Sustainability *2023*

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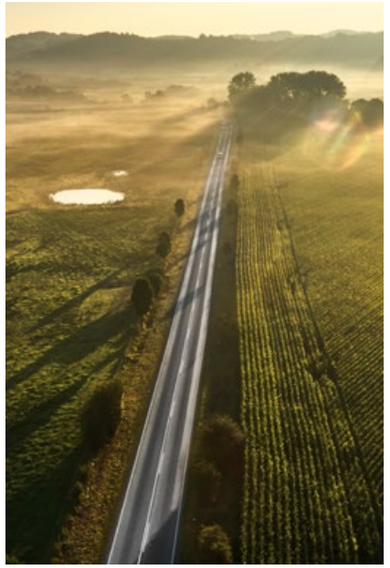
Highlights 2023



Security of supply at Loviisa nuclear power plant at a **very good level: load factor of**

91.06%

is among the best in the world for pressurised water reactor power plants, and a new operating license granted for both units until the end of 2050.

Fortum's **biodiversity footprint assessment finalised with GBS® tool*:** main terrestrial corporate impacts are related to GHG emissions, land use and fuel procurement.

* Global Biodiversity Score®

Completion rate of Fortum Management Safety and Security Leadership Programme was

100%

with over **400 trained managers.**

During the renewal of Fortum's organisation, **special attention was paid to the composition and diversity of leadership teams** in terms of gender and nationality; females now account for

40.8%

of leaders.

Fortum actively participated in the implementation of the new Finnish Transparency Register Act and developed a publicly available IT tool for stakeholder management, taken into use at Fortum in Finland, Sweden, Norway and Belgium.

Fortum established a Green Finance Framework, allowing the company to raise capital via green bonds and loans (Green Debt) to refinance and finance renewable energy and energy efficiency projects, and/or nuclear power projects.

Fortum's direct CO_2 emissions decreased by

27%

due to, e.g., the decreased use of the Meri-Pori condensing power plant and success of the Espoo Clean Heat programme.

Milestones for ▸ The Espoo Clean Heat project: an industrial-scale electric boiler commissioned at Suomenoja power plant; an air-to-water heat pump plant producing district heating and cooling in Vermo; and a

225

-million-euro investment decision as part of a **▸ collaboration project with Microsoft**.

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Year of transformation and enhanced environmental targets

For Fortum, 2023 was a year of transformation and stabilisation. In March, we launched our new strategy, complemented with considerably enhanced environmental targets, indicating our continued ambition and commitment to climate action and biodiversity. Equally, we continue our focus on the health, safety and wellbeing of our people.

Decarbonising the power sector and the electrification of energy-intensive industries are fundamental next steps in the green transition and in limiting the global temperature increase to 1.5 °C. As one of the cleanest power generators in Europe, with industry expertise, we are in a unique position to deliver clean, reliable energy at scale and drive decarbonisation in industries.

Fortum is committed to reaching carbon neutrality by 2030 and to exiting coal by the end of 2027. In 2023, 98% of our power generation was already CO_2-free, and we continue to reduce our remaining emissions. In 2023, our direct CO_2 emissions decreased by 27%; one large contributor to the decrease was the progress made in the Espoo Clean Heat project. Together with the City of Espoo, where Fortum is headquartered, Fortum is facilitating a transformation that will result in carbon-neutral district heating by 2030 in the Espoo, Kauniainen and Kirkkonummi regions. Furthermore, the license extension granted last year for the Loviisa nuclear power plant plays a significant role in ensuring low-carbon power also in the future.

Fighting climate change and protecting biodiversity go hand in hand. Based on the biodiversity footprint assessment completed with the Global Biodiversity Score® (GBS®) tool, Fortum's main terrestrial corporate biodiversity impacts are related to greenhouse gas (GHG) emissions, land use, and fuel procurement. We continue to mitigate our biodiversity impacts in hydropower with multiple local initiatives both in Sweden and Finland, including restoring aquatic and terrestrial habitats, improving fish migration and strengthening migratory fish populations. We also continue to contribute to the development of the aquatic segment of the GBS® tool to measure hydropower's aquatic biodiversity impacts.

Besides reducing and mitigating our environmental impact, maintaining high-standard health and safety practices is essential for Fortum. Excellence in safety is the foundation of our business and an absolute prerequisite for efficient and stable production.

We want to be a safe workplace for our employees, contractors, and service providers, and we continuously strive to improve our safety performance. Unfortunately, 2023 was a clear disappointment in terms of the outcome for two key performance indicators (KPIs) for safety; Total Recordable Injury Frequency (TRIF) and Lost Time Injury Frequency (LTIF), both for own personnel and contractors. This underlines the importance of continuing our safety improvement journey. Concrete improvement actions related to safety, such as developing safety leadership and culture, process safety, learning organisation and risk management, were implemented throughout 2023.

Safety has the continued focus of our leadership. Our commitment to safety is conveyed in the execution rate of our Management Safety and Security Leadership Programme and the Safety improvement plans, which reached 100% and 78%, respectively, both exceeding the set targets.

Besides keeping our employees safe, we aspire to be a responsible employer that offers a diverse and motivating work environment and invests in personnel development and wellbeing. As part of our new strategy, we re-organised ourselves internally, and special attention was paid to the composition and diversity of leadership teams in terms of gender and nationality, leading to an increase of female leaders. We also continued to focus on the mental wellbeing of our employees and highlighted resilience, stress management, the power of community and working together.

Climate change is one of the greatest challenges of our time. It is clear that an urgent transition from fossil fuels to clean energy is necessary to make an impact. Fortum's purpose "To power a world where people, businesses and nature thrive together" shows our determination to work towards a world where there is a healthy balance between the wellbeing of people, the needs of societies, the success of businesses and the diversity of nature.

Markus Rauramo
President and CEO

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Sustainability 2023

Sustainability 2023

Fortum's 2023 reporting entity

CEO's Business Review

Financials

Governance

Remuneration

Tax Footprint

Sustainability

Notes:

- Fortum's TCFD report for 2023 is included in the chapter Climate, pages: 19–25, and in Financials 2023, pages: 18–21 and 44–45.
- Fortum's Non-Financial Information report is included in the Financials 2023, pages: 8–14 and 18–36.
- To make this Sustainability Report fully web accessible, Fortum has aligned all its visuals with the Web Accessibility Directive, (EU) 2016/2102. This allows also people with disabilities to perceive, understand, and navigate through the report.

Fortum's strategy – Power to renew

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

Fortum is the third-largest power generator in the Nordics and one of Europe's cleanest power generators. In 2023, roughly 98.5% of the Group's EBITDA originated from the company's Nordic 45 TWh of outright power generation, which is based on CO_2-free hydro and nuclear power. This business is complemented by district heating and cooling operations, electricity retail business, onshore wind and solar, and circular solutions.

Fortum's new strategy, published at the beginning of March 2023, is designed to deliver on the company's new purpose: To power a world where people, businesses and nature thrive together. It crystallises Fortum's value proposition to its stakeholders.

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

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1. Deliver reliable clean energy

Fortum's biggest strength is its ability to deliver reliable and clean energy at scale to customers and the Nordic energy system, ensuring long-term productivity and security of supply. 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 also continues to decarbonise and modernise its existing assets and operations to ensure optimal value creation and to reach its environmental targets. Partnering with customers to deliver the clean power volumes they require on long-term contracts with stable prices will also enable Fortum to better manage the impact of the volatile wholesale power prices in the Nordics.

2. Drive decarbonisation in industries

Decarbonisation of energy intensive industries is a key hurdle to address on the way to carbon neutrality. The use of sustainable fuels in industrial production processes is also accelerating. With its strong position in clean power in the Nordics, Fortum works to find solutions for industrial customers to lower their carbon footprint. Fortum aims to develop and build new clean power generation in partnership with strategic customers in the longer term and to actively develop a ready-to-build project pipeline of renewables (on-shore wind and solar) to enable future growth. Further, Fortum explores future opportunities in nuclear, both in small modular reactors (SMRs) and conventional large reactors, in cooperation with customers and partners. Fortum will gradually and on a small scale explore hydrogen through pilot projects in the Nordics.

3. Transform and develop

To succeed in strategy execution and to navigate the uncertainty in the operating environment, Fortum needs to transform and develop. The aim is to prepare for future opportunities by strenghtening collaboration across businesses and enabling functions and by developing competitiveness and more customer-orientation.

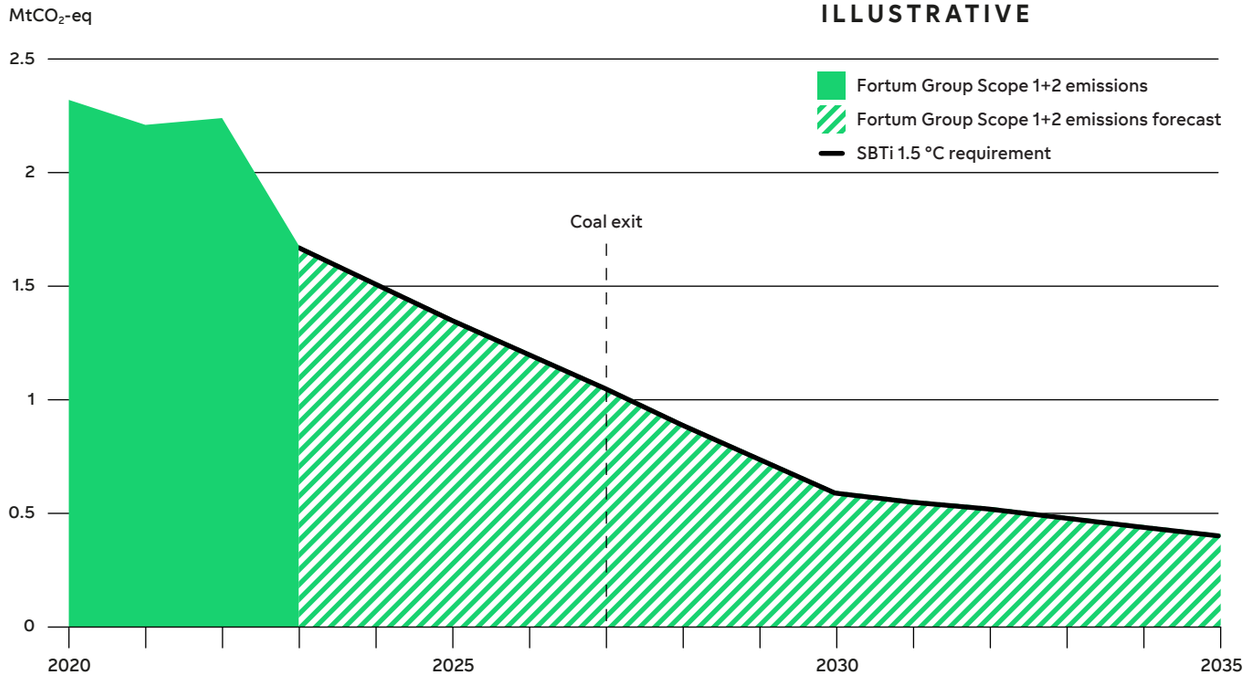
More ambitious environmental targets

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 set a target to reach carbon neutrality (Scopes 1, 2, 3) by 2030 and will exit all coal-based generation by the end of 2027. In addition, Fortum has the following targets:

- Fortum commits to set emission reduction targets based on climate science (SBTi 1.5 °C).
- Mid-point targets for specific emissions: below 20 g CO_2/kWh for total energy production and 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 participate in the development of a science-based methodology to assess the company's aquatic impacts.

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

Fortum's climate roadmap in line with SBTi 1.5 °C



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.

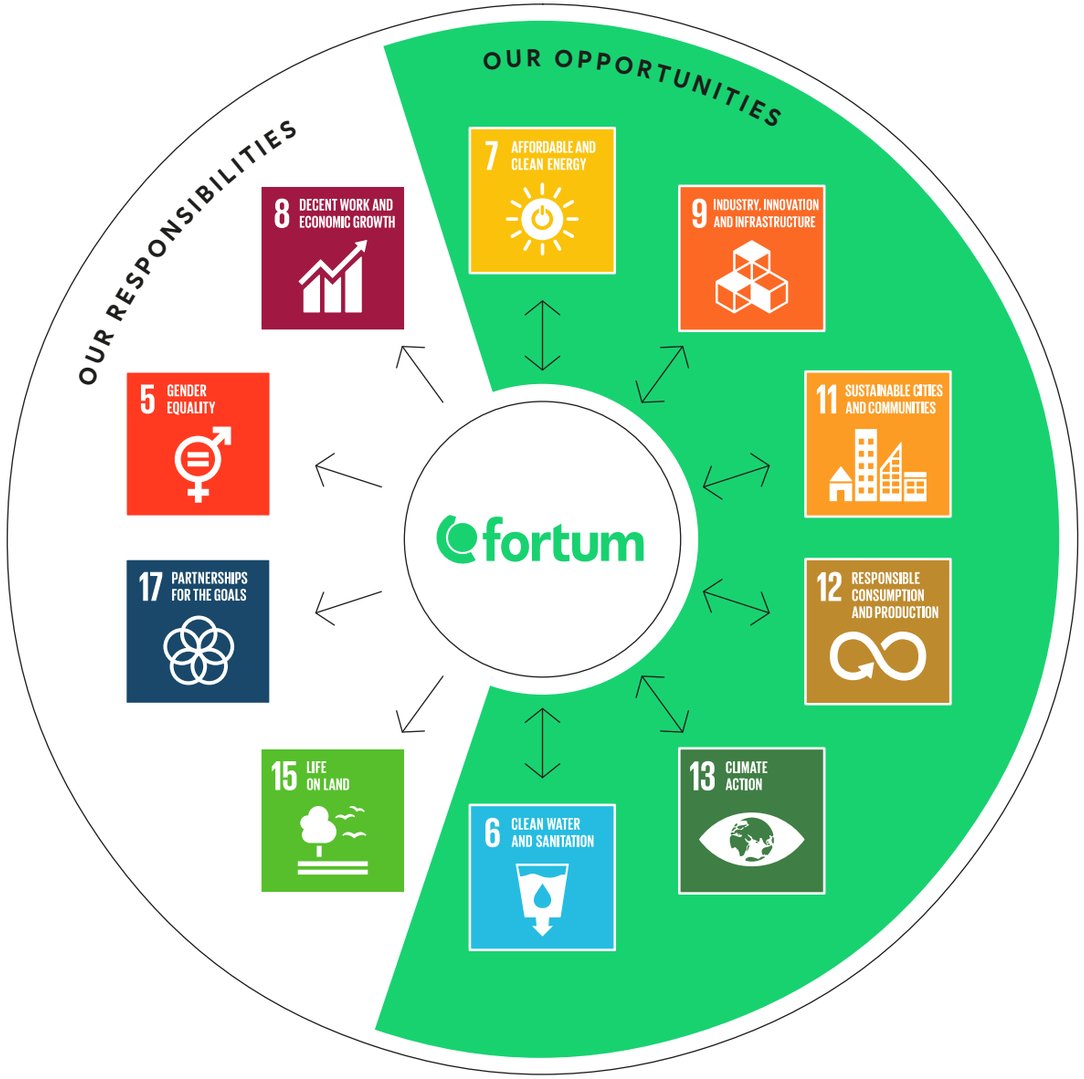
Sustainable Development Goals and Fortum

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 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 decarbonisation in the framework of our own operations, and we are driving decarbonisation in Nordic industries by partnering with strategic customers.

Our responsibilities are presented on the left in the graphic. From the social and societal perspectives, goals 5 and 8 are important to us, 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 dependencies related to ecosystems and biodiversity.

Key UN Sustainable Development Goals for Fortum



SUSTAINABLE DEVELOPMENT GOALS

Fortum supports the Sustainable Development Goals.

