



Sustainability

2015



To the reader

Our sustainability website is part of Fortum's integrated reporting for 2015. This pdf publication contains the reporting content of our sustainability website.

Contents

Sustainability reporting	3	Social responsibility	36
Sustainability indexes	4	Social key figures	37
Sustainability management	5	Security of supply	38
Key sustainability topics	5	Employees	39
Governance and management	8	Diversity and equal opportunity	41
Economic	9	Employee-employer relations	42
Environment	10	Employee wellbeing	43
Labour practices	11	Employee development	44
Human rights	12	Operational and occupational safety	45
Society	13	Contingency planning	46
Product responsibility	13	Corporate citizenship	47
Policies and commitments	14	Human rights	49
Business ethics and compliance	16	Product responsibility	50
Economic responsibility	17	Reporting principles	51
Economic impacts	17	Reported GRI indicators	52
Customer satisfaction and reputation	19	Glossary, acronyms and units	57
Supply chain management	20	Glossary	57
Sustainable fuel purchasing	21	Acronyms	59
Sustainable supply chain	22	Units	59
Environmental responsibility	23	Contact us	60
Environmental key figures	24		
Sustainable energy production	25		
Climate change mitigation	26		
Greenhouse gas emissions 2015	27		
Improving energy efficiency	29		
Energy intensity 2015	30		
Fuel consumption 2015	30		
Biodiversity	31		
Emissions into air	32		
Water use	33		
Waste and by-products	34		
Environmental non-compliances and incidents	35		



Sustainability reporting

In our sustainability reporting, we comply with integrated reporting principles, and we apply the Global Reporting Initiative (GRI) G4 Guidelines' specific standard disclosure indicators we have identified as material. We apply the requirements of the Electric Utilities Sector Disclosures where we have deemed the information to be material to our stakeholders.

We gain information about our stakeholders' views through the One Fortum survey, the stakeholder sustainability survey, the EPSI customer satisfaction survey, and other stakeholder collaboration. Our selection of material aspects is based on Fortum's own and our stakeholders' views regarding the significance of the impacts.

Our reporting for 2015 includes:

[Annual review](#)

[Financial statements](#)

[Governance \(incl. Corporate Governance Statement and Remuneration Statement\)](#)

[Tax footprint](#)

Sections on Fortum's website:

[Sustainability, with subpages](#)

[Reported GRI indicators](#)

[Energy production](#)

[Fortum worldwide](#)

[Our stakeholders](#)

[Products and services](#)

We report sustainability information annually in Finnish and English. In our annual reporting we describe Fortum's operations in 2015 as well as some information from January-February 2016. The previous reporting was published in March 2015 as part of the online Annual Report, and our next reporting will be published in spring 2017. In addition to the annual reporting, we report on our sustainability activities in Fortum's interim reports.

Read more

[Reporting principles](#)

[Fortum's CDP reporting \(pdf\)](#)

[Interim reports](#)

[Global compact reporting](#)

Internal reporting

Fortum's environmental sustainability targets include the Group's CO₂ emissions per produced kWh, energy-efficiency improvement and the number of major EHS incidents. Social responsibility is measured at the corporate level with security of supply and occupational safety indicators. Also customer satisfaction and reputation are measured with corporate-level indicators.

EHS incidents, employee and contractor injury frequency rate, the number of serious work-related injuries and plant availability are reported monthly to the Fortum Executive Management. All occupational accidents and major EHS incidents as well as the causes of accidents are reviewed at Fortum Executive Management meetings. Specific carbon dioxide emissions and, new for 2016, work wellbeing measured by the percentage of sickness-related absences, are reported to the Fortum Executive Management every quarter. The Group's key indicators are reported regularly also to Fortum's Board of Directors and are published in Fortum's interim reports.

Global Compact reporting

Fortum has been a member of the United Nations Global Compact initiative since June 2010. On our sustainability web pages, in conjunction with the description of environmental responsibility and social responsibility, we describe the realisation of the Ten Principles of the Global Compact initiative in our operations in 2015. We use the GRI G4 indicators to measure compliance with the principles of human rights, labour standards, the environment and anti-corruption.

Fortum joined the UN Caring for Climate initiative in November 2013. Fortum meets the reporting requirements of the Caring for Climate initiative by participating annually in the assessment in the CDP's climate change survey and by publishing its response on the CDP website.

Sustainability assessments and questionnaires

Fortum annually responds to several sustainability assessments and questionnaires conducted by the investor community and others. For example, we respond to the global CDP Questionnaire (previously Carbon Disclosure Project) surveying corporate actions to mitigate climate change, and we are featured in the CDP's Nordic Climate Disclosure Leadership Index for the eight consecutive year. Some of these responses are public and some are available only to the organisation performing the assessment and ranking the respondents.



Sustainability indexes

Expert assessments of sustainability and good rankings in significant sustainability indexes are important to Fortum because they support the development and continuous improvement in the responsibility of our operations. Additionally, the assessments and indexes provide investors with impartial information about the level of the company's operations in the three sub-areas of sustainability: economic, environmental and social responsibility.



CDP representing altogether 822 institutional investors, ranked Fortum among the best companies in the Nordic Climate Disclosure Leadership Index (CDLI) 2015. Fortum received 100/100 scores. Fortum is featured in the Nordic CDLI for the 8th consecutive year.



German oekom research AG has awarded Fortum a Prime Status (B-) rating. Prime Status means that Fortum is among the best companies in its sector and fulfils industry-specific best-in-class requirements. Oekom research AG annually assesses about 3,000 companies.



Fortum is included in the STOXX Global ESG Leaders indices which list global leaders in terms of environmental, social and governance (ESG) criteria. The family of indices is made up of three specialized indices for the categories mentioned and one broad index which sums up the specialized indexes.



Fortum has been included in the NASDAQ OMX and GES Investment Service's new OMX GES Sustainability Finland index. It provides investors with reliable and objective information about company performance in sustainability. GES Investment Services compares leading companies listed on NASDAQ OMX Helsinki and their responsibility in environmental, social and governance issues. The 40 top-ranking companies in the assessment are included in the index.



In December 2013 Fortum was included in the ECPI® Indices. These indices are used for benchmarking, thematic investments, risk management purposes and to create index-tracking investment strategies or ETF's (Exchange-traded funds). ECPI is a leading Rating and Index company dedicated to ESG Research (Environmental, Social and Governance) since 1997.

Read more

[CDP](#)

[CDP - diploma](#)

[NASDAQ OMX](#)

[oekom research AG](#)

[ECPI indices](#)



Sustainability management

Fortum's purpose is to provide customers with energy solutions that improve present and future life, and to deliver excellent shareholder value. Our values – accountability, creativity, respect and honesty – form the foundation for all our activities.

Sustainability is an integral part of Fortum's strategy. Business and responsibility are tightly linked, underlining the role of sustainable solutions as a competitive advantage. In our operations, we give balanced consideration to economic, social and environmental responsibility.

Our way of operating responsibly includes continuously identifying the views of our stakeholders and finding a balance between the different expectations our stakeholders have. We describe our stakeholder collaboration on separate [web pages](#).

Key sustainability topics

We have defined our most important sustainability focus areas in the areas of economic, social and environmental responsibility:



Our focus areas are based on Fortum's and our stakeholders' views of the significance of the impacts on the company and its ability to create value for its stakeholders and on the environment. Our understanding of stakeholder views is based on the results of the extensive stakeholder surveys conducted annually as well as on information gained through other stakeholder collaboration.

In 2015 a total of 2,133 stakeholder representatives, more than 60% of them representing personnel, participated in our separate sustainability survey. In the 2015 sustainability survey for stakeholders, decision makers, organisations, employees and the general public put special emphasis on the significance of security of supply of heat and electricity, management of sustainability-related risks, and sustainable ways of operating. Our personnel emphasised the safety of operations. The general public considered the use of renewable energy sources as important.

Read more
[Fortum's vision, mission, strategy and values](#)



Sustainability reporting	Sustainability indexes	Sustainability management	Economic responsibility	Environmental responsibility	Social responsibility	Glossary and units	Contact us
Key sustainability topics	Governance and management	Policies and commitments	Business ethics and compliance				

Realisation of sustainability targets in 2015

The Fortum Executive Management decides on the sustainability approach and the Group-level sustainability targets that guide annual planning. The targets are ultimately approved by Fortum's Board of Directors. The Fortum Executive Management monitors the achievement of the targets in its monthly meetings and in quarterly performance reviews. The achievement of the targets is regularly reported also to Fortum's Board of Directors. In addition to the Group-level targets approved by Fortum's Board of Directors, Fortum also has division-level targets.

Group sustainability targets and performance

	Target for the year 2015	Status at the end of 2015	Status at the end of 2014
Reputation index, based on One Fortum Survey	70.8	71.75	70.4
Customer satisfaction index (CSI), based on One Fortum Survey	CSI divisional scores at level "good" (70-74)	68-79	67-77
Environmental responsibility			
Specific CO₂ emissions			
Electricity production in the EU, g/kWh, 5-year average	< 80	50	60
Total energy production, g/kWh, 5-year average (electricity and heat, all countries)	< 200	191	198
Energy efficiency			
Energy efficiency improvement by year 2020, base line year 2012, GWh/a	> 1 400	1 240	681
Major EHS incidents	≤ 27	18	27
(Fires, leaks, explosions, INES ¹⁾ events exceeding level 0, dam safety incidents, environmental non-compliances)			
Social responsibility			
Security of supply			
CHP plant energy availability, %	> 95	96.4	94.7
Occupational safety			
Total recordable injury frequency (TRIF) ²⁾ , own personnel	≤ 2.5	1.6	2.0
Lost workday injury frequency (LWIF) ³⁾ , own personnel	≤ 1.0	1.1	1.0
Lost workday injury frequency (LWIF) ³⁾ , contractors	≤ 3.2	2.7	3.2
Number of serious occupational accidents ⁴⁾	≤ 8	16	16

1) INES = International nuclear event scale

2) TRIF = Total recordable injury frequency, injuries per million working hours

3) LWIF = Lost workday injury frequency, injuries per million working hours

4) Fatality, accident causing permanent disability or at least 30 days of absence

- From our stakeholders' perspective, our performance developed positively, and both our reputation and customer satisfaction improved.
- We achieved our target also in specific carbon dioxide emissions. In 2015 our specific carbon dioxide emissions in the EU area were 21 gCO₂/kWh and specific emissions from total energy production 181 gCO₂/kWh.
- The Suomenoja heat pump station and the Joensuu power plant's flue-gas condenser contributed to the energy efficiency improvement in our production in Finland. Boosting the operational efficiency of our turbine plants improved the energy efficiency at the Argayash and Chelyabinsk CHP3 power plants in Russia. The implemented projects resulted in an annual energy savings of about 559 GWh.
- We strive to be a safe workplace for our employees and for our contractors' employees. In 2015 the injury frequency for own employees remained at a low level, and the injury frequency for our contractor employees improved, but the number of serious injuries was still too high. There were no accidents leading to a fatality during the year.
- To ensure supply chain responsibility, our goal was to audit 15 fuel and goods suppliers. As part of our contractor selection process, in India we focused on auditing potential solar plant contractors. Altogether, we audited nine suppliers in five countries.



Sustainability targets affect every Fortum employee

Sustainability targets affect every Fortum employee and are part of Fortum's short-term incentive scheme. Fortum's Board of Directors annually decides on the sustainability targets to be included in the incentive scheme. In 2015 the incentive scheme included an index measuring injury frequency for Fortum employees and for contractors, the number of serious injuries, the number of major environmental, health and safety incidents (EHS incidents), and Fortum's ability to improve its performance in the Dow Jones Sustainability Assessment.

The injury frequency for Fortum employees and for contractors and the number of serious occupational accidents will be included in the 2016 incentive scheme. In 2016, the weight of the sustainability index in the incentive scheme is 10% (2015: 20%).

Group sustainability targets in 2016

	Target
Reputation index, based on One Fortum Survey	72.0
Customer satisfaction index (CSI), based on One Fortum Survey	CSI divisional scores at level "good" (70-74)
Environmental responsibility	
Specific CO₂ emissions	
Total energy production, g/kWh, 5-year average	< 200
Energy efficiency	
Energy efficiency improvement by year 2020, base line year 2012, GWh/a	> 1,400
Major EHS incidents	
(Fires, leaks, explosions, INES ¹⁾ events exceeding level 0, dam safety incidents, environmental non-compliances)	≤ 23
Social responsibility	
Security of supply	
CHP plant energy availability, %	> 95
Occupational safety	
Total recordable injury frequency (TRIF) ²⁾ , own personnel	≤ 2.5
Lost workday injury frequency (LWIF) ³⁾ , own personnel	≤ 1.0
Lost workday injury frequency (LWIF) ³⁾ , contractors	≤ 3.0
Number of serious occupational accidents ⁴⁾	≤ 8
Sickness related absences, %	2.4

1) INES = International nuclear event scale

2) TRIF = Total recordable injury frequency, injuries per million working hours

3) LWIF = Lost workday injury frequency, injuries per million working hours

4) Fatality, accident causing permanent disability or at least 30 days of absence

Our targets for 2016

Our sustainability targets are based on continuous operational improvement. There are still too many serious injuries, leading to absences of over 30 days, occurring in our operations; our most important goal is to cut the number of these injuries by half. We are aiming for no serious injuries by 2020.

We believe that workplace well-being supports the achievement of our strategic goals, and for this reason a work well-being indicated as a percentage of sickness-related absences, was approved as a new Group target starting from 2016. Our target is to maintain our currently low rate of sickness-related absences (2.4% of working hours).

In terms of specific carbon dioxide emissions from our production (gCO₂/kWh), we decided to focus on measuring Group-level specific emissions from our total energy production (electricity and heat production in all countries). Previously, we measured the specific emissions from electricity production also in the EU area, but this figure covers only about 10% of our carbon dioxide emissions, so its production-guiding impact is minor.

Read more

[Customer satisfaction and reputation](#)

[Greenhouse gas emissions](#)

[Improving energy efficiency](#)

[Security of supply](#)

[Operational and occupational safety](#)



Governance and management

Sustainability management at Fortum is strategy-driven and is based on the company's values, the Code of Conduct, the Supplier Code of Conduct and the policies and their specifying instructions defined at the Group level. We comply with laws and regulations. All of our operations are guided by good governance, effective risk management, adequate controls and the internal audit principles supporting them.

Fortum's goal is a high level of environmental and safety management in all business activities. Calculated in terms of sales, 99.9% of Fortum's electricity and heat production operations at the end of 2015 were ISO 14001 and OHSAS 18001 certified. The divisions and sites develop their operations with internal and external audits required by environmental, occupational safety and quality management systems.

Responsibilities

Sustainability is an integral part of Fortum's strategy and the highest decision-making authority in these issues is with the Board of Directors, which has joint responsibility in matters related to sustainability. For this reason, Fortum has not designated a Sustainability Committee for decision-making on economic, environmental and social issues. The Audit and Risk Committee, members of Fortum Executive Management and other executives support the Board of Directors in the decision-making in the aforementioned matters, when needed.

The Fortum Executive Management decides on the sustainability approach and Group-level sustainability targets that guide annual planning. The targets are ultimately approved by Fortum's Board of Directors. Fortum Executive Management monitors the achievement of the targets in its monthly meetings and in quarterly performance reviews. The achievement of the targets is regularly reported also to Fortum's Board of Directors.

Read more

[Sustainability targets](#)

[Corporate governance](#)

[Corporate Governance Statement and Remuneration Statement 2015](#)



Fortum's line management is responsible for sustainability management, and realisation of the targets is part of Fortum's incentive system.

Corporate Sustainability unit

Fortum's Corporate Sustainability unit is responsible for coordinating and developing sustainability at the Group level. The Corporate Sustainability unit works in close collaboration with the business functions as well as with functions responsible for risk management and for internal audit and controls. Collaboration with the units responsible for Legal, Mergers and Acquisitions, Strategy, Purchasing, Corporate Relations and Public Affairs is an ongoing activity.

The Corporate Sustainability unit gives sustainability approval for all significant investments, acquisitions and divestments as part of Fortum's investment evaluation and approval procedure. In addition, the unit participates in the Group's market outlook and public affairs

processes and supports the Investor Relations function with its expertise.

Sustainability management by topic

Sustainability management in the areas of economic responsibility, environmental responsibility and social responsibility is described in more detail in the accompanying tables. Additionally, more detailed information about the management of different aspects and impacts is presented by topic on our sustainability web pages.

Photo: Lehtikuva



Sustainability reporting

Sustainability indexes

Sustainability management

Economic responsibility

Environmental responsibility

Social responsibility

Glossary and units

Contact us

Key sustainability topics

Governance and management

Policies and commitments

Business ethics and compliance

Economic

Fortum's management of sustainability in the area of economic performance is described in the table. Additionally, more detailed information on the management of the different aspects and impacts is presented by topic on our sustainability web pages.

Management of economic responsibility	Description
Targets and approach	<p>Our goal is to achieve excellent financial results in strategically selected core areas through strong expertise and responsible ways of operating. We believe that competitiveness, security of supply and market driven production enable long-term profitable growth. A financially strong company can shoulder responsibility for the environment, take care of its employees, monitor its supply chain, meet customer expectations, and produce excellent value to its shareholders.</p> <p>Each new research and development target is assessed against the criteria of carbon dioxide emissions reduction and resource efficiency. Likewise, each new investment proposal is assessed against sustainability criteria as part of Fortum's investment assessment and approval process. In our investments we seek the kinds of economically profitable alternatives that provide the opportunity to increase capacity and reduce emissions.</p> <p>We measure financial performance with the return on capital employed (target: 10%) and capital structure (target: comparable net debt/EBITDA about 2.5).</p> <p>The realisation of financial targets in 2015 is reported in the Financial performance and position section of the Financial Statements.</p>
Policies	The financial management system is based on Group level policies and their specifying instructions, and on good governance, effective risk management, sufficient controls and the internal audit principles supporting them. Other key elements steering financial management are presented in the section Policies and commitments .
Responsibilities	<p>The CFO and the Group's Financial unit, division management, and ultimately the CEO and the Board of Directors, are responsible for issues related to finances and financial statements and for broader financial responsibility issues.</p> <p>Our sustainability responsibilities are presented in the section Governance and management.</p>
Monitoring and follow-up	The Board decides on the company's financial targets as a part of the annual business planning process. Realisation of the targets is monitored on monthly basis both at the division level and by the Fortum Executive Management. Fortum's management monitors the realisation of financial targets quarterly as part of the business performance assessment, and key indicators are regularly reported to Fortum's Board of Directors. Financial key indicators related to investments are monitored in investment forums.

Read more
Economic responsibility



Sustainability reporting

Sustainability indexes

Sustainability management

Economic responsibility

Environmental responsibility

Social responsibility

Glossary and units

Contact us

Key sustainability topics

Governance and management

Policies and commitments

Business ethics and compliance

Environment

Fortum's management of sustainability in the area of environmental performance is described in the table. Additionally, more detailed information on the management of the different aspects and impacts is presented by topic on our sustainability web pages.

Management of environmental responsibility	Description
Targets and approach	<p>In environmental responsibility, we emphasise energy and resource efficiency, climate change mitigation and the reduction of environmental impacts. Our expertise in carbon dioxide-free hydro and nuclear power production and in energy-efficient CHP production, as well as our investments in solar and wind energy, and our offering of sustainable solutions for cities contribute to our environmental responsibility. Through research and development work we are creating prerequisites for environmentally benign energy solutions.</p> <p>We measure the realisation of the environmental responsibility with the following indicators, for which we have set Group-level targets (targets for 2015 and 2016):</p> <ul style="list-style-type: none"> • Specific CO₂ emissions • Energy efficiency • Significant environmental incidents <p>Additionally, we have a Group-level target for the number of supplier audits (aspect: supplier environmental assessments).</p>
Policies	<p>Environmental management is based on Fortum's sustainability policy. Other key elements steering environmental management are presented in the section Policies and commitments.</p> <p>We assess environmental risks as part of the Group's risk assessment process (Financial Statements/Operating and financial review/risk management).</p>
Responsibilities	Our sustainability responsibilities are presented in the section Governance and Management .
Monitoring and follow-up	<p>EHS non-compliances are reported monthly and specific carbon dioxide emissions are reported quarterly and energy efficiency improvements annually to the Fortum Executive Management. The Group's key indicators are reported regularly to Fortum's Board of Directors and are published in Fortum's Interim Reports.</p> <p>The divisions and sites develop their operations with audits required by environmental management systems. Internal and external auditors regularly audit our ISO 14001 standard-compliant management system. The CO₂ emissions of plants within the sphere of the EU's emissions trading scheme are audited annually on a per plant basis by an external verifier accredited by the emissions trading authority. The verification addresses the reliability, credibility and accuracy of the monitoring system and the reported data and information relating to emissions. The plants must annually submit to the authorities a verified emissions report of the previous calendar year's carbon dioxide emissions.</p> <p>We assess the level of operations of our business partners through pre-selection and supplier audits. For coal, we use the Bettercoal Code and tools in assessing the sustainability of the supply chain. The Bettercoal audits are always conducted by third parties.</p> <p>We map our stakeholders' views annually with the One Fortum survey and with separate sustainability surveys.</p>

Read more
Environmental responsibility



Sustainability reporting

Sustainability indexes

Sustainability management

Economic responsibility

Environmental responsibility

Social responsibility

Glossary and units

Contact us

Key sustainability topics

Governance and management

Policies and commitments

Business ethics and compliance

Labour practices

Fortum's management of sustainability in the area of Labour practices and decent work in social performance is described in the table. Additionally, more detailed information on the management of the different aspects and impacts is presented by topic on our sustainability web pages.

