

# Sustainability<sup>2013</sup>

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# Fortum's Annual Report 2013

*Fortum is an energy company highly committed to sustainability. Catering to the versatile needs of our customers, we generate, distribute and sell electricity and heat and offer related expert services.*

## Sustainability



*Sustainable business is our competitive advantage. We produce and distribute environmentally-benign electricity and heat, and offer customer-driven energy products and services. We interact with millions of people on a daily basis and build a sustainable energy future together with our various stakeholders.*



# Sustainability Approach

*Sustainability is an integral part of Fortum's strategy. In its operations, Fortum gives balanced consideration to economic, social and environmental responsibility.*

## Economic responsibility

- Competitiveness, performance excellence and responsible business operations generate long-term value and growth

Our economic responsibility includes competitiveness, performance excellence and market-driven production, which create long-term value and enable profitable growth. We aim for performance excellence. 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.

## Environmental responsibility

- Competence in CO<sub>2</sub>-free hydro and nuclear and energy-efficient CHP production
- Development of new climate and environmentally benign energy systems and forms

The efficient use of resources and the need to mitigate climate change are emphasised in our environmental responsibility. Our know-how in CO<sub>2</sub>-free hydro and nuclear power production and in energy-efficient CHP production plays a key role in this. Through research and development activities, we are creating prerequisites for environmentally benign energy solutions.

## Social responsibility

- Security of supply of electricity and heat to customers
- Good corporate citizenship
- Employee well-being and competence development
- Occupational safety
- Responsible business conduct

Our social responsibility includes being a good corporate citizen and taking care of our own personnel and the surrounding community. Our innovations and the secure supply of power and heat support the development of society and increase well-being. We promote well-being and safety in the work community, respect for individuals and mutual trust, and responsible operations in our supply chain and in society in large.

## Management model

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

At Fortum, responsibility for issues related to sustainability lies with division and Group function management, and, ultimately, the President and CEO and the Board of Directors. The Board of Directors has not appointed any of its members specifically conversant in sustainability and thus in its decision-making relies on the information and expert statements provided by the Fortum Management Team and the Group's sustainability experts. Fortum's corporate governance is discussed in the [Governance](#) section of the Annual Report 2013.

“ Sustainability management at Fortum is strategy-driven and line management has clear responsibility in it.

## Corporate Sustainability unit

The Corporate Sustainability unit is responsible for coordinating and developing sustainability at the Group level. In 2013, Corporate Sustainability was part of Corporate Finance. In addition to business divisions, Sustainability unit closely collaborates with the other units of Corporate Finance: Risk, Mergers and Acquisitions, Strategy, Purchasing, and Internal Audit units. Also the cooperation with the Legal, the Communications and the Corporate Relations units is part of everyday activities. The head of Corporate Finance, Fortum's Chief Financial Officer, reports to the CEO and is a member of the Fortum Management Team. The CFO also participates in Fortum's Board meetings.

The Corporate Sustainability unit manages the Group's Environment and Health and Safety (EHS) network. Corporate Sustainability is a member of the Group's Finance Forum dealing with investments and gives sustainability approval (environmental, occupational health, safety and social impacts) for all significant investments, acquisitions and divestments as part of Fortum's investment evaluation and approval procedure. In addition, Corporate Sustainability plays a central role in the Group's market outlook and public affairs processes and supports investor relations with its expertise.

In February 2014, Fortum announced a reorganisation of its business structure as of 1 March 2014. Along with this change part of group level functions were administratively located in business divisions. Corporate Sustainability will become part of Heat, Electricity Sales and Solutions division. The head of this division will report to Fortum's Chief Operating Officer (COO) and is a member of the Fortum Executive Management.

## Line management responsibility

Fortum's line management is responsible for sustainability management, and the realisation of targets is part of [Fortum's incentive system](#).

## Read more about

- [Sustainability target setting](#)
- [Sustainability management](#)

# Key sustainability management topics in 2013

*In accordance with our sustainability policy, we continuously improve our operations by assessing our impacts and by considering sustainability in our whole business value chain.*

During the year the development of sustainability management focused on three key areas:

- Systematic handling of sustainability-related issues at the Board level
- Assessment of the impacts of Fortum's activities on human rights
- Development of tools for country and partner risk assessment from sustainability perspective

In June 2013, Fortum's Board of Directors supplemented its [working order](#) with the approval of Fortum Corporation's Sustainability Policy, sustainability target setting and follow-up as well as review of Fortum's Sustainability Report. In the same meeting the Board approved Fortum's renewed [Sustainability Policy](#). In December 2013, the Board approved the Group's sustainability targets for the year 2014 and the sustainability components included in both the short-term (STI) and long-term (LTI) incentive schemes.

Fortum has included the UN Guiding Principles (Protect-Respect-Remedy framework) on Business and Human Rights in its procurement processes and has implemented a [raise a concern](#) channel for misconduct reporting. In 2013, Fortum included the assessment based on those principles as part of a systematic country and partner risk assessment. During the year the most significant country assessed was India. In addition to country risk assessment, altogether around twenty potential partners were assessed.

## Climate at the top of the agenda

Among the global sustainability challenges, climate change mitigation is one of the most relevant issues for Fortum. In 2013, Fortum actively promoted a market-based energy and climate policy regarding the future EU target

setting, the emissions trading scheme and the functioning of the internal energy market.

In July, Fortum made a proposal to reform the ETS using a so-called automatic supply adjustment mechanism. The proposal was followed by an extensive dialogue with several governmental organisations and politicians in the EU and member states. During the year Fortum joined three international business initiatives promoting the role of business in climate change mitigation: [Caring For Climate Initiative](#) under the UN Global Compact, Single Target 2030 Initiative and twelve CEOs' Initiative for better energy policy.

“ In 2013, Fortum joined three international business initiatives promoting the role of business in climate change mitigation.

## Development actions

The long-term development of the operational sustainability performance based on continuous improvement continued. New topics investigated included Fortum's water balance, definition and mapping of environmental liabilities and extended auditing of social responsibility issues among contractors. A common procurement model and safety requirements for contractors were implemented during the year.

## Key successes and development areas of the year

### We succeeded in these sustainability challenges:

1. Improvement of image and customer satisfaction
2. Improvement of occupational safety of our own personnel
3. Increase of the production capacity based on biomass and biofuels and waste derived fuels
4. Improved management of the supply chain

### We have room for further improvement in these sustainability challenges:

1. Secure supply of electricity and management of disturbances
2. Occupational safety of contractors
3. Improvement of energy efficiency
4. Reduction of emissions

# Sustainability target setting

*The Fortum Management Team decides on Fortum's sustainability approach and Group-level sustainability target setting, which guide annual planning. The targets are approved by Fortum's Board of Directors.*

The divisions define detailed targets and develop action plans supporting the achievement of the targets, and they ensure that sustainability goals are included in the business goals. Group-level key sustainability indicators are reported quarterly. Safety and environmental incidents and indicators measuring the reliability of power distribution and the availability of CHP plants are reported monthly. The Fortum Management Team regularly monitors the achievement of the targets in its monthly meetings and in quarterly performance reviews. As of the beginning of 2013, results of the sustainability indicators have been regularly reported to Fortum's Board of Directors.

Sustainability targets are based on the continuous improvement of operations. The renewed targets, which came into force at

the beginning of 2013, emphasise Fortum's role in society and measure not only environmental targets, but also Fortum's reputation, customer satisfaction, and the security of supply of power and heat. As of the beginning of 2014, the target setting was adjusted by adding contractors' injury frequency to the corporate targets and expanding the CHP plant availability target to cover the whole Group (in 2013, Heat Division only).

Sustainability targets affect every Fortum employee and are part of Fortum's short-term incentive scheme. The 2013 incentive scheme included an index that was based on the [One Fortum](#) survey and measured Fortum's reputation among the general public and customers. The index approved by the Board of Directors for 2014 measures lost

workday injury frequency for Fortum employees and contractors, the number of major EHS incidents and Fortum's ability to improve its performance in the Dow Jones Sustainability Assessment.

“ Sustainability targets affect every Fortum employee and are part of Fortum's short-term incentive scheme.

# Sustainability targets and results

Fortum's sustainability targets consist of Group-level key indicators and division-level indicators. In addition to these, Fortum has set targets for Group-wide projects, such as supply chain monitoring, promoting work well-being, and minimum requirements for the environment, occupational health and safety. In 2013, we improved our performance in regard to many indicators, but a couple of targets were not achieved.

## Group sustainability targets and performance in 2013

	Target	Status at the end of 2013	Remarks for 2013
Reputation index	Target result 69.6 in One Fortum Survey (long-term target >70)	69.8	
Customer satisfaction index (CSI)	CSI divisional scores at level "good" (70-74) in One Fortum Survey	61-77	Customer satisfaction improved in 4 out of 5 customer segments. Power Solutions business area achieved the target.
<b>Environmental responsibility</b>			
<b>Specific CO<sub>2</sub> emissions</b>			
Electricity production in the EU	< 80 g/kWh, 5-year average	66 g/kWh	Emissions in 2013 were 70 g/kWh. 5-year average was up from 60 g/kWh in 2012.
Total production (electricity & heat, all countries)	< 200 g/kWh, 5-year average	186 g/kWh	Emissions in 2013 were 196 g/kWh. 5-year average was up from 179 g/kWh in 2012. 5-year average has been increasing since 2008.
<b>Energy efficiency</b>			
Total efficiency of combustion (Definition: produced energy divided by the primary energy of fuel)	> 70%, 5-year average	66%	Efficiency in 2013 was 61%. 5-year average was down from 67% in 2012. 5-year average has been decreasing since 2008.
<b>Major EHS incidents</b>	< 40 Fortum-wide	51	
(Fires, leaks, explosions, INES <sup>1)</sup> events exceeding level 0, dam safety incidents, environmental non-compliances)			



Social responsibility			
Security of supply			
SAIDI <sup>2)</sup>	< 110 minutes	220 minutes	High SAIDI was caused by severe storms in the Nordic countries in December
CHP plant availability in Europe	> 92%	94%	
Occupational safety			
Lost workday injury frequency (LWIF) <sup>3)</sup> , Fortum personnel	< 1	1.1	

<sup>1)</sup> International Nuclear Event Scale

<sup>2)</sup> System Average Interruption Duration Index

<sup>3)</sup> LWIF = Lost workday injury frequency per one million working hours

### Other sustainability targets and related performance in 2011-2013

	Target	2013	2012	2011
Occupational safety				
Total recordable injury frequency (TRIF) <sup>1)</sup> , Fortum personnel	< 3.0	2.8	3.4	3.5
Lost workday injury frequency (LWIF) <sup>2)</sup> , contractors	< 3.5	4.8	3.8	3.2
Number of fatalities, Fortum personnel	0	0	0	0
Number of fatalities, contractors	0	1	1	1
Number of lost workday injuries, Fortum personnel	-	20	29	29
Number of lost workday injuries, contractors	-	76	57	45
Number of safety walks	8,920	16,644	17,507	15,324
Number of improvement proposals and near-miss reports	7,800	21,876	6,362	10,087
Supply chain management				
Supplier audits	9 <sup>3)</sup>	13	10	-

<sup>1)</sup> TRIF = Total recordable injury frequency per one million working hours

<sup>2)</sup> LWIF = Lost workday injury frequency per one million working hours

<sup>3)</sup> Three suppliers in risk countries/division, excluding ESD Division

## Our key areas of development

### Environmental responsibility indicators

Our key environmental responsibility indicators, specific CO<sub>2</sub> emissions and energy efficiency, are embedded in the core areas of our strategy: CO<sub>2</sub>-free hydro and nuclear power production and energy-efficient combined heat and power production. We use these key indicators to measure our ability to respond to two major global sustainability challenges: mitigating climate change and improving resource efficiency.

In terms of environmental targets, however, the situation is challenging. Our fuel use efficiency and our specific CO<sub>2</sub> emissions from total energy production have developed unfavourably during the past five years, although we are still on the better side of the target level. Specific CO<sub>2</sub> emissions from total energy production have been on the rise with the increased use of fossil fuels. Our Russian investment programme in its original form was factored into our target of <200 g/kWh set in 2010. However, the higher than initially planned use of coal has led to higher emissions than anticipated. Our goal in the upcoming years is to reverse the growth trend in specific emissions. In this regard, the plan in 2014 is to find emissions reduction opportunities for our biggest sources of emissions in Russia.

“During the last five years, the overall efficiency of fuel use and the specific CO<sub>2</sub> emissions from total energy production have developed unfavourably in regard to our targets.

The overall efficiency of fuel use has decreased because of the increase in condensing power production; consequently, we have not reached our 70% target. The two gas turbine power plants commissioned in 2013 at the Nyagan plant in Russia were the primary contributors to the increase in condensing power production. Power

generation at the Inkoo coal-fired condensing power plant in Finland ended in February 2014, which will reduce some of our condensing power production. Additionally, Fortum has two big CHP plants under construction: in Chelyabinsk, Russia, and in Stockholm, Sweden. Their commissioning, in 2015 and 2016, will contribute to improved efficiency of fuel use.

The total number of major EHS incidents, a category that covers fires, leaks of over 100 litres, explosions, nuclear and dam safety incidents, and environmental permit non-compliances, was 51; the target was 40. To some extent, the reasons for exceeding the target can be attributed to changes in definitions and in reporting practices. However, incidents increased in some projects and exceptional situations. Improvement measures for these incidents are local, such as better management of changes in projects and the development programme for the Heat Division's Swedish functions. Corrective measures also include e.g. renovation projects to reduce transformer oil leaks and modifications to Russian plants to reduce waste water permit violations.

### Social responsibility indicators

Of our key social responsibility indicators, the security of supply of energy reflects Fortum's role in securing reliable energy supply for society. Safe operations and a good level of safety are demonstrations of professional operations and the level of expertise.

With regard to social responsibility indicators, we did not achieve our targets in security of electricity supply or in contractor work safety. Due to the severe storms in December, the System Average Interruption Duration Index (SAIDI), which indicates reliability of electricity distribution, was double compared to our target.

“With regard to social responsibility indicators, we did not achieve our targets in security of electricity supply or in contractor safety.

Our preparedness to respond to storm damage improved significantly, and repairs were completed more quickly than before. However, power outages affected a large number of customers, and as a result the SAIDI was high. Construction of a weather-proof grid continues; the aim is to have about half of our customers in Finland and nearly all of our customers in Sweden within the sphere of weather-proof power distribution by the end of 2014.

The number of improvement proposals and near-miss reports increased considerably due to high activity in the Heat and Russia Divisions and the clarification of reporting practices in the Russia Division.

Despite many development measures, the lost workday injury frequency (LWIF) for contractors worsened and was 4.8 (2012: 3.8). In 2013, there was one fatal accident involving a contractor employee at the Chelyabinsk CHP-2 plant in Russia. In February 2014, a contractor employee died in an accident in power distribution in Sweden.

Additionally, the number of contractor accidents increased from the previous year. Most of the units and projects were able to improve contractor safety, but the weak development in a few of the organisations led to an unsatisfactory overall result.

The biggest challenges were the construction and renovation projects in Russia and Sweden, and the electricity transmission repair and modification work mainly in Finland.

Contractor safety is a major challenge and will remain a focus area in 2014. To improve the situation, existing development projects have been continued and new projects have been launched. A common contractor management model was adopted Fortum-wide in 2013. To emphasise the importance of contractor safety, LWIF for contractors was made one of the Group-level sustainability key indicators for 2014. Contractor safety is also a more prominent part of Fortum's incentive schemes. Additionally, the auditing of issues related to social responsibility was expanded among contractors.

## Corporate sustainability targets in 2014

	Target
Reputation index	Target result 70.8 in One Fortum Survey
Customer satisfaction index (CSI)	CSI divisional scores at level "good" (70-74) in One Fortum Survey
<b>Environmental responsibility</b>	<b>Target</b>
<b>Specific CO<sub>2</sub> emissions</b>	
Electricity production in the EU	< 80 g/kWh, 5-year average
Total production (electricity & heat, all countries)	< 200 g/kWh, 5-year average
<b>Energy efficiency</b>	
Total efficiency of combustion (Definition: produced energy divided by the primary energy of fuel)	> 70%, 5-year average
<b>Major EHS incidents</b>	< 35
(Fires, leaks, explosions, INES <sup>1)</sup> > 0 events, dam safety incidents, environmental non-compliances)	
<b>Social responsibility</b>	<b>Target</b>
<b>Security of supply</b>	
SAIDI <sup>2)</sup>	
- Sweden	< 100 min
- Norway	< 96 min
CHP plant availability	> 95%
<b>Occupational safety</b>	
Lost workday injury frequency (LWIF) <sup>3)</sup> , Fortum personnel	< 1
Lost workday injury frequency (LWIF) <sup>3)</sup> , contractors	< 3.5

<sup>1)</sup> International Nuclear Event Scale

<sup>2)</sup> System Average Interruption Duration Index

<sup>3)</sup> LWIF = Lost workday injury frequency per one million working hours

# 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 of our operations.*

In 2013, Fortum achieved its all-time highest scoring in the Carbon Disclosure Project's (CDP) Climate Disclosure Leadership Index: a full 100 points. In the Climate Performance Index Fortum's result was A- in scale A-C. Fortum shared the first place in CDP's Nordic climate index. With its peak scoring, Fortum would have shared a top ranking also in the global index. Because the company's market capitalisation was below the threshold for inclusion among the 500 largest companies worldwide, it was only assessed in the Nordic index.

Fortum was awarded a Prime Status (B-) rating by the German oekom research AG. Fortum is listed in the STOXX Global ESG Leaders indexes, which list global leaders in terms of environmental, social and governance criteria, and in the NASDAQ OMX's and GES Investment Service's OMX GES Sustainability Finland index, which compares the leading companies listed on the NASDAQ OMX Helsinki and their corporate responsibility.

In December Fortum was listed in ECPI® Indices. ECPI is a rating and index company dedicated to ESG (environment, social, governance) research.

Fortum is included in the Sustainability Yearbook 2013, published by the SAM Group. The assessment included more than 2000 companies, with the top 15 per cent in each sector earning a spot in the yearbook.

“Fortum achieved its all-time highest scoring in the Climate Disclosure Leadership Index: a full 100 points.”

During 2003-2013 Fortum was listed in the Dow Jones Sustainability World Index, but was excluded for 2013-2014. In the 2013 ranking, the industry classification was changed. Fortum's performance scores remained at the level of the previous year, but due to the new industry classification Fortum did not make the index.

## Honourable mention for our sustainability report

Fortum's Sustainability Report 2012, received an honourable mention at the Corporate

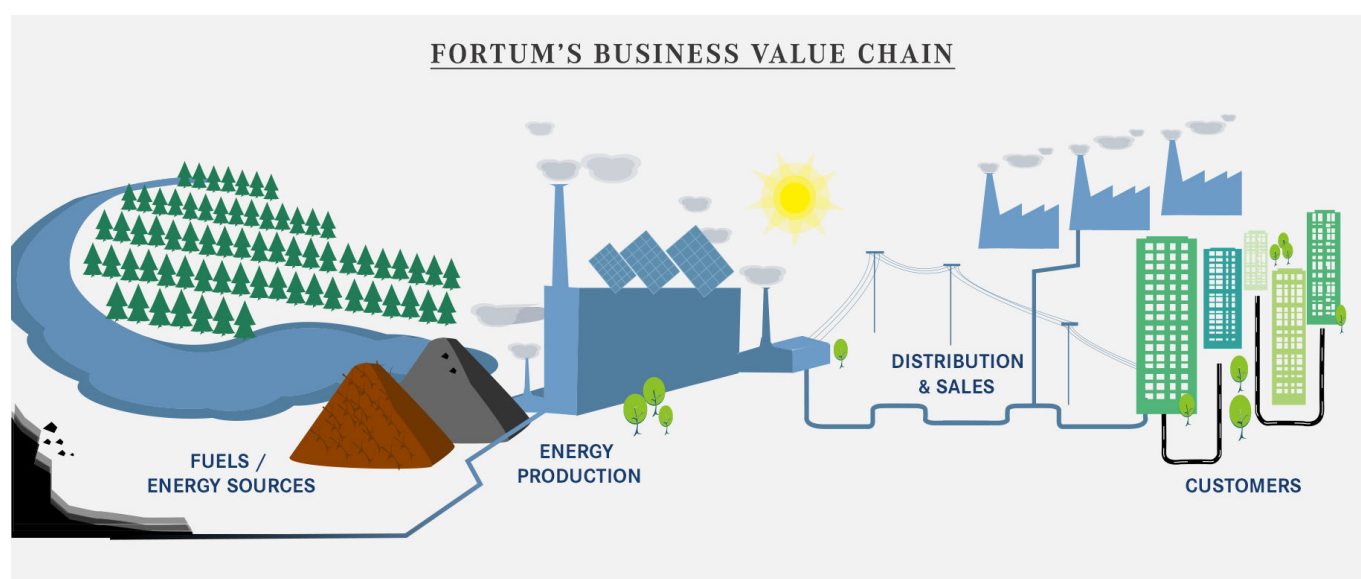
Responsibility Reporting Competition in Finland. Altogether 140 companies participated in the competition. Fortum was given special credit for a clear and balanced report, the review of the supply chain and its impacts, and also for comprehensive reporting of its tax footprint. The report was also characterised as clearly structured and reader friendly.





# Our business

*Fortum's business activities cover the production, sales and distribution of electricity and heat as well as energy-sector expert services. Investments and fuels make up a big part of Fortum's purchases.*



We produce electricity and heat in an environmentally benign manner using versatile [energy sources](#). We distribute energy to our customers while taking into consideration long-term, sustainable community planning. We sell electricity and heat and [energy-sector expert services](#).

Energy production, distribution and use result in many kinds of environmental impacts. Some of them are global and extensive by nature, some regional or local. The biggest environmental concerns are related to climate change, acidification, diminishing natural resources and biodiversity.

Fortum takes into consideration the entire life cycle of its energy products and reduces the environmental impacts of its operations by applying best practices and the best available technologies, using natural resources in a responsible manner, and efficient operating and maintenance processes.

“Fortum takes into consideration the entire life cycle of its energy products and aims at minimising the environmental impacts of its operations as part of the daily business.”

Fortum's investments pursue a financially profitable balance that provides the possibility to increase capacity and reduce emissions. In line with our strategy, we invest in carbon dioxide-free [hydro](#) and [nuclear power](#) production and in energy-efficient [combined heat and power \(CHP\)](#) production.

We produce [economic added value](#) for our stakeholder groups. We support the functioning of society by e.g. compensating debt investors and shareholders, paying taxes, employing people and supporting non-profit activities.

As part of our daily business, we strive to minimise the negative environmental impacts of our operations. We act responsibly, and we aim to ensure that our business partners act responsibly and comply with our Code of Conduct and Supplier Code of Conduct.

## Read more

- [Fortum's energy production in different countries](#)
- [Impacts of energy production and use \(PDF\)](#)

# Impacts of energy production and use

FORTUM'S ANNUAL REPORT 2013

## Impacts of fuel sourcing and other energy sources

### Climate

- Harvesting biomass reduces absorption of carbon dioxide into vegetation (carbon sinks), unless replanting is managed.
- Fossil fuels are used in mining operations and in harvesting biomass, resulting in greenhouse gases.
- Natural gas pipelines leak some methane, which is a greenhouse gas.
- Sea and road transports and the pumping of natural gas use fossil fuels, which generate greenhouse gases.

### Health and safety

- Mining operations pose health and safety risks for workers and local residents.
- Coal dust, especially in loading and unloading, may cause adverse effects on the local environment and workers.

### Water systems

- The damming of rivers and hydropower construction change the natural state of water systems.
- Impurities from coal mines and peat harvesting and production are released into water systems.
- Transporting fuels via waterways involves environmental risks, such as oil spills.

### Society

- Mining, harvesting and processing fuels have a significant employment impact, and they increase social and economic well-being.
- They also involve social risks in terms of land ownership, human rights, labour rights and living conditions of communities near the production area.
- Transportation and distribution of fuels have a positive impact on local employment and this increases well-being.

### Other environmental aspects

- Fossil fuels and uranium are exhaustible natural resources, and biomass resources are limited.
- Mining operations and the draining of peat bogs have a local impact on soil, water systems and the visual landscape.
- Harvesting biomass may have an impact on biodiversity and on the visual landscape.
- Utilisation of waste to energy saves natural resources and reduces the load on landfills.

## Fortum's actions to reduce impacts in 2013

- The origin and sustainability of fuels was the target of increased focus in purchasing. We assessed the performance of our suppliers through, e.g., pre-selection and supplier audits: we performed a total of 261 pre-selections and audited 13 suppliers, four of which were fuel suppliers.
- Fortum continued an active dialogue within the framework of the Forest Stewardship Council (FSC), the WWF Global Forest & Trade Network, the Roundtable of Sustainable Palm Oil, and the Bettercoal initiative.
- Fortum's experts assessed the fuel supplier's uranium mine operations in Russia in June. Fortum regularly assesses the quality, environmental, and health and safety management systems of its nuclear fuel suppliers and the manufacturing of nuclear fuel assemblies.
- Fortum used 6.8 terawatt-hours of biomass and other biofuels in energy production, and increasing the use of bioenergy was researched at several of our power plants.
- Fortum used about 900,000 tonnes of waste-derived fuels in Sweden, Finland and Lithuania, accounting for 2.2% of the energy content of total fuel use. The use of waste-derived fuels reduces the use of natural resources.
- Fortum reports the greenhouse gas emissions from the fuel chain, including indirect emissions from the production and transportation of fuels, in line with the GHG Protocol. The indirect CO<sub>2</sub> emissions from the transportation of coal, oil and wood fuels were approximately 193,000 tonnes.

# Impacts of energy production

## Climate

- Carbon dioxide emissions from the combustion of fossil fuels and peat contribute to climate change.
- Hydro, nuclear, wind and solar power production do not result in carbon dioxide emissions in the production phase.
- The use of bioenergy is carbon dioxide-neutral.
- Fossil fuels used in the transportation of fuels, waste and by-products generate greenhouse gases.

## Health and safety

- Safety of production plants is of utmost importance for the personnel working in them.
- Flue-gas emissions may have an impact on air quality and health.
- Nuclear power production has no impact on human health or the environment in normal use. Nuclear safety is secured under all circumstances.
- Health and safety risks are related to the handling of hazardous and radioactive waste. The handling of spent nuclear fuel, in particular, requires long-term research and planning before final disposal.

## Society

- Energy production enables modern society to function and has many economic impacts on society.
- Energy companies generate steady and long-term economic well-being in society.
- Nuclear waste management and final disposal are highly sensitive issues in society and subject to political and public acceptance.
- Utilisation of waste in energy production reduces costs for society.

## Water systems

- Hydropower regulation has an impact on water flows and surface levels and may impact fishing and recreational use as well as biodiversity.
- Cooling waters increase and heat pumps decrease the temperature of water systems locally.
- Small amounts of impurities are carried along with wastewaters from thermal and nuclear power plants into water systems.
- Impurities from dumping areas and ash basins are released into water systems.

## Other environmental aspects

- Production and maintenance create, e.g., ash, gypsum, scrap metal and waste oils.
- Production plants have impacts on the visual landscape and on land use.
- Energy production can adversely affect the surrounding environment and community. The impacts are comparable with those from other industrial operations, such as noise and transports.
- Utilisation of ash and gypsum reduces the amount of waste into landfills and the need for natural materials.
- Dumping areas have impacts on the visual landscape and on land use, and they release impurities into the soil and groundwater.
- Utilisation of waste to energy saves natural resources and reduces the load on landfills.

## Fortum's actions to reduce impacts in 2013

- 63% of Fortum's electricity production was carbon dioxide-free.
- Fuel selection, the use of best available technology (BAT) and the efficient operation and maintenance of plants helped to reduce environmental impacts.
- Refurbishments of hydropower plants and dams and voluntary activities to mitigate the impacts of hydropower production continued. Fortum continued the sizable power plant dam refurbishment project in Höjles, Sweden. Refurbishment was completed at Fyäkoski power plant in Finland and at Edsforsten and Hansjö power plants in Sweden. In Sweden refurbishment continued at Gammelinge power plant and new projects started at Noppikoski, Väsa and Skedvi power plants. The refurbishments completed during 2013 produced 12 MW of additional capacity, which is equal to approximately 24 GWh of annual power generation.
- To offset hydropower production's environmental impacts on the fishing industry, Fortum restocked about 1.1 million fish fry in Sweden and Finland.
- CHP plants accounted for 33% of our electricity production and 83% of our heat production. New biomass- and waste-fired CHP plants were commissioned in Klaipėda, Lithuania; Jelgava, Latvia; Bråsta, Sweden; and Järvenpää, Finland.
- A pyrolysis technology-based bio-oil production plant was commissioned at the Joensuu CHP plant in Finland. Bio-oil will replace the use of fossil fuel in heat production.
- 48% of the ash produced by Fortum and 99% of the gypsum was utilised. Utilisation of by-products reduces the use of natural resources.
- To reduce the load on waterways from the Russian thermal power plants, improvements were made in wastewater handling, e.g. by separating and reducing water flows through ash ponds at coal-fired power plants.
- Fortum acquired the 5-MW Amrit Solar power plant in India. Fortum started construction of a wave power park together with Seabased AB in Sotenäs, Sweden.

## Impacts of energy distribution

### Environmental aspects

- Building and maintenance of overhead power lines have an impact on the environment, land use and visual landscape.
- Underground cables improve electricity distribution reliability and reduce environmental impact.
- The construction of district heat networks causes temporary disruptions locally, but the operation of the network does not have any major known impacts on the environment.

### Society

- Overhead power lines are more vulnerable to weather conditions like storms.
- Power outages have a substantial impact on modern society, which is dependent on electricity.
- Disruptions in heat delivery cause adversities for heat consumers.

### Health and safety

- The electric and magnetic fields in the immediate vicinity of power lines and transformers may have adverse impacts on health.

### Fortum's actions to reduce impacts in 2013

- Distribution business area invested a total of EUR 260 million, the majority of which in smart meters, underground cables, overhead lines and substations. Due to the severe storms in December, the System Average Interruption Duration Index (SAIDI) per customer in Fortum's electricity network was 220 minutes.
- Fortum improved communication during electricity distribution outages by adding more customers to our text messaging service. In widespread distribution outages, information is also available through social media channels and Fortum's website. Customer service resources for widespread power outages were also increased.
- In Finland, Fortum continued the VahvaVerkko project to improve the reliability of electricity distribution. The goal is to have about 280,000 Fortum customers within the sphere of weatherproof distribution by the end of 2014. In Sweden, implementation of the SäkraNät investment programme continued.
- Losses in power distribution were reduced by increasing automatic meter management, optimising network operations, increasing transmission capacity in the lines with the highest loads and replacing obsolete transformers with new, more energy-efficient ones.
- In Russia, Fortum continued modernising the district heat networks in Cheyabinsk and Tyumen.

## Impacts of energy use

### Climate

- When electricity and district heat replace less efficient energy forms in consumption, e.g. electricity replacing fossil fuels in traffic, the impact on the climate is reduced.

### Society

- Electricity is a requisite for a functioning and safe society. In the smart energy system of the future, consumers can take an active role by being both an electricity producer and consumer. Consumers are able to actively control their energy use and costs.

### Other environmental aspects

- The use of electricity instead of other energy sources improves resource efficiency and reduces the environmental burden.
- District heating reduces air pollution and the local environmental burden when it replaces distributed heat production.

### Fortum's actions to reduce impacts in 2013

- In Finland and Sweden, all electricity sold to private customers was CO<sub>2</sub>-free. The electricity sold in Finland was produced with hydro and wind power, and with these in addition to nuclear power in Sweden.
- By the end of the year, Fortum had installed smart meters for all 620,000 customers in Finland. In Sweden, new meters had already been installed for all customers back in 2009. In Norway, the installation of new smart meters is planned to begin in 2015.
- All of Fortum's district heat customers in Finland and the majority in Sweden and Latvia are already within the sphere of smart metering. Smart metering and control systems offer heat network customers the opportunity to affect their own heat consumption.
- In Finland and Sweden, Fortum's carbon-neutral heat product gave customers the opportunity to impact their carbon dioxide emissions.
- Fortum offered customers energy advice, energy-efficiency consulting, and energy-saving products, like energy consumption metering devices (e.g. Home Display), heating automation and solar panels.



# Solar economy production forms

Fortum's diversified production portfolio utilises several solar economy energy forms in an environmentally benign way. In addition to hydropower, these include bioenergy, solar power, wind power and energy produced by heat pumps. Fortum is also actively researching many future [solar economy](#) production technologies, such as wave power.

## Hydropower

Hydropower is Fortum's most significant renewable electricity production form. About one third of Fortum's annual electricity production is hydropower; the share fluctuates yearly based on the hydrological situation. In 2013, our hydropower production was 18.0 TWh, i.e. 26% of the company's electricity production.

Fortum's hydropower production capacity in the Nordic countries is about 4,600 MW. At year-end 2013, we owned or co-owned 159 [hydropower plants](#) in Sweden and Finland. Fortum has production control of 139 of them. The power plants with the largest capacity are located on the Dalälven, Indalsälven and Ljusnan rivers in central Sweden and on the Oulujoki, Kemijoki and Vuoksi rivers in Finland.

### Hydropower refurbishments

Refurbishments and power upgrades increase the efficiency and production of our hydropower plants without additional environmental load. Modernisation of

machinery and equipment improves efficiency, occupational safety and operational reliability. The risk and extent of oil spills and fires is reduced through refurbishments.

“Hydropower refurbishments increase the efficiency and safety of power plants and reduce environmental risks.”

During 2013, refurbishment was completed at the Pyhäkoski power plant in Finland and the Edsforsen and Hansjö power plants in Sweden. In Sweden, refurbishment continued at Gammelänge power plant and new projects started at the Noppikoski, Väsa and Skedvi power plants. The refurbishments completed during 2013, produced 12 MW of additional capacity, which equals approximately 24 GWh annual power generation.

## Reducing environmental impacts

The most significant environmental impacts of hydropower are caused by the construction of plants and dams and the dredging of riverbeds. Hydropower can alter river systems, shorelines, and the routes and natural flow rates of rivers. Regulating the level of water in lakes and rivers affects the aquatic habitat as well as other uses of the water systems. Fortum actively participates in [mitigating the impacts of hydropower](#) and in research related to the impacts of hydropower.

### Regulation of water systems

Because of hydropower production, the flow of water systems is regulated both on an annual level and in the short term. Annual regulation includes the storage of flood waters and shifting of water discharges to winter time when electricity consumption is high. Short-term regulation means regulating the discharges during the day to correspond with electricity demand.

The permit conditions for Fortum's hydropower plants and lake regulation define

the limits for surface water levels and flow-rate variations in the water systems. The permits also define obligations to prevent and to compensate for other environmental impacts. As a result of careful operation, Fortum's hydropower plants had only one significant permit non-compliance in 2013.

In the Oulujoki water system in Finland, Fortum worked with the local Centres for Economic Development, Transport and the Environment to find ways to develop the regulation of the entire water system in an effort to reduce the kind of flooding

experienced in summer 2012. As part of the development work, shoreline property owners, residents and other water system users were asked about their experiences with water regulation.

“ Fortum invested EUR 2.4 million to compensate for the impacts of hydropower production on the fish industry.

## Fish stockings

To compensate for the [environmental impacts of hydropower production on the fish industry](#), in 2013 Fortum restocked about 265,000 salmon and sea trout smolts, and 267,000 sea whitefish smolts in Finland.

In inland water systems, lake trout, landlocked salmon, pike perch, European grayling and whitefish were restocked based

on plans drafted in cooperation with fishery collectives. About 520,000 salmon and rainbow trout smolts and 50,000 eels were restocked in Sweden's water systems.

## Water system restoration

[Voluntary projects](#) also helped to lessen the environmental impacts of hydropower. In Finland, the fish habitats in three sections of the Vuoksi river between the Tainionkoski and Imatra power plants were restored. The restoration projects were funded by proceeds from the sales of EKOenergy-labelled hydroelectricity. In the Oulujoki water system, restoration of the Kiantajärvi flood plain areas continued. The restoration will improve the migrating and nesting conditions for birdlife as well as the recreational use of the area.