Examples of measures Fortum implemented in 2023 that promote the achievement of the Sustainable Development Goals

Sustainable Development Goal (SDG)	Fortum and SDG	Examples of measures
CLIMATE AND RESOURCES		
 **13** CLIMATE ACTION	Fortum supports an ambitious, market-driven climate policy. Fortum delivers reliable and clean energy and helps to decarbonise industries and societies.	• Fortum's direct CO_2 emissions decreased by 27% due to, e.g., the decreased use of the Meri-Pori condensing power plant and success of the Espoo Clean Heat programme.
 **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 clean energy.	• As part of Fortum's strategic priorities to deliver reliable clean energy, **Fortum will invest over EUR 60 million during 2023–2030 to modernise Untra**, one of Sweden's oldest hydropower plants. In addition, the plan announced in 2021 to invest approx. EUR 59 million during 2021–2025 to rebuild the over 100-year-old Forshuvud hydropower plant is proceeding.
 **6** CLEAN WATER AND SANITATION  **15** LIFE ON LAND	Fortum is committed 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.	• In March 2023, Fortum announced new and ambitious biodiversity targets. Fortum also updated its **Biodiversity action plan** including several **voluntary projects** implemented in 2023 that aim to improve biodiversity in connection with Fortum's operations.
 **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.	• In March 2023, the Finnish Government granted an operating license for **Fortum's final disposal facility** for Loviisa nuclear power plant's low- and intermediate-level radioactive waste until the end of 2090.
 **9** INDUSTRY, INNOVATION AND INFRASTRUCTURE	Fortum advances innovations related to clean energy and the decarbonisation of industries. Fortum also invests in start-ups and creates partnerships to gain synergy and scale.	• Fortum is exploring commercial, technological, societal and regulatory conditions both for **small modular reactors (SMRs) and conventional large reactors** in Finland and Sweden in collaboration with several partners.
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.	• In June 2023, Fortum announced a decision to **invest approximately EUR 225 million** during 2023–2027 in projects within the **Espoo Clean Heat programme** to drive decarbonisation and build sustainable waste heat solutions in the Helsinki metropolitan area. Total capital expenditure of the programme amounts to approximately EUR 300 million.
 **8** DECENT WORK AND ECONOMIC GROWTH	Fortum promotes the good working conditions and safety of its own and contractors' employees and requires service and goods suppliers to respect human and labour rights and to adhere to anti-corruption principles. Fortum generates economic added value for its investors, suppliers and the public sector.	• The completion rate of the Fortum Management Safety and Security Leadership Programme was 100%. In addition, the SafetyCORE project of Fortum Recycling and Waste proceeded with concrete improvement actions.
 **5** GENDER EQUALITY	Fortum fosters workplace diversity, inclusion and equal opportunities for its personnel.	• Diversity, equity and inclusion (DEI) progresses: The overall DEI score, from November 2023, was 7.8 (employee Net Promoter Score, eNPS), positioning Fortum close to the relevant energy and utility benchmark score.
 **17** PARTNERSHIPS FOR THE GOALS	Fortum cooperates with civil society organisations in its operating countries. In addition, Fortum has joint projects with cities, municipalities and universities.	• Fortum organised the **River Clean-up** (Älvstädningen) in collaboration with Städa Sverige for the 11th year in a row to clean up rubbish from rivers relevant to Fortum's hydropower production and nearby nature with participation from 3,000 youngsters from local Swedish sports associations.

Sustainability priorities and targets

Sustainability priorities have been defined to support sustainable business. They also define the scope for corporate sustainability reporting. In our operations, we take into consideration climate and resource issues, as well as our impacts on personnel and society.

Sustainability targets are the driving force for achieving Fortum's goals and implementing corporate strategy. The targets aspire to be specific, measurable, time-bound and science-based whenever possible.

Sustainability priorities

Fortum's material sustainability topics include climate change, pollution, water, biodiversity and ecosystems, circular economy, our own workers, workers in the value chain, as well as how we do business.

During 2023, Fortum started preparations for the Corporate Sustainability Reporting Directive (CSRD), set by the EU. Starting from 2024 annual reporting, Fortum's sustainability reporting will be prepared following the CSRD requirements.

Sustainability targets

CLIMATE

- Emissions reduction aligned with SBTi 1.5 °C trajectory.
- Specific emissions at below 20 g CO_2/kWh for total energy production and below 10 g CO_2/kWh for power generation by 2028.
- Carbon neutrality by 2030 (all Scopes 1, 2 and 3).
- Coal-exit in Fortum's own operations by the end of 2027.

BIODIVERSITY

- No net loss of biodiversity from existing and new operations in Scopes 1 and 2 from 2030 onwards, excluding all aquatic impacts.
- 50% reduction in dynamic terrestrial impacts in upstream Scope 3 by 2030 compared to 2021.
- Commitment to continue local initiatives and participate in the development of a science-based methodology to assess the aquatic impacts of hydropower.

SAFETY*

- 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.

* The updates for safety targets in 2024 are described in the chapter ▸ **Occupational safety targets**.

Sustainability targets affect every Fortum employee

Sustainability targets affect every Fortum employee, and safety-related targets, applicable to all employees, are a part of Fortum's short-term incentive (STI) programme. Fortum's Board of Directors annually decides on the Group-level sustainability targets to be included in the incentive programme. In the 2023 STI programme, the safety target contained the following elements: participation in the Management Safety and Security Leadership Programme training, as well as identification and completion of key safety actions to improve safety culture.

In the 2024 STI programme, just as in 2023, the safety target includes completion of key safety actions to improve safety culture in five focus areas: Safety leadership, Contractor management, Risk awareness, Learnings and skills, and Health and wellbeing. The weight of the safety target in the incentive programme is 10% (2023: 10%). In addition to the financial and safety targets, the 2024 STI programme also includes customer satisfaction and operational measures (fleet availability), both having a weight of 10%.

Fortum's long-term incentive (LTI) programme, applicable to top management and other key employees, includes Environmental, Social and Governance (ESG) measures. More information on the LTI programme can be found in the chapter ▸ **Governance and management** and in the ▸ **Remuneration 2023 report**.

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Sustainability 2023

Reporting principles

Fortum reports 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, Fortum describes sustainability-related governance practices in the Corporate Governance Statement, and strategy and the CEO's view in the CEO's Business Review. Fortum's reporting entity also includes the Tax Footprint and the Remuneration.

Fortum gains information about its stakeholders' views through the One Fortum Survey and other stakeholder collaboration. Fortum reports sustainability information annually in English and some sustainability information in Finnish. In annual reporting, Fortum describes its operations in 2023 and material information from events after the balance sheet date. Fortum's Sustainability 2023 Report is available only in English. The previous Sustainability Report was published in March 2023. In spring 2025, Fortum will report its 2024 sustainability information according to the new Corporate Sustainability Reporting Directive (CSRD). In addition to the annual reporting, Fortum reports its sustainability activities in Fortum's interim reports.

Reporting scope and boundaries

In this report, selected sustainability key performance indicators for continuing operations excluding Russia are disclosed. Comparative figures and information for 2022 have been restated. Figures for 2021 have not been restated, unless otherwise stated.

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 39 Group companies by segment**.

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 April 2023, Russia segment was deconsolidated and reclassified as discontinued operations. Thus, Russia segment's heat production capacity of 7,613 MW and power generation capacity of 4,672 MW have been excluded from Fortum's 2023 reporting and comparatives for 2022 have been restated.

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 power and other production plants for which Fortum is the legal holder of the environmental permit.

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. 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 2023**

Assurance

Deloitte Oy has provided limited assurance in accordance with ISAE 3410 for the reporting period of 1 January 2023 to 31 December 2023 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 2023 report, Fortum describes the realisation of the Ten Principles of the Global Compact initiative in its operations in the chapters ▸ **Climate and resources**, ▸ **Personnel and society**, and ▸ **Business ethics and compliance**.

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.

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, non-compliance 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. Additionally, Fortum provides training on the Market Abuse Regulation, including insider regulations for newly hired individuals who need it based on their roles.

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.

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 59 cases of suspected or confirmed misconduct that were reviewed and closed during 2023. Violation was not confirmed in 13 of the cases. As a result of the investigations, 10 employment contracts were terminated and 11 written warnings were given.

12 of the reported cases were related to non-compliance with company rules. Violation was not confirmed in six of those cases. In confirmed cases, corrective actions were agreed with relevant persons and written warnings were given.

Fortum has zero tolerance towards alcohol and drug use, and random breathalyser tests are conducted regularly. In 2023, 19 cases related to alcohol or drug use during working hours were identified.

One suspected case of corruption, which was under investigation at year-end 2022, was confirmed in 2023. Fortum deals 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.

Restricting competition

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

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 earlier can also be used by stakeholders to report problems possibly caused by Fortum's operations. There were two environmental-related grievances reported through these channels in 2023.

- **Human rights-related grievances**
- **Incidents of discrimination or harassment**

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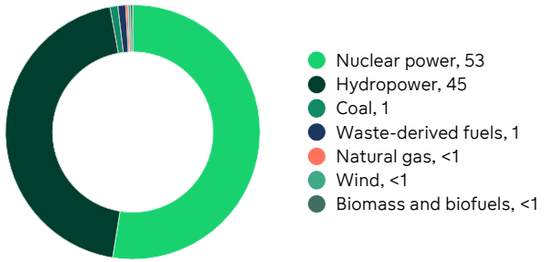
Energy

Fortum's purpose is to power a world where people, businesses and nature thrive together. Fortum is today one of Europe's cleanest power generators. Our energy production is based on low-carbon hydro and nuclear power and is complemented by onshore wind, district heating and cooling operations, the electricity retail business and circular solutions. By improving the energy efficiency of our power and heat production, we can also reduce flue-gas emissions relative to the produced energy and decrease production costs.

Power generation by energy source, %



Energy production

Fortum's power generation in the Nordic countries is mainly based on CO_2-free hydro and nuclear power. Fortum also produces district heating and cooling. Fortum's target is to end all coal-based production by the end of 2027.

In 2023, Fortum's power generation was 47.0 (2022: 44.2) TWh and its heat and steam production 4.3 (2022: 5.3) TWh. 98% of Fortum's total power generation was CO_2-free. These figures also include Fortum's share in associated companies and joint ventures that sell their production to the owners at cost.

Tables of power generation and heat production can be found in Appendix Tables, Energy:

- **Power generation by energy source in 2021–2023**
- **Heat production by energy source in 2021–2023**

- **Fortum's energy production**

Energy efficiency

Improving energy efficiency at power plants refers to measures Fortum implements to increase the efficiency of production processes or to reduce the energy consumption of plants or equipment. This enables Fortum to produce more electricity or heat for its customers and to reduce carbon intensity.

Fortum is committed to exiting coal-based energy production and is replacing fossil fuels in heat production with smart and flexible solutions, such as renewable electricity-powered heat pumps and electric boilers, waste heat utilisation and heat accumulators. These solutions are also highly energy efficient compared to traditional fuel combustion-based boilers.

In fuel-based energy production, Fortum aims to utilise the fuel's energy as efficiently as possible. Up to 90% of the energy content of the fuels can be utilised in CHP production, compared to about 40–60% efficiency in separate electricity generation. Fortum annually invests in refurbishments and modernisations at several power plants, which improves their energy efficiency and availability.

All Fortum's power plants and Circular Solutions business in Finland are within the scope of the 2017–2025 Energy Efficiency Agreement made 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.

- **Espoo Clean Heat**

Fuel consumption

Fortum uses various fuels, such as uranium 78% (2022: 73%), coal 9% (2022: 12%), waste-derived fuels 8% (2022: 9%), biomass fuels 3% (2022: 4%), and natural gas 2% (2022: 1%), to produce electricity, heat, and steam in its plants in the Nordic countries and in Poland.

In 2023, the most significant fuel in Fortum's energy production was uranium, which was used at the Loviisa nuclear power plant in Finland. Coal was used in combined heat and power (CHP) plants in Poland and in Finland, as well as in condensing power plant in Meri-Pori, Finland. Waste-to-energy plants in Riihimäki, Finland; Nyborg, Denmark; Kumla, Sweden; and Zabrze, Poland, used waste-delivered fuels in energy production. Biomass and other biofuels were used to generate heat mostly in Finland.

Natural gas is used to produce heat in Finland. Due to the Russia segment deconsolidation in 2023, Fortum's use of natural gas decreased significantly.

In Finland, CO_2-free electricity was also used in heat pumps and electric boilers to produce heat.

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.

Tables of fuel use can be found in Appendix Tables, Energy:

- **Fuel use in 2021–2023, mass/volume**
- **Fuel use in 2021–2023, energy**

Energy intensity

In 2023, Fortum's fuel consumption in electricity, heat and steam production was a total of 28 (2022: 31) TWh, or 103 (2022: 113) PJ. Additionally, Fortum acquired 0.6 TWh, or 2.3 PJ, of electricity from external suppliers.

With these energy resources, Fortum's net electricity production was about 9.0 (2022: 9.4) TWh and heat and steam production 3.4 (2022: 4.4) TWh. The total energy consumption, calculated as the difference between the procured energy resources and net energy production, was about 17 (2022: 19) TWh, or 60 (2022: 68) PJ.

Fortum's average fuel-use efficiency was about 44%. The efficiency has been calculated by dividing the net energy produced by the energy content of the fuels used in the energy production. In 2023, the energy intensity of Fortum's own energy production was 1.0. 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.

- **Fuel purchasing**

Security of supply

A functional society requires an uninterrupted and reliable supply of energy. Wind and solar power play a constantly increasing role in providing clean and affordable electricicty, but, due to their intermittent nature, other sources of CO_2-free power generation are also needed. At its nuclear power plants, Fortum provides a stable supply of clean electricity at scale to the grid 24/7. With hydropower, batteries and demand response solutions, Fortum balances the fluctuating production of solar and wind and helps to keep the power grids stable. Hydropower reservoirs are also the only truly large-scale energy storage providers in the Nordic societies today.

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 also be 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.

Fortum is exploring prerequisites for new nuclear in a two-year feasibility study launched in 2022. During this study, Fortum will broadly examine the commercial, technological, societal and regulatory prerequisites for new nuclear in Finland and Sweden. The study is focusing on both large nuclear reactors of more than 1,000 megawatts and smaller, new reactor designs, i.e. Small Modular Reactors (SMRs). Both types of reactors – large and small – have their advantages, and there is room for both in the market. Fortum's feasibility study is also investigating new partnerships and business models.

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 its 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 secure the supply of electricity. Finland's first floating LNG terminal located in Fortum's Inkoo port has been safeguarding Finland's security of supply since winter 2023.

With planned preventive maintenance and condition monitoring, Fortum ensures that its 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

Fortum measures the availability of power and heat plants with an energy availability indicator. 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 2023, the hydro availability was 96%.

In 2023, the nuclear availability of Fortum's total nuclear fleet, excluding TVO's third Olkiluoto power plant unit (OL3), was 87%.

In 2023, the load factor of the Loviisa nuclear power plant was 91.06%. The load factor describing the availability of the Loviisa nuclear power plant is among the best in the world for pressurised water reactor power plants.

In early 2024, Fortum set new strategic targets to capture long-term opportunities, mitigate business and market risks, and measure its strategy implementation. As part of this, new KPIs were set, namely: >90% for nuclear fleet availability and >95% for hydro fleet availability.

fortum
Powering a thriving world

Sustainability 2023

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 (GHG) emissions need to be reduced in all sectors, not just in energy, but also in, e.g., heating, cooling, industry and transport. Reducing GHG 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.

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 °C scenario will likely materialise between 2030 and 2035. Large evidence of global warming is already underway, and this highlights the need to accelerate efforts to reduce emissions and increase carbon sinks. In order to stay within 1.5 °C, the world's emissions must be halved by 2030 and must reach net zero in the early 2050s. The world must rapidly shift away from burning fossil fuels, and carbon removal is now essential to reach the targets.

Fortum has a long-standing focus on mitigating climate change and has adopted the reporting recommendations of the Task Force on Climate-related Financial Disclosures (TCFD) starting from the financial year 2019. The following Climate chapter 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 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. The Group's performance targets, including sustainability and climate-related targets, are approved by Fortum's Board of Directors.

The Fortum Leadership Team (FLT) decides on the sustainability approach and Group-level sustainability targets that guide annual planning. Fortum's Technology and Investment Committee (TIC) assesses and makes recommendations to the Board on the management's proposals pertaining to Fortum's sustainability targets and performance. Fortum's line management is responsible for the implementation of Fortum's policies and instructions and for day-to-day sustainability management and improvement plans.

