2022, Fortum published Business Ethics Guidelines for Lobbying. The purpose of the guidelines is to outline principles relating to Fortum's lobbying practices and external stakeholder relationship management covering all functions and business areas. Transparency is an inbuilt principle in all Fortum's operations. The guidelines apply to lobbying and external stakeholder management in all geographies where Fortum is present and complement the respective local rules and regulations. The guidelines are in line with Fortum's values, and they complement the Group Code of Conduct. Fortum aims to be a forerunner in transparent lobbying and stakeholder management. With the new guidelines, external stakeholder groups can see our commitment to open and transparent lobbying. Fortum is registered in the EU Transparency Register, ID: 03501997362-71.

In 2022, Fortum also published an update to its **Climate Lobbying Review**, originally published in 2021. 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's climate lobbying is discussed more in the section **Climate engagement lobbying**.

Fortum's **Business Ethics Guidelines for Lobbying** are:

1. Fortum complies with all applicable international, national and local laws, regulations and conventions in the countries where we do business.
2. The goal of Fortum's lobbying is to ensure a favourable operational environment for Fortum's business and to support strategy development and implementation while contributing positively to Fortum's reputation and brand.
3. Fortum actively engages with a variety of stakeholder groups in society. We promote open, transparent and two-way dialogue with different stakeholders.
4. We are a constructive and collaborative partner in developing local and international regulatory environments. We offer our expertise in the preparation of political and legislative decision making. Our lobbying messages are always based on facts.



5. Our positions are based on Fortum's longer term strategic targets and business interests while taking into account also broader societal objectives and implications. We communicate about our lobbying objectives proactively and transparently.
6. Fortum represents itself in stakeholder relations. While we occasionally utilise external advisors in our advocacy work, third parties do not represent Fortum.
7. Fortum cooperates with and participates in different organisations, coalitions and networks. Also in these situations, we always act in accordance with competition laws, Fortum's Code of Conduct and Business Ethics Guidelines for Lobbying.
8. When representing Fortum in any situation, we represent the views and interests of the company and not our personal opinions or interests. We ensure that Fortum's interests are always a priority.
9. With regard to hospitality, we always act in accordance with Fortum's Code of Conduct and local laws and regulations. We do not accept or offer gifts that go beyond what is considered reasonable in the ordinary conduct of business or that may influence the decisions of any party. We do not provide financial support for party-political purposes.
10. Fortum promotes transparency in lobbying and stakeholder management. We support regulation that advances transparency and ensure that our practices are aligned with the latest requirements. Fortum enrols in transparency registers in all markets where it operates if such register is available.

Reputation

The results of Fortum's annual reputation study One Fortum Survey conducted in 2022 show that Fortum's reputation declined among all our main stakeholder groups, compared to the 2021 results. The loss in reputation was mainly driven by weakened views among Finnish stakeholders. Fortum's reputation was strongest among our own employees, with a reputation index score of 75 (2021: 80) on a scale of 0–100. Our reputation among decision makers weakened to a score of 66 (2021: 76). Among capital market representatives, our reputation was rated at 65 (2021: 74). Fortum's reputation among media representatives decreased somewhat to 64 (2021: 69). Among NGOs, the result declined to 54 (2021: 68). We continued to have the weakest reputation among the general public, with a score of 52 (2021: 56).

The stakeholders collectively feel that Fortum's strength in terms of reputation is connected to its operations – competent employees 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 somewhat worried about our ambition and ability to take biodiversity into account. They also feel that Fortum could offer more support to the local communities in the places we operate. As a new feature in the survey, we also inquired about the expectations towards Fortum going forward. Two main themes emerged: the first was Fortum's contribution as a producer of energy, including reliability of supply, carbon neutral production and technical expertise to help solve the energy crisis; the second was governance and the need for a clear strategy and vision on how to contribute and be a part of the solution to the energy crisis.

The target for Fortum's reputation in 2022 was ≥72 in the One Fortum Survey, measured as the average rating by all stakeholders included in the survey. The target was not reached; the average reputation index score was 63 (2021: 70.5).

The markets included in the 2022 survey were adjusted to correspond with Fortum's current operations. The Reputation Index for 2021 would have been 68, if the score were recalculated to include only the markets in the 2022 survey.

The importance of reputation is also highlighted in Fortum's long-term Incentive (LTI) programme, as Fortum's reputation index development among key stakeholders is part of the ESG target in the 2023–2025 LTI plan.

Brand

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

We also monitor the development of Fortum's brand value and strength through a yearly brand study performed by Brand Finance, an independent business valuation consultancy.

Economic impacts

Fortum is a European energy company with activities mainly in the Nordic countries, Russia and Poland. 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, procurement 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 51.26% 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.

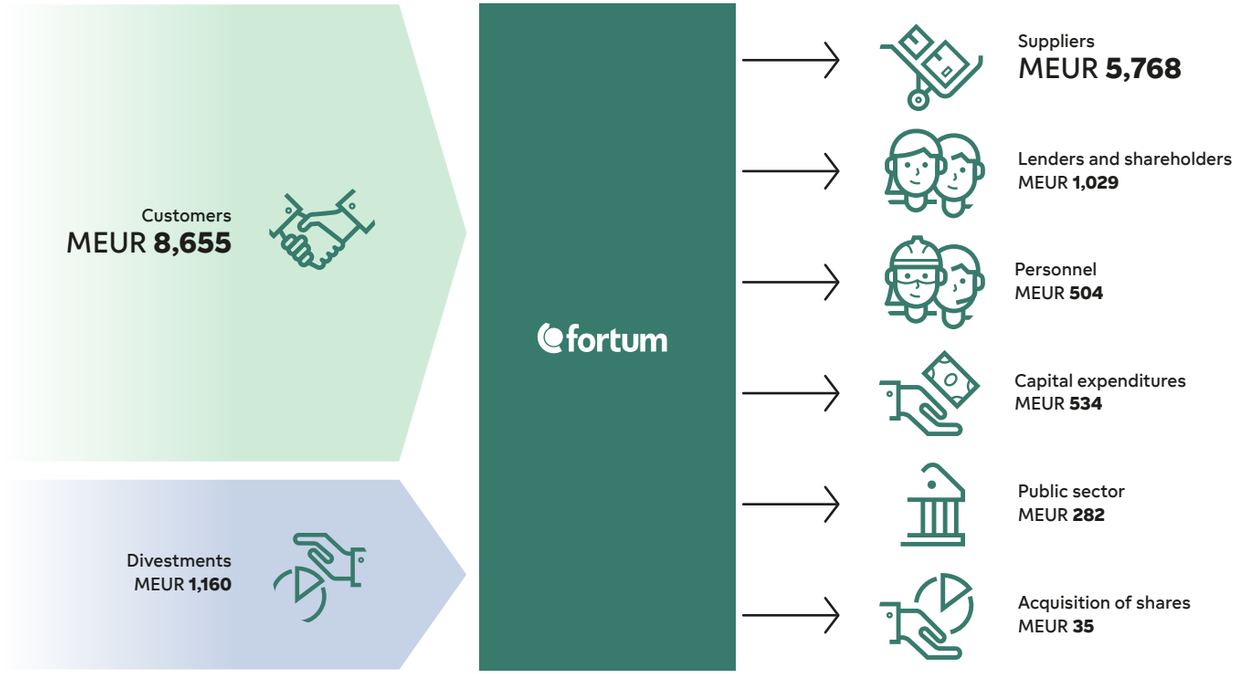
The wages and taxes paid have a positive impact on local communities.