As a result of the restoration work carried out in the surroundings of the Krokströmmen plant in the Ljusnan river in Sweden, trout can migrate to Valvtjärnsbäcken creek to the freshwater pearl mussel habitat. In 2013, Fortum also participated in migratory fish research by, e.g., modelling the movement of

migrating fish in dammed rivers. Research in the Klarälven river focused on improving the survival of smolts as they migrate down the river.

## Improving dam safety

Fortum is continuously improving the [safety of its hydropower plant dams](#), and the condition of the dams is monitored in accordance with the safety inspection programmes approved by the dam authority. In Sweden, Fortum's refurbishment project of the Höljes dam launched in 2012 is continuing; it launched a refurbishment project at the Spjutmo dam in 2013. The Höljes dam is one of the biggest dams in Sweden, and during the project the dam will be refurbished to meet the current requirements for dam safety. The project is the biggest of the ongoing investment projects in Fortum's hydropower production and is scheduled for completion during 2015.

# Bioenergy

*Fortum utilises both solid biomass and liquid biofuels in CHP production and in heat-only production. These fuels include e.g. forest chips and other wood-derived fuels and vegetable and animal oils and fats. In addition, part of the municipal and industrial waste burned is bio-based.*

In 2013, Fortum used a total of 6.8 terawatt-hours (TWh) of biomass and biofuels, accounting for about 5% of our primary energy use. The amount increased by 11% from 2012.

Solid biomass and liquid biofuels are used in Fortum's CHP production and in heat-only boilers in Sweden, Finland, Poland and the Baltic countries. During the year four new CHP plants utilising biomass and waste, were inaugurated in Klaipeda (Lithuania), Jelgava (Latvia), Järvenpää (Finland) and Brista (Sweden).

Additionally, the production of [bio-oil](#) based on pyrolysis technology started in November at the Joensuu CHP plant in Finland.

Construction of a 410 MW bio-CHP plant started at Värtan, Stockholm, in January 2013. The plant is expected to be in operation in 2016 and will be one of the world's largest bio-fuelled CHP plants.

“ Fortum's plant to be commissioned in 2016 in Stockholm will be one of the largest bio-fuelled CHP plants in the world.

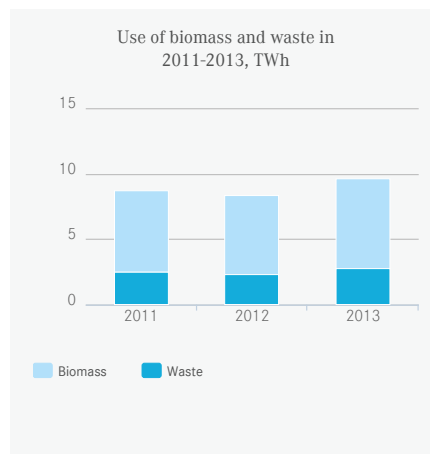
Increasing the use of bioenergy was researched at many power plants. At the Värtan power plant in Sweden, testing the use of olive stones in the fuel mix continued. Altogether 12,200 tonnes were burned and their share in the fuel used was 2%. At the Czystochowa CHP plant in Poland, the share of biomass, both forest and agricultural, in fuel use was one third during 2013.

Fortum is also a leading user of municipal waste in the Nordic and Baltic countries. The use of waste fuel amounted to 2.8 TWh (2012: 2.3). Utilising municipal waste is an

essential part of sustainable waste management because it can reduce the amount of waste that would otherwise end up in landfills. It is also environmentally benign since the energy content of the waste can be utilised thus reducing the need for other energy sources.

The sustainability, especially the carbon neutrality and renewal, of biomass is subject to intense debate in the EU. Fortum participated in the discussion on this topic and has established its [position](#) and actions to ensure sustainable use of bioenergy in its operations. Fortum is a member in several international networks and organisations promoting the sustainable sourcing and use of bioenergy.

“ Fortum is involved in several international organisations promoting the sustainable sourcing and use of bioenergy.



## Heat pumps

*Fortum utilises waste heat from wastewater and thermal energy from sea water, among other energy sources, to produce heat and cooling energy. Energy produced by heat pumps replaces the use of fossil fuels.*

Fortum produces district heating and cooling based on heat pump technology in Stockholm, Sweden, and Espoo, Finland. In Stockholm Fortum operates 17 large-scale heat pumps in two separate locations. At the Hammarby plant seven heat pumps with a total capacity of 225 MW use sewage water to produce heat for the district heating system, and at Värtan/Ropsten a total of 10 heat pumps with a capacity of 256 MW use sea water to produce heat and cooling.

Heat pumps utilising excess heat from customers are used in the [Open District Heating](#) pilot in Sweden.

### Waste heat is being utilised

In Espoo, Finland, Fortum is building a new heat pump station near the Suomenoja power plant. The heat pump station uses the waste heat from the purified wastewater from the near-by wastewater treatment plant before

the water is released into sea. The station produces some 300 GWh heat, corresponding to the annual consumption of roughly 15,000 single-family homes. Heat pumps also cool the wastewater, thus reducing the environmental impact of the wastewater treatment plant. The heat will be utilised in the district heating network in the Espoo area.

“ In Espoo, Finland, Fortum is building a heat pump station to produce district heat from heat in wastewater. Production of the plant equals the annual consumption of 15,000 single-family homes.

The heat pump will significantly reduce the local emissions from district heat production. The annual CO<sub>2</sub> emissions will decrease by about 150,000 tonnes compared to the use of fossil fuels. The construction work on the heat pumps started at the end of 2013, and they will be commissioned at the end of 2014.

A heat pump is an energy-efficient and climate-benign production form that doesn't generate emissions in the production phase, with the exception of possible minor losses of refrigerants or heating medium from the pump equipment. The environmental impacts from the use of heat pumps originate from the production of the electricity used by the pumps.

## Solar power

*Fortum is gradually moving from the research phase of solar energy to commercial use. Solar power technologies are developing rapidly and the use of solar energy is already cost efficient in sunny areas on a small scale.*

In 2013, Fortum started solar power production in India by acquiring a 5.4-MW solar power plant in the state of Rajasthan,

north-western India. The annual production is about 9 GWh. Our short-term ambition is to build a small photo-voltaic solar portfolio in

order to gain experience in different solar technologies and in operating in the Indian power market.

There have been [solar energy](#) demonstration and research projects ongoing for several years in Fortum. At the beginning of 2012, a solar business team was started at Fortum. The team analyses the solar energy market

and technology development and assesses potential business concepts.

Fortum sells solar power kits in the Nordic countries. Fortum's Solar Kit is a turnkey

solution including solar panels installed at the customer's facilities. Fortum is also committed to buying the surplus electricity from the customer.

## Wave power

*Fortum has been developing wave power since 2007, and currently we have three ongoing projects. We believe that wave energy will be one of the production methods in the future energy system.*

In spring 2013, Fortum, the French large-scale maritime enterprise DCNS and AW-Energy signed a development agreement in wave power research and development. As part of the agreement, the companies will develop a joint 1.5-MW wave power demonstration project in Bretagne, France. The project is based on the WaveRoller™ technology of AW-Energy. Fortum is responsible for project development and will be the owner of the demonstration park.

Fortum is also a partner in the Finnish wave energy technology company AW-Energy. The

WaveRoller™, developed by AW-Energy, can generate electricity from the bottom waves of the sea. Three WaveRoller™ units with a total output of 300 kilowatts have been tested during the past years offshore in Peniche, Portugal.

Fortum and the Swedish Seabased AB are currently building a demonstration wave power park in Sotenäs, on the west coast of Sweden. If all the planned phases are constructed, it will be one of the world's largest wave-power demonstration projects and will have a 10-MW output. The initial

phase 1, capacity of 1MW, is currently being constructed. The project is scheduled for completion in 2014.

### Read more about

- [Fortum's wave power development](#)

## Wind power

*Throughout the 2000s, Fortum has been developing several wind power projects in Finland and Sweden. Fortum's current wind power capacity of approximately 30 MW originates from associated companies in Sweden and Finland.*

Fortum's [wind power capacity](#) originates mainly from its minority share in BlaikenVind AB in Sweden. Upon completion, Blaiken wind park will have a capacity of 250 MW, making it one of Europe's largest land-based wind farms. Commercial production of the

first phase of Blaiken wind power park started in the first quarter of 2013. In Finland, Fortum also has minority interests in Ab Öskata Vind Närpes - Öskatan Tuuli Närpiö Oy, and a one-fourth interest in TVO's one-megawatt wind turbine in Oikiluoto.

In 2013, Fortum divested two permitted sites in northern Finland (Kuolavaara-Keulakkopää and Joukhaisselkä), and shares in Tunturituuli Oy. In early 2014, Fortum announced that it sold the Tohkoja wind power project in Kalajoki, Finland.

## Nuclear power

*Nuclear power has a central role in Fortum's energy production. In 2013, Fortum's nuclear power production was 23.7 terawatt-hours (TWh), i.e. 34% of the company's electricity production. Fortum is also a significant provider of nuclear consulting services.*

In Finland, Fortum owns and operates the [Loviisa power plant](#). In addition, we have a 26.6% share in Oikiluoto's two reactors and a 25% share in the third reactor under construction.

In Sweden, Fortum has a 22% share in Forsmark's power production and a 43% share in Oskarshamn's power production. Fortum's nuclear power production capacity is 3,276 MW.



# Safety and availability

*Fortum has long experience in the responsible operation of nuclear power. The safety of Fortum's nuclear power plants is at a high level and we continuously develop the safety and availability of the plants based on the principle of continuous improvement.*

In 2013, our Loviisa power plant produced 8.04 TWh of electricity, which was about 9% of the electricity production in Finland. The load factor describing the availability of the nuclear power plant was 92.5%, i.e. excellent by international standards. The availability of pressurised-water reactors globally was 83% in 2013. In the annual maintenance outage, both units underwent a so-called refuelling outage, with no major alterations or repairs carried out. In addition, there were three repair outages.

During the year, the Loviisa power plant recorded two incidents impacting safety (level 1 on the INES scale used by the International Atomic Energy Agency). The incidents did not cause any danger to people,

the environment or the power plant. According to the IAEA definition, INES 1 incidents do not pose a risk but do indicate a lack of safety provisions.

“ The load factor at the Loviisa power plant was 92.5%, whereas the global average for that particular reactor type was 83%.

Availability in co-owned plants was good, excluding Oskarshamn units 1 and 3. The prolonged repairs and availability problems at Oskarshamn 1 continued until the start-up of the plant in January 2014. A problem requiring a plant modification was discovered in autumn in the Oskarshamn 3 turbine plant; this will limit the plant's output until the spring 2014 annual outage.

In December 2012, the Swedish Radiation Safety Authority (SSM) placed the Oskarshamn nuclear power plant under special supervision. The operational improvement programme launched at the plant progressed as planned in 2013.

## Continuous development of nuclear safety

Nuclear safety and, in particular, preparedness for extreme external events, were actively discussed after the Fukushima accident in 2011. Consequently, the European Union launched nuclear power safety assessments, the so-called stress tests. In addition to these, national safety assessments have also been carried out. Based on the work done during and after the stress tests, the European Commission released a proposal for the renewal of the Nuclear Safety Directive in summer 2013. The new directive proposal is under review by the Council of the European Union.

According to the [safety assessments](#) carried out in 2012, the design basis for Fortum's nuclear power plants in Finland and Sweden are proper in terms of external events. The most important development measures at the Loviisa power plant are related to the planning of air-cooled cooling towers that are independent of seawater and improved flood protection in case of the very improbable exceptionally high seawater level.

Planning of these measures continued, and they will be implemented within the framework of the annual investment

programmes. A decision was made to construct a new air cooling system independent of seawater cooling during 2014. The new system will improve the plant's preparedness for extreme conditions when seawater for some reason becomes unavailable for its normal cooling function.

“ The cooling system independent of sea water to be built at Loviisa power plant in 2014 will improve the plant's preparedness for extreme events.

In Sweden, the Oskarshamn and Forsmark plants have presented their safety improvement plans to the Swedish Radiation Safety Authority. The authority will require the plants to have, e.g., independent emergency feed water systems and a stronger focus on analysing the aging of the plants.

### Development measures in 2013

We are developing the safety of our nuclear power plants in line with the principle of continuous improvement. The risks related to heavy lifts were reduced and an alternative cable connection was added for the emergency diesel generator engine at the Loviisa power plant. We also launched the Loviisa power plant's periodic extensive safety assessment, the results of which will be submitted to Finland's Radiation and Nuclear Safety Authority (STUK) during 2014 and 2015.

The goal of Fortum's R&D related to nuclear power is to ensure first-rate nuclear safety and nuclear waste management as well as good efficiency of fuel use. In addition to its own research programmes, Fortum participates in Finnish national research programmes and in the development of Swedish nuclear power research.

## Modernisations and capacity upgrades

*The efficiency and power capacity of both units at the Loviisa nuclear power plant have been increased during the past by the modernisation of the plant, and the work will continue during the next few years. Power upgrades are being carried out also in our co-owned plants in Sweden.*

A decision has been made to modernise the Loviisa power plant's high-pressure turbines in 2014–2017. Additionally, the plant's eight moisture separators and reheaters will be modernised in 2015–2017. The modernisations will increase the plant's nominal output by a total of 29 MW. These are examples of projects we are undertaking to ensure the reliable electricity production of

the plant units to the end of their operational lifetime.

Projects related to capacity upgrades continued at the Oskarshamn and Forsmark nuclear power plants. The test-run period of the Forsmark 2 capacity upgrade that had been postponed to spring 2013 was completed as planned in May. During the

year the plant's nominal output increased from 996 MW to 1,120 MW. Oskarshamn 2 unit was shut down at the beginning of June to implement preparations for modifications to improve safety and for capacity upgrades.

## Reducing nuclear power's environmental impacts

*Carbon dioxide-free nuclear power has an important role in mitigating climate change. Under normal conditions, nuclear power production does not have any health or environmental impacts.*

Nuclear power's most significant factors are related to nuclear safety, nuclear waste management, and the impacts of cooling waters.

The most significant environmental impact of a nuclear power plant during operation is the increased water temperature in the immediate vicinity of the plant as a result of

cooling water, when seawater cooling is used. In 2013, the Loviisa power plant's thermal load on the sea was 15.7 TWh. Based on temperature measurements, the cooling water has raised the surface water temperature by 1–2 degrees within a 1–2 kilometre radius of the cooling water discharge location.

The thermal load on the sea could be reduced by making the nuclear power plant a combined heat and power plant. This would increase the power plant's energy efficiency by several tens of per cents. So far, this type of solution has not been realised in any country on a large scale.

## Nuclear waste management

*Both radioactive and conventional waste is generated in nuclear power production. The solutions for final disposal of nuclear waste from the Loviisa nuclear power plant and from Fortum's co-owned nuclear power plants are in the forefront in the world.*

The waste generated in the operating of a nuclear power plant is treated within the sphere of either conventional (non-radioactive) or radioactive waste management. As in a normal work environment, conventional waste is generated in, e.g., the transportation of goods and in office work. Depending on its activity, radioactive waste is sorted into either low-, intermediate- or high-level radioactive waste.

The Loviisa power plant's low- and intermediate-level radioactive waste is disposed of in the underground repository built in the plant area. A periodic safety assessment of the repository was made in 2013. Separate facilities for decommissioning waste will be built in the repository in due course. Final disposal of decommissioning waste will be subject to an environmental impact assessment followed by a corresponding licensing procedure that was carried out for the final repository for operation and maintenance waste.

The finalising of the liquid waste storage and solidification plant continued. The plan is to commission the solidification plant by 2016.

High-level radioactive nuclear waste will be stored at the Loviisa power plant before it will be disposed of in the nuclear waste final repository to be constructed in Olkiluoto, Eurajoki.

After use in the reactor, the fuel assemblies are removed and stored, first in deep water basins inside the reactor building for a few

years and then in water basins in an interim storage.

## Final disposal of nuclear waste

In Finland and Sweden, the producers of nuclear waste are responsible for management and final disposal of the nuclear waste and for the related costs.

The practical implementation of the final disposal of spent nuclear fuel from the Loviisa and Olkiluoto nuclear power plants is handled by [Posiva Oy](#), which is co-owned by Fortum and Teollisuuden Voima Oyj. Spent nuclear fuel will be placed in Olkiluoto's final repository in Eurajoki. Posiva submitted its construction licence application for a final repository for spent nuclear fuel to the Ministry of Employment and the Economy at the end of 2012. During 2013, additional

reports have been submitted in response to the special questions that emerged during the authority's review of the construction licence. Readiness to start the final repository operations is estimated to be around 2020.

In Sweden, [Svensk Kärnbränslehantering AB](#) (SKB) handles the final disposal of the existing plants' spent nuclear fuel. In March 2011, the company submitted an application for a construction licence for an encapsulation and final disposal facility; the application is under review by the authorities. The final repository is planned to be in Forsmark. Disposal operations could be

started after construction and testing period in late 2020's.

In 2013, Fortum updated the technical plans and cost estimates related to nuclear waste management in Finland. The plan and cost estimate include also the decommissioning of the plant.

### Read more about

- [Loviisa nuclear power plant's nuclear liability](#)

## Nuclear consulting services

*Fortum's nuclear expertise is recognised worldwide. We provide nuclear safety and waste management services and system supplies in various nuclear technology areas for the nuclear power industry.*

New breakthroughs were made in the commercialisation of Fortum's nuclear power expertise in 2013. We signed a collaboration agreement with the Russian State Atomic Energy Corporation ROSATOM and with the British Rolls-Royce Plc in the area of nuclear power development. The collaboration will jointly investigate the feasibility of ROSATOM's VVER-type reactors for the UK new-build programme. During the first phase, the partners will launch preparatory work towards Generic Design Assessment of a VVER-type power plant and preparations for plant licensing. Fortum's contribution to the project is, for example, its special

expertise in nuclear safety and nuclear waste management.

We also continued supplying ion exchange materials to the American EnergySolutions LLC in Japan. The ion exchange materials are being used to purify the radioactive waters at the damaged Dai-ichi power plant in Fukushima, Japan. Since 2012, Fortum has delivered thousands of kilos of ion exchange materials in granulated form in order to purify the radioactive waters of the nuclear power plant.

“ Fortum has delivered ion exchange materials worth of dozens of million euros in order to purify the radioactive waters in Fukushima, Japan.

# Thermal energy

*Fortum produces electricity and heat from a versatile mix of fuels in thermal energy production. Most of our thermal energy production consists of combined heat and power production (CHP) units; in addition, we have condensing power production and heat-only boilers (HOB). In 2013, our thermal energy production was 27.0 TWh of electricity and 39.7 TWh heat.*

We have 28 CHP production facilities in Finland, Sweden, Russia, Poland, the Baltic countries and in Great Britain. In 2013, CHP plants accounted for 33% (2012: 32%) of our total power production and 83% (2012: 79%) of our total heat production.

Fortum has condensing power plants in Finland and in Russia. Fortum has two coal-

fuelled condensing power plants in Finland: Inkoo and Meri-Pori. The new gas-fuelled Nyagan power plants in Russia are condensing plants. In 2013, condensing power production accounted for 6.7% of our total power production.

Heat-only boilers serve as reserve units or peak-load boilers during the coldest time of

the year. Fortum has heat-only boilers in almost all its operating countries. In 2013, heat-only boilers accounted for 17% of our total heat production.

## Combined heat and power

*Combined heat and power production (CHP) is one of the cornerstones in Fortum's strategy. We produce energy in CHP plants in eight countries. We utilise versatile and flexible energy sources in our CHP production.*

Fortum produces heat, steam and electricity in its CHP plants. The majority of district heat is produced at CHP plants.

Fortum's long-term aim is to replace heat-only plants and old CHP units with new CHP plants. In 2013, a total of four new CHP units started production: in Järvenpää, Finland; in Brista, Sweden; in Jelgava, Latvia; and in Klaipeda, Lithuania. The new plants added 86 MW to the production capacity of our CHP

electricity and 225 MW to our CHP heat. Preparations for three major CHP investments, a biomass CHP plant in Stockholm, Sweden, and two natural gas CHP units in Chelyabinsk, Russia, continued.

In normal operation, the Järvenpää CHP unit uses only biomass, mostly forest chips or forest industry by-products like saw dust and bark. The biomass is local, typically harvested from within 100 km of the unit. The

investment reduces the CO<sub>2</sub> emissions of heat production in the area by 70%. The plant can also use peat or natural gas when needed.

The Klaipeda CHP unit is the first waste-fuelled power plant in the Baltic countries. It uses municipal and industrial waste and biomass. The Klaipeda CHP unit replaces old, natural gas-fired capacity and reduces annual CO<sub>2</sub> emissions by 100,000 tonnes.

## Diverse use of fuels

Fortum utilises a diverse and flexible mix of energy sources in its CHP production and aims at increasing the use of [renewable fuels](#). In 2013, the fuel mix in CHP production consisted of natural gas 76%, coal 13%, waste-derived fuels 3%, biomass and bioliquids 7% and peat 0.6%. Increasing the use of [bioenergy](#) was researched and implemented at many of Fortum's existing power plants. Additionally, Fortum increased the use of biomass by starting up two new biomass-fuelled CHP plants in Järvenpää, Finland, and in Jelgava, Latvia.

Fortum is a major user of municipal waste in the Nordic and Baltic countries. Utilising municipal waste is an essential part of

sustainable waste management because it can reduce the amount of waste that would otherwise end up in landfills. Fortum increased the use of waste-derived fuels by starting up two new municipal waste-fuelled CHP plants in Klaipeda, Lithuania, and in Brista, Sweden. CHP improves energy efficiency

CHP has an important role in enhancing resource efficiency, as it substantially increases the efficiency of primary energy use. Almost 90% of the primary energy of fuel can be utilised in the CHP process.

The total efficiency of a CHP unit can be further increased with a so-called CHP+

solution where a third product, like liquid fuel, is produced in addition to electricity and heat production. An example is the pyrolysis technology-based CHP plant in Joensuu, Finland, which produces OTSO bio-oil and increases the plant's efficiency due to increasing heat production. Plant was commissioned at the end of 2013. Bio-oil will replace fossil-based oil in Fortum's own heat-only boilers and in heating plants of our customers.

## Availability of CHP plants at a good level

High availability enables the efficient and safe use of a power plant, reliable energy delivery and reduced environmental impacts. Since the beginning of 2013, Fortum has made the availability of its CHP plants one of its sustainability performance indicators. In

2013, the availability was 94% and the target > 92%.

Fortum's target is to continuously improve plant availability and reliability. Several improvement projects are under way. For example, an availability improvement programme focusing on both technical improvements and competence building was started in Russia. The Zabrze CHP plant in

Poland, started using gas instead of coal dust in the start-ups and managed to reduce the number of start-up's. In Sweden, the project targeting improved plant availability through preventive maintenance was continued.

## Condensing power

*Fortum produces condensing power in Russia, Finland and Sweden. In the Nordic countries, condensing power works as peak load power and as reserve capacity for other power generation; consequently, the annual condensing power generation also fluctuates considerably depending on the market situation.*

Condensing thermal power plants produce electricity only, and therefore the efficiency of primary energy use (typically 40-45%) is lower than in CHP production (up to 90%).

During 2013, Fortum operated two coal-fuelled condensing power plants in Finland: the Meri-Pori and Inkoo plants. Power

generation at the Inkoo power plant ended in February 2014.

The share of condensing power production in Fortum's electricity production will increase significantly in the next few years due to the new Nyagan gas-fuelled units in Russia. These units are located in an area where heat production cannot be utilised on a large

scale. Other Fortum plants in Russia, also produce some condensing power.

## Reducing environmental impacts of thermal energy

*Thermal energy production is based on the combustion of fuels, and its most significant environmental impacts are related to flue-gas emissions, emissions to water, and wastes and by-products, like ash and desulphurisation products.*

The impacts of thermal energy production on the environment can be reduced with the use of various combustion and flue-gas cleaning technologies and by fuel switching. The main way to reduce the environmental impacts of thermal energy production is to switch from fossil fuels to renewable fuels. This reduces especially carbon dioxide and sulphur dioxide emissions, and, depending on the combustion technique, there is also a reduction in nitrogen oxide.

The overall efficiency of fuel use in CHP production is high compared to that of condensing power production. Therefore the emissions per produced energy unit are lower than in condensing power production, and CHP reduces the environmental impacts. In CHP production, the need for cooling water

is minimal and thus the thermal load into water systems is significantly reduced.

### Emissions to air

The environmental impacts of thermal energy plants are regulated by plant-specific environmental permits, which set limitations for emissions and obligations for monitoring and reporting emissions. In 2013, Fortum continued preparations for the investments needed to fulfil the new emissions requirements set by the Industrial Emissions Directive (IED) in the EU countries. The IED tightens the emissions requirements for practically all of Fortum's thermal power plants (CHP plants and condensing power plants) from 2016 onwards.

In Russia, actions continued to use better quality coal within technical and contractual limitations at Fortum's thermal power plants. This has resulted in reduced sulphur dioxide and particle emissions per used ton of coal. Boiler efficiency was improved through boiler modifications at a couple of power plants.

Our key environmental responsibility indicators, specific CO<sub>2</sub> emissions from total energy production and efficiency of fuel use, developed unfavourably in spite of improvement actions. Specific CO<sub>2</sub> emissions from total energy production have been on a continuous rise with the increased use of fossil fuels during the last five years. The emissions, however, are lower than the target level of 200 g/kWh. The overall efficiency of fuel use has decreased during the last five



years because of increased condensing power production, and we have not reached our 70% target.

## Utilisation of waste and by-products

In 2013, the utilisation rate for ash was 48% (2012: 51%) and for gypsum 99% (2012: 89%). Gypsum utilisation rate in 2012 has been recalculated based on [reclassification of desulphurisation products](#). At Fortum's plants in Europe, by-products and waste are utilised and recycled as efficiently as possible. Gypsum is used as raw material in the plasterboard industry. Fly ash is used in the construction material industry, road construction, land filling and mine filling. The Joensuu power plant applied for a permit to

build a noise reduction wall around the plant area using ashes from the plant. A project to get CE labelling for the bottom ashes from Fortum's plants started during the year.

In Russia, ash is stored in ash basins because there is no demand for ash utilisation.

## Impact on water systems to be further reduced

The impacts of thermal power plants on water systems result from the thermal load of cooling water, the release of solids, and nitrogen, phosphorus and heavy metal emissions. Wastewater from power plants is treated mechanically, chemically or biologically before being released into water

systems. The wastewater from certain plants is led into municipal wastewater networks.

In recent years, Fortum's Russian power plants have had repeated exceedings of wastewater permit conditions. Actions to improve the situation continued in 2013, but the number of exceedances remained at the 2012 level. The actions included changing the anticorrosion agent, and separating and reducing the water flowings through the ash ponds of the coal-fired plants. In addition studies were started to install better oil separation systems. Possible investment decisions will be made in 2014.

# Power distribution

*The reliable delivery of energy is a priority for Fortum. When developing the distribution network, we take into consideration customer needs and long-term, sustainable community planning.*

Fortum owns and operates regional and local electricity networks and supplies electricity to about 1.6 million customers in Finland, Sweden and Norway. The total length of the company's electricity network is approximately 160,000 km, which is four times the circumference of the earth. In 2013, 42.4 TWh electricity was transmitted in Fortum's networks.

In December, Fortum announced that it has sold its electricity distribution business in Finland to Suomi Power Networks Oy, which is owned by a consortium of Finnish pension funds Keva and LocalTapiola Pension together with international infrastructure investors First State Investments and Borealis Infrastructure.

Fortum expects to complete the divestment process during the first quarter of 2014, subject to the necessary regulatory approvals as well as customary closing conditions. Fortum is also evaluating the possible future divestment opportunities within the electricity distribution business country by country.

# Improving reliability of electricity distribution

*Electricity distribution reliability is becoming increasingly important for society using a lot of electricity. The needs of consumers and society alike demand efficient communications in power outages.*

Fortum continuously invests in network updates and maintenance and in further improving security of supply. In 2013, the Distribution business area invested a total of EUR 260 million in Finland, Sweden and Norway. Fortum invested in smart meters, underground cables, overhead lines and substations. Network automation for the critical parts of the grid also has been increased. Through its electricity network investments, Fortum aims to make the network smarter and to decrease and shorten power outages.

## Legal requirements for security of supply

The Electricity Market Act, that came into force in September 2013, in Finland sets new requirements for the security of electricity supply. The duration of a power outage caused by a storm cannot be longer than six hours for urban areas and 36 hours for rural areas.

Electricity distribution companies must meet these requirements by 2028 at the latest. The new Electricity Market Act, also obligates

distribution network owners also to inform network users in outage situations and to provide an estimate about the duration and extensiveness of the outage.

## Several severe storms in autumn

Finnish electricity distribution networks were hit by four severe storms in late autumn. In many areas the storms were of the same magnitude as those experienced in December 2011. As a result of the storm

damage, at one point 145,000 Fortum customers were without power. The majority of the power outages were caused by strong winds toppling trees onto overhead power lines. The mild and rainy conditions in late autumn had saturated the ground so it was soft and the trees were susceptible to falling onto power lines. However, the impacts on electricity users were smaller than was the case in the storms in 2011.

Communicating customers has improved and the repairing of outages has become quicker. In terms of the autumn storms, the communication about the outage was successful. Fortum customers received information through e.g. text messages, mobile applications and the website.

Due to severe storms in December, the system average interruption duration index (SAIDI) per customer was double our target. The SAIDI in Fortum's network was 220 minutes (2012: 103), and the customer average interruption duration index (CAIDI) was 115 minutes (2012: 61). Fortum has set country-specific SAIDI targets for 2014: Sweden <100 minutes and Norway <96 minutes.

“ Due to severe storms in December the system average interruption duration per customer was double our target.

### Construction of weather-proof network continues

In 2012, Fortum launched the VahvaVerkko project in Finland aiming to improve reliability of electricity distribution. The target is to have about 280,000 Fortum customers (almost half of our customers) within the scope of weather-proof electricity distribution in Finland by the end of 2014. The long-term goal is to cut the number of power outages in half and to double the number of customers currently within the scope of weather-proof distribution in Finland by 2020.

Decisions on this long-term project will be made by Suomi Power Networks Oy. Fortum signed a contract on the sales of the

distribution network in Finland with Suomi Power Networks Oy in December 2013.

In Sweden, the SäkraNät network investment programme launched in 2006 continued. The initial target of the programme was to cut the outage times for Fortum's customers in the rural network areas by half in five years. This target was reached in 2010 but the programme is still continuing. By the end of 2013, approximately 740,000 Fortum's customers (82% of customers) in Sweden live in areas with a weather-proof electricity distribution network.

In addition to underground cabling, the reliability of electricity distribution will be improved by moving power lines from the forests to the roadsides and by increasing electricity distribution automation. It is easier and faster to repair power lines that run along roads than those in the middle of a forest. With electricity distribution automation, fault locations can be isolated as quickly as possible and power restored to customers outside the area affected by the fault.

## Smart metering

*The installation of smart meters for customers is a significant step towards demand-side management. The modern network enables customers to track and actively influence their consumption.*

A smart grid gives electricity users better opportunities to influence their own energy consumption. In essence, this means flexible electricity transmission that adjusts to demand fluctuations. In the third quarter of 2013, Fortum finalised the installations of smart electricity meters for its approximately

620,000 electricity network customers in Finland.

In Sweden, Fortum already finalised the installations of new meters for all its customers. The installation of new meters in Norway is planned to begin in 2015. A total

of 100,000 households and small businesses in Fortum's electricity network area will be connected to the new system by 2018.

## Reduction of environmental impacts

*Construction, use and maintenance of the energy distribution network impact the surrounding environment. Environmental impacts are reduced through careful operational planning and technology solutions and by practicing environmentally benign ways of operating.*

When planning an electricity distribution network, the impacts on land use, the landscape and nature are taken into consideration. Through the planning, zoning and permit processes, the aim is to find the best solution for society for securing electricity distribution.

In the construction phase of a distribution network, environmental impacts are caused by e.g. the removal of trees, and by construction traffic, noise and dust. Waste and environmental aspects are taken into consideration in the contractor selection process, and environmental impacts are

reduced through careful operational planning and by practicing environmentally benign ways of operating.

The distribution network is inspected, maintained and renewed regularly. Improvements in electricity distribution

reliability are achieved with underground cabling, the use of isolated overhead lines, by moving power lines from the forests to the roadsides and public areas whenever possible, by clearing power line corridors and by introducing automation in critical parts of the network.

Underground cabling also protects biodiversity and reduces the impact on the landscape and birds. Bird collisions are

reduced by mounting marker balls on overhead lines and landing perches on poles.

Efforts are made to recycle waste material that is created in the construction and renewal of distribution networks. In 2013, Fortum's distribution operations created 3,900 tonnes of waste, 75% of which was recycled and 25% was disposed of in landfills. Contaminated soil areas from transformer oil leaks are cleaned as quickly as possible. New

transformers sit on oil trays to prevent oil from seeping into the environment in the event of an accident. In Norway, the aim is to use biodegradable oil in transformers located in groundwater areas.

## Heat distribution

*Heat produced in CHP plants and heat-only boilers is transferred to consumers in the district heat network. Smart metering and control systems as well as open, two-way district heat networks are new types of solutions in the development of heat distribution.*

Fortum owns and operates about 1,200 km of district heat network in Finland, 2,400 km in Sweden, 860 km in Poland, 300 km in the Baltic countries and 480 km in Russia. Additionally, in Stockholm Fortum owns the world's most extensive district cooling network, which consists of 204 km and has a capacity of 350 MW. In Espoo, Fortum also has a small local district cooling network of 1.5 km.

The environmental impacts of district heat distribution occur in the network construction phase. They are temporary in nature and common to other construction projects in society. With the exception of occasional water leaks, there are no environmental impacts arising from the use of district heat networks.

### Uninterrupted heat delivery

An uninterrupted supply of district heat is important, particularly in the cold weather

conditions of the North. Fortum is continuously improving the reliability of its district heat networks by repairing faults found during scheduled maintenance and by investing in new network when needed.

As a result of interruptions caused by various reasons, district heat customers in the Nordic countries are without heat supply for only 1-2 hours per year on average. About half of the interruptions are caused by damage to the network and the work to repair it, and half are for some other reason, like network refurbishment work and connecting new customers to the district heat network. In general, new connections and district heat network branching can be implemented without interrupting heat distribution. When doing repair work that will cause an interruption in distribution, the aim is to schedule the work outside the heating season.

### Reduction of heat losses in Russia

In Russia, Fortum produces more than 90% of the heat demand of the cities Tyumen, Chelyabinsk, Tobolsk and Ozersk. Fortum is aiming to build modern and energy-efficient heat distribution systems in the cities within its operating area. Refurbishment measures can reduce heat losses from district heat networks by 20-30%.

Fortum continued the modernisation of the Chelyabinsk district heat network infrastructure in 2013. Development of a modern heat distribution network also continued in Tyumen.

## Smart metering

*Smart metering and control systems give also heat network customers the opportunity to influence their own heat consumption. With smart meters, consumption data is received in real-time and heat consumption monitoring is more efficient.*

All Fortum's district heat customers in Finland and Poland are within the sphere of smart metering. In Sweden, the majority of

customers are also within the sphere of smart metering. In Latvia and Estonia, the target is

to finalise the automated meter reading system by the end of 2014.

## Open district-heat network

*Making the district-heat networks two-way enables consumers to sell the surplus heat to the network. Utilising the heat that would otherwise be lost reduces energy costs and the carbon footprint of the energy system.*

The opening of the district-heat network is technically simple and does not require any major investments. The biggest change is in the business logic and mind-set. An open district-heat network makes it easier to use, for example, solar energy in heat production. Buildings, industrial processes and production plants generate a lot of waste

heat, and individual households sometimes produce surplus heat energy.

The open district heating launched by Fortum in Stockholm, Sweden, is a novel solution for heat recovery and energy recycling. The recovered energy is used to heat residential homes and to produce hot tap water across the city.

In Espoo, Finland, Fortum has launched the nation's first open district-heat network pilot. Fortum's new energy solution enables the use of waste heat from the Espoo Hospital in the district heating of the city. This solution reduces the environmental impact of district heating.