The Executive 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 the FLT, and, as a C-suite officer, she has executive-level responsibility for Fortum's sustainability 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 the 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 the Fortum Leadership Team (FLT) and the Audit and Risk Committee (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.

Strategy

Fortum is the third-largest power generator in the Nordics and one of Europe's cleanest power generators. In 2023, roughly 98.5% of the Group's EBITDA 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 district heating and cooling operations, electricity retail business, onshore wind and solar, and circular solutions.

Fortum's renewed strategy, with a focus on the Nordic market, launched in March 2023, 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 is its ability to deliver reliable and clean energy at scale to customers and the Nordic energy system, ensuring long-term productivity and security of supply. 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 also continues to decarbonise and modernise its existing assets and operations to ensure optimal value creation and to reach its environmental targets. Partnering with customers to deliver the clean power volumes they require on long-term contracts with stable prices will also enable Fortum to better manage the impact of the volatile wholesale power prices in the Nordics.

Drive decarbonisation in industries

Decarbonisation of energy intensive industries is a key hurdle to address on the way to carbon neutrality. The use of sustainable fuels in industrial production processes is also accelerating. With its strong position in clean power in the Nordics, Fortum works to find solutions for industrial customers to lower their carbon footprint. Fortum aims to develop and build new clean power generation in partnerships with strategic customers in the longer term and to actively develop a ready-to-build project pipeline of renewables (on-shore wind and solar) to enable future growth. Further, Fortum explores future opportunities in nuclear, both in small modular reactors (SMRs) and conventional large reactors, in cooperation with customers and partners. Fortum will gradually and on a small scale explore hydrogen through pilot projects in the Nordics.

Transform and develop

To succeed in strategy execution and to navigate the uncertainty in the operating environment, Fortum needs to transform and develop. The aim is to prepare for future opportunities by strenghtening collaboration across businesses and enabling functions and by developing competitiveness and more customer-orientation.

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. Fortum applies 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 Fortum's 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. Fortum helps societies to reach carbon neutrality and its customers to grow and decarbonise their processes in a reliable and profitable way. In the strategy, Fortum also defines 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 biodiversity targets, among other financial and non-financial targets.

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 →

	PREVAILING TRANSITION RISKS IN THE SCENARIO			Risk impact assessment	Key mitigating actions
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 relocating outside the 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 of supply due to geopolitical situation delaying energy transition • Industries relocating to countries outside the EU due to more favourable regulatory frameworks • Electricity customers relocating outside the 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 relocating outside the 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 drive the energy transition and enable decarbonisation of various sectors. Fortum is lobbying for: • High EU climate ambition • Coherence of targets and policies • Carbon pricing as the main instrument in decarbonisation • Holistic investment framework for all power system services (clean energy, flexibility and capacity) • Equal treatment of technologies in energy and climate regulation • Strengthening and enlarging the EU ETS • De-risking instruments (incl. capacity mechanisms) for electricity markets
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 hydrogen produced by electrolysis. Decarbonisation is not driven by green hydrogen and direct electrification	• 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 hydrogen produced by electrolysis, do not materialise, resulting in lower industrial decarbonisation	• Technological developments not proceeding as anticipated, resulting in failure to achieve renewables business growth targets • Hydrogen market does not take off, resulting lower electricity demand growht and thus limited growth opportunities	Hundreds of MEUR	• Partnering with industrial customers • Early insight through venturing and selectively investing in technology innovations • Project participation in technological developments
Market risks (impacts on supply and demand)	• More volatile electricity 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 in the Nordics, green capacity relocating 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 for 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 in the Nordics, green capacity relocating elsewhere because of massive subsidies	• Low market prices for electricity due to a low or inadequate price for 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 in the Nordics, less green investments due to 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
	• Inability to provide stakeholders with adequate proof points supporting Fortum's decarbonisation strategy
		• Failure to decarbonise Fortum's business as requested by stakeholders, such as investors, lenders and NGOs	• 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) and 20 g/kWh by 2028 (total)
					• Providing evidence of successful strategy implementation to investors and other stakeholders
					• 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 long-term weather pattens)	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 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 2023, in the chapter Risk management**.

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. Fortum also believes 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 Fortum's business-specific targets. The transition underway leads to structural changes in various industrial sectors, opening up new opportunities, energy sources and markets.

For the period of 2024–2026, Fortum's capital expenditure is expected to be approximately EUR 1.7 billion (excluding acquisition) of which growth capital expenditure is expected to be EUR 800 million and annual maintenance capital expenditure EUR 300 million.

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 2023, Fortum's CO_2-free power generation, including renewable energy and nuclear power, was 45.9 TWh and 98% of Fortum's total power generation was CO_2-free. To ensure long-term productivity and security of supply, Fortum announced several projects in 2023, such as the Loviisa nuclear power plant lifetime extension until 2050 and upgrades of the hydro power plants, for example Untra in Sweden. Commercial power generation of the Olkiluoto 3 nuclear power unit, of which Fortum owns 25%, was also started. The construction of Finland's third largest wind farm in Pjelax progressed and testing of power generation was already started in the 2023. The wind farm will be commissioned in the second quarter of 2024.

In the heating and cooling business, installations of heat pumps in Finland and in Poland continued. 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 2024 and 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 2023, Fortum started the construction of heat pump plants in Espoo and Kirkkonummi. Heat pumps will recycle waste heat from the nearby data centre – which is to be built later on – into district heat, and plants can also produce district heat independently with air-to-water heat pumps and electric boilers. Once the waste heat capture from data centres is in operation, the two plants will produce heating energy for homes, services and businesses and will cover a total of about 40% of the heating demand of the area, and gradually reduce CO_2 emissions of around 400,000 tonnes. Fortum also started the construction of Poland's biggest heat pump, supplying heat to the district heating system in Wrocław. The heat pump will be utilising heat from the municipal sewage and, when completed in 2024, it will be the first non-fossil heat source in Wrocław's heating system covering up to 5% of the annual district heating demand in the city.

Fortum has included investments in its own assessment of economic impacts, as their annual volume and impact on society is significant. In 2023, Fortum invested EUR 381 (2022: 265) million in CO_2-free energy production. Capital expenditure by country and by production type is presented in the **Financials 2023, in the chapter Key figures 2014–2023, Capital expenditure**. Provisions related to nuclear power are covered in the **Financial Statements, Note 28 Nuclear-related assets and liabilities**. 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 chapters **Energy** and **Circular economy**.

Fortum's innovation and venturing will concentrate on exploring potential future-shaping business opportunities where Fortum could become market leader in the future, with a clear link to Fortum's strategy. In 2023, Fortum spent EUR 56 (55) million on research and development.

Accelerated coal-exit

In line with Fortum's strategic priorities, Fortum focuses 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 decarbonize their processes and products.

Finland's last coal-fired condensing plant, Meri-Pori, has operated on a commercial basis during the winter months to support security of supply in the Nordic power market. In 2023, Fortum and the National Emergency Supply Agency, Huoltovarmuuskeskus (NESA) signed an agreement under which NESA reserves the production of the Meri-Pori coal condensing power plant for severe disruptions and emergencies to guarantee security of supply in the electricity system in Finland. The agreement period is from April 2024 until end of 2026. Fortum has also decided to discontinue the use of coal at the Suomenoja power plant in Espoo, Finland, in 2024.

In Poland, coal-fired generation capacity of 94 MW still remains in the existing CHP plants Zabrze and Częstochowa. Fortum will evaluate alternatives for further decarbonisation of these assets.

A table of **Coal-fired generation capacity per asset** can be found in Appendix Tables, Climate.

Metrics and targets

The Fortum Board of Directors resolved on Fortum's new strategy at the beginning of March 2023. As part of this, Fortum's Sustainability targets were updated.

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 set a target to reach carbon neutrality (Scopes 1, 2, 3) by 2030 and will exit all coal generation by the end of 2027. To measure the progress, mid-point targets have also been set for specific emissions: below 20 g CO_2/kWh for total energy production and below 10 g CO_2/kWh for power generation by 2028.

Fortum is committed to setting near- and long-term company-wide emission reduction targets in line with climate science with the SBTi. Fortum's climate targets will be revisited and aligned to correspond to the SBTi Net-zero Standard during the target-setting process.

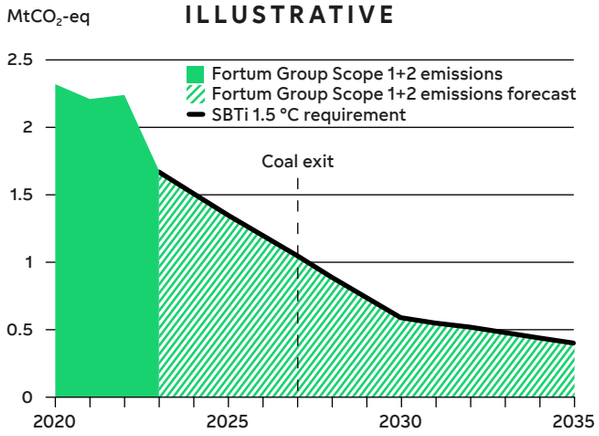
Fortum's long-term incentive (LTI) programme, applicable to top management and other key employees, includes Environmental, Social and Governance (ESG) measures. In the 2021–2023 LTI plan, the set ESG measure was linked to the reduction of Fortum's coal-based power generation capacity in line with Fortum's coal-exit path, with a minimum level requiring exceeding the communicated ambition level. In the 2022–2024 LTI plan, the ESG measure was 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. Due to the divestment of Uniper in 2022, the ESG measure was revised in early 2023. The revised climate target for 2022–2024 for Fortum is related to the reduction of the absolute CO_2 emissions in Europe, i.e., including also Fortum Recycling and Waste. In the 2023–2025 LTI plan, the ESG measure is linked to emission reduction targets based on the climate science (SBTi 1.5° C) and related to emissions in Europe, and to Fortum's reputation index development among key stakeholders.

Governance and management

Climate roadmap

Fortum is committed to setting near- and long-term company-wide emission reduction targets in line with climate science with the SBTi. Fortum's transition plan will include exit from coal by 2027, replacing fossil fuels in heat production with smart and flexible solutions based on renewable electricity and emission reduction actions in the value chain.

Almost 90% of Fortum's greenhouse gas emissions are related to indirect Scope 3 emissions, with a majority related to electricity, heat and gas retail. Collaboration with suppliers and partners is vital for Fortum to identify emission reduction possibilities and solutions, and to succeed in the joint efforts in carbon emissions reduction. Fortum is also working to decrease its Scope 3 emissions by influencing its electricity sales footprint through Fortum's product selection as well as reducing the footprint of its gas sales to customers.



Specific CO_2 emissions

In 2023, Fortum's specific CO_2 emissions for total energy production were 32 (45) gCO_2/kWh and specific CO_2 emissions for power generation were 16 (25) gCO_2/kWh.

The boundary for specific carbon dioxide emissions generated from energy production differs from other environmental reporting principles. The figures also include power generation from Fortum's share in associated companies and joint ventures that sell their production to the owners at cost. This power generation 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, combined heat and power (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%.

Power and heat production
Fortum's power and heat production as well as Fortum's energy-efficiency improvements are described in the chapter **Energy**. Fortum's water withdrawal at power plants located in high and extremely high water-stressed areas is described in the chapter **Water**.

Greenhouse gas emissions

Fortum's greenhouse gas emissions are defined and reported according to the Greenhouse Gas (GHG) Protocol guidelines. In 2023, Fortum's direct Scope 1 GHG emissions were 1.6 (2.2) million CO_2-eq tonnes, indirect market-based Scope 2 GHG emissions 0.04 (0.03) million CO_2-eq tonnes, and indirect location-based Scope 2 GHG emissions 0.06 (0.03) million CO_2-eq tonnes.

Tables of GHG emissions can be found in Appendix Tables, Climate:

- **Direct greenhouse gas emissions (Scope 1) in 2021–2023**
- **Direct carbon dioxide emissions by country in 2021–2023**
- **Market-based and location-based indirect greenhouse gas emissions (Scope 2) in 2021–2023**
- **Indirect greenhouse gas emissions (Scope 3) in 2021–2023**

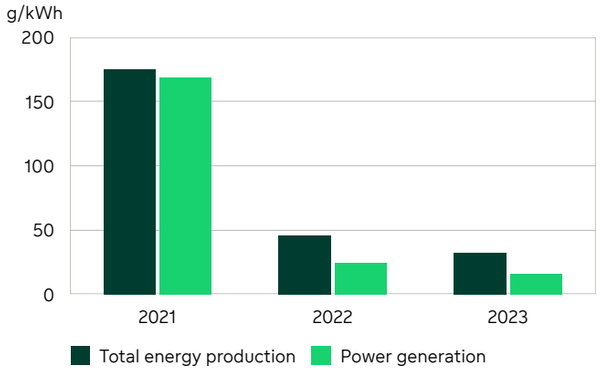
Direct greenhouse gas emissions – Scope 1

Fortum's Scope 1 greenhouse gas emissions accounted for about 11% of total GHG emissions. In 2023, Fortum's Scope 1 direct GHG emissions were 1.6 (2022: 2.2) million CO_2-eq tonnes. The share of carbon dioxide emissions from Fortum's direct GHG emissions was 98%.

The majority of Fortum's direct CO_2 emissions, 1.6 (2022: 2.2) million tonnes, are generated from the use of fossil fuels in energy production. Of Fortum's direct carbon dioxide emissions, about 44% originated from the Finnish operations, 37% from Poland and 19% from other countries.

Of the direct carbon dioxide emissions in 2023, 1.1 (2022: 1.6) million CO_2 tonnes were within the EU emissions trading system (ETS). About 70% of CO_2 emissions from Fortum's energy production in Europe were within the sphere of the EU ETS. In 2023, Fortum was granted free emission allowances corresponding to 0.2 (2022: 0.2) million tonnes.

Specific carbon dioxide emissions from total energy production in 2021–2023



In terms of emission allowances, we had a deficit and purchased the shortfall of emission allowances from the markets.

In 2023, Fortum's direct biogenic carbon dioxide emissions were about 0.6 (2022: 0.8) million CO_2 tonnes.

The calculation of GHG emissions covers carbon dioxide (CO_2), methane (CH_4) and nitrous oxide (N_2O). Carbon dioxide emissions as well as methane and nitrous oxide emissions have been calculated on the basis of plant-specific fuel data. Specific emission factors of gases are based on IPCC publications (IPCC Fifth Assessment Report, 2014 (AR5), 100-year time horizon).

Indirect greenhouse gas emissions – Scope 2

Fortum's Scope 2 greenhouse gas emissions accounted for less than 1% of total GHG emissions. Fortum's indirect market-based Scope 2 GHG emissions were 0.04 (2022: 0.03) million CO_2-eq tonnes, and indirect location-based Scope 2 GHG emissions were 0.06 (2022: 0.03) million CO_2-eq tonnes.

Other indirect greenhouse gas emissions – Scope 3

Fortum's Scope 3 greenhouse gas emissions accounted for about 88% of Fortum's total GHG emissions. Fortum's Scope 3 GHG emissions in 2023 were estimated to be 12.7 (2022: 9.5) million CO_2-eq tonnes. The Group's Scope 3 emissions originate from the upstream and downstream activities in supply chain: purchased goods and services; capital goods, i.e. investments; procurement of fuels; electricity and heat retail to customers; transportation and distribution; and from processing and use of sold products (natural gas). Fortum's Scope 3 emissions originate mainly from fossil energy sources.

The majority of Fortum's Scope 3 GHG emissions are caused by electricity and heat retail (88%), as well as by the use of sold products (7%).

Fortum reports Scope 3 GHG 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 Fortum's monitoring and reporting systems. The specific emission factors used in calculating the Scope 3 GHG emissions are based on databases and other literature sources.

Offsetting emissions from air travel

Fortum has been offsetting GHG emissions from employee air travel since 2007. In 2023, Fortum's GHG emissions from employee air travel were about 3,300 (2022: 2,900) 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 2023 response**
- **EU Taxonomy in Financials 2023 report**

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 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.

Fortum has reduced flue-gas emissions in Poland with the commissioning of the multi-fuelled Zabrze combined heat and power (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.