Management of social responsibility: labour practices and decent work	Description
Targets and approach	<p>We aspire to be a desired and safe workplace for our employees and for contractors and service providers working for us. We believe that all injuries can be avoided. Our social responsibility targets are related to employee well-being and competence development, work and process safety, responsible business practices and responsible operations in our supply chain, and good corporate citizenship.</p> <p>We measure the realisation of the social responsibility with the following indicators, for which we have set Group-level targets (targets for 2015 and 2016):</p> <ul style="list-style-type: none"> • Total Recordable Injury Frequency (TRIF) and Lost Workday Injury Frequency (LWIF), own personnel • Lost Workday Injury Frequency (LWIF), contractors • Number of serious occupational accidents, own personnel and contractors • Percentage of sickness-related absences (in 2016) <p>Additionally, we have a Group-level target for the number of supplier audits (aspect: supplier labour practices).</p>
Policies	<p>Safety management is based on Fortum's sustainability policy. Other key elements steering labour practices and safety management are presented in the section Policies and commitments.</p> <p>We assess safety risks as part of the Group's risk assessment process. Everyday safety management is guided with about 20 Group-level Environment, Health and Safety (EHS) instructions and EHS training events. The Group-level instructions are supported by local-level instructions, which address in more detail the material safety issues and local special requirements. They include, e.g., nuclear power plant safety and dam safety. The instructions cover Fortum employees and contractor employees.</p> <p>Personnel management is based on Fortum's human resources policy and the supporting Group-level HR processes: strategic planning, recruiting, personnel development, performance management, remuneration, and employment and workforce administration.</p>
Responsibilities	Our sustainability responsibilities are presented in the section Governance and management .
Monitoring and follow-up	<p>Fortum employee and contractor injury frequency and the number of serious accidents are reported monthly to Fortum Executive Management. The key indicators for safety are reported regularly to Fortum's Board of Directors and are published in Fortum's Interim Reports.</p> <p>The divisions and sites develop their operations with audits required by occupational safety and quality management systems. Internal and external auditors regularly audit our OHSAS 18001 standard-compliant management system.</p> <p>Starting at the beginning of 2016, work wellbeing, indicated as a percentage of sickness-related absences, will be measured and reported to the Fortum Executive Management every quarter. Work wellbeing is also monitored through other Group-level indicators, such as the ratio between actual retirement age and the statutory start of the retirement pension.</p> <p>Monitoring work well-being is also part of the Fortum Sound employee survey. The survey's well-being index measures employee views on, e.g., the openness of the dialogue in the work community, personal accountability, and how challenging work tasks are.</p> <p>We assess the level of operations of our business partners through pre-selection and supplier audits. The results of the supplier surveys and audits assessing the realisation of labour rights and practices are recorded along with corrective measures into the supplier database, which is accessible to all Fortum employees. Fortum has set a Group target for the number of audits, and the audits that are conducted are reported quarterly to operative management.</p> <p>For coal, we use the Bettercoal Code and tools in assessing the sustainability of the supply chain. The Bettercoal audits are always conducted by third parties.</p> <p>We map our stakeholders' views annually with the One Fortum survey and with separate sustainability surveys.</p>

Read more
Social responsibility



Sustainability reporting

Sustainability indexes

Sustainability management

Economic responsibility

Environmental responsibility

Social responsibility

Glossary and units

Contact us

Key sustainability topics

Governance and management

Policies and commitments

Business ethics and compliance

Human rights

Fortum's management of sustainability in the area of Human rights in social performance is described in the table. Additionally, more detailed information on the management of the different aspects and impacts is presented by topic on our sustainability web pages.

Management of social responsibility: human rights	Description
Targets and approach	<p>Our goal is to operate in accordance with the UN Guiding Principles on Business and Human Rights, and to apply these principles in our own operations as well as in country and partner risk assessments and supplier audits.</p> <p>Our social responsibility includes operating as a good corporate citizen and taking care of our own employees and the surrounding communities. We advance the well being and safety of the work community, respect for individuals, and mutual trust and responsible operations in our supply chain and more broadly in society.</p> <p>We have set a Group-level target for the number of supplier audits.</p>
Policies	Key elements steering human rights management are presented in the section Policies and commitments .
Responsibilities	Our sustainability responsibilities are presented in the section Governance and management .
Monitoring and follow-up	<p>We assess the level of operations of our business partners through pre-selection and supplier audits.</p> <p>The results of the supplier surveys and audits assessing the realisation of labour rights and practices are recorded along with corrective measures into the supplier database, which is accessible to all Fortum employees. Fortum has set a Group target for the number of audits, and the audits that are conducted are reported quarterly to operative management.</p> <p>For coal, we use the Bettercoal Code and tools in assessing the sustainability of the supply chain. The Bettercoal audits are always conducted by third parties.</p> <p>The divisions and sites develop their operations with internal and external audits required by occupational safety and quality management systems.</p> <p>Country-specific reports that address also human rights are presented to Fortum's Board of Directors and Fortum Executive Management when needed.</p> <p>We map our stakeholders' views annually with the One Fortum survey and with separate sustainability surveys.</p>

Read more
Human rights



Sustainability reporting

Sustainability indexes

Sustainability management

Economic responsibility

Environmental responsibility

Social responsibility

Glossary and units

Contact us

Key sustainability topics

Governance and management

Policies and commitments

Business ethics and compliance

Society

Fortum's management of sustainability in the area of Society in social performance is described in the table. Additionally, more detailed information on the management of the different aspects and impacts is presented by topic on our sustainability web pages.

Management of social responsibility: society	Description
Targets and approach	<p>We believe that an excellent financial result and ethical business are intertwined. We follow good business practices and ethical principles in all our operations. We compete fairly and ethically and work within the framework of applicable competition laws and Group competition instructions. We avoid all situations where our own personal interests may conflict with the interests of the Fortum Group. Notably, we never accept or give a bribe or other improper payment for any reason.</p> <p>Our customer relations are based on honesty and trust. We treat our suppliers and subcontractors fairly and equally. We select them based on their merit and we expect them to consistently comply with our requirements and with Fortum's Supplier Code of Conduct.</p>
Policies	Key elements steering social and compliance management are presented in the section Policies and commitments .
Responsibilities	Our sustainability responsibilities are presented in the section Governance and management .
Monitoring and follow-up	<p>The risk assessment on compliance is part of the Group's risk assessment process, and the results are reported twice per year as part of the business performance assessment process. Significant risks and violations are reported regularly to the Audit and Risk Committee.</p> <p>Fortum has a channel available to all stakeholder groups for the reporting of misconduct.</p>

Product responsibility

Fortum's management of sustainability in the area of Product responsibility in social performance is described in the table. Additionally, more detailed information on the management of the different aspects and impacts is presented by topic on our sustainability web pages.

Management of social responsibility: product responsibility	Description
Targets and approach	<p>Our goal is to present products and services truthfully in all our marketing and communication materials. We do not present misleading statements and we strictly follow responsible marketing communication guidelines. In statements regarding environmental issues, we follow the regulations for environmental marketing.</p> <p>We have set Group level targets (targets for 2015 and 2016):</p> <ul style="list-style-type: none"> Customer satisfaction Reputation
Policies	Elements of our management practices related to product responsibility are presented in the section Policies and commitments .
Responsibilities	Our sustainability responsibilities are presented in the section Governance and management .
Monitoring and follow-up	<p>The availability of power plants are reported monthly to Fortum Executive Management. The Group's key indicators are reported regularly also to Fortum's Board of Directors and are published in Fortum's interim reports.</p> <p>Customer satisfaction is monitored annually with the One Fortum survey and the EPSI customer satisfaction survey. The results of the surveys are presented to Fortum's management and they are used to develop the business. Customer satisfaction and Fortum's reputation are part of the Group-level sustainability target setting, and they are reported annually to the Board of Directors.</p> <p>Compliance is reported twice per year as part of the business performance assessments.</p>

Read more
Social responsibility



Sustainability reporting	Sustainability indexes	Sustainability management	Economic responsibility	Environmental responsibility	Social responsibility	Glossary and units	Contact us
Key sustainability topics	Governance and management	Policies and commitments	Business ethics and compliance				

Policies and commitments

Sustainability management at Fortum is strategy-driven and is based on the company's values, the Code of Conduct, the Supplier Code of Conduct and the policies and their specifying instructions defined at the Group level. The company's Group-level policies are approved by Fortum's Board of Directors. The Group-level instructions are approved by either the President and CEO or by the head of the function responsible for the instruction.

International commitments and initiatives

Fortum has been a member of the UN Global Compact initiative since June 2010, and joined the UN Caring for Climate initiative in 2013. Fortum supports and respects the following international initiatives and commitments, and national and international guidelines, and they guide our operations in the areas of economic responsibility, environmental responsibility and social responsibility.

International and national initiatives, commitments and guidelines

	Economic responsibility	Environmental responsibility	Social responsibility: Labour practices and decent work	Social responsibility: Human rights	Social responsibility: Society	Social responsibility: Product responsibility
The UN Universal Declaration of Human rights			x	x		
International Covenant on Economic, Social and Cultural Rights	x		x	x		
International Covenant on Civil and Political Rights			x	x		
The UN Convention on the Rights of the Child			x	x		x
The core conventions of the International Labour Organisation			x	x		
The UN Global Compact initiative	x	x	x	x	x	
The UN Caring for Climate initiative		x				
The UN Guiding Principles on Business and Human Rights			x	x	x	
The statutes of the OECD Guidelines for Multinational Enterprises	x	x	x	x	x	x
The International Chamber of Commerce's anti-bribery and anti-corruption guidelines	x				x	
The Bettercoal initiative's Code on responsible coal mining	x	x	x	x	x	
Responsible advertising and marketing guidelines						x
Environmental marketing guidelines						x



Sustainability reporting	Sustainability indexes	Sustainability management	Economic responsibility	Environmental responsibility	Social responsibility	Glossary and units	Contact us
Key sustainability topics	Governance and management	Policies and commitments	Business ethics and compliance				

Fortum's internal policies and instructions

Fortum's main policies and instructions guiding sustainability are listed in the table. The public documents can be accessed through the links.

Development and training related to instructions in 2015

Fortum's Code of Conduct and the related online training were updated in 2015. The Supplier Code of Conduct was revised towards the end of 2014. We report on the training related to the updated codes in the section "**Business ethics and compliance**".

We provide training in competition law through an online training course and tailored classroom training. Additionally, competition law is part of the online training related to the Code of Conduct.

Fortum has Group-level EHS guidelines and minimum requirements that set requirements for all the operations for which we have operative responsibility. In 2015 we updated these guidelines and trained more than 500 employees in the revised requirements.

Read more
Operational and Occupational safety

Fortum's internal policies and instructions

	Economic responsibility	Environmental responsibility	Social responsibility: Labour practices and decent work	Social responsibility: Human rights	Social responsibility: Society	Social responsibility: Product responsibility
Values	x	x	x	x	x	x
Code of Conduct	x	x	x	x	x	x
Supplier Code of Conduct	x	x	x	x	x	x
Group Risk policy	x	x	x	x	x	x
Sustainability policy (including environmental, and health and safety policies)	x	x	x	x	x	x
Minimum requirements for EHS management		x	x	x	x	
Biodiversity guideline		x			x	
Guidelines on sustainability assessment		x	x	x	x	
Human resources policy			x	x	x	
Accounting manual	x				x	
Group manual on investment evaluation and approval procedure	x				x	
Group instructions for anti-bribery	x				x	
Group instructions for safeguarding assets	x				x	
Group instructions for conflicts of interest	x				x	
Group instruction on Competition Law	x				x	
Security guidelines		x	x	x	x	
Sponsorship steering document					x	



Sustainability reporting	Sustainability indexes	Sustainability management	Economic responsibility	Environmental responsibility	Social responsibility	Glossary and units	Contact us
Key sustainability topics	Governance and management	Policies and commitments	Business ethics and compliance				

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 go beyond simply obeying the law: we embrace the spirit of integrity and uphold ethical business conduct wherever we operate.

Code of Conduct sets the basic requirements

The Fortum Code of Conduct and Fortum Supplier Code of Conduct define how we treat others, engage in business, and safeguard our corporate assets, and how we expect our suppliers and business partners to operate. We have zero tolerance for corruption and fraud. Fortum's Board of Directors is responsible for the company's mission and values and has approved the Fortum Code of Conduct. The Supplier Code of Conduct, based on the 10 principles of the UN Global Compact, has been approved by the Head of Procurement in collaboration with the purchasing steering group.

Fortum's Code of Conduct and the related online training were updated in 2015. By the end of the year more than 95% of the personnel had completed the updated online training. The members of Fortum's Board of Directors had also completed the training. The online training on the Code of Conduct is part of the induction programme for new employees.

The Supplier Code of Conduct was revised towards the end of 2014 by updating e.g. the anti-corruption guidelines. Training related to the Supplier Code of Conduct was held in 2015 in Finland, Sweden, Poland and in India in January 2016. The training will be held for other countries during 2016. The Code of Conduct has been included in new contracts and is part of any purchase agreement exceeding EUR 50,000. These agreements account for about 95% of our total purchasing volume, and geographically they target mainly Finland, Sweden, Russia, Poland and Estonia.

Read more

[Environmental grievances](#)

[Labor practices and human rights grievances](#)

[Incidents of discrimination](#)

[Fines related to environmental non-compliances](#)

In line with our Code of Conduct, Fortum does not award donations to political parties nor to any kind of political activities, religious organisations, authorities, municipalities or local administrators.

Risk identification and management

The compliance risks targeting our business operations are related to the potential for bribery or corruption, fraud and embezzlement, non-compliance with legislation or company guidelines, conflicts of interest, improper use of company assets, and working under the influence of alcohol or drugs. These risks are managed as part of Fortum's operational risk management framework and control procedures. This process also includes risks related to sustainability. A systematic compliance risk assessment is included in the annual business planning process and reporting, and follow-up is a part of the operational performance review.

Reporting misconduct

In addition to internal reporting channels, Fortum has an external "Raise a concern" channel. The same mechanism is used for reporting any suspected misconduct relating to the environment, labour practices or human rights violations, and it is available to all stakeholders. In Russia, Fortum has a separate compliance organisation in place and employees there are encouraged to use the channels provided by the compliance organisation. They may, however, also use the "Raise a concern" channel should they so wish.

Suspected misconduct and measures related to ethical business practices and compliance with regulations are regularly reported to the Fortum Executive Management Team and to the Board's Audit and Risk Committee.

Suspected cases of misconduct in 2015

A total of 159 (2014: 225) reports of suspected misconduct were made. Of these cases, 115 (2014: 98) led to an investigation; at the end of the year, there were 26 ongoing investigations.

More than half of the investigated cases were related to non-compliance either with company rules or with laws and regulations. In these cases, corrective action was taken by reviewing and developing existing processes and instructions and by providing training to employees. Fortum has zero tolerance towards alcohol and drug use. About a third of the cases were related to alcohol abuse during working hours.

As the result of the investigations, 9 (2014: 9) employment contracts were terminated either by immediate dismissal or by mutual agreement, and 7 (2014: 11) written warnings were given. There were 8 (2014: 4) cases of misconduct reported to the police. There was no case for action to be taken in 5 (2014: 23) of the cases investigated.

No cases of suspected corruption or bribery related to Fortum's operations were detected in 2015. Regarding the two misconduct cases reported in 2014, the local district court in Sweden issued a final ruling. In both cases, the former Fortum employees were found guilty of accepting a bribe.

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. As part of supply chain management, we requested a report from a few goods and service suppliers regarding possible cases of misconduct and the corrective measures taken related to the operator's own activities. The reports were considered sufficient and didn't lead to the termination of a contract.

We deal with potential cases of corruption in a professional manner, in accordance with the defined compliance investigation process, in line with applicable laws and with respect to the rights and personal integrity of all parties involved.

Restricting competition

There were three ongoing investigations cases in Russia in 2015 targeting the Russia Division's heat business. All three cases involved technical disputes related to a customer's connection to the heat network. In Russian legislation, these kinds of cases are assessed within the framework of the regulation on abuse of a dominant market position.

One of the investigations cases was completed during the year. The Russian competition authority noted found that the Russia Division's heat business had not violated the competition law.

During the year Fortum was not subject to any significant monetary fines for competition law violations.

Other significant fines

In Sweden, the Värmland district court issued a final ruling ordering Fortum a fine of SEK 2 million (EUR 210,000) for a May 2014 hydropower plant accident that resulted in the fatality of a contractor's employee.

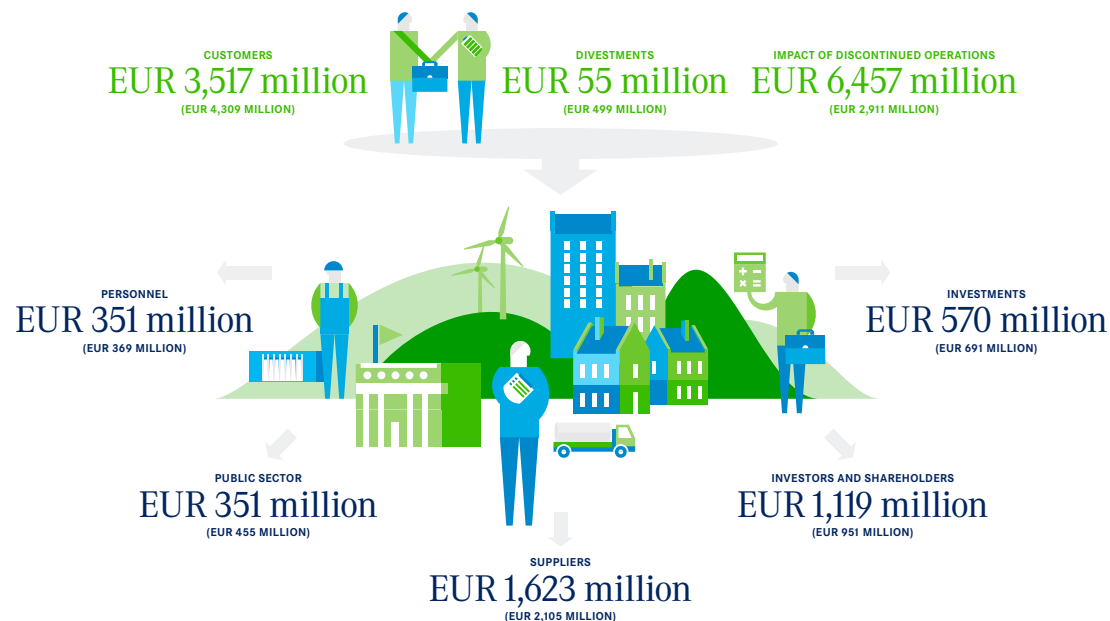


Economic responsibility

For Fortum, economic responsibility means competitiveness, performance excellence and market-driven production, which create long-term value for our stakeholders and enable profitable growth. We manage our supply chain in a responsible manner. Fortum aims for performance excellence through continuous development of our operational efficiency and our core processes. A company that is financially strong is able to shoulder its responsibility for the environment, take care of its personnel, meet the needs of its customers and support the development of the entire society.

Fortum measures its financial performance by monitoring the return on capital employed and the capital structure. We report regularly on the direct and indirect financial impacts on our most important stakeholder groups. Fortum also uses the applicable Global Reporting Initiative (GRI) indicators to measure economic responsibility. Different sustainability indexes and our own One Fortum stakeholder survey also measure the development and continuous improvement of our operational responsibility.

Distribution of added value 2015



Distribution segment is presented as discontinued operations for year 2015 and comparative period information for 2014 has been restated accordingly. The impact of discontinued operations includes the total net cash flow from the divested electricity distribution operations, including the proceeds of the divestment.

Economic impacts

Fortum is a significant economic actor in Finland, Sweden, Russia, Poland, Norway and the Baltic countries. We continuously monitor the impact and well-being generated by our operations to our stakeholders. The key stakeholders include shareholders and investors, customers, personnel, suppliers of goods and services, and the public sector.

The most significant direct monetary flows of Fortum's operations come from sales revenue from customers, procurements from suppliers of goods and services, compensation to financiers and dividend to shareholders, growth and maintenance investments,

employee wages and salaries, and taxes borne.

Our operations also have indirect economic impacts. The Finnish State owns 50.76% of Fortum's shares, and we contribute to a functioning society by, among other things, paying taxes and dividends. These secure society's basic functions and build well-being. Investments and the procurement of goods and services provide employment both locally and outside our operating areas. In terms of suppliers of goods and services, we also assess the global impacts, paying particular attention to suppliers of goods and services operating in risk countries. The wages and taxes paid have a positive impact on local communities.



In 2015, the difference between added value generated and distributed to stakeholders was EUR 128 (2014: 928) million for the development of own operations.

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

- **Sales by country based on customer location: Financial Statements, Note 5**
- **Employee costs by country**
- **Tax footprint**

We have included investments in our own assessment of economic impacts, as their annual volume and impact on the society is significant. Capital expenditure by country and by production type is presented in Financial Statements Note 19.2. Capital Expenditure. Provisions related to nuclear power are covered in the financial statement, Note 30. Nuclear related assets and liabilities.

In 2015 we received financial support from the public sector in the form of production-related subsidies, investments, R&D and other significant grants (over EUR 0.5 million) totalling EUR six (2014: 3) million. The figure excludes free emission allowances and electricity certificates as well as electricity and heat price related subsidies.

Monetary flows by stakeholder group in 2013–2015 (GRI G4-EC1)

EUR million		2015 ¹⁾	2014 ^{1),2)}	2013 ³⁾
Generation of added value				
Income from customers	Income from customers on the basis of products and services sold and financial income.	3,517	4,309	5,630
Divestments	Income from divestment of shares, business activities or plants	55	499	210
Purchases from suppliers	Payments to suppliers of raw materials, goods and services	-1,623	-2,105	-2,766
Fortum produced added value		1,950	2,703	3,073
Distribution of added value				
Employees compensation	Wages, salaries, remunerations and other indirect employee costs	-351	-369	-460
Funders compensation	Dividends paid to investors, interest, realised foreign exchange gains and losses and other financial expenses	-1,119	-951	-1,212
Public sector	Income and production taxes paid, support for society and donations	-351	-455	-532
Distributed to stakeholders		-1,821	-1,776	-2,204
Retained in business		128	928	869

1) Figures do not include the divested Distribution business.