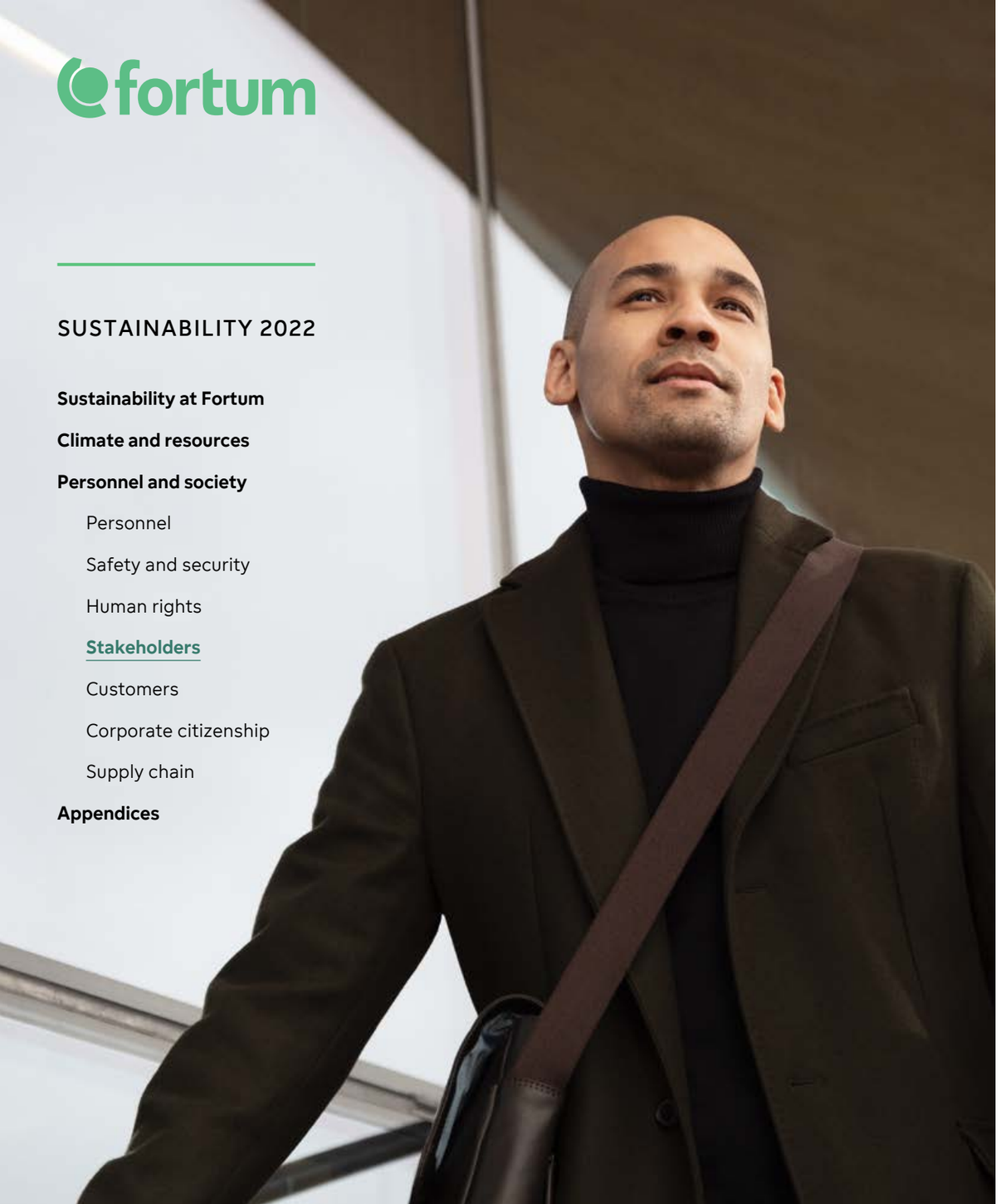
In 2022, the difference between added value generated and distributed to stakeholders was EUR 2,232 (2021: 3,928) million for the development of own operations.

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 2022**

Distribution of added value





We have included investments in our own assessment of economic impacts, as their annual volume and impact on society is significant. In 2022, we invested EUR 266 (2021: 227) million in CO_2-free energy production. Capital expenditure by country and by production type is presented in the Financials 2022, in the section Key figures 2013–2022, 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.

Support from the public sector

In 2022, we received financial support from the public sector in the form of investments, R&D and other significant grants totalling EUR 8.4 million. The figure excludes free emission allowances and electricity certificates as well as electricity and heat price-related subsidies.

Monetary flows by stakeholder group in 2020–2022 (GRI 201-1)

EUR million		2022	2021 [1]	2020 [2]
Generation of added value				
Income from customers	Income from customers on the basis of products and services sold and financial income	8,655	5,978	52,878
Divestments	Income from divestment of shares, business activities or plants	1,160	3,818	1,260
Purchases from suppliers	Payments to suppliers of raw materials, goods and services	-5,768	-3,805	-48,699
Fortum produced added value		4,047	5,991	5,439
Distribution of added value				
Compensation to employees	Wages, salaries and remunerations, and other indirect employee costs	-504	-496	-1,195
Compensation to lenders and shareholders	Dividends paid to investors, interest, realised foreign exchange gains and losses, and other financial expenses	-1,029	-1,193	-1,081
Public sector	Income and production taxes paid, support for society and donations	-282	-373	-484
Distributed to stakeholders, total		-1,815	-2,063	-2,760
Surplus/deficit cash		**2,232**	**3,928**	**2,679**
Capital expenditures		-534	-470	-1,101
Acquisition of shares		-35	-282	-1,801
Surplus/deficit including investments		**1,663**	**3,177**	**-224**

1) Comparative information for 2021 was restated following the classification of Uniper as discontinued operations in 2022. For additional information, see Financials 2022.

2) Includes Uniper as of Q2/2020

Case | **Exceptional year in the eye of a media storm**

Fortum experienced unprecedented media interest in 2022, especially in Finland.

Russia's war against Ukraine and the resulting energy crisis turned Fortum's operating environment upside down in a matter of months. As unprecedented events unfolded, media interest in Fortum skyrocketed to completely new levels. Especially in Finland, Fortum was under extensive media scrutiny, resulting in wide negative coverage on multiple topics.

Turning point in Fortum's history

Russia's attack on Ukraine had dramatic implications both for Fortum's business and its societal standing. Fortum's presence in Russia and Uniper's dependency on Russian gas resulted in critical media coverage and strong criticism from some NGOs. Even though Fortum condemned the war already at the beginning of March and announced that it had stopped all new investment projects in Russia, this initially was not considered adequate action. In May, Fortum stated that the company is pursuing a controlled exit from Russia with the divestment of the operations as the preferred path. However, while working intensively on the exit, the completion is not fully under Fortum's control, as any major transaction in Russia's energy sector is subject to approvals by both the Russian Government Commission and the Russian President.

However, the largest media coverage in Fortum's history had yet to emerge. In mid-June, the energy crisis escalated when Russia decided to cut pipeline gas exports to Germany and most of Europe, causing massive losses to gas midstream companies. Uniper, as Germany's largest importer of Russian gas, was hit particularly severely.

Media interest skyrocketed both in Finland and in Germany as high-ranking government officials and politicians became involved in the negotiations to save Uniper. On July 22, a stabilisation package for Uniper was announced. This resulted in record-setting media coverage in July and just two months later, in September, the records were broken again. On 21 September, Fortum, the German State and Uniper signed an agreement on a long-term solution that allowed the German State to take full control of Uniper. Fortum's decision to divest Uniper resulted in an all-time daily peak of 562 pieces of coverage in one day, in Finland and Sweden.

Media narrative varies between countries

Even though media coverage increased in most of Fortum's operating countries, the narrative created by media varied greatly. In Finland, the media discussion was highly societal and political. The implications of the stabilisation package and Uniper divestment for Fortum, Finland and Finnish taxpayers were considered widely in multiple articles and from various angles. After it became clear that the crisis would result in financial losses for Fortum, the media started a hunt for culprits of the failed investment.

At the same time, German media coverage of the Uniper stabilisation was largely focused on Uniper, Germany's security of supply and the German Government. Germans questioned the willingness of Fortum and the Finnish State to help Uniper, but overall Fortum largely remained out of the spotlight.

The Uniper divestment was visible in Swedish media as well but to a much lesser extent. The media focused on the September parliamentary elections. However, as the new government launched new energy initiatives, the energy discussion gained increasing coverage in Swedish media towards the end of the year, with Fortum well-placed in the discussions. Media interest in Fortum increased and the tone of the coverage was overwhelmingly neutral to positive.