## Electricity and heat sales

*Fortum sells electricity and heat to private and business customers. More and more customers are requiring a guarantee of origin for the electricity they buy, i.e. information about the way the electricity is produced. Fortum is one of the leading sellers of CO<sub>2</sub>-free and guarantee-of-origin-labelled electricity in the Nordic countries.*

Fortum is one of the leading electricity sales companies in the Nordic countries. The company markets and sells electricity to 1.2 million customers in Sweden, Finland and Norway. In 2013, the company sold a total of 12.1 terawatt-hours (TWh) of electricity (2012: 12.1).

Fortum's heat sales were 43.1 TWh (2012: 46.1). Fortum is the Nordic countries' leading

seller of district heat. In all Fortum sells district heat in eight countries and has 40,000 district heat customers. In Russia the company has more than 250 major customers, mainly industry and residential housing companies.

The new smart solutions Fortum has launched in the markets in recent years give customers better opportunities to control

their electricity consumption and reduce their costs. As a small-scale producer, a user of Fortum's solar panel kit can sell the surplus electricity to Fortum. The Fortum Fiksu product sold in Finland, decreases customer costs by choosing the day's lowest hourly spot prices to heat the water boiler.

## Climate-benign electricity products

In 2013, all electricity sold to private customers in Finland was CO<sub>2</sub>-free, produced by hydropower and wind power. The origin of hydropower and wind power was guaranteed with European Guarantees of Origin or with the EKOenergy label of the Finnish Association for Nature Conservation.

In 2013, all electricity in Sweden was sold with an environmental value. Customers can

choose either the Fortum Enkel product, which is electricity produced from a mix of wind power and hydropower, or they can choose either wind or hydropower. The Fortum Enkel product has the Swedish Society for Nature Conservation's Good Environmental Choice (Bra Miljöval) label. Electricity sold as a 100% wind power or hydropower product is based on the European Guarantee of Origin certificate.

In Sweden, customers who don't choose eco-labelled electricity receive electricity produced with nuclear power, which is carbon dioxide-free in the production phase. Also customers in Norway are offered CO<sub>2</sub>-free electricity produced 100% with renewable energy.

## Climate-benign heat products

Fortum sells heat to companies, municipalities and private customers. Fortum is a leading provider of heat in Nordic countries and fifth largest in the world. In 2013, Fortum sold 43.1 TWh of heat, of which 24.1 TWh in Russia.

A climate-neutral heat product is available for district heating customers in Finland and

Sweden. This product allows customers to purchase international emission reduction units and offset the greenhouse gas emissions of district heating.

In 2013, Fortum introduced new products for district heating customers in Sweden and Finland. Customers and co-ops can now choose between different products based on

their consumption profile and preferences. New service and maintenance products for the district heating system were also introduced in 2013.

## Energy-efficiency products and services

In 2013, Fortum continued to offer new products and services that improve energy-efficiency.

The Fortum Kotinäyttö (home display) shows the household's electricity consumption in real-time. Real-time information makes it possible to identify the most significant opportunities to save energy.

Two Fortum Fiksu products were launched in 2013. One of the products is targeted at customers who have electric hot water heating. The product automatically shifts the heating of the water boiler to the hours when

the electricity price is lowest. This levels out consumption peaks and helps customers to reduce their electricity bill. An electricity agreement with hourly-based pricing makes it possible to take advantage of the lowest hourly rates.

In October 2013, a new version of Fortum Fiksu was introduced for oil heaters. Fortum Fiksu for oil heating switches the heating system hour by hour between oil and electricity depending on which energy form is cheaper at that time.

Customers can also buy solar panels from Fortum. With the Fortum Aurinkopaketti (solar kit) connected to the grid, customers can produce some or all of their electricity and sell the produced electricity exceeding their own consumption to Fortum at a Nordic wholesale electricity price.

Fortum actively promotes the adoption of electric vehicles and develops solutions that enable the smart charging of electric vehicle batteries based on the electricity market situation and price.

## Purchasing

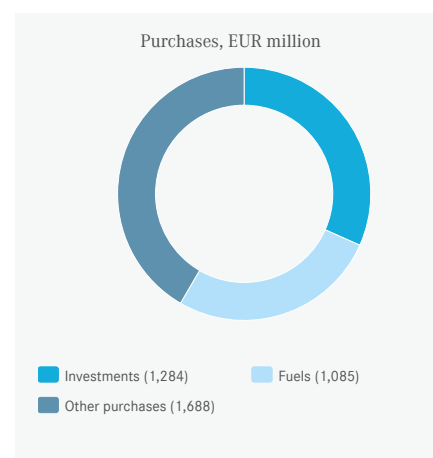
*Fortum is a significant purchaser of goods and services. Investments and fuels make up a big part of Fortum's purchases. In 2013, Fortum had about 13,300 suppliers of goods and services (2012: 15,200). Our purchasing volume was EUR 4.1 billion (2012: 4.2).*

Of our purchases, EUR 1.3 billion (2012: 1.6), targeted investments. The biggest investments were made in Sweden (EUR 497 million) and Russia (EUR 435 million).

Along with investments, fuels (EUR 1,085 million in 2013) make up a significant part of Fortum's purchases. We purchase fuels from international and local suppliers. Our fossil fuel purchases totalled about EUR 864 million (2012: 910), biomass and bioliquids about EUR 155 million (2012: 130), and nuclear fuel about EUR 66 million (2012: 20).

The rest of our purchases (EUR 1.7 billion in 2013) consist of other operational goods and services. The figure includes electricity purchased by the Electricity Sales business area from the Nordic wholesale electricity

market for retail sales. Purchases of other goods and services are related to those used in operation and maintenance and to other services, like IT, marketing and travel.



More than half of the purchasing volume, excluding the purchases from the Nordic wholesale electricity market, was purchased



from suppliers operating in Europe, mostly in Finland, Sweden and Poland. This does not include electricity purchases from the Nordic wholesale market. About 40% of the total

volume of purchases came from risk countries. These purchases mainly consisted of fuel purchases and the Russia Division's local purchases in Russia.

#### Purchases<sup>1)</sup> excluding investments in 2011-2013

EUR million	2013	2012	2011
Nordic countries	1,685	1,612	1,903
Russia	813	769	692
Poland	143	161	148
Estonia	29	36	64
Other countries	103	99	44
<b>Total</b>	<b>2,773</b>	<b>2,677</b>	<b>2,851</b>

<sup>1)</sup> Includes purchases of fuel, power and other materials and services.

## Investments

*In 2013, Fortum continued its strategy-based investments in energy-efficient combined heat and power production and carbon dioxide-free energy forms.*

In 2013, Fortum's capital expenditures and investments in shares totalled EUR 1,299 million (2012: 1,574). Investments, excluding acquisitions, were EUR 1,284 million (2012: 1,558), of which EUR 449 million (2012: 482) targeted CO<sub>2</sub>-free\* production. During the year biomass-fuelled CHP plants were inaugurated in Järvenpää and Jelgava, and waste-fuelled CHP plants in Brista and Klaipėda. In addition, a bio-oil production plant was commissioned at the Joensuu CHP plant.

In hydropower, Fortum continued refurbishments of its hydropower plants in Finland and Sweden.

Fortum acquired the Amrit Solar power station in India. Two gas-fired power plant units in Nyagan were commissioned as part of Fortum's investment programme in Russia in 2013.

In 2013, investments in [nuclear power](#) continued through capacity upgrades at our co-owned plants at Forsmark and

Oskarshamn in Sweden. In Finland, Fortum participates in Teollisuuden Voima Oy's Olkiluoto 3 nuclear power plant, which is under construction, and in the Olkiluoto 4 project, which is in the design phase. These are financed mainly with shareholder loans.

Fortum's investments in 2013, are described in detail in the [Financials](#).

\*) includes: hydro, nuclear, wind, wave and solar power as well as electricity and heat production from bioenergy and waste-derived fuels.

## Sustainable management of supply chain

*Fortum expects its business partners to act responsibly and to comply with the Fortum Code of Conduct and Supplier Code of Conduct. In 2013, Fortum continued sustainability-related supplier audits. Altogether 13 audits were conducted.*

The [Fortum Code of Conduct](#) provides the basis for ethical business conduct, and [Fortum's Supplier Code of Conduct](#) sets the basic sustainability requirements for suppliers of services and goods. The Supplier Code of Conduct is based on the principles of the United Nations Global Compact and is divided into four sections: business practices, human rights, labour standards and the environment. The Supplier Code of Conduct

is implemented in all Fortum's operating countries and is included in purchase agreements exceeding EUR 50,000. In the Russia Division suppliers must sign a commitment to follow the Supplier Code of Conduct, in order to be able to participate in competitive negotiations.

Fortum has been a member of the [Bettercoal initiative](#) since 2012. The aim of the

Bettercoal initiative is to promote the principles of sustainable development in coal mining. Bettercoal Code, adopted in 2013, sets expectations for ethical, social and environmental performance in coal production. In coal purchasing, Fortum follows the principles defined in the Bettercoal Code.

In 2013, several activities, including the renewal of relevant corporate instructions, definition of common EHS requirements and development of the contractor evaluation process, were carried out to improve contractor EHS management.

## Pre-selection and supplier audits to support assessment

We assess the level of operations of our business partners through pre-selection and supplier audits. Pre-selection includes a supplier questionnaire and verification of credit. The supplier questionnaire is used to identify general and sustainability-related practices, and it helps suppliers to understand Fortum's expectations for compliance with the Supplier Code of Conduct. The supplier questionnaire also helps to identify potential high-risk suppliers and thus the need for further actions. In 2014 the aim is to harmonise Russia Division's pre-selection with the Corporate instructions.

The audit assesses the supplier's compliance with the requirements in Fortum's Supplier Code of Conduct. Audits are always done on-site and they include production inspection, employee interviews and review of documents and records. If non-compliances are found, the supplier makes a plan for corrective actions and we monitor the implementation of it.

## From non-compliances to corrective actions

In 2013, Fortum's goal was to audit three risk-country or otherwise risky suppliers in each division. Fortum's classification of risk countries is based on the ILO's Decent Work Agenda, the UN Human Development Index, and Transparency International's Corruption Perceptions Index. Altogether thirteen audits were conducted and they included suppliers both in risk and non-risk countries who are either in a direct contractual relation with Fortum or act as a subcontractor to Fortum's supplier. The goal was reached in all divisions except ESD. In the ESD Division, audits were not started due to the assessment of the electricity distribution business future alternatives.

The most significant non-compliances brought out in the supplier audits were related to occupational safety, overtime hours and management of sub-suppliers.

Based on the audit results, in some cases, an agreement with a supplier has not been renewed or the co-operation with the supplier has been put on hold until the supplier has made the needed improvements. In June 2013, an audit conducted on a contractor revealed significant shortcomings and the work was put on hold immediately until the major shortcomings were corrected. A re-audit of the contractor was conducted at the end of summer to assure that the corrective actions were done.

“ The most significant non-compliances brought out in the supplier audits were related to occupational safety, overtime hours and management of sub-suppliers.

In 2014, Fortum will continue with the supplier audits; the goal is to audit at least fifteen suppliers or partners. Contractors will also be within the scope of the audits. Suppliers to be audited will be selected based on risk or significance of the contract.

## Own personnel as auditors

Fortum's own personnel are responsible for the supplier audits. Auditors 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. After the training, supplier audits are started together with an experienced auditor. Our goal is to train auditors from different divisions and operating countries. In 2013, we trained a total of 11 auditors from Poland and Sweden. In addition, five persons have received auditor training on the Social Accountability (SA8000) standard.

### Supplier audits conducted by Fortum 2013

MAY	JUNE	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER
Bioliq audit in Brazil	Partner audit in Poland	Biomass audit in Russia	Biomass trader audit in Poland	Materials audit in Russia	Bioliq audit in Malaysia
	Contract audit in Sweden		Contractor audit in Russia	Materials audit in India	
			Materials audit in Russia	Contractor audit in Russia	
			Materials audit in Russia	Contractor audit in Sweden	

## Responsible fuel purchasing

*Fuels represent a significant purchasing category at Fortum, EUR 1,085 million in 2013 (2012: 1,057). Increasing attention is being paid to the origin and responsible production of the fuels in purchasing.*

### Natural gas

The natural gas used in Fortum's operations in Russia, the Baltic countries and Finland originated from Russia, where the gas is purchased from several suppliers. Gas used in Poland originated mainly from Russia, but part of the gas was sourced from Poland. Gas used in Sweden's operations originated from Norway. In Great Britain, Fortum purchases natural gas from the national gas network and it originates mostly from the Britain and Norwegian gas fields in the North Sea.

Bettercoal reached a major milestone as a new code was adopted by the members of the organisation. The Code sets expectations for ethical, social and environmental performance in coal production. The compliance will be assured by the supplier's self-assessment, which were started at year-end 2013, and mine assessments performed by independent third-party assessors. Fortum's representatives tested the self-assessment tool with a Polish coal supplier at year-end 2013.

plant. The compliance with sustainability criteria according to the law of biofuels and bio liquids is proven through the verification system. It is estimated that the Energy Authority will approve the system in the first quarter of 2014.

“Fortum actively participates globally in the dialogue about responsible fuel purchasing with companies in the sector and with stakeholders.

### Coal

All of the coal used by Fortum in Finland and Sweden originated from Russia despite one shipment from Poland. Coal used in Poland mainly originated from Poland, but there were also small amounts imported from the Czech Republic. Fortum's Russian power plants used coal from Russia and Kazakhstan.

Fortum has been a member of the [Bettercoal initiative](#) since 2012. The aim of the initiative is to promote the principles of sustainable development in coal mining. In 2013,

### Biomass and bioliqids

The majority (95%) of the biomass used by Fortum consisted of wood pellets, wood chips and industrial wood residues that originated from Finland, Sweden and Estonia. Other types of biofuels were acquired from, for example, Brazil and Malaysia.

Fortum has recognised the challenges related to the origin of biomass and other biofuels and develops measures to verify the traceability and sustainability of fuels. In 2013, a verification system was established for the bio-oil production in the bio-oil plant integrated with Fortum's Joensuu power

The Dutch non-governmental organisation SOMO published a report in June 2013 discussing the biomass purchasing policies and the transparency regarding the origin of biomass in the energy companies operating in the Netherlands. Based on the report Fortum evaluated its practices and considers them sufficient for the time being. Fortum's goal in 2014 is to start gathering data on the

volume of certified wood-based biomass used as fuel in Finland and Sweden.

In Sweden, Fortum's subsidiary Fortum Värme is a participant in the WWF Global Forest & Trade Network (GFTN) through GFTN Sweden. Additionally, Fortum Värme has been a member of the Roundtable of Sustainable Palm Oil (RSPO) since 2005 and became a member of the Forest Stewardship Council (FSC) in 2012.

## Uranium

The fuel assemblies used at Loviisa's power plant are completely of Russian origin. The fuel supplier acquires the uranium used in the fuel assemblies from various mines. The Dalur uranium mine received ISO 14001 environmental certification in September 2012. The supplier's goal is to get certification also for the other mines supplying uranium to Fortum. The zirconium material manufacturing plant and the plant responsible for manufacturing uranium oxide pellets and fuel assemblies also have ISO 14001 and OHSAS 18001 certification.

Fortum carries out regular reviews of the quality, environmental, and health and safety management systems of its nuclear fuel suppliers and the manufacturing of nuclear fuel assemblies. In summer 2013, as in the previous year, Fortum's experts reviewed the fuel supplier's uranium mine in Russia. The Krasnokamensk mine (JSC PIMCU) strives for certification of management systems for quality, environment, and occupational health and safety by the end of 2015. In 2013, the mine focused on developing its occupational health and safety systems based on the DuPont model.

## Origin of fuels used at Fortum in 2013<sup>1)</sup>

Fuel	Country of origin
Biomass	Sweden, Finland, Estonia
Coal	Russia, Poland, Kazakhstan, Czech Republic
Natural gas	Russia, Great Britain, Norway
Uranium	Russia
Oil	Russia
Peat	Finland, Estonia

<sup>1)</sup> The biggest countries of origin based on the purchasing volumes in 2013

# Generating economic value for stakeholders

*Fortum is a significant economic actor in Finland, Sweden, Russia, Poland, Norway and the Baltic countries. We continuously monitor the impact and added welfare of our operations.*

The most significant direct monetary flows of Fortum's operations come from sales revenue from customers, procurements from suppliers, compensation to investors and shareholders, growth and maintenance investments, employee wages and salaries, and payments of taxes.

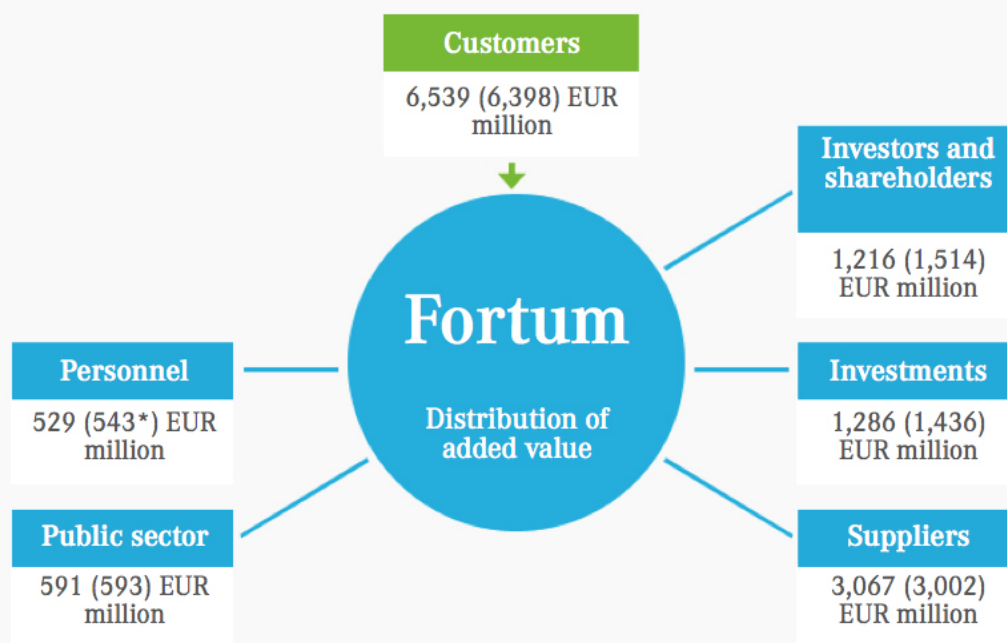
Our operations also have indirect economic impacts. The Finnish State owns 50.8% of Fortum's shares, and we contribute to a functioning society by, among other things, paying taxes and dividends. These secure the basic functioning of Finnish

society and build well-being. Investments and the procurement of goods and services provide employment both locally and outside our operating areas. The wages and taxes paid have a positive impact on local communities.

The graphic beside presents Fortum's monetary flows by stakeholder group in 2013 and examples of the generation of added value. With mouse-over on the stakeholder groups you can find additional information on Fortum's direct and indirect economic impacts on different stakeholders.

“Taxes borne in our operating countries totalled EUR 644 million in 2013. The largest share of taxes borne was for the state of Sweden, EUR 382 million.”

## Generation of added value (values from 2012 in parenthesis)



\*Comparative period information for 2012 has been restated due to the accounting change for pensions.



## Personnel

- Operations are concentrated to the Nordic countries, Russia and the Baltic rim area
- Fortum employed an average of 10,246 (10,600) people
- Fortum develops the competence and performance of its employees through skills and leadership training and through job rotation
- Wages and bonuses impact private consumption, and taxes paid by personnel have an impact on the generation of social well-being

## Public sector

- Fortum's income, property and production taxes totaled about EUR 588 (587) million
- Support for society totaled about EUR 3.2 (5.8) million
- Fortum supports social development and well-being by paying taxes and social security costs
- Fortum supports research in the natural, economic and technical sciences within the energy sector

## Investors and shareholders

- 132,072 (124,451) shareholders, the Finnish State owns 50.8% of Fortum
- Dividends EUR 888 (888) million were paid
- About 73.8% of dividends was paid to Finnish shareholders

- Fortum's total shareholder returns have outperformed its European peers during a five-year period
- The dividend income on the Finnish state's shares has an impact on maintaining both short- and long-term social welfare

## Investments

- Majority of growth was made in Heat and Russia Divisions
- Almost all of the planned investments in Europe target CO<sub>2</sub>-free production
- Maintenance, productivity and legislation-based investments were EUR 794 (848) million
- Growth investments were EUR 492 (588) million
- Research and development expenditure was EUR 49 (41) million
- Fortum's investments develop e.g. safety, production capacity, energy efficiency, local infrastructure and electricity distribution reliability
- Fortum's investments create business opportunities as well as jobs for suppliers of goods and services

## Suppliers

- Fortum refines natural energy sources into electricity and heat
- Fortum purchases fuels, goods, and services from local and global suppliers
- About half of the goods and services Fortum purchases are from suppliers operating in Europe

- Uranium, gas and majority of coal were purchased from Russia in 2013
- Collaboration creates jobs for suppliers and unlocks business opportunities in the Nordic, Baltic, Polish and Russian markets
- Collaboration, networking and partnerships increase Fortum's intellectual capital, enable a wide project base and support the successful throughput of R&D projects

## Customers

- Fortum offers electricity, heating, cooling and town gas as well as related expert services
- Fortum has 1.2 million private and business customers and 1.6 million electricity distribution customers in the Nordic countries. Wholesale electricity market customers in Russia.
- Fortum has district heat customers in eight countries and tens of cities
- Fortum knows the markets it operates in and develops competitive products and services for its customers
- The services and environmentally-benign products Fortum offers help to improve energy efficiency and reduce both costs and emissions
- Fortum develops smart grids that support sustainable community planning

# Fortum as a tax payer

*Fortum's policy is to pay taxes on the production, employment, property and earnings of each of the Group's businesses in accordance with each country's local regulations.*

Fortum operates in competitive markets where legal certainty and flexibility are both important for the business. Fortum's tax management follows these same priorities. The Group's tax principles support the commercial operations of the Group, and the implications for all taxes are considered early in the business and decision making process. Tax is one factor that is taken into account when making business decisions in order to achieve business targets and a balanced tax position.

Fortum's operations in the various operating countries are driven by the commercial and operational objectives of the Group and the need to operate the business effectively and efficiently. Fortum's corporate functions are based in EU countries - except for Guernsey, where Fortum has a fully owned captive insurance company, and the Cayman Islands, where Fortum has a stake in the Nature Elements Asia Renewable Energy and Cleantech Fund L.P.

As part of safeguarding its shareholders' interests, Fortum takes steps to mitigate tax uncertainty by seeking tax rulings and taking other legal action to protect its position. The

overall aim is to organise all taxes to be able to meet future challenges and to avoid surprises. Tax-related uncertainties are assessed annually in line with the Group's tax principles.

## Tax governance

The Corporate Tax Team instructs and guides the business units in all tax matters in line with agreed tax principles. The business units are required to follow the guidance and controls, including risk assessments, and reviews are in place to monitor compliance. The key findings and actions around tax issues and tax risks are reported annually to Fortum's risk and audit committee.

## Tax environment

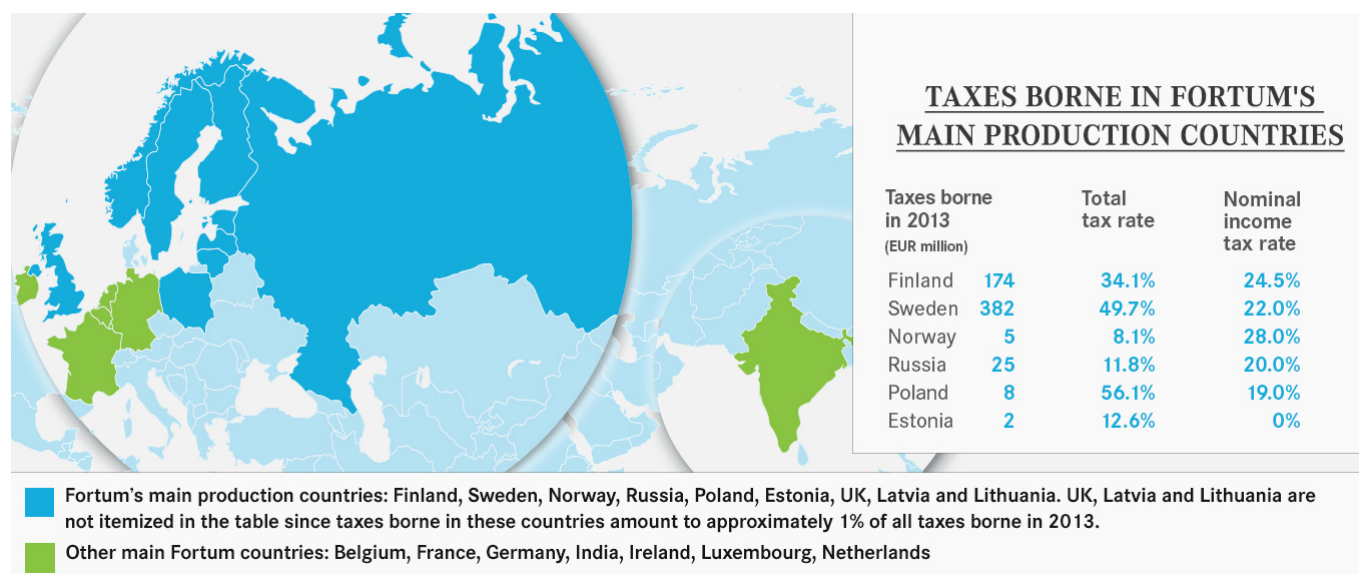
The current economic situation in Fortum's key operating countries has created an unstable tax environment leading to increasing or new taxes. Interpretations of existing tax laws may also change surprisingly. This in turn has led to

unexpected challenges for Fortum in the way the Group is organised and how its operations are taxed. Where there is uncertainty, Fortum seeks to maintain its position in line with its tax principles and to have dialogue with the tax authorities where they have differing interpretations of the law.

## Read more about

- [Subsidiaries by segment](#)
- [On-going tax appeals](#)
- [Public affairs](#)

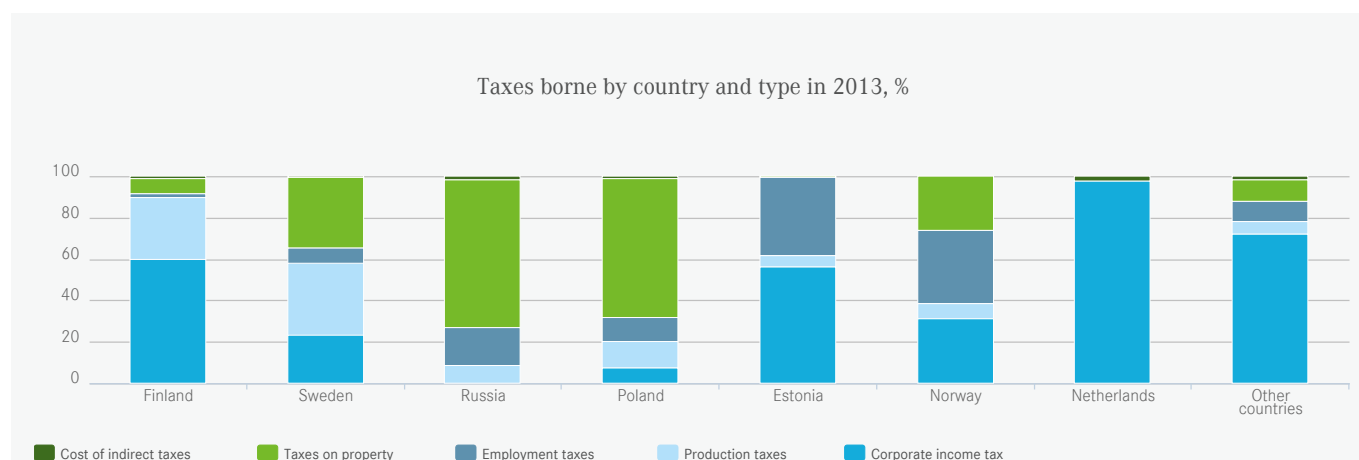
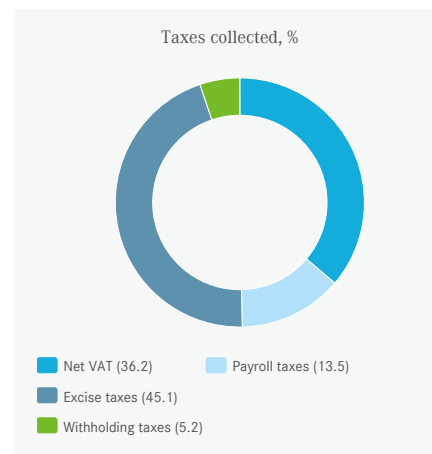
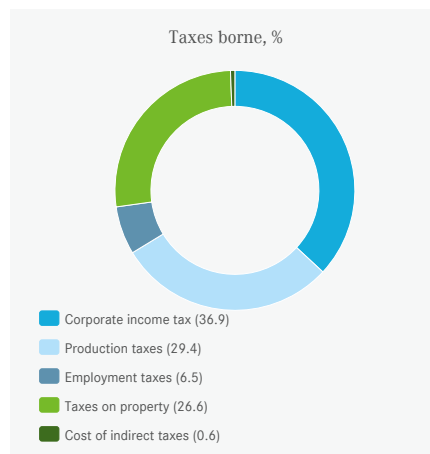
“ For every EUR 1 of corporate tax, Fortum pays EUR 1.69 other taxes.



## Tax contribution to society

Fortum is a large tax payer in its main operating countries of Finland and Sweden. Fortum also pays several different taxes in other countries where it does business. Fortum's total tax contribution is material as taxes borne and collected have a direct impact on the area where Fortum's operations are located.

Fortum makes all reasonable efforts to comply with tax rules for all the taxes that it pays in all the countries where it operates so that the Group makes an appropriate contribution to the communities where it does business.

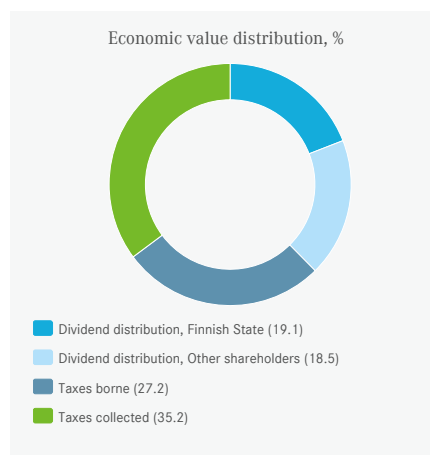


Statutory corporate income tax rates have recently decreased in Finland, Sweden and in some other Fortum's operating countries. Meanwhile, especially real estate taxes have been increasing in Sweden. Changes in statutory corporate income tax create big fluctuations in the effective tax rate, even though the total tax rate is steadily increasing.

For 2013, Fortum's effective tax rate, was 14.7% (2012: 4.7%) and the total tax rate 33.8% (2012: 29%).

## Read more about

- [Income tax](#)



## Other payments to and from the public sector

In addition to taxes borne and taxes collected, Fortum has other compulsory tax-like payments to the public sector, payments that are not compensation related to any service or commodity. For example, in 2013 Fortum had EUR 56 million (2012: 55) in compulsory pension contributions for

employees. Fortum has also 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) worth EUR 9 million (2012: 3). The figure excludes free [emission allowances](#) and electricity certificates.

Fortum is also a significant dividend payer. The Board of Directors' proposal to increase the dividend for 2013 by 10% would result in EUR 89 million more in income for the State of Finland.

## Tax transparency

Fortum aims for improved transparency in tax reporting and increased understanding of the Group's tax footprint. The company makes all reasonable efforts to communicate relevant tax related information accurately and at the correct time to tax authorities, investors and other stakeholders. Fortum recognises the importance of open communication about its main tax-related information, such as audits and appeals.

## Read more about

- [Deferred income taxes](#)
- [Press releases](#)

### Taxes borne in 2012-2013

EUR million	Finland		Sweden		Russia		Poland		Estonia		Norway		Netherlands		Other countries		Total	
	2013	2012	2013	2012	2013	2012	2013	2012	2013	2012	2013	2012	2013	2012	2013	2012	2013	2012
Corporate income tax <sup>1)</sup>	105	97	89	93	-1	1	1	2	1	1	2	0	31	7	11	2	239	203
Production taxes <sup>2)</sup>	51	49	133	140	2	2	1	1	0	0	0	0	0	0	1	1	188	193
Employment taxes	3	4	29	28	5	4	1	1	1	1	2	2	0	0	2	1	43	41
Taxes on property	13	12	131	86	19	19	5	5	0	0	1	1	0	0	2	2	171	125
Cost of indirect taxes	2	2	0	0	0	0	0	0	0	0	0	0	1	1	0	0	3	3
<b>Total</b>	<b>174</b>	<b>164</b>	<b>382</b>	<b>347</b>	<b>25</b>	<b>26</b>	<b>8</b>	<b>9</b>	<b>2</b>	<b>2</b>	<b>5</b>	<b>3</b>	<b>32</b>	<b>8</b>	<b>16</b>	<b>6</b>	<b>644</b>	<b>565</b>

Excluding custom duties

<sup>1)</sup> Corporate income tax includes current taxes booked as cost for the year and adjustments to the previous year's current taxes.

<sup>2)</sup> Production taxes include also production taxes and taxes on property paid through electricity purchased from associated companies.

### Taxes collected in 2012-2013

EUR million	Finland		Sweden		Russia		Poland		Estonia		Norway		Netherlands		Other countries		Total	
	2013	2012	2013	2012	2013	2012	2013	2012	2013	2012	2013	2012	2013	2012	2013	2012	2013	2012
Sales VAT	455	543	861	767	370	324	49	60	19	14	56	50	1	1	48	45	1,859	1,804
VAT on Purchases	403	488	657	608	373	328	35	51	14	18	35	38	0	2	43	67	1,560	1,600
Net VAT <sup>3)</sup>	52	55	204	159	0	0	14	9	5	0	21	12	1	0	5	0	302	235
Payroll taxes	52	54	39	41	11	10	3	4	0	1	3	3	0	0	5	4	113	117
Excise taxes	158	156	181	166	0	0	0	0	0	0	35	33	0	0	2	2	376	357
Withholding taxes	42	39	0	0	0	0	1	1	0	0	0	0	0	0	0	0	43	40
<b>Total</b>	<b>304</b>	<b>304</b>	<b>424</b>	<b>366</b>	<b>11</b>	<b>10</b>	<b>18</b>	<b>14</b>	<b>5</b>	<b>1</b>	<b>59</b>	<b>48</b>	<b>1</b>	<b>0</b>	<b>12</b>	<b>6</b>	<b>834</b>	<b>749</b>

<sup>3)</sup> If net VAT is negative, included as zero. In 2012 Fortum reported VAT in the table as gross amount for input and output VAT. The gross amount of taxes collected was EUR 3,918 million in 2012.