2) Comparative period information for 2014 has been restated due to divestment of the Distribution business.

3) Figures include the divested Distribution business.

Read more

Financial implications, risks and opportunities due to climate change, emission trading
Sustainability indexes
Financial Statements 2015



Customer satisfaction and reputation

Fortum has several million customers, and customer satisfaction is a top priority for Fortum's value creation. We have set Group-wide targets for customer satisfaction and for Fortum's reputation.

We invested in customer centricity in 2015

Our Group-wide development programme, Customer in the centre, has strengthened our culture of customer centricity and has increased the collaboration and shared ways of operating between our countries of operation. Developing user-friendly service channels and customer applications has improved customer satisfaction. During the year we redesigned our web site to be responsive, and the share of mobile users increased. New energy-efficiency services have been developed in closer collaboration with customers.

Our investments in customer-centric operations resulted in improved customer satisfaction.

One Fortum survey provides information about all stakeholder groups

We use the extensive One Fortum survey to annually measure customer and stakeholder satisfaction as well as changes in the company's reputation and the factors that impact it. The survey covers customers, public administrations, capital markets, non-governmental organisations and opinion makers as well as Fortum's personnel. In Finland and Sweden, we also survey the views of the general public.

As in the previous year, in 2015 we conducted the survey in Finland, Sweden, Norway, Poland, the Baltic countries and Russia. Over 4,000 customers and 3,500 other stakeholders were interviewed for the One Fortum survey.

Improved customer satisfaction and reputation in the One Fortum survey

Fortum's customer satisfaction improved in virtually all customer groups in 2015. Business customers of electricity sales, district heat and the Power Solutions unit were more satisfied with our operations than before. Satisfaction also improved among private customers of

electricity sales, while satisfaction among private customers of district heat remained at the same level. We are pleased with the positive trend in customer satisfaction during the last five years that the One Fortum survey has been conducted.

Fortum has a strong reputation among public administration representatives. Our reputation improved the most in this group, compared to the previous year. Our reputation improved also among non-governmental organisations, opinion makers, personnel, and customers and is now good in all of these groups. Our reputation continues to be weakest among the general public; our reputation remained at the previous year's level in Finland and improved slightly in Sweden. Fortum has a very good reputation in the capital markets, but analysts were not included in the 2015 survey. Based on the survey results, we should focus particularly on social responsibility and on taking customers into even more consideration in the future.

Customers satisfaction in electricity sales improved

The international and independent EPSI Rating annually surveys the level of satisfaction of electricity retail company customers in Finland, Sweden and Norway. Based on the 2015 EPSI survey, Fortum's customer satisfaction improved in all three countries where we offer electricity products and services.

Our customer satisfaction rating in Norway increased to 75.6, which is clearly better than the industry average of 72.0 and is third best of the electricity companies in Norway. We also achieved our all-time best rating in Finland. Our result in Sweden was 64.4, which meant a 1.8 point improvement compared to 2014.

Read more
Customers
Stakeholder collaboration

Customer satisfaction ¹⁾ in 2013-2015 (GRI G4-PR5)

	2015	2014	2013
Finland	75	74	71
Sweden	64	63	65
Norway	76	70	69

1) In Finland and Norway research method was EPSI, in Sweden Svenskt Kvalitetsindex



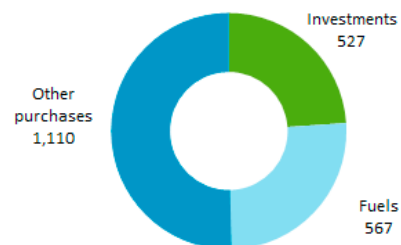
Supply chain management

Fortum is a significant purchaser of goods and services. We actively strive to reduce the environmental impacts caused by our operations and to improve economic and social wellbeing. We also manage risks related to our supply chain. The aim is that open and efficient collaboration creates value for both parties.

Fuel purchases and investments in a significant role

Fortum's purchasing volume in 2015 was EUR 2.2 (2014: 2.6) billion. Fuel purchases, investments, and electricity purchased by the Electricity Sales business area from the Nordic wholesale electricity market for retail sales accounted for the majority of Fortum's purchases. The purchasing figures for 2014 and 2015 do not include the sold Distribution business.

Purchases, EUR million



Fortum's fuel purchases in 2015 totalled EUR 567 (2014: 782) million. We purchase fuels from international and local suppliers. Our fossil fuel purchases totalled about EUR 482 (2014: 689) million, biofuels about EUR 46 (2014: 55) million, and nuclear fuel about EUR 39 (2014: 38) million.

Of our purchases, EUR 527 (2014: 622) million targeted various investments. The biggest investments, EUR 285 million, were made in Russia. A large share of the investments are contracted out in full with materials, installation and other service as well as contractor work included in the total purchase.

The rest of our purchases, EUR 1,1 (2014: 1,2) billion, consist of other goods and services. The figure includes electricity purchased by the Electricity Sales business area from the Nordic wholesale electricity market for retail sales. The other goods and services purchases were related to operations and maintenance as well as to other functions, such as IT solutions, marketing and travel.

Half of purchases from Europe

About half, i.e. 48%, of the purchasing volume was purchased from suppliers operating in Europe, mostly in Finland, Sweden and Poland. This does not include electricity purchases from the Nordic wholesale market. 52% of Fortum's purchases were from risk countries. The majority of these purchases were from Russia.

Violations related to work conditions and human rights are more likely in risk countries than in non-risk countries. Fortum's risk-country classification is based on the ILO's Decent Work Agenda, the Human Development index published by the UN, and the Corruption Perceptions index published by Transparency International.

In 2015 we had about 9,700 (2014: 10,500) suppliers of goods and services, 1,300 of them were in risk countries. Excluding the Russia Division's local suppliers, there were about 270 suppliers in risk countries.

Purchases excluding investments in 2013-2015¹⁾

EUR million	2015 ²⁾	2014 ²⁾³⁾	2013 ⁴⁾
Nordic countries	935	1,017	1,361
Russia	546	670	813
Poland	138	141	143
Estonia	26	29	29
Other countries	32	123	106
Total	1,677	1,980	2,452

1) Includes purchases of fuel, power and other materials and services.

2) Figures do not include the sold Distribution business.

3) Comparative period information for 2014 has been restated due to divestment of the Distribution business.

4) Figures include the sold Distribution business.



Sustainable fuel purchasing

The most significant environmental impacts of our supply chain are related mainly to fuels, particularly to coal and biomasses. We recognise that open-pit coal mining can be challenging in terms of environmental protection, and working conditions in underground mines can create occupational health and safety concerns. The acquisition of biomass involves environmental risks, such as illegal logging and loss of biodiversity, but there are also economical, social and reputational risks related to human rights, labour rights and land ownership.

Fuel purchases in 2015

In fuel purchasing, special attention is paid to the origin of the fuel and to responsible production. In 2015 we had 117 suppliers in our fuel supply chain, 8% of them operated in risk countries.

Natural gas

The natural gas used in Russia, the Baltic countries and Finland originated from several suppliers in Russia. The natural gas used in Poland was purchased mainly from Poland.

Coal

The coal used in Finland originated from Russia. The coal used in Poland originated mainly from Poland. The power plants in Russia used coal originating from Russia and Kazakhstan.

In Finland, we have a legal obligation to have an amount of fuels in reserve equivalent to three months of average electricity production. There are no similar legal obligations in other countries, but we do maintain sufficient reserves for uninterrupted energy production in all countries where we operate.

Fortum is a member of the Bettercoal initiative, and uses the Bettercoal Code and tools in assessing the sustainability of the coal supply chain. The 2015 Bettercoal audits are described in more detail in [Sustainable supply chain](#).

Read more

Fuels

Fuel consumption 2015

Origin of fuels used at Fortum in 2015 ¹⁾

Fuel	Country of origin
Biomass	Finland, Poland, Russia, Belarus, the Baltic countries
Coal	Russia, Kazakhstan, Poland
Natural gas	Russia, Poland
Uranium	Russia
Oil	Russia
Peat	Finland, Estonia

1) The biggest countries of origin based on the purchasing volumes in 2015

Biomass

The biomass we used consisted of wood pellets, wood chips, industrial wood residues and agrobiomass that originated from Finland, the Baltic countries, Russia, Belarus and Poland. We are developing measures to verify the traceability and sustainability of biofuels. In 2016 we will strengthen and standardise the agreement requirements related to the origin of wood-based biofuel, and we aim to set a target for the use of wood-based biofuel from certified sources.

A verification system established for the bio-oil production at the bio-oil plant integrated with Fortum's Joensuu power plant was approved at the end of 2014. The verification system is used to prove compliance with nationally legislated sustainability criteria for bio-oil. In 2015 the first Fortum Otso® verification certificates were given to domestic and foreign customers. The verification certificates enable customers to prove that the combusted Fortum Otso® is a carbon dioxide-free fuel.

Uranium

The fuel assemblies used at the Loviisa power plant are completely of Russian origin. The fuel supplier acquires the uranium used in the fuel assemblies from Russian mines in accordance with Fortum's agreement. In 2015, the uranium originated from the Krasnokamensk, Khiagda and Dalur mines.

Both ARMZ Uranium Holding Co., a uranium producer, and TVEL, which is responsible for refining and manufacturing uranium, have environmental and occupational safety systems in place in all their plants. All three uranium mines have ISO 14001 environmental certification. The Khiagda mine has an OHSAS 18001 certified occupational health and safety management system, and certification

is under way at the Dalur mine. The zirconium material manufacturing plant and the plant responsible for manufacturing uranium oxide pellets and fuel assemblies have ISO 14001 environmental management system certification and OHSAS 18001 occupational health and safety management system certifications.

We regularly assess the quality, environmental, and occupational health and safety management systems of our nuclear fuel suppliers and the manufacturing of nuclear fuel assemblies. As part of the collaboration between the different companies in the supply chain of uranium to be manufactured into fuel, Fortum's representatives assessed the operations of the uranium mine co-owned by Fortum's Russian uranium supplier in Kazakhstan in summer 2015. The mine's sustainable operations represented best practices in the sector, and its quality, environmental, occupational health and occupational safety management systems and its energy efficiency management system were certified.



Sustainability reporting	Sustainability indexes	Sustainability management	Economic responsibility	Environmental responsibility	Social responsibility	Glossary and units	Contact us
Economic impacts	Customer satisfaction and reputation	Supply chain management					

Sustainable supply chain

We expect our business partners to act responsibly and to comply with the Fortum Code of Conduct and the Supplier Code of Conduct. Fortum's key tools in supply chain management are country and counterparty risk assessments, pre-selection of suppliers and supplier audits.

Codes of conduct cover basic requirements

The Fortum Code of Conduct forms the foundation for ethical business conduct and the Supplier Code of Conduct includes the sustainability requirements for suppliers of services and goods. The Supplier Code of Conduct is based on the principles of the United Nations Global Compact initiative and is divided into four sections: business practices, human rights, labour standards, and the environment. The country and counterparty risk assessment follows the same basic structure with regards to sustainability, and addresses issues like the implementation of the guiding principles of human rights.

The Supplier Code of Conduct is used in all our countries of operation and is included in all purchase agreements exceeding EUR 50,000. The Supplier Code of Conduct was updated in 2014, and at the beginning of 2015 we started internal training on the requirements of the updated Supplier Code of Conduct. In 2015 the training was held in Finland, Sweden and Poland. Personnel in India received training in early 2016. The training in our other countries of operation will be arranged during 2016.

Pre-selection of suppliers was renewed

We assess the level of operations of our business partners through pre-selection and supplier audits. The pre-selection process was renewed during 2015, and it is made whenever the purchase volume exceeds EUR 50,000. The goal is to better identify risk suppliers and to direct further measures towards these suppliers. During the first phase of the pre-selection, the credit check is made, and the supplier is sent a short written questionnaire. The questionnaire surveys the supplier's possible operations in risk countries, certified management systems, and the occupational safety level of the contractors. We pay special attention also to anti-corruption practices.

If potential risks in the supplier's operations are identified through the questionnaire, a more extensive self-assessment questionnaire may be sent or a supplier audit is conducted. The extensive self-assessment questionnaire is always sent to fuel suppliers.

The Russia Division uses its own supplier pre-selection process. Pre-selection is done in accordance with Russian procurement law, and bidding is open to all companies. In the Russian operations, we set supplier requirements for business principles and ethics.

Supplier audits support assessments

In supplier audits, we assess the supplier's compliance with the requirements in Fortum's Supplier Code of Conduct. Our own personnel are responsible for conducting the supplier audits. Audits are always done on-site, and they include production inspections, employee interviews, and reviews of documents and records. If non-compliances are found, the supplier makes a plan for corrective actions and we monitor the implementation of them.

Fortum is a member of the Bettercoal initiative and uses the Bettercoal Code and tools in assessing the sustainability of the coal supply chain. Bettercoal audits are always conducted by a third, accredited party. In 2015, one of Fortum's Russian coal supplier was audited, and the audit process for another coal supplier was under way at the end of the year.

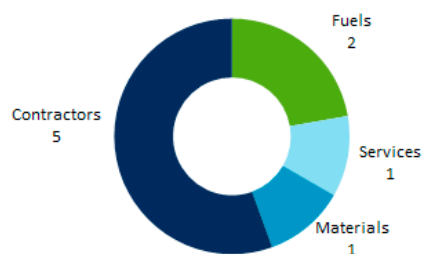
Supplier audits in 2015

In 2015 we audited a total of nine suppliers in Poland, Czech Republic, Russia, Kazakhstan and India; our focus in India was on potential solar plant contractors.

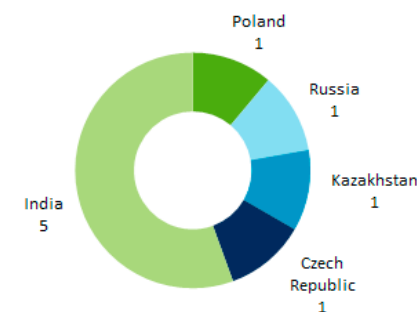
Most of the non-compliances identified in the audits were related to occupational safety, overtime hours, remuneration, and management of the suppliers' own subcontractors. The audits conducted did not reveal non-compliances related to freedom of association, discrimination, or child or forced labour, but we did give a recommendation to an Indian contractor to strengthen its age verification practices when hiring new employees. The recommendations we gave regarding environmental issues involved, among others, measuring emissions, setting environmental targets, reducing water use, improving sorting effectiveness, and improving chemical safety.

Our goal in 2016 is to audit 15 suppliers. Our goal is also to take into use a simplified, lighter auditing model. The lighter model will enable also our purchases personnel to verify a supplier's practices. Additionally, in 2016 we will assess the possibility to increase the number of supplier audits by collaborating with an external service provider in conducting audits.

Suppliers audited in 2015 by supplier type



Suppliers audited in 2015 by country





Sustainability reporting		Sustainability indexes		Sustainability management		Economic responsibility		Environmental responsibility		Social responsibility		Glossary and units	Contact us
Environmental key figures	Sustainable energy production	Climate change mitigation	Improving energy efficiency	Biodiversity	Emissions into air	Water use	Waste and by-products	Environmental incidents					

Environmental responsibility

Fortum wants to be part of building a sustainable energy future. Energy efficiency and climate change mitigation, and reducing environmental impacts are emphasised in our environmental responsibility. Our know-how in CO₂-free hydro and nuclear power production and in energy-efficient combined heat and power production, our investments in solar and wind power as well as our solutions for sustainable cities play a key role in this. Through research and development activities, we are creating prerequisites for environmentally benign energy solutions.

Energy production causes various environmental impacts. Some of them are global or wide-reaching, some are regional or local. In terms of Fortum's operations, the key environmental impacts include:

- Climate change
- Acidification
- Diminishing non-renewable fuels
- Diminishing biodiversity

The management and reduction of these environmental impacts is a central part of our environmental responsibility. We have set the Group-level targets for the following environmental responsibility indicators:

- Specific CO₂ emissions from total energy production
- Improvements in energy efficiency
- Significant environmental non-compliances

Read more

[Our energy production](#)

[Our sustainability targets](#)

[Combustion technology services](#)

[Energy efficiency services for industrial customers](#)

[Energy efficiency services for private customers](#)

[Supply chain management](#)

Various sustainability indices and our own One Fortum stakeholder survey also measure the development and continuous improvement of our responsibility.

More emissions-free energy

Climate change is a consequence of carbon dioxide emissions caused by the use of fossil fuels. We can reduce our carbon dioxide emissions primarily by increasing the use of renewable and low-carbon energy sources. Fortum's strengths are know-how in carbon dioxide-free hydro and nuclear power production and in the use of renewable and low-carbon fuels in combined heat and power production. We are also developing next generation energy solutions, like solar, wind and wave power. 64% of the electricity we produced in 2015 was carbon dioxide-free.

Combustion technology solutions

Sulphur dioxide and nitrogen oxide emissions cause acidification of soil and water systems. We can reduce these emissions with flue-gas cleaning technology. Additionally, we can impact sulphur emissions by choosing fuels with lower sulphur content. And nitrogen oxide emissions can be reduced by developing the combustion technology. Special expertise in combustion technology is, in fact, one of Fortum's strengths. In addition to our own power plants, we have supplied combustion technology solutions to several other energy companies.

Energy, efficiently

Fortum uses plenty of both renewable and non-renewable fuels in its electricity and heat production. Even though the world's coal and natural gas resources will last for several more decades, sustainable energy production and climate change mitigation require a transition to the use of renewable energy sources. Our vision of the solar economy supports precisely this development. The continuous improvement of energy efficiency also plays a key role in terms of the sufficiency of natural resources. Improving our own operational efficiency has given us specialised expertise in energy efficiency improvements, and we have provided energy efficiency services to many other energy companies.

Solutions for sustainable cities

Growing cities and urban areas are facing multiple challenges, such as high emissions from inefficient heating, cooling and electricity production, increasing amounts of waste, and high traffic pollution and noise. Fortum aims to use its expertise and experience to help cities solve these challenges sustainably and to support building a circular economy. Fortum's solutions include efficient and reliable district heating and cooling, integrated electricity retail solutions and related applications, waste-to-energy and waste treatment, as well as enhancing e-mobility with smart charging solutions for electric vehicles.

We take care of biodiversity

Biodiversity is a significant aspect for Fortum, especially in hydropower production. The damming of rivers and the variation in water levels and flow rates due to hydropower production cause changes in aquatic habitats. We actively take part in research activities in the sector and implement voluntary and permit-based measures to develop the biodiversity and recreational use of built water systems.

We study environmental impacts of procurements

The environmental impacts in our procurement activities are substantial, primarily in the acquisition of fuels. Fortum acquires different type of fuels from numerous suppliers. We require our fuel suppliers to comply with Fortum's Supplier Code of Conduct. We study environmental impacts related to fuel procurements as part of the preselection of suppliers and through supplier audits.



Environmental key figures

The table presents our key figures for environmental responsibility in 2015. More information about these and other key figures is available in our sustainability reporting by topic.

Our carbon dioxide emissions in the EU decreased by 1.4 million tonnes. The decrease was mainly attributable to the reduced production of coal-fired condensing power in Finland. The decrease in emissions supports Finland's national targets and the EU's shared targets for the reduction of carbon dioxide emissions. Our carbon dioxide emissions in Russia grew by nearly 300,000 tonnes, mostly due to the commissioning of all units at the Nyagan power plant.

Improvements to energy efficiency have advanced faster than expected, thanks to, among other things, the energy efficiency programmes implemented in Russia. Already 89% of the target set for 2020 has been achieved. Energy efficiency improvements save fuel and reduce emissions.

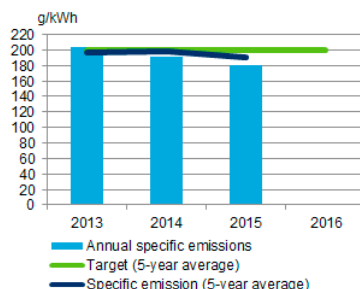
These factors contributed also to a decrease in our specific carbon dioxide emissions. The five-year average for specific carbon dioxide emissions from our electricity production in the EU was 50 g/kWh, which is clearly better than the target of 80 g/kWh. The five-year average for specific carbon dioxide emissions from our total energy production was 191 g/kWh, which is better than the target level of 200 g/kWh.

The specific carbon dioxide emissions from our electricity production are low compared to other European electricity producers. Our specific carbon dioxide emissions in the EU in 2014 were about one-eighth of the average specific carbon dioxide emissions of 313 g/kWh of major European electricity companies. Including Russia, our emissions totalled less than 60% of the European average. European comparison data for 2015 is not yet available.