Highlights and the way forward

As the year drew to an end, media focus turned largely to the high energy prices consumers were facing all around Europe. Hence, despite the storm passing, media activity remained high, as Fortum's experts were a valuable source for explanations about the energy market and price developments.

Despite the dramatic events, politics and negative press, Fortum was also present in media in multiple positive or neutral stories. Among the highlights were the Fortum-Microsoft data centre heat capture announcement, the Loviisa nuclear power plant operating licence extension application and the new nuclear feasibility study launch in Finland and Sweden.

MEDIA WORK IN NUMBERS

Over 2,900 pieces of media coverage in July and over 4,200 in September, 2022, in Finnish media.

Number of stories about Fortum in Finnish media: over 17,100 articles in 2022, compared to just over 3,400 in 2021.

By the end of November, 520 media enquiries had been received by the News Desk in Espoo.

Between 24 February and the end of October, a total 192 daily and weekly media and social media analysis reports for the Group Crisis Team were produced by a team of 27 communicators across the organisation, from Group, Business and Country Communications units.

Customers

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

Product responsibility

Fortum is the largest electricity retailer in the Nordic countries and has generation of district heating and cooling in Finland and in Poland. As part of our business as an energy merchant, we purchase energy commodities and sell them to end-users and resellers.

Additionally, Fortum provides industrial and infrastructure customers with decarbonisation and environmental solutions, such as grid stability, waste-to-energy, and low-carbon industrial solutions.

CO_2-free and guarantee-of-origin-labelled electricity

Fortum is one of the Nordic countries' leading sellers of CO_2-free and guarantee-of-origin-labelled electricity. We sell CO_2-free electricity to our customers in the Nordic countries and in Poland. 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 the pan-European EKOenergy 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. 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**.

Exceptional market situation and record-high power prices in 2022

In 2022, gas and power prices across Europe reached all-time highs. In the exceptional market situation, Fortum continued to help its customers by expanding its product portfolio range, offering tips on saving electricity, encouraging smart consumption and moving consumption away from peak-hours and thereby supporting the energy system as a whole, supporting its customers more actively in managing their invoices, and offering more flexible payment plans. Fortum Duo, an electricity contract available to consumer customers in Finland and Sweden, encourages smart consumption, as the consumption profile impact rewards the consumer for timing their consumption to more affordable hours. Fortum's new Smart Charging value adding service enables customers to automatically charge their electric vehicle during the most affordable hours. The service is available to consumer customers in Finland, Sweden and Norway, and is part of the My Fortum app, which optimises and controls the charging and makes sure the car is fully charged by the time of the next ride. The My Fortum app for consumers and the Enterprise Online service for businesses also enable our customers to see their consumption, follow the market prices and better plan their electricity consumption.

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 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 gave its decision at the beginning of 2022 in line with the Market Court's decision.

In 2022, Fortum received a decision from the Finnish Consumer Authority regarding environmental claims in marketing. Fortum has implemented the decision and is committed to conducting environmental marketing in a way that is not misleading and to only present factual claims.

The Finnish Energy Authority informed Fortum in 2022 that it had launched an inquiry regarding supply obligation products. The inquiry is related to a supervisory matter; the pricing and publicity of Fortum's and 15 other electricity retail companies' supply obligation products are being looked into by the Authority. Fortum has responded to requests for information from the Authority. In addition, the Finnish Non-Discrimination Ombudsman enquired in 2022 into equal treatment of consumers in telemarketing and in digital services. Fortum has responded to requests for information from the authority.

The Swedish Consumer Agency inquired in 2021 about the information given to customers on fixed-term contracts. 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. Fortum further challenged, at the end of 2021, the legal basis for the decision in the Oslo District Court but was denied. Fortum has complied with the decision of the authority.

Customer data protection

Fortum 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. Training on privacy and data protection is mandatory for all Fortum employees.

In Finland, Fortum notified the Data Protection Authority about two personal data breaches regarding customers' data in 2022. The authority has not contacted Fortum with any further questions.

In Norway, the Data Protection Authority inquired about the process around recording sales calls with customers. Fortum has given its written reply to the inquiry.

In Poland, Fortum notified the Data Protection Authority about a personal data breach in 2020. The authority made several inquiries throughout 2020 and 2021 about this breach, and Fortum provided the authority with all the necessary information. In early 2022, Fortum was imposed a fine of PLN 4.9 million (EUR 1.08 million). The data processor related to the case was also fined. Fortum appealed the decision on the fine to the Administrative Court in Warsaw, which dismissed the Authority's decision in its entirety at the end of 2022. The Authority has since appealed the decision to the Supreme Administrative Court.

Customer satisfaction

For Fortum, customer satisfaction is a top priority in implementing the company's strategy and in growing the business.

Fortum measures customer satisfaction as part of the extensive One Fortum Survey. The customer satisfaction index (CSI) varied by business area between 60 and 83 points (2021: 58–83), on a scale of 0–100. Overall, Fortum's customer satisfaction is at a very good level among business-to-business customers. The customer satisfaction levels remained excellent for Nuclear Services, with a CSI of 83 (2021: 83). The CSI for the eNext business unit was 74 (2021: 73) and for Recycling & Waste Solutions 78 (2021: 81). The CSI among district heating customers in our main market improved slightly among business-to-business customers to 78 (2021: 77) and to 74 (2021: 73) among business-to-consumer customers. Satisfaction among electricity retail customers, which includes all retail brands, was fairly stable overall, with a CSI of 66 (2021: 67); among business customers the score was 60 (2021: 63). The customer satisfaction for our electric vehicle charging service brand Charge & Drive was 61 (2021: 58).

The importance of customer satisfaction is also highlighted in Fortum's short-term incentive (STI) programme, applicable to all personnel. For 2023, the Group-level STI target includes the customer satisfaction index with a weight of 10%.

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 2020–2022 [1)]

	2022	2021	2020
Finland			
Fortum	60.6	64.0	64.3
Sweden			
Fortum	60.2	60.2	62.7
Göta Energi	61.9	63.7	68.5
SverigesEnergi	-	-	-
Norway			
Fortum	62.4		-
Hafslund Strøm	-	56.2	62.1
NorgesEnergi	62.6	61.3	64.6

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.

Corporate citizenship

Social responsibility is vital for Fortum's operations. Our operations impact the local communities where our plants are located and it is important for us to engage and collaborate 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 2022, Fortum's support for activities promoting the common good totalled about EUR 2.3 (2021: 1.8) million.

Corporate Social Responsibility programme

We cooperate with communities and organisations worldwide through the societal initiatives undertaken by Fortum in our Corporate Social Responsibility (CSR) programme. Our CSR programme's focus areas, aligned with our strategic priorities, are: 1. Climate, including environment- and water-related topics; 2. Material revolution, including material use, recycling and waste management topics; and 3. 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.

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.

In 2022, some of our CSR programme initiatives were on standby or cancelled due to uncertainties caused by the geopolitical situation and the Uniper divestment. We continued with our ongoing programmes in Finland,

Sweden, Norway and India. Our programmes and support were especially targeted towards educational programmes for children.

In addition, due to the devastating war in Ukraine, we directed donations towards organisations helping the Ukrainian people. In the beginning of the war, we made a 200,000 euro donation as part of a wider Emergency Appeal where IFRC, alongside its partner Red Cross and Red Crescent societies, provided basic assistance to more than 5 million people. Later during the year, we also participated in various relief programmes in Poland.

Fortum also donated three power units and two related automation units to Ukraine. The units are designed to manage short power cuts but can also be used for longer periods.

Employee volunteering work programme launched

In 2022, we launched an employee volunteering programme through which employees may do two days of volunteer work annually during paid hours. The volunteer work is to take place within specified themes of Fortum's Corporate Social Responsibility programme. The themes in 2022 were People, Circular economy, and Climate, water, environment and biodiversity. Examples of employee participation included working at local charity organisations to support refugees from Ukraine and joining clean-up events surrounding Fortum facilities.

Local impacts

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

Our energy production, for example hydropower, can impact local communities and local land use. Hydropower construction and use may alter the fluctuation range and rhythm of the water discharge and level in waterways as well as the fish populations. These changes impact fishing, recreational use and boating. We mitigate and offset 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 community and city collaboration

In Finland and Sweden, we participate in many ways in the environmental care of riverbanks, in mitigating the adverse environmental impacts of hydropower production, and in promoting recreational use waterways in cooperation with local residents, riverside municipalities, research institutions and environmentalists.