Emissions to air are minimised through the use of various filters and scrubbers selected on the basis of the waste to be incinerated.

A table of **Flue-gas emissions in 2021–2023** can be found in Appendix Tables, Emissions.

Carbon dioxide (CO_2) and other greenhouse gas emissions are reported in chapter **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. The reporting of at least nitrogen oxide, sulphur dioxide and particle emissions from Fortum's power plants is based on continuous measurement. Other flue-gas emissions data are based on discontinuous measurement 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.

Emissions to water

Wastewater generated at power plants and other production facilities is treated either at an on-site 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, 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 2023, about 0.2 (2022: 0.1) tonnes of oil were released into water systems through wastewater generated in Fortum's operations.

Environmental incidents

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

The definition of major environmental incidents includes environmental incidents that resulted in significant harm to the environment (ground, water, air) and environmental non-compliances with legal or regulatory requirements. In 2023, there were 2 (2022: 2) major environmental incidents: low water flow due to low water level in the fish-holding tanks caused the death of salmon and broodstock salmon at the hydropower plants in Ljusnefors and in Forshaga, Sweden. Both incidents have been investigated following Fortum's investigation procedure and corrective actions have been determined.

Process safety

Water

Water availability is a prerequisite for Fortum's operations using cooling water, in particular at our nuclear and other condensing power plants, as well as for 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. Fortum uses water within the limits set by its 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. Fortum monitors its use of water and aim for efficient use of it by, e.g., decreasing water consumption and by recycling water, where feasible. Additionally, Fortum carries 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.

Fortum's water use has impacts on water resources and also has connections to Fortum's biodiversity impacts. Fortum also recognises that water use has impacts in the company's supply chain, especially in fuel production. Fortum's Supplier Code of Conduct expects Fortum's suppliers to identify their environmental impacts, to implement mitigation actions when required, and to strive to reduce water use.

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 Fortum's assessment, relatively small in the medium term. The majority of Fortum's water withdrawal is seawater for cooling at condensing power plants and it is discharged back into the same water system without consumption.

Only 0.007% of Fortum's total water withdrawal is in water-stressed areas (in 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 addition to the **WRI Aqueduct Water Risk Atlas**, Fortum has used site-level basin physical risk data from the **WWF Risk Filter Suite's Water Risk Filter** tool in the assessment of Fortum's physical water risks. 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 Fortum's 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, local damages and production outages. A warmer climate may also lead to the need for new cooling or process water sources or systems.

Fortum is adapting its operations to the changes in water availability and hydrological conditions, and Fortum takes climate change into consideration in production and maintenance planning, in dam safety, and in evaluating growth and investment projects.

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

Opportunities

Efficient water management in hydropower production allows Fortum 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 Fortum's operations can reduce environmental impacts, generate cost savings, ensure the acceptance of Fortum's operations, and also ensure the supply of water for other purposes and for other users.

Water withdrawal and forms of water use

Fortum's power and heat production using water is located in the Nordic countries and Poland. In 2023, Fortum's total water withdrawal was about 1,460 (2022: 1,440) million m^3, of which seawater for cooling accounted for 98%. This is mainly brackish water of the Baltic Sea. In addition, fresh surface water and small amounts of municipal water, rainwater and groundwater are used. Fortum's water withdrawal also includes rainwater, seepage and stormwater that is not used, but collected only to be discharged. Fortum recycled or reused in total 3.6 million m^3 of water. A table of **Water withdrawal in production operations in 2021–2023** can be found in Appendix Tables, Water.

Cooling and process water in energy production, district heating and waste treatment

Condensing power production requires large volumes of cooling water. 93% of Fortum's total 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; 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 16 (2022: 15) 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.

In addition to cooling, water is used e.g. in thermal power plants' water-steam cycle, in power plant auxiliary processes, and in radioactive waste handling and storage at nuclear power plants. Water is also used in district heating networks as well as in processes at recycling and waste treatment facilities.

Fortum has increased condition monitoring and maintenance of the district heating network in the Espoo-Kirkkonummi-Kauniainen area in Finland. Fortum's target is to decrease leakages: water consumption rate at below 1.6 times/year of the district heating network's current water volume. Development of condition monitoring methods has helped to detect leakages earlier. In 2023, the utilisation of artificial intelligence helped to decrease the use of water, and the consumption rate was 2.0. Some process development is still needed to achieve the 1.6 target.

Hydropower production

Fortum produces hydropower from water flowing in rivers in Sweden and Finland. Fortum's hydropower production is not in water-stressed areas. Water is not consumed in hydropower production, the water quality does not significantly change, 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.

Fortum has precise knowledge of the water situation in those waterways where it produces hydropower and uses real time hydrological forecasts in production planning. Fortum does not report river flows as a hydropower production-related water withdrawal.

Fortum stocks fish to offset the impacts of hydropower production. The majority of Fortum's fresh water withdrawal for other purposes than cooling is for fish farms in Finland and Sweden. The water 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. Fortum's new fish farm at Gammelkroppa in Sweden will be taken into operation in May 2024. In the land-based facility water circulates in a closed system, reducing water withdrawal by about 90% compared with a standard run-off fish farm. Nutrient emissions will also be decreased.

Water use in water-stressed areas

According to the **WRI Aqueduct Water Risk Atlas**, accessed on 4 January 2023, Fortum's CHP plant and heat boilers in Częstochowa, Poland, are located in an area with an extremely high (80–100%) water-stress level. Fortum does not have production plants in high (40–80%) water-stress areas. The classification of water-stressed locations is based on the WRI Aqueduct data, not on actual issues of water scarcity experienced in Fortum's operations.

Fortum's water withdrawal in water-stressed areas was 0.1 (2022: 0.2) million m^3, only 0.007% (2022: 0.013%) of Fortum's total water withdrawal. In water-stressed areas in Poland, Fortum recycled 16,000 (2022: 23,000) m^3 of water.

Water management in Częstochowa is based on water intake from the municipal water supply network. In the Częstochowa operations, water is used mainly as process water for the production of heat and electricity and to replenish losses in the heating network. In order to reduce water consumption, part of the used water is recycled back to the processes. Two cooling stations have been installed at the Częstochowa CHP, a dry cooling tower, which does not consume water, and an evaporative fan cooling tower, which consumes water. Fortum has not experienced problems with water availability in Częstochowa so far.

Fortum has partly-owned solar power in India. The solar power plant sites are located in areas of extremely high water-stress. Fortum's primary method of water conservation is the deployment of waterless cleaning of solar panels; the target is to deploy this method in all Fortum's future solar power plants in India. Apart from this, Fortum saves water by meticulously planning cleaning schedules and utilising rainwater as much as possible to clean modules. In 2023, at the Pavagada plant, Fortum has started recharging ground water through rainwater harvesting. A table of **Water withdrawal in production operations in water-stressed areas in 2021–2023** can be found in Appendix Tables, Water.

Water discharge

Fortum's discharged water is mainly cooling water released back into the sea. In addition to the cooling water, Fortum discharges process water and wastewater. 94% of the process water and wastewater is discharged water from fish farms. The process water and wastewater is purified, when needed, before release into the environment. In water-stressed areas, the discharged water is process water released into municipal sewerage systems.

Tables of Fortum's water discharge can be found in Appendix Tables, Water:

- **Water discharge by recipient in 2021–2023**
- **Water discharge by recipient in water-stressed areas in 2021–2023**

Water consumption

Fortum's water consumption includes, e.g., water leakage from district heating networks and water used in processes at waste recycling facilities and power plants. In 2023, Fortum's own water consumption was about 1.1 (2022: 0.7) million m^3. In water-stressed areas, the water consumption was 0.07 (2022: 0.12) million m^3.

- **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. The degradation of biodiversity is one of the greatest environmental problems globally. We at Fortum acknowledge that we need to know and take responsibility for our impacts and dependencies related to biodiversity and ecosystem services.

Addressing biodiversity issues has become one of the key elements in sustainable business. Fortum recognises the importance of protecting biodiversity and respecting our planetary boundaries. Not only is it the right thing to do, it is also a fundamental component of long-term business survival.

Biodiversity remained high on the global, EU and Fortum agenda

In 2023, biodiversity stayed in focus on the policy and regulatory agenda and in the public discussion. Fortum has actively followed the development of concrete actions in implementing the EU Biodiversity Strategy for 2030 as well as the post-2020 global biodiversity framework. In the EU, the main achievement was reaching a political agreement on the Nature Restoration Regulation, 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 Commission adopted new taxonomy criteria for the protection and restoration of biodiversity and ecosystems. Fortum supports the EU Biodiversity Strategy and its high ambitions to protect and restore species and habitats.

Fortum's biodiversity targets

Biodiversity has been identified as one of Fortum's sustainability priorities. In 2023, Fortum finalised the biodiversity footprint assessment (BFA), initiated in 2022, using the Global Biodiversity Score tool® (GBS®). As the result of the assessment, Fortum has now mapped its dependencies related to and impacts on biodiversity covering direct operations as well as the value chain. Due to the limitations in the methodology, the aquatic impact of hydropower production could not be assessed and quantified as part of the work conducted.

Based on the results of the assessment, the following ambitious biodiversity targets were set for Fortum in March 2023:

- No net loss of biodiversity from existing and new operations in Scopes 1 and 2 from 2030 onwards, excluding all aquatic impacts,
- 50% reduction in dynamic terrestrial impacts in upstream Scope 3 by 2030 compared to 2021.

Fortum is also committed to continue local-scale initiatives, especially in hydropower production, and to participate in the development of a science-based methodology to assess the company's aquatic impact. In 2023, Fortum participated in developing the aquatic segment of the GBS® tool and also assessed other potential tools and approaches to measure hydropower's aquatic biodiversity impacts.

Reduction of the company's greenhouse gas (GHG) emissions is a key lever for reducing negative impacts on biodiversity and for reaching biodiversity targets. Fortum is committed to setting near- and long-term company-wide emission reduction targets with the SBTi in line with climate science.

Assessment of biodiversity impacts is also included as part of the company's investment assessment, and new company-level guidelines, such as guidelines for ecologically sustainable forest management, are being developed.

Impacts on biodiversity

All operations, including Fortum's own, have an impact on biodiversity. Fortum is working to reduce its impact, but must accept that its operations have caused and will cause changes in the natural environment. For example, while hydropower is important in the fight against climate change, which is globally one of the greatest threats to biodiversity, hydropower operations affect migratory fish and the natural state of the river system as a whole. Introducing new wind and solar power production has direct and indirect impacts on biodiversity, and the production of the fuel (both bio- and fossil-based) used in Fortum's 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.

Based on the biodiversity footprint assessment, on a global scale, Fortum's main terrestrial 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. As described in the manual, biodiversity issues are systematically considered as part of Fortum's environmental management processes and 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. Fortum annually updates its **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.

Biodiversity impacts in the supply chain

As mentioned in Fortum's Supplier Code of Conduct, Fortum expects its 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. Fortum manages the biodiversity impacts of its fuel procurement, such as wood-based biomass and coal, by using international certification and assessment systems. More information is available in the chapter **Supply chain**.

Local-scale projects improving biodiversity

In addition to strategy work, in 2023, Fortum continued to carry out voluntary and licence-related biodiversity measures to prevent negative impacts and, where possible, to implement biodiversity improvement measures.

In 2023, Fortum carried out hydropower-related fish obligations, valued at approximately EUR 2.8 million. Investigations and environmental assessments were also carried out as a preparation for the Swedish National Plan for Modern Environmental Conditions for Hydropower (NAP). A table of **Restored habitats and other major voluntary biodiversity measures implemented in 2023** can be found in Appendix Tables, Biodiversity. Additional information about Fortum's projects supporting biodiversity is available in the **Biodiversity Action Plan** and on Fortum's **website**.

Most of Fortum's local-scale 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 combating invasive species. In addition to voluntary projects, measures are also carried out as licence obligations.

In other operations, e.g., at Loviisa, Finland, in addition to monitoring water quality, supplementary information was obtained on the populations of phytoplankton, macroalgae, benthic fauna and fish in the marine area near the Loviisa nuclear power plant. More information on the fauna of the nearby sea area was also obtained by sampling water and sediment using the eDNA method.

Improving fish migration and migratory fish populations

To strengthen the lifecycle of fish, Fortum uses a number of solutions, like fish stocking, habitat improvements, various types of fishways, and trap and transport systems enabling fish to pass 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, Fortum 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.

In 2023, Fortum carried out voluntary measures for salmon in Gullspång, Sweden, e.g., additional water spillage from the Gullspång hydropower plant was implemented to benefit the downstream migration of young salmon.

In 2023, Fortum continued the programme of dismantling small dams in Sweden. The programme includes 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 2023, four dams were removed.

Fortum finalised the construction of a large-scale fish passage solution for up- and downstream migration at the Spjutmo hydropower plant and two downstream migration solutions at the Blyberg and Väsa hydropower plants in River Dalälven, Sweden. This was based on a decision by the environmental court. The upstream solution for fish at the Blyberg and Väsa hydropower plants will be completed in 2025.

In Finland, the Montta fish trap was in operation from the end of August until the end of October, 2023. In the Oulujoki area, Fortum is improving the lifecycle of the threatened Oulujärvi lake trout with a hydraulic dam-bypass solution, Fishheart, at Leppikoski, and by stocking juvenile fish above the Leppikoski dam. Fortum also started a feasibility study of a fish passage solution at the Seitenoikea hydropower plant. In the Vuoksi area, Fortum carried out a feasibility study of a Tainionkoski environmental city creek/bypass designed to create more breeding areas for trout and salmon.

Fortum also restored or improved several terrestrial habitats in order to support threatened species or habitats, often in cooperation with other parties.

Actions planned for 2024

Fortum will continue working with its biodiversity strategy development to identify and implement actions needed to achieve the Group's biodiversity targets.

Fortum is committed to applying a science-based approach when setting its biodiversity targets, also related to the impact of hydropower. As there are currently no methodologies known to Fortum, the company continues to participate in the development of science-based tools to assess the aquatic biodiversity impacts of its hydropower production. This pioneering work has proven to be more complex and is taking more time than originally estimated. In the absence of quantifying tools supporting Fortum's science-based criteria, Fortum will start assessing the aquatic impact qualitatively and the mitigation possibilities following the steps of ecological mitigation hierarchy at the river level. Assessments will be done in Sweden in connection with the Swedish NAP (National Plan for Modern Environmental Conditions for Hydropower) process and in Finland starting with River Vuoksi in 2024.

In addition to the strategic work, Fortum is continuing to work on voluntary and licence-obligated biodiversity projects. In addition, Fortum is seeking ways to assess and enhance the biodiversity value of Fortum-owned forests. Fortum's initiatives will be updated in the **Biodiversity Action Plan**.

fortum
Powering a thriving world

Sustainability 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 plants 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.

Our waste management services

Fortum's aim is to promote resource efficiency 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.

Fortum offers waste management services for customers in the Nordic countries, Central Europe and Poland. Of the waste stream received from customers, as much as possible is recycled, reused or recovered as raw material. Waste that is unsuitable for recycling or reuse as a material is incinerated in Fortum's 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 any recovery is disposed of at landfill sites.

Waste received from customers

In 2023, Fortum received a total of 2.0 (2022: 2.2) million tonnes of waste from its customers, about 1.4 (2022: 1.6) million tonnes of which was non-hazardous waste, with ash accounting for 35% (2022: 27%) and contaminated soil for

15% (2022: 25%). Fortum also received about 716,000 (2022: 659,000) tonnes of hazardous waste from its customers, with ash accounting for 10% (2022: 12%) and contaminated soil for 13% (2022: 19%).

About 34% (2022: 33%) of received waste was recovered as materials, 40% (2022: 42%) was recovered as energy and the rest was landfilled.

Recovery of materials

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

- Fortum produces **plastic recyclate** from post-consumer plastic waste.
- Fortum processes and **recycles metals** separated from customers' waste streams and from ash and slag generated in customers' energy production. Fortum also recycles scrap metals generated in the maintenance activities of its own power and heat plants.
- Fortum treats and **processes ash**, dredging masses, slurry and contaminated water from energy production and other industries for reuse in various types of products, environmental construction and earthwork projects.
- Fortum treats contaminated soil received from its customers, and Fortum directs 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 Fortum's own industrial waste treatment centres.
- Fortum uses a combination of mechanical and hydrometallurgical technologies to **recycle battery materials**. The recovered battery chemicals – lithium, cobalt, manganese and nickel – can be used by battery manufacturers in the production of new batteries. It's possible to recycle over 80% of the battery and 95% of the valuable metals contained in the battery's black mass can be put back into circulation.