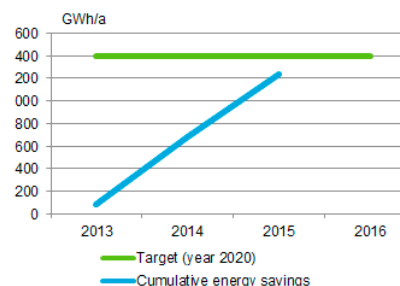
Key figures for environmental responsibility

	2015	2014	2013
Carbon dioxide emissions (Scope 1), million tonnes	19.2	20.3	20.5
Sulphur dioxide emissions, tonnes	19,900	20,400	22,000
Nitrogen oxide emissions, tonnes	26,800	28,700	30,800
Particle emissions, tonnes	17,800	21,300	20,800
Specific CO ₂ emissions of power generation, g/kWh	166	177	200
5-year average in the EU, g/kWh	50	60	60
Specific CO ₂ emissions of total energy production, g/kWh	181	189	204
5-year average, g/kWh	191	198	197
Share of CO ₂ -free energy in power generation, %	64	64	63
Share of renewable energy in power generation, %	34	32	28
Share of renewable energy in heat production, %	8	6	9
Cumulative energy efficiency improvement, GWh/a	559	592	89
Gypsum utilisation, %	100	100	99
Ash utilisation, %	33	34	38
Water withdrawal, million m ³	2,138	2,186	2,312
of which cooling water, million m ³	2,060	2,094	2,231
Major EHS incidents, pcs	18	27	35
of which environmental non-compliances, pcs	14	15	14
ISO 14001 certified operations, % of sales	99.9	99.9	99.9

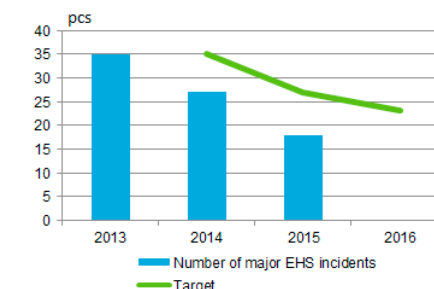
Specific carbon dioxide emissions of Fortum's total energy production in 2013-2015



Annual energy savings achieved in 2013-2015



Number of major EHS incidents in 2013-2015





Sustainable energy production

The cornerstones of Fortum's energy production are carbon dioxide-free hydro and nuclear power and energy-efficient combined heat and power production.

Fortum's total power generation in 2015 was 75.9 TWh and total heat production was 32.2 TWh. Total power generation and heat production by energy source are presented in the following tables. The tables have been consolidated in accordance with the boundaries applied in financial reporting. The figures for power generation include also production shares in the hydro, wind and nuclear power plants of associated companies.

64% (2014: 64%) of our total power generation was carbon-free and 34% (2014: 32%) was produced from renewable energy sources. About 8% of our heat production was produced from renewable, carbon-free energy sources.

Power generation by energy source in 2013–2015 (GRI G4-EN3)

TWh	2015	2014	2013
Hydropower	25.0	22.3	18.0
Nuclear power	22.7	23.8	23.7
Natural gas	24.1	22.5	20.0
Coal	2.9	3.6	4.0
Biomass and biofuels	0.8	0.9	1.1
Peat	0.0	0.1	0.1
Other	0.3	0.2	0.5
Total	75.9	73.4	67.4

Heat production by energy source in 2013–2015 (GRI G4-EN3)

TWh	2015	2014	2013
Natural gas	24.2	26.7	26.1
Coal	5.0	5.1	4.6
Biomass and biofuels	2.0	2.0	2.8
Heat pumps, electricity	0.3	0.1	0.3
Waste-derived fuel	0.4	0.3	0.4
Oil	0.1	0.1	0.1
Peat	0.3	0.3	0.3
Total	32.2	34.6	34.6

Read more
Energy production

New, energy-efficient production capacity

In 2015 we commissioned the following new, renewable electricity production capacity:

- **Kapeli solar power plant**, India, 10 MW
- Refurbishments of hydropower plants, Sweden and Finland, 31 MW

In heat production, we commissioned the following new energy-efficient capacity:

- Suomenoja heat pump station, district heating capacity 40 MW, cooling capacity 15 MW
- **Joensuu power plant's flue-gas condenser**, district heating capacity 30 MW

In Russia, the first new unit of the **Chelyabinsk GRES** power plant was completed. Fuelled by natural gas, its electricity production capacity is 247 MW and heat production capacity 174 MW. Another power plant unit of the same size will be completed in the first half of 2016.

During the year we started construction of a **new CHP plant in Poland**. The plant will be completed in 2018. It can use waste-derived fuels, coal, and various biomass fuels. The plant will replace the old Zabrze and Bytom coal-fired power plants. The investment will significantly improve the efficiency of electricity and heat production in the area and, consequently, reduce carbon dioxide and other emissions into the environment.

More wind power

We made a decision in 2015 to grow our share in the **Blaiken wind farm in Sweden** with three wind turbines, which will be commissioned in 2017. We also decided on the construction of a 35-MW **wind farm in the Ulyanovsk area of Russia**. This wind farm is also scheduled for completion in 2017.

Developing wave power

Our **wave power research project in Sotenäs in Sweden** moved ahead, when the first wave power generators started to generate electricity to the Swedish National Grid.



Sustainability reporting		Sustainability indexes	Sustainability management	Economic responsibility	Environmental responsibility		Social responsibility		Glossary and units	Contact us
Environmental key figures	Sustainable energy production	Climate change mitigation	Improving energy efficiency	Biodiversity	Emissions into air	Water use	Waste and by-products	Environmental incidents		

Climate change mitigation

In our opinion, the scientific evidence of climate change is clear and the message of the latest IPCC report (November 2014) is stronger than ever: the time to act is now. A significant step forward in international climate collaboration was made in December 2015, when a universal climate agreement was reached in Paris. The Paris Climate Agreement will take effect in 2020.

Energy production is a significant source of greenhouse gases globally. At the same time, however, electricity produced with renewable energy sources and district heating and cooling are significant solutions to reducing greenhouse gas emissions.

Climate change is a threat and an opportunity

Fortum is exposed to physical risks of climate change, including changes in weather patterns that could alter energy demand and supply. Higher precipitation and temperatures may affect hydropower production, dam safety and bioenergy supply and availability. In addition to climate change mitigation, we are also adapting our operations to climate change and taking climate change into consideration in production planning and in evaluating growth projects, for example.

We expect the concern about climate change to increase the demand for low-carbon and energy-efficient energy products and solutions. We believe that our know-how in carbon-free hydro and nuclear power, in energy-efficient CHP production, in wind and solar energy, as well as in research and development of the future energy system and its technologies will prove to be a competitive advantage for the company.

Towards low-emissions production

Fortum's primary means of mitigating climate change is to reduce production emissions. We are investing in carbon-free production in Europe, switching to lower emissions fuels at our existing plants and improving the energy efficiency of our production. We see business opportunities also in providing climate-benign energy solutions for sustainable urban living and electrification of transport.

In Europe, we produce carbon-free electricity at hydro and nuclear power plants and at combined heat and power (CHP) plants that utilise biomass, bio liquids and waste-derived fuels. 97% of our electricity production in the EU area was carbon-free in 2015. The rest of the electricity was produced mainly with coal.

Our electricity production in Russia is based entirely on fossil fuels, mainly on natural gas. Our new plant units in Russia are based on gas turbine technology, which represents the best available technology in natural gas combustion. Including Russia, about 64% of our electricity production is carbon dioxide-free.

New climate-benign production

The following projects improving energy efficiency and reducing carbon dioxide emissions were completed in 2015:

- **Kapeli solar power plant** in India
- Suomenoja heat pump station in Finland
- Joensuu power plant's **flue-gas condenser** in Finland
- Refurbishment projects for hydropower plants in Sweden and Finland
- Energy efficiency improvements of turbine plants at the Argayash and Chelyabinsk CHP 3 power plants in Russia

We have calculated that these projects will reduce annual carbon dioxide emissions by about 150,000 tonnes.

Sustainable energy page describes our power plants under construction and decided new developments.

Innovative fuels

The bio-oil plant constructed next to the Joensuu power plant started production during 2015, producing about 8,300 tonnes of bio-oil. The major part of this was used in Fortum's own heat plants. The bio-oil was also delivered to Savon Voima in Finland and for test use to EON's Karlshamn power plant in Sweden.

We launched the pilot "HorsePower" service in Finland in 2015. With this service, Fortum delivers bedding to horse stables and picks

up the bedding-manure mixture for combustion at the Järvenpää power plant. The pilot project will continue until March 2016, when a decision will be made on continuation of the service.

Climate-benign products and services

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

Carbon pricing and emissions trading

Climate regulation primarily impacts Fortum through the price of carbon dioxide determined in EU emissions trading. This also determines the financial value for emission reductions. The price of emission allowances has to a large extent been passed on to the electricity price in the Nordic electricity markets. In accordance with the objective of emissions trading, the price of carbon dioxide emissions is a financial incentive to produce electricity with emissions-free production forms and to improve the efficiency of energy production and use. The price of carbon dioxide increases the production cost of fossil-based energy, but it also raises the prices of energy products. The best way to reduce the risk related to the price of carbon dioxide is to increase carbon-free and low-carbon production.

Russia does not have a similar emissions trading scheme for the regulation of greenhouse gases, nor do carbon dioxide emissions currently have economic value.

We want to promote global carbon pricing and the establishment of a global carbon market. Fortum has signed the Carbon Price Communiqué, an international business statement for setting a price on carbon emissions. We also participate in several international business initiatives promoting the role of business in climate change mitigation, including Caring for Climate, under the UN Global Compact, and Carbon Pricing Leadership Coalition, by the World Bank.



Sustainability reporting		Sustainability indexes		Sustainability management		Economic responsibility		Environmental responsibility		Social responsibility		Glossary and units		Contact us			
Environmental key figures		Sustainable energy production		Climate change mitigation		Improving energy efficiency		Biodiversity		Emissions into air		Water use		Waste and by-products		Environmental incidents	

EU emissions trading scheme

Over 95% of carbon dioxide emissions from our energy production in Finland, Poland and the Baltic countries is within the sphere of the EU's emissions trading scheme. We had a total of 48 (2014: 49) plants in five member countries within the EU's emissions trading scheme in 2015. Fortum was granted free emission allowances corresponding to 1.3 (2014: 1.4) million tonnes per year. Our carbon dioxide emissions within the EU's emissions trading scheme were 2.1 (2014: 3.6) million tonnes. So in terms of the emissions allowances, we had a deficit and had to purchase the shortfall of emissions allowances from the markets.

Fortum's view is that emissions trading is the most cost-efficient way to achieve emissions targets. In our view the Emissions Trading Scheme (ETS) should be the key means for realising the EU climate targets also in the future. However, the functionality and emission ceiling of the ETS need to be developed further. In late 2014, the EU approved the greenhouse gas emissions reduction targets for 2030. A market stability reserve mechanism for the emissions trading scheme was approved in 2015 and will be deployed at the beginning of 2019. Additionally, the EU Commission presented a proposal to revise the emissions trading directive for the post-2020 period.

Carbon funds

Fortum is currently a participant in the international Prototype Carbon Fund (PCF) climate fund. In 2015 we received a total 180,000 CER emission reduction units from the fund. We have so far received a total of 1,240,000 emission reduction units, and we estimate that we will still receive about 170,000 units during PCF's operating period.

Read more

[Our energy production](#)

[Climate benign products and services](#)

[Fortum's position on the development of the EU climate policy](#)

Greenhouse gas emissions 2015

Our greenhouse gas emissions in 2015 totalled 24.1 million tonnes. Scope 1 emissions were 19.3 million tonnes, Scope 2 emissions 0.1 million tonnes, and Scope 3 emissions 4.7 million tonnes.

Direct greenhouse gas emissions - Scope 1

Our direct greenhouse emissions were 19.3 (2014: 20.5) million CO₂-equivalent tonnes. The share of carbon dioxide from our direct greenhouse gas emissions was over 99%. The share of direct greenhouse gas emissions from our total greenhouse gas emissions was 80.1%. Of the direct carbon dioxide emissions, 89% (2014: 82%) originated from the Russian operations and 7% (2014: 11%) from Finland. Carbon dioxide emissions increased in Russia with the commissioning of the new capacity and decreased in Finland due to the reduction in condensing power production. Fortum's direct biogenic carbon dioxide emissions were 1.3 (2014: 1.3) million tonnes.

The calculation of greenhouse gas emissions covers carbon dioxide, methane, nitrous oxide, fluorinated hydrocarbons and SF₆. Carbon dioxide emissions as well as methane and nitrous oxide emissions have been calculated on the basis of plant-specific fuel data. The amounts of HFC compounds and SF₆ are reported on the basis of the amounts of gas added to the equipment. Specific gas emission factors are based on IPCC publications.

Direct greenhouse gas emissions in 2013-2015 (GRI G4-EN15)

Mt CO ₂ eq	2015	2014	2013
CO ₂	19.2	20.3	20.5
CH ₄	0.01	0.01	0.01
N ₂ O	0.14	0.15	0.14
HFCs	0.00	0.00	0.01
Total	19.3	20.5	20.7

Direct CO₂ emissions by country in 2013-2015 (GRI G4-EN15)

million t	2015	2014	2013
Finland	1.3	2.2	3.5
Russia	17.0	16.7	15.3
Poland	0.8	0.8	0.9
Great Britain	-	0.5	0.6
Other countries	0.1	0.1	0.2
Total	19.2	20.3	20.5

Indirect greenhouse gas emissions - Scope 2

Greenhouse gas emissions from the production of electricity purchased for our own use were 85,400 (2014:136,000) tonnes of carbon dioxide equivalent. Carbon dioxide emissions accounted for over 99% of this.

The share of Scope 2 greenhouse gas emissions of our total greenhouse gas emissions was 0.4%.

Scope 2 emissions have been estimated on the basis of country-specific breakdowns of electricity production.

Indirect greenhouse gas emissions (Scope 2) in 2013-2015 (GRI G4-EN16)

t CO ₂ eq	2015	2014	2013 ¹⁾
CO ₂	85 003	135 505	309 000
CH ₄	52	57	600
N ₂ O	344	389	5 200
Total	85 400	136 000	314 800

1) Includes joint venture AB Fortum Värme samägt med Stockholms Stad



Other indirect greenhouse gas emissions - Scope 3

The majority of our Scope 3 emissions are caused by the production and transportation of fuels, purchases of goods and services, and investments. Other activities (e.g. employee travel and waste management) account for less than 1%.

Our Scope 3 greenhouse gas emissions in 2015 were an estimated 4.7 (2014: 5.0) million tonnes. The share of Scope 3 emissions was 19.5% of our total greenhouse gas emissions. We estimate that all of our Scope 3 greenhouse gases come from fossil energy sources.

We report Scope 3 greenhouse gas emissions in accordance with the requirements of the Corporate Value Chain (Scope 3) Accounting and Reporting standard. The volumes describing the scope of the various activities have been obtained from our monitoring and reporting system. The specific emission factors used in calculating the greenhouse gas emissions are based on different literature sources.

Indirect greenhouse gas emissions (Scope 3) in 2013-2015 (GRI G4-EN17)

t CO ₂ eq	2015	2014	2013 ¹⁾
Fuel procurement	4,557,000	4,800,000	4,919,000
Purchased good and services	83,000	112,000	286,000
Capital goods	50,000	51,000	196,000
Other activities	16,000	21,000	61,000
Total	4,706,000	4,984,000	5,462,000

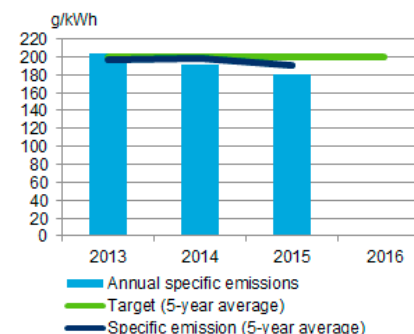
1) Includes joint venture AB Fortum Värme samägt med Stockholms Stad

Specific carbon dioxide emissions

Our specific carbon dioxide emissions (Scope 1) from total energy production were 181 (2014: 189) g/kWh. The five-year average, including 2015, was 191 (2014: 198) g/kWh. The five-year average of specific carbon dioxide emissions from total energy production started decreasing last year and is now clearly below the target level of 200 g/kWh. The main reason is the decrease in condensing power production in Finland.

[Read more](#)
[Emissions into air](#)

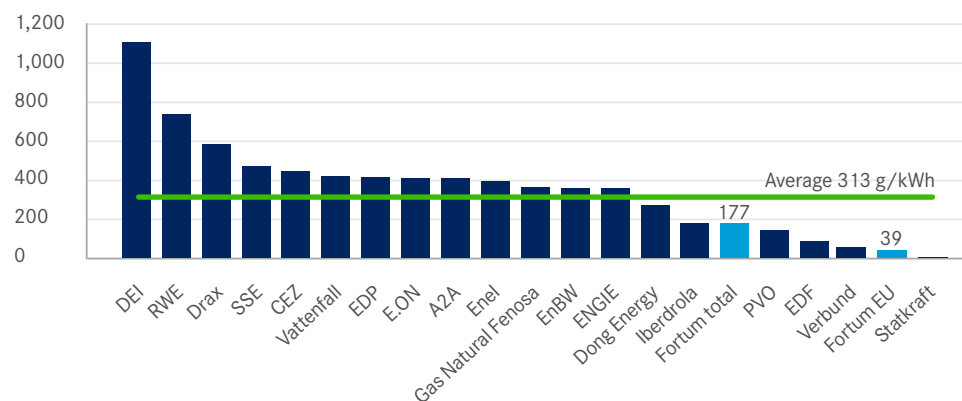
Specific carbon dioxide emissions (Scope 1) from total energy production in 2013-2015 (GRI G4-EN18)



Our specific carbon dioxide emissions (Scope 1) from power production in the EU were 21 (2014: 39) g/kWh and the five-year average, including 2015, was 50 (2014: 60) g/kWh. The specific carbon dioxide emissions from our power production are low compared to other European power producers. Our specific emissions in 2014 were about one-eighth of the 313 g/kWh average specific emissions of major European utilities.

Including our Russian power production, our specific emissions in 2015 were 166 (2014: 177) g/kWh, which was about 60% of the average level of European utilities in 2014. European reference data for 2015 is not yet available.

Specific carbon dioxide emissions of major European utilities, g/kWh electricity in 2014



Note: Only European generation except "Fortum total" which includes Russia.

Fortum's specific emissions of the power generation in 2015 in the EU were 21 g/kWh and in total 166 g/kWh.

Source: PWC, Novembre 2015, Changement climatique et Électricité, Fortum

The boundary for electricity production's specific carbon dioxide emissions differs from other environmental reporting. Fortum's production shares in associated companies are also included. This production is based on hydro and nuclear power and doesn't cause direct carbon dioxide emissions.

In the calculation of electricity production's specific emissions, CHP plant emissions have been allocated for electricity and heat using the efficiency method presented in the Greenhouse Gas Protocol guidelines, with heat production efficiency of 90% and electricity production efficiency of 40%.



Improving energy efficiency

Energy efficiency is a key factor in energy production – from both an economic and environmental perspective. Improving energy efficiency at power plants refers to measures we implement to increase the efficiency of production processes or reduce the energy consumption of plants or equipment. This enables us to produce more electricity or heat for our customers without increasing the amount of fuel.

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

Energy-efficiency investments

In fuel-based energy production, we aim to utilise the fuel's energy as efficiently as possible. Our most important means to improve the energy efficiency of fuel use is to increase combined heat and power (CHP) production. In CHP production, up to 90% of the energy content of the fuels can be utilised; separate electricity production's efficiency is about 60% at best.

At the end of 2015 we commissioned a new natural gas-powered CHP unit at our Chelyabinsk GRES power plant in Russia. The new unit's output is 247 MW electricity and 174 MW heat. Another similar unit will be completed in the first half of 2016. Construction of a new CHP power plant started in Zabrze, Poland. The plant is scheduled for completion in 2018. The new power plants will replace existing old plants and thus improve the efficiency of energy production in the area.



The following were some of the energy-efficiency improvement projects completed in 2015:

- Kapeli solar power plant in India
- Suomenoja heat pump station in Finland
- Joensuu power plant's flue-gas condenser in Finland
- Refurbishments of hydropower plants in Sweden and Finland
- Refurbishments of turbine plants in Russia

In all, the energy-efficiency improvement projects implemented in 2015 are calculated to yield an annual energy savings of 559 GWh.

Target within reach

Fortum's target is to achieve an annual energy savings of more than 1,400 GWh by 2020 compared to 2012. By the end of 2015, about 1,240 GWh of this target had been achieved.

We are participating in the European electricity sector's **Energy Wisdom programme**, and we report to the programme on our projects that improve energy efficiency and reduce greenhouse gases.

Energy efficiency services for businesses...

For decades now, our operation and maintenance services have been improving the energy efficiency of our customers' power plants. Our energy-efficiency services and expertise bring our customer plants financial benefits and save the environment.

...and for homes

We have introduced many energy-efficiency services for private customers in Finland and Sweden. Fortum's customers can use the new services to, e.g., monitor their energy consumption in real-time and optimise the heating of their home.

Read more

[Energy efficiency services for private customers](#)

[Energy efficiency services for industrial customers](#)



Sustainability reporting		Sustainability indexes		Sustainability management		Economic responsibility		Environmental responsibility		Social responsibility		Glossary and units		Contact us			
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Energy intensity 2015

We used a total of 116,000 GWh (417 PJ) of fuel in 2015 in our electricity and heat production. Additionally, we acquired 398 (2014: 401) GWh electricity from external energy suppliers. With these energy resources we produced 35,741 GWh of electricity, 31,229 GWh of heat, 18 GWh of cooling and 39 GWh of bio-oil. The total energy consumption, calculated as the difference between the procured energy resources and net production, was 49,300 GWh, or 178 (2014: 167) PJ.

In combustion-based energy production, we aim to utilise the fuel as efficiently as possible. In 2015, our average fuel use efficiency was 64% (2014: 64%). The efficiency has been calculated by dividing the energy (electricity and heat) produced with the fuel by the energy content of the fuel used in the production.

The energy intensity of our own production was 1.33 (2014: 1.37). The intensity figure has been calculated by dividing the amount of used energy resources by the total net production of energy products; hydropower and solar power are included in production.

Fuel consumption 2015

Fortum's fuel consumption in own energy production was 116 terawatt-hours (TWh), or 417 (2014: 422) petajoules (PJ). The most significant fuel was natural gas, which accounted for 65% (2014: 65%) of the total fuel consumption. The shares of uranium and coal were 22% (2014: 19%) and 9% (2014: 11%), respectively.