We have partnered with various stakeholders for years in rehabilitating waterways and improving riverside landscaping. In Oulujoki, Finland, we have been improving the river's environmental conditions since 1998 within the framework of the Oulujoki renovation and multiple use project (OUMO).

In 2022, as part of the OUMO project, we improved the services and safety of the Meteli beach area in Paltamo, Finland. We constructed a pier for swimming and buildings serving the beach area (dressing booths, rest area), and made improvements to the beach floor. We also improved the recreational use of the Saukkoniemi area in Hyrynsalmi, Finland, by constructing an observation hut with accessories.

In Loviisa, Finland, we continued publishing the Naapurina ydinvoimala (Nuclear power plant as a neighbour) magazine, and maintained an active dialogue with local residents and Loviisa city representatives. We also conducted a survey amongst the residents of the surrounding area about the acceptability of nuclear power and Fortum's Loviisa power plant. In cooperation with the city of Loviisa, we renovated the play and exercise equipment at Plagen's beach, including the renovation of the children's boat Fortum donated to the beach more than 10 years ago.

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. Fortum also announced the plan to build Poland's biggest heat pump supplying heat to the city's district heating system. It will be the first non-fossil heat source in Wrocław's heating system. The project will be completed in 2024. The project is being carried out in cooperation with the city-controlled entity Municipal Water and Sewage Company in Wrocław (MPWiK).

In Poland, Fortum also continued a nationwide campaign promoting the circular economy. "Turn clean energy on for Poland" was implemented together with the Polish Employers Union (Pracodawcy RP), engaging businesses, NGOs and local governments to develop and promote circular economy solutions.

In our solar operations in India, we carry out various CSR projects in the villages located near plants. At our plant in Pavagada, Karnataka, we are working with the NGO named SEED with whom we delivered a number of projects through 2022. These projects include regular and specialized health camps (e.g. eye camps, blood testing camps and orthopaedic camps), courses in tailoring and handicrafts to uplift women, and basic computer skill training courses for children and young adults.

In addition, we also conducted awareness sessions to educate locals on topics related to healthcare and the environment such as plastic awareness, cancer awareness and personal hygiene. We also donated equipment such as an ECG machine and a digital x-ray machine to the local hospital.

At our plant in Bhadla, a water purification system has been repaired ready for use at the local Bhadla Government School. We also completed renovation activity such as sitting arrangements and other repairs at the Nachanna government primary school in Bhadla.

Our CSR work in India continues through 2023, to enrich the lives of those living near our plants, so we give back to our local communities.

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. In autumn 2022, we introduced content about plastic recycling. Fortum has participated in the initiative since 2017.
Sweden	Städa Sverige	In 2022, about 3,000 members from 130 different sports clubs teamed up with Fortum and the environmental organisation "Städa Sverige" to participate in the annual River clean-up. During the latter part of each summer since 2013, selected river stretches in proximity to Fortum plants have been cleaned of garbage – some years amounting to 30 tonnes. The annual River clean-up creates both social and environmental value, as Fortum contributes to local sports around our power plants whilst together ensuring clean rivers and nature.
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. Fortum employees also attended Maskrosbarn's youth centre to participate in a clothes making workshop and to educate the children about the circular economy and recycling.
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. We participated in funding a teaching programme for all third-graders in Norway called De grønne forskerspirene. In 2022, over 500 classes (12,500 pupils) registered to participate in the science project.
India	Save the Children	In June 2021, Fortum started a new collaboration with the long-term corporate social responsibility partner Save the Children by donating 100,000 euros to support Save the Children's efforts to help children and families impacted by the Covid-19 pandemic in India. The funds were used during 2021 and 2022 to help children and families to recover in the aftermath of the pandemic. To maximise the impact of Fortum's donation, the funds were used in the existing project in Rajasthan and to enable an expansion of the work to new areas in the region. The new areas covered 87 villages in Dungarpur and Udaipur in southern Rajasthan. With the donation, Save the Children was able to increase local awareness of health care services, including vaccination and testing, provided families with cash, food and other necessities, as well as psychosocial support to children who had lost one or both parents or caregivers during the pandemic. In addition, children in need of alternative care were identified and supported, and a parenting programme for selected families receiving government social protection was implemented to strengthen parenting practices and interaction with children in the Covid-19 aftermath.
Poland	Fundacja Ukraina, Fundacja Przystanek Rodzina, Polish Red Cross in Zabrze, Spolecznie Zaangazowani, Fundacja Petralana, PSONI (Polish Association of Persons with Intellectual Disabilities)	• Fundacja Ukraina launched a project called Help UA Package with the aim to provide food kits to people who suffered from the Russian military invasion on the territory of Ukraine. • Fundacja Przystanek Rodzina spent the donation, among other things, for educational purposes. • Fundacja Petralana purchased 12 power generators to schools in Drohobycz – the partner city of Bytom in Ukraine. • Medicines were received with the help of the Polish Red Cross in Zabrze – especially for women with children, who heavily experienced hostilities in their cities. • Everyday living needs, such as food and personal hygiene products were enabled by the association Spolecznie Zaangazowani. • PSONI supported the refugees offering medical, educational and psychological support, in particular for disabled children and adults.

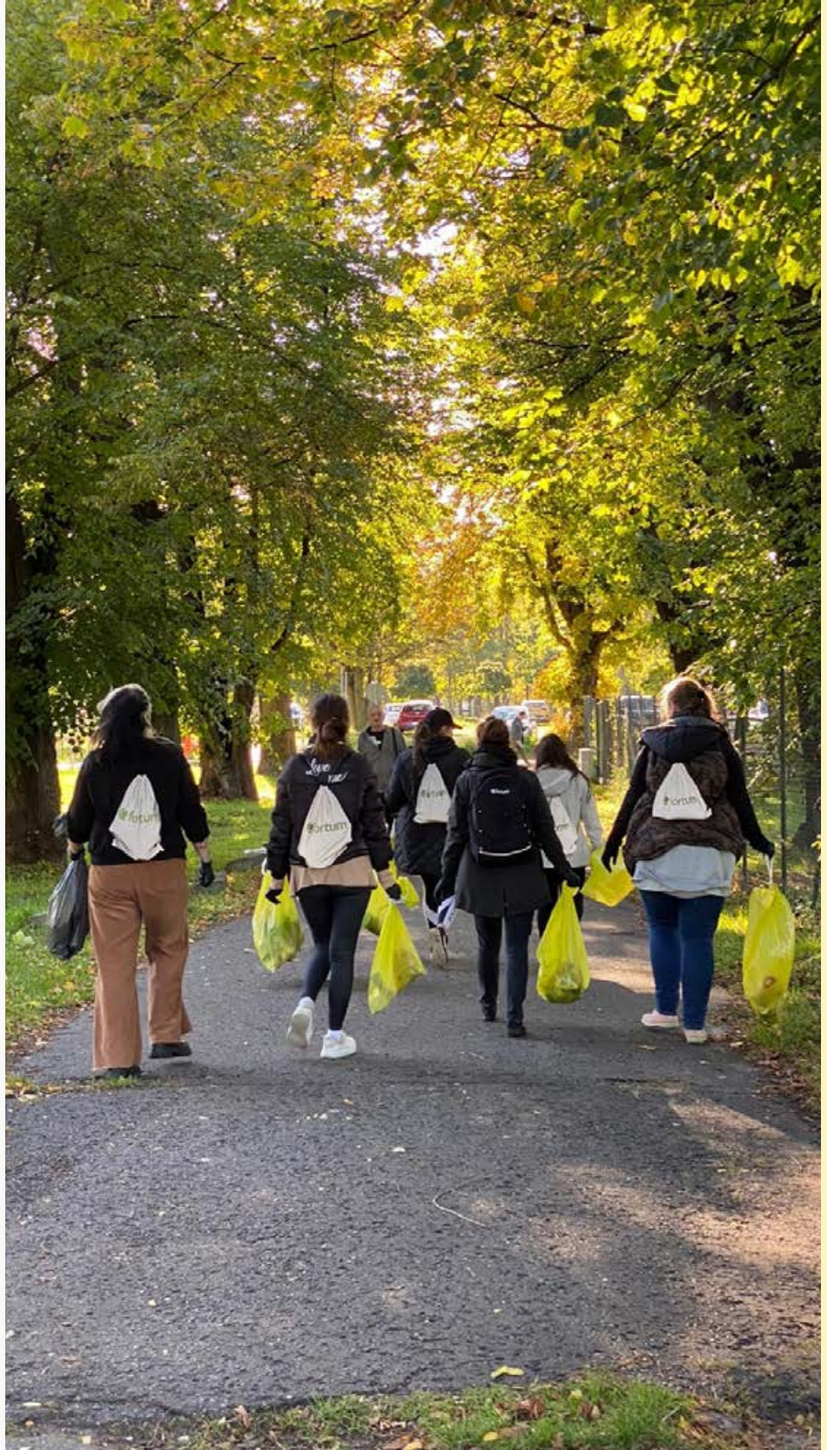
University collaboration and R&D cooperation projects