In 2023, of the waste received from its customers, Fortum recovered about 663,000 (2022: 733,000) tonnes as materials; various environmental construction materials accounted for 69% (2022: 60%) of that amount, processed raw materials and products for 11% (2022: 8%), and recoverable ash for 5% (2022: 12%). In addition, about 50,000 (2022: 45,000) tonnes of recoverable materials originated at Fortum's own power and heat plants.

Hazardous waste treatment

Fortum offers solutions to treat **hazardous waste**. Fortum takes hazardous waste out of circulation in a sustainable manner and cleans the hazardous substances from materials that end up in recycling. At the same time, Fortum produces 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.

Fortum has three high-temperature incineration plants producing electricity and district heating for the surrounding areas: in Riihimäki, Finland; Nyborg, Denmark; and Kumla, Sweden. In 2023, about 325,000 (2022: 333,000) tonnes of hazardous waste and, additionally, about 311,000 (2022: 408,000) tonnes of non-hazardous waste was incinerated at these facilities.

Waste and by-products from our energy production

The total volume of by-products and waste generated at all Fortum's power and heat plants in 2023 was about 160,000 (2022: 200,000) tonnes. Of this volume, about 89% (2022: 84%) was recovered either as material or energy.

Ash and gypsum as by-products

Ash and gypsum are generated as by-products in heat and power production and waste-to-energy plants. Ash is the non-combustible residue of the fuel, containing mainly minerals and metals. In 2023, about 112,500 (2022: 170,800) tonnes of ash was generated. About 99% (2022: 95%) of the ash from Fortum's plants was utilised as a raw material, for example, in the construction industry and road construction, and as soil improvement and backfill.

Coal-fired power plants also generate either a wet or semi-dry desulphurisation by-product (gypsum) in the flue-gas cleaning systems. In 2023, 4,900 (2022: 4,200) tonnes of gypsum was generated and about 57% (2022: 69%) of that was recovered. A table of **Ash and gypsum generated in energy production plants in 2021–2023** can be found in Appendix Tables, Circular economy.

Conventional and hazardous waste

In 2023, the power and heat plants generated a total of about 40,800 (2022: 27,000) tonnes of waste, about 400 (2022: 1,500) 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 and transportation companies. A table of **Waste generated in Fortum's operations in 2021–2023** can be found in Appendix Tables, Circular economy.

Radioactive waste

In addition to conventional industrial waste, the Loviisa nuclear power plant in Finland also generates radioactive waste, which Fortum treats in accordance with the requirements of Finnish nuclear energy legislation. According to the requirements, nuclear waste generated in Finland must be finally disposed of in Finland.

High-level radioactive waste from spent nuclear fuel is stored in an interim storage at the Loviisa nuclear power plant site. In 2023, 23 (2022: 23) tonnes of spent nuclear fuel was removed from the Loviisa power plant reactors.

In 2023, 199 (2022: 157) m^3 of intermediate-level radioactive waste from the Loviisa nuclear power 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 2023, 34 (2022: 31) m^3 of low-level radioactive waste from the Loviisa nuclear power plant went to final disposal and 18 (2022: 22) m^3 of radioactive maintenance waste was stored to wait for final disposal.

Nuclear waste management
Final disposal of spent nuclear fuel

Personnel

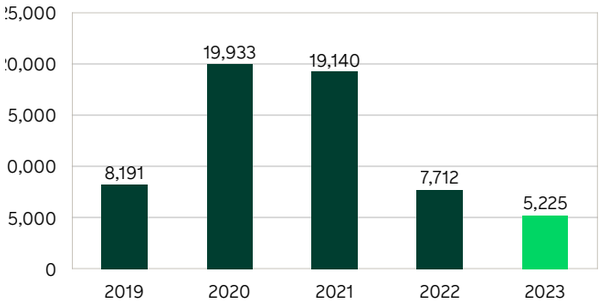
We aspire to be a responsible employer that offers a diverse and motivating work environment and invests in personnel development and wellbeing. Personnel-related matters are guided by our People Policy and Leadership Principles.

Our employees

Fortum's 5,225 employees are mainly based in the Nordic countries and Poland. Tables of employee statistics can be found in Appendix Tables, Personnel:

- **Personnel statistics by country in 2023**
- **Workforce by employment contract and employment type, by country and gender in 2023**

Number of employees, 31 December



Diversity and equal opportunity

We understand that diversity and inclusion are key to our long-term success as a company in all our markets. Fortum values diversity and fosters 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 Fortum offers an additional six weeks of unpaid maternity leave on top of what is stipulated by law and two weeks of paid paternity leave. Fortum offers flexible work schedules and remote working in positions that do not require presence in the workplace.

In Finland, Fortum annually drafts company-specific gender equality plans in collaboration with personnel representatives. Separate equality promotion plans addressing various forms of equality (such as age, sexual orientation, and ethnicity) are drafted annually at the corporate level. Their purpose is to assess the realisation of equality in the workplace and to further improve equality.

In 2023, Fortum continued to provide training and information on diversity, equity and inclusion for managers and all employees.

Fortum measures employees' perceptions on diversity and inclusion as part of Fortum's Employee Voice survey conducted twice a year. Fortum's overall Diversity and Inclusion score was 7.8, positioning Fortum close to the relevant energy and utility benchmark score, with a slight increase from May 2023 to November 2023. These results reflect room for improvement in fostering a deeper understanding among Fortum's employees regarding the significance of diversity as a priority.

During the renewal of Fortum's organisation in 2023, special attention was paid to the composition and diversity of leadership teams in terms of gender and nationality. This resulted in a significant increase of females in top management (CEO, FLT and one level down if in a supervisor position); in 2023 the number of females in top management positions was 40.8%. A table of **Management by age and gender in 2023** can be found in Appendix Tables, Personnel.

Fortum's talents participating in Navigator, an internal talent development programme, conducted several projects aiming at improving Diversity, Equity and Inclusion (DEI), e.g. defining DEI for Fortum, DEI practice benchmarking, and DEI in recruitment and talent development. The outcomes from these projects are now being implemented in the organisation, like the renewed talent management as a core governance process in the organisation, or the new Employee Value Proposition highlighting the importance of diversity.

The average age of Fortum Group employees was 42 years. The share of employees over 50 years old was 27% for the entire Group. A table of **Personnel age distribution by country and gender in 2023** can be found in Appendix Tables, Personnel.

Fortum's target is to comply with the principles of the 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 2023, Fortum's Board of Directors comprised 10 members, four (40%) of them were women.

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. There were 10 confirmed harassment or discrimination incidents reported to Fortum's reporting channels in 2023. 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.

Remuneration

Competitive remuneration is essential for attracting and retaining talented people. Salary levels at Fortum are in compliance with established industry practices, local legislation, and sector-specific labour market and other agreements in the countries where Fortum operates. The key objective of remuneration is to encourage and recognise high performance and behaviour that is in line with Fortum's values and leadership principles and enables successful implementation of Fortum's strategy. Employee compensation includes base salaries, benefits and variable components. The performance measures in the Group's short-term incentive (STI) plan typically comprise the Group's financial, operational, customer and safety measures, as well as business- or function-specific measures and/or team or individual measures, which are approved annually by the Board of Directors.

Base salaries are derived from a harmonised job classification system in all Fortum's operating countries; the system defines the basis for setting the base salary for different roles. Fortum analyses the gender equality of base salaries. All personnel groups, except individuals working in blue-collar positions (around 13% of total personnel), are currently included. In 2023, the total number of persons included in the analysis was 3,463, of which 1,352 (39%) were female. The base salaries of female employees were, on average, 1.0% (2022: 2.9%) lower than the base salaries of male employees. This figure is based on data covering Finland, Sweden, Norway and Poland where the number of employees is big enough for reliable analysis.

Employee-employer relations

Fortum's business operations are developed and strengthened in good collaboration with employees. Fortum believes 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 Fortum's 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, Fortum complies with the same practices as in other countries of operation and does not limit or prohibit the right to freedom of association.

Fortum applies local collective bargaining agreements in compliance with the scope of each respective agreement in its operating countries. Collective bargaining agreements cover around 73% of Fortum's employees in Fortum's 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 Fortum's Leadership team's representatives meet. Through the council, employees are informed by management on the progress of the business. Additionally, based on the agreement made between the company and employee representatives, the representatives are informed and consulted about the plans that may have a significant impact on personnel at the European level.

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, Fortum wants to primarily support the re-employment of personnel.

Fortum offers outplacement services on a per-case and per-country basis and in cooperation with local unemployment authorities or service providers. Also, Fortum can 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 possible financial compensation of the package is usually based on years of employment.

Employee health and wellbeing

Occupational safety and health care are organised in Fortum's 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.

Fortum runs a global Energise Your Day wellbeing programme, which encourages employees to maintain their wellbeing and to take care of themselves. The programme offers ideas, services and tools for self-management, mental wellbeing, recovery, nutrition and physical activity. In 2023, the focus areas were about increasing resilience skills and reinforcing the importance of community. The Wellbeing Toolbox Talks concept was implemented to increase awareness and discussions regarding wellbeing within the teams. Nearly 400 discussions were facilitated during 2023.

The sickness-related absences target for 2023 was 3.0%. The percentage of sickness-related absences was 3.1% in 2023 (2022: 3.4%). The sickness absence rate is calculated based on the theoretical working hours. Reducing sickness-related absences is a priority for Fortum, and the company addresses the issue with the so-called early-support model. Fortum increases open communication between employees and supervisors by discussing and mapping the reasons for absences. Supervisors receive training in leading work capacity and wellbeing.

Fortum conducts the Employee Voice Survey twice a year. Based on the feedback, despite another challenging year, wellbeing was at a good level. According to the latest employee survey, in November 2023, the health and wellbeing score improved slightly and was 7.7 and in line with the relevant energy and utility benchmark score. The mental wellbeing score was 7.4, which is slightly below the industry benchmark of 7.5. Based on the survey results, there is a need to support Fortum's employees with managing the mental demands of their own work role. To support the mental wellbeing of its employees, Fortum offers individual- and team-level wellbeing coaching and services for mental wellbeing discussions.

Employee development

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

Fortum continued developing the portfolio of online training courses, mainly in communication skills, project management, Fortum Open Leadership, and culture. In 2023, training costs for Fortum totalled EUR 4.3 million (2022: 4.0 million).

Fortum supports 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.

Feedback from personnel

Fortum places significant emphasis on an open and trusting corporate culture and highly values feedback from its employees. Fortum uses a real-time and flexible feedback 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. Employees' additional open comments give insight behind the scores and help us set improvement actions going forward.

The response rate of the global engagement survey carried out in 2023 was 84%. The overall engagement score measuring how committed and enthusiastic employees are about their work and the organisation is 7.2, which is in the middle range of the benchmark score (7.5).

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. Fortum's commitment to safety also extends to people and the environment near its facilities.

Occupational safety management

Safety is developed systematically in all Fortum's operations. The Sustainability Policy, the Minimum Requirements for EHS Management, and more detailed EHS manuals steer the work. Fortum regularly updates the requirements and assesses the business units' performance in complying with the revised requirements.

A certified ISO 45001 occupational health and safety management system covers 100% of Fortum Group's power and heat production worldwide. Internal audits and external audits by independent auditors are regularly conducted at Fortum's power plants to improve operations.

Occupational safety targets

As part of the strategy work, Fortum's safety targets were also updated in 2023. Due to the changes in the company structure, the time span to reach the ambitious safety target of Total Recordable Injury Frequency (TRIF) <1.0 was extended with five years, to be reached by the end of 2030.

Fortum's safety targets set in 2023 were:
- Total Recordable Injury Frequency (TRIF), <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

Fortum's safety targets for 2024 are:
- Total Recordable Injury Frequency (TRIF), <1.0 by the end of 2030
- No severe or fatal injuries
- 60% execution rate for Safety improvement plans in 2024 (including 95% execution rate for the Safety and Security Leadership Programme in 2024)

Safety performance

At the end of 2023, Fortum's TRIF for own personnel and contractors was 5.0 (2022: 4.0) and Lost Time Injury Frequency (LTIF) was 3.9 (2022: 2.3). Fortum strives for zero severe occupational accidents. In 2023, there were 0 (2022: 2) severe occupational accidents in the operations. A table of **Key safety figures in 2021–2023** can be found in Appendix Tables, Safety and security.

The execution rate of the Management Safety and Security Leadership Programme and the Safety improvement plans was 100% and 78%, respectively. Both exceeded the set targets.

In 2023, Fortum applied three internal control points to assess EHS process compliance, namely:
- Quality of EHS incident investigations; the process includes occupational accidents, major process safety incidents and serious near misses.
- Compliance with Fortum EHS minimum requirements: Lifting works; measures how well requirements are followed in high-risk lifting works.
- Contractor EHS management 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 2023, all three EHS control points reached a very good level (4–5) at the most of the assessed sites.

The focus of the Compliance with Fortum EHS minimum requirements: Lifting works was changed to Risk assessment to improve EHS risk assessments in 2024 and in 2025.

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.

Training and development projects related to occupational safety

Fortum employees are committed to being actively involved in creating a new joint safety culture.

Fortum's Safety Culture Programme was launched in 2022. The programme includes trainings, webinars and workshops for all organisational levels. In 2022, 109 top-level executives participated in the programme. In 2023, the programme was extended and the number of participants quadrupled to 409 managers who completed the 2-day-programme. The programme will be continued in 2024 as the Safety and Security Leadership Programme.

Circular Solutions' Recycling & Waste business area continued a comprehensive safety improvement programme called SafetyCORE. The programme consists of six different workstreams to develop safety leadership and culture, process safety, the learning organisation and risk management.

In 2023, Fortum continued several initiatives to improve contractor safety management by, e.g., increasing the number and quality of supplier post-evaluations. In the post-evaluations, supplier safety practices are evaluated after projects, and the post-evaluations are used for supplier selection in tender evaluations.

A chemical management system, integrating previously scattered systems together, started to be used by all Fortum functions in the Nordic countries in May 2023.

Process safety

Fortum's top priorities are to ensure the health and safety of its employees and contractors and to maintain business continuity. In 2023, maintenance outages were, in general, 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 2023, several minor fires occurred as well as one major fire with material damage but no personal injuries or significant environmental damage. In 2023, there were 2 (2022: 2) major environmental incidents: low water flow due to low water level in the fish-holding tanks caused death of salmon and broodstock salmon in the hydropower plants in Ljusnefors and in Forshaga, Sweden. Both incidents have been investigated following Fortum's investigation procedure and corrective actions have been determined.

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 2023, Fortum focused on operational issues in hydropower. The organisation was also tested in reality during the autumn storm and flooding (Storm Hans in August 2023) resulting no major harm to dam safety.

A table of **Major dam safety projects** can be found in Appendix Tables, Safety and security.

Nuclear safety

Safety is a prerequisite for all Fortum's nuclear operations. Fortum's task is to produce electricity safely, reliably and competitively, in the short term and long term, while complying with the principles of nuclear and radiation safety, waste management control and nuclear security. Fortum's operations are based on a high-level safety culture and quality and on continuous improvement. Fortum's world-class expertise is a prerequisite for safety and competitiveness.

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. Loviisa power plant plays an important role as a producer of steady and emission-free electricity. Over the course of the new licence period, the plant is expected to generate up to 170 terawatt-hours of CO_2-free electricity. In March 2023, the Finnish Government granted a licence to operate the final disposal facility for low- and intermediate-level radioactive waste, located in the Loviisa power plant area, until the end of 2090. Loviisa's final disposal facility forms a key part of Loviisa power plant's nuclear waste management.

Several plant modifications were implemented at the Loviisa nuclear power plant in 2023 to improve the safety and operation of the plant. The emergency diesel generator automation renewal at the Loviisa unit 1 was completed in 2023 by renewing the fourth diesel generator. The renewal of automation has been implemented in the three other Loviisa 1 emergency diesel generators 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 the Loviisa unit 1 and to ensure the operational reliability, safety and availability of the system.