Fuel use in 2013-2015, energy (GRI G4-EN-3)

petajoules	2015	2014	2013
Natural gas	272.0	276.1	264.5
Nuclear fuel	90.5	81.6	83.3
Coal	38.8	46.8	53.0
Waste-derived fuel, fossil	1.0	0.8	1.0
Peat	1.4	1.6	2.2
Other fossil	0.8	0.6	1.0
Non-renewable fuels total	404.4	407.5	405.0
Biomass and bio liquids	11.4	12.5	12.3
Waste-derived fuel, renewable	1.7	1.5	1.2
Renewable fuels total	13.1	14.0	13.5
Fuels total	417.5	422.0	419.0

Biomass and bioliquids accounted for 2.7% (2014: 3.0%) and waste-derived fuels 0.6% (2014: 0.5%) of our total fuel consumption.

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

Fuel use in 2013-2015, mass/volume (GRI G4-EN1)

	2015	2014	2013
Non-renewable fuels			
Natural gas, million m ³	8,023	8,148	7,844
Coal, 1,000 t	2,062	2,539	2,843
Waste-derived fuel, fossil 1,000 t	97	87	221
Peat, 1,000 t	135	161	227
Fuel oil, 1,000 t	20	13	18
Nuclear fuel, t	22	23	20
Renewable fuels			
Biomass and bio liquids, 1,000 t	1,126	1,264	1,428
Waste-derived fuel, renewable 1,000 t	198	177	633

Fuel use by country in 2015 (GRI G4-EN1)

	Finland	Russia	Poland	Other countries	Total
Natural gas, million m ³	47	7,952	9	15	8,023
Coal, 1,000 t	409	1,287	366		2,062
Biomass and bio liquids, 1,000 t	295		147	684	1,126
Waste-derived fuel, 1,000 t	111			184	295
Peat, 1,000 t	98			63	161
Fuel oil, 1,000 t	16	4			20
Nuclear fuel, t	22				22

Russia accounted for 99% of our use of natural gas and 53% of our use of coal. Russia's share of our total fuel use was about 70%.

Read more
Our fuels



Sustainability reporting		Sustainability indexes	Sustainability management	Economic responsibility	Environmental responsibility		Social responsibility		Glossary and units	Contact us
Environmental key figures	Sustainable energy production	Climate change mitigation	Improving energy efficiency	Biodiversity	Emissions into air	Water use	Waste and by-products	Environmental incidents		

Biodiversity

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

Our impacts on biodiversity

Fortum's impacts on biodiversity are primarily related to its hydropower production operations in Finland and Sweden. Hydropower construction and the related regulating of water alter the conditions in water systems and thus impact the diversity of the aquatic habitat and, in particular, the fish population. Emissions from fossil fuel-based energy production may decrease local biodiversity, especially in Russia. In addition, our fuel procurement may have a negative impact in areas that are rich in biodiversity. However, our production of CO₂-free energy replaces energy production based on fossil fuels and thus mitigates climate change, which is globally one of the greatest threats to biodiversity.

Fortum's biodiversity engagement

Fortum's Biodiversity guidelines set the principles for taking biodiversity into consideration and for managing the impacts of the company's operations on biodiversity. Since 2014, we have participated in the activities of the Finnish Business & Society's (FIBS) Corporations and Biodiversity programme.

Fortum has compiled its position statement and has defined actions for the sustainable use of bioenergy in electricity and heat production. The position statement and actions contribute to improved traceability of these biomass fuels and responsible management of fuel purchases. Fortum is a member of the Bettercoal initiative and uses the Bettercoal Code and tools in assessing the sustainability of the coal supply chain. Biodiversity aspects related to coal mining are covered in Bettercoal assessments.

Read more

[Voluntary hydropower related environmental projects](#)
[Environmental impacts of hydropower production](#)
[Bra Miljöval eco-labelled energy projects \(In Swedish\)](#)
[Sustainable fuel purchasing](#)

We aim to minimise our negative impact on biodiversity. The impacts on biodiversity are assessed in projects. We offset and reduce the impacts of hydropower production on biodiversity by stocking and over-dam transferring fish and through voluntary environmental projects. In Sweden, we carry out biodiversity related projects with the financing from our eco-labelled (Bra Miljöval) electricity.

Our actions in 2015

Restoration of flood plain areas at Lake Kiantajärvi

The wide flood plain areas along the banks of Lake Kiantajärvi were restored **in a cooperation project** in 2013-2015. The total surface area of the flood plain area is ca. 2.1 km², and the actions carried out in 2015 targeted about quarter of it. Canals and small ponds were dug into the flood plain to form diverse shelter areas and a fragmented shoreline.

The flood plain areas offer important resting and feeding areas for several migratory bird species, and as many as 105 species have been reported in bird surveys. By comparison, the average number of species in similar areas close by is usually between 50-70. According to the local environmental authority, the actions increased the vital habitat for migrating birds and improved the reproduction areas of spring-spawning fish.

Restoring river stretches by tearing down dams

In 2015 we tore down two old dams in Sweden to restore the river to a more pristine state.

The River Getaån has been dredged to facilitate log driving, but when the Geadammen dam was torn down vital parts of the river were restored. By returning rocks to the stream, the habitat was diversified and the flow made more natural. This improved the biodiversity and conditions for stream-living fish, such as trout. A more natural flow will probably also have a positive impact on the wetlands downstream.

The Brodammen dam downstream from the Ljunga hydropower plant was torn down. The river stretch is affected by a changed flow regime from the hydropower plant, but it still has good potential for both bottom fauna and grayling. By tearing down the dam and restoring the river stretch, suitable habitats for grayling and many species of insects are restored and free passage for fish are created.

Biofuels actions

We annually collect data on the volume of certified wood fuel used in our power plants in Finland, Sweden, Poland and the Baltics. Certified wood fuel originates from sustainably managed forests in which special attention is paid to biodiversity. In 2016 we will strengthen and standardise the agreement requirements related to the origin of wood-based biofuel, and we aim to set a target for the use of wood-based biofuel from certified sources.

Other biodiversity related projects

In 2015 a mapping of environmental values was done for most of the Swedish rivers where Fortum is a major hydropower operator. Occurrence of red-listed species and sensitive fish stocks were used as indicators of high environmental values. Hotspots of biodiversity and relevant measures for preserving and supporting future colonisation of endangered species, while at the same time maintaining hydropower production, were identified. Possible measures are, e.g., restoring shores and tributaries as well as tearing down dams with limited function. The mapping and prioritisation of measures will continue in 2016.

Fortum has also been involved in several long-term projects with a focus on biodiversity, for example:

- In the lower part of Dalälven: a project with Upplandsstiftelsen to manage about 330 ha of land with the goal of conserving and developing the very high environmental values in the area. Measures include controlled burnings and cutting down spruce to support the deciduous forest.
- Eldbäcken biochannel: Follow-up on the colonisation of different species and function as a fishway, in collaboration with the University of Karlstad. The biochannel was created in 2011 to compensate for lost biodiversity in connection with the construction of the Eldforsen hydropower plant.
- A study on downstream migration of a genetically unique population of River Klarälven salmon.



Emissions into air

Fuel-based energy production creates emissions to air: carbon dioxide, advancing global climate change, as well as flue-gas emissions, like sulphur dioxide, nitrogen oxides and particles, causing local environmental and health impacts.

Nitrogen oxides are generated in all combustion from the nitrogen contained in the fuel and in the combustion air. Sulphur dioxide, in turn, is generated from the sulphur contained in the fuel. Sulphur is an impurity in, e.g., coal, peat and oil. Particle emissions are fine-grained ash generated primarily in the use of solid fuels.

Requirements are getting tighter

It is possible to decrease nitrogen, sulphur and particle emissions through fuel selections and various flue-gas cleaning technologies. The EU has set very strict limits for these emissions; meeting the requirements necessitates the use of Best Available Technology (BAT). Our nitrogen, sulphur and particle emissions have, in fact, decreased significantly in our European production over the past decades. Emission limits became even stricter when the Industrial Emissions Directive came into force in 2016. Our power plants meet the new emissions requirements, for the most part. Investments in air pollution control have to be made in upcoming years at the Suomenoja power plant and the Rejtana heat plant in Poland.

World-class combustion technology

Nitrogen oxide emissions from our power plants have been decreased primarily by developing the combustion technology. Additionally, our Meri-Pori power plant has a catalytic nitrogen removal system. We have world-class know-how in combustion technology, and, in fact, we have delivered combustion technology solutions also to other power utilities.

Sulphur emissions are decreasing

Our Meri-Pori and Suomenoja power plants are equipped with a desulphurisation plant. Sulphur emissions at our other coal- and peat-fired power plants have been decreased by acquiring low-sulphur



fuels and by increasing the use of biomass. The flue-gas condenser completed in 2015 at the Joensuu power plant significantly reduces the plant's sulphur and particle emissions. In Poland, we are constructing a new CHP plant; it will replace the old Zabrze and Bytom power plants by the end of 2018. The new plant will significantly reduce all emissions to air.

Stricter standards also in Russia

Currently over 70% of our SO₂ and NO_x emissions and over 95% of our particle emissions originate from our Russian production plants, where emissions are limited in accordance with Russian legislation. The new legislation currently being drafted in Russia will bring stricter emissions standards in the future.

Emissions in 2015

In 2015, our thermal energy production generated 26,800 (2014: 28,700) tonnes of nitrogen oxide (NO_x) emissions, 19,900 (2014: 20,400) tonnes of sulphur dioxide (SO₂) emissions and 17,800 (2014: 21,300) tonnes of particle emissions. The decline in sulphur and nitrogen emissions was primarily due to the decrease in condensing power production in Finland. Carbon dioxide emissions are reported on the section [Greenhouse gas emissions in 2015](#).

Fortum's SO₂, NO_x and particle emissions in 2013-2015 (GRI G4-EN21)

t	2015	2014	2013
SO ₂	19,900	20,400	22,000
NO _x	26,800	28,700	30,800
Particles	17,800	21,300	20,800

85% (2014: 77%) of the flue-gas emissions (SO₂ and NO_x) and 98% (2014: 98%) of the particle emissions originated from the Russian operations. The most significant source of particle emissions (12,700 tonnes in 2015) was the Argayash power plant in Russia.

Our mercury emissions into air were 105 (2014: 126) kg.

The reporting of emissions from our European power plants is based on continuous measurement. At our Russian power plants and at most of our heat plants, emissions are calculated using fuel consumption data and specific emission factors. Specific emission factors can be based on measurements taken at regular intervals or on information from the equipment supplier.

[Read more](#)
[Greenhouse gas emissions](#)



Water use

Fortum uses large volumes of water at various types of power plants and in district heat networks. In most cases our power plants do not consume water, but the water is discharged back to the same water system from where it was withdrawn. The properties of the water may change in the process, but the volume of the water generally remains unchanged. In some cases, water is transferred to another recipient, e.g. through evaporation into the air from cooling towers, leaks into the ground from district heat piping, or through the discharge of wastewater to a municipal sewage system.

Hydropower production is a special case of water use. Water flowing in a river is conducted through a turbine to generate electricity. No water is consumed nor are the properties of water altered in the process. 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 does not report water flows in rivers as water use related to hydropower production.

Cooling water

Condensing power production requires large volumes of cooling water. Cooling water accounts over 90% of Fortum's total water withdrawal annually.

Fortum's big condensing power plants in Finland are located on coastal area and use direct sea water cooling. No water is consumed in the process and the water withdrawn is discharged back into the sea. The only change is an approximately 10 °C increase in the temperature of the cooling water.

Condensing power is occasionally produced also at our CHP plants. In most cases, the cooling water is withdrawn from a local water system. In Russia and Poland, cooling towers are used, so some of the cooling water evaporates into the atmosphere.

District heating network

Fortum is a major supplier of district heating in Finland, Russia, Poland and the Baltic countries. Fortum has a total of about 2,700 kilometres of district heat pipes in these countries. Water is used as the heat

transfer media in the district heat networks. Some water is lost through leaks that occur in the pipes, so occasionally water must be added to the district heating network.

Process water and other water uses

A thermal power plant needs water in the water-steam cycle when electricity is generated with a steam turbine. Because of leaks in the pipes, occasionally water must be added to the water-steam cycle. Water is also needed in some auxiliary processes, e.g. in SO₂ removal with wet scrubber technology and in liquid radioactive waste handling and storage at nuclear power plants.

Water withdrawal

The Baltic Sea and local fresh water systems are the most important water sources for Fortum's water withdrawal. Municipal tap water is used mainly at CHP plants in major cities. In some cases, water is acquired from a near-by industrial facility of another company.

The majority of Fortum's power and heat production capacity is located in Finland, Russia and Poland. Our thermal power plants are not located on a water critical area in any of our operating countries. Water is used to clean solar panels at our Indian solar power plants. Even though the water volumes are relatively small, alternative water sources and purification methods are being explored in India.

Wastewater

Wastewater generated at power plants is either treated at the power plants' own wastewater treatment plant and discharged into a water system or it is piped to a municipal wastewater system for further processing. In Russia, the wet method is used to pump ash from power plants into ash ponds. Part of the water from the ponds is recycled back to the power plant and part is released into a water system after sedimentation.

Wastewater contains solids and nutrients, like nitrogen, phosphor, and heavy metals. Wastewater effluents can impact local water quality as well as the nutrient and oxygen balance of the water system.

Water withdrawal in 2015

We withdrew a total of 2,138 (2014: 2,186) million m³ of water in 2015. Sea water accounted for 70% of this amount.

Of the water we withdrew, we used the majority, 2,060 (2014: 2,094) million m³, as cooling water. The Loviisa nuclear power plant withdrew from and discharged to the sea 1,403 million m³ of cooling water.

Water withdrawal in 2013-2015 (GRI G4-EN8)

million m ³	2014	2014	2013
Sea water	1,487	1,573	1,702
Fresh surface water	643	602	598
Tap water	4	6	7
Other source	5	6	5
Total	2,138	2,186	2,312

Water use in 2013-2015 (GRI G4-EN8)

million m ³	2015	2014	2013
Cooling water	2,060	2,094	2,231
Process and auxiliary water	73	77	77
Make-up water for DH networks	14	15	13
Water recycling	12	14	12

The reported water withdrawal and water use volumes are based on flow measurements at power plants and heat plants.

Wastewater in 2015

Our plants generated a total of 34 (2014: 33) million m³ of wastewater, of which 96% was released into the environment after being treated and 4% was piped to municipal wastewater treatment plants.

About 1.2 tonnes of oil was released into water systems with wastewater. In addition, 3.8 tonnes of oil was released into rivers from hydro power plants. In recent years there have been frequent violations of wastewater permits at Russian power plants. They have been discussed in more detail on page Environmental incidents.

The thermal load discharged into water systems with cooling water was 17 (2014: 18) TWh. Loviisa nuclear power plant's share of this was 16 TWh. Temperature measurements indicate that the cooling water has increased the temperature of surface water by 1–2 °C within a 1–2 kilometre radius from the discharge point.

The reported wastewater volumes are based on flow measurements at our power plants and heat plants.

Wastewater emissions by recipient in 2013-2015 (GRI G4-EN22)

million m ³	2015	2014	2013
Sea	9.3	9.0	9.6
Fresh water system	22.9	22.4	22.3
Municipal sewage	1.3	1.2	1.6
Other recipient	0.5	0.5	0.1
Total	34.0	33.1	33.6

Read more

Environmental non-compliances and incidents



Waste and by-products

Various types of waste and by-products are generated in electricity and heat production. Ash is a by-product of the use of fuels, and gypsum and other desulphurisation products are by-products of flue-gas desulphurisation. Ash and desulphurisation products account for a more than 90% share, on average, of the by-products and waste from our energy production.

Power plant maintenance generates scrap metal and other conventional industrial waste and, to a smaller extent, waste oil and other waste classified as hazardous. We aim to recycle by-products and waste whenever possible. Waste that is unsuitable for recycling or reuse is disposed of in a landfill. We source waste management services only from reliable, properly licensed waste management companies.

In addition to conventional industrial waste, the Loviisa nuclear power plant also generates radioactive waste, which we treat in accordance with the requirements of Finnish nuclear energy legislation. The volume of radioactive waste generated is small, but special solutions are needed in their treatment and final disposal.

The total volume of by-products and waste generated at our power and heat plants in 2015 was about 601,000 (2014: 697,000) tonnes. Of this volume, 33% was recycled or reused.

Ash and gypsum

Ash is created in the combustion of all solid fuels. Over half of the ash from our plants operating in Europe is utilised as a raw material in, e.g., the construction industry, road construction and soil improvement, and as backfill. In Russia, ash from our power plants is stored in ash basins because there is no demand for wet ash sludge in Russia.

Desulphurisation generates either a wet or semi-dry desulphurisation end product. Gypsum created as a by-product in the wet desulphurisation process at our Meri-Pori power plant is suitable for use as a raw material for the construction industry, and, on average, over 90% is utilised. The desulphurisation product created at

the Suomenoja power plant is not suitable as such for utilisation.

In 2015, about 570,000 (2014: 659,000) tonnes of ash, 2,300 (2014: 9,800) tonnes of gypsum and 8,800 (2014: 9,800) tonnes of other desulphurisation product were generated. About 60% of the ash was generated at Russian plants, 15% in Poland and 11% in Finland. The reduced volume of ash and gypsum was primarily a result of the decreased condensing power production in Finland. The ash recycling rate was 33% (2014: 34%) and the gypsum recycling rate 100% (2014: 100%).

Any remaining by-products that cannot be utilised are disposed of in landfills or put into intermediate storage. In 2015, about 390,000 (2014: 444,000) tonnes of by-products were disposed of in landfill sites.

The reported volumes of ash and gypsum from our European power plants are based on the weighing of the truckloads. Ash volumes at our Russian power plants are calculated on the basis of the ash content of the coal.

Radioactive waste

Nuclear power plant operations generate conventional waste and radioactive waste. Conventional waste is generated e.g. in the transportation of goods, in building and maintenance work, and in office work.

The treatment of low- and intermediate-level radioactive waste

from our Loviisa power plant is described on Loviisa power plant's web pages.

High-level spent nuclear fuel is currently stored at the Loviisa power plant site, waiting for the ultimate disposal in **Posiva Oy's final repository** in Olkiluoto in the municipality of Eurajoki. Posiva is jointly owned by Fortum and Teollisuuden Voima. In 2015, 21.8 (2014: 22.7) tonnes of spent nuclear fuel was removed from Loviisa power plant's reactors. 2.7 (2014: 2.9) g/MWh of spent fuel was generated per produced energy unit.

Other waste

Conventional waste generated during the operation and maintenance of power plants is sorted, and waste that can be recycled (e.g. scrap metal) is sent for further processing. Waste that cannot be utilised is disposed of in a landfill or is stored so that harmful substances do not seep into the environment, air, soil, or surface and ground waters. Hazardous waste is delivered to licensed hazardous waste treatment facilities.

Our operations generated a total of 27,200 (2014: 27,700) tonnes of waste (excluding the ash and gypsum deposited in landfills); of this amount, 1,700 (2014: 2,500) tonnes was hazardous waste. In addition, 2,100 tonnes of contaminated soils was removed.

The reported volumes of other waste are based mainly on the information provided by the waste companies.

Ash and gypsum handling in 2013-2015 (GRI G4-EN23)

tonnes	2015	2014	2013
Ash utilisation	189,000	226,000	257,000
Ash disposal	381,000	434,000	420,000
Gypsum utilisation	2,260	9,800	28,800
Gypsum disposal	0	0	300

Waste handling in 2013-2015

tonnes	2015	2014	2013
Recycling/recovery	8,000	7,700	8,800
Landfill	17,400	17,500	21,300
Hazardous waste recovery	90	100	1,300
Hazardous waste disposal	1,700	2,400	4,000
Total	27,200	27,700	35,400

Read more

Nuclear power

The final disposal of spent nuclear fuel



Environmental non-compliances and incidents

At the Group level we monitor the number of significant EHS non-compliances. Major environmental non-compliances are large spills (over 100 litres) into the environment, major deviations from environmental permit terms, and other non-compliances having a significant impact on the environment.

Spills and environmental non-compliances in 2015

In 2015 there were two spills of more than 100 litres (2014: 3) into the environment. At the Chelyabinsk CHP2 power plant about 3 m³ of ash transport water was released into the soil. A leak in the Tyumen district heat network resulted in hot water and steam being released to the ground surface. The events didn't have significant environmental effects. The Tyumen district heat network's leak caused a burn on a pedestrian who intentionally made his way into the fenced-off accident area.

In conjunction with modification work to the Kivenlahti heat boilers in Finland, instances of ash emissions occurred resulting in ash falling onto the roofs of buildings and onto parked cars. Fortum paid for 24 cars to be washed and waxed.

Permit violations in 2015

There were no significant environmental permit violations in our European operations in 2015. The total number of permit violations in Russia was 14 (2014: 15). Of these, 12 were related to wastewater discharges. Studies continued on measures to reduce the discharge water permit violations.

Grievances

Fortum's website has a grievance channel that our stakeholders can use to report suspected misconduct or problems caused by our operations. No new environment-related grievances were reported to us through this channel in 2015.

During the year we continued measures to reduce the excessive night-time lighting and the noise level previously reported by some neighbours of the Jelgava power plant. The power plant has also received complaints about biofuel transports on Saturdays and public holidays; these deliveries are unavoidable during the winter season.

The lighting problem was resolved in early 2015 by changing some of the lights to a warmer colour temperature range. To reduce the noise level experienced by residents, we continued enclosing equipment and implementing other technical solutions, even though the noise caused by the power plant's operations do not exceed the permitted limits.

We communicated with the residents about the progress of the measures at resident meetings, personally via email, and through local media. After the measures were completed, we invited residents to an official noise-level measurement conducted by a certified laboratory. Six local residents witnessed the measurement process. The measurements indicate that the power plant does not exceed the permitted noise levels, and all but one of the local neighbours are satisfied that the noise issue has now been resolved.

Fines

In 2015, Fortum paid a total fine of RUB 11.5 million (EUR 167,000) for non-compliances with waste water emission limits.