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. In 2022, Fortum collaborated with about 40 universities, universities of applied sciences and research institutions globally.

For example, a research project with MIT (Massachusetts Institute of Technology) related to SMRs (Small Modular Reactors) has been underway since 2020. As a result of the collaboration, in 2022, Fortum and MIT published a Nuclear Cost Estimation Tool (NCET), which enables more accurate cost and risk estimates for nuclear power-related projects. In addition to a programme tailored to Fortum's use, a publicly available version of the tool based on open source code has been published.

In 2022, Fortum also started research projects with two Asian universities (Hong Kong Polytechnic University in Hong Kong and Kyushu University in Japan). The projects are related to the utilisation of waste incineration bottom ash.

In addition, we support research, education and development in the natural, technical and economical sciences in the energy sector through the Fortum and Neste Foundation (earlier Fortum Foundation). The grants awarded by the Foundation in 2022 totalled about EUR 783,136 (2021: 701,250). The Fortum and Neste Foundation is not part of Fortum Group.



Case | **Helping through non-profit organisations and volunteering in Poland**

Operating in Poland, close to Ukraine, Fortum wanted to do its share in helping Ukrainian refugees. We made donations via various non-profit organisations. Also, several Fortum employees volunteered. This is strongly encouraged, as Fortum gives all its employees the possibility to volunteer during two work days each year.

Thousands of people from all over Poland took active steps to help those in need, engaging in various humanitarian actions or organising help on their own. Fortum also partnered with different non-profit organisations operating close to our sites.

"The war came so close to us. People were asking what we as a company could do. We donated to six different organisations. This is an effective route, as these organisations know the best use of the money, and they have processes already set up," explains **Maja Gorlinska,** Communications Specialist from Fortum's site in Poland.

The following organisations were selected: Fundacja Ukraina in Wroclaw, Fundacja Przystanek Rodzina in Plock, Polish Red Cross in Zabrze, the association Spolecznie Zaangazowani in Lodz, Fundacja Petralana in Bytom and PSONI (Polish Association of Persons with Intellectual Disabilities) in Czestochowa. The total donation amounted to about 75,000 euros.

Real impacts with the donations

The donations had a real impact. Fundacja Ukraina was able to launch a project called Help UA Package with the aim to provide food kits to people who suffered from the Russian military invasion on the territory of Ukraine. Fundacja Przystanek Rodzina used the donation for, among other things, educational purposes.

Fundacja Petralana purchased 12 power generators for schools in Drohobycz – the partner city of Bytom in Ukraine. Medicines were received with the help of the Polish Red Cross in Zabrze – especially for women with children who experienced hostilities in their cities. The association Spolecznie Zaangazowani provided access to everyday living needs, such as food and personal hygiene products. In addition, PSONI provided support for refugees by offering medical, educational and psychological support, particularly for disabled children and adults.

All Fortum employees get to volunteer

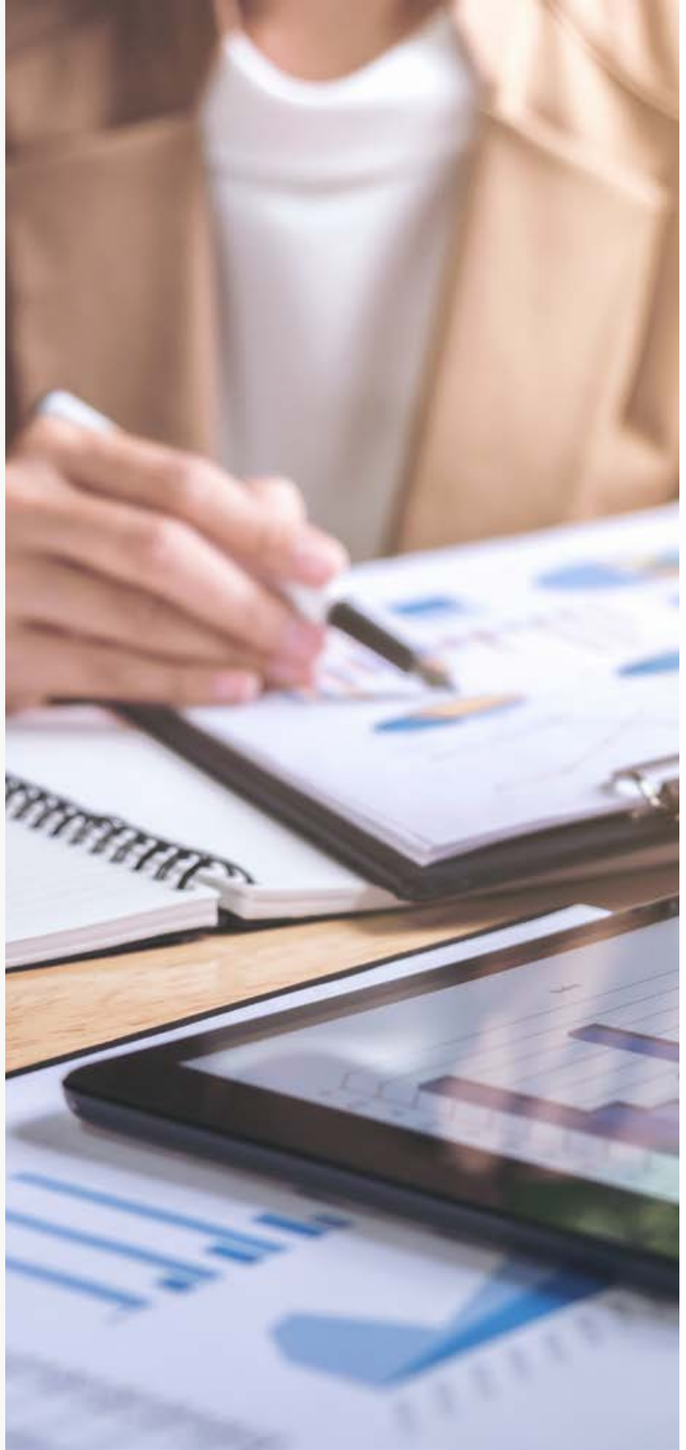
Social responsibility is important for Fortum. To drive concrete changes, Fortum launched a new initiative in 2022. All Fortum employees can use two work days each year for volunteer work. In Finland, some employees used their volunteering days to work at Kaivo, a local organisation providing food and toiletries for Ukrainian refugees.

Employees in Poland have also taken various actions to help Ukrainians.

"Some have offered temporary housing or have helped to collect and hand out food and other supplies. One colleague in Wroclaw collected food for orphaned pets that had been brought in from animal shelters in Ukraine," Maja describes.

Although the volunteering programme is still small in scale, the employees who have been involved have given positive feedback. For some, it has been their first experience volunteering, and many feel it is great to be able to do something meaningful, helpful and very concrete for society.

"For me personally, this is a very important part of our way to do business. We need to take care of people and societies – not just the environment. It would be hard to imagine working for a company that did not pay attention to these issues," Maja concludes.