*Fortum interacts with millions of people through its business operations. Collaboration and dialogue with different stakeholder groups helps us to assess and meet the expectations that important stakeholder groups have towards our company. We report openly about the stakeholder collaboration and impacts of our operations.*



#### Local communities' expectations

- Plant safety
- Elimination of noise and emissions
- Safeguarding biodiversity and recreational use of nature
- Support and donations to local communities
- Dialogue and collaboration

#### Fortum's actions

- Management of our [risks](#) and operating in line with our [Code of Conduct](#), policies and instructions
- Infrastructure and plant safety [investments](#)
- Good employer and [neighbour](#)
- Active and open communication
- Meetings with local residents and customers
- Support for local community activities



## Customers' expectations

### Customer relationship and products

- Safe and reliable electricity company
- Good service
- Fair pricing; straightforward and accurate billing
- Support for efficient and smart energy use, environmentally benign products

### Energy production and distribution

- Delivery reliability of energy
- Efficient energy production
- Responsible operations in society
- Real time disturbance communication

## Fortum's actions

### Our products and customer relationship management

- Products that meet customer needs
- Striving for safe, easy and long-term [relationship](#)
- Customer service development
- Services including web, social media and mobile
- Energy-conservation instructions and [energy-efficiency services](#)
- Origin-labelled electricity
- [Climate-benign heat products](#)
- Product developments with customers

### Energy production and distribution, and our activities in society

- Distribution network improvements
- Effective disturbance communication
- Use of environmentally benign forms of energy
- Investments in energy efficiency

## Services and goods suppliers' expectations

### Fortum's business operations

- Good financial position and ability to take care of the agreed obligations
- Responsible operations
- Good reputation (e.g. Fortum as a good customer reference)

### Business relations with suppliers

- Fair and equal treatment of suppliers
- Long-term business relations
- Development of suppliers' business and products/services

## Fortum's actions

### Fortum's business and purchasing principles

- Compliance with the Fortum [Code of Conduct](#), regulations and agreements
- Professional purchasing process consistent with good purchasing principles (including public procurements)
- Supplier [pre-selection and audits](#)
- Monitoring of [reputation](#) development

### Supplier relationship management

- Systematic supplier relationship management
- Category management model in use for most significant purchasing categories
- Joint development projects with suppliers and creation of new business opportunities for our suppliers

## General public's expectations

- Activities for the good of society
- Fair pricing
- Transparency
- Reasonable financial returns and fairness in management remuneration

## Media's expectations

- Relevant, reliable and transparent communication

## Fortum's actions

- Tax payment and development of the energy sector to meet society's needs
- Active and open communication
- Remuneration complies with the Cabinet Committee guidelines and principles
- Support to [non-profit activities](#)

## Fortum's actions

- Active and open communication
- Easily accessible through [media desk](#)
- Continuous development of crisis communication preparedness

### Non-governmental organisations' expectations

- Operational responsibility
- Environmentally benign investments
- Promoting renewable/efficient energy production
- Collaboration projects, open interaction and dialogue
- Reliable reporting

### Fortum's actions

- Active and open communication
- Publishing tax footprint
- Collaboration with Finnish and Swedish nature conservation associations regarding our environmentally benign electricity products
- [Collaboration](#) in responsible procurement of wood fuel material and in sponsorship projects
- Monitoring of [NGO](#) activities and engagement in dialogue
- Third-party assurance of reports

### Personnel's expectations

#### Employment relationship

- Job security
- Equal treatment
- Performance-based wages

#### Working environment

- Work well-being and safe working conditions
- Opportunities for professional development
- Recognition of work contribution
- Open interaction

### Fortum's actions

#### Employment relationship

- 96.2% of [personnel](#) permanent employees
- Support for equality, respect for cultures and values of individuals and groups
- Performance-based [wages](#), commitment to uniform guidelines and tools in remuneration

#### Working environment

- Promotion and improvement of [well-being](#) and [safety](#)
- Active development of [competence](#), by career advancement and job rotation
- Opportunity of personnel to [influence the content of own work](#)
- Development of [leadership and management skills](#)
- Support in [change situations](#)
- Compliance with the Fortum [Code of Conduct](#)

### Energy-sector organisations' expectations

- Advocating for shared interests
- Maintaining dialogue

### Fortum's actions

- We [advocate](#) on behalf of shared interests
- [Position papers](#) and views on energy-sector development

### Authorities' and decision makers' expectations

- Compliance with laws and regulations
- Paying taxes
- Maintaining dialogue
- Transparency and reliable reporting

### Fortum's actions

- Compliance management
- Payment of [taxes](#) and dividends
- Publishing tax footprint
- Active [dialogue](#) with authorities and decision makers about key issues in the energy sector
- Active and open communication, reports [assured](#) by a third party

### Investors' and shareholders' expectations

- High-yield share
- Risk management
- Responsible operations

### Fortum's actions

- Dedicated to achievement of our [financial targets](#)
- [Dividends](#) paid every year

- A stable, sustainable and over time increasing dividend of 50-80% of earnings per share excluding one-off items
- Compensation for investors as agreed
- Systematic management of risks and operations in line with our [Code of Conduct](#)

# Stakeholder collaboration

*Fortum is aware of the impacts its operations have on the surrounding society and communities. Dialogue, feedback and good collaboration are key ways to promote mutual understanding with our stakeholders. Our corporate responsibility includes the continuous mapping of our stakeholders' views and finding a balance between the different expectations of our stakeholders.*

Management of stakeholder collaboration at Fortum is divided by stakeholder group among a number of people, particularly the heads of communications, corporate relations and human resources, sustainability, and the managers responsible for electricity and heat sales, as well as several expert areas. Fortum increasingly engages in dialogue with its stakeholders also in the social media in its operating countries.

Stakeholder work is managed mainly based on the stakeholder group or the interaction theme. Annual plans have been drafted for the key interaction areas, like corporate relations, and corporate and customers communications. Fortum has an informal Advisory Council consisting of representatives of Fortum's stakeholder groups as invited by the Board of Directors. The Advisory Council aims to advance Fortum's businesses by facilitating dialogue and exchange of views between Fortum and its stakeholders. During 2013, the Advisory Council consisted of 13 representatives of Fortum's stakeholder groups and three employee representatives.

Meetings are convened by the company's management, and also other people may participate in them depending on the topics on the agenda.

We report openly about dialogues with our stakeholders and the impacts of our operations. In our annual reporting, we focus on the shareholders, investors, analysts, decision makers and the media. Our activities are affected also by other important stakeholder groups, such as employees, customers, goods suppliers and service providers, and non-governmental organisations.

## Information through surveys

We work with third parties to conduct several annual surveys regarding stakeholder group collaboration. The aim of these stakeholder group surveys is to help Fortum to assess the expectations the important stakeholder groups have for the company and to respond to them.

The surveys also provide information about growing sustainability trends and risks to the company's operations. We regularly monitor and assess the public discussion in our operating countries.

Stakeholder views are mapped and the success of stakeholder collaboration is measured systematically through various surveys and feedback questionnaires. The main surveys and questionnaires conducted regularly are presented in the following table.

The survey results are used in business planning and development. The feedback received from customers guide the development of products and services. Additionally, our activities in national and international organisations help to deepen our understanding of global sustainability issues and their connections to our business.

Survey/questionnaire	Target groups	Target countries	Frequency
<b>One Fortum</b>	Customers Public administration Capital markets NGO:s Opinionmakers Personnel	Finland, Sweden, Norway, Poland, Baltic countries, Russia	Annually
<b>EPSI customer satisfaction surveys</b>	Electricity sales customers	Finland, Sweden, Norway	Annually
<b>PR-barometer</b>	Media	Finland, Sweden, Poland, Baltic countries, Russia	Annually
<b>Media tracking</b>	Media	All operating countries	Daily
<b>Student surveys</b>	Students	Finland Sweden	Employer surveys by T-Media and Universum and Uratie survey by Talentum in Finland in 2013. Employer surveys by Universum in Sweden.

## Social media

Fortum actively participates in social media. Our social media presence is primarily country-specific, and there are some differences between our operating countries in the use of the services. Facebook and Twitter are our main social media channels. Additionally, we use other social media services, like LinkedIn, YouTube and blogs. We use Facebook to engage in a dialogue with our customers and the general public

about Fortum and topical issues related to the energy sector. We have also used it to communicate with our customers in power and district heat outages. We use Twitter as a communication channel and for engaging in a dialogue with our customers, the general public, the media, organisations and opinion leaders, and other companies. The topics of discussion on Twitter include our current activities and new issues of interest in the energy sector. We have also used Twitter in customer communications about power and heat outages.

## Read more about

- [Stakeholders' expectations and Fortum's actions in respond to them](#)

# Customers

*Fortum has several millions of customers, and customer satisfaction is of utmost importance to us. In 2013, we introduced numerous new consumer products, and we continued our investments to improve the reliability of our distribution networks. We also improved communication in power outage situations and extended our presence in social media.*

Fortum has 1.2 million electricity customers and 1.6 million electricity distribution customers in Finland, Sweden and Norway. We sell electricity to the Nordic power exchange and to the Russian power exchange. Fortum delivers heat to several millions of people in dozens of cities in eight countries and heat and steam to industry.

We regularly assess [customer satisfaction](#) and feedback so that we can better meet customer expectations. We involve customers also in the development of products and services.

In 2013, Fortum's customer satisfaction in all business divisions improved compared to the

previous year. In most business areas, customer service and the price/value ratio received the biggest improvements in customer satisfaction. We are continuously developing these areas to fulfill the expectations of our customers.

## Services for electricity distribution customers

In 2013, Fortum developed its customer service channels and improved the reliability of the distribution network.

In 2012, Fortum introduced a text message service to provide information about power outages to its electricity distribution customers in the Nordic countries. In 2013, new customers have been added to the service. Widespread distribution disruptions are also communicated through social media channels and on Fortum's website.

Customer communications in Finland were improved with the introduction of an online electricity distribution investment map in May 2013. The map shows the most significant grid improvement projects in Finland, and customers can quickly see Fortum's grid improvement work in their residence area.

Fortum continued the construction of the weather-proof network in Finland with the [VahvaVerkko project](#). In Sweden, the [SäkraNät project](#) improving electricity distribution reliability continued.

In the autumn Fortum completed the installation of smart electricity meters in Finland. A total of 620,000 smart meters were installed on schedule in Fortum's electricity distribution area. During the smart meter project, more than 40 customer events, attended by 5,000+ people, were held at libraries and in conjunction with various events.

## Services for heat customers

Fortum is improving the reliability of its district heating networks by repairing malfunctions detected in regular maintenance and by investing to new networks when necessary. Smart metering and control systems give district heating customers the opportunity to influence their own heat consumption. All of Fortum's district heating customers in Finland and Poland and the majority of Fortum's district heating customers in Sweden are within the sphere of smart metering. In Latvia and

Estonia, the aim is to finalise the automated meter reading system by the end of 2014.

In 2012, Fortum opened up the possibility for customers in Stockholm, Sweden, to sell the surplus heat they produce to Fortum's heating network at market price. The service has raised interest among customers and several contracts were signed in 2013.

Fortum is actively developing heating services also in Russia by modernising the heating

networks in Chelyabinsk and Tyumen. Modernisation of Chelyabinsk district heating networks continued in 2013. In 2013, a new pipeline was built to connect Chelyabinsk CHP-1 and CHP-2. The new pipeline will improve energy efficiency and heat distribution in the adjacent urban areas.



## Consulting services

Fortum's Power Solutions business area is responsible for sales of energy production-related consulting services and products in competitive global markets. The offerings range from long-term, full-scope operation and maintenance (O&M) solutions to highly specialised expert products and services. The services help to secure maximum availability and productivity as well as energy and cost efficiency.

The services are based on Fortum's long experience and cover all forms of energy production - from thermal, hydro and nuclear to wind and solar power. In 2013, Power Solutions launched its renewed Hydro power services, and the first contracts have been signed.

Deliveries of ion exchange materials to the Fukushima nuclear power plant in Japan

continued. Power Solutions also started training collaboration in the UK with Rosatom. Fortum has delivered over 750 burners worldwide to lower emissions, mainly oxides of nitrogen (NOx). In 2013, Power Solutions delivered low-NOx burners to Wroclaw and Krakow in Poland. Fortum's low-NOx burners are also used to decrease emissions of oil shale power plants in Narva, Estonia.

## Demand-side management

Fortum increases the flexibility of its customers' electricity demand by offering products that are based on different pricing models and by promoting smart electricity meters.

Distribution's sizable smart meter project is a significant step towards promoting demand flexibility. Replacing old electricity meters with hourly-based meters improves load management and increases opportunities for energy savings. All of Fortum's distribution customers in Finland and Sweden are included in the sphere of smart metering. In Norway, the planning of the smart meter system is continuing, and the preliminary

legislation on it will take effect on 1 January 2019.

Smart meters record electricity consumption on an hourly basis. Fortum's electricity clients, who have a smart electricity meter, can follow their electricity consumption on a yearly-, monthly-, daily- and hourly-level at Fortum's website. With the smart meters, electricity billing is based on actual consumption rather than the previous estimated and balance billing. An electricity bill based on actual consumption is easier for customers to understand and increases awareness about electricity use.

In market-based, hourly-priced electricity retail products in Finland, the price for electricity is based on the hourly spot price on the Nord Pool Spot electricity exchange. An hourly-priced electricity agreement combined with the hourly-based measurement of electricity consumption allows customers to choose the more economical hours to use electricity.

Customers can monitor their own consumption with Internet and mobile services. The services help customers to see how energy conservation efforts affect their own consumption. This gives customers a better picture of their electricity use and allows them to also have an impact on it.

## Electricity distribution pricing

Currently, pricing in electricity distribution for the majority of business customers is based on the electrical power used. Household electricity distribution customers, in turn, have the option to choose a two-time metering and tariff, making the electricity

price lower at night. The system is particularly suitable for distribution customers with electrically heated water boilers. Hourly-based monitoring of consumption will offer opportunities also for the development of transmission tariffs and load services. Load

management services are also available for large-volume customers.

# Personnel

*The aim of Fortum's personnel strategy is to promote the commitment and well-being of employees. At the end of 2013, Fortum had 9,886 employees in 11 countries, majority of which, 4,162, worked in Russia.*

In 2013, the focus was on implementing the 2013-2014 efficiency programme, developing leadership, harmonising Group-level people

processes and maintaining and developing strategy-aligned competencies.

## Human resources management

*Fortum aims to be a preferred employer that attracts and retains qualified employees at all levels. We believe that good leadership is the foundation to employee engagement and performance, and we strive to create attractive career and development opportunities to continuously grow the professional skills of individuals.*

### Leadership development

In line with the Leading Performance & Growth initiative launched in 2010, leadership and the organisational culture have been developed by integrating Fortum's key behaviours – challenge, co-create, coach and celebrate – into daily routines.

An important part of the transition process has been Leadership Impact, a leadership development programme for managers. The main objective of the programme has been to enhance the self-awareness of the participants and their coaching skills; it is believed that this will have a positive impact on the organisational culture. In 2011-2013 a total of 1,000 Fortum managers from different countries participated in the Leadership Impact programme.

The plan is to continue enhancing a coaching culture throughout the organisation. Managers have received coaching training as part of the Leadership Impact programme, and starting in 2013 coaching training has also been arranged for other personnel.

Various development activities related to coaching leadership at the organisational, team and unit levels have also been arranged. For example, the Heat Division in Poland has organised workshops that have enhanced collaboration across organisational boundaries and have collectively pursued solutions to business challenges.

### Uniform HR processes

Our aim is to adopt fair and effective people processes at all Fortum's sites. Group-level people processes – Manage Strategic HR Planning, Recruit and Select Employees, Develop Employees, Reward and Retain Employees, and Manage Employee Information – were defined in 2012. In 2013, the use of Performance Development Process was broadened so that it covers Fortum's operating countries. The defining of other Group-level processes continued and the focus in 2014 is on adopting, monitoring and further developing them.

### Strategy at the individual level

Fortum aims to put the company's strategic goals into practice at the team and employee level. The key tool for implementation is the annual [Performance Development Process](#) (PDP).

The PDP is supported by the Career Development Framework concept adopted in 2012; one of the goals of the concept is to maintain and develop strategy-aligned competencies. The model-based role and competence descriptions will be phased in to

support also other people processes. For example, in conjunction with the recruiting process renewal in 2013, role and competence descriptions were introduced as recruiting criteria basis and evaluation support. In 2013, some 1,000 employees in the Nordic countries, Poland and the Baltic countries were within the sphere of the competence assessments. Development of the model will continue and it will be rolled out to more of the organisation in 2014.

“ In 2013, some 1,000 employees in the Nordic countries, Poland and the Baltic countries were within the sphere of the competence assessments.

### Efficiency programme goals

Fortum's efficiency programme will run in 2013-2014, and it aims to strengthen the cash flow by over one billion euros. Each division and unit has set its own targets to achieve the efficiency programme's goals. The aim has been to implement possible headcount reductions resulting from the efficiency programme through attrition, restructuring of vacant jobs and retirement. During 2013, the efficiency programme proceeded according to plan.

“ Altogether 1,000 Fortum managers have participated in the Leadership Impact, a leadership development programme for managers.

In situations of organisational restructuring, Fortum negotiates with personnel representatives in compliance with each country's local legislation and contractual procedures. The minimum notice period is based on local legislation, collective agreements or employment contracts, which are compliant with local legislation and agreements. In situations involving headcount reductions, Fortum's priority is to support the re-employment of personnel.

## An interesting employer

During Fortum's efficiency programme, the aim has been to fill vacant jobs primarily through internal recruiting. To support the internal mobility of employees, Employee Mobility practices have been developed during 2012-2013. The internal mobility of employees between different countries and divisions strengthens know-how and

promotes the deployment of best practices throughout the organisation.

Fortum strives to maintain sufficient expertise and leadership potential with the Talent Management Process, which was renewed in 2012. Being an interesting employer helps Fortum in recruiting new employees. In a survey of students and young professionals, conducted by the employer branding company Universum, Fortum was ranked as the 11th most desirable employer in Finland in 2013. In the Swedish Universum student survey, the company ranked amongst the 30 most desirable companies among master's-level technology students.

Summer Energy, the campaign launched every February to recruit summer employees, was of interest to young job seekers. 4,700 applications were submitted for the 110 summer jobs offered in Finland and Sweden.

Employee engagement is measured with the annual [One Fortum survey](#) of stakeholders and personnel and with the Fortum Sound employee survey, which is conducted roughly at two-year intervals.

Fortum's reputation weakened slightly amongst the 1,045 employees who participated in the One Fortum survey in 2013, but it was at a higher level than in the 2011 survey. Decision on the timeschedule of the next Fortum Sound has not been made yet.

## Read more about

- [Fortum employees and work conditions](#)

# Well-being at work

*Well-being at work is supported by developing managerial work, by offering tools to support leadership and by coaching work communities towards a work culture that recognises our key behaviours. ForCARE, Fortum's programme for overall well-being at work, offers information and professional services in issues related to well-being at work.*

ForCARE aims to promote health, safety, employee work capacity and work community functionality. The programme activities are tailored to take into account the legislative requirements and unique cultural aspects in different countries.

## Support for managers and personnel during situations of change

Changes and restructuring are a constant at Fortum and in its operating environment. Changes can be a source of anxiety and stress for employees.

The strategic assessment of Fortum's electricity distribution business was completed in Finland towards the end of 2013, when Fortum announced that it will sell its electricity distribution business to Suomi Power Networks Oy. A total of 320 employees will transfer with the business at closing with existing terms of employment.

During the assessment process, regular dialogue opportunities were arranged for the

personnel in an effort to prevent and alleviate any assessment-related uncertainty. Twice during the nearly year-long assessment period, employees were asked for feedback regarding the managers' management of change and their communication about it.

At the work community level, employees have been coached to update their own coping strategies and have been encouraged to engage in open and continuous interaction with managers and their colleagues. The materials in the managers' portal have provided support for managers.

The materials will be further developed into a change management toolbox for managers. The aim is to create the prerequisites for successful change that take into consideration the organisation's special needs. Well-being skills of new managers have been developed with the new managerial training programme in Sweden and Finland.

## Employee responsibility for well-being at work

The ForCARE programme emphasises each work community's responsibility for its own work well-being and for the joint development of the work community's well-being. Employee well-being at work stems from working together at the workplace. Managing well-being at work starts with developing the capacity of individuals to manage their own lives and work in a healthy manner.

In 2013, the focus has been on developing the self-management capacity of individuals. The topics in Finland have included, e.g., healthy nutrition, adequate sleep and a work-life balance.

## Monitoring and assessing well-being at work

Well-being at work is monitored with an overall well-being at work index included in the regular Fortum Sound employee survey. Among other things, it measures opinions

related to the openness of the dialogue in the work community, personal accountability and the level of challenge of work tasks. The result of the index in 2012 was 3.88 (on a scale of 1-5).

“ Well-being at work is monitored with an overall well-being at work index included in the Fortum Sound employee survey every second year.

In addition to the work well-being index, well-being at work is also monitored with other Group-level key indicators, such as sick leave, which is tracked quarterly, and the ratio between actual retirement age and the statutory start of the retirement pension.

In 2013, the number of people retiring from Fortum was 164 (2012: 137). The figure includes age-related, early and disability retirements. The average retirement age was 61. Fortum had 782 (2012: 769) employees who were over the age of 60.

## Workplace well-being projects

A Fortum-level workplace assessment model, developed in 2013, will be used to commensurably determine psycho-social factors in the work environment and work community and their impact on well-being at work.

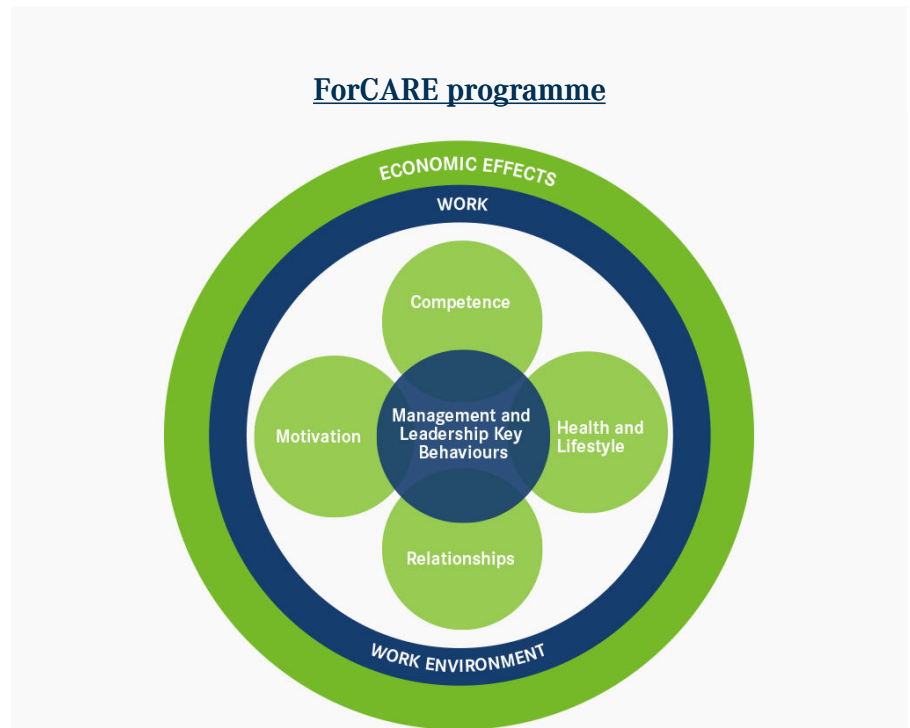
The goal is for the work community to find the key development targets for well-being at work and safety when the risks are identified

## Safety

*Fortum's target is to be a company where the employees, the contractors and service providers who work for us can come to work safely and leave for home at the end of the work shift unharmed. We believe that all work injuries are preventable when the competence and the right attitude prevails, when potential risks are addressed and when measures are taken to protect against them.*

## Contractor safety a challenge

The systematic work to improve occupational safety continued. The lost workday injury frequency (LWIF) per million work hours for



and assessed. The plan is to pilot the model in 2-3 different countries in 2014.

Fortum's well-being at work programme includes also country-specific work well-being projects. The work community's – and particularly the managers' – knowledge of the effects of harmful stress on work productivity is promoted with the work well-being section included in the occupational safety training or in training tailored to the work community.

## Read more about

- [Fortum employees and work conditions](#)

Fortum's own personnel improved to 1.1 (2012: 1.5), which is Fortum's best-ever result. In spite of the hard work the LWIF for contractors increased to 4.8 (2012: 3.8).

“Fortum reached its best result ever in the occupational safety of its own personnel.”

In 2013, one fatal accident involving a contractor's employee occurred at the Chelyabinsk CHP-2 unit in Russia. And, unfortunately, another fatal contractor accident occurred in February 2014 in Distribution in Sweden. The total number of contractor accidents also increased in 2013 compared to 2012. Most of our power plants and projects reported improvements in contractor safety, but, due to the challenges in some parts of the company, the total result was unsatisfactory. The biggest challenges were identified in our investment projects in Russia and Sweden and in repair and improvement works in electricity distribution.

The situation in plant safety worsened compared to 2012. A new KPI, major EHS incidents, was introduced as a Fortum-level indicator. It combines fires, leaks over 100 litres, explosions, dam and nuclear safety (INES) incidents, and environmental non-compliances. During 2013, there were 51 incidents; the target was less than 40. Two INES 1 (International Nuclear Event Scale) incidents occurred at the Loviisa plant (2012: 3). They didn't cause any injuries to people or damage to the plant or the environment.

## Contractor safety improvement actions

A common contractor safety management model was adopted during the year. In order to ensure an even higher focus on contractor safety, a contractor LWIF was included in the Group-wide targets starting 1 January 2014.

The Electricity Solutions and Distribution Division continued implementing of the online training programme aimed at contractors and the contractor assessment practice; regular safety meetings with the contractors experiencing the biggest performance challenges also continued. The implementation of common EHS requirements for contractors continued in the Power and Heat divisions. Additionally, safety practices in investment projects were improved by utilising the new project safety manual in the CHP project in Sweden, by developing a safety manual for small projects,

and by developing a contractor evaluation tool in Heat Finland. At the Loviisa nuclear power plant, more focus was put on contractor management and on management activity and influence during the annual maintenance period. The results were promising: the number of contractor accidents decreased from 8 to 2.

Unfortunately, a fatal accident involving a contractor occurred in the Russia Division. After the accident, contractor safety instructions and requirements as well as daily safety management practices at the power plants were renewed. Improvements related to hazardous works, such as working at heights, were introduced. Additionally, an improved procedure for contractor safety audits was developed. The implementation of these practices is monitored together with the Corporate Sustainability unit.

## Safety is about continuous improvement

During the year we implemented many initiatives that were developed in 2012: for example, a new safety video and safety handbook were introduced. Additionally, Fortum's common "stop and think" safety training material was updated, and a new safety walk e-learning tool was developed.

The annual safety award was given to the Imatra hydro-power plant in Finland for long-term successful safety work that is based on making safety an integral part of the daily work, and for the culture of caring for each other that prevails within the organisation. Implementation of Fortum's minimum requirements for environmental, health and safety (EHS) management continued. A new reporting and management system for EHS incidents, near-misses and improvement proposals was adopted during the year, and its use will be extended in 2014.

In the Power Division, the work continued by increasing management commitment and visibility during maintenance periods and by improving the work permit system.

In the Fortum Heat Division, the use of the proactive safety index was started in all countries. In Heat Poland, the integration of the Zabrze and Bytom plants was completed and OHSAS 18001 and ISO 14001 certificates were received. The performance of the units has remained clearly better than before integration. The plant-safety improvement investments continued with a

focus on boiler start-up and coal handling. An extensive safety awareness campaign both for own personnel and contractors was started throughout the Polish operation.

“The annual safety award was given to the Imatra power plant, where safety is an integral part of the daily work and a culture of caring for each other prevails within the organisation.”

The most important measures in the Heat Baltic operations were related to the safe commissioning of the new units in Latvia and Lithuania. No accidents or incidents took place during the commissioning process. Heat Finland enhanced the risk assessment and work permit practice. The new pyrolysis process at the Joensuu CHP plant was commissioned without incidents.

In Heat Sweden, a comprehensive safety culture improvement programme was launched due to the excessive number of accidents and incidents. This programme will continue in 2014.

In the Russia Division the EHS action plan, started in 2009, to improve work and plant safety, was concluded. The ISO 14001 and OHSAS 18001 certification process proceeded in Russia, and District heating operations received certification during 2013. Asbestos removal continued during the year; about 390 tonnes of asbestos were removed. Other activities included improved accident investigation, integration of the Nyagan units into the management system of the rest of the organisation, and "stop and think" safety refreshment trainings. Fortum India started implementation of the Fortum way of operating. The first actions were improvements to the work-place and personal protective equipment, and a more systematic EHS risk assessment practice.

## Read more about

- [Occupational health and safety at Fortum](http://annualreport2013.fortum.com/)



# Shareholders

*Shareholders, investors and analysts are a key stakeholder group to us. As a listed company, Fortum's obligation is to provide correct, adequate and up-to-date information regularly and equally to all market participants.*

Fortum Corporation's shares are listed on the NASDAQ OMX Helsinki exchange. At the end of 2013 Fortum had 132,072 (2012: 124,451) shareholders. The Finnish State owned 50.8% of Fortum's shares. Of the shares, 26.2% (2012: 25.4%) were in foreign ownership.

In line with Fortum's principle of transparency, the Investor Relations function ensures that stakeholder groups receive correct and adequate information through regular meetings and from the Investors section on Fortum's website. The key values of Fortum's Investor Relations are openness, transparency and easy approachability.

To support stakeholder group collaboration, Investor Relations meets with investors and analysts regularly in conjunction with the publication of the quarterly financial statements, at investor meetings, road shows, and shareholders' meetings.

Investor Relations and top management communicate with analysts, shareholders and potential investors also at seminars and conferences in Finland and abroad. At events, Fortum presents issues of topical importance to the company and discusses them with investors. Discussions focusing on sustainability in particular have been arranged with some investors.

During the year, Fortum met with some 200 investor sector professionals in one-on-one meetings or in other events. In 2013, investor events were held in the Nordic countries, other European countries and in the United States and Canada.

## Read more about

- [Fortum's share and shareholders](#)

# Suppliers of goods and services

## Read more about

- [Purchasing and investments](#)

# Authorities and energy industry organisations

*Collaboration with authorities is important in the energy sector. Fortum engages in an active dialogue on key issues in the energy sector and annually publishes several comments and position papers on relevant topics.*

At the EU level and in our countries of operation, we are directly and indirectly involved in approximately 62 sector associations and organisations. We actively present our views on energy policy issues and offer our energy sector expertise to decision makers and organisations in the sector. A list of the [Energy sector organisations](#) can be found on Fortum's website.

## Public affairs themes in 2013

Fortum's public affairs activities in Finland focused on tax issues and, in particular, on the so-called [windfall tax](#), as well as on the revision of the Electricity Market Act. In Sweden, tax issues, especially the [real estate tax on hydropower](#), were also high on the agenda.

Heating costs for end-customers is a significant issue in all the Baltic countries. We focus on questions concerning the competitiveness and liberalisation of district heating as well as on other legislation affecting the energy sector, such as different subsidies and planned retroactive changes of them. In Lithuania, waste management issues are also followed closely, due to the newly opened waste-to-energy plant in Klaipėda.

In Russia, Fortum focused on energy efficiency and on Russian electricity and heat market legislation. Fortum hosted several groups of Russian federal and regional authority representatives visiting other Fortum countries to familiarise themselves with the functioning of power and heat markets. Legislation regarding the heat market and heat pricing were most actively

debated in Russia, especially the proposed [new heat market model](#).

At the EU level, our representatives discussed issues related to the [EU's future climate and energy policy](#) targets, functioning of the [Emissions Trading Scheme](#) and the internal energy market, as well as the impact of different policy targets and measures on energy prices and hence on the competitiveness of EU industry.

In November 2013, Fortum updated the company's information in the [Transparency Register](#) maintained jointly by the European Parliament and European Commission. The register offers information about organisations that aim to influence EU decision making.

Fortum's Corporate Relations function reporting to the President and CEO is responsible for all public affairs activities, and

the Group does not use third parties for lobbying purposes.

## Media

*From the media's perspective, Fortum's operations are interesting particularly in the Nordic countries because we are one of the biggest listed companies in Finland and among the biggest energy-sector players also in Sweden.*

Laws and regulations governing the communications of publicly listed companies set the framework for our communications. As a listed company, we follow the rules and recommendations of the [NASDAQ OMX Helsinki](#) stock exchange. Furthermore, we follow the regulations set forth in the Finnish Companies Act and Finnish Securities Markets Act and other relevant laws as well as the standards of the Financial Supervision Authority (FSA) in Finland. Fortum also observes other recommendations for publicly listed companies set forth by the European Union.

We communicate openly and proactively to ensure that our stakeholder groups have sufficient information available about decisions and factors that are likely to have a material impact also on Fortum's share price. We communicate actively and consistently also to increase awareness about the company's strategy and business.

The State's majority ownership in Fortum also increases the media's and the general public's interest in the company in Finland. In other countries where it operates, Fortum is a foreign player in the energy sector. In line with its communication principles, Fortum communicates with its stakeholders in an impartial, open and timely manner. We engage in a continuous dialogue with the media at press conferences, press visits, other visits, and by giving interviews and responding to daily media contacts.

In 2013, we continued strengthening our crisis communication preparedness by drafting specific, Group-wide communications guidelines for exceptional situations related to district heating. In March we participated in an international crisis communications exercise involving the Loviisa nuclear power plant. We also boosted our social media presence in countries where we operate.

During the year we arranged a number of local media events in all the countries where we operate and had [plant inaugurations](#) in Finland, Latvia, Lithuania, Russia and Sweden. We met hundreds of media representatives at these events. The inauguration of the Nyagan power plant in Russia was the biggest of the events, with participation by over 180 media representatives from around Russia and Europe.

“ The inauguration of the Nyagan power plant in Russia was attended by over 180 media representatives from around Russia and Europe.

## Non-governmental organisations

*We follow the activities of non-governmental organisations and engage in a dialogue. In addition, we realise most of our sponsorships in collaboration with organisations.*

We engage in collaboration with environmental organisations regarding the eco-labelling of electricity products in Finland and Sweden. We also participate in projects related to local environmental conservation and maintaining [biodiversity](#). Part of the funding for the environmental projects comes from the sales of eco-labelled electricity.

Since 2006 Fortum has been a supporter of the John Nurminen Foundation's [Clean Baltic Sea project](#) that is mitigating eutrophication

of the Baltic Sea and offering maritime solutions with the goal to prevent oil spills in the Gulf of Finland. In 2013, the project was granted 75,000 euros.

In Sweden, Fortum additionally sponsors the release of salmon and trout into the waters of Stockholm with the purpose of preserving the unique fishing in the city centre.

Fortum participates in the [Bettercoal](#) initiative promoting sustainability in coal mining. In

Sweden, Fortum is a member in the [Forest Stewardship Council](#) (FSC), an organisation promoting sustainable forest management, and a participant in WWF's [Global Forest and Trade Network](#) activities. These programmes aim to ensure the responsible sourcing of fuel and are primarily business-oriented interaction.

# Local communities

*Fortum collaborates closely with local communities in the municipalities where it has power plants. We are an important employer and significant tax payer in our operating areas. Our investments also improve the local infrastructure.*

We take local communities into account in power plant maintenance, improvement and environmental work, and we meet with local residents, e.g., at open-house events at power plants.