Read more

Business ethics and compliance
Operational and occupational safety



Social responsibility



Fortum interacts with millions of people through its businesses. We engage in an active dialogue with different stakeholder groups and we strive to find a balance between their various expectations. Fortum's social responsibility emphasises the secure supply of electricity and heat, creating solutions for sustainable cities, plant and occupational safety, as well as ethical business operations and compliance with regulations.

The most important social impacts of Fortum's operations are:

- Uninterrupted supply of power and heat
- Promoting sustainable development and circular economy through products and services
- Uninterrupted operation and safe work environment at plants
- Personnel well-being
- Impacts related to the human rights of own and supply chain employees
- Support for non-profit activities and impacts on local communities

Fortum's innovations and the secure supply of power and heat support the development of society and increase well-being. Fortum aims to use its expertise and experience to help cities solve challenges sustainably and to support building a circular economy. Fortum's solutions include efficient and reliable district heating and cooling, integrated electricity retail solutions and related applications, waste-to-energy and waste treatment, as well as enhancing e-mobility with smart charging solutions for electric vehicles.

Fortum promotes plant and occupational safety and well-being in the work community. Fortum's sustainability approach also includes

being a good corporate citizen and taking care of the surrounding communities. We want to support responsible operations in Fortum's supply chain and in society.

Fortum measures its social responsibility by monitoring CHP plant energy availability, lost workday injury frequency (LWIF) of own personnel and contractors, total recordable injury frequency (TRIF) of own personnel, number of serious accidents and sickness absence rate.

Different sustainability indices and our own One Fortum stakeholder survey also measure the development and continuous improvement of our operational responsibility.

Read more
Business ethics and compliance

Photo: Lehtikuva



Sustainability reporting	Sustainability indexes	Sustainability management	Economic responsibility	Environmental responsibility	Social responsibility	Glossary and units	Contact us
Social key figures	Security of supply	Employees	Operational and occupational safety	Corporate citizenship	Human rights	Product responsibility	

Social key figures

The table presents our key figures for social responsibility in 2015. More information about these and other key figures is available in our sustainability reporting by topic.

Key figures for social responsibility

	2015	2014	2013
CHP plant energy availability, %	96.4	94.7	94*
Average number of employees	8,009	8,821	9,532
Number of employees, 31 December	7,835	8,592	9,186
Departure turnover, %	8.6	8.1	9.7**
Female employees, %	29	28	28**
Females in management, %	33	33	31**
Health care expenditure, EUR/person ¹⁾	509	542	569
Sickness absence rate, %	2.4	2.4	2.5**
Total recordable injury frequency (TRIF) ²⁾ , Fortum's personnel	1.6	2.0	2.5
Lost workday injury frequency (LWIF) ³⁾ , Fortum's personnel	1.1	1.0	1.0
Lost workday injury frequency (LWIF) ³⁾ , contractors	2.7	3.2	3.9
Serious occupational accidents	16	16	14
Fatalities	0	3	1
OHSAS 18001 -certified operations in power and heat production, % of sales	100	75	73**
Supplier audits, number	9	14	13**
Support for society, EUR million	3.6	3.3***	2.1

1) Only in Finland

2) Total recordable injuries per one million working hours

3) Injuries resulting in an absence of at least one day per million working hours

*In 2013, energy efficiency KPI was measured only for sites located in Europe.

**Includes joint venture AB Fortum Värme samägt med Stockholms Stad.

***Figures do not include the sold distribution business.

The reliable delivery of energy is a priority for Fortum and ensures an opportunity to create value for our stakeholders. The average energy availability of our CHP plants remained at a good level in 2015 (96.4%) and we exceeded the set target.

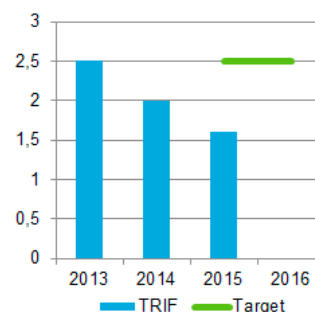
Safe working conditions and personnel wellbeing are an absolute prerequisite for efficient and uninterrupted operations. The safety of our own employees has stabilised at a good level. The total recordable injury frequency for own employees decreased in 2015, and we achieved the set target. The target for lost workday injury frequency per million hours worked for contractors was also achieved. There were no accidents leading to a fatality in 2015.

The rate of absence due to sickness remained at a good level and was 2.4% (2014: 2.4%). Starting from the beginning of 2016 the sickness absence rate is one of the Group's sustainability indicators.

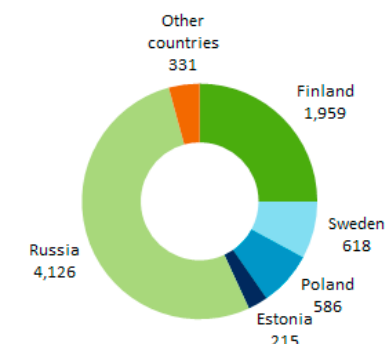
An open flow of information and close collaboration between Fortum and its goods and service suppliers is mutually beneficial. We want to take care of the impacts of our supply chain and promote responsible ways of operating. In 2015 Fortum audited a total of nine suppliers in Poland, Czech Republic, Russia, Kazakhstan and India.

Fortum supports activities promoting the common good in society, for example the work of organisations and communities in our operating countries. Our goal is for the collaboration to be mutually beneficial. In 2015 our support for activities promoting the common good totalled about EUR 3.6 (2014: 3.4) million. The figures for 2014 and 2015 do not include the sold Distribution business.

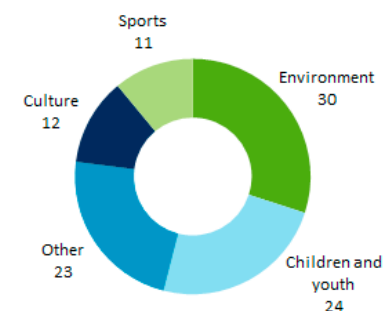
Total recordable injury frequency (TRIF), Fortum's personnel



Personnel by country, 31 Dec. 2015



Fortum's support to society in 2015 by target, %





Security of supply

An uninterrupted energy supply is one of the basic prerequisites for modern society. With preventive condition monitoring and planned maintenance, we make sure that our power plants are operating reliably when they are needed.

Security of supply in 2015

We measure the availability of our CHP and hydropower plants with an energy availability indicator. It is calculated by dividing the power plant's actual production by the theoretical maximum production in the period under review. The planned maintenance outages do not affect availability. However, if an outage of a CHP plant is longer than planned, this is considered an interruption, which decreases the availability. The average energy availability of our CHP plants in 2015 was 96.4% (2014: 94.7%); the target was 95%.

For hydropower plants, outages due to a failure and unplanned or prolonged outages decrease the availability factor only if they lead to spillage. The average energy availability of our hydropower plants was 99.16% (2014: 99.96%).

The load factor describing the energy availability of the Loviisa nuclear power plant was 92.9% (2014: 90.9%), which is high by international standards.



Employees

We are a significant employer in the regions where we have operations. We aim to be a responsible employer that invests in the development and wellbeing of personnel.

Total workforce in 2015

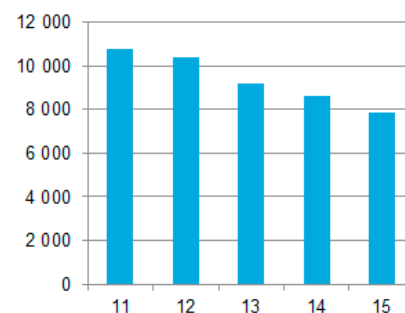
In 2015 an average of 8,009 (2014: 8,821) employees worked at Fortum. The highest number of employees was in Russia, 4,180 (2014: 4,196) on average. The number of Fortum's permanent employees on 31 December 2015 was 7,522 (2014: 8,260), i.e. 96.0% (2014: 96.1%) of the personnel; 7,395 (2014: 8,078) of them were full-time employees and 127 (2014: 182) part-time employees. In general, Fortum does not use temporary workers.

Fortum uses contractors mainly in construction and maintenance work. Contractor employees worked at Fortum sites for a total of approximately 1,327,000 (2014: 1,359,000) days during the year. The figure is based on contractors' hourly logs and on estimates based on job costs and average hourly rates. The figure has been calculated on the basis of an 8-hour work day.

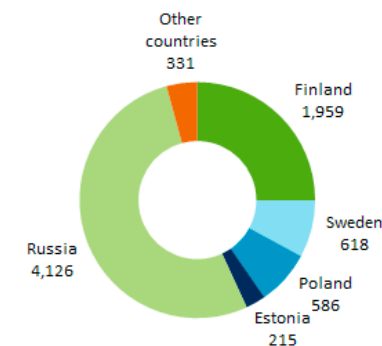
Personnel statistics from 2015, by country of operation

	Finland	Sweden	Russia	Poland	Other countries	Total
Personnel at year-end	1,959	618	4,126	586	546	7,835
male	1,428	332	3,038	455	341	5,594
female	531	286	1,088	131	205	2,241
Personnel, average	2,043	644	4,180	597	545	8,009
Personnel expenses, 1,000 euros	183,255	57,395	74,868	12,348	23,443	351,309
Personnel expenses per person, 1,000 euros	89.7	89.1	17.9	20.7	43.0	43.9

Number of employees, 31 Dec.



Personnel by country, 31 Dec. 2015



Workforce by employment contract and employment type, broken down by region and gender (GRI G4-10)

	Finland		Sweden		Russia		Poland		Other countries		Total	
	M	F	M	F	M	F	M	F	M	F	M	F
Employment contract												
Permanent	1,396	509	310	266	2,921	1,000	454	129	341	196	5,422	2,100
Fixed-term	32	22	22	20	117	88	1	2	0	9	172	141
Employment type (permanently employed)												
Full-time	1,381	481	295	235	2,920	995	454	128	333	173	5,383	2,012
Part-time	15	28	15	31	1	5	0	1	8	23	39	88



Employee turnover in 2015

During the year 375 (2014: 619) new employees joined Fortum and 650 (2014: 668) employment relationships were terminated, of which 248 were terminated by the employer. Divestments and outsourcing reduced the number of personnel by a total of 184 (2014: 468). Departure turnover in 2015 was 8.3% (2014: 8.1%). Voluntary departure turnover was 4.2%.

Total number and rate of new employee hires and employee turnover (GRI G4-LA1)

	Finland		Sweden		Russia		Poland		Other countries	
New employee hires	M	F	M	F	M	F	M	F	M	F
age group	no.	no.	no.	no.	no.	no.	no.	no.	no.	no.
below 30	13	2	3	1	72	25	0	1	12	4
30-50	26	14	8	6	101	24	1	3	10	7
over 50	5	0	3	0	22	7	0	1	2	2
New recruits, %	3.2	3.1	4.5	2.6	6.7	5.6	0.2	3.9	7.0	6.6

	Finland		Sweden		Russia		Poland		Other countries	
Employees leaving	M	F	M	F	M	F	M	F	M	F
age group	no.	no.	no.	no.	no.	no.	no.	no.	no.	no.
below 30	4	4	14	7	36	14	1	1	5	1
30-50	31	23	83	16	98	32	11	3	9	3
over 50	12	8	98	7	87	22	7	3	7	3
Departure turnover, %	3.4	6.9	62.9*	11.3	7.6	6.8	4.2	5.4	6.2	3.6

*Departure turnover was affected by the outsourcing of hydro operation & maintenance services.

	Finland		Sweden		Russia		Poland		Other countries	
Employees leaving, employee's initiative	M	F	M	F	M	F	M	F	M	F
age group	no.	no.	no.	no.	no.	no.	no.	no.	no.	no.
below 30	5	4	11	12	59	25	2	1	1	2
30-50	19	11	25	25	80	22	3	3	6	11
over 50	5	0	4	4	46	15	4	1	2	1
Voluntary departure turnover, %	2.6	4.3	6.1	8.3	4.6	4.5	2.4	3.1	3.8	3.6

Service years of the permanent employees in 2013-2015, %

	2015	2014	2013 ¹⁾
0-5 yrs.	32	32	34
6-10 yrs.	23	20	18
11-15 yrs.	9	10	10
16-20 yrs.	9	10	10
21-26 yrs.	10	11	11
27-30 yrs.	9	9	8
31+	8	9	9

1) Includes joint venture AB Fortum Värme samägt med Stockholms Stad



Diversity and equal opportunity

We promote equal treatment and opportunities in the recruiting, remuneration, development and career advancement of personnel, regardless of the employee's race, religion, political views, gender, age, nationality, language, sexual orientation, marital status or disabilities.

Employee diversity in 2015

The average age of our permanent employees was 44,5 years. The share of employees over 50 years old was 33%. Women accounted for 29% (2014: 28%) of our total personnel. Women accounted for 33% (2014: 33%) of the Group- and division-level management teams. The Board of Directors comprised eight members, three of them, including the Chairman, were women.

Incidents of discrimination in 2015

Any form of harassment is forbidden and addressed immediately. In Finland and Sweden, there are separate guidelines in place for workplace harassment and discrimination. In 2015 there was one incident of inappropriate conduct reported, which resulted in termination of the employment of the perpetrator. One of the allegations of discrimination in 2014 was handled through court proceedings in 2015. According to the court ruling, the employer was found not guilty of discrimination and the case was dismissed.

Equal remuneration

In line with our remuneration policy, we offer a fair, transparent and competitive compensation scheme for employees. Salaries and wages are compliant with established practices in each country and based on local legislation and labour market agreements. Salary level is based on personal work performance, on defined competence requirements, and on the market situation in each country.

The comprehensive implementation of our human resources data management system enables the reporting of pay equality in all our operating countries. In addition to the centralised HR data management system, a separate, local, data system is also used in Russia, and therefore the data on Russia's pay equality is reported separately.

Our reporting covers all personnel groups except "workers". A comparison in this group is not possible because of the small group sizes. The number of personnel in some of our operating countries is so small that a country-specific comparison is not reliable. We have reported these countries collectively under "Other countries".

Personnel age distribution of permanent employees by age group, gender and personnel group (GRI G4-LA12)

age group	Finland				Sweden				Russia				Poland				Other countries			
	Male		Female		Male		Female		Male		Female		Male		Female		Male		Female	
	b	w	b	w	b	w	b	w	b	w	b	w	b	w	b	w	b	w	b	w
below 30	32	62	0	33	2	31	0	31	351	93	27	94	0	4	0	9	26	14	1	25
30-50	184	600	5	292	1	156	0	161	966	641	188	393	116	109	0	75	88	96	7	107
over 50	143	375	1	178	3	117	0	74	580	290	165	133	112	113	2	43	78	39	11	45

b = blue-collars
w = white-collars

Group and division-level management, by age and gender, persons

age group	Men	Women
below 30	0	0
30-50	23	9
over 50	21	13

Remuneration in 2015

In our operating countries in 2015, the base salaries of female employees were, on average, 12% (2014: 10%) less than the male base salaries in all personnel groups. The total number of personnel included in the comparison was 3,089, of which 1,111 (36%) were female. The differences varied between countries; years of service and job grade levels had the most impact on the differences.

Fortum's short-term incentive (STI) system includes a personal performance indicator. We have included the STI's personal bonus

multiplier in the remuneration equality comparison. The difference between female and male in the personal bonus multiplier was +3%.

In Russia, the difference between female and male salaries and wages was +0.6% for comparable grade levels (1,728 individuals). There was no comparison made for the personal bonus multiplier.

Basic salary, remuneration and other key factors of women compared to men, % (GRI G4-LA13)

Country	Basic salary and personal bonus		Job grades		Service years
	Basic salaries	Personal bonus coefficient	Roles until middle management and specialists	Jobs with tactical or strategical role	Average service years
Finland	-14	3	-6	0	-12
Sweden	-23	3	-8	-1	-14
Poland	10	10	11	1	-32
Other countries ¹⁾	-21	-6	0	-3	-2
Total ¹⁾	-12	3	-3	-1	-22

¹⁾ Do not include Russia



Employee-employer relations

Fortum's business operations are developed and strengthened in good collaboration with employees. We believe that the successful management of business is built on relationships of trust between management and employees and on the free flow of information. Fortum respects employees' freedom of association and the right to collective bargaining.

In our operating countries, freedom of association and collective bargaining are guaranteed by law. The exception to this is India, which has not ratified the International Labour Organisation's (ILO) Convention on the right to freedom of association and collective bargaining. In India, we comply with the same practices as in other countries of operation, and we do not limit or prohibit the right to freedom of association.

We apply local collective bargaining agreements in compliance with the scope of each respective agreement in all our operating countries. Collective bargaining agreements cover about 90% of Fortum's employees.

Share of personnel within collective bargaining agreements, by operating country:

- Latvia, Sweden and Russia: 100%
- Finland: 100% (except top management)
- Estonia: 25%
- Poland: 32%

There are no collective bargaining agreements in Lithuania. Employment contracts are based on local legislation and on the company's human resources policy.

Fortum European Council

Fortum European Council (FEC) convenes, as a rule, once a year. FEC is a Europe-level cooperational function in which personnel and employer representatives meet to discuss matters related to Fortum. In 2015, the Fortum European Council (FEC) held a meeting in May in Finland, and personnel representatives from Finland, Sweden, Poland, and Estonia participated. The Council's themed workshops focused on, among other topics, the future outlook for the energy industry, occupational safety and health, and wellbeing. In addition to Fortum European Council meetings, local level meetings are held several times a year in different countries based on need.

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, we want to primarily support the re-employment of the personnel.

In restructuring situations, the length of the obligatory negotiation period depends on the scale of upcoming changes and varies in Fortum's different operating countries. The shortest period for obligatory negotiations is three weeks (Finland) and the longest is 90 days (India). There is no statutory obligatory negotiation period in Sweden, Norway and Lithuania.

The minimum notice period is based on local legislation, collective agreements or employment contracts, which are in harmony with the local legislation and agreements.

In situations involving personnel reductions, we offer outplacement services and, case by case, investigate the possibilities to arrange vocational training in cooperation with local unemployment authorities or service providers. Retraining for employees who continue working is arranged based on organisational and individual needs.

In situations involving personnel reductions, the content of the support package that we offer is decided based on local needs. The financial compensation of the package is usually based on the years of employment at Fortum.



Employee wellbeing

A strong and healthy organisation is a prerequisite to successful business operations. Fortum takes a proactive approach in supporting employee wellbeing and working capacity.

ForCARE work wellbeing model

The goal of the work wellbeing model, ForCARE, is to promote the health and occupational safety of our employees by developing the work and work environment and by promoting the functionality of the work community.

We adopted global ForCare wellbeing themes in 2015. The theme for spring was “activeness and energy” and for autumn “positive feedback and interaction”. In addition to the themes being on the agenda at team meetings, theme-related lectures, wellbeing events and activity contests were held. The themes for 2016 will be “recovery and sleep” and “activeness and energy”.

We will begin using a new tool in the ForCare work wellbeing programme in nearly all our operating countries at the beginning of 2016. HeiaHeia is an online and mobile app offering a wealth of wellness content to motivate users to live a healthier lifestyle, to record physical and wellness activities, to encourage colleagues, and to participate in team-spirit initiatives.

Wellbeing Booster project

In 2015 we participated in the Sitra-coordinated Wellbeing Booster pilot project in Finland. The project tested digital solutions to measure and support health. A total of 180 Fortum employees from the Suomenoja and Järvenpää power plants and from financial administration participated in the project. Additionally, 130 individuals participated as a control group.

The functionality and impact of the Wellbeing Booster concept was assessed through a user survey. The results of the survey indicate that the participants experienced improved awareness of their own wellbeing and an increase in physical activity as a result of the coaching.

Early-support model

We promote wellbeing at the workplace also through what is called an early-support model. We increase open communication between employees and supervisors by discussing and mapping the reasons for absences. In 2015 we focused on the functionality of the early-support model, and we developed the related manager reporting.

The new Manage Working Capacity MASTER training was started for managers. The goal of the training is to strengthen managerial know-how in working capacity management.

Occupational safety committee and workplace wellbeing

Workplace wellbeing and work safety are regularly addressed in local-level occupational safety committees, which operate in line with local legislative requirements and represent all personnel groups. The committees exist in all our significant operating countries.

All our employees are within the sphere of occupational health care. Our occupational health care is arranged in all countries of operation in accordance with local laws and regulations. We emphasise the significance of preventive activities in promoting wellbeing in the company. The occupational health care costs per person in Finland, calculated from the share paid by Fortum, were EUR 509 (2014: 542).

Fortum conducts regular examinations of its personnel in accordance with local laws. Employees who in their work are exposed to e.g. noise, dust, radiation or who perform shift work are within the sphere of the examinations. Occupational health care participates also in various discussions and assessments in the work community. The occupational health care professionals support supervisors by providing information on preventive actions as well as alternatives when the ability to work decreases. Occupational health care also offers methods and tools for these situations.

Sick-leave absences, occupational diseases and average age of retirement in 2015

At Fortum the rate of absence due to sickness was 2.4% (2014: 2.4%), which is lower than the average in the energy sector. The rate of absence due to sickness was 2.2% (2014: 2.2%) for males and 3.0% (2014: 2.9%) for females. The sickness absence rate is calculated based on the reported theoretical working hours of the permanent employees. The rate of absence due to sickness was included as a new Group-level indicator for 2016 to measure employee wellbeing. The management of sick-leave absences and particularly the early-support for managers in the management of illness-related absences and other working capacity challenges are among our focus areas in 2016.

There were 8 (2014: 8) cases of suspected occupational diseases in Finland; 3 were related to noise and 5 were related to asbestos. Two of the suspected noise-related cases were determined to be non-occupational. One of the suspected asbestos-related cases was determined to be an occupational disease and compensated as such. Investigations are still under way for the other suspected cases. All the cases of suspected occupational diseases involved males.

An indication of the good management level of working capacity and work well-being at Fortum is the average retirement age, which was 62 (2014: 62) years.