Reviewers from the World Association of Nuclear Operators (WANO) conducted a peer review at Loviisa power plant in March 2023 and a corporate peer review was conducted in December 2023. The peer reviews provided valuable insight on areas for improvement as well as identified strengths. The nuclear sector's international peer reviews are an important part of improving nuclear safety.

Fortum's Nuclear Generation – Safety and quality policy

Corporate security

The global geopolitical situation remains tense. Fortum assesses the threat landscape continuously so that business operations are prepared for evolving and new threat scenarios. Corporate security processes strive to ensure the uninterrupted continuity of business and the safety of assets, people, information and processes in normal and exceptional situations. Uninterrupted energy production and other services are critical for an energy-dependent society.

Securing personnel and business

Fortum assesses risks related to people and business in all operating countries and in countries where they have potential operations or business travel. Compliance with the minimum-security requirements improves their operational ability to withstand and recover from disruptions and thus improves productivity. Risks impacting the company and business operations may be directly or indirectly related to political situations, terrorism, crime, conflicts and business partners.

Cyber security

Fortum has a security programme in place to ensure the security of the information it handles and the security of its Information and Operational Technology systems. The programme aims to ensure the production and distribution of power and heat and the functioning of digital services offered to customers. Fortum actively collaborates with authorities and other stakeholders to identify and prevent increasing and evolving cyber threats. The security awareness of employees is improved through mandatory training and instructions, including renewed eLearning tools.

Contingency planning

Fortum is prepared for various disaster and emergency situations, which may cause disruptions to its operations. The situations can be caused by, for example, political uncertainty, climate change and the growing dependence on partners. Crisis and emergency management instructions have been prepared for Group, unit and site levels. In 2023, Fortum concentrated heavily on ensuring resiliency arrangements and continuity management as well as on substitute locations for critical functions. The company also held an annual emergency preparedness exercise related to a nuclear power accident at the Loviisa power plant. Additionally, crisis management rehearsals were organised during the year in relevant businesses.

Regulatory compliance

Fortum has initiated supplementary measures required by safety- and security-related regulations. For dam and nuclear safety, emergency preparedness obligations especially in Finland and Sweden are based on regulatory provisions. Fortum independently defines, based on its own risk assessments, the crisis and non-compliance situations for which it prepares action plans.

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Sustainability 2023

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.

Fortum's 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 chapter ▸ **Policies and commitments**.

Management of human rights issues and personnel training

The 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.

The 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, Fortum either assesses risks based on public sources or conducts 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 Fortum's business units is planning to sell products or services. In 2023, five such assessments were performed.

For investment projects targeting risk countries, Fortum performs an in-depth assessment in which the company often also uses external local experts. One in-depth assessments was carried out in 2023.

Supplier and counterparty-related risks are assessed as part of supplier selection in the supplier qualification process and Know Your Counterparty process. These practices are described in more detail in the chapter **Supply chain**.

Examples of risk mitigation measures include policies, instructions and trainings for employees and contractors. Mitigation measures are described more in detail at **Fortum's website**.

Identified impacts on human rights

Fortum has identified the actual and potential human rights impacts and right-holder groups that its operations directly or indirectly impact. The identification of Fortum's 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. Fortum's 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 Fortum's personnel, as well as the right to privacy of Fortum's customers and employees.

Fortum's operations may also have indirect impacts on those working in the supply chain, as well as on members of local communities in supply chains. Fortum's 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. Fortum has not identified risks related to the use of child or forced labour in its own operations.

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 2023, 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.

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 2023, Fortum participated in the **Energy for a Just Transition** collaboration facilitated by BSR in partnership with The B Team to identify and address the impacts of green energy transition on people and communities. The collaboration brings 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.

A just transition in the supply chain is addressed also in Fortum's work with the **Bettercoal** initiative. 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.

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Sustainability 2023

Stakeholders

Fortum's way of operating responsibly includes an open dialogue with its stakeholders and continuously identifying stakeholders' views and needs. Good collaboration and transparency are the key ways to promote trust and mutual understanding.

Stakeholder collaboration

Collaboration with different stakeholder groups helps Fortum to assess and meet the expectations stakeholder groups have towards the company. Fortum has an open and regular dialogue with different stakeholders, and annual stakeholder surveys are conducted to systematically monitor stakeholders' views of the company. Fortum follows the public dialogue in the countries where it operates and participates in providing relevant information to its stakeholders through different channels. Feedback from customers drives the development of Fortum's products and services. Membership in national and international organisations helps to deepen Fortum's understanding of global sustainability issues and their connections to Fortum's business.

Management of stakeholder collaboration at Fortum is assigned particularly to Sustainability and Corporate Relations function as well as to 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 in Finland as invited by the Board of Directors. The Advisory Council aims to advance Fortum's businesses by facilitating the dialogue and exchange of views between Fortum and its stakeholders.

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 Fortum's 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 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.

A table of **Fortum's stakeholder surveys** can be found in Appendix Tables, Stakeholders.

NGOs' main criticism towards Fortum is related to the biodiversity impacts of hydropower

Fortum's strategy, the divestment of Uniper and the exit from Russia have been perceived positively by NGOs. Fortum is now a clean energy company, and NGOs expect Fortum to continue its efforts and investments in clean energy. The main concern and criticism NGOs have towards Fortum is related to hydropower's impacts on the local environment, and they urge Fortum to secure fishways for migratory fish along the rivers where Fortum has power plants.

During 2023, Fortum arranged a roundtable meeting with a group of Finnish NGOs and several meetings with individual NGOs to discuss specific concerns and cooperation. In addition, Fortum engaged in dialogue with local NGOs on several occasions through various media. In Sweden, Fortum has established relationships with a couple of NGOs and continued to work with them in 2023. One example of such cooperation is the River Clean-up event organised with Städa Sverige.

Working with investors

In 2023, energy prices significantly calmed down after the previous year's dramatic shock in the European energy markets. However, price volatility for both gas and electricity continued with the increasing share of intermittent generation in the energy system and the occasionally re-emerging concerns over security of energy supply.

At the beginning of the year, Fortum launched its new Nordic strategy and announced ambitious new financial and environmental targets. As one of the leading energy companies in the Nordics, Fortum's strategic priorities are to deliver clean energy reliably, drive decarbonisation in industries, and transform and develop.

In April 2023, the Russian authorities unlawfully seized the company's assets in Russia, which resulted in the de facto loss of control of the company's Russian operations. Due to this, assets were impaired in full, deconsolidated and reclassified as discontinued operations. This also significantly reduced Fortum's carbon intensity profile, which was appreciated by the capital markets. The carbon intensity is now among the lowest in Europe, at 16 g/kWh in electricity generation (end of year 2023).

The new strategy, and especially the very ambitious sustainability targets, were perceived well by the capital markets. Many sustainability-focused investment and rating companies are, however, still updating their data and models to reflect the exclusion of Uniper and Russia.

In 2023, Fortum continued a very active dialogue with investors and investor coalitions. In these dialogues, investors highlighted and showed interest regarding Fortum's concrete actions to drive decarbonisation and actions to achieve the set ESG targets, especially with a focus on the transition plan to reach the emissions reduction targets, including concrete actions to phase out coal in Finland and Poland. Fortum is also committed to setting emission reduction targets based on climate science (SBTi 1.5 °C).

In 2023, Fortum gained a lot of new investor attention, and a broad range of sustainable investors returned to reinitiate discussions with Fortum following the transformation to a clean Nordic power generator. Fortum met approximately 450 times with investors from 160 various investment firms – either individually, in group meetings or at investor conferences – and maintained very frequent contact both with equity and credit research analysts at investment banks and brokerage firms. The majority of these investor activities were held virtually, but the share of physical meetings increased compared to the previous year.

The dialogues with investors on climate-related topics are very valuable for Fortum, and the company considers investor feedback in its continuous business development and strategic decarbonisation agenda to also reflect the requirements of the capital markets. Fortum considers the received investor support of high importance in driving the energy transition forward.

In May, Fortum successfully returned to the fixed income market and issued five- and ten-year bonds with a total nominal amount of EUR 1.15 billion under its Euro Medium Term Note (EMTN) programme. To enable future issuance of sustainable and green bonds, Fortum established a Green Financing Framework, which was launched in January 2024. The Green Finance Framework allows Fortum to raise capital via green bonds and loans (Green Debt). Green projects may include fixed assets, capital expenditures and/or operational expenditures (including R&D expenditures). Net proceeds of Green Debt Instruments issued under the framework will be allocated to the development of renewable energy, energy efficiency projects, and/or the nuclear power project portfolio.

Transparent and ethical lobbying

As an energy sector expert, Fortum actively expresses its views on energy, climate policy, sustainability and circular economy issues and offers expert advice to officials and decision makers. The goal of Fortum's lobbying is to ensure a favourable operational regulatory environment for Fortum's business, support the development and implementation of the strategy while contributing positively to Fortum's reputation, brand and license to operate. Fortum's positions are based on its longer term strategic targets and business interests while taking into account also broader societal objectives and implications. Fortum publishes position papers on significant topics, which can be found on Fortum's **corporate website**.

Fortum lobbies officials and decision-makers directly, but also through different coalitions and many business associations representing, for example, a certain sector or energy production technology. Fortum occasionally utilises external advisors in its advocacy work, but always represent itself in external lobbying activities. In addition to the

Corporate Relations functions, also Fortum's business units and other corporate functions conduct lobbying. Fortum conducts lobbying both on a national level in its operating countries and towards EU institutions.

In 2023, Fortum's key lobbying priorities were related to advocating for a balanced and sustainable energy market framework focusing on technology-neutral climate policies and streamlined regulatory processes to foster investments in renewables and clean technologies. Fortum's top-10 lobbying priorities for 2023 are described in more detail on **Fortum's website**.

In Finland, Fortum actively participated in the discussions on the new Government Programme and its implementation. In Sweden, many lobbying activities were linked to the implementation of Sweden's Government Programme, adopted in 2022.

Towards the end of the year, Fortum prepared its **White Paper** on the priorities for the next European Commission, including Fortum's priority recommendations for the next Commission Work Programme.

Climate engagement lobbying

In 2023, there were many notable developments in climate policies at an international, EU and national level. The global climate negotiations at the UN Climate Change Conference, COP28, in December resulted in an outcome speeding up the energy transition and paving the way for the non-fossil fuel era. A key issue was the first global stocktake of the commitments under the Paris Agreement.

The EU Fit for 55 legislative package to implement the EU 2030 climate and energy targets was adopted in 2023 and has proceeded to national implementation in the member states. The EU 2040 target consultation was implemented in 2023, and the Communication from the Commission on the 2040 target and 2030–2050 carbon budget is expected in early 2024.

Fortum's climate policy advocacy is strongly based on climate science, and support for the Paris Agreement is the core principle underpinning it. Fortum has expressed its support for the EU 2050 climate-neutrality goal and the revised 2030 target to reduce emissions by at least 55%. In 2023, the company continued 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. In June 2023, Fortum submitted its response to the EU Commission's consultation on the 2040 climate ambition. In its position, Fortum favours a target of around 90% net emission reduction by 2040, compared to 1990, with separate targets for emission reduction and removal.

In 2023, Fortum joined the global 'Fossil to Clean' initiative by We Mean Business together with more than 130 companies. The initiative was established to address global policymakers attending the COP28 and asks for predictability and policy certainty that will allow businesses to develop affordable and reliable near-term alternatives to fossil fuels for their operations and supply chains. Fossil to Clean signatories also call on ensuring clear pricing signals through a meaningful price on carbon that reflects the full costs of climate change.

Furthermore, in late 2023, Fortum updated **Fortum's Climate Lobbying Review** that was published for the first time in 2021 as part of the efforts to increase transparency around Fortum's advocacy related to climate change. The latest update included conclusions on discussion Fortum had with two Polish associations that had been identified as still being only partially aligned with the goals of the Paris Agreement and Fortum's key climate advocacy principles.

Increasing lobbying transparency

Fortum aims to be a forerunner in transparent lobbying and stakeholder management. In 2023, Fortum implemented its **Business Ethics Guidelines for Lobbying**, published in December 2022. The purpose of the guidelines is to outline principles relating to Fortum's lobbying practices and external stakeholder relationship management in all business areas and geographies where Fortum is present and to complement the respective local rules and regulations. The guidelines are in line with Fortum's values, and they complement the Group Code of Conduct. With the Business Ethics Guidelines for Lobbying, external stakeholder groups can see Fortum's commitment to open and transparent lobbying.

In Finland, a new Transparency Register Act was adopted in March 2023 and entered into force 1 January 2024. The purpose of the Finnish Transparency Register is to improve the transparency of lobbying and decision-making and to make it easier to follow the functioning of the political system. Fortum has supported the new legislation and actively participated in the implementation process of the new legislation in 2023. Fortum also set up internal processes to ensure compliance with the new legislation. A major effort was the development of an IT tool for stakeholder management; the tool has also been offered for other stakeholders and facilitates a smooth implementation of the new legislation. To improve Fortum's coordinated dialogue with political stakeholders, Fortum has taken the tool into use in all its main operating countries.

In 2023, Fortum also participated in the OECD Trusted Dialogue on Getting Influence Right, which aims to identify core Principles of Responsible Corporate Political Engagement, applicable to the range of legitimate practices companies use to influence public policy and across various sectors, industries and regions. These principles will provide guidance for companies on how they could organise, exercise, conduct, monitor and report on their political activities in a way that does not raise concerns over the integrity and inclusiveness of public policy-making processes and that does consider the materiality of corporate political activities.

Fortum is registered in the EU Transparency Register, ID: 03501997362-71, and in the Finnish Transparency Register, register number FOR-24-343-R.

Economic impacts

Fortum's efforts to mitigate climate change benefit all its stakeholders. Through the payment of taxes, employee wages and dividends, and through investments and the procurement of goods and services from suppliers, Fortum distributes added value to its various stakeholders.

A table of **Monetary flows by stakeholder group in 2021–2023** can be found in Appendix Tables, Stakeholders.

Sales by geographical area based on customer locations:
Financial Statements, Note 6
Capital expenditure by country and by production type:
Financials 2023, Key figures 2014–2023, Capital expenditure
Provisions related to nuclear power:
Financial Statements, Note 28 Nuclear-related assets and liabilities
Pension arrangements:
Financial Statements, Note 30 Pension obligations

Tax Footprint 2023

Support from the public sector

In 2023, Fortum received financial support from the public sector in the form of investments, R&D and other significant grants totalling EUR 9.9 million (2022: EUR 8.4 million). The figure excludes free emission allowances and electricity certificates, as well as electricity and heat price-related subsidies.

Customers

As a responsible actor in the electricity, heating and circular solutions 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.

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. Fortum sells CO_2-free electricity to its 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 Fortum sells is also guaranteed with the pan-European EKOenergy label granted by environmental organisations and, in Sweden, with the Bra Miljöval label.

Customer data protection

Fortum has in place the Fortum Privacy Programme. The programme ensures that Fortum applies appropriate processes to protect the rights of its customers and that Fortum's businesses can utilise and process personal data in accordance with laws. Training on privacy and data protection is mandatory for all Fortum employees.

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 One Fortum Survey. In 2023, the customer satisfaction index (CSI) varied by business area between 52 and 83 points (2022: 60–83), 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 level remained excellent for Nuclear Services, with a CSI of 83 (2022: 83). The Operation and Maintenance, as well as Turbine Generator Services business areas (formerly part of Fortum eNext) both reached a CSI of 75. The new business unit, Corporate Customers and Markets, reached a CSI of 77. CSI results for the Recycling & Waste business area are not available for 2023 (2022: 78). The CSI score among district heating and cooling business-to-business customers is strong, 82, while business-to-consumer segment scored lower, 72. Satisfaction among electricity retail customers, which includes all retail brands, remained stable at 66 (2022: 66); among business customers, the score weakened two points to 58 (2022: 60). The customer satisfaction index for Fortum's electric vehicle charging service, Charge & Drive, weakened considerably to 52 (2022: 61).