Supply chain

Fortum is a significant purchaser of goods and services and 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 2022 was EUR 6.3 billion (2021: 4.3 billion). The main reason for the increase was the rise in commodity prices. Electricity purchased from Nordic wholesale electricity market for retail sales, investments and fuel purchases accounted for the majority of purchases. The rest of the purchases consist of other goods and services related to operation and maintenance as well as to other functions, such as IT solutions, marketing and consulting.

About 71% (2021: 62%) of the purchasing volume of goods and services was purchased from suppliers operating in Europe, mostly in Finland, Sweden, Norway and Poland. This does not include electricity purchased from the Nordic wholesale market.

About 35% (2021: 40%) of Fortum's goods and services purchases were from risk countries. The majority of these purchases were the Russia Division's local purchases 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 the ILO's Country profiles. The risk-country list was last updated in 2022.

In 2022, Fortum had about 12,300 (2021: 12,000) suppliers of goods and services. About 2,500 (2021: 1,500) of these suppliers were in risk countries. The increase in the number of risk-country suppliers is due to the update in the risk-country classification, which added several European countries to the list. Excluding the Russia Division's local suppliers, there were about 2,000 (2021: 500) suppliers in risk countries.

Top 10 supplier countries[1)]

Finland	50%
Sweden	18%
Norway	8%
Poland	8%
Switzerland	5%
Denmark	3%
Germany	2%
Lithuania	1%
Latvia	1%
Netherlands	1%

1) Excluding Russia Division purchases and electricity purchases from the Nordic wholesale market.

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, the 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 sourcing, special attention is paid to the origin of the fuel and to responsible production. Fortum has replaced Russian fuels in our other operating countries. We don't buy fossil fuels, pellets or biomass from Russia for our power plants.

Information about fuel use can be found in the section ▸ **Energy**. The most significant countries of origin for the main fuels used are presented in the table.

Most significant countries of origin for main fuels used in 2022

Fuel	Main countries of origin
Natural gas	European countries, Russia*
Coal	Poland, Colombia, Australia, Canada, USA, South Africa
Uranium	Russia
Wood-based biomass	Finland, Poland, Baltic countries, Norway, Russia**

* Russia Division purchases and purchases to other operating countries before Russia's attack on Ukraine.

**Purchases before Russia's attack on Ukraine.

Natural gas

Fortum purchases natural gas from the stock market and direct contracts. Since May 2022, Russian gas supplies to Finland were stopped. In our contracts, we expect natural gas to be of non-Russian origin. The gas is imported through the Balticconnector pipeline between Inkoo, Finland, and Paldiski, Estonia. The origin of the gas varies from different European countries and is supplied via Poland, Latvia and Lithuania.

Coal

Fortum is a member of the Bettercoal initiative and uses Bettercoal tools to improve sustainability in the coal supply chain. At year-end 2022, Fortum's coal volume purchased from Bettercoal producers was 26%. Read more about Bettercoal assessments in the section ▸ **Bettercoal**.

Following Russia's attack and the war in Ukraine, Fortum looked for alternative sources to ensure security of supply. The coal market was challenging throughout the year and the availability of Bettercoal coal was limited. The coal purchased in 2022 originated from Poland, Colombia, Australia, Canada, USA and South Africa. All coal purchased from Colombia was from Bettercoal producers.

Uranium

We currently procure fuel for our Loviisa nuclear power plant in Finland from the Russian fuel company TVEL. The current contract is valid until the end of our current operating licences, i.e. until 2027 and 2030. The power plant has plenty of fuel in storage, even for a couple of years. As part of the application to extend the lifetime of the operating licences of the Loviisa nuclear power plant, new tendering processes, including nuclear fuel, will be initiated based on Fortum's procurement procedures. Fortum has signed an agreement with Westinghouse Electric Company for the design, licensing and supply of a new fuel type for the Loviisa power plant. Taking the new fuel into use is a multi-year project requiring regulatory approvals.

All of the current uranium mines have ISO 14001 environmental certification. Also the uranium producer, refiner and manufacturers of zirconium material, uranium oxide pellets and fuel assemblies have certified environmental and occupational safety systems in place in all their plants.

Biomass

In 2022, wood-based biomass fuels were used in Finland, Poland and Norway. 66% of the forest-based biomass fuel purchased by Fortum originated from certified, sustainably managed sources and 7% was recycled wood. All biomass purchased is assessed for the legality of the source of origin.

Waste-derived fuel

Fortum uses waste-derived fuels at waste-to-energy plants in Riihimäki, Finland; Nyborg, Denmark; Kumla, Sweden; and Zabrze, Poland. The fuel used in 2022 was mainly locally collected municipal and industrial waste.

Supply chain management

Fortum expects its business partners to act responsibly and to comply with the requirements set forth in the Supplier Code of Conduct. The key tools in supply chain management are counterparty risk assessments, supplier qualifications and supplier audits.

Codes of Conduct cover the basic requirements

The Fortum Code of Conduct establishes the basic principles of conduct that everyone must follow. It defines how we treat each other, do business, and engage with the world. The Supplier Code of Conduct, which is based on the ten principles of the UN Global Compact, outlines the requirements for Fortum'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. Fortum reserves the right to monitor whether its suppliers observe the Supplier Code of Conduct by requesting information and conducting on-site audits. Suppliers who fail to observe the Supplier Code of Conduct are expected to take immediate corrective action, and Fortum reserves the right to terminate relationships with suppliers who cannot demonstrate adherence to the Code of Conduct.

Supplier qualification

Fortum 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 and to the prohibition of forced labour. 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 2022, 87% (2021: 81%) of Fortum's purchasing volume of goods and services, excluding the Russia Division, came from qualified suppliers.

At the beginning of 2022, Fortum launched the renewed Know Your Counterparty (KYC) process to assess compliance risks, including legal, reputational, ethical, sustainability and security risks, related to the suppliers and other counterparties that Fortum has a contractual relationship with. The KYC process is mandatory to conduct for counterparties when the contract value is EUR 100,000 or more.

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.

Supplier sustainability audits

In supplier sustainability audits, Fortum assesses the supplier's compliance with the requirements in Fortum's Supplier Code of Conduct. The audits are done on-site, and they include site inspections, management and employee interviews, and reviews of documents. Fortum uses an international service provider for conducting the audits, especially in risk countries. In some cases, the audits may be performed by Fortum personnel. In 2022, one audit was conducted by Fortum personnel.

Due to the Covid-19 pandemic and travel restrictions, the possibilities to conduct on-site supplier audits have been limited since 2020. Consequently, Fortum conducted a total of six audits of potential new suppliers in India, China and Thailand during 2022. One of the audits was conducted remotely due to local Covid-19 restrictions.

If non-compliances are found in an audit, the supplier makes a plan for corrective actions and we monitor their implementation. In cases of severe non-compliances, the supplier can be qualified or the cooperation can be continued only if the corrective actions are implemented and confirmed. In 2022, the majority of the non-compliances identified in the audits were related to overtime hours, wages and occupational safety. No severe non-compliances related to freedom of association and employee collective bargaining rights, child labour, forced labour or discrimination were identified. One potential supplier will be re-audited in 2023 to verify the practices regarding the prohibition of forced labour. One potential supplier was issued a recommendation related to company policies and procedures to strengthen its practices regarding anti-corruption, prohibition of forced labour, child labour and discrimination. These suppliers are not qualified until corrective actions are implemented and verified.

Bettercoal

Fortum is a member of the Bettercoal initiative and uses 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.

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 2022, two Bettercoal site assessments were conducted. 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 three significant coal procurement countries: Russia, Colombia and, as of 2022, South Africa. 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. Fortum participates in the Russia, Colombia and South Africa working groups' activities. In April 2022, Bettercoal suspended the engagement with Russian coal suppliers and paused the activities of the Russia working group due to Russia's attack and war in Ukraine.

The Bettercoal Colombia working group continued to implement its work programme in 2022. The objectives of the working group for 2022 were the monitoring of continuous improvement plans of Bettercoal Colombian producers, active engagement with stakeholders, and developing and implementing actions on prioritised contextual issues, such as fostering dialogue in the peace building process, access to clean water, responsible mine closure and economic diversification. The working group visited Colombia for an engagement programme in September 2022 and met stakeholders (companies, trade unions and local communities).