Sickness absence rate of the permanent employees in 2013-2015 (GRI G4-LA6)

	2015		2014		2013	
	Male	Female	Male	Female	Male	Female
Finland	2.3	3.5	2.3	3.7	2.7	3.1
Sweden	3.1	5.3	2.0	4.1	2.3 ¹⁾	3.7 ¹⁾
Russia	1.7	2.0	2.0	2.0	2.0	1.9
Poland	4.1	6.5	3.6	4.7	2.6	4.6
Other countries	1.8	3.2	2.0	2.2	2.3	2.9

1) Includes joint venture AB Fortum Värme samägt med Stockholms Stad



Sustainability reporting	Sustainability indexes	Sustainability management	Economic responsibility	Environmental responsibility	Social responsibility	Glossary and units	Contact us
Social key figures	Security of supply	Employees	Operational and occupational safety	Corporate citizenship	Human rights	Product responsibility	

Employee development

Fortum encourages its employees to continuously develop their knowledge, skills and competencies. To support this, we have focused on developing leadership and organisational culture through a coaching approach. The coaching approach increases participative management, which encourages employee accountability in their work. One of the key elements in the coaching approach is the giving and receiving of feedback.

Leadership coaching and induction in 2015

There were three programmes under way in 2015 to develop the leadership and organisational culture of managers:

- Leadership Impact coaching
- MASTER Growing Leader training
- Fortum Navigator development programme

A total of 116 managers took part in these programmes in 2015.

All our new employees go through an induction programme, part of which is Fortum Passport, the online on-boarding programme. In 2015 there were 131 (2014: 136) employees who learned about Fortum's operations through the Fortum Passport programme.

Training hours and costs in 2015

In 2015 the total number of training hours was 50,466. Courses and licenses are, for the time being, registered in Finland, Sweden, Poland and Norway. Training costs in 2015 totalled approximately EUR 3.5 (2014: 3.0) million. The training costs for 2014 and 2015 do not include the sold Distribution business.

Performance and development discussions support the achievement of targets and professional growth

Employee development is supported through the annual performance and development discussions; all employees are within the scope of the annual discussions. The main target of the performance and development discussion is to ensure that the employee has clear targets that align with the business as well as the competencies supporting the achievement of the targets and professional growth.

The achievement of the targets forms the basis for payment of incentives. All employees who have a minimum of three months of employment in Fortum are within the scope of Fortum's incentive plan.

Performance and development discussions in 2015

For 2015 we report development discussion coverage as of February

Training hours in 2015 (GRI G4-LA9)

	Total number of training hours for employees	Average training hours per employee	Total number of training hours for females	Average training hours per female	Total number of training hours for males	Average training hours per male
Finland	48,196	24.3	8,929	16.4	39,267	27.2
Blue-collar	10,431	28.5	223	31.8	10,209	28.4
White-collar	37,765	23.3	8,707	16.2	29,058	26.8
Other countries ¹⁾	2,270	1.8	1,039	2.3	1,231	1.5
Blue-collar	69	0.3	0	0.0	69	0.3
White-collar	2,201	2.2	1,039	2.3	1,162	2.1
Grand Total	50,466	15.6	9,968	10.0	40,498	18.0

1) Other countries: Sweden, Poland, Norway

Level of education of the permanent employees in 2013-2015

%	2015	2014	2013 ¹⁾
Doctorate	1	1	1
University	41	41	37
Lower university	6	6	7
College	27	26	26
Vocational	21	22	22
Compulsory	4	4	3
Not indicated	0	0	4

1) Includes joint venture AB Fortum Värme samägt med Stockholms Stad

2015, as the previous year's development cycle ends in February. The electronic tool used in the performance and development discussions was used by 67% of the personnel. Of them 93% had performance and development discussions. The performance and development discussions were completed nearly equally among female employees 95% and male employees 92%. The aim is to get all operating countries and employee groups within the sphere of the electronic tool.

Fortum Sound personnel survey

The Fortum Sound personnel survey is conducted every other year. The response rate to the survey conducted in October 2014 climbed to 84% (2012: 79%). The results indicate that 70% of the employees feel a commitment to the company (2012: 65%).

Based on the survey results, the personnel feel that the customer-oriented way of thinking of Fortum employees as well as sustainability as an integral part of Fortum's operations are at a good level. Overall wellbeing and a healthy work-life balance are also considered to be at a good level. Working in compliance with the Fortum Code of Conduct and occupational safety guidelines is part

of the Fortum employees' daily work.

The most important development targets emerging from the survey were clarification of the strategy, transparency and more effective communication of changes. In response to this need, the Fortum Dialogue events between management and employees were started. They are held twice a year.

Additionally, a project to develop change management capacity was launched. During phase one of the project, support materials for management were created, and HR and communications organisations were trained to support management in change situations.

In a survey conducted when Pekka Lundmark started as President and CEO of Fortum in September 2015, more than 3,200 Fortum employees noted their observations and development suggestions on ways to boost operational efficiency and build future success. The responses revealed that the employees have strong confidence in Fortum's operations, but they would like the company to have a clearer direction, flexibility and quickness in decision-making.



Sustainability reporting	Sustainability indexes	Sustainability management	Economic responsibility	Environmental responsibility	Social responsibility	Glossary and units	Contact us
Social key figures	Security of supply	Employees	Operational and occupational safety	Corporate citizenship	Human rights	Product responsibility	

Operational and occupational safety

We strive to be a safe workplace for our employees and for the contractors and service providers who work for us. We believe that all work injuries are preventable when competence and the right attitude prevails, when potential risks are addressed and when measures are taken to safeguard against them. Good plant safety is an absolute prerequisite for safe and efficient operations in terms of the employees and the environment.

We have set Group-level targets for the following key indicators:

- Injury frequency (TRIF* and LWIF**) for own employees and (LWIF) for contractors
- Number of serious accidents
- Major environmental, health and safety (EHS) incidents

The safety targets apply to all Fortum employees and are part of the short-term incentive plan.

Safety of own employees at a good level in 2015

The safety of our own employees has stabilised at a good level and the lost workday injury frequency (LWIF) per million work hours was 1.1 (2014: 1.0). We achieved our best-ever record in total recordable injury frequency (TRIF) for own employees: 1.6 (2014: 2.0).

We also succeeded in improving contractor safety compared to the previous year. The injury frequency (LWIF) for contractors was 2.7 (2014: 3.2). In 2015 there were no accidents leading to a fatality in Fortum's operations.

Unfortunately, there were still too many serious accidents to our own and our contractors' employees, and we didn't achieve our target of reducing the number of serious accidents by half, i.e. to fewer than eight accidents. A total of 16 (2014: 16) serious accidents occurred. Falls and injuries in connection with using tools and operating machinery were the main causes of the serious accidents. We have investigated all the injuries and launched measures to prevent similar injuries.

*TRIF: Total Recordable Injury Frequency, injuries per million working hours

**LWIF: Lost Workday Injury Frequency, injuries per million working hours, absence of one or more working days or shift excluding the day the accident happened

Key safety figures in 2013-2015 (GRI G4-LA6)

	Target 2016	Target 2015	2015	2014	2013
Lost workday injury frequency (LWIF) ¹⁾ , own personnel	≤ 1.0	≤ 1.0	1.1	1.0	1.0
Lost workday injuries, own personnel			15	15	16
Lost workday injury frequency (LWIF) ¹⁾ , contractors	≤ 3.0	≤ 3.2	2.7	3.2	3.9
Lost workday injuries, contractors			29 ²⁾	35	54
Total recordable injury frequency (TRIF), own personnel ²⁾	≤ 2.5	≤ 2.5	1.6	2.0	2.5
Serious occupational accidents	≤ 8	≤ 8	16	16	14
Fatalities, own personnel	0	0	0	0	0
Fatalities, contractors	0	0	0	3	1
Major EHS Incidents	≤ 23	≤ 27	18	27	35

1) LWIF = Lost workday injury frequency per million working hours

2) TRIF = Total recordable injury frequency per million working hours

*) Including contractor injuries of the divested Distribution business

Occupational accidents, accident frequencies and absence days due to occupational accidents in 2015 by region and gender (GRI G4-LA6)

	Finland	Sweden	Russia	Poland	Others
Own personnel					
Occupational accidents causing absence, men	4	0	6	0	2
Occupational accidents causing absence, women	0	0	3	0	0
LWIF, men	1.5	0	1.1	0	2.9
LWIF, women	0	0	1.6	0	0
Absence from work due to occupational accidents for men, days	16	0	361	0	93
Absence from work due to occupational accidents for women, days	0	0	218	0	0
Contractors					
Occupational accidents causing absence, men	13	9	5	1	2
Occupational accidents causing absence, women	0	0	0	0	0
LWIF, men	8.7	2.6	0.7	1.9	3.4
LWIF, women	0	0	0	0	0
Absence from work due to occupational accidents for men, days	283	575	153	24	18
Absence from work due to occupational accidents for women, days	0	0	0	0	0

In reporting incidents we comply with the principles of the United States Occupational Safety & Health Administration (OSHA) and ILO's Practices on Recording and Notification of Occupational Accidents and Diseases to the extent that they conform to the legislation in Fortum's countries of operation.



Plant safety in 2015

We track major environmental, health and safety (EHS) incidents as a Group target, which covers fires, leaks >100 litres, explosions, nuclear and dam safety incidents, and environmental non-compliances. There were 18 (2014: 27) EHS incidents in 2015; the target was ≤27. The incidents didn't cause significant harm to operations, people or the environment. The majority (12) of the incidents were wastewater permit violations in Russia. In 2016 the possibility to transition to using a closed water circulation system will be explored at two power plants in Russia.

Common guidelines steer operations

Fortum has Group-level EHS guidelines and minimum requirements that set requirements for all the operations for which we have operative responsibility. In 2015 we updated these guidelines and trained more than 500 employees in the revised requirements. The training emphasised management's role, and we trained the management teams of business units, project management, power plant management, operators and service personnel. Procurement plays a central role in selecting contractors, so also the procurement management team received training.

As a part of the implementation of the new guidelines, we assessed the divisions' performance in complying with the guidelines in their operations. The shortcomings were recorded and the corrective measures were included into divisions' 2016 action plans. Measures to prevent serious accidents were also recorded in the action plans.

The contractors' ability to operate safely is important for us, and we assess contractors also from the perspective of safety. Fortum

uses the common contractor safety management model, which takes into consideration the contractor's safety level from moment of the agreement to the completion of the job. The goal is to implement the safety management model in all divisions during 2016.

Improving safety is a continuous effort

Our goal is to continuously improve the safety of our operations. We have set ambitious safety targets for 2016. The number of serious accidents must be reduced by half, the safety of our own personnel must be kept at a good level, and our target level in contractor safety must be tightened. We have also set more challenging targets for EHS incidents.

Contingency planning

The main disaster and emergency situations we prepare for are related to our critical operations, such as power plant and dam safety and securing other operations.

For dam and nuclear safety, emergency preparedness obligations in Finland and Sweden are based on regulatory provisions; likewise, there are terrorism-related preparedness obligations in Russia. Otherwise, emergency preparedness obligations prescribed by authorities are of a general nature. Based on its own risk assessments, Fortum independently defines the crisis and exceptional situations it prepares for and drafts action plans for.

Responsibilities in contingency planning

Fortum's crisis and emergency management and business continuity plans are prepared for the Group, division and site levels. The testing

and updating of the crisis management and continuity plans are the responsibility of each division and line organisation. Crises impacting Group operations more broadly are managed at the Group level. Crisis communication instructions have been prepared for e.g. power and heat outages and for the Loviisa nuclear power plant. Corporate Security is responsible for crisis management development, e.g., for organising rehearsals and supporting planning. Corporate Communications is responsible for crisis communication.

Crisis rehearsals and other actions in 2015

In 2015 a crisis rehearsal was held for Fortum's Heat, Electricity Sales and Solutions Division Management Team, among others. In Finland, the annual emergency exercise related to a nuclear power accident was held at the Loviisa power plant. The exercise focused on communication methods between the Loviisa power plant, the Keilaniemi Headquarters emergency organisations and key authorities: emergency response centre, national rescue services, police, and the Radiation and Nuclear Safety Authority.

Fire safety and rescue plans were created for the Headquarters in Russia, Finland, Sweden, Poland and the Baltics. Based on these plans, awareness events were held in the relevant locations. Information security risks were addressed during the year by creating an information security risk process to evaluate and analyse information-related risks. A goal for 2016 in preparing for crises and exceptional situations is to improve the risk management related especially to information security in power plants, as well as fire and rescue operations.



Corporate citizenship

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

We support activities promoting the common good in society, for example the work of organisations and communities in our operating countries. Our sponsorship programme focuses on the future – on children, young people, the environment and society. Fortum also does significant collaboration with different research and development projects, particularly with Nordic universities.

We actively participate in **national and international organisations**. Public affairs and collaboration with authorities are a priority in the energy sector.

Local impacts and collaboration with local communities

We are an important employer and significant tax payer in our operating areas. In addition, our investments improve the local infrastructure. Of our energy production forms, hydropower has the most significant impacts on local communities and local forms of land use. Hydropower construction and use may alter the flow rate and the fluctuation and rhythm in the water level in waterways as well as the fish fauna. These changes impact fishing, recreational use, and boating. We mitigate and compensate the adversities caused by hydropower production through numerous measures, such as stocking fish and building boat launch ramps.

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

Examples of our activities with local communities in 2015:

- Customer panels and meetings were organised in Finland, Sweden, Estonia and Poland. Meeting with customers is one way to get direct feedback and development ideas. We want to accommodate customers' needs even better in the future.
- Open-house events were arranged at power plants in different countries of operation; thousands of locals attended the events.

- Fortum continued publishing the Naapurina ydinvoimala (Nuclear power plant as a neighbour) magazine in Loviisa and maintained an active dialogue with local residents and representatives of the city of Loviisa.
- **Projects** aiming to mitigate the adverse environmental impacts of hydropower were under way in Finland and Sweden in collaboration with municipalities, research facilities, fishermen, universities and environmental organisations.
- The third National Clean River Championships was held for students in Sweden. More than 2,000 young people raised money for recreational activities by collecting 35 tonnes of trash along the banks of four rivers (Dalälven, Klarälven, Ljusnan and Gullspångälven) where Fortum has hydropower plants.
- In Estonia, collaboration related to district cooling solutions and smart and energy-efficient rebuilding was initiated with multiple local stakeholder groups.
- Fortum continued supporting local communities with **several projects** in the vicinity of the Kapeli and Amrit solar power plants in India.
- Fortum supports the communities in power plant areas through various donations. Support in 2015 went to e.g. homeless children and youth in Sweden, workshops and scholarships for talented children raised in difficult conditions in Poland, as well as a sports school for children, a hockey team, and cultural and residential events in Russia.

Read more

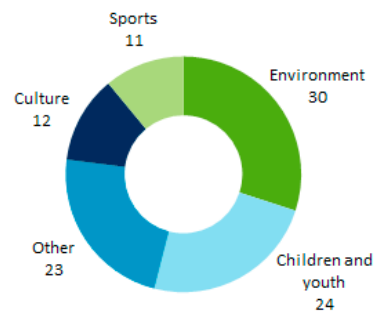
Environmental impacts of hydropower



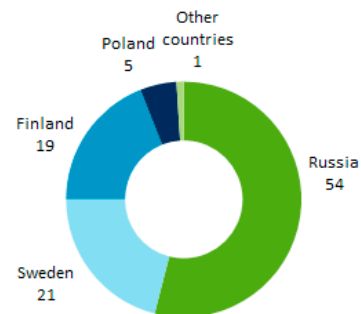
Support for society in 2015

In 2015 our support for activities promoting the common good totalled about EUR 3.6 (2014: 3.3) million. The figures for 2014 and 2015 do not include the sold Distribution business. The share of grants awarded by the Fortum Foundation was about EUR 706,000 (2014: 550,000) of the support. Fortum Foundation supports research, education and development in the natural, technical and economical sciences within the energy industry.

Fortum's support to society in 2015 by target, %



Fortum's support to society in 2015 by country, %



Read more
[Sponsoring](#)

The goal of the collaboration with universities and colleges is to develop Fortum's business, promote energy-sector research and development, and foster Fortum's recruiting and training opportunities.

Examples of our collaboration with universities and colleges in different operating countries:

- In Finland, we are funding a solar economy professorship (75% funding for a five-year period, i.e. until 2017) at Lappeenranta University of Technology.
- In Sweden, we are researching ways to improve the river habitat for migrating fish with the University of Karlstad. Additionally, there is a multi-year project under way that aims to offer sustainability-related training to more than 4,000 educators. Fortum's collaboration partners in the project are Pedagog Värmland and Karlstad municipality, and new partners include engineering and consulting company ÅF and Chalmers University of Technology.
- In Poland, Fortum is collaborating with the Wrocław University of Technology on district cooling solutions and with the Częstochowa University of Technology's Faculty of Environmental Engineering and Biotechnology. Fortum also has a collaboration agreement with the Silesia University of Technology.
- In Russia, we are participating in the AboutEnergy training programme, which supports educators in providing training related to energy conservation. For university students, we also offer internships and information visits at our power plants.
- In the Baltic countries, Fortum is a member of the Baltic Innovative Research and Technology Infrastructure (BIRTI), which coordinates collaboration between universities, scientific institutes and entrepreneurs.
- In Latvia, we are cooperating with Riga Technical University and Latvia University of Agriculture, and in Lithuania, with Klaipėda Technical School, Klaipėda University and Kaunas University of Technology. We arrange internships and information visits for students, and we support energy sector-related conferences and seminars.

Sponsorship projects in 2015

We sponsored junior football and junior volleyball in Finland in 2015 through the Fortum Tutor programme. The goal is to ensure that children have inspiring and motivating coaches. About 120 tutors mentor the coaches and provide them with useful tools for coaching. In its seven years of operation, the Fortum Tutor programme has reached more than 100,000 children. In May 2015 the first training was arranged for football team coaches of special populations.

In 2015 the Fortum Tutor programme was also launched in Latvia, where Fortum sponsors a local volleyball team in Jelgava. Within the programme, professional volleyball players and Fortum employees visit local schools and teach students volleyball skills. Short-term Fortum Tutor projects have been implemented in football and ice hockey also in Chelyabinsk, Russia.

The Fortum Honorary Energy Donor mobile app has been in use in Poland, the Baltic countries and Russia. It encourages people to engage in physical activity. The distance covered during a physical activity can be converted into energy, for which Fortum makes a financial donation to selected charities.



Human rights

Fortum supports and respects internationally recognised human rights, which are included in the key human rights agreements. Our own operations have a direct or indirect impact on the realisation of the human rights of our own personnel, those working in the supply chain, and members of local communities.

Management of human rights issues

Our goal is to operate in accordance with the UN Guiding Principles on Business and Human Rights, and to apply these principles in our own operations as well as in country and partner risk assessments and supplier audits. Fortum's approach to the management of human rights issues is described in more detail in the Social responsibility: **Human rights**.

Fortum's Corporate Sustainability unit is responsible for coordinating and developing sustainability, including human rights issues, at the Group level.

Personnel training in human rights issues in 2015

Fortum employees conducting supplier audits receive 1.5 days of internal training, during which they review the requirements of the Supplier Code of Conduct, the sub-areas to be audited, and the tools to be used to verify compliance with the requirements. In 2015 we trained a total of three auditors from Finland and India. Those who have completed the internal training are advised to complete auditor training also on the Social Accountability (SA8000) standard.

The online course for Fortum's Code of Conduct also includes training in human rights-related issues. The Code of Conduct was updated in 2015 and employees completed an online course with exercises related to everyday Code of Conduct situations. The online course is also part of the induction programme for new employees.

In 2015 we participated in the Finnish Corporate Responsibility Network's (FIBS) training related to business and human rights.

Assessment of human rights impacts in 2015

A sustainability assessment is carried out for all of our investment projects and takes into consideration the environmental, occupational health and safety, and social impacts of the project. The sustainability assessment includes a human rights evaluation, especially in new operating areas. A human rights assessment is also part of the systematic assessment of country and counterparty risks when planning a project.

The process has two parts: a light and a deep assessment. A light assessment is done for all new countries in where our business unit is planning the sales of operation or maintenance services, for example, and it is based on publically available sources. In 2015, seven of these assessments were made. A deep assessment was done for one country.

Fortum's supplier audits cover the most important human rights aspects related to purchases. Our personnel conduct the supplier audits. By conducting the audits on our own, we gain a better idea of the supplier's practices and, at the same time, increase the supplier's competence related to human rights.

In 2016 we will assess the possibility to increase the number of supplier audits by collaborating with an external service provider in conducting audits.

The supplier audits conducted in 2015 and their results are described in more detail in the section **Sustainable supply chain**.

Identified impacts on human rights, corrective measures and grievances in 2015

All forms of child and forced labour are strictly prohibited and in violation of Fortum's Code of Conduct. Of our operating countries, India has not ratified the International Labour Organisation's (ILO) Convention on the minimum age and the worst forms of child labour. Our functions in India require job applicants to be of adult age. We have not identified risks related to the use of forced labour in our own operations. Support of employees' right to freedom of association and collective bargaining are discussed in the section **Employee-employer relations**.

During the year there was one grievance filed regarding discrimination, which is reported in the section **Diversity and equal opportunity**. There were no other grievances related to human rights or labour rights filed through formal grievance channels, nor were there any grievances carried over from the previous year.

Read more
Sustainable supply chain
Stakeholders

[Sustainability reporting](#)[Sustainability indexes](#)[Sustainability management](#)[Economic responsibility](#)[Environmental responsibility](#)[Social responsibility](#)[Glossary and units](#)[Contact us](#)[Social key figures](#)[Security of supply](#)[Employees](#)[Operational and occupational safety](#)[Corporate citizenship](#)[Human rights](#)[Product responsibility](#)

Product responsibility

Fortum's business activities cover the production, sales and distribution of electricity and heat as well as energy-sector expert services. In line with our strategy, we develop sustainable energy solutions that benefit all of society.