Examples of Fortum activities with local communities in 2013:

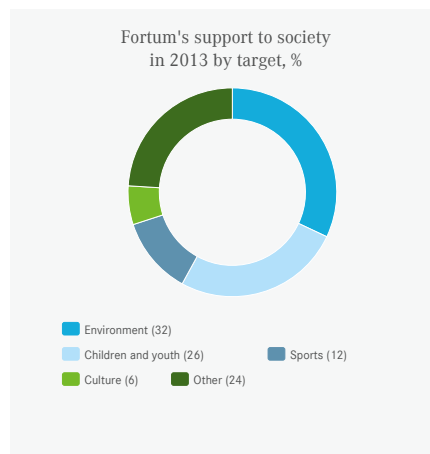
- In Finland and Sweden, Fortum supported projects to reduce the adverse environmental impacts of hydropower production and to promote biodiversity in built-up water systems. The company collaborates with universities, local authorities, fishermen and environmental organisations. In a number of projects, river basins are being restored and habitats for fish and freshwater pearl mussels are being improved. Many projects were carried out to improve recreational use of the Oulujoki river in Finland, especially in terms of swimming and boating. The projects were part of the framework agreement within which the municipalities of the region, Fortum and environmental authorities continuously work in tight cooperation.
- Fortum worked with the local authorities of the Oulujoki watershed to study how developing the regulation of the watershed could reduce flooding. Many meetings were held to give local residents information about water regulation and to discuss hydropower on a more general level.
- A significant share of Fortum's hydropower-related environmental work targets the impacts on fish stocks. Fortum aims to deliver information on these impacts and on the research projects funded by Fortum. Fortum participates in events organised by local fishing associations and in the activities of the migratory fish forum.
- Fortum is involved in lighting projects in cities and municipalities. In Stockholm, Sweden, various projects were implemented in 2013. Energy-efficient lighting on a popular running and walking path in Stockholm was implemented with support from the citizens who voted for the location. Within the same project, Fortum has also supported a charity campaign by the City of Stockholm to help homeless people.
- Fortum launched the National Clean River Championship in which 30 tonnes of garbage was collected during the one-day effort along the three big river banks. More than 1,000 young people collected funds for their recreational activities by cleaning up the river banks in Fortum's hydro power areas in Värmland, Dalarna, Hälsingland and Härjedalen.
- The Loviisa nuclear power plant publishes a stakeholder magazine called Naapurina voimala (Power plant as a neighbour) and holds regular discussions with the residents and representatives of the city of Loviisa, Finland.
- In the past three years Fortum has engaged in an active dialogue with local authorities, politicians and organisations in France about hydropower development. In the framework of the French National debate on energy transition, Fortum organised an event for French and Nordic players to discuss hydropower, biomass and marine energies.
- In Russia, Fortum supported various projects at its power plant locations in Chelyabinsk, Tyumen, Tobolsk and Nyagan. On a local level, we support a children's sports school and an ice hockey team as well as various cultural and residential events.
- The inauguration ceremony of the Klaipeda waste-to-energy power plant was held in May in the presence of the Presidents of the Republics of Lithuania and Finland. A similar inauguration ceremony was held in September in Jelgava, Latvia, accompanied by the Latvian and Finnish Presidents. The events triggered big media coverage on combined heat and power technology (CHP). Several groups have visited the power plants during their first months of operation.
- In Poland, Fortum met with local residents in different events organised in the municipalities where it has power plants. Open-house events were organised at the CHP plants in Zabrze and Czeszochowa. In four cities where Fortum has operations (Bytom, Czeszochowa, Wrocław and Zabrze) 1 000 runners participated in the Fortum Honorary Energy Donor programme. It lasted from March to September, and Fortum gave a donation to a charity organisation.
- For the third consecutive year, Fortum supported talented Silesian children who have grown up in difficult conditions. In 2013, 120 children participated in workshops organised by Fortum. Fortum also awarded scholarships for the children.
- In Bhilwara, India Fortum has equipped three schools providing education to around 1,200 students with solar-powered infrastructure. Solar panels will meet the schools' power needs in an efficient and sustainable way.
- In India, Fortum is also participating World Vision's Weconomy Start program aiming to find a win-win sustainable business concept to use local biomass in Fortum's CHP plants.

# Support for society

*Fortum supports organisations and communities working for the common good in the countries where we operate. The goal is for collaboration to be mutually beneficial.*

In 2013, Fortum's support for activities promoting the common good totalled about EUR 3.2 million (2012: 5.8), of which the share of grants awarded by the [Fortum Foundation](#) was about EUR 432,000 (2012: 780,000). Fortum Foundation supports research, education and development in natural and technical sciences as well as economics within the energy area.

“Fortum is the main financer of the solar economy professorship established at Lappeenranta University of Technology in 2013.



## Collaboration with universities and colleges

The goal of the collaboration with universities and colleges is to develop Fortum's business and to promote Fortum's research and development work and its recruiting and training opportunities.

A solar economy professorship focusing on the research and teaching of market mechanisms related to a solar economy began at Lappeenranta University of Technology in Finland 2013. Fortum is supporting the start-up of operations with a 75% share for a five-year period. Christian Breyer was nominated as the first solar economy professor.

In Sweden, Fortum is working with various stakeholders, for example the Royal Institute of Technology, to develop solutions for sustainable urban living in the Norra Djurgårdstad new residential area.

Projects include, among others, development of smart grids and analysis of carbon footprint in housing. Fortum also researches with the University of Karlstad how to improve the living conditions for fish migration in river environments.

In Poland, Fortum has developed a research programme for producing district cooling, which is currently being implemented in

collaboration with the Technical Universities of Wroclaw and Czestochowa.

In Russia, Fortum has a collaboration agreement with Ural Federal University for further training of Fortum employees and research collaboration in the energy sector.

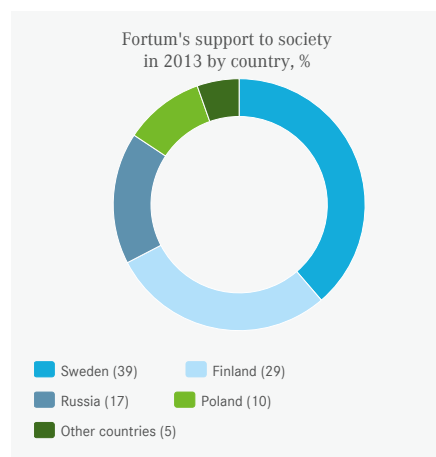
In Latvia, Fortum cooperates with Riga Technical University and Latvia University of Agriculture, and in Lithuania, with Klaipeda Technical School by providing internships for students as well as by supporting energy sector-related conferences and seminars.

“Fortum's sponsorship projects focus on youth activities, culture and activities to improve liveability at the local level.

## Sponsorship supporting youth sporting activities

In 2013, Fortum sponsored junior football and junior volleyball in Finland through the [Fortum Tutor programme](#). The goal of the junior football programme implemented in collaboration with the Football Association of Finland is to ensure each child can have an inspiring and motivating coach. About 100 tutors mentor the junior football coaches and provide them with useful tools for coaching.

A similar programme was launched with the Finnish Volleyball Association in January 2014 to strengthen the coaching of junior volleyball. The Fortum Para School Day tour, implemented in collaboration with the Finnish Paralympics Committee, encouraged children and young people at dozens of schools around Finland to engage in physical activities within their own capacities.



# Stakeholder views

*The Fortum sustainability themes that are most important to stakeholder groups are selected on the basis of the materiality assessment, the annual One Fortum survey, public discussion, media follow-up and the business value chain.*

## Key topics 2013

In 2013, the following issues important in terms of our company's operations were among the topics of public discussion in the company's market areas:

### Reliability of electricity distribution:

- In Finland the new Electricity Market Act requires electricity companies to be better prepared to handle widespread power outages caused by natural phenomena. The new Act entered into force on 1 September 2013. The new law includes the national legislation changes required by the EU's third internal energy market package.
- Fortum's preparedness to handle storm situations and their aftercare was better than in previous years. Fortum proactively informed customers through text messages and social media. Storm damage repairs were carried out more quickly than before.

## Read more about

- [Fortum's actions to improve weather-proof electricity distribution in Finland.](#)
- [The reliability of Fortum's electricity distribution](#)

### Divestment of Finnish electricity distribution business:

- The strategic assessment and divestment of Fortum's Finnish distribution networks has sparked an active public dialogue. There was public suspicion that the security of energy supply would collapse if Fortum's distribution networks were sold to foreigners. Additionally, it was assumed that divesting the networks would automatically lead to an increase in the electricity price for consumers. Distrust towards foreign owners emerged, and it was speculated that they lack the know-how and interest to invest in a grid in Finland.

- Fortum has communicated that the people who have taken care of the distribution network operations so far are the same ones who work in the new company. The new owner is governed by the laws of Finland and the Finnish authority oversees its operations.
- About 20% of Finland's distribution network is within the scope of the sale, so there is no impact on the security of supply. The new foreign owners are among the world's largest infrastructure investors and have experience also in electricity networks around the world. The authority's oversight model determines the profit from the distribution business, and the new owner operates within this framework.

### Change in electricity billing:

- With the installation of smart meters, there has been a switch to billing based on actual electricity consumption. In particular, switching to hourly-based metering, the correctness of billing after meter replacement, and discontinuing the instalment billing have caused uncertainty and discussion among customers. The bigger bill resulting from increased consumption during winter has come as a surprise to some people.

### Energy market functioning and development:

- Energy and climate policy and energy market development were important topics in the dialogue with the authorities in our different operating countries and at the EU level. Fortum has actively participated in the preparation of the EU's 2030 energy and climate package and in the related discussions.
- Fortum expects clarity and consistency from European energy policy in the face of the climate challenge. The company has emphasised setting ambitious and binding emissions target for 2030.
- Energy sector investments require a stable and long-term policy, because

decisions are made for the long-term and require significant capital. Transitioning to a low-carbon system as cost efficiently as possible requires a well functioning, integrated internal energy market. To develop the internal energy market, Fortum also suggests consideration of a more binding target to develop a cross-border electricity distribution network.

## Read more about

- [Carbon market development](#)

### Increased use of coal:

- Fortum's coal use increased in Finland, Sweden and Russia. There was an active discussion about the increased use of coal. The growth in the use of coal has increased local emissions in power plant municipalities, and the stakeholders' concerns are warranted. On the other hand electricity production in Fortum's coal-fired Inkoo power plant in Finland ended in February 2014. This has sparked a discussion in Finland about energy self-sufficiency. The use of coal at Fortum's Suomenoja CHP plant increased by nearly 90% from 2012. In 2013, coal's share of the total heat production in Espoo was about 80%. The increase in coal use is due to the higher price for natural gas and the decreased price for emission allowances coupled with the natural gas tax changes and lower electricity prices. At the end of the last decade, Fortum invested in a new natural gas-fired power plant that was believed to be competitive in the electricity and heating markets. Unfortunately, in the current situation, the plant operation is not profitable.
- At the Värtan plant in Sweden, the use of coal increased by a quarter from the previous year, due to the better availability of the plant and the elimination of the CO<sub>2</sub> tax overlapping with emissions trading.



- Fortum's responses to the discussion emphasise expanding the focus area from the local level to the entire market area. Fortum operates in the Nordic electricity market and on the European emission allowance market. Many internal and external factors affect these markets.
- In the United States, the entry of shale gas into the markets has increased gas use and reduced coal consumption. Europe has received a stream of more economically priced coal, and its use has increased. The profitability of energy produced with natural gas has weakened, and new gas-fired power plants have been shut down due to unprofitability.
- In EU's emissions trading, the emissions cap is set at the EU level. Even though, from a local perspective, the increase in a single power plant's carbon emissions is unfortunate, the EU's overall emissions target will be achieved. Conversely, if the use of fossil fuels were completely stopped in one EU country's electricity and heat production that is within the sphere of emissions trading, there would be no decrease in Europe's emissions, because the decrease in emissions in that particular country would make room for emissions growth elsewhere in the EU.

#### Taxation:

- In Finland, the power plant tax (previously called the windfall tax) has been adopted as of 2014. It will be applied provided that the European Commission finds that it is in line with the general tax principles and regime in Finland and that it does not include forbidden state aid to power plants excluded from the tax. The tax would target hydro, wind and nuclear power plants built prior to 2004. Fortum would be the single biggest payer of the tax, and its share of the tax would be about half, i.e. an estimated 25 million euros a year. Fortum has submitted a complaint to the European Commission and has requested clarification whether the tax treats companies in a similar situation in an equal manner and whether

the tax is prohibited State aid to plants excluded from the tax. In April, Fortum filed a complaint to the European Commission in order to find out whether the Swedish real estate tax on hydro-plants is in line with the EU regulations and whether the different tax levels of real estate on renewables, such as wind-, hydro- and biopower, are to be considered as state aid or not. The real estate tax for hydro power plants in Sweden will be increased by nearly 50% during 2013-2018.

- In January 2014, the non-profit organisation Finnwatch published a report regarding the role of holding companies in the operation of Finnish companies. According to the report, the 20 biggest companies, based on turnover, have over 225 holding companies in countries that Finnwatch classifies as tax havens. Fortum is also included in the report. The report and the ensuing discussion was widely communicated in the media. Fortum was the first Finnish company to publish its tax footprint in the Sustainability Report 2012.

#### Read more about

- [Fortum's tax footprint](#)

#### Progress and earnings expectations of the Russian investment programme:

- Fortum's investment programme and earnings expectations in Russia is regularly a source of interest for media and investors. Fortum has announced its target to achieve an operating profit level (EBIT) of about EUR 500 million run-rate in its Russia Division during 2015 and to create positive economic value added in Russia.
- The completion of the last units in Fortum's investment programme has been delayed by some months from the original timetable; the programme will be completed by the middle of 2015. The most significant part of Fortum's Russian

investment programme – two units at the Nyagan power plant – were inaugurated in September. The plant's inauguration was widely reported in Russian and Nordic media.

#### Read more about

- [Russia Division](#)

#### Hydropower's future in Sweden:

- A report published in Sweden about the need for changes in hydropower-related legislation sparked a dialogue about the future of hydropower. Hydropower plants may be forced to apply for new operating permits, and, in conjunction with the processing of the permits, the production of the plants may be limited. The impact would target the small hydropower plants in particular. Fortum views the change as a risk and emphasises that the use of emissions-free hydropower is essential in climate change mitigation, and it is of critical importance as regulating power in the Nordic markets. Fortum has an ongoing hydropower refurbishment programme to modernise plants. Additionally, Fortum is involved in voluntary environmental conservation efforts to reduce the adverse effects of hydropower and to safeguard the other uses of water systems.

#### Impact of hydropower on fish:

- During the year the status of the migratory fish stocks evoked a lot of discussion in conjunction with, among others, the salmon and sea trout strategy work lead by the Ministry of Agriculture and Forestry.

#### Read more about

- [How hydropower is involved and Fortum's view on fishing-related issues](#)

# Materiality assessment

Fortum's sustainability reporting focuses on describing operations important from the stakeholders' perspective and their impacts. The aim is to provide reporting that is comprehensive and transparent and takes into consideration all significant stakeholders. Our report is verified by a third party.

Fortum will move to GRI G4 reporting during 2014 and will publish its first sustainability report that is consistent with the G4 Guidelines in spring 2015. The G4 Guidelines highlight the reporting of aspects material to stakeholders and to company operations. Fortum will renew its materiality assessment in spring 2014 so that the stakeholder expectations and information gathered will provide the best possible transition to G4 reporting.

Fortum previously conducted a comprehensive stakeholder analysis in 2010. Since then, Fortum has assessed the issues material to different stakeholders based on the themes raised in the yearly One

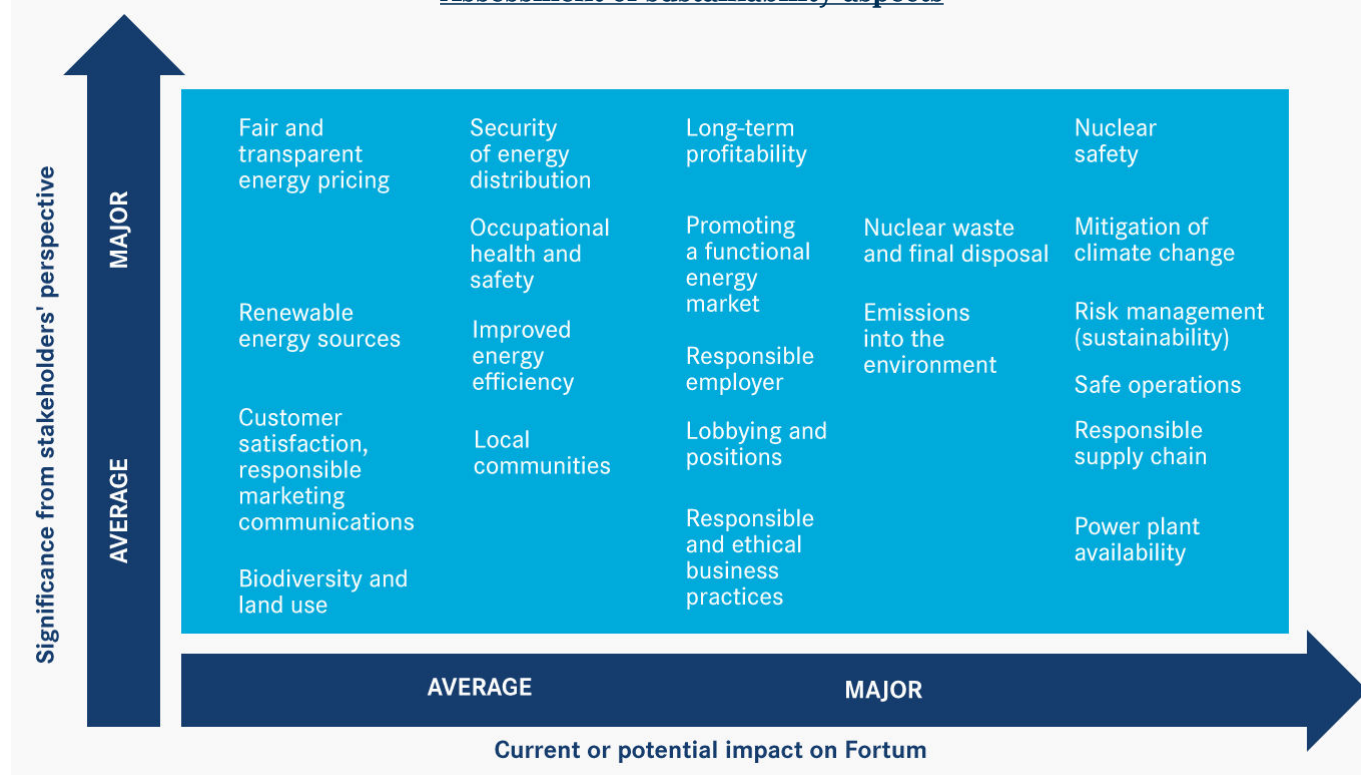
Fortum stakeholder survey and in the company's dialogue with stakeholders. For the 2013 report, Fortum also used the TVR report, published by the TwoTomorrows consultancy, and the Sustainability Topics for Sectors report, published by GRI, as external benchmarks.

Of the aspects assessed as material by Fortum, CO<sub>2</sub> emissions and climate change mitigation, operational safety, security of supply and power plant availability as well as customer service and customer satisfaction correspond very well with the aspects assessed as material by TwoTomorrows. For these aspects, Fortum has also set Group-level targets.

Fortum also has a Group-level target for energy efficiency, one of the aspects assessed as material by GRI. Energy production by fuel type and especially use of renewable energy sources are also listed as material aspects by GRI. Fortum also believes that future energy production will be based on a solar economy and presents the solar economy production forms as a category of its own in this report.

As government subsidies are recognised as a material aspect under economic responsibility by GRI, Fortum has included this information in its 2013 reporting.

## Assessment of sustainability aspects



# Customer satisfaction surveys

*Fortum annually measures customer and stakeholder satisfaction, as well as development of the company's reputation and the factors that impact it, through the extensive One Fortum and regular EPSI surveys.*

The One Fortum survey covers customers, governmental bodies, capital markets, non-governmental organisations and opinion leaders as well as Fortum's personnel. In 2013, the survey was conducted in Finland, Sweden, Norway, Poland, the Baltic countries and Russia, as in the previous year. For the Power Division, the survey also covered customers in Germany and Great Britain. In Finland and Sweden, the survey covered the general public as well. In addition, Fortum monitors customer satisfaction through regular EPSI customer satisfaction surveys in Finland, Sweden and Norway.

“ The results of the customer satisfaction surveys are reviewed by Fortum's top management and are used for planning and development of the company's business.

The survey results are reviewed by Fortum's top management and are used for planning and development of the company's business. In 2013, Fortum's reputation and customer satisfaction were part of the Group's sustainability target setting, and Fortum's reputation among the general public and customers were also part of the Group's short-term incentive system (STI).

## Better image among customers and the general public

The results of the One Fortum Survey for 2013 were mainly positive in regards to reputation and customer satisfaction. Compared to 2012, Fortum's reputation improved noticeably amongst the general

public and customers. Customer satisfaction also increased, compared to the previous year. Fortum's reputation has continually gained strength over the last three years that the One Fortum survey has been conducted.

Fortum's reputation improved not only amongst customers and the general public, but also amongst government representatives. However, its reputation slightly declined amongst capital market operators, employees, opinion leaders and civic organisations. Fortum's reputation is still the highest in the opinions of capital market operators, despite the slight downturn in its reputation amongst this group.

In all divisions of Fortum, customers were more satisfied than before, but the Group's target for customer satisfaction was reached only in the Power Solutions business unit of the Power Division. Customer satisfaction among the ESD Division's business customers declined slightly after its rise in 2012.

As in the previous year, Fortum's leadership, operations and financial performance were given high scores. The reputation improved the most, especially among the general public, in two development areas identified the previous year: Customer Orientation and Social Responsibility. These two areas will continue to be important targets of development in 2014. Fortum's employer image and reputation among the employees also remained as development areas.

“ The improvement in customer satisfaction is the result of new customer-oriented products and services and our ability to provide guidance on energy efficiency.

The international and independent EPSI Rating annually surveys customer satisfaction with

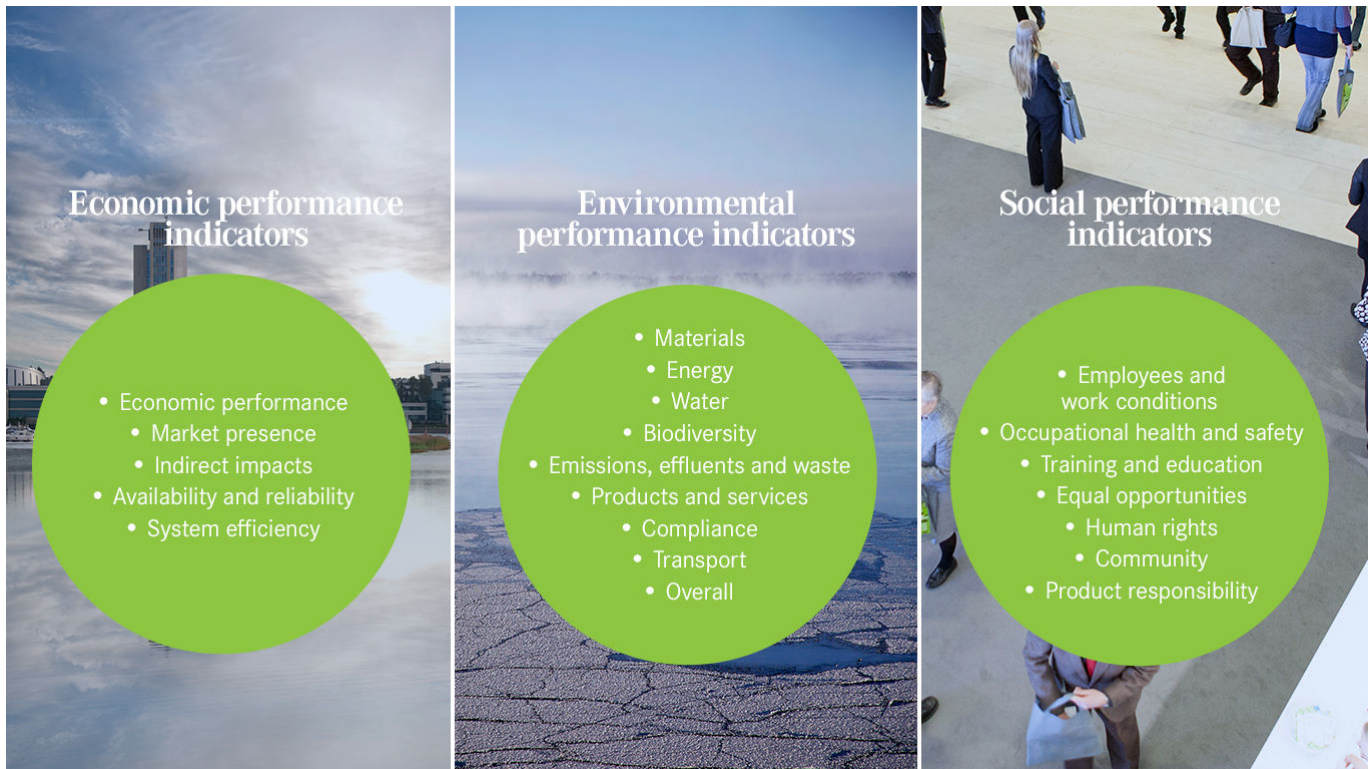
electricity retail companies in Finland, Sweden and Norway. Based on the 2013 EPSI survey, customer satisfaction with the electricity industry improved in Finland, Sweden and Norway. In Finland and Sweden, Fortum's customer satisfaction rose more than the industry average. In Finland, Fortum was the top gainer of the year. Our result in Norway was somewhat lower than in the previous year. The considerable improvement in customer satisfaction is the result of new customer-oriented products and services and our ability to provide guidance on energy efficiency.

Customers value the price-quality ratio of Fortum's products. Customer satisfaction among private customers in Finland has improved steadily since 2006.

Fortum's satisfaction index in Finland has risen 2.7 index units from the previous year. Fortum has improved its result among business customers in Finland by nearly 10 index units.

In December 2013, an indicator measuring Fortum's reputation among the general public, customers and employees was included in the long-term incentive systems (LTI) for the years 2014-2016.





## Sustainability management

*Fortum's sustainability approach, management model, roles and responsibilities together with target-setting are discussed in the report section Sustainability Approach. Fortum's governance model is discussed in the Governance Statement 2013.*

### Guiding policies and international commitments

The renewal of Group-level policies and instructions has been ongoing during 2012-2013. The renewed policies require the Board's approval. In June 2013, Fortum's Board of Directors approved Fortum Corporation's Sustainability Policy. Public policies will be available on Fortum's website

after the Board's approval. Our main policies and instructions supporting sustainability include:

- [Code of Conduct](#)
- [Supplier Code of Conduct](#)
- [Sustainability policy](#) (including environmental, and occupational health and safety policies)
- Human resources policy
- [Group risk policy](#)
- Sponsorship steering document Group manual on investment evaluation and approval procedure
- Group instructions on Competition Law
- Group instructions on anti-corruption and anti-bribery
- Group instructions for safeguarding Fortum's assets
- Group instructions for conflicts of interest
- Biodiversity guidelines

- Minimum requirements for EHS management

Fortum respects and supports the United Nations Universal Declaration of Human Rights, the United Nations Convention on the Rights of the Child, and the core conventions of the International Labour Organisation (ILO). Additionally, Fortum recognises in its operations the statutes of the OECD Guidelines for Multinational Enterprises, the International Chamber of Commerce's anti-bribery and anti-corruption guidelines, and the Bettercoal initiative's Code on responsible coal mining. Fortum has been a member of the UN Global Compact initiative since June 2010 and joined the UN [Caring for Climate initiative](#) in November 2013.

## Management approach to economic responsibility

Fortum's economic responsibility emphasises strong financial performance, profitable growth and added value over the long term. A company that is financially strong is able to be responsible for the environment, take care of its personnel, meet the needs of its customers, support the development of society and produce added value for its different stakeholders. Strong financial performance and growth must be achieved in compliance with sustainability principles and the company's target setting. Every new [research and development](#) project is assessed against carbon dioxide-free and resource efficiency criteria. Likewise, every new investment proposal is assessed against sustainability criteria as part of Fortum's investment evaluation and approval procedure. In investments we are looking for economically viable options that enable a capacity increase and reduced emissions.

Fortum's key financial figures are prepared and presented in compliance with International Financial Reporting Standards (IFRS). Fortum uses the information presented in the financial statements as well as the applicable Global Reporting Initiative (GRI) indicators for reporting economic responsibility and discloses in its Sustainability Report some figures that are collected as part of the financial statement process, but are not included in the actual [financial statements](#).

## Read more about

- [Economic performance indicators](#)

## Management approach to environmental responsibility

Environmental responsibility at Fortum emphasises the efficient use of natural resources and the need to mitigate climate change, and it highlights our know-how in CO<sub>2</sub>-free hydro and nuclear power production and in energy-efficient CHP production. Research and development activities create requisites for environmentally benign energy solutions.

Fortum's environmental management is based on the Group's policies and commitments as well as the international ISO 14001 standard; the goal is for all operative functions to have ISO 14001 environmental certification. During the year the Zabrze and Bytom operations in Poland and OAO Fortum's district heat network operations in Russia received ISO 14001 certification. At the end of 2013, the [certification rate of Fortum's operations was 100%](#). The certification rate is based on the share of sales generated in certified operations (2013 net sales values) out of Fortum's total sales.

Key environmental performance indicators include CO<sub>2</sub> emissions per produced kWh, energy efficiency and the number of EHS incidents. EHS incidents are reported monthly and CO<sub>2</sub> emissions and energy efficiency quarterly to the Fortum Management Team and regularly to the Board of Directors.

## Read more about

- [Environmental performance indicators](#)

## Management approach to occupational health and safety

Fortum's safety management emphasises the company's strategic intent to create a safe workplace for all individuals working in Fortum's operations. We believe that all work injuries are preventable. Safety management is based on the Group's policies and commitments as well as Group-level instructions and Group-defined minimum requirements for environmental and occupational health and safety work. Fortum's goal is for all operative functions to have OHSAS 18001, occupational health and safety certification.

At the end of 2013, the [certification rate of Fortum's operations was 73%](#). During the

year certification was awarded to Zabrze and Bytom operations in Poland and OAO Fortum's district heat network operations in Russia. The Electricity Solutions and Distribution (ESD) Division does not have OHSAS 18001 certification.

In reporting injuries, Fortum complies with the principles of the United States Occupational Safety & Health Administration (OSHA) and the ILO's Practice on Recording and Notification of Occupational Accidents and Diseases (1995) to the extent that they conform to the legislation in Fortum's countries of operation.

A key occupational safety performance indicator includes lost workday incident frequency (LWIF) for own employees which is reported monthly to Fortum Management Team and regularly to the Board of Directors. Operative management receives a comprehensive safety report covering both own employees and contractors, monthly.

## Read more about

- [Social performance indicators, occupational health and safety](#)
- [Well-being at work](#)
- [Occupational safety](#)

## Human resources and well-being management

Fortum aims to have engaged and satisfied employees. We want to create attractive career and development opportunities for individuals to continuously grow their professional skills and know-how. Fortum's Code of Conduct and HR policy guide HR practices, which are supported by Group-level HR processes: strategic planning, recruiting, personnel development, performance management, benefits and remuneration, and career and personal data management.

We value diversity and foster fair treatment and equal opportunity in recruitment, remuneration, development and advancement of employees, regardless of race, religion, political opinion, gender, age, national origin, language, sexual orientation, marital status and disability. The implementation of the HR practices is monitored through employee surveys, annual performance and development reviews as well as other feedback channels.

The focus areas of Fortum's HR management in 2013 were coaching leadership,



competence management and development aligned with the strategy, and development of Group-wide HR processes.

ForCARE is Fortum's well-being programme that comprehensively covers issues related to employee well-being. The programme's goals are to promote health and safety, support the employees' capacity to work throughout their career and promote the functionality of work communities at Fortum. Each member of the work community is responsible for their own well-being and competence and for the mutual development of well-being. The model is customised according to each country's legislation in collaboration with local occupational safety organisations, the personnel and management.

Well-being is monitored through sick leaves, which is tracked quarterly and the ratio between actual retirement and the statutory start of the retirement age. Employee survey, which is conducted at two-year intervals also includes index measuring well-being.

## Read more about

- [Social performance indicators, employees and work conditions](#)
- [ForCARE - A model for overall well-being at work](#)

## Human rights

Fortum's approach to human rights is described in Fortum's Code of Conduct, Supplier Code of Conduct and Human Resources policy. Fortum endorses the UN Universal Declaration of Human Rights, the UN Convention of the Rights of the Child, and

the key conventions of the International Labour Organisation. Additionally, Fortum recognises the statutes of the OECD Guidelines for Multinational Enterprises, the International Chamber of Commerce's anti-bribery and anti-corruption principles and rules, and the Bettercoal initiative's Code on responsible coal mining. Fortum has been a member of the United Nations Global Compact initiative since June 2010.

In 2013, Fortum included the UN Guiding Principles (Protect-Respect-Remedy Framework) on Business and Human Rights as part of its systematic country and partner risk assessment.

Supplier questionnaires and audit results assessing the realisation of human rights are recorded along with the corrective measures in the supplier database, which is available to all Fortum employees. Fortum has set a Group target for the number of audits and audits performed are reported quarterly to operative management.

## Read more about

- [Social performance indicators, human rights](#)
- [Sustainable management of the supply chain](#)

## Society

Fortum's Code of Conduct guides our management approach to [society](#). Fortum follows good business practices and ethical principles in all of its 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.

We base our customer relations on honesty and trust. We treat our suppliers and subcontractors fairly and equally and we choose them based on merit; and with the expectation that they will consistently comply with our requirements and with Fortum's Supplier Code of Conduct.

As an active corporate citizen, Fortum offers expert advice to decision makers and non-governmental organisations in energy-related issues. Fortum as a company does not support, directly or indirectly, any political parties or other political organisations, nor does it participate in financing election campaign for any candidates.

Through our business, Fortum interacts with millions of people. According to our Sustainability Policy, we want to develop our operations in co-operation with our stakeholders. Open, honest and proactive communication and listening to our stakeholders are important in targeting our strategic aims. Special attention is paid to the local communities and people around our production plants.

## Read more about

- [Social performance indicators, community](#)
- [Support for society](#)
- [Stakeholder engagement](#)

# Reporting principles

Fortum's Annual Report consists of four parts: Financials, Annual Review, Governance and Sustainability. The entire Annual Report will be published online in Finnish and English on Fortum's website.

Fortum as a company and key information on production capacity, customers, certified management systems and carbon dioxide emissions is described in the Annual Review.

The Sustainability Report reviews Fortum's operations in 2013 and also contains some information from January-February 2014. The 2012 Sustainability Report was published in

March 2013, and the 2014 report will be published in March 2015.

The report is divided into four sections. The first section describes sustainability as part of Fortum's strategy. The second section focuses on Fortum's business value chain and the role of different production and distribution forms in it. Fortum's key stakeholder groups and their expectations about Fortum's sustainability work are discussed in the third section. The standard disclosures of the Global Reporting Initiative (GRI) G3.1 Guidelines are presented in the fourth section.

Contact persons providing more information related to the report can be found on the [contacts page](#).

## Report scope and boundary

Reporting related to operations and management covers all functions under Fortum's control, including subsidiaries in all countries of operation. The consolidation includes the parent company Fortum Corporation and all the companies in which Fortum Corporation has the power to govern the financial and operating policies and in

which it generally holds, directly or indirectly, more than 50% of the voting rights. Possible deviations to this principle are reported in conjunction with information applying different boundaries.

The reporting of management practices does not fully cover Fortum's minority ownerships, and thus the defining of the scope of reporting is not fully compliant with the GRI Boundary Protocol. According to the GRI Boundary Protocol, entities with 50% ownership or less and with significant sustainability impacts should be included in the management approach disclosures. In Fortum's case, management practices of the Olkiluoto nuclear power plant (26% ownership), Kemijoki Oy (18% ownership in equity capital, 64% ownership in hydropower shares) and Turun Seudun Maakaasu ja Energiantuotanto Oy (49.5% ownership) in Finland and the management practices of the Forsmark (26% ownership) and Oskarshamn (46% ownership) nuclear power plants in Sweden are excluded from the reporting.

Information from previous years is 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 key indicators.

## Capacity changes

### New and acquired capacity

Four new CHP plants were inaugurated in 2013: Järvenpää (Finland), Brista (Sweden), Klaipėda (Lithuania) and Jelgava (Latvia). In Russia, two units of the gas-fired Nyagan power plant were commissioned. In addition, Fortum acquired Amrit Solar power plant in North-Western India.

The plants and capacity acquired during a year are included in reporting starting from

the takeover. The same principle applies to new capacity built and new plants inaugurated during the year.

### Leased and divested capacity

Fortum sold the Kuusamo Power Plant in Finland to Adven Oy on 1 October 2013. The Kuusamo Power Plant is included in Fortum's sustainability reporting for the period January–September. At the end of 2013 Fortum also sold the Kauttua and Nokia power plants, and the ownership of the Uimaharju power plant was transferred back to Stora Enso in accordance with the agreement signed in 1990. These plants are included in reporting for the whole year of 2013.

## 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. Normally, Fortum is the majority shareholder of such plants, but the company can be the holder of a plant's environmental permit also when it is a minority shareholder. In such cases, the plant information is reported in its entirety, but only the share of production and emissions corresponding to Fortum's share of ownership are calculated in the specific emissions figures.

Fortum utilises a Group-wide database with instructions for collecting site-level environmental data. Sites are responsible for data input, emissions calculations and assurance. The Corporate Sustainability unit compiles all data and is responsible for disclosed sustainability information.