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 Colombia's coal mining regions. Bettercoal works with stakeholders (government, companies, trade unions, and local communities) in mining regions to support the transition 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 2022 were ISO 14001 environmentally certified and 100% 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 Leadership Team, and other senior executives support the Board of Directors in the decision-making in these matters, when necessary.

Fortum Leadership Team 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 Leadership Team 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 short-term incentive (STI) programme, applicable to all employees, includes safety as one element. In the 2022 STI programme, the safety target contained the following elements: severity rate per Total Recordable Injuries (TRI) of own employees and contractors combined, the execution rate of Safety Leadership Training and the execution rate of the Safety eLearning. In the 2023 STI programme, the safety target includes participation in the Management Safety and Security Leadership Programme as well as identification and completion of key safety actions to improve safety culture. Fortum's long-term incentive (LTI) programme includes an ESG target. In the 2021–2023 LTI plan, the set ESG target was linked to the reduction of Fortum's coal-based power generation capacity in line with Fortum's coal-exit path, with a minimum level requiring exceeding the communicated ambition level. In the 2022–2024 LTI plan, the ESG target is related to the reduction of the absolute CO_2 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. The ESG targets of both LTI plans were adjusted in early 2023 due to the divestment of Uniper.

Corporate Governance Statement 2022
Remuneration 2022
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 tables. 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, as well as 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	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. 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. At the beginning of March 2023, the Fortum Board of Directors resolved on Fortum's new strategy, including new financial targets and dividend policy. In affirming its commitment to a stable credit rating of at least BBB, Fortum would be comfortable with financial net debt-to-comparable EBITDA of 2.0–2.5 times in the longer term (earlier leverage guidance was to be below 2 times). Regarding its investment decisions, Fortum will be prudent in its capital allocation in order to carefully manage the current volatile and uncertain operating environment. Fortum has estimated growth capital expenditure (excluding acquisitions) to be up to EUR 1.5 billion for the years 2023–2025. Investment hurdles of project WACC + 150–400 basis points will be applied. The renewed dividend policy – a payout ratio of 60–90% of comparable EPS – reflects the potential earnings fluctuations of Fortum's power generation portfolio. The realisation of financial targets in 2022 is reported in the Financial performance and position section of the ▸ **Financials 2022**
Policies and commitments	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**.
Responsibilities	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**.
Monitoring and follow-up	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 a monthly basis both at the division level and by Fortum Leadership Team. 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 Leadership Team. 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.

Management of environmental responsibility

	Description
Targets and approach	Fortum has a unique ability to reliably deliver clean energy from sources at scale. With its energy Fortum helps its customers to decarbonise their processes and societies to reach carbon neutrality in balance with nature. Fortum's biggest strength, and a continuing strategic priority for the company, is its ability to deliver reliable and clean energy at scale to customers and the Nordic energy system. In addition, with its strong position in clean power in the Nordics, Fortum will work to find solutions for industrial customers to lower their carbon footprint. Fortum's position as a leading Nordic clean energy company is now complemented by considerably enhanced environmental targets with the aim to be a leader in sustainability. See the section ▸ **Climate and resources** for more information on Fortum's environmental targets.
Policies and commitments	Environmental management is based on Fortum's Sustainability Policy together with the Minimum Requirements for EHS Management. 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 Operating and financial review/Risk management section of the ▸ **Financials 2022**. Climate-related risks are reported in the section ▸ **Climate**.
Responsibilities	Our sustainability responsibilities are presented in the section ▸ **Governance and management**.
Monitoring and follow-up	Fortum'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 CO_2 emissions are reported quarterly to Fortum Leadership Team. The divisions and sites monitor 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 CO_2 emissions of plants within the sphere of the EU 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 CO_2 emissions. The plants must annually submit to the authorities a verified emissions report of the previous calendar year's CO_2 emissions. ▸ **Independent limited assurance** on Fortum's Greenhouse gas emissions in 2022 has been provided by Deloitte Oy. Fortum's supply chain monitoring systems also cover environmental responsibility. The approach is described in the section ▸ **Supply chain**. Fortum maps its stakeholders' views annually with the One Fortum Survey.

Management of social responsibility: Employees

	Description
Targets and approach	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 indicators, for which we have set the new Group-level targets: • Total Recordable Injury Frequency (TRIF), for own personnel and contractors, <1.0 by the end of 2030 • No severe or fatal injuries • 95% execution rate for the Management Safety and Security Leadership Programme • 60% execution rate for Safety improvement plans • Sickness-related absences 3.0%
Policies and commitments	Safety management is based on Fortum's Sustainability Policy together with the Minimum Requirements for EHS Management. 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 the Operating and financial review/Risk management section of the ▸ **Financials 2022**.
Responsibilities	Our sustainability responsibilities are presented in the section ▸ **Governance and management**.
Monitoring and follow-up	Fortum personnel and contractor injury frequencies (TRIF and LTIF), the number of severe occupational accidents, and execution rate for both the Safety and Security Leadership Programme and Safety improvement plans are reported monthly to Fortum Leadership Team. Work wellbeing, indicated as a percentage of sickness-related absences, is reported to Fortum Leadership Team monthly. 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. 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 monitor 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. Feedback about personnel wellbeing and job satisfaction is also obtained from personnel surveys. Fortum maps its stakeholders' views annually with the One Fortum Survey.

Management of social responsibility: Human rights

	Description
Targets and approach	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. 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 section ▸ **Personnel**.
Policies and commitments	Our respect for human rights is expressed in Fortum's Code of Conduct, Supplier Code of Conduct and Sustainability Policy, which are approved by Fortum's Board of Directors. Fortum's approach to human rights due diligence is based on the UN Guiding Principles on Business and Human Rights and follows the six steps outlined in the OECD Guidelines for Multinational Enterprises. Human rights due diligence is an ongoing process where risks and impacts are assessed continuously as part of various processes. The key elements steering human rights management are presented in the sections ▸ **Human rights** and ▸ **Policies and commitments**.
Responsibilities	Our responsibilities related to human rights are presented in the section ▸ **Human rights**.
Monitoring and follow-up	Fortum includes a human rights risks and impacts assessment in various processes. The key tools for monitoring the impacts of human rights are country and counterparty risk assessments, supplier qualification and supplier audits. Supplier audits conducted are reported in our interim reports. Fortum conducts a human rights assessment for investment projects – especially in new operating areas – and in countries where Fortum plans to expand the sales of products and services. The assessments are presented to Fortum Leadership Team and to the Board of Directors when needed. Fortum is a member of the Bettercoal Initiative and uses the Bettercoal tools to improve sustainability in the coal supply chain. Fortum also sponsors and participates in the development of the Solar Stewardship Initiative, aiming to improve the traceability and sustainability of solar products, components and raw materials. Monitoring systems related to our own personnel are presented in the section ▸ **Personnel**. Fortum maps its stakeholders' views annually with the One Fortum Survey.

Management of social responsibility: Business ethics (incl. anti-corruption and anti-bribery)

	Description
Targets and approach	We believe that an excellent financial result and ethical business are intertwined. We follow the good business practices and ethical principles defined in Fortum's Code 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. 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 Supplier Code of Conduct.
Policies and commitments	The key elements steering social and compliance management are presented in the section ▸ **Policies and commitments**.
Responsibilities	Our sustainability responsibilities are presented in the section ▸ **Governance and management**.
Monitoring and follow-up	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. Internal and external reporting channels are offered for reporting suspicions of misconduct. The channels are described in the Code of Conduct and accessible on the company's internal and external webpages. Monitoring systems related to the supply chain are presented in the section ▸ **Supply chain**.

Management of social responsibility: Product responsibility

	Description
Targets and approach	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. 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.
Policies and commitments	Key elements steering product responsibility management are presented in the section ▸ **Policies and commitments**.
Responsibilities	Our sustainability responsibilities are presented in the section ▸ **Governance and management**.
Monitoring and follow-up	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 Leadership Team. Customer satisfaction 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.

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.