The importance of customer satisfaction is also highlighted in Fortum's short-term incentive (STI) programme, applicable to all personnel. For 2023, the STI target included the customer satisfaction index measured as CSI with a weight of 10%. For 2024, the STI measure for customer satisfaction is Net Promoter Score (10%).

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 our sustainability targets.

Purchases and supply chains

Fortum's total purchasing volume in 2023 was EUR 4.6 billion (2022: 5.7 billion). Electricity purchased from the Nordic wholesale electricity market for retail sales, investments and fuel purchases accounted for the majority of purchases. The rest of the purchases consisted of other goods and services related to operation and maintenance and other functions, such as IT solutions and professional services.

About 97% (2022: 99%) 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 11% (2022: 9%) of Fortum's goods and services purchases were from risk countries, mainly from Poland. 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 2023, Fortum had about 11,500 (2022: 11,800) suppliers of goods and services. About 2,000 (2022: 2,000) of these suppliers were in risk countries.

Fuel purchasing

In fuel sourcing, special attention is paid to the origin of the fuel and to responsible production. Fortum does not buy fossil fuels, pellets or biomass from Russia for its power plants.

Information about fuel use can be found in the chapter ▸ **Energy**. A table of ▸ **Most significant countries of origin for main fuels used in 2023** can be found in Appendix Tables, Supply chain.

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, Fortum determines and assesses, among other things, the supplier's possible operations in risk countries, certified management systems and the occupational safety performance of the contractors. Fortum also pays special attention to practices related to anti-corruption, human and labour rights. Once completed, the qualification is valid for three years.

At the end of 2023, 81% (2022: 87%) of Fortum's purchasing volume of goods and services came from qualified suppliers.

Fortum also uses the 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.

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.

Fortum conducted a total of seven audits of potential new suppliers in China during 2023.

If non-compliances are found in an audit, the supplier makes a plan for corrective actions and Fortum monitors 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 2023, the majority of non-compliances identified in the audits were related to overtime hours 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.

In 2023, Fortum continued to pay special attention to assessing and auditing its suppliers in the solar sector. 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.

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 site assessment and the Bettercoal Code cover legal compliance, sustainability policies and management systems, business ethics, human rights and social performance, and environmental performance including biodiversity.

In 2023, Fortum continued to participate in the activities of the Bettercoal Colombia and South Africa working groups. 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.

Governance and management

Sustainability management at Fortum is strategy-driven and based on Fortum's Values, Code of Conduct, Supplier Code of Conduct, sustainability-related policies, and other Group policies and their specifying instructions. The purpose of the sustainability management approach is to ensure Fortum's operational compliance, as well as to avoid, mitigate and offset the adverse impacts from Fortum's operations and to increase the positive impacts.

Fortum complies with laws and regulations. All of Fortum's 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 2023 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. The Technology and Investment Committee (TIC) assesses and makes recommendations to the Board on the management's proposals pertaining to Fortum's sustainability targets and performance. The Audit and Risk Committee, the Technology and Investment 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's Board of Directors approves the Sustainability Policy and Group sustainability targets that guide annual business planning.

The Fortum Leadership Team, headed by the President and CEO, is responsible for setting the Group's sustainability objectives, proposing the Group's sustainability targets for approval by the Board of Directors, and monitoring sustainability performance on a monthly, quarterly or annual basis, depending on target. 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 the 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 adequate situation awareness and oversight regarding sustainability.

Fortum's short-term incentive (STI) programme, applicable to all employees, includes safety as one element. The 2023 STI programme's safety targets were related to participation in the Management Safety and Security Leadership Programme, as well as the identification and completion of key safety actions to improve safety culture. The 2023 STI programme also included a customer satisfaction target to highlight the importance of customer centricity.

Fortum's long-term incentive (LTI) programme, applicable to top management and other key employees, includes Environmental, Social and Governance (ESG) measures. In the 2021–2023 LTI plan, the set ESG measure 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. Due to the divestment of Uniper in 2022, the ESG measure was adjusted in early 2023 in such a way that the original measure was evaluated regarding the period 2021–2022, and Fortum's reputation index among key stakeholders in Finland, Sweden and Norway was set as a measure for the year 2023. In the 2022–2024 LTI plan, the ESG measure was 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. Due to the divestment of Uniper in 2022, the ESG measure was revised in early 2023. The revised climate target for 2022–2024 for Fortum is related to the reduction of the absolute CO_2 emissions in Europe, i.e. including also Fortum Recycling and Waste. In the 2023–2025 LTI plan, the ESG measure is linked to emission reduction targets based on the climate science (SBTi 1.5° C) and related to emissions in Europe, and to Fortum's reputation index development among key stakeholders. The relative Total Shareholder Return (TSR) measured against a peer group of European utilities has remained as a measure in the 2021–2023, 2022–2024 and 2023–2025 LTI plans.

- **Corporate Governance Statement 2023**
- **Remuneration 2023**
- **Code of Conduct**
- **Supplier Code of Conduct**
- **Sustainability Policy**

Policies and commitments

Fortum follows and respects several international initiatives and national and international guidelines addressing different aspects of sustainability. They guide Fortum's 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 Code of Conduct was updated in 2023 and will be launched in 2024. 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 the ambitions and priorities for sustainability at Fortum. 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.

A table of **Fortum's main policies and instructions guiding sustainability** can be found in Appendix Tables, Policies and commitments.

Fortum's EHS minimum requirements are updated annually. In 2023, the main updates were made to Chemical Management and EHS reporting and follow-up manuals.

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 the Fortum Leadership Team.

Energy

Power generation by energy source in 2021–2023 (GRI 302-1: 2016)

TWh	2023	2022	2021
Nuclear power	24.8	23.4	23.5
Hydropower	20.9	19.1	23.3
Coal	0.6	1.1	1.4
Waste-derived fuels	0.3	0.4	0.5
Natural gas	0.1	0.1	28.1
Wind	0.1	0.0	0.6
Biomass and other biofuels	0.1	0.1	0.5
Fuel oil, other	0.00	0.00	0.02
Total	**47.0**	**44.2**	**78.0**

Back to the chapter Energy production

Heat production by energy source in 2021–2023 (GRI 302-1: 2016)

TWh	2023	2022	2021
Coal	1.2	1.6	2.9
Waste-derived fuels	1.1	1.6	2.5
Biomass and other biofuels	0.8	0.9	1.5
Heat pumps, electricity	0.7	0.6	1.0
Natural gas	0.4	0.2	16.9
Fuel oil, other	0.02	0.3	0.07
Total	**4.3**	**5.3**	**24.9**

Back to the chapter Energy production

Fuel use in 2021–2023, mass/volume (GRI 301-1: 2016)

	2023	2022	2021
Non-renewable fuels			
Waste-derived fuels, fossil, 1,000 t	543	625	813
Coal, 1,000 t	414	626	1,141
Natural gas, million m^3	50	37	7,777
Nuclear fuel, t	23	23	23
Fuel oil and diesel, 1,000 t	12	35	11
Peat, 1,000 t	0	0	10
Renewable fuels			
Biomass and biofuels, 1,000 t	292	368	792
Waste-derived fuels, renewable, 1,000 t	238	301	494
Biogas, million m^3	1	1	1

Back to the chapter Fuel consumption

Fuel use in 2021–2023, energy (GRI 302-1: 2016)

petajoules	2023	2022	2021
Non-renewable fuels	**103.1**	**111.4**	**323.7**
Nuclear fuel	85.5	87.5	88.1
Coal	9.6	14.6	23.3
Waste-derived fuels, fossil	5.8	6.7	8.7
Natural gas	1.9	1.4	203.2
Fuel oil and diesel	0.3	1.1	0.4
Peat	0.0	0.0	0.1
Renewable fuels	**6.1**	**8.0**	**14.7**
Biomass and biofuels	3.3	4.3	9
Waste-derived fuels, renewable	2.8	3.7	5.7
Fuels total	**109.2**	**119.3**	**338.4**

Back to the chapter Fuel consumption

Climate

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

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

1) As of year-end 2023

Back to the chapter Accelerated coal-exit

Direct greenhouse gas emissions (Scope 1) in 2021–2023 (GRI 305-1: 2016)

Mt CO_2-eq	2023	2022	2021
CO_2	1.6	2.1	17.8
N_2O	0.04	0.1	0.1
CH_4	0.001	0.001	0.01
Total	**1.6**	**2.2**	**17.9**

Back to the chapter Greenhouse gas emissions

Direct carbon dioxide emissions by country in 2021–2023 (GRI 305-1: 2016)

Mt	2023	2022	2021
Finland	0.7	1.1	0.8
Poland	0.6	0.7	0.8
Russia	-	-	15.6
Other countries	0.3	0.3	0.6
Total	**1.6**	**2.1**	**17.8**

Back to the chapter Greenhouse gas emissions

Market-based and location-based indirect greenhouse gas emissions (Scope 2) in 2021–2023 (GRI 305-2: 2016)

tCO_2-eq	2023	2022	2021
Market-based, total	44,800	27,400	42,800
Location-based, total	56,600	34,900	53,800

Back to the chapter Greenhouse gas emissions

Indirect greenhouse gas emissions (Scope 3) in 2021–2023 (GRI 305-3: 2016)

tCO_2-eq	2023	2022	2021
Upstream emissions	**11,730,400**	**8,636,700**	**12,684,200**
Purchased goods and services and capital goods (categories 1 and 2)	303,900	435,400	676,300
Fuel procurement and electricity retail (category 3)[1)]	11,215,500	8,007,900	11,761,300
Upstream transportation and distribution (category 4)	204,200	186,800	235,500
Other upstream activities	6,800	6,600	11,000
Downstream emissions	**950,400**	**869,600**	**1,097,100**
Use of sold products (category 11)	949,800	868,900	1,097,100
Other downstream activities	700	700	0
Total	**12,680,800**	**9,506,300**	**13,781,300**

1) 2022 changed due to the update in GHG inventory calculation principles

Back to the chapter Greenhouse gas emissions

Emissions

Flue-gas emissions in 2021–2023 (GRI 305-7: 2016)

	2023	2022	2021
NO_X, t	1,900	2,100	20,600
SO_2, t	900	1,000	8,200
Particles, t	40	40	6,800
Mercury, kg	40	110	150*

* The figure is a calculated estimation

Back to the chapter We aim to reduce impacts on air quality

Water

Water withdrawal in production operations in 2021–2023 (GRI 303-3: 2018)[1)]

million m³ , i.e. 1,000 megalitres	2023	2022	2021
Total water withdrawal for cooling	**1,429**	**1,415**	**1,833**
Seawater and brackish water	1,429	1,415	1,423
Fresh surface water	0.1	0.1	410
Municipal water	0.01	0.1	0.03
Total water withdrawal for other use	**26**	**28**	**98**
Fresh surface water	24	27	95
Municipal water	1	1	2
Rainwater, stormwater and seepage[2)]	0.8	-	-
Seawater	0.4	0.4	0.3
Groundwater	0.1	0.2	0.2
Other external water supplier, fresh water	0.3	0.2	0.3
Total water withdrawal	**1,456**	**1,444**	**1,931**

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

2) Reported separately only in 2023. Includes rainwater used in processes (0.1 Mm³) and water collected just to be discharged (0.7 Mm³).

Back to the chapter Water withdrawal and forms of water use

Water withdrawal in production operations in water-stressed areas in 2021–2023 (GRI 303-3: 2018)

million m³ , i.e. 1,000 megalitres	2023	2022	2021
Total water withdrawal for cooling	**0.0002**	**0.05**	**192**
Municipal water	0.0002	0.05	0.03
Fresh surface water	0	0	192
Total water withdrawal for other use	**0.1**	**0.1**	**46**
Municipal water	0.1	0.1	0.4
Fresh surface water	0	0	46
Groundwater	0	0	0.001
Total water withdrawal	**0.1**	**0.2**	**238**

Back to the chapter Water use in water-stressed areas

Water discharge by recipient in 2021–2023 (GRI 303-4: 2018)[1)]

million m³ , i.e. 1,000 megalitres	2023	2022	2021
Total cooling water discharge	**1,429**	**1,415**	**1,803**
Sea	1,429	1,415	1,423
Fresh surface water	0.1	0.1	380
Total process and wastewater discharge	**25**	**28**	**48**
Fresh surface water	24	27	46
Sea	0.7	0.8	0.8
Municipal sewage	0.4	0.5	1
Other recipient	0.1	0.05	0.1
Total water discharge	**1,454**	**1,443**	**1,851**

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

Back to the chapter Water discharge

Water discharge by recipient in water-stressed areas in 2021–2023 (GRI 303-4: 2018)

million m³ , i.e. 1,000 megalitres	2023	2022	2021
Total cooling water discharge	**0**	**0**	**175**
Fresh surface water	0	0	175
Total process and waste water discharge	**0.03**	**0.07**	**12**
Municipal sewage	0.03	0.07	0.2
Fresh surface water	0	0	12
Other recipient	0	0	0.1
Total water discharge	**0.03**	**0.07**	**187**

Back to the chapter Water discharge

Biodiversity

Restored habitats and other major voluntary biodiversity measures implemented in 2023

Measure	Location	Waterway, country	Description of actions in 2023
Removing of Low Profitable Dams (LPD)		Sweden	We removed four small dams in River Uvån: Östra and Västra Görsjön and Östra and Västra Gällsjön. After the removals, the water level in the lakes returned to the conditions that prevailed before the damming in the 1930s and 1940s.
Habitat improvement measures	Near Untra and Lanforsen hydropower plants (HPPs) and area of Ambricka	Lower River Dalälven, Sweden	Improving biodiversity values. We continued environmental inventories, habitat restoration and maintenance measures. Near the Untra HPP, plans were made to thin out the overly dense tree-covered areas during winter. Invasive alien species vegetation was also removed and inventoried in Södrä Kvarnön and Stor-Gysinge. An inventory of local fungi populations was made in Tippön and Askön.
Krafttag ål (Eel programme)		Rivers Göta älv, Lagan, Ätran, and Motala ström, Sweden	Actions for the threatened eel population. The trap and transport of silver eels was carried out in four Swedish rivers: Göta älv, Lagan, Ätran, and Motala ström. The actions are managed by Energiforsk, with participation from Fortum and five other hydropower companies. Also young eels (imported from France) were released on the Swedish west coast.
Habitat improvements around Fortum hydropower plants	Edsforsen, Forshult, Dejefors, Forshaga, Krakerud, Munkfors and Skoga HPPs	River Klarälven, Sweden	Improvements for biodiversity and managing invasive species. Detailed management plans and monitoring programmes were made for areas around the Skoga and Forshult power plants. The nature conservation measures carried out included the restoration of meadows, clearance of deciduous trees and control of invasive plant species.
Habitat improvements around Fortum hydropower plants	Ljusnefors, Ljusneströmmar, Höljebro, Bergvik	River Ljusnan, Sweden	Improvements for biodiversity and managing invasive species. An external consultant conducted a study of the ecological state around the hydropower plants on River Ljusnan. The results of the study will be used for planning site-level biodiversity measures.
Habitat improvement in the water and around Söräng hydropower plant	Söräng (former hydropower plant), River Voxnan	River Voxnan (tributary to Ljusnan), Sweden	Improvements for fish and terrestrial species. An external consultant conducted a field study to determine the potential for habitat improvements.
Avesta hydropower plant meadow improvement	Avesta HPP, River Dalälven, Sweden	River Dalälven, Sweden	Improvement for butterflies and meadow flowers. Actions were concentrated to general maintenance of the meadow, such as mowing and weed removal, and keeping the sandy banks clear. New signs and information about the biodiversity work in the popular recreation area were posted.
Releases of young salmon and seatrout in the tributaries of River Oulujoki	Muhos, Utajärvi and Vaala, River Oulujoki, Finland	River Oulujoki, Finland	In addition to power companies' legal obligations for fish stocking in the Oulujoki catchment area, about 50,000 one-year-old salmon or seatrout are stocked yearly in River Oulujoki tributaries and the Muhosjoki, Utosjoki and Kutujoki rivers. In 2023, 11,000 one-year-old salmon and 4,000 one-year-old seatrout were stocked in River Kutujoki, 11,000 salmon and 4,000 seatrout in River Utosjoki, and 11,000 salmon and 4,000 seatrout in River Muhosjoki.
Seitenoikea fish passage in River Emäjoki	Seitenoikea HPP, Ristijärvi	River Emäjoki, Finland	Determine the best solution for upstream migration of fish for Seitenoikea HPP. The Seitenoikea HPP dam is currently a barrier to migrating fish. In the national fish passage strategy, the Hyrynsalmi route is a top target for restoring the natural life cycle of lake trout, and Seitenoikea is a top target for building a fish passage and restoring the migration connection.
Montta fish trap operation and development	Montta HPP, Muhos	River Oulujoki, Finland	The main focus at the Montta fish trap is to trap and transport mature salmonids to the improved spawning areas in the tributaries upstream of several dams in River Oulujoki.
Establishment of a flower meadow	Muhos, Pyhäkoski	River Oulujoki, Finland	Enhance biodiversity. Together with the municipality of Muhos, Fortum has renovated the trailhead area of Lemmenpolku next to Fortum's Pyhäkoski hydropower plant. The restoration project turned the deforested area at the trailhead into a meadow. The area lighting and information boards were upgraded to improve safety and the enjoyment of outdoor activities.