Fortum's CO<sub>2</sub> 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 HeRMeS is currently used in Finland, Sweden, Norway and Poland, excluding the Zabrze and Bytom functions, and it is the main system for all employee-related personal and job data. In 2013, HeRMeS was introduced partly also in Estonia, Latvia and Lithuania. Other social responsibility data, such as occupational health-related data, originates from various data systems and is collected by the relevant contact persons and delivered to Corporate Sustainability unit in the format recommended by GRI.

### Global Compact reporting

Fortum has been a member of the United Nations [Global Compact initiative](#) since June 2010. This report describes the realisation of the Global Compact's ten principles in Fortum's operations. Global Compact approves the use of the indicators in the GRI G3.1 Guidelines in Communication on Progress (COP) reporting. The GRI index presents the indicators used to measure Fortum's performance in fulfilling the principles of human rights, labour standards, the environment and anti-corruption.

Fortum joined the 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 programme and by publishing its response on the CDP's website.

# Assurance

Fortum's Sustainability Report 2013 is published online in Finnish and English and can be read at [annualreport2013.fortum.com](http://annualreport2013.fortum.com). The report is based on the GRI G3.1 Guidelines. The Finnish version of the Sustainability Report is given limited assurance by Deloitte & Touche Oy, Fortum Corporation's financial auditors. The assurance scope covers the Finnish version of the sustainability reporting material presented at [annualreport2013.fortum.com](http://annualreport2013.fortum.com).

In addition to the G3.1 Guidelines Fortum has also reported, when applicable, some of the indicators presented in the Electric Utility Sector Supplement of the GRI. Sector-

specific additions to the G3.1 indicators have not been acknowledged. Fortum has conducted a self-assessment on the comprehensiveness of the reporting, as required by the GRI. The application level has also been reviewed by the assurance provider, and both parties are in agreement that Fortum has followed application level B+ of the GRI 3.1 Guidelines. In its reporting, Fortum has also adhered to the AA1000 Accountability Principles Standard (AA1000 APS).

The report content is not updated after assurance, and any amendments to the content will be reported the following year.

Deloitte & Touche Oy has also provided limited assurance for emission calculations (Scope 1-3) based on the GHG Protocol according to the requirements published by CDP ([Verification of Climate Data](#)). The assurance report will be delivered to CDP as part of Fortum's CDP reporting.

## Read more about

- [Assurance statement](#)

# GRI index

●	Fully reported
●	Partially reported
●	Not reported

## STANDARD DISCLOSURES PART I: Profile Disclosures

Code	Description	Inclusive-ness	Section/Further information
<b>1. STRATEGY AND ANALYSIS</b>			
1.1	Statement from the most senior decision-maker of the organisation	●	<a href="#">Annual Review/CEO's Review</a>
1.2	Description of key impacts, risks, and opportunities	●	<a href="#">Annual Review/Market Development</a> <a href="#">Sustainability targets and results</a>
<b>2. ORGANISATIONAL PROFILE</b>			
2.1	Name of the organisation	●	<a href="#">Annual Review/Fortum in 2013/Group business structure</a>
2.2	Primary brands, products, and/or services	●	<a href="#">Annual Review/Fortum in 2013/Group business structure</a>
2.3	Operational structure	●	<a href="#">Annual Review/Fortum in 2013/Group business structure</a>
2.4	Location of organisation's headquarters	●	<a href="#">Annual Review/Fortum in 2013/Group business structure</a>
2.5	Countries where the organisation operates	●	<a href="#">Annual Review/Fortum in 2013/Fortum's operations and market areas</a>
2.6	Nature of ownership and legal form	●	<a href="#">Annual Review/Financials 2013/The Fortum share and shareholders</a>
2.7	Markets served	●	<a href="#">Annual Review/Fortum in 2013/Group business structure</a>
2.8	Scale of the reporting organisation	●	<a href="#">Annual Review/Fortum in 2013/Group business structure</a>
			<a href="#">Annual Review/Fortum in 2013/Year 2013 in figures/Sales and production</a>
2.9	Significant changes during the reporting period regarding size, structure, or ownership	●	<a href="#">Financials/Operating and financial review /Financial performance and position/Capital expenditure, investments&amp;divestments of shares</a>
			<a href="#">Sustainability/GRI Section/Reporting principles</a>
2.10	Awards received in the reporting period	●	<a href="#">Sustainability/Sustainability Approach/Sustainability indexes</a>
			Fortum's Sustainability Report 2012 was selected as the winner in the Corporate Responsibility Reporting competition in Finland.
<b>3. REPORT PARAMETERS</b>			
3.1	Reporting period	●	<a href="#">Sustainability/GRI Section/Reporting principles</a>
3.2	Date of most recent previous report	●	<a href="#">Sustainability/GRI Section/Reporting principles</a>
3.3	Reporting cycle	●	<a href="#">Sustainability/GRI Section/Reporting principles</a>
3.4	Contact information	●	<a href="#">Contact information</a>
3.5	Process for defining report content	●	<a href="#">Sustainability/Stakeholder views/Materiality assessment</a>
			<a href="#">Sustainability/Our stakeholders/Stakeholder collaboration</a>
3.6	Boundary of the report	●	<a href="#">Sustainability/GRI Section/Reporting principles</a>
3.7	State any specific limitations on the scope or boundary of the report.	●	<a href="#">Sustainability/GRI Section/Reporting principles</a>

3.8	Basis for reporting on joint ventures, subsidiaries, leased facilities, outsourced operations, and other entities that can significantly affect comparability from period to period and/or between organizations.	●	<a href="#">Sustainability/GRI Section/Reporting principles</a>
3.9	Data measurement techniques and the bases of calculations	●	<a href="#">Sustainability/GRI Section/Reporting principles</a>
3.10	Explanation of the effect of any re-statements of information provided in earlier reports	●	<a href="#">Sustainability/GRI Section/Reporting principles</a>
3.11	Significant changes from previous reporting periods in the scope, boundary, or measurement methods applied in the report.	●	<a href="#">Sustainability/GRI Section/Reporting principles</a>
3.12	GRI content index	●	<a href="#">Sustainability/GRI Section/GRI index</a>
3.13	Policy and current practice with regard to seeking external assurance for the report	●	<a href="#">Assurance Statement</a>

#### 4. GOVERNANCE, COMMITMENTS, AND ENGAGEMENT

4.1	Governance structure of the organisation	●	<a href="#">Governance/Corporate Governance Statement/Governing bodies of Fortum</a>
4.2	The Board Chair's function within the organisation's management	●	<a href="#">Governance/Corporate Governance Statement/Governing bodies of Fortum</a>
4.3	Independence of Board members	●	<a href="#">Governance/Corporate Governance Statement/Governing bodies of Fortum</a>
4.4	Mechanisms for shareholders and employees to provide recommendations or direction to the highest governance body	●	<a href="#">Sustainability/GRI Section/Social performance indicators/ Employees and work conditions</a>
			The shareholders have the right to make decisions over company matters in a General Meeting of Shareholders and to ask questions about the issues covered in the meeting. The operations and duties of the Annual General Meeting and the Board of Directors are explained in the Fortum Financials.
			<a href="#">Governance/Corporate Governance Statement/Governing bodies of Fortum</a>
4.5	Linkage between compensation for members of the Board and the management, and the organisation's sustainability performance	●	<a href="#">Governance/Remuneration</a>
4.6	Processes in place for the Board to ensure conflicts of interest are avoided	●	<a href="#">Governance/Corporate Governance Statement/Governing bodies of Fortum</a>
4.7	Process for determining the composition, qualifications, and expertise of the members of the highest governance body and its committees, including any consideration of gender and other indicators of diversity.	●	<a href="#">Governance/Corporate Governance Statement/Governing bodies of Fortum</a>
4.8	Mission, values, codes of conduct, and principles and the status of their implementation	●	<a href="#">Annual Review/Strategy</a>
			<a href="#">Sustainability/GRI Section/Sustainability management</a>
4.9	Procedures of the highest governance body for overseeing the organisation's identification and management of economic, environmental, and social performance, including relevant risks and opportunities, and adherence or compliance with internationally agreed standards, codes of conduct, and principles	●	<a href="#">Governance/Corporate Governance Statement/Governing bodies of Fortum</a>
			As of the beginning of 2013, results of the sustainability indicators are regularly reported to Fortum Board of Directors.
			<a href="#">Financials/Operating and financial review/Risk management</a>
			<a href="#">Sustainability/Sustainability Approach/Sustainability target setting</a>
4.10	Processes for evaluating the highest governance body's own performance	●	<a href="#">Governance/Corporate Governance Statement/Governing bodies of Fortum</a>
			The Board of Directors conducts an annual self-assessment.
4.11	Explanation of how the precautionary principle is addressed	●	<a href="#">Sustainability/Sustainability Approach</a>
			Sustainability assessment is part of every acquisition and investment.



			<a href="#">Financials/Operating and financial review/Risk management</a>
4.12	Externally developed economic, environmental, and social charters, principles, or other initiatives to which the organization subscribes or endorses.	●	<a href="#">Sustainability/GRI Section/Sustainability management</a>
			<a href="#">Sustainability/Our stakeholders/Stakeholder collaboration/Authorities and energy industry organisations</a>
4.13	Memberships in associations and advocacy organisations	●	<a href="#">Sustainability/Our stakeholders/Stakeholder collaboration/Authorities and energy industry organisations</a>
			<a href="#">List of collaboration partner can be found from Fortum's website</a>
4.14	List of stakeholder groups engaged by the organisation	●	<a href="#">Sustainability/Our stakeholders</a>
4.15	Basis for identification and selection of stakeholders with whom to engage	●	<a href="#">Sustainability/Our stakeholders/Stakeholder views/Materiality assessment</a>
			<a href="#">Sustainability/Our stakeholders/Stakeholder views/Customer satisfaction</a>
4.16	Approaches to stakeholder engagement	●	<a href="#">Sustainability/Our stakeholders/Stakeholder collaboration</a>
4.17	Key topics and concerns that have been raised through stakeholder engagement	●	<a href="#">Sustainability/Our stakeholders/Stakeholder views</a>

## STANDARD DISCLOSURES PART II: Disclosures on Management Approach (DMAs)

Description		Inclusive-ness	Section/Further information
<b>ECONOMIC RESPONSIBILITY</b>			
Aspects	Economic performance and indirect economic impacts	●	<a href="#">Sustainability/GRI Section/Sustainability management</a>
	Market presence	●	<a href="#">Annual Review/Market Development</a>
			<a href="#">Annual Review/Fortum in 2013/ Operations and market areas</a>
<b>ENVIRONMENTAL RESPONSIBILITY</b>			
Aspects	Materials, energy, water, emissions, effluents and waste, products and services, compliance and overall	●	<a href="#">Sustainability/GRI Section/Sustainability management</a>
			<a href="#">Fortum Sustainability Policy</a>
	Biodiversity	●	<a href="#">Sustainability/GRI Section/Sustainability management</a>
			<a href="#">Fortum Sustainability Policy</a>
			<a href="#">Biodiversity guidelines</a>
	Transport	●	<a href="#">Sustainability/GRI Section/Sustainability management</a>
			<a href="#">Fortum Sustainability Policy</a>
			<a href="#">Fortum's response to CDP</a>
<b>SOCIAL RESPONSIBILITY/LABOUR PRACTICES</b>			
Aspects	Employment, labor/management relations, occupational health and safety, training and education, diversity and equal opportunity and equal remuneration for women and men	●	<a href="#">Sustainability/GRI Section/Sustainability management</a>
			<a href="#">Fortum HR Policy</a>
<b>SOCIAL RESPONSIBILITY/HUMAN RIGHTS</b>			
Aspects	Investment and procurement practices, indigenous rights	●	<a href="#">Investment evaluation and approval procedure</a>
	Non-discrimination	●	<a href="#">Sustainability/GRI Section/Sustainability management</a>
			<a href="#">Fortum HR Policy</a>
	Freedom of association and collective bargaining, child labor, prevention of forced and compulsory labor and security practices	●	<a href="#">Sustainability/GRI Section/Sustainability management</a>
			<a href="#">Fortum HR Policy</a>
			<a href="#">Fortum Code of Conduct</a>

			<a href="#">Fortum Supplier Code of Conduct</a>
	Assessment, remediation	●	<a href="#">Sustainability /GRI Section/Sustainability management</a>
			<a href="#">Fortum HR Policy</a>
			<a href="#">Fortum Code of Conduct</a>
			<a href="#">Fortum Supplier Code of Conduct</a>
			<a href="#">Investment evaluation and approval procedure</a>

#### SOCIAL RESPONSIBILITY/SOCIETY

Aspects	Local communities	●	<a href="#">Sustainability /Our stakeholders/Stakeholder collaboration/ Local communities</a>
			<a href="#">Sustainability /Our stakeholders/Stakeholder views</a>
	Corruption, anti-competitive behavior and compliance	●	<a href="#">Fortum Code of Conduct</a>
			<a href="#">Supplier Code of Conduct</a>
	Public policy	●	<a href="#">Sustainability Policy</a>

#### SOCIAL RESPONSIBILITY/PRODUCT RESPONSIBILITY

Aspects	Customer health and safety	●	<a href="#">Sustainability /Our stakeholders/Stakeholder collaboration/ Customers</a>
	Product and service labelling	●	<a href="#">Sustainability /Our business/Electricity and heat sales</a>
	Marketing communications, customer privacy and compliance	●	<a href="#">Fortum Code of Conduct</a>

### STANDARD DISCLOSURES PART III: Performance Indicators

Code	Description	Inclusive-ness	Section/Further information
<b>ECONOMIC RESPONSIBILITY</b>			
<b>Economic performance</b>			
EC1	Direct economic value generated and distributed	●	<a href="#">EC1</a>
EC2	Financial implications and other risks and opportunities due to climate change	●	<a href="#">EC2</a>
			<a href="#">Financials/Strategic risks</a>
			<a href="#">Fortum's CDP reporting</a>
EC3	Coverage of the organisation's defined benefit plan obligations	●	<a href="#">Governance/Remuneration/Pensions</a>
EC4	Significant financial assistance received from government	●	<a href="#">Sustainability /Our business/Generating economic value for stakeholders/Fortum as a tax payer</a>
			Support not specified by categories.
<b>Market presence</b>			
EC5	Standard entry level wage by gender compared to local minimum wage at significant locations of operation	●	
EC6	Spending on locally-based suppliers	●	<a href="#">EC6</a>
			Local purchasing volumes presented in euros, not as percentages. A guiding policy on local purchasing is not available.
			<a href="#">Responsible fuel purchasing</a>
EC7	Procedures for local hiring	●	<a href="#">EC7</a>
			Local hiring policy not available.
<b>Indirect economic impacts</b>			
EC8	Development and impact of infrastructure investments and services provided for public benefit	●	<a href="#">EC8</a>

			On a larger scale, Fortum's investments in infrastructure – especially in the districting heating network in Russia – can be considered as providing public benefit, even though the investments also have economic benefits.
			<a href="#">Fortum's economic impacts</a>
EC9	Significant indirect economic impacts, including the extent of impacts	●	<a href="#">EC9</a>
			Negative, indirect economic impacts have not been analysed. Benchmarking has not been done.
			<a href="#">Fortum's economic impacts</a>
EU6	Management approach to ensure short and long-term electricity availability and reliability	●	<a href="#">Fortum in Brief/Group Business Structure</a> <a href="#">Our Business/Energy Distribution</a>
EU7	Demand-side management programs including residential, commercial, institutional and industrial programs	●	<a href="#">Our Stakeholders/Customers</a>
EU8	Research and development activity and expenditure aimed at providing reliable electricity and promoting sustainable development	●	<a href="#">Our Strategy/Research and Development</a>
EU9	Provisions for decommissioning of nuclear power sites	●	<a href="#">Financials/Consolidated financial statements Note 30 Nuclear related assets and liabilities</a>
EU10	Planned capacity against projected electricity demand over the long term, broken down by energy source and regulatory regime	●	<a href="#">EU10</a> <a href="#">Annual Review/Market Development</a> <a href="#">Financials/Operating and financial review/Capital expenditure, investments &amp; divestments of shares</a>
EU11	Average generation efficiency of thermal plants by energy source and regulatory regime	●	<a href="#">EU11</a>
			Generation efficiency of thermal plants reported for total production, without the breakdown required in the indicator.
EU12	Transmission and distribution losses as a percentage of total energy	●	<a href="#">EU12</a>

## ENVIRONMENTAL RESPONSIBILITY

### Materials

EN1	Materials used	●	<a href="#">EN1</a>
EN2	Materials used that are recycled input materials	●	<a href="#">EN2</a>

### Energy

EN3	Direct energy consumption	●	<a href="#">EN3</a>
EN4	Indirect energy consumption	●	<a href="#">EN4</a>
			Primary energy sources for purchased electricity are not exactly known.
EN5	Energy saved due to conservation and efficiency improvements	●	<a href="#">EN5</a>
EN6	Energy-efficient or renewable energy based products and services	●	<a href="#">EN6</a>
			Fortum offers electricity products produced with renewable energy sources. We also offer energy efficiency advice and devices (e.g. home displays) which help our customers to control their electricity consumption.
EN7	Initiatives to reduce indirect energy consumption and reductions achieved	●	<a href="#">EN7</a>
			Achieved reductions are not reported.

### Water

EN8	Water withdrawal	●	<a href="#">EN8</a>
			<a href="#">Environmental summary</a>

EN9	Water sources significantly affected by withdrawal of water	●	<a href="#">EN9</a>
EN10	Water recycled and reused	●	<a href="#">EN10</a>
<b>Biodiversity</b>			
EN11	Location and size of land owned, leased, managed in, or adjacent to, protected areas and areas of high biodiversity value outside protected areas	●	<a href="#">EN11</a>
EN12	Description of significant impacts of activities on biodiversity in protected areas and areas of high biodiversity value	●	<a href="#">EN12</a>
			Impacts have not been described in detail.
EN13	Habitats protected or restored	●	<a href="#">EN13</a>
			Size of habitats has not been reported.
			<a href="#">Reducing hydropower's environmental impacts</a>
			<a href="#">Reducing the environmental impacts of energy distribution</a>
EN14	Strategies, current actions, and future plans for managing impacts on biodiversity	●	<a href="#">EN14</a>
			<a href="#">Reducing hydropower's environmental impacts</a>
			<a href="#">Reducing the environmental impacts of energy distribution</a>
EN15	Number of IUCN Red List species and national conservation list species with habitats in areas affected by operations	●	<a href="#">EN15</a>
			No comprehensive study has been made on threatened species.
<b>Emissions, effluents and waste</b>			
EN16	Direct and indirect greenhouse gas emissions	●	<a href="#">EN16</a>
			<a href="#">Environmental summary</a>
EN17	Other relevant indirect greenhouse gas emissions	●	<a href="#">EN17</a>
EN18	Initiatives to reduce greenhouse gas emissions and reductions achieved	●	<a href="#">EN18</a>
			<a href="#">Hydropower</a>
			<a href="#">Emissions, effluents and waste/Increasing the use of biomass</a>
			<a href="#">CHP/Diverse use of fuels</a>
			<a href="#">Financials/Consolidated financial statements/Note 19.2</a>
			<a href="#">Capital expenditure</a>
EN19	Emissions of ozone-depleting substances	●	<a href="#">EN19</a>
EN20	NO <sub>x</sub> , SO <sub>x</sub> , and other significant air emissions by type	●	<a href="#">EN20</a>
			The whole list of heavy metals has not been reported, only mercury.
			<a href="#">Environmental summary</a>
EN21	Water discharge	●	<a href="#">EN21</a>
			Waste water volumes have not been reported by type of treatment.
			<a href="#">Reducing CHP's environmental impacts</a>
			<a href="#">Environmental summary</a>
EN22	Total weight of waste by type and disposal method	●	<a href="#">EN22</a>
			Waste volumes have not been reported in detail by type of treatment.
			<a href="#">Reducing nuclear power's environmental impacts</a>
			<a href="#">Nuclear waste management</a>
			<a href="#">Environmental summary</a>
EN23	Total number and volume of significant spills	●	<a href="#">EN23</a>

EN24	Weight of transported, imported, exported, or treated waste deemed hazardous	●	Not relevant for Fortum.
EN25	Water bodies and related habitats significantly affected by the reporting organization's discharges of water and runoff	●	<a href="#">EN25</a>
<b>Products and services</b>			
EN26	Initiatives to mitigate environmental impacts of products and services	●	<a href="#">EN26</a>
EN27	Percentage of products sold and their packaging materials that are reclaimed by category	●	Not relevant for Fortum.
<b>Compliance</b>			
EN28	Compliance with environmental law and regulations	●	<a href="#">EN28</a>
			Possible disputes have not been reported.
<b>Transport</b>			
EN29	Significant environmental impacts of transporting	●	<a href="#">EN29</a>
			Measures to mitigate environmental impacts have not been reported.
<b>Overall</b>			
EN30	Total environmental protection expenditures and investments by type	●	<a href="#">EN30</a>

## SOCIAL RESPONSIBILITY: LABOR PRACTICES AND DECENT WORK

### Employment

LA1	Total workforce by employment type, employment contract, and region, broken down by gender	●	<a href="#">LA1</a>
			<a href="#">Social summary</a>
LA2	Employee turnover	●	<a href="#">LA2</a>
			<a href="#">Social summary</a>
LA3	Benefits provided to permanent employees	●	<a href="#">LA3</a>
			<a href="#">Financial summary</a>
			<a href="#">EC3</a>
LA15	Return to work and retention rates after parental leave, by gender	●	

### Labor/management relations

LA4	Percentage of employees covered by collective bargaining agreements	●	<a href="#">LA4</a>
			Fortum does not monitor the unionisation of its employees.
LA5	Minimum notice period(s) regarding significant operational changes	●	<a href="#">LA5</a>

### Occupational health and safety

LA6	Percentage of total workforce represented in formal health and safety committees	●	<a href="#">LA6</a>
LA7	Rates of injury, occupational diseases, lost days, and absenteeism, and number of work-related fatalities by region and by gender	●	<a href="#">LA7</a>
			Rates of injury are not reported by country, occupational diseases reported only in Finland.
			<a href="#">Social summary</a>
LA8	Education and counseling to assist workforce members regarding serious diseases	●	<a href="#">LA8</a>
LA9	Health and safety topics covered in formal agreements with trade unions	●	

### Training and education

LA10	Average hours of training per year per employee by gender, and by employee category	●	
LA11	Programs for skills management and lifelong learning	●	<a href="#">LA11</a>



			Programs for managing career endings not reported.
LA12	Performance and career development reviews, by gender	●	<a href="#">LA12</a>
<b>Diversity and equal opportunity</b>			
LA13	Composition and diversity of governance bodies and employee categories	●	<a href="#">LA13</a>
			Minority groups are not reported.
			<a href="#">Social summary</a>
			<a href="#">Governance/Board of Directors</a>
<b>Equal remuneration for women and men</b>			
LA14	Ratio of basic salary and remuneration of women to men	●	<a href="#">LA14</a>
			Reported excluding Russia.
<b>SOCIAL RESPONSIBILITY: HUMAN RIGHTS</b>			
<b>Investment and procurement practices</b>			
HR1	Human rights screening in investment decisions	●	<a href="#">HR1</a>
			Total number and percentage are not reported.
HR2	Suppliers and contractors that have undergone human rights screening	●	<a href="#">HR2</a>
			Percentage is not reported.
HR3	Employee training on policies and procedures concerning aspects of human rights	●	<a href="#">HR3</a>
			Training hours are not reported.
<b>Non-discrimination</b>			
HR4	Total number of incidents of discrimination and corrective actions taken	●	<a href="#">HR4</a>
<b>Freedom of association and collective bargaining</b>			
HR5	Operations in which the right to exercise freedom of association and collective bargaining may be violated	●	<a href="#">HR5</a>
			<a href="#">LA4</a>
<b>Child labor</b>			
HR6	Operations identified as having significant risk for incidents of child labor, and measures taken to contribute to the effective abolition of child labor	●	<a href="#">HR6</a>
<b>HR</b>			
HR7	Operations identified as having significant risk for incidents of forced or compulsory labor, and measures to contribute to the elimination of all forms of forced or compulsory labor	●	<a href="#">HR7</a>
<b>Security practices</b>			
HR8	Percentage of security personnel trained in aspects of human rights	●	
<b>Indigenous rights</b>			
HR9	Total number of incidents of violations involving rights of indigenous people and actions taken	●	
<b>Assessment</b>			
HR10	Operations that have been subject to human rights reviews and/or impact assessments	●	
<b>Remediation</b>			
HR11	Number of grievances related to human rights filed, addressed and resolved through formal grievance mechanisms	●	
EU16	Policies and requirements regarding health and safety of employees and employees of contractors and subcontractors	●	<a href="#">EU16</a>

EU17	Days worked by contractors and subcontractor employees involved in construction, operation and maintenance activities	●	<a href="#">LA1</a>
EU18	Percentage of contractor and subcontractor employees that have undergone relevant health and safety training	●	<a href="#">EU18</a>
			Percentage is not reported.

## SOCIAL RESPONSIBILITY: SOCIETY

### Local communities

SO1	Programmes that assess and manage the impacts of operations on communities	●	<a href="#">SO1</a>
			Percentage is not reported.
SO9	Operations with significant potential or actual negative impacts on local communities.	●	
SO10	Prevention and mitigation measures implemented in operations with significant potential or actual negative impacts on local communities	●	

### Corruption

SO2	Percentage and total number of business units analysed for risks related to corruption	●	<a href="#">SO2</a>
SO3	Percentage of employees trained in anti-corruption policies and procedures	●	<a href="#">SO3</a>
			Percentage is not reported.
SO4	Actions taken in response to incidents of corruption	●	<a href="#">SO4</a>

### Public policy

SO5	Public policy positions and participation in public policy development and lobbying.	●	<a href="#">SO5</a>
			<a href="#">Our stakeholders</a>
			<a href="#">Our stakeholders/Authorities and energy industry organisations</a>
SO6	Total value of financial and in-kind contributions to political parties, politicians, and related institutions	●	<a href="#">SO6</a>
			<a href="#">EC8</a>

### Anti-competitive behavior

SO7	Legal actions for anti-competitive behavior, anti-trust, and monopoly practices	●	<a href="#">SO7</a>
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### Compliance

SO8	Monetary value of significant fines and total number of non-monetary sanctions for non-compliance with laws and regulations.	●	<a href="#">SO8</a>
EU19	Stakeholder participation in the decision making process related to energy planning and infrastructure development	●	<a href="#">EU19</a>
			Projects are not reported.
EU21	Contingency planning measures, disaster/emergency management plan and training programs, and recovery/restoration plans	●	<a href="#">EU21</a>
			Specific projects/models are not reported on a local level.

## SOCIAL RESPONSIBILITY: PRODUCT RESPONSIBILITY

### Customer health and safety

PR1	Assessment of health and safety impacts of products	●	
PR2	Non-compliance with regulations concerning health and safety impacts of products	●	

**Product and service labelling**

PR3	Product information required by procedures	●	<a href="#">PR3</a>
			Percentage is not reported.
PR4	Non-compliance with regulations concerning product information and labelling	●	
PR5	Customer satisfaction	●	<a href="#">PR5</a>
			<a href="#">Our Stakeholders/Customers</a>

**Marketing communications**

PR6	Adherence to marketing communications laws, standards and voluntary codes	●	
PR7	Non-compliance with marketing communications regulations and voluntary codes	●	<a href="#">PR7</a>

**Customer privacy**

PR8	Total number of substantiated complaints regarding breaches of customer privacy and losses of customer data.	●	
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**Compliance**

PR9	Monetary value of significant fines for non-compliance with laws and regulations concerning the provision and use of products and services	●	<a href="#">PR9</a>
EU28	Power outage frequency	●	<a href="#">EU28</a>
EU29	Average power outage duration	●	<a href="#">EU29</a>

# Economic performance indicators

## Economic performance

### EC1 Direct economic value generated and distributed

Fortum analyses the economic impacts and produced prosperity from its operations to different [stakeholders](#) in its [operating countries and market areas](#). These include shareholders and investors, customers,

employees, suppliers of services and goods, and the public sector. In terms of suppliers, Fortum analyses its impact also globally, [paying special attention to risk countries](#).

In 2013, the difference between added value generated and distributed to stakeholders was EUR 1,136 million (2012: 746) for the development of own operations.

### Read more about

- [Generating value for stakeholders](#)
- [Fortum and taxation](#)

### Monetary flows by stakeholder group in 2011-2013

EUR million		2013	2012	2011
<b>Generation of added value</b>				
Income from customers	Income from customers on the basis of products and services sold, financial income and income from divestment of business activities or plants	6,539	6,398	7,192
Purchases from suppliers	Cash payments to suppliers of raw materials, goods and services	-3,067	-3,002	-3,272
Fortum produced added value		3,472	3,396	3,920
<b>Distribution of added value</b>				
Employees compensation	Wages, salaries, remunerations and other indirect employee costs	-529	-543 <sup>1)</sup>	-529
Funders compensation	Dividends, interest and financial expenses paid to investors	-1,216	-1,514	-1,431
Public sector	Income and production taxes paid, support for society and donations	-591	-593	-728
Distributed to stakeholders		-2,336	-2,650	-2,688
<b>Retained in business</b>		<b>1,136</b>	<b>746</b>	<b>1,232</b>

<sup>1)</sup> Comparative period information for 2012 has been restated due to the accounting change for pensions.

**Breakdown of Fortum's added value by operating country in 2011-2013**

EUR million	Capital expenditure			Employee costs			Taxes <sup>1)</sup>			Total		
	2013	2012	2011	2013	2012 <sup>2)</sup>	2011	2013	2012	2011	2013	2012	2011
Finland	266	338	239	208	221	209	153	137	250	627	696	698
Sweden	497	492	392	177	181	181	325	367	440	999	1,040	1,013
Russia	435	568	670	88	83	80	19	19	15	542	670	765
Estonia	16	10	12	5	5	7	1	1	0	22	16	19
Poland	10	19	18	15	18	21	7	10	8	32	47	47
Norway	13	36	19	15	16	14	2	2	1	30	54	34
Other countries	47	95	58	21	19	17	81	49	7	149	163	82
<b>Total</b>	<b>1,284</b>	<b>1,558</b>	<b>1,408</b>	<b>529</b>	<b>543</b>	<b>529</b>	<b>588</b>	<b>585</b>	<b>721</b>	<b>2,401</b>	<b>2,686</b>	<b>2,658</b>

<sup>1)</sup> Includes paid income taxes, production taxes and property taxes

<sup>2)</sup> Comparative period information for 2012 has been restated due to the accounting change for pensions.

Investments are not recognised in the calculation of distributed added value in

accordance with GRI, but Fortum has included investments in its own assessment

of economic impacts, as their annual volume and impact on the society is significant.

**Capital expenditure<sup>1)</sup> by country of operation in 2012-2013**

EUR million	Finland		Sweden		Estonia		Poland		Norway		Other countries		Total	
	2013	2012	2013	2012	2013	2012	2013	2012	2013	2012	2013	2012	2013	2012
<b>Power</b>														
Hydropower	17	12	91	86	-	-	-	-	-	-	-	-	108	98
Nuclear power	60	53	-	-	-	-	-	-	-	-	-	-	60	53
Fossil-based electricity	2	4	-	-	-	-	-	-	-	-	-	-	2	4
Renewable-based electricity	4	1	3	27	-	-	-	-	-	-	-	-	7	28
Other	1	1	-	-	-	-	-	-	-	-	0	6	1	7
<b>Total Power</b>	<b>84</b>	<b>71</b>	<b>94</b>	<b>113</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>0</b>	<b>6</b>	<b>178</b>	<b>190</b>
<b>Heat</b>														
Fossil-based heat	7	9	6	12	-	-	2	3	-	-	1	-	16	24
Fossil-based electricity	-	-	-	-	-	-	2	1	-	-	-	-	2	1
Renewable heat, of which	17	66	218	150	-	-	-	-	-	-	39	87	274	303
Waste	0	0	105	106	-	-	-	-	-	-	14	47	119	153
Biofuels	17	66	111	41	-	-	-	-	-	-	25	40	153	147
Other	-	-	2	3	-	-	-	-	-	-	-	-	2	3
District heat network	14	12	42	33	16	10	6	15	4	21	4	0	86	91
Other	5	12	14	32	-	0	0	-	-	-	0	1	19	45
<b>Total Heat</b>	<b>43</b>	<b>99</b>	<b>280</b>	<b>227</b>	<b>16</b>	<b>10</b>	<b>10</b>	<b>19</b>	<b>4</b>	<b>21</b>	<b>44</b>	<b>88</b>	<b>397</b>	<b>464</b>



Distribution	128	158	123	151	-	0	-	-	9	15	-	-	260	324
Electricity Sales	1	-	-	0	-	-	-	-	-	-	-	1	1	1
Other	10	10	0	1	-	-	0	-	-	-	3	-	13	11
<b>Total, excluding Russia Division</b>	<b>266</b>	<b>338</b>	<b>497</b>	<b>492</b>	<b>16</b>	<b>10</b>	<b>10</b>	<b>19</b>	<b>13</b>	<b>36</b>	<b>47</b>	<b>95</b>	<b>849</b>	<b>990</b>
<b>Russia</b>														
Fossil-based electricity													387	535
Fossil-based heat													48	32
Other													0	1
<b>Total Russia</b>													<b>435</b>	<b>568</b>
<b>Total, including Russia Division</b>													<b>1,284</b>	<b>1,558</b>

1) Includes capital expenditure to both intangible assets and property, plant and equipment.

Maintenance investments during 2013 in property, plant and equipment were EUR 239 million (2012: 247). Investments due to requirements of legislation were EUR 187 million (2012: 223). Investments increasing productivity were EUR 385 million (2012: 422) and growth investments were EUR 473 million (2012: 666).

## EC2 Financial implications and other risks and opportunities for the organisation's activities due to climate change

Climate change poses both financial, regulatory and physical risks as well as opportunities for Fortum. As energy production and use is the largest source of greenhouse gases, the energy sector has a central role in building a low-carbon future. The energy industry has established visions and roadmaps of the future energy system and is prepared to invest in new climate-benign production capacity, provided that the related policy framework and preconditions of society are in place.

The primary impact of climate regulation for Fortum is the price of carbon dioxide in the EU's emissions trading and the cost arising from it. This also determines the financial value for the reduction of emissions. The price of CO<sub>2</sub> 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 CO<sub>2</sub>-free and low-carbon production capacity.

In 2013, about 88% of Fortum's electricity production in the EU was CO<sub>2</sub>-free. In 2013, Fortum had a total of 83 (2012: 79) plants in six member states within the EU's emissions trading scheme. About 98% of the CO<sub>2</sub>

emissions in the EU area were included in the emissions trading system. In 2013, Fortum was granted 3.0 million tonnes in free emissions allowances. The company's emissions in the EU emissions trading scheme were 6.0 million tonnes. Thus, in terms of emissions allowances, Fortum showed a deficit.

In the third, ongoing ETS period, 2013-2020, the volume of Fortum's free emissions allowances will decrease significantly, because electricity production has to purchase all allowances from the market or auctions. Only in Poland and the Baltic countries, Fortum's CHP plants will receive free allowances also for electricity production on the basis of the derogation rules of the Emissions Trading Directive.

In Russia, Fortum's CO<sub>2</sub> emissions are growing in upcoming years as a result of the increasing energy production capacity. In Russia, carbon dioxide emissions do not have economic value, so far. During the Kyoto period 2008-2012, the so-called Joint Implementation (JI) mechanism could be utilised. Fortum implemented several projects in this framework.

Fortum is participating in two international climate funds, the Prototype Carbon Fund (PCF) and the Testing Ground Facility (TGF). In 2013, Fortum received a total 325,000 emission reduction units from these funds. Of the emission reduction units received, 274,000 were CER units and 51,000 were

ERU units. Fortum's emission reduction units received so far total 710,000 and we estimate that we will still receive about 300,000 units during the funds' operating period.

Fortum is exposed to physical risks of climate change, including changes in weather patterns that may change energy demand and supply from, e.g., hydropower plants. More frequent and intensive storms may impact the operation and maintenance of the distribution network. Higher precipitation may affect hydropower production, dam safety and bioenergy supply. In addition to climate change mitigation, Fortum is also taking measures to adapt its operations to climate change and to take impacts into consideration in e.g. production planning and in evaluating growth projects.