We are one of the leading electricity sales companies in the Nordic countries, and we sell electricity to private and business customers in Sweden, Finland and Norway. Fortum is one of the world's biggest producers and sellers of heat. We sell heat to companies, the public sector and private customers in Finland, Poland, all the Baltic countries, and especially in Russia. Additionally, we sell district cooling in Finland and in Estonia, where the first customers will start using district cooling in 2016.

Read more

Customer satisfaction and reputation
Products and services

Guarantee-of-origin-labelled and renewable electricity

Fortum is one of the Nordic countries' leading sellers of carbon dioxide-free and guarantee-of-origin-labelled electricity and can offer more and more customers an electricity agreement that comes with electricity produced with renewable energy. In 2015 all the electricity we sold to private customers in Finland was renewable and carbon dioxide-free hydropower or wind power. The origin of the hydroelectricity and wind power was guaranteed with European Guarantees of Origin. Some of the production was guaranteed also with the pan-European EKOenergy label granted by environmental organisations and in Sweden with the Bra Miljöval label.

Services to customers

In recent years Fortum has introduced many new solutions that improve energy efficiency for customers and reduce environmental impacts. We want to offer growing urban areas sustainable solutions that support building a circular economy. Smart solutions give customers better opportunities to control their electricity consumption and costs. Fortum is continuously developing its products and services to meet the needs of customers. The new solutions are related to, e.g., energy efficiency, electric vehicles, solar power, and open district heating.

We offer a variety of operation and maintenance expert services to power plant owners and industrial customers. Additionally, we

offer products and consulting services related to hydropower, nuclear safety and nuclear waste handling.

Marketing communications

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

No violations of regulatory or voluntary principles were observed in Fortum's marketing communications in 2015.



Reporting principles

We observe the following principles in the sustainability reporting for 2015.

Reporting scope and boundaries

Reporting related to operations and management covers all functions under Fortum's control, including subsidiaries in all countries of operation. Subsidiaries are defined as companies in which Fortum Corporation has control. Possible deviations to this principle are reported in conjunction with information applying different boundaries. A list of Fortum's subsidiaries is in Notes to the Consolidated **Financial Statements**, Note 43 Subsidiaries by segment.

Information from previous years is mainly presented as pro forma information, i.e. 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 updated afterwards in the previous indicators.

An exception is the company AB Fortum Värme samägt med Stockholms stad (Fortum Värme), previously consolidated as a subsidiary company and now classified in the Financial Statements as a joint venture and consolidated with the equity method as of 1.1.2014. Whenever possible, the data presented in this report has been changed to reconcile with the above mentioned accounting practice starting in 2013. Exceptions to the reconciliated 2013 figures are noted separately for each indicator. Thus Fortum Värme is not included in Fortum's sustainability targets and indicators nor in the descriptions of management practices, unless mentioned otherwise. Fortum Värme's sustainability information is available in Fortum Värme's sustainability report.

Fortum completed the divestment of its Distribution business on 1 June 2015. As a general rule, the information for 2015 presented in this report does not include the Distribution business. The Distribution business is included in the figures for 2013 and 2014. Exceptions to the accounting practice are presented in conjunction with each figure.

Capacity changes

In December 2015 Fortum commissioned unit 1 of its Chelyabinsk GRES combined heat and power (CHP) plant in Russia. In January 2015 Fortum's new Suomenoja heat pump station started operating in Espoo, Finland. The new capacity built and the new plants commissioned in 2015 are included in the reporting starting from the time of their commissioning.

Fortum divested its Distribution business in Sweden on 1 June 2015. The reporting rules for the Distribution business are presented in the Reporting scope and boundaries section.

Measurement and calculation principles

Data for economic performance indicators is collected from the audited financial statements and from financial accounting and consolidation systems.

The environmental information of the report covers the plants for which Fortum is the legal holder of the environmental permit. In such cases, the plant information is reported in its entirety. The only exception is the calculation of specific CO₂ emissions from the Meri-Pori power plant, where the calculation covers only Fortum's share of production and emissions as specified in the operation agreement between Fortum and Teollisuuden Voima Oy. In the specific emissions calculation, the production shares of minority holdings are also included in the total production.

Fortum utilises a Group-wide database with instructions for collecting site-level 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 CO₂ emissions subject to the EU Emissions Trading Scheme 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 Protocol and based on the Greenhouse Gas Analysis performed by an external consultant.

Fortum's human resources (HR) management system is currently used in all Fortum's operating countries and is the main system for employee-related personal and job data. In Russia, the employee data system covers mainly superiors. In addition, Russian operations have their own, local data system. Other social responsibility data, such as occupational 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 GRI.



Reported GRI indicators

In our sustainability reporting 2015 we apply the Global Reporting Initiative (GRI) G4 Guidelines' specific standard disclosure indicators presented in the table.

CODE	DESCRIPTION	SECTION
DISCLOSURES OF MANAGEMENT APPROACH		
G4-DMA	Management approach	Sustainability management / Governance and management
ECONOMIC RESPONSIBILITY		
G4-DMA	Management approach to economic responsibility	Sustainability management / Governance and management / Economic
Economic performance		
G4-EC1	Direct economic value generated and distributed	Economic responsibility / Economic impacts
G4-EC2	Financial implications and other risks and opportunities due to climate change	Environmental responsibility / Climate change mitigation Financials / Operating and financial review / Risk management
G4-EC3	Coverage of the organisation's benefit plan obligations	Financials / Notes to the consolidated financial statements / 32. pension obligations
G4-EC4	Financial assistance received from government	Economic responsibility / Economic impacts
Plant decommissioning		
G4-DMA	Management approach	Financials / Notes to the consolidated financial statements / 30. Nuclear related assets and liabilities
System efficiency		
EU11	Average generation efficiency of thermal plant	Environmental responsibility / Improving energy efficiency / Energy intensity 2015
ENVIRONMENTAL RESPONSIBILITY		
G4-DMA	Management approach to environmental responsibility	Sustainability management / Governance and management / Environment
Materials		
G4-EN1	Use of materials	Environmental responsibility / Improving energy efficiency / Fuel consumption 2015
G4-EN2	Recycled materials used	Environmental responsibility / Improving energy efficiency / Fuel consumption 2015
Energy		
G4-EN3	Energy consumption within the organisation	Environmental responsibility / Improving energy efficiency / Fuel consumption 2015 (consumption) Environmental responsibility / Sustainable production (production) Environmental responsibility / Improving energy efficiency / Energy intensity 2015
G4-EN5	Energy intensity	Environmental responsibility / Improving Energy efficiency / Energy intensity 2015
G4-EN6	Reduction of energy consumption	Environmental responsibility / Improving energy efficiency
Water		
G4-EN8	Total water withdrawal by source	Environmental responsibility / Water use


[Sustainability reporting](#)
[Sustainability indexes](#)
[Sustainability management](#)
[Economic responsibility](#)
[Environmental responsibility](#)
[Social responsibility](#)
[Glossary and units](#)
[Contact us](#)
[Reporting principles](#)
[Reported GRI indicators](#)

CODE	DESCRIPTION	SECTION
Biodiversity		
G4-EN13	Habitats protected or restored	Environmental responsibility / Biodiversity
Emissions		
G4-EN15	Direct greenhouse gas (GHG) emissions (Scope 1)	Environmental responsibility / Climate change mitigation / Greenhouse gas emissions 2015
G4-EN16	Indirect greenhouse gas (GHG) emissions (Scope 2)	Environmental responsibility / Climate change mitigation / Greenhouse gas emissions 2015
G4-EN17	Other indirect greenhouse gas (GHG) emissions (Scope 3)	Environmental responsibility / Climate change mitigation / Greenhouse gas emissions 2015
G4-EN18	Greenhouse gas (GHG) emissions intensity	Environmental responsibility / Climate change mitigation / Greenhouse gas emissions 2015
G4-EN21	NO _x and SO ₂ and other significant air emissions	Environmental responsibility / Emissions into air
Effluents and waste		
G4-EN22	Total water discharge by quality and destination	Environmental responsibility / Water use
G4-EN23	Total weight of waste by type and disposal method	Environmental responsibility / Waste and by-products
G4-EN24	Total number and volume of significant spills	Environmental responsibility / Environmental incidents
Compliance		
G4-EN29	Significant fines and nonmonetary sanctions for noncompliance with environmental laws and regulations	Environmental responsibility / Environmental non-compliances and incidents
Supplier environmental assessment		
G4-EN33	Significant actual and potential negative environmental impacts in the supply chain and actions taken	Economic responsibility / Supply chain management / Sustainable supply chain
Environmental grievance mechanisms		
G4-EN34	Number of grievances about environmental impacts filed, addressed, and resolved through formal grievance mechanisms	Environmental responsibility / Environmental non-compliances and incidents Sustainability management / Business ethics and compliance


[Sustainability reporting](#)
[Sustainability indexes](#)
[Sustainability management](#)
[Economic responsibility](#)
[Environmental responsibility](#)
[Social responsibility](#)
[Glossary and units](#)
[Contact us](#)
[Reporting principles](#)
[Reported GRI indicators](#)

CODE	DESCRIPTION	SECTION
SOCIAL RESPONSIBILITY: LABOUR PRACTICES AND DECENT WORK		
G4-DMA	Management approach to social responsibility, labour practices and decent work	Sustainability management / Governance and management / Labour practices
G4-10	Workforce	Social responsibility / Employees
G4-11	Coverage of collective bargaining agreements	Social responsibility / Employees / Employee-employer relations
Employment		
G4-LA1	New employee hires and employee turnover	Social responsibility / Employees
Occupational health and safety		
G4-LA6	Type of injury and rates of injury, occupational diseases, lost days, and absenteeism, and total number of work related fatalities	Social responsibility / Operational and occupational safety Social responsibility / Employees / Employee wellbeing
Training and education		
G4-LA9	Average hours of training per employee	Social responsibility / Employees / Employee development
G4-LA10	Programmes for skills management and lifelong learning	Social responsibility / Employees / Employee development
G4-LA11	Percentage of employees receiving regular performance and career reviews	Social responsibility / Employees / Employee development
Diversity and equal opportunity		
G4-LA12	Composition of governance bodies and breakdown of employees	Social responsibility / Employees / Diversity and equal opportunity Corporate governance statement / Governing bodies of Fortum / Board of directors
Equal remuneration for women and men		
G4-LA13	Ratio of basic salary and remuneration of women to men	Social responsibility / Employees / Diversity and equal opportunity
Supplier assessment for labour practices		
G4-LA15	Significant actual and potential negative impacts for labour practices in the supply chain and actions taken	Economic responsibility / Supply chain management / Sustainable supply chain
Labour practices grievance mechanisms		
G4-LA16	Number of grievances about labour practices filed, addressed, and resolved through formal grievance mechanisms	Social responsibility / Human rights Sustainability management / Business ethics and compliance



Sustainability reporting

Sustainability indexes

Sustainability management

Economic responsibility

Environmental responsibility

Social responsibility

Glossary and units

Contact us

Reporting principles

Reported GRI indicators

CODE	DESCRIPTION	SECTION
SOCIAL RESPONSIBILITY: HUMAN RIGHTS		
G4-DMA	Management approach to social responsibility, human rights	Sustainability management / Governance and management / Human rights
Investment		
G4-HR1	Human rights screening or clauses included in significant investment agreements	Social responsibility / Human rights
G4-HR2	Employee training on human rights policies or procedures	Social responsibility / Human rights
Non-discrimination		
G4-HR3	Incidents of discrimination and corrective actions taken	Social responsibility / Employees / Diversity and equal opportunity
Freedom of association and collective bargaining		
G4-HR4	Supporting the right to freedom of association and collective bargaining in risk areas	Social responsibility / Employees / Employee-employer relations
Child labour		
G4-HR5	Measures taken to eliminate child labour in risk areas and in operations of significant suppliers	Social responsibility / Human rights
Forced or compulsory labour		
G4-HR6	Measures taken to eliminate forced and compulsory labour in risk areas and in operations of significant suppliers	Social responsibility / Human rights
Assessment		
G4-HR9	Operations that have been subject to human rights reviews or impact assessments	Social responsibility / Human rights
Supplier human rights assessment		
G4-HR11	Significant actual and potential negative human rights impacts in the supply chain and actions taken	Economic responsibility / Supply chain management / Sustainable supply chain
Human rights grievance mechanisms		
G4-HR12	Number of grievances about human rights impacts filed, addressed, and resolved through formal grievance mechanisms	Social responsibility / Human rights Sustainability management / Business ethics and compliance



Sustainability reporting

Sustainability indexes

Sustainability management

Economic responsibility

Environmental responsibility

Social responsibility

Glossary and units

Contact us

Reporting principles

Reported GRI indicators

CODE	DESCRIPTION	SECTION
SOCIAL RESPONSIBILITY: SOCIETY		
G4-DMA	Management approach to social responsibility, society	Sustainability management / Governance and management / Society
Local communities		
G4-SO2	Operations with significant actual and potential negative impacts on local communities	Social responsibility / Corporate citizenship
Anti-corruption		
G4-SO3	Operations assessed for risks related to corruption and the significant risks identified	Sustainability management / Business ethics and compliance
G4-SO4	Communication and training on anticorruption policies and procedures	Sustainability management / Business ethics and compliance
G4-SO5	Confirmed incidents of corruption and actions taken	Sustainability management / Business ethics and compliance
Public policy		
G4-SO6	Total value of political contributions	Sustainability management / Business ethics and compliance
Anti-competitive behaviour		
G4-SO7	Total number of legal actions for anticompetitive behavior, antitrust, and monopoly practices and their outcomes	Sustainability management / Business ethics and compliance
Compliance		
G4-SO8	Significant fines and nonmonetary sanctions for noncompliance with laws and regulations	Sustainability management / Business ethics and compliance
Disaster/Emergency planning and response		
G4-DMA	Management approach	Social responsibility / Operational and occupational safety / Contingency planning
SOCIAL RESPONSIBILITY: PRODUCT RESPONSIBILITY		
G4-DMA	Management approach to social responsibility, product responsibility	Sustainability management / Governance and management / Product responsibility
Product and service labelling		
G4-PR5	Results of surveys measuring customer satisfaction	Economic responsibility / Customer satisfaction and reputation
Marketing communications		
G4-PR7	Total number of incidents of non-compliance with regulations and voluntary codes concerning marketing communications	Social responsibility / Product responsibility
Access		
EU30	Average plant availability factor	Social responsibility / Security of supply



Glossary, acronyms and units

Glossary

Acidification

The decreased ability of a habitat, such as a lake or forest ground, to neutralize the acid fallout from the air; as a result, the pH level drops, i.e. water becomes more acidic. Flue-gas emissions, like sulphur dioxide and nitrogen oxides, contribute to acidification.

Best available technology (BAT)

The most advanced commercially available processes, equipment and techniques that can be practically adopted to limit emissions and waste. BAT is a central principle in plant permit processes.

Biodiversity

The existence of a wide variety of plant and animal species in their natural environment (diversity in habitats and species and genetic diversity within species).

By-product

A product generated in conjunction with power and heat production or in the cleaning of flue gases that can be utilised. Examples include ash and gypsum.

Carbon dioxide

A gas generated from the combustion of fossil fuels containing carbon, see Greenhouse effect.

Carbon dioxide-free production

In Fortum's reporting the term carbon dioxide-free production refers to hydro, nuclear, wind, solar and wave power, which do not generate emissions in the production phase, and the use of biomass energy and the thermal energy generated by heat pumps from ground, water system or waste heat.

Certification

Verification of compliance of operations with an environmental, safety or quality management system standard (e.g. ISO 14001). Verification is made by an accredited organisation.

Climate change

A long-term change in the global or local climate, e.g. in precipitation, temperatures and wind patterns. Climate change can be caused by events related to e.g. oceanic thermal mechanisms, solar activity, volcanic activity, and human activity. Commonly, the term climate change refers to the global warming caused by the increased greenhouse gases resulting from human activity.

Code of Conduct The Code of Conduct defines the foundation of Fortum's way of operating everywhere. The Board has approved the Code of Conduct and it is based on Fortum's shared values.

Combined heat and power production

The simultaneous generation of heat and electricity at a power plant in which the thermal energy of the turbine steam used for power production is utilized by industry or as district heat. Combined heat and power production achieves a high co-efficiency rate (as much as 90%), i.e. the fuels needed in production are used more efficiently.

Condensing power

Electricity production in a power plant where thermal energy is not utilized, but is cooled using cooling water.

Cooling water

Water used to condense the steam that is used in electricity production at a power plant. Cooling water is taken from a water system (sea, lake) and is returned to it about 10 °C warmer.

Eco-labelled energy

Electricity produced in accordance with certain criteria in an environmentally sound manner and with renewable energy sources. For instance, "Ekoenergia" in Finland and "Bra miljöval" in Sweden.

Electricity retail market

In the electricity retail market consumers can choose their electricity seller within their own country. Electricity retailers make electricity agreements with consumers. The selling price of electricity is based on the wholesale price and the seller's margin. Consumer prices

follow with a delay the fluctuation of the wholesale price determined in the exchange.

Electricity wholesale market

In the wholesale market electricity producers, retailers and big electricity users buy and sell electricity in the exchange. The Nordic power exchange Nord Pool is an important part of the electricity wholesale market. Nord Pool's common market area includes Denmark, Norway, Sweden and Finland. Both spot trading and derivatives trading is conducted in the wholesale market.

Emissions trading

A scheme in which emissions have economic value and in which emissions allowances or credits are bought and sold. At the moment the most significant emissions trading scheme is the EU's carbon dioxide emissions trading scheme.

Fly ash

A by-product generated in connection with solid-fuel combustion. Fly ash can be utilised as made-up ground and in mine filling.

Greenhouse effect

The phenomenon whereby the earth's atmosphere traps heat as a result of carbon dioxide and other greenhouse gases, which allow incoming solar radiation to reach the earth's surface but slow its radiation in the infrared area. The strengthening of the greenhouse effect means that as greenhouse gases increase, their warming effect on the atmosphere strengthens.

Greenhouse gas

A gas that absorbs heat radiation and traps it in the atmosphere, thus strengthening the greenhouse effect. The main greenhouse gases are carbon dioxide and methane.

Guarantee of origin

In line with the EU directive, an electricity guarantee of origin contains information about the electricity production method and its energy sources and discloses the date and location of production.

**High-level radioactive waste**

Spent fuel removed from a nuclear power plant is high-level radioactive waste.

Lost workday injury frequency (LWIF)

The number of injuries per million working hours, absence of one or more working day or shift excluding the day the accident happened.

Low- and intermediate-level radioactive waste

In addition to high-level radioactive waste, nuclear power plant operations also generate low- or intermediate-level radioactive waste. Similar waste is also generated when a nuclear power plant is dismantled.

Methane

A hydrocarbon compound. Natural gas consists of more than 99 per cent methane. Methane is a greenhouse gas.

Nitrogen oxides

NO and NO₂ are produced during the combustion of fuel from both the nitrogen contained in fuel and in the combustion air.

Primary energy

Unrefined, natural energy. The energy content of fuel is commonly referred to as primary energy.

Renewable energy certificate

The purpose of the renewable energy certificate (green certificate) system is to increase the use of renewable energy sources where it is most cost-effective. Certificates can be bought and sold and are proof that a certain amount of electricity has been produced with renewable energy sources.

Renewable energy sources

Renewable energy sources include solar, wind, hydro and bioenergy, geothermal, and wave and tidal energy. Renewable energy sources do not cause greenhouse gas emissions.

Smart grid

A grid in which electricity is transferred in the future both from the production plant to the consumer and from the consumer's production equipment to the grid. A smart grid is a marketplace for distributed energy production and for consumers. Everything occurs in real time, the grid adapts, scales, anticipates and corrects itself using automation. Smart solutions also connect information and communications technology to the electricity infrastructure.

Specific emissions

The amount of emissions of a plant in proportion to the amount of energy produced. The specific emissions figure (for example g/kWh) indicates how effectively the emissions have been reduced.

Sulphur dioxide

A chemical compound generated in the combustion of fuels containing sulphur.

Sustainable development

Development that fulfils the needs of present generations without compromising the ability of future generations to fulfil their own needs. Sustainable development is considered to encompass economic, environmental and social dimensions.

Total recordable injury frequency (TRIF)

The number of injuries per million working hours. In addition to LWI accidents, this figure includes medical treatment cases and restricted workday cases.



Acronyms

CCS	Carbon capture and storage
CDM	Clean Development Mechanism
CHP	Combined heat and power production
CH ₄	Methane
CO ₂	Carbon dioxide
IEA	International Energy Agency
LWIF	Lost workday injury frequency
NO ₂	Nitrogen dioxide
N ₂ O	Nitrous oxide
SO ₂	Sulphur dioxide
TRIF	Total recordable injury frequency

Units

Energy

1 terawatt hour (TWh)
= 1,000 gigawatt hours (GWh)
= 1,000,000 megawatt hours (MWh)
= 1,000,000,000 kilowatt hours (kWh)

1 terawatt hour (TWh)
= 3,600 terajoules (TJ)

1 terajoule (TJ)
= 278 megawatt hours (MWh)

1 petajoule (PJ)
= 1000 terajoules (TJ)

Capacity

1 megawatt (MW)
= 1,000 kilowatts (kW)
= 1,000,000 watts (W)

Volume

1 cubic metre (m³)
= 1,000 litres (l)

1 normal cubic metre (Nm³)
= 1 m³ of gas in normal atmospheric pressure (1.0 bar) and temperature 0 °C

Mass

1 tonne (t)
= 1,000 kilograms (kg)

1 megatonne (Mt)
= 1,000,000 tonnes (t)
= 1,000,000,000 kilograms (kg)

Activity

1 becquerel (Bq)
= 1 nuclear transformation per second

1 terabecquerel (TBq)
= 1 000 gigabecquerels (GBq)
= 1 000 000 000 000 becquerels



Contact us

Your feedback is very important to us, because it helps us to further develop our actions related to sustainability, including reporting and communication.

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