Restored habitats and other major voluntary biodiversity measures implemented in 2023

Measure	Location	Waterway, country	Description of actions in 2023
Fishheart solution for upstream passage of fish at Leppikoski hydropower plant and supporting actions	Leppikoski HPP, Paltamo	River Emäjoki, Finland	Enabling fish to pass the dam. Fishheart is a Finnish innovation to enable fish passage over a migratory obstacle. In 2023, more than 19,000 fish were taken upstream of the Leppikoski hydropower plant. The number of lake trout was 19. A study was started in 2023 with Natural Resources Institute Finland to estimate the size of the lake trout population downstream of Leppikoski and the efficiency of the Fishheart solution. It was agreed in 2023 with Natural Resources Institute Finland to conduct studies of downstream migration in 2024.
Kumla butterfly landscape	Increase biodiversity by restoring former grasslands to meadows	Kumla, Sweden	Increase biodiversity by restoring former grasslands to meadows. In Sweden, we are taking part in the project coordinated by the Kumla municipality to build a butterfly landscape in the area close to our waste treatment facility, in the Norra Mossby area. Various management practices, such as felling and the control of problematic species, were made in 2023.
Getting to know the DNA method	Loviisa NPP	Gulf of Finland	More information on the fauna of the nearby sea area was obtained by sampling water and sediment using the eDNA method.
River habitat restoration project in River Vuoksi	Tainionkoski HPP	River Vuoksi, Finland	River Vuoksi lacks breeding areas for lake trout and salmon. A feasibility study of the Tainionkoski environmental city creek/bypass for fish was carried out. The timetable for implementing the project will be clarified as planning progresses.
Three voluntary actions for salmon	Gullspång hydropower plant	River Gullspång, Sweden	Spillage from the Gullspång hydropower plant in May 2023 when smolt, i.e. young salmon, migrate from the river to Lake Vänern. Start and stop of the turbine at a lower flow was introduced for smoother and slower turbine operation. This has a positive impact and more stable conditions for the fish and can reduce the impact from short-term regulation. A pilot project was initiated by Fortum with a genetic bank for the unique Gullspång salmon.

Back to the chapter Local-scale projects improving biodiversity

Circular economy

Ash and gypsum generated in energy production plants in 2021–2023 (GRI 306-3, GRI 306-4, GRI 306-5: 2020)

t	2023	2022	2021
Ash recovery	110,900	161,700	317,700
Ash disposal	1,600	9,100	172,200
Gypsum recovery	2,800	2,900	0
Gypsum disposal	2,100	1,300	3,000

Back to the chapter Ash and gypsum as by-products

Waste generated in Fortum's operations in 2021–2023 (GRI 306-3, GRI 306-4, GRI 306-5: 2020)

t	2023	2022	2021
Non-hazardous waste	**40,400**	**25,500**	**31,300**
Material recovery	25,900	3,900	4,400
Energy recovery	700	400	1,600
Final disposal	13,800	21,200	25,100
Hazardous waste	**400**	**1,500**	**2,200**
Material recovery	100	700	100
Energy recovery	200	600	600
Final disposal	100	200	1,500
Total	**40,800**	**27,000**	**33,300**

Back to the chapter Conventional and hazardous waste

Personnel

Management by age and gender in 2023 (GRI 405-1: 2016)[1)]

Age group, number of employees	Male	Female
≤20	0	0
21–30	1	0
31–40	6	3
41–50	12	14
51–60	18	10
>60	5	2

1) Includes CEO, Fortum Leadership Team and one level down if in a supervisor position.

Back to the chapter Diversity and equal opportunity

Personnel statistics by country in 2023

Number of employees	Finland	Sweden	Poland	Norway	Other countries	Total
Personnel at year-end, by gender	**2,682**	**1,038**	**717**	**350**	**438**	**5,225**
Male	1,847	661	346	188	292	3,334
Female	835	377	371	162	146	1,891
Personnel at year-end, by type[1)]						
white collar	2,248	894	642	350	342	4,458
blue collar	436	58	75	0	112	681
Personnel expenses, million euros	248	92	25	32	39	436

1) Excluding Telge Energi Ab

Back to the chapter Our employees

Workforce by employment contract and employment type, by country and gender in 2023 (GRI 102-8: 2021)[1)]

	Finland		Sweden		Poland		Norway		Other countries		Total	
Number of employees	M	F	M	F	M	F	M	F	M	F	M	F
Permanent	1,814	805	621	324	322	340	187	162	282	136	3,226	1,767
Fixed-term	36	29	3	4	24	31	1	0	7	11	71	75
Full-time	1,832	805	611	312	346	366	177	156	281	137	3,247	1,776
Part-time	18	29	13	16	0	5	11	6	8	10	50	66

1) Excluding Telge Energi Ab

Back to the chapter Our employees

Personnel age distribution by country and gender in 2023 (GRI 405-1: 2016)[1)]

	Finland		Sweden		Poland		Norway		Other countries		Total	
Age group, number of employees	M	F	M	F	M	F	M	F	M	F	M	F
≤20	7	3	10	9	0	1	0	0	1	1	18	14
21–30	257	117	119	73	51	92	45	27	20	20	492	329
31–40	496	246	149	99	104	157	75	65	68	58	892	625
41–50	527	236	153	82	81	87	46	40	76	30	883	475
51–60	426	180	129	48	83	29	13	23	90	31	741	311
>60	137	52	64	17	27	5	9	7	34	7	271	88

1) Excluding Telge Energi Ab

Back to the chapter Diversity and equal opportunity

Safety and security

Key safety figures in 2021–2023 (GRI 403-9: 2018)

	2023	2022	2021
Total Recordable Injury Frequency (TRIF)[1], own personnel and contractors	5.0	4.0	3.1
Lost Time Injury Frequency (LTIF)[2], own personnel and contractors	3.9	2.3	2.2
Lost Time Injury Frequency (LTIF)[2], own personnel	2.1	1.1	1.3
Lost Time Injury Frequency (LTIF)[2], contractors	7.6	4.6	3.9
Lost time injuries, own personnel	19	10	18
Lost time injuries, contractors	36	22	31
Severe[3] occupational accidents	0	2	2
of which fatalities, own personnel	0	1	0
of which fatalities, contractors	0	0	0
Major environmental incidents[4]	2	2	-

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

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

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

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

Back to the chapter Safety performance

Major dam safety projects

Project	Description	Status	Country	River
Major dam safety projects (>3 M€), started before the end of 2021				
Trängslet	Refurbishment of existing surface spillway gates, new berm for embankment dam, increasing spillway channel capacity, new low-level outlet	Progressing	Sweden	Dalälven
Forshuvud	Major refurbishment and partial rebuild of concrete dam, new spillway gates, repair of erosion damages downstream of spillway gates	Progressing	Sweden	Dalälven
Dejefors	Refurbishment of all major spillway gates	Progressing	Sweden	Klarälven
Major dam safety projects (>3 M€), started during 2022				
Letten	Stabilisation actions on embankment dam, instrumentation for embankment dam	Expected to be completed in Q1/2024	Sweden	Klarälven
Sveg	Repair of erosion damages downstream of spillway gates, change of hydraulic design and energy dissipator for surface spillways	Completed	Sweden	Ljusnan
Untra	Refurbishment and new spillway gates in several spillways	Completed	Sweden	Dalälven
Åtorp	Concrete dam rehabilitation actions, spillway gate refurbishment and replacement actions, improved redundancy for power supply and manoeuvre equipment, strengthening of embankment dam	Progressing	Sweden	Gullspång
Major dam safety projects (>3 M€), started during 2023				
Tainionkoski	Concrete dam rehabilitation actions of one spillway, refurbishment of one spillway gate	Progressing	Finland	Vuoksi
Ljusnefors	Spillway gate refurbishments, repair of erosion damages downstream of spillway gates, improved redundancy for power supply and manoeuvre equipment	Progressing	Sweden	Ljusnan
Major dam safety projects (>3 M€), expected to be started during 2025–2026				
Mockfjärd	Spillway gate refurbishments, introduction of emergency manoeuvre for spillway gates, improved redundancy for power supply and manoeuvre equipment, refurbishment of u/s guide wall, strengthening of embankment dam	Not started	Sweden	Dalälven
Lanforsen	Erodible dam to manage extreme flows, strengthening of embankment dam, refurbishment of several spillway gates, stabilisation actions of concrete dam	Not started	Sweden	Dalälven
Gråda	Rehabilitation actions on concrete dam, refurbishment of 3 gates, installation of a new hoist machinery for one spillway gate, strengthening of embankment dam, instrumentation for embankment dam, raising a guide wall, new access road to dam	Not started	Sweden	Dalälven
Sveg	Refurbishment or rebuild part of concrete dam (arch dam), rehabilitation actions on other parts of concrete dam	Not started	Sweden	Ljusnan
Lottefors	Refurbishment of several spillway gates, including seals, renewal of spillway gate manoeuvre systems, rehabilitation actions on concrete dam, repair of erosion damages under guide wall	Not started	Sweden	Ljusnan

Back to the chapter Dam safety

Stakeholders

Fortum's stakeholder surveys

Survey	Target groups	Target countries	Frequency
One Fortum survey	Customers General public Public administration Capital markets NGOs Opinion leaders Personnel Media	Finland, Sweden, Norway, Poland as well as relevant international stakeholders	Customer satisfaction is measured semi-annually or annually depending on the customer segment. Reputation is measured annually.
Supplier Relationship Management (SRM) survey	Suppliers of goods and services	All operating countries	Annually
Media tracking	Media	All operating countries	Daily
Brand tracking	General public and customers	Finland, Sweden, Norway	Continuously
Employee Voice survey	Own personnel	All operating countries	Every six months
IT Stakeholder Satisfaction survey	Own personnel	All operating countries	Every six months
Local acceptance of hydropower production	Local stakeholders around Fortum's operations	Sweden	Annually

Back to the chapter Information through surveys

Monetary flows by stakeholder group in 2021–2023 (GRI 201-1: 2016)

EUR million		2023	2022	2021
Generation of added value				
Fortum produced added value, total		**2,795**	**3,581**	**5,991**
Income from customers	Income from customers on the basis of products and services sold, and financial income	7,260	7,609	5,978
Divestments	Income from divestment of shares, business activities or plants	17	1,159	3,818
Purchases from suppliers	Cash payments to suppliers of raw materials, goods and services	-4,481	-5,188	-3,805
Distribution of added value				
Distributed to stakeholders, total		**-1,886**	**-1,736**	**-2,063**
Compensation to employees	Wages, salaries, remunerations, and other indirect employee costs	-436	-432	-496
Compensation to lenders and shareholders	Dividends, interest and financial expenses paid to investors	-910	-1,046	-1,193
Public sector	Income taxes paid, production taxes, support to society and donations	-540	-258	-373
Surplus/deficit cash		**910**	**1,845**	**3,928**
Capital expenditures		-576	-479	-470
Acquisition of shares		-53	-29	-282
Surplus/deficit including investments		**281**	**1,337**	**3,177**

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Supply chain

Most significant countries of origin for main fuels used in 2023

Fuel	Main countries of origin	Other information
Natural gas	the US, Norway	In our contracts, natural gas is of non-Russian origin. The origin of the gas varies and is supplied via LNG terminals in Lithuania and Finland.
Coal	Poland, Colombia, South Africa	Majority of coal was from Poland. At year-end 2023, Fortum's coal volume purchased from Bettercoal producers was 14%. Decrease of Bettercoal use is due to decreasing coal volumes in Finland.
Uranium	Russia	Current purchasing agreement with the Russian fuel company TVEL is valid until the end of our previous operating licenses, i.e. until 2027 and 2030. Fortum has signed an agreement with Westinghouse Electric Company for the design, licensing and supply of a new fuel type for the Loviisa nuclear power plant. Fortum has also concluded agreements for the procurement and enrichment of uranium with Western companies for the nuclear fuel manufactured by Westinghouse. The uranium supplier has been audited for sustainability to verify appropriate environmental, social and human rights management practices at production.
Wood-based biomass	Finland, Poland, Baltic countries, the US	62% of the forest-based biomass fuel purchased by Fortum originated from certified, sustainably managed sources. All biomass purchased is assessed for the legality of the source of origin.
Waste-derived fuel	Finland, Sweden, Denmark, Poland	The fuel used in 2023 was mainly locally collected municipal and industrial waste.

Back to the chapter Fuel purchasing

Policies and commitments

Fortum's main policies and instructions guiding sustainability

	Economic matters	Environmental matters	Social and personnel matters	Human rights	Anti-corruption and bribery
Values	●	●	●	●	●
Code of Conduct	●	●	●	●	●
Supplier Code of Conduct	●	●	●	●	●
Sustainability Policy (including environmental, and health and safety policies)	●	●	●	●	●
Disclosure Policy	●		●		●
Group Risk Policy	●	●	●	●	●
Group Counterparty Risk Instruction	●	●	●	●	●
Minimum Requirements for EHS Management		●	●	●	
Biodiversity Manual		●			
Group Manual for Sustainability Assessment		●	●	●	●
Group Instructions for Corporate Social Responsibility (CSR) Programme Governance Model	●	●	●	●	●
People Policy	●		●	●	
Leadership Principles			●	●	
Accounting Manual	●	●	●		●
Fortum Insider Rules	●		●		●
Investment Manual	●	●	●	●	●
Tax Principles	●		●		●
Group Instructions for Compliance Management	●	●	●	●	●
Group Instructions for Anti-Bribery	●		●		●
Group Instructions for Safeguarding Assets	●		●		●
Group Instructions for Conflict of Interest	●		●		●
Anti-Money-Laundering Manual	●		●		●
Competition Law Compliance Guidelines	●		●		●
Security Guidelines		●	●	●	
Group Privacy Policy	●		●	●	
Human rights due diligence at Fortum			●	●	
Business Ethics Guidelines for Lobbying					●
Climate Advocacy Principles	●	●			

Back to the chapter Policies and commitments

Independent limited assurance report

To the Management of Fortum Corporation

We have been engaged by Fortum Corporation (Business ID 1463611-4, hereafter also "the Company" or "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, 2023 to December 31, 2023 (hereinafter "GHG Emissions Disclosures"). The disclosures subject to the assurance engagement are presented on page 25 in the section "Climate" of Fortum's Sustainability Reporting 2023 (hereinafter "GHG Reporting").

Management's responsibility

Management of the Company 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.

Although we consider the effectiveness of internal controls when determining the nature and extent of our procedures, our assurance engagement is not designed to provide assurance on internal controls. Our procedures did not include testing controls or performing procedures related to data consolidation and calculation within IT systems. Our limited assurance engagement consists of inquiries of persons responsible for the preparation of the sustainability report and related information and performing analytical and other procedures.

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 page 25 in the Fortum's Sustainability Reporting 2023.
- 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.
- Conducting an interview with relevant employees located at Fortum's site in Riihimäki, Finland through a video conference.

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, 15 March 2024
Deloitte Oy

Jukka Vattulainen
Authorized Public Accountant

Anu Servo
Authorized Public Accountant