Concern about climate change is expected to result in an increasing demand for low-carbon and energy-efficient energy products and solutions. Fortum's know-how in CO<sub>2</sub>-free hydro and nuclear power and in energy-efficient CHP as well as research and development in the future energy system and technologies, like wave and solar energy, can prove to be a competitive advantage. Fortum is investing in CO<sub>2</sub>-free production in Europe and sees business opportunities in providing climate-benign energy solutions for sustainable urban living and the electrification of transport.

## Read more about

- [Risks and opportunities of climate change for Fortum](#)

## EC3 Coverage of the organisation's defined benefit plan obligations

Fortum's pension arrangements conform to the local regulations and practices in each

country where Fortum companies operate; these are discussed in section 32 Pension obligations of [the notes of the Financials 2013](#).

# Market presence

## EC6 Policy, practices and spending on local suppliers

Fortum buys fuels, goods and services from international and local suppliers. A significant part of Fortum's [procurements](#) are related to

investments. Fortum classifies purchases as local for those countries in which Fortum has operations. The most significant purchases, excluding investments, are from the Nordic countries (EUR 1,685 million) and Russia (EUR 813 million).

[Fuels](#) accounted for about EUR 1,085 million of the total annual purchasing volume. Fossil fuels accounted for about EUR 864 million, biofuels about EUR 155 million and nuclear fuel about EUR 66 million.

### Purchases<sup>1)</sup> excluding investments in 2011-2013

EUR million	2013	2012	2011
Nordic countries	1,685	1,612	1,903
Russia	813	769	692
Poland	143	161	148
Estonia	29	36	64
Other countries	103	99	44
<b>Total</b>	<b>2,773</b>	<b>2,677</b>	<b>2,851</b>

<sup>1)</sup> Includes purchases of fuel, power and other materials and services.

In 2013, Fortum's [investments](#), excluding acquisitions, were EUR 1,284 million (2012: 1,558), of which EUR 449 million (2012: 482) was for CO<sub>2</sub>-free production. Investments totalled 21% of sales (2012: 25%). Fortum's investments have a significant local impact, as they create business and job opportunities for local suppliers and develop the local infrastructure. The biggest investments were made in Russia, EUR 435 million (2012: 568), and in Sweden, EUR 497 million (2012: 492). Investments in renewable energy forms were EUR 389 million (2012: 429).

## EC7 Local hiring procedures and proportions of local senior management

Based on Fortum's definition, senior management consists of persons who are members of corporate function-level or division-level management teams. Fortum's business is global and covers several countries. Therefore, also function- and division-level management teams consist of several nationalities. The Russia Division's management team is an exception, with one

German member, and the rest being Russians.

Senior management, according to Fortum's definition consists of 72 persons. Of these, 61% are Finns, 21% Swedes and 14% Russians. Senior Management also includes one Norwegian, one German and one Polish person. In local hiring, Fortum uses advertised recruitment and direct search methods.

# Indirect impacts

## EC8 Infrastructure investments and services provided primarily for public benefit

Fortum supports [organisations and communities working for the common good](#) in the countries where it operates. The goal is for sponsorships to be mutually beneficial. Collaboration in research and development projects with Nordic universities in particular is significant. A solar economy professorship was established at Lappeenranta University of Technology in Finland 2013. Fortum is supporting the financing with a 75% share for a five-year period.

In 2013, Fortum's support for public benefit totalled about EUR 3.2 million (2012: 5.8), of which the share of grants awarded by the Fortum Foundation was EUR 432,000 (2012: 780,000). The purpose of the Fortum

Foundation is to support research, education and development in natural, technical and economical sciences within the energy industry. In 2013, Fortum Foundation granted scholarships to 38 students.

Fortum's investments in infrastructure – especially in [the district heating network in Russia](#) – provide public benefits. However, as Fortum's investments in district heating networks have also economic and environmental benefits, they are not regarded as investments for public benefit referred to in the GRI.

The amount donated to non-profit targets is decided by Fortum's Board of Directors. Donations are not awarded for any kind of political activities, religious organisations, authorities, municipalities or local administrations, nor are they ever part of business agreements.

## EC9 Significant indirect economic impacts, including the extent of impacts

Fortum supports social development and well-being by, e.g., [increasing local employment and paying taxes, salaries and social security costs](#). The [tax benefits](#) Fortum produces for society include income taxes and taxes related to the business operations – such as property, waste and fuel taxes. Fortum also has pass-through taxes, such as the value added tax, and withholding taxes, which Fortum is obligated to collect and report on behalf of the government.

The dividend income on the shares of the Finnish State has an impact on maintaining social infrastructure.

# Availability and reliability

## EU10 Planned capacity against projected electricity demand over the long term, by energy source and regulatory regime

Fortum is currently investing substantially in new energy production capacity both in

Russia and Europe. In Russia, Fortum is committed to a EUR 2.5 billion investment programme that will increase electricity capacity by 2,300 MW and heat capacity by 662 MW. The last units in the programme are scheduled for commissioning in 2015. The Russian investment programme is based mainly on natural gas, whereas the

investments in Europe (~800 MW electricity and 280 MW heat, under construction) target mainly CO<sub>2</sub>-free production.

# System efficiency

## EU11 Average generation efficiency of thermal plants

Fortum has a Group-level target (>70%) for overall efficiency of fuel-use as a 5-year average. Efficiency in 2013 was 61.4% (2012: 64.2%) and the 5-year rolling average 65.6% (2012: 66.9%). Fortum's target setting is based on the present production portfolio, planned new capacity both in Europe and Russia, as well as planned actions for increased efficiency and flexible fuel use.

### Read more about

- [Combined heat and power production](#)

## EU12 Transmission and distribution losses as a percentage of total energy

Fortum's power transmission and distribution losses totalled 1.4 TWh (2012: 1.4 TWh). This

corresponds to 3.2% (2012: 3.3%) of the total volume of power transmission and distribution. Guarantees of origin (CO<sub>2</sub>-free electricity) were acquired for all the electricity purchased for network losses.

### Read more about

- [Power distribution](#)
- [Heat distribution](#)

# Environmental performance indicators

## Materials

### EN1 Materials used by weight or volume

#### Fuel use

Fortum's materials and energy use mainly consists of [fuels](#). Fortum produces electricity

and heat from a diverse range of energy sources: in Europe mostly from renewable and low-carbon energy sources and in Russia from fossil fuels. In its operations, Fortum aims to use natural resources efficiently and sparingly.

Energy content of the fuels is described in [EN3](#).

Natural gas and 58% (2012: 57%) of solid and liquid fuels were of non-renewable origin.

#### Fuel consumption in 2011-2013

	2013	2012	2011
Natural gas, million m <sup>3</sup>	7,844	7,844	7,909
Coal, 1,000 t	3,092	2,536	3,587
Biomass and biofuels, 1,000 t	2,096	1,790	1,439
Waste-derived fuel, 1,000 t	987	806	754
Peat, 1,000 t	227	269	254
Fuel oil, 1,000 t	36	49	100
Nuclear fuel, t	20	21	23
Other fuels, 1,000 t	5	4	54

#### Fuel consumption by country in 2013

	Russia	Finland	Sweden	Poland	Other countries	Total
Natural gas, million m <sup>3</sup>	7,324	160	17	5	338	7,844
Coal, 1,000 t	1,152	1,290	249	402		3,092
Biomass and biofuels, 1,000 t		706	668	146	576	2,096
Waste-derived fuel, 1,000 t		75	765		146	987
Peat, 1,000 t		142			85	227
Fuel oil, 1,000 t	1	16	18		1	36
Nuclear fuel, t		20				20
Other fuels, 1,000 t			2		3	5

#### Other materials use

In addition to fuels, other materials used on a large-scale in energy production include chemicals for flue-gas cleaning, e.g., limestone, ammonia and urea.

### Use of chemicals in 2011-2013

tonnes	2013	2012	2011
Chemicals used for air pollution control	68,000	58,000	69,000
Chemicals for water treatment	13,000	13,000	14,000
Other chemicals and additives	4,500	8,600	3,200
Lubricants	540	200	470

### EN2 Recycled materials used

Fortum used 987,000 tonnes (2012: 806,000) of [waste-derived fuels](#) in Sweden, Finland and Lithuania. About 16,400 tonnes (2012: 37,300) of the waste-derived fuels used in Sweden originated from other

countries, including Norway, Great Britain and Ireland (combustible municipal waste, EWC 191210). Fortum and the waste supplier companies hold the licences for waste import. Fortum is responsible for reporting its annual imports of waste to the authorities.

Recycled input materials accounted for 15% (2012: 14%) of Fortum's fuel use volume (excluding natural gas) and 2.2% (2012: 1.8%) of the total energy content of fuels.

# Energy

### EN3 Direct energy consumption by primary energy source

Fortum's direct primary energy consumption in own energy production in 2013 was

140 terawatt-hours (TWh) (2012: 143). The most significant primary energy sources were natural gas, uranium and coal. Non-renewable energy sources accounted for 84% (2012: 82%) of the direct consumption of primary energy.

Renewable energy sources accounted for 29% (2012: 36%) of Fortum's power generation and 21% (2012: 20%) of its heat production.

### Direct energy consumption by energy source in 2011-2013

TWh	2013	2012	2011
Natural gas	73.6	76.0	75.6
Nuclear fuel	23.1	24.7	24.3
Hydropower	14.4	18.3	17.1
Coal	17.9	14.2	21.8
Biomass and biofuels	6.8	6.1	6.2
Waste-derived fuel	2.8	2.3	2.5
Peat	0.6	0.7	1.2
Fuel oil	0.4	0.6	1.3
Other fuels	0.1	0.1	0.2
<b>Total</b>	<b>139.7</b>	<b>143.0</b>	<b>150.2</b>

### Direct energy consumption by country in 2011-2013

TWh	2013	2012	2011
Russia	72.9	74.0	69.6
Finland	39.8	38.0	49.2
Sweden	18.2	22.1	21.5
Poland	3.0	3.7	3.6
Great Britain	3.4	3.3	4.1
Other countries	2.4	1.9	2.2
<b>Total</b>	<b>139.7</b>	<b>143.0</b>	<b>150.2</b>



As an exception to the generally applied reporting boundary in this report, the figures

shown below for Fortum's power and heat production by energy source in 2011-2013

include also production from shared companies.

#### Fortum's power production by energy source in 2011-2013

TWh	2013	2012	2011
Hydropower	17.9	25.2	21.0
Nuclear power	23.7	23.4	24.9
Natural gas	20.0	19.4	18.5
Coal	4.6	3.3	5.8
Biomass and biofuels	1.6	1.3	1.7
Peat	0.1	0.1	0.2
Other	0.8	0.3	0.6
<b>Total</b>	<b>68.7</b>	<b>73.1</b>	<b>72.7</b>

#### Fortum's heat production by energy source in 2011-2013

TWh	2013	2012	2011
Natural gas	26.1	27.0	28.6
Coal	5.7	5.3	7.2
Biomass and biofuels	5.2	4.9	5.2
Heat pumps, electricity	3.1	3.4	2.7
Waste-derived fuel	2.2	1.9	1.0
Oil	0.2	0.4	1.0
Peat	0.3	0.4	0.6
Others	0.0	0.0	1.0
<b>Total</b>	<b>42.8</b>	<b>43.3</b>	<b>47.3</b>

### EN4 Indirect energy consumption

Fortum's indirect energy consumption in 2013 was 5.1 TWh (2012: 4.6). The largest

part of this is electricity and heat acquired from external sources for operating power plants and for compensating for network losses in power distribution.

#### Indirect energy use in 2011-2013

GWh	2013	2012	2011
External heat procurement	2,384	2,196	2,366
Electricity transmission and distribution losses	1,374	1,432	1,402
Other external electricity procurement	1,340	962	969
<b>Total</b>	<b>5,098</b>	<b>4,590</b>	<b>4,737</b>

A major part of the external heat originated from the Enocell pulp mill in Finland and was produced from biomass. Electricity is bought from various suppliers and the exact primary energy sources are not known. Guarantees of origin (CO<sub>2</sub>-free electricity) were acquired for all the electricity for network losses.

By assuming 75% energy efficiency for power production and 85% energy efficiency for heat production, indirect primary energy consumption amounted to 6.4 TWh (2012: 5.8). The share of renewable energy sources

in indirect primary energy consumption was over 50%.

### EN5 Energy saved due to conservation and efficiency improvements

In combustion-based energy production, Fortum aims to utilise the fuel as efficiently as possible. Fortum's efficiency of fuel use was 61% (2012: 64%), while the

corresponding target is 70% as a five-year average.

Energy-efficient CHP production, in which up to 90% of the energy content of the fuel can be utilised, is Fortum's most important tool to increase the efficiency of fuel use. CHP plants accounted for 33% (2012: 32%) of Fortum's total electricity production and 83% (2012: 79%) of heat production.

The implementation of the energy analyses, energy-efficiency training and technology

measures related to Fortum Power and Heat Oy's 2008–2016 energy-efficiency programme continued in 2013. The goal of the programme is to improve energy efficiency in power plants in Sweden, Finland and Great Britain by 600 GWh per year. The main focus is on improving power plant efficiency and on increasing the capacity of CO<sub>2</sub>-free production. About 30 projects will be implemented every year. In 2013, the efficiency improvements resulted in energy savings of about 50 GWh (2012: 95).

During 2013, refurbishment was completed at Pyhäkoski power plant in Finland and at Edsforsen and Hansjö power plants in Sweden. In Sweden, refurbishment continued at Gammelänge power plant and new projects started at Noppikoski, Väsa and Skedvi power plants.

At Meri-Pori power plant, burners were replaced and soot blowers were refurbished to be more energy efficient. A heat pump project was launched at Suomenoja. The heat pumps will be used to annually recover about 300 GWh of thermal energy from the wastewater treated there. This thermal energy, which would otherwise go into the sea, equals the annual consumption of about 15,000 single family houses. The utilisation of waste heat to heat boiler air was started in Joensuu, and the oxygen control of heating plants was improved in Espoo.

Fortum is participating in the European electricity sector's [Energy Wisdom](#)

[programme](#) and reports on its projects that improve energy efficiency and reduce greenhouse gases.

### EN6 Initiatives to provide energy efficient or renewable energy-based products and services

Fortum is contributing to a low-carbon society by offering energy products and services that can help mitigate climate change and improve energy efficiency also in other sectors of society. Fortum provides customers with energy advice, offers energy-efficiency consulting and energy-saving products, like energy consumption metering devices (e.g. Kotinäyttö/Home Display), heating control systems and solar panels. A more detailed description of environmentally benign products is given in [EN26](#).

### EN7 Initiatives to reduce indirect energy consumption and reductions achieved

Own use of energy in a power plant can be reduced with technical modifications, systematic and preventive maintenance, and by training personnel in the optimal operation and monitoring of the plant's operational economy.

Fortum has invested in automatic meter management in power distribution in Sweden and Finland in recent years. This improves the quality of loss data and creates new possibilities for load management, which in turn reduces distribution losses.

Losses in power distribution can also be reduced by optimising network operations, increasing transmission capacity in lines with the highest loads and replacing obsolete transformers with new, more energy efficient ones. The impact of an individual measure is often minor and even the cumulative impacts can only be seen over the longer term. However, in the long term the network load tends to grow, which makes quantification of energy efficiency improvements difficult.

Fortum's power distribution losses were 1,374 GWh, which is a little less than in the previous year (2012: 1,432). The losses accounted for 3.2% (2012: 3.3%) of total power distribution volume. The volume of power distribution decreased to 21.6 TWh (2012: 26.6) and the volume of regional power transmission to 16.3 TWh (2012: 17.3).

The volume of electricity acquired from external sources for operating power plants, heat boilers and district heat networks was 1,340 GWh (2012: 962). Increase is based on more comprehensive reporting of electricity consumption of the district heat networks.

## Water

### EN8 Total water withdrawal by source

Fortum withdrew a total of 2,460 million cubic metres (2012: 2,210) of water, of which the majority, 2,245 million cubic metres (2012: 2,017), was used as cooling water in thermal power plants. Direct sea water cooling is applied at the condensing power plants in Finland. When cooling water flows through the condenser, its temperature

rises, but the volume of water remains unchanged.

Fortum's power plants in Russia and Poland use cooling towers where part of the water is evaporated into the atmosphere. In Russia, water is used also for pumping ash from coal-fired power plants into ash ponds.

In hydropower production, all the water runs through turbines, so the water volume and quality remain unchanged. Hydropower

production is not included in the above mentioned figures for water withdrawal.

In 2013, Fortum carried out a systematic survey on water use at all its power plants. Based on the survey, the water withdrawal volumes in 2011 and 2012 were recalculated, especially with regard to the cooling waters at our Russian power plants. Water withdrawal for heat pumps in Sweden is included as of 2012.

### Water withdrawal by source in 2011-2013

million m <sup>3</sup>	2013	2012	2011
Sea water	1,840	1,629	1,950
Fresh surface water	606	573	641
Tap water	8.4	8.1	8.6
Other source	5.3	0.2	0.2
<b>Total</b>	<b>2,460</b>	<b>2,210</b>	<b>2,600</b>

### Water withdrawal by country in 2011-2013

million m <sup>3</sup>	2013	2012	2011
Finland	1,764	1,538	2,071
Russia	544	526	524
Sweden	148	143	1.2
Great Britain	2.2	2.1	2.5
Poland	0.9	1.0	0.8
Other countries	0.5	0.3	0.4
<b>Total</b>	<b>2,460</b>	<b>2,210</b>	<b>2,600</b>

### Water use in 2011-2013

million m <sup>3</sup>	2013	2012	2011
Cooling water	2,245	2,017	2,517
Sea water to heat pumps	138	130	-
Process and auxiliary water	76	64	83
Recycled water	12.5	9.5	36

### EN9 Water sources significantly affected by withdrawal of water

Fortum withdraws sea, lake or river water. The withdrawn volume is small compared to the watercourse volume and flow, so none of these water sources is significantly affected. Water scarcity is not an issue in the operation areas of Fortum's power plants.

Poland is Fortum's only area of operation defined as water-stressed in the Global Water

Tool of the World Business Council for Sustainable Development. The criterion for water stress in the tool is 1700 m<sup>3</sup> of annual renewable water supply per person.

Fortum's power and heat plants in Poland are mostly small and use mainly municipal tap water. The aggregated water consumption is about one million cubic metres annually. No risk of shortage in the municipal water supplies has been identified in the areas where Fortum operates. All of our operations in water-stressed areas have ISO 14001 environmental certification.

### EN10 Percentage and total volume of water recycled and reused

The volume of water recycled was 12.5 (2012: 9.5) million cubic metres, which was 16% (2012: 15%) of the process water intake. The majority of the recycled water originated from the ash and wastewater ponds at our Russian power plants.

## Biodiversity

### EN11 Location and size of land holdings in areas of high biodiversity

Fortum has land holdings with energy production facilities in protected areas. In Finland, Fortum owns 52 hectares of land in 4 protected areas near Fortum's power

plants. Some 15 hectares of protected areas are on Fortum's land with electricity distribution facilities. The areas consist of natural conservation programme areas, nature and wilderness conservation areas, and Natura 2000 areas. In Sweden, 971 hectares in 12 protected areas are located within areas owned by Fortum near power plants. These areas consist of Natura

2000 areas and nature conservation areas. In addition Fortum has several land holdings in protected areas without energy production or distribution facilities. A more comprehensive list of Fortum's land holdings near conservation areas is available [here](http://annualreport2013.fortum.com/).

## EN12 Description of significant impacts of activities, products, and services on biodiversity

Fortum's impacts on biodiversity are above all related to hydropower production that Fortum has in the Nordic countries. Consequently the consideration of impacts and actions is geographically restricted mainly to the Nordic countries. Impacts are often local and mainly linked to the use of land and water areas. In some cases, the [impacts of hydropower production](#) are related to dams, which prevent fish migration and reduce the number of rapids as habitats.

In addition, Fortum's electricity distribution business and fuel procurement may have a negative impact in areas of high biodiversity. Fortum's discharges into water systems, particularly cooling and runoff waters, have only a minor impact on water systems and the related habitats and aquatic biodiversity.

Utilising fuels (for example, peat and biomass) in energy production can affect biodiversity. Biodiversity aspects are also taken into consideration in other [fuel purchasing](#). Fortum's only own fuel production site is the bio-oil plant commissioned in autumn 2013 in Joensuu, Finland. Bio-oil is produced from forest chips and other wood biomass, such as forest industry by-products, sourced locally from the Joensuu region.

## EN13 Habitats protected or restored

Fortum took part in several habitat restorations in 2013. In Finland, grayling and trout habitats were restored in three locations on the Vuoksi river. In the Utosjoki river, a tributary of the Oulujoki river, 16 areas were restored by placing rocks in rapids, adding gravel for spawning and watering small dry tributaries.

Restoration of Kiantjärvi lake's flood-meadows in Finland was implemented by creating nesting areas for birds and fish habitats. Almost 100 different bird species have been spotted in the flood-meadows during the breeding period.

In Sweden the freshwater pearl mussel was reintroduced to the Bultsjö river. The result and the survival of the mussels will be followed up during 2014. Fortum also financed the restoration of a small creek, Valvtjärnsbäcken, a tributary to the Ljusnan

river. The restoration will increase the freshwater pearl mussel's chances for reproduction.

At the Untra power plant on the river Dalälven, environmental management of the forests in an area of 260 hectares in Fortum's real estate has continued during the year. Various measures have been implemented to protect the very rich biodiversity in the forest, meadows and water. Continuous use of environmentally benign forest management practices will be monitored with ecological surveys.

## EN14 Managing impacts on biodiversity

Fortum's Biodiversity guidelines set the principles for taking biodiversity into consideration and for managing the impacts of the company's operations on biodiversity. Fortum recognises that biodiversity is an essential element of sustainable development on a global and local scale.

In January 2014 Fortum joined Finnish Business & Society's (FiBS) Corporations and biodiversity programme, which aims to increase companies' awareness about the significance of biodiversity in business, help companies understand and achieve the goals set for the protection of natural resources, and support companies' own development and improvement in environmental responsibility. Fortum is also participating in the Master Class training within the framework of the programme.

The main impacts on biodiversity are assessed in the pre-feasibility phase of any project, e.g., in hydropower projects, before the investment decision. If an investment project impacts a specific species, it may result in modification to the plant design or in the initiation of measures to preserve or restore the ecological value. Biodiversity impacts are assessed in depth as part of the EIA (Environmental Impact Assessment) process.

Fortum compensates for the environmental impacts caused by its hydro-power production by stocking several fish species. General biodiversity and environmental action plans for Finnish rivers with Fortum's hydropower production were completed in 2013. In Sweden, the work with biodiversity and environmental action plans is ongoing. An inventory of possible environmental measures in six Swedish rivers where Fortum

is one of the hydro-power operators was carried out during the year.

In addition to the legal obligations, Fortum reduces the environmental and biodiversity impacts of hydropower production with [voluntary environmental projects](#). Part of the funds used to the projects originate from the sales of Bra Miljöval -labeled (Good Environmental Choice) electricity in Sweden. In 2013, one project in Finland was financed with funding from the eco-labelled electricity. In 2013, Fortum spent about EUR 710,000 on various voluntary environmental projects related to hydropower production. All projects are typically carried out in cooperation with authorities, municipalities and research institutes.

In electricity network operations underground cabling protects biodiversity and reduces the impact on the landscape and birds. Measures to prevent bird collisions and electric shocks include isolation of the live parts of the network and mounting marker balls on overhead lines and landing perches on poles. New power lines will be built on public areas and roadsides whenever possible.

In biomass and biofuel purchases, Fortum aims to increase the share of certified wood fuel. This kind of fuel originates from sustainable energy sources in which, e.g. biodiversity is taken into consideration. During 2014, Fortum's goal is to start gathering data on the volume of certified wood-based biomass used as fuel in Finland and Sweden.

## EN15 Species with extinction risk with habitats in areas affected by operations

Fortum has not conducted a comprehensive study on the presence of species with extinction risk in the vicinity of its operating areas, but is continuously increasing the awareness of the endangered species in the vicinity of its power plants. The Saimaa ringed seal (*Pusa hispida saimensis*) is classified in Finland as an extremely endangered species on the IUCN's red list. There have been a few years when Fortum has altered water flows in the Vuoksi river to enhance the survival of seal pups in their nests.

One important threatened species in Finnish and Swedish rivers is the freshwater pearl mussel. Fortum has implemented several voluntary projects related to restoration of the mussel habitats. Fortum also funds Karlstad University's research project that is

producing information about the freshwater pearl mussel reproduction and the significance of the origin of the mussel's host fish (trout) on the life-cycle of mussels.

A threatened sedge species (*Carex heleonaste*) grows close to the Laforsen

hydropower plant on the Ljusnan river in Sweden. To protect this threatened species, annual maintenance work is carried out to ensure good living conditions for this species.

In Sweden, Fortum is participating in an eel (*Anguilla anguilla*) conservation project and

research together with seven hydropower companies and the Swedish Agency for Marine and Water Management (Havs och vattenmyndigheten).

# Emissions, effluents and waste

## EN16 Total direct and indirect greenhouse gas emissions

### Carbon dioxide (CO<sub>2</sub>)

Fortum emitted 21.4 million tonnes (2012: 20.7) of CO<sub>2</sub>. Of this amount, 72% resulted from the Russian operations and 16% from Finland. The increase in CO<sub>2</sub> emissions was mainly due to increased condensing power production in Finland.

The specific CO<sub>2</sub> emissions from total energy production rose to 196 g/kWh (2012: 177). The five-year average, including 2013, increased to 186 g/kWh (2012: 179).

The five-year average of the specific CO<sub>2</sub> emissions from total energy production have been increasing during the last five years, although we are still below the target level of < 200 g/kWh. The increase in the specific emissions is a result of the increased share of our Russian energy production based on natural gas and coal. In addition, use of coal increased in Finland and Sweden in 2013.

Fortum's total and specific CO<sub>2</sub> emissions will further increase in the future as a consequence of the commissioning of the

new production capacity in Russia. Moreover, the share of coal in the fuel use of our Russian power plants will evidently increase due to relative prices and availability of fuels.

The specific CO<sub>2</sub> emissions from power production in the EU were 70 g/kWh (2012: 42) and the five-year average, including 2013, was 66 g/kWh (2012: 60). Increase in emissions was mainly caused by increased coal condensing power production in Finland.

The specific CO<sub>2</sub> emissions from Fortum's power production are low compared to other major European power producers. Our specific emissions in 2012 were slightly over 10% of the average specific emissions of European utilities, 350 g/kWh. Including our Russian power production, our specific emissions were slightly below half of the level of European utilities. European reference data for 2013 is not yet available.

### Total greenhouse gas emissions

Fortum reports greenhouse gases in accordance with the principles of the Greenhouse Gas Protocol recommended by the Global Reporting Initiative (GRI), where emissions are categorised into scope 1, scope 2 and scope 3 emissions.

The reporting covers direct and indirect CO<sub>2</sub>, methane (CH<sub>4</sub>) and nitrous oxide (N<sub>2</sub>O) emissions. Indirect emissions are calculated using literature-based emission factors and assumptions on different parts of the fuel chains. Starting from 2013 the scope 3 greenhouse gas emissions have been calculated according to the requirements of the revised Corporate Value Chain (Scope 3) Accounting and Reporting standard.

About 79% (2012: 80%) of Fortum's greenhouse gas emissions were direct CO<sub>2</sub> emissions (scope 1), which are generated when burning fossil fuels to produce electricity and heat. Additionally, the direct emissions include the CO<sub>2</sub> emissions of company cars. The share of indirect emissions from electricity, heat and steam purchased from outside sources (scope 2) was about 1% of all greenhouse gas emissions.

Indirect emissions from the production and transportation of fuels, from purchased capital goods, materials and services, from the use and processing of our products, from employee travel and from waste generated in our operations (scope 3) accounted for about 20% (2012: 19%) of greenhouse gas emissions.

### Total greenhouse gas emissions, 2011-2013

MtCO <sub>2</sub> -eq	2013				2012				2011			
	CO <sub>2</sub>	CH <sub>4</sub>	N <sub>2</sub> O	Total	CO <sub>2</sub>	CH <sub>4</sub>	N <sub>2</sub> O	Total	CO <sub>2</sub>	CH <sub>4</sub>	N <sub>2</sub> O	Total
Scope 1	21.4	0.1	0.2	21.7	20.7	0.1	0.2	21.0	23.5	~ 0	0.2	23.7
Scope 2	0.3	~ 0	~ 0	0.3	0.1	~ 0	~ 0	0.1	0.2	~ 0	~ 0	0.2
Scope 3	5.5 <sup>1)</sup>			5.5 <sup>1)</sup>	1.9	2.9	~ 0	4.8	2.2	3.3	~ 0	5.5
<b>Total</b>	<b>27.2</b>	<b>0.1</b>	<b>0.2</b>	<b>27.5</b>	<b>22.8</b>	<b>3.0</b>	<b>0.2</b>	<b>26.0</b>	<b>25.9</b>	<b>3.3</b>	<b>0.2</b>	<b>29.4</b>

<sup>1)</sup> In 2013 scope 3 emissions reported only as CO<sub>2</sub>-eq, not gas by gas.



## EN17 Other relevant indirect greenhouse gas emissions

The refrigerants used at Fortum's heat pump facilities are strong greenhouse gases. Refrigerant leaks into air amounted to 5.8 tonnes (2012: 3.7), which is equivalent to 7,600 tonnes (2012: 5,100) of CO<sub>2</sub> emissions. The figures for 2012 have been restated based on corrected emission information.

SF<sub>6</sub> is used as isolation gas in switchgears at a number of substations located in urban areas. SF<sub>6</sub> is a strong greenhouse gas, but the gas volume is low and the gas is well confined in the equipment. In 2013, about 43 kg (2012: 24) of SF<sub>6</sub> was leaked into the atmosphere from Fortum's installations. This is equal to 980 tonnes (2012: 540) of CO<sub>2</sub> emissions.

## EN18 Initiatives to reduce greenhouse gas emissions and reductions achieved

### New CO<sub>2</sub>-free and low-carbon capacity

One of Fortum's most important measures in curbing climate change are to increase CO<sub>2</sub>-free or low-carbon energy production and to improve energy efficiency.

In line with its strategy, Fortum is focusing on CO<sub>2</sub>-free hydro and nuclear power and on energy-efficient combined heat and power (CHP) production. [Emissions trading](#) is also an important climate action at Fortum.

During 2013, we inaugurated four new biomass- and waste fuel-fired CHP plants in Järvenpää (Finland), Klaipėda (Lithuania), Jelgava (Latvia) and Brista (Sweden). The total production capacity of these power plants is 86 MW of electricity and 225 MW of heat. Currently we are building a 410-MW biomass-fired CHP plant in Stockholm in Sweden. New carbon-free and low-carbon capacity is described in more detail in the section on [Combined Heat and Power](#).

Refurbishment of our hydropower plants produced in total 12 MW of new capacity. Modernisation and power upgrades at nuclear power plants created 29 MW of additional carbon-free capacity.

## Increasing the use of bioenergy

Increasing the use of bioenergy was studied at many power plants. At the Värtan power plant, testing of the use of olive stones in the fuel mix continued and their share of the fuel use was 2%. At the Czeszochowa CHP plant in Poland, biomass accounted for one third of the total fuel use.

In November 2013, Fortum inaugurated a pyrolysis oil production plant at the Joensuu power plant. The plant will produce 50,000 tonnes (corresponding to 200-220 GWh of fuel energy) of bio-oil annually, and it is the first commercial-scale demonstration plant on pyrolysis technology. Primary raw materials will be sawdust and forest residues.

Pyrolysis oil will replace the use of heavy fuel oil in heat-only boilers and power plants. The use of 200 GWh of pyrolysis oil instead of heavy fuel oil can reduce CO<sub>2</sub> emissions by about 60,000 tonnes. In 2013, Fortum received an environmental permit for the use of pyrolysis oil at the Vermo heat plant in Espoo.

The biomass-fuelled combined heat and power (CHP) plant under construction in Stockholm, Sweden, will use primarily forest biomass, but can use a full range of other types of biomass as well. The share of bioenergy in fuel use at the Värtan plant will increase from today's 45% to as high as 70% upon completion of the plant in 2016. The use of fossil fuels will decrease accordingly.

In 2013, Fortum used 6,787 GWh of bioenergy (solid biomass and liquid biofuels), an 11% increase from the previous year.

## Read more about

- [Responsible fuel purchasing](#)

## Cutting emissions by improving energy efficiency

Fortum's activities in improving energy efficiency are described in [EN5](#).

## CCS as future abatement technology

Carbon capture and storage (CCS) is expected to have a key role in energy system transformation in the future. In 2013, Fortum

participated in CCS research programmes in Finland and the EU. Fortum was the main financier of Cleen's CCS research and is represented in the Zero Emissions Platform.

However, the feasibility of CCS still faces major technical, economic, social and political challenges. The current cost level of CCS does not yet offer solid business cases for successful investments. Fortum is focusing on so-called second-generation CCS concepts and technologies in its research and considers them more promising than the technologies researched so far. Research areas under development are e.g. use of bio-based fuels in district heating systems and related carbon capture and storage.

## EN19 Emissions of ozone-depleting substances

A variety of refrigerants are used in Fortum's heat pump facilities in Stockholm, Sweden, and in Espoo, Finland. Emissions of refrigerants into the atmosphere were 5.8 (2012: 3.7) tonnes, which is 13 kg (2012: 38) as CFC-11 equivalent. The figures for 2012 have been restated based on corrected source data.

## EN20 NO<sub>x</sub>, SO<sub>2</sub> and other significant air emissions

In 2013, Fortum's thermal energy production emitted 32,000 tonnes (2012: 29,400) of NO<sub>x</sub>, 22,100 tonnes (2012: 19,800) of SO<sub>2</sub> and 20,800 tonnes (2012: 16,000) of particle emissions. Due to technical and contractual limitations the use of lower quality coal increased at Russian power plants, which contributed especially to higher particle emissions. NO<sub>x</sub> and SO<sub>2</sub> emissions were also affected by increased condensing power production in Finland.

About 69% (2012: 72%) of the flue-gas emissions (SO<sub>2</sub> and NO<sub>x</sub>) and about 96% (2012: 96%) of the particle emissions originated from the Russian operations. The most significant source of particle emissions (13,500 tonnes in 2013) is the Argayash plant in Russia.

Fortum's mercury emissions into air were 151 kg (2012: 130).

## SO<sub>2</sub>, NO<sub>x</sub> and particle emissions by country in 2013

thousand tonnes	SO <sub>2</sub>	NO <sub>x</sub>	Particles
Russia	14.0	23.1	20.0
Finland	4.1	4.9	0.2
Poland	3.7	1.6	0.6
Sweden	0.1	1.2	0.0
Great Britain	0.0	0.3	0.0
Other countries	0.2	0.8	0.0

## Fortum's SO<sub>2</sub>, NO<sub>x</sub> and particle emissions in 2011-2013

thousand tonnes	2013	2012	2011
SO <sub>2</sub>	22.1	19.8	24.9
NO <sub>x</sub>	32.0	29.4	36.0
Particles	20.8	16.0	16.6

## EN21 Total water discharge

Energy production's impacts on water systems are mainly caused by the thermal load of cooling water discharges and the impurities in wastewater effluents. All wastewater is conducted directly to municipal sewage treatment plants or cleaned on-site before being discharged into water systems.

In 2013, Fortum used a total of 2,245 million m<sup>3</sup> (2012: 2,017) of cooling water that was mostly discharged back to water systems. The thermal load on the water systems

was 19 TWh (2012: 17). The biggest single water withdrawal in 2013 was at the Loviisa nuclear power plant in Finland, where 1,390 million m<sup>3</sup> of cooling water was withdrawn and discharged back to the sea. The thermal load into the sea was 16 TWh. Measurements indicate that the cooling water has increased the temperature of surface water by 1–2 °C within a distance of 1–2 kilometres from the discharge point. During the year, about two tonnes of oil was released into water systems with the waste water discharges from Fortum's power plants. In addition, about one tonne of oil was released into the

environment in three separate oil leak incidents.