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. Fortum's Code of Conduct establishes the basic principles of conduct that everyone must follow. It defines how we treat each other, do business and engage with the world. Fortum's Supplier Code of Conduct, based on the ten principles of the UN Global Compact, outlines the requirements for Fortum's suppliers and business partners.

Fortum's Sustainability Policy defines our ambitions and priorities for sustainability. Fortum has sound policies and specifying instructions guiding the operations in the areas of environmental matters, social and personnel matters, human rights, and anti-corruption and bribery, as listed in the tables.

Fortum's EHS minimum requirements are updated annually. In 2022, the main updates included, e.g., adding a new Group manual on lifting work and adding a new definition for environmental incidents. We report on the training related to the updated instructions in the sections ▸ **Business ethics and compliance**, and ▸ **Occupational and process safety**.

Fortum's 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		X
Group Risk Policy	X	X	X	X	X
Group Counterparty Risk Instruction	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		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	

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 Leadership Team.

GRI content index

Fortum Corporation has reported the information cited in this GRI content index for the period 1.1.2022 - 31.12.2022 with reference to the GRI Standards.
This Sustainability 2022 report references the GRI 1: Foundation 2021, and other Disclosures listed in the table. The table includes Disclosures reported in full or partly.

DISCLOSURE	LOCATION
GRI 2: General Disclosures 2021	
2-3 Reporting period, frequency and contactpoint	**Sustainability at Fortum / Reporting principles**
2-4 Restatements of information	**Sustainability at Fortum / Reporting principles**
2-5 External assurance	**Sustainability at Fortum / Reporting principles** **Appendices / Independent limited assurance report**
2-7 Employees	**Personnel and society / Personnel**
2-9 Governance structure and composition	**Appendices / Governance and management** **Governance 2022**
2-10 Nomination and selection of the highest governance body	**Governance 2022**
2-11 Chair of the highest governance body	**Governance 2022**
2-12 Role of the highest governance body in overseeing the management of impacts	**Governance 2022**
2-13 Delegation of responsibility for managing impacts	**Governance 2022**
2-19 Remuneration policies	**Governance 2022**
2-23 Policy commitments	**Personnel and society / Human rights**
2-25 Processes to remediate negative impacts	**Sustainability at Fortum / Business ethics and compliance** **Personnel and society / Human rights** **Personnel and society / Personnel / Diversity and equal opportunity**
2-26 Mechanisms for seeking advice and raising concerns	**Personnel and society / Human rights** **Appendices / Governance and management** **SpeakUp channel**
2-27 Compliance with laws and regulations	**Sustainability at Fortum / Business ethics and compliance** **Climate and resources / Emissions / Environmental incidents** **Personnel and society / Customers / Product responsibility** **Personnel and society / Personnel / Diversity and equal opportunity** **Personnel and society / Human rights**
2-29 Approach to stakeholder engagement	**Personnel and society / Stakeholders**
2-30 Collective bargaining agreements	**Personnel and society / Personnel / Employee-employer relations**
GRI 201: Economic performance 2016	
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	**Climate and resources / Climate** **Financials 2022 / Operating and financial review / Risk management**
201-3 Defined benefit plan obligations and other retirement plans	**Financials 2022 / Notes to the consolidated financial statements / 31 Pension obligations**
201-4 Financial assistance received from government	**Personnel and society / Stakeholders / Economic impacts**
GRI 205: Anti-corruption 2016	
205-1 Operations assessed for risks related to corruption	**Sustainability at Fortum / Business ethics and compliance** **Financials 2022 / Risk management**
205-3 Confirmed incidents of corruption and actions taken	**Sustainability at Fortum / Business ethics and compliance**
GRI 206: Anti-competitive Behavior 2016	
206-1 Legal actions for anti-competitive behavior, anti-trust, and monopoly practices	**Sustainability at Fortum / Business ethics and compliance**

DISCLOSURE	LOCATION
GRI 207: Tax 2019	
207-1 Approach to tax	**Tax Footprint 2022**
207-2 Tax governance, control, and risk management	**Tax Footprint 2022** **Financials 2022 / Operating and financial review / Risk Management** **Financials 2022 / Auditor's report** **SpeakUp channel**
207-3 Stakeholder engagement and management of concerns related to tax	**Tax Footprint 2022** **SpeakUp channel**
GRI 301: Materials 2016	
301-1 Materials used by weight or volume	**Climate and resources / Energy / Fuel consumption**
301-2 Recycled input materials used	**Climate and resources / Energy / Fuel consumption** **Climate and resources / Circular economy**
GRI 302: Energy 2016	
302-1 Energy consumption within the organization	**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**
GRI 303: Water and Effluents 2018	
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 2016	
304-3 Habitats protected or restored	**Climate and resources / Biodiversity**

DISCLOSURE	LOCATION
GRI 305: Emissions 2016	
305-1 Direct (Scope 1) GHG emissions	**Climate and resources / Climate / Metrics and targets / Greenhouse gas emissions**
305-2 Energy indirect (Scope 2) GHG emissions	**Climate and resources / Climate / Metrics and targets / Greenhouse gas emissions**
305-3 Other indirect (Scope 3) GHG emissions	**Climate and resources / Climate / Metrics and targets / 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 2020	
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 of our energy production**
306-4 Waste diverted from disposal	**Climate and resources / Circular economy / Waste and by-products of our energy production**
306-5 Waste directed to disposal	**Climate and resources / Circular economy / Waste and by-products of our energy production**
GRI 308: Supplier Environmental Assessment 2016	
308-2 Negative environmental impacts in the supply chain and actions taken	**Personnel and society / Supply chain**
GRI 401: Employment 2016	
401-1 New employee hires and employee turnover	**People and society / Personnel**

DISCLOSURE	LOCATION
GRI 403: Occupational Health and Safety 2018	
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**
GRI 404: Training and Education 2016	
404-2 Programs for upgrading employee skills and transition assistance programs	**Personnel and society / Personnel / Employee development**
GRI 405: Diversity and Equal Opportunity 2016	
405-1 Diversity of governance bodies and employees	**Personnel and society / Personnel / Diversity and equal opportunity** **Governance 2022 / Corporate governance statement / Board of Directors**
405-2 Ratio of basic salary and remuneration of women to men	**Personnel and society / Personnel / Diversity and equal opportunity / Rewarding**
GRI 406: Non-discrimination 2016	
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 2016	
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 / Human rights**

DISCLOSURE	LOCATION
GRI 408: Child Labor 2016	
408-1 Operations and suppliers at significant risk for incidents of child labor	**Personnel and society / Human rights**
GRI 409: Forced or Compulsory Labor 2016	
409-1 Operations and suppliers at significant risk for incidents of forced or compulsory labor	**Personnel and society / Human rights**
GRI 413: Local Communities 2016	
413-2 Operations with significant actual and potential negative impacts on local communities	**Personnel and society / Corporate citizenship** **Personnel and society / Supply chain / Supply chain management / Bettercoal**
GRI 414: Supplier Social Assessment 2016	
414-2 Negative social impacts in the supply chain and actions taken	**Personnel and society / Supply chain / Supply chain management**
GRI 415: Public Policy 2016	
415-1 Political contributions	**Sustainability at Fortum / Business ethics and compliance**
GRI 417: Marketing and Labeling 2016	
417-3 Incidents of non-compliance concerning marketing communications	**Personnel and society / Customers / Product responsibility**
GRI 418: Customer Privacy 2016	
418-1 Substantiated complaints concerning breaches of customer privacy and losses of customer data	**Personnel and society / Customers / Product responsibility**

Independent limited assurance report

To the Management of Fortum Corporation

We have been engaged by Fortum Corporation (Business ID 1463611-4, hereafter: 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, 2022 to December 31, 2022 (hereinafter: GHG Emissions Disclosures). The disclosures subject to the assurance engagement are presented on pages 36–37 in the section "Climate" of Fortum's Sustainability Reporting 2022 (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 36 and 37 in the Fortum's Sustainability Reporting 2022.
- 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, 27 March 2023
Deloitte Oy

Jukka Vattulainen
Authorized Public Accountant

Anu Servo
Authorized Public Accountant