In recent years there have been frequent violations of wastewater permits at Fortum's power plants in Russia. Corrective actions to improve performance continued in 2013; an anti-corrosive agent was changed and water flows through the ash ponds were separated and reduced at coal-fired power plants. In addition, a study was initiated on the installation of better oil separation systems.

## Waste water emissions by recipient in 2011-2013

million m <sup>3</sup>	2013	2012	2011
Sea	9.9	9.1	3.9
Fresh water system	22.6	22.9	20.7
Municipal sewage	1.9	2.7	1.7
Other recipient	0.1	0.3	0.2

## EN22 Total amount of waste by type and disposal method

Fortum's thermal power plants use millions of tonnes of solid fuels annually. Ash from incineration and gypsum from flue gas desulphurisation account for the clearly biggest share of the by-products and wastes from Fortum's energy production, over 90% on the average.

All energy production generates normal industrial waste, which is either recycled or disposed of at landfill sites. Part of waste is classified as hazardous waste and is

transported for treatment at licensed hazardous waste treatment plants. The volume of radioactive wastes generated in nuclear power production is small, but special solutions are needed in their treatment and disposal.

The total volume of by-products and wastes was 1,025,000 tonnes (2012: 773,000). The increase was mainly caused by increased volumes of ashes and contaminated soil.

## Ash and by-products

About 863,000 tonnes (2012: 720,000) of ash, 29,000 tonnes (2012: 9,200) of gypsum and 15,800 tonnes (2012: 10,100) of other desulphurisation product were generated in 2013. About 37% of the ash was generated at Russian plants, 22% in Sweden and 21% in Finland.

In Europe, ash and gypsum from desulphurisation are utilised and recycled as efficiently as possible. In Russia, ash is stored in ponds because it does not have other usages, except for building embankments for ash ponds. In addition, the wet ash handling

makes utilisation more difficult. In 2013, the ash recycling rate at Fortum was 48% (2012: 51) and the gypsum recycling rate 99% (2012: 89%). The gypsum utilisation rate for 2012 has been recalculated after reclassifying desulphurisation product from Suomenoja power plant as waste and not as gypsum.

Gypsum was utilised in the gypsum board industry. Fly ash was used in the construction

material industry, in road construction and in backfilling mines. In Finland, the Joensuu power plant submitted a permit application in order to construct a noise barrier around the power plant area. The power plant's own ash would be utilised in construction. The CE-marking for bottom ashes of Fortum power plants was started in 2013.

Any remaining by-products that cannot be utilised are deposited in landfills or

intermediate storage. About 453,000 tonnes (2012: 351,000) of ash, 290 tonnes (2012: 1000) of gypsum and 15,800 tonnes (2012: 10,100) of other desulphurisation product were deposited in landfill sites. All desulphurisation product from the Suomenoja power plant is disposed of as waste, since it has no potential for utilisation.

### Ash and gypsum handling in 2011-2013

thousand tonnes	2013	2012	2011
Ash utilisation	410	369	429
Ash disposal	453	351	400
Gypsum utilisation	28.8	8.1	30.6
Gypsum disposal	0.3	1.0	0.1

### Nuclear waste

Fortum used 20 tonnes (2012: 23) of [uranium fuel at the Loviisa nuclear power plant](#) and produced a corresponding amount of high-level radioactive nuclear waste. In addition, about 160 m<sup>3</sup> (2012: 130) of low- and intermediate-level radioactive waste was produced. After measuring the radioactivity, some of the low-level waste was reclassified as non-radioactive and was released from control to be disposed of like other conventional waste.

Low- and intermediate-level nuclear waste is disposed of in the underground repository at the power plant site in Loviisa. During

2013, 38 m<sup>3</sup> (2012: 57) of low-level maintenance waste was disposed of in the repository. At the end of the 2013, 16% of the current disposal capacity was in use. In 2013, 60 m<sup>3</sup> (2012: 49) of liquid waste was produced. This liquid waste, like evaporation waste and the ion exchange resins, will be solidified with concrete before final disposal. The solidification plant was in test use in 2013. The volume of the evaporation waste is further reduced with a caesium removal system before solidification.

### Other waste

Fortum's operations generated a total of 48,800 tonnes (2012: 42,000) of waste (excluding gypsum and ash deposited in landfills), 7,200 tonnes (2012: 10,400) of which was hazardous. In addition, 85,000 tonnes (2012: 3,100) of contaminated soil was removed in building and site remediation projects. Most of it originated from the foundation works of the new CHP plant under construction in Stockholm, Sweden.

### Read more about

- [Nuclear waste management](#)
- [Final disposal of nuclear waste](#)

### Waste handling in 2011-2013

thousand tonnes	2013	2012	2011
Recycling/recovery	12.4	12.7	8.1
Landfill	29.2	18.8 <sup>1)</sup>	16.5 <sup>1)</sup>
Hazardous waste recovery	2.0	4.7	-
Hazardous waste disposal	5.2	5.8	12.8
<b>Yhteensä</b>	<b>48.8</b>	<b>42.0</b>	<b>37.4</b>

<sup>1)</sup> Recalculated based on reclassification of Suomenoja desulphurisation product

### EN23 Total number and volume of significant spills

In 2013, there were 19 spills of more than 100 litres (2012: 11) into the environment. The total volume of the spills was about 20 m<sup>3</sup>. Most of the spills were bio-oil. The

biggest single leak was 10 m<sup>3</sup> of bio-oil at the Håsselby power plant in Sweden.

About 5.8 tonnes of refrigerants was leaked into the air from heat pump facilities. None of the spills caused major environmental impact.

### EN24 Transported, imported, exported, or treated hazardous waste

Not relevant for Fortum.

## EN25 Water bodies and habitats affected by discharges of water

Fortum's discharges of waste water and runoff have only a minor impact on water

bodies and related habitats. For a more detailed description, see [EN12](#) and [EN14](#).

# Products and services

## EN26 Mitigating environmental impacts of products and services

Fortum's main products are electricity and heat, the use of which does not cause direct emissions. Indirect emissions may be caused if electricity and heat are used in operations that themselves cause environmental impacts.

Fortum is building a low-carbon society by offering products and services that can help mitigate climate change also in other sectors

of society. Fortum's CO<sub>2</sub>-free electricity and heat products make it possible to reduce the environmental impacts of our customers' energy use (part of the customers' carbon footprint).

In Finland and in Sweden, Fortum's carbon-neutral heat product offers users the opportunity to influence their CO<sub>2</sub> emissions. Companies can purchase international emissions reduction units to offset the carbon emissions generated from the heating they use.

The CO<sub>2</sub> emissions reduction of our customers' energy use can be assessed by assuming that all the electricity sold by Fortum in Finland and Sweden (10.6 TWh in 2013) would have had the average specific CO<sub>2</sub> emissions of the Nordic electricity mix (258 g/kWh in 2012). Calculated this way the CO<sub>2</sub> emissions would have been about 2.7 million tonnes. The use of Fortum's CO<sub>2</sub>-free electricity generated no greenhouse gas emissions.

# Compliance

## EN28 Significant fines and sanctions for non-compliance with environmental regulations

In Fortum's European operations, two significant environmental non-compliances or permit violations occurred in 2013 (2012: 0): a release of coloured district heating water, and an excessive water level in hydropower

production. In Russia, the total number of non-compliances (12) related to discharge water emissions stayed at the same level as in 2012.

The amount of fines paid for discharge water permit violations in Russia remained at the 2012 level, i.e. about EUR 1,000. The actions to reduce the permit violations continued by changing the anticorrosion agent, increasing the water circulation, and separating and reducing the water flows through ash ponds

of the coal-fired power plants. Additionally, studies were initiated to install better oil separation systems.

At the beginning of 2014 Fortum received a fine of SEK 140,000 for a too low of a water flow in 2011 at the Ljunga hydropower plant in Sweden.

# Transports

## EN29 Environmental impacts of transportation

Fortum reports the greenhouse gas emissions of its company car fleet and the company benefit cars operated by its employees. In 2013, the CO<sub>2</sub> emissions from Fortum's cars were 2,500 tonnes. Fortum also reports the CO<sub>2</sub> emissions from the flights of its employees and offsets for the emissions

annually. In 2013, the CO<sub>2</sub> emissions from Fortum's air travel were 3,600 tonnes. Together, Fortum's cars and air travel accounted for 0.02% of the [total greenhouse gas emissions](#).

The indirect emissions from the shipping of coal, oil and wood fuels have been roughly estimated. The CO<sub>2</sub> emissions were about 193,000 tonnes, contributing to 0.7% of Fortum's total greenhouse gas emissions.

Transporting fuels and materials by road and rail results in emissions of SO<sub>2</sub>, NO<sub>x</sub> and particles. Fortum has no relevant information on the transport equipment of the fuel suppliers; therefore, these emissions cannot be calculated.

# Overall

## EN30 Total environmental protection expenditures and investments

### EHS expenditures

Fortum's Environmental, Health and Safety (EHS) expenditures (EHS investments and operating costs) are costs resulting from measures that primarily aim to manage and reduce the environmental impacts of Fortum's operations or to improve operational safety.

Costs are defined as EHS costs regardless of whether the measures are mandatory on the basis of legislation or permit conditions or whether they are voluntary. Costs related to environmentally benign products and services are also included.

In 2013, Fortum's investments in environment and safety were a total of EUR 69 million (2012: 63). The investments were mainly related to health and safety, air pollution control and dam safety. Operating costs related to the environment, health and safety were EUR 65 million (2012: 62). The costs include, e.g., use and maintenance of environmental protection equipment and

systems, emissions and environmental monitoring, decontamination of polluted soil, maintaining and developing biodiversity, development of EHS management systems, research and development work related to improving the management of environmental impacts, and the necessary environmental impact assessment reports and permit applications.

The figures are illustrative, because EHS costs and investments are not yet itemised in detail in cost accounting.

### EHS operating costs<sup>1)</sup> in 2012-2013

EUR million	2013	2012
Environmental research	22.3	24.4
Health and safety	7.1	11.1
EHS management	4.3	7.9
Air pollution control	12.9	6.1
Waste management	5.2	4.0
Prevention and remediation of soil and water contamination	1.2	2.3
Waste water management	2.4	2.2
Other environmental protection	5.3	2.1
Environmental compensations and fines	3.3	1.8
Development of environmentally benign products and services	0.8	0.3
<b>Total</b>	<b>64.8</b>	<b>62.2</b>

1) Allocated data was not collected in 2011

### Environmental liabilities

Environmental risks and liabilities in relation to past actions are regularly assessed and based on this necessary provisions are made for future remedial costs. In most cases environmental liabilities in relation to past operations relate to the dismantling of buildings and structures on contaminated land, remediation of contaminated areas or landscaping and after-treatment of closed disposal areas. During 2013, Fortum collected information on environmental risk cases of its operations. The aim is to categorise the identified cases and to define the related potential provisions in 2014.

In 2013, the provisions for future remedial costs concerning environmental damage amounted to a total of EUR 11 million. The

main part of the provisions is likely to be used within the next ten years.

In Sweden, third-party liabilities from dam failures are strictly the plant owner's responsibility. Together with other hydro power producers, Fortum has a shared dam liability insurance programme in place that covers Swedish dam failure liabilities up to SEK 9,000 million.

According to the renewed Nuclear Energy Act in Finland Fortum submitted the proposal for the nuclear waste management liability regarding the Loviisa nuclear power plant to the Ministry of Employment and the Economy at the end of June 2013. The legal liability is calculated according to the Nuclear Energy Act in Finland and is decided by the Ministry every year. The liability is based on a technical plan, which is made every third

year. Based on the new technical plan, the cost estimate was updated in early 2013. Following the update of technical plan, the legal liability increased due to anticipated increase in the future costs of interim storage and final disposal of spent fuel.

The legal liability by the end of 2013, decided by the Ministry of Employment and the Economy and calculated according to the Nuclear Energy Act, is EUR 1,059 million (2012: 996).

### Read more about

- [Nuclear related assets and liabilities.](#)
- [Environmental liabilities](#)

# Social performance indicators

## Employees and work conditions

### LA1 Total workforce by employment type and employment contract, broken down by region and gender

In 2013, an average of 10,246 employees (2012: 10,600) [worked at Fortum](#). The biggest number of employees was in Russia,

4,245 employees (2012: 4,301) on average. Subcontractor employees worked at Fortum sites for a total of approximately 1,961,526 (2012: 1,900,000) 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.

The number of Fortum's permanent employees on 31 December 2013 was 9,515 (2012: 9,899), i.e. 96.2% (2012: 95.4%) of the personnel. The number of full-time employees was 9,264 (2012: 9,644) and part-time 251 (2012: 255). The percentage of fixed-term employees was 3.8% (2012: 4.6%).

#### Workforce by employment contract and employment type, broken down by region and gender

	Finland		Sweden		Russia		Poland		Other countries		Total	
	M	F	M	F	M	F	M	F	M	F	M	F
<b>Employment contract</b>												
Permanent	1,743	645	1,335	550	2,894	1,049	496	137	464	202	6,932	2,583
Fixed-term	53	36	22	32	136	83	1	2	1	5	213	158
<b>Employment type (permanently employed)</b>												
Full-time	1,692	592	1,287	484	2,891	1,045	496	137	458	182	6,824	2,440
Part-time	51	53	48	66	3	4	0	0	6	20	108	143

#### Personnel statistics from 2013, by country of operation

	Finland	Sweden	Russia	Poland	Other countries	Total
Personnel at year-end	2,477	1,939	4,162	636	672	9,886
male	1,796	1,357	3,030	497	465	7,145
female	681	582	1,132	139	207	2,741
Personnel, average	2,616	1,993	4,245	660	732	10,246
Personnel expenses, 1,000 euros	207,427	177,085	87,905	14,881	41,702	529,000
Personnel expenses per person, 1,000 euros	79.3	88.9	20.7	22.5	57.0	51.6

#### Personnel by division, 31 Dec.

	2013	2012	2011
Power	1,709	1,846	1,847
Heat	2,102	2,212	2,504
ESD	1,348	1,379	1,417
Russia	4,162	4,253	4,379
Other	565	681	633
<b>Total</b>	<b>9,886</b>	<b>10,371</b>	<b>10,780</b>



### Service years<sup>1)</sup> of the permanent employees in 2012-2013, %

	2013	2012
0-5 yrs.	34	35
6-10 yrs.	18	15
11-15 yrs.	10	10
16-20 yrs.	10	10
21-26 yrs.	11	11
27-30 yrs.	8	9
31+	9	10

<sup>1)</sup> Data was not collected in 2011.

### LA2 Total number and rate of new employee hires and employee turnover by age group, country and gender

During the year, 552 (2012: 878) new employees joined Fortum and 910 (2012: 1,176) employment relationships were terminated. Divestments reduced the number of personnel by a total of 126 (2012: 259). There were 36 (2012: 36) employees on international assignment. Departure turnover in 2013 was 9.7% (2012: 12%)

### Read more about

- [Fortum's employees](#)

### Total number and rate of new employee hires and employee turnover by age group, country and gender

New employee hires	Finland		Sweden		Russia		Poland		Other countries	
	M	F	M	F	M	F	M	F	M	F
	no.	no.	no.	no.	no.	no.	no.	no.	no.	no.
-25	0	1	8	1	59	18	0	0	0	3
25-29	9	4	13	3	80	26	1	0	10	4
30-34	12	1	7	3	59	13	1	0	5	2
35-39	9	2	13	4	25	8	0	0	4	2
40-44	4	0	9	1	19	8	2	0	8	1
45-49	0	2	2	1	12	2	3	1	4	0
50-54	3	1	4	1	18	5	5	1	6	0
55-59	1	0	0	0	2	1	1	0	2	1
60+	0	0	0	0	1	1	1	0	8	0
<b>New recruits, %</b>	1.6	0.5	3.0	0.7	7.0	2.1	2.2	0.3	9.2	2.6

Employees leaving	Finland		Sweden		Russia		Poland		Other countries	
	M	F	M	F	M	F	M	F	M	F
	no.	no.	no.	no.	no.	no.	no.	no.	no.	no.
-25	1	0	2	5	25	7	0	0	4	1
25-29	10	3	3	4	37	17	2	0	14	3
30-34	19	3	13	10	34	20	4	2	17	1
35-39	17	6	14	12	37	10	2	1	10	2
40-44	17	8	16	8	27	22	5	2	11	1
45-49	10	4	16	5	28	11	7	4	15	4
50-54	13	4	10	6	34	11	5	5	8	3
55-59	18	2	13	5	32	13	11	5	8	3
60+	16	0	19	2	27	11	5	5	16	6
<b>Departure turnover, %</b>	5.1	1.3	5.6	3.0	7.1	3.1	6.5	3.8	20.2	4.7

## LA3 Employee benefits for full-time employees

In principle, Fortum's employee benefits are country-specific and comply with local legislation and the prevailing market situation. Local market practices and eligibility criteria are followed for typical fringe benefits and include, for example, car and mobile phone benefits. These benefits are mainly for permanent employees. In addition to fringe benefits, Fortum also provides various employee benefits. These include, for example, occupational health care, longevity pay for years of service, discounted electricity prices and recreational and leisure activities. These benefits are mainly for all employees.

Fortum in Finland is participating in the Tekes EVE - Electric Vehicle Systems Programme; employees choosing an electric company car will receive monthly monetary subsidy. The subsidy applies to battery electric vehicles (BEVs) and Plug-in Hybrid Electric Vehicles (PHEVs).

Fortum encourages its employees to exercise and to enjoy culture. In Finland, Sweden and Russia, all Fortum employees can join different personnel clubs offering activities related to sports, nature and the arts.

In 2013, Fortum's support for employee recreational and leisure activities in Finland was EUR 338,387 (2012: 415,000). The support included clubs, fitness and culture vouchers, and activities related to vacation homes. In Sweden, the support for clubs was EUR 121,622 (2012: 111,100). In Poland, support for employee fitness activities amounted to EUR 8,860 (2012: 19,300). In Russia, support for employee social programmes was about EUR 200,000 (2012: 309,000).

## Labour/management relations

Collaboration between employees and Fortum management is based on local legislation and the [Code of Conduct](#). In Finland, Fortum's employee representation

system is site- and company- and division-specific, and representatives in the co-operation bodies are chosen by the employee representatives from amongst themselves. Group collaboration meetings in Finland are held at least twice a year in conjunction with the Group's financial statements and interim reports.

In addition to Group collaboration meetings, there are also division- or function-level co-operation bodies that meet a few times per year. The co-operation and employment group is comprised of seven representatives chosen from amongst the delegates. This group holds meetings under the supervision of Senior Vice President, Human Resources approximately five times per year; it is the decision making body in Finland-level collaboration issues and it also appoints personnel representatives for the preparation of various development projects.

In Sweden, the system is fundamentally identical. In Sweden, collaboration between personnel representatives and Fortum management at the central level takes place in the Council (Sverigerådet) that convenes twice a year. The collaboration forms are based on the agreement made between the company and personnel representatives. Additionally, there are a significant number of meetings held locally during the year.

In Estonia, the Working Councils convened five times during 2013. These councils are for co-operation between an employer and the employees' representatives and focus on resolving, for example, occupational health and safety issues in the enterprise. Additionally, there are meetings between personnel representatives and employer representatives on an as-needed basis.

In Poland, some 35 meetings were arranged with the local labour union. The meetings focused on salary- and benefits-related issues, occupational safety, improving collaboration, and harmonisation of benefits.

In Russia, in line with local legislation, the collective bargaining agreement and the Fortum Code of Conduct, division management closely collaborates with union

representatives within the labour relations board and veteran council. These bodies meet on an as-needed basis to resolve various matters related to management and employees' relations.

As a rule, the Fortum European Council (FEC) convenes once a year. FEC is a Europe-wide co-operation body where employees and employer representatives meet to discuss Fortum matters. In 2013, the Fortum European Council (FEC) held a meeting in May in Finland, and personnel representatives from Finland, Sweden, Poland, Norway and Estonia participated. Issues on the Council's agenda included the CEO's current review; themed workshops included occupational health and safety, well-being as well as improving communication and the handling of confidential information.

## LA4 Coverage of collective bargaining agreements

Fortum respects its employees' freedom of association and collective bargaining, and does not monitor the degree of unionisation of its employees. Fortum applies local collective bargaining agreements in all countries where it operates, in compliance with the scope of each respective agreement.

## LA5 Minimum notice period regarding operational changes

In situations of organisational restructuring, Fortum negotiates with personnel representatives in compliance with each country's local legislation and contractual procedures. The minimum notice period is based on local legislation, collective agreements or employment contracts, which are in harmony with local legislation and agreements. In situations involving personnel reductions, Fortum aims primarily to support the re-employment of its personnel.

# Occupational health and safety

## LA6 Representation in joint health and safety committees

Fortum's occupational health care is organised in all countries of operation in accordance with local laws and regulations. [Workplace well-being](#) and [work safety](#) are regularly addressed also in occupational safety committees, which operate in line with local legislative requirements and represent all personnel groups.

## LA7 Rates of injury, occupational diseases, lost days, fatalities and absenteeism by area and by gender

Fortum's performance in [occupational safety](#) for its own personnel improved in 2013. The lost workday injury frequency (LWIF) per million working hours for Fortum's own personnel decreased to 1.1 (2012: 1.5). The result was Fortum's all-time best. There were 20 work-related injuries resulting in an absence in 2013 (2012: 29). All of the injuries happened to males. Fortum personnel's total recordable injury frequency (TRIF) per million working hours, which includes also minor injuries that do not lead to an absence, improved to 2.8 (2012: 3.4). There were no fatal accidents to own personnel during 2013. The number of serious occupational accidents to Fortum personnel, resulting in an absence of more than 30 days, increased from 3 to 5. Fortum personnel absence days resulting from work-related injuries increased slightly from 2012 to 599 days (2012: 560).

Safety management at Fortum equally encompasses contractors and service providers working at Fortum sites. The LWIF for contractors weakened from 3.8 to 4.8. In 2013, there was one contractor fatality at the Chelyabinsk CHP-2 unit in Russia. In February

2014 a fatal contractor accident took place in electricity distribution in Sweden. Unfortunately, both the total number of contractor accidents and the number of serious contractor accidents increased in 2013. There were a total of 76 contractor accidents leading to absence (2012: 57), 15 of them were serious and resulted in an absence of more than 30 days (2012: 7). Most of our organisations improved contractor safety, but due to the challenges in some parts of the organisation, the total result was unsatisfactory. The biggest challenges were experienced in improvement and investment projects in Sweden and Russia, and in repair and improvement works in electricity distribution.

Contractor safety remains a major challenge and will continue to be a focus area in 2014. Several ongoing initiatives have been extended and new initiatives started in order to improve the situation.

A common contractor safety management model was adopted during the year. In order to ensure an even higher focus on contractor safety, a contractor LWIF was included in the Group-wide targets as of 1 January 2014. Contractor safety will also have more significance in the bonus systems.

In 2013, the proactive indicator targets (safety reports and initiatives, completion of the agreed actions and safety observation tours) were achieved. The number of safety reports and initiatives increased considerably compared to 2012 due to the high activity in the Heat and Russia Divisions and the more clearly defined reporting practices in the Russia Division.

Plant safety was somewhat worse than in 2012. A new key performance indicator, major EHS incidents, was introduced as a Fortum-level indicator. It combines fires, leaks over 100 l, explosions, dam and nuclear safety (INES) incidents, and environmental non-compliances. Some clarifications concerning definitions and reporting were

made, so the result is not fully comparable to the previous years' results. The target for 2013 was to have fewer than 40 major EHS incidents. There were 51 incidents during the year 2013. The majority of the incidents did not cause damage to plants or the environment but some of the oil leaks caused the need for soil remediation and some of the fires and explosions resulted in short production disturbances. During 2013, there were two INES 1 (International Nuclear Event Scale) events at the Loviisa plant (2012: 3). They didn't cause any injuries to people or damage to the plant or the environment.

Fortum strives to ensure safe and healthy work conditions for personnel and supports the maintenance and development of working capacity. The monitoring of sickness-related absences is defined at the Group-level, and the rate of absence due to sickness was 2.5% in 2013 (2012: 3.1%); the rate of absence due to sickness was 2.3% (2012: 3.1%) for males and 3.3% (2012: 3%) for females. The sickness rate is calculated based on the reported theoretical working hours of the permanent employees.

In 2013, there were four (2012: 3) cases of suspected occupational diseases in Finland. The suspected occupational diseases are related to noise and occurred with males. In spring about 50 people working at the Högdalen power-plant in Sweden, reported respiratory track and skin symptoms. Based on the investigation done in collaboration with the Swedish Centre of Occupational and Environmental Medicine (Centrum för Arbets- och miljömedicin), the most obvious cause of the respiratory track symptoms was the higher than normal dust concentration combined with cold, dry weather. The skin irritation was most likely caused by tiny fibreglass-like fibres. None of the employees received permanent damage or illness. Immediate actions were taken at the plant to prevent a recurrence of the problem.

### Key safety figures in 2011-2013

	2013	2012	2011
Lost workday injury frequency (LWIF) <sup>1)</sup> , own personnel	1.1	1.5	1.6
Lost workday injuries, own personnel	20	29	29
Lost workday injury frequency (LWIF) <sup>1)</sup> , contractors	4.8	3.8	3.2
Lost workday injuries, contractors	76	57	45
Total recordable injury frequency, own personnel <sup>2)</sup>	2.8	3.4	3.5
Fatalities, own personnel	0	0	0
Fatalities, contractors	1	1	1
Number of safety observation tours	16,644	17,507	15,324
Number of improvement proposals and near-miss reports	21,876	6,362	10,087

<sup>1)</sup> LWIF = Lost workday injury frequency per one million working hours

<sup>2)</sup> TRIF = Total recordable injury frequency per one million working hours

### Sickness absence rate of the permanent employees in 2012-2013

	2013		2012	
	Male	Female	Male	Female
Finland	2.7	3.1	2.8	3.2
Sweden	2.3	3.7	2.2	3.9
Russia	2.0	1.9	2.1	2.2
Poland	2.6	4.6	3.5	5.0
Other countries	2.3	2.9	2.9	3.0

### LA8 Education and counselling to assist workforce members regarding serious diseases

All Fortum employees are covered within the sphere of Fortum's occupational health care as required by local legislation.

Fortum's occupational health care service emphasises the significance of preventive activities in promoting [well-being](#) in the company as well as employee counselling for work-related or serious illnesses. Fortum conducts regular examinations in accordance with local laws; employees who are exposed to e.g. noise, dust, radiation or 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 management by providing information on preventive actions as well as alternatives when the ability to work decreases. They also offer methods and tools for these situations.

In 2013, an average of 2,412 (2012: 2,660) employees in Finland was within the sphere of Fortum's occupational health care. About 90% (2012: 80%) of them used Fortum's own occupational health care services and about 10% (2012: 20%) used contracted health clinics. The total costs of Fortum's own occupational health care in Finland were about EUR 1.2 million (2012: 1.3). The occupational health care costs per person in Finland, calculated from the share paid by Fortum, were EUR 569 (2012: 580). Preventive activities accounted for 50% (2012: 43%) of occupational health care visits. In Sweden, all employees are within the sphere of Fortum's occupational health care services. 439 employees used the service (2012: 681). Occupational health care costs in Sweden were EUR 113 per person (2012: 130).

Fortum covers all employees' occupational health care in Fortum's countries of operation as required by law. In Russia, employees are within the sphere of a medical expenses insurance plan and can use private medical services. Also each production plant in Russia has a healthcare station with nursing-level first-aid services.

### EU16 Policies and requirements regarding health and safety of employees and employees of contractors and subcontractors

Everyday work is guided by Fortum- and local-level EHS (Environmental, Health and Safety) guidelines. There are some 20 Group-level safety instructions, such as instructions for contractor management, incident investigation, fire and electrical safety, asbestos management, change management, work permit system requirements, safety management in investment projects, risk assessment practices, deviation reporting and EHS training. Additionally, there are common minimum requirements also for EHS meetings, personal protective equipment and high-risk jobs. Local organisations address their relevant safety issues, such as nuclear power plant safety and dam safety, in more detail. The instructions apply to Fortum's own and contractor employees.

## Read more about

- [Safety](#)

### EU18 Percentage of contractor and subcontractor employees that have undergone relevant health and safety training

The safety of subcontractor and contractor employees is as important as the safety of Fortum's own employees. Contractor safety targets are set based on a continuous improvement principle, safety incidents and accidents are reported, accidents are investigated, and safety performance indicators are monitored on a monthly basis. Contractor and subcontractor safety is considered in all aspects of contractor management – from selection and job performance to the post-performance evaluation. Requirements are set forth in the corporate-level safety instructions and the

purchasing organisation's instructions, and the local organisation can have more specific instructions. During 2013, new requirements for contractor safety management were implemented. Additionally, locally, for example in Sweden and in Russia, improved practices were introduced after accidents occurred.

One of the key elements in the instructions is the requirement to provide proper induction training and on-site orientation to all workers, including contractors, before starting the work. Efficient induction training ensures a good understanding of site-specific risks, procedures and safety requirements. Induction training is valid for a limited period, typically, not more than three years. Induction training includes at least site-specific safety requirements, rules, instructions, work permit procedures, the main risks of the site and how to prepare for them, the required personnel protective equipment, near-miss and incident reporting, emergency response, inspections,

housekeeping, fire protection, first-aid systems, evacuation plans, and the individuals responsible for these tasks. Verification that the safety procedures and requirements given in the induction training are understood is ensured by using interpreters, when needed, and by testing. All of these requirements cover all types of contractors and subcontractors. Implementation of the training is the responsibility of the local organisations.

In 2013, safety training for subcontractors was again a focus. E-learning training was used in the ESD Division and in the Heat Division's Finland operations. In the Heat Division's Sweden operations, the improvement of the existing e-learning training was started. In the Russia Division, the contractor safety training procedure was improved by adding a post-training evaluation. More than 22,000 contractors were trained in Fortum's operations in 2013: some 15,000 in the Russia Division, and some 7,000 in the Heat Division, Sweden.

# Training and education

### LA11 Programmes for skills management and lifelong learning

Fortum offers its [employees](#) many internal training programmes to support the various development needs. As part of the Leading Performance and Growth initiative, Fortum has arranged a leadership development programme aimed at all managers. The key goal of the Leadership Impact programme has been to deepen the understanding and skills required from individuals in management positions to lead performance and growth. Increasing self-awareness and developing coaching skills have been central themes in the programme. In 2013, the main elements of the Leadership Impact programme were 360° assessments and a

one-day training event. Since autumn 2011, nearly 1,000 managers from all of Fortum's countries of operation have participated in the programmes offered in Finnish, Swedish, Polish, Russian and English. In the future, the same themes will be covered in a new MASTER course, Growing Leader, targeted mainly for new managers.

The aim of the MASTER courses offered to Fortum managers is to improve their competence in meeting the challenges of supervisory work. In addition, the intention is to harmonise and develop the way of operating in HR processes in Fortum. The one-day MASTER courses consist of theory, exercises and dialogue. In 2013, the main course themes were performance and development discussions, recruitment, labour laws, rewarding, growing in leadership, working environment and

convincing performance. There was a total of 16 MASTER training days with 163 participants.

In 2013, 107 employees (2012: 324) learned about Fortum's operations through the Fortum Passport online onboarding programme for new employees. The programme covers several different topics, including the Code of Conduct, sustainability principles and safety. The programme also includes a Joiner's Survey that is used to collect feedback about and develop the recruitment and onboarding process.

In 2013, training costs totaled approximately EUR 5.0 million (2012: 7.9).

### Level of education of the permanent employees in 2011-2013, %

	2013	2012	2011
Doctorate	1	1	0.5
University	37	35	34
Lower university	7	7	5.5
College	26	26	29
Vocational	22	22	21.5
Compulsory	3	3	3.5
Not indicated	4	6	6

### LA12 Employees receiving regular performance and career development reviews by gender

Fortum's permanent employees in all operating countries are within the scope of the performance and development discussion processes, which are implemented on a personal and/or team level. The annual performance and development reviews support the employee/supervisor dialogue about goals, achievements and opportunities for professional development. The discussions aim to commit and motivate employees, engage them in the implementation of the strategy, business

goals and operating plans, and improve operational planning, the workplace atmosphere and the flow of information, as well as promote performance and growth at the individual and corporate level.

Personal and/or team-specific targets aligned with Fortum's strategy are set at the beginning of the year. At the same time, the needed competence is verified and last year's performance is assessed. The achievement of targets forms the basis for incentives to be paid. Permanent employees, who have a minimum of three months of employment in Fortum are within the scope of Fortum's incentive plan. The aim is to implement a Fortum-wide performance and development model at all Fortum sites.

The performance and development process applies to all permanent employees, however, the electronic tool used in the process in 2013 covered about 67% (2012: 64%) of the personnel globally, out of which the performance and development process was conducted for 97% (2012: 96%). The performance and development process was nearly equally completed among female employees 95% (2012: 95.8%) and male employees 98% (2012: 96.3%). Company-wide completion rate will be available when all countries and employee groups are covered by the electronic tool.

## Equal opportunities

### LA13 Composition of governance bodies and breakdown of employees

Fortum promotes equal treatment and opportunities in recruiting, remuneration, development and career advancement, regardless of the employee's race, religion, political views, gender, age, nationality,

language, sexual orientation, marital status or possible disabilities. Any form of harassment is forbidden and addressed immediately. In Finland and Sweden, Fortum has separate guidelines for workplace harassment and discrimination. In 2013, there was no cases of discrimination reported (2012: 1).

The average age of Fortum's permanent employees in 2013 was 44 years (2012: 44),

and the share of employees over 50 years was 36% (2012: 36%). In 2013, women accounted for 28% (2012: 28%) of Fortum's total personnel. Women accounted for 31% (2012: 35%) of the Group- and division-level management teams. In 2013, the Board of Directors comprised seven members, three of them, including the chairman, were women.



### Personnel age distribution of the permanent employees in 2011-2013, %

	2013	2012	2011
-25 yrs.	3	3	3
25-29 yrs.	10	10	9
30-34 yrs.	13	12	11
35-39 yrs.	12	12	12
40-44 yrs.	13	13	14
45-49 yrs.	14	14	15
50-54 yrs.	15	16	16
55-59 yrs.	12	13	13
60+ yrs.	8	7	7

### LA14 Ratio of basic salary of men to women by employee category, by significant operation countries

In line with its HR policy, Fortum offers a fair, transparent and competitive compensation portfolio to its employees at all levels. Salaries and wages are based on local legislation and labour market agreements and are compliant with established practices in each country. Salary levels are based on personal work performance, on defined competence requirements, and the market situation in each country.

In Finland, the pay equality for men and women in white- and upper white-collar positions has been monitored since 2005. In 2013, reporting was also conducted with separation between personnel groups. Previously, comparisons in the 'workers' personnel group were not possible due to the small group sizes.

More comprehensive HR information system has made it possible to report pay equality also in other countries. In 2013, a comparison was made in seven countries: Finland, Estonia, Latvia, Lithuania, Norway, Poland and Sweden.

The difference in average base salary between male and female employees was -8%. The total number of employees included in the comparison was 4,695 of which 1,522 (32%) are female. When taking into consideration the female share in the comparison group, the difference in average base salary was -3%. The differences varied between countries, and years of service and job grade levels also contributed to the differences. The amount of women in different levels also has an impact. The most noticeable difference in favour for men was in Estonia where the average years of service for the male employees was nearly double that of the female employees.

## Human rights

### HR1 Investment agreements that include human rights clauses

A sustainability assessment is carried out for all of Fortum's investment projects and takes into consideration the environmental, occupational health and safety, and social impacts of the project. Projects requiring approval by the Fortum Management Team are additionally subject to an assessment and approval by Group-level sustainability experts. The sustainability assessment also includes a human rights evaluation, especially regarding new operating areas.

In 2013, Fortum implemented human rights assessment as part of a systematic country and partner risk.

### HR2 Suppliers and contractors that have undergone human rights screening

The majority of Fortum's [purchases](#) are from the Nordic countries. Fortum's purchases from risk countries are 11% (2012: 5%), excluding the Russia Division's suppliers. In 2013, Fortum conducted pre-selection on 261 suppliers (2012: 264). Pre-selection includes a supplier questionnaire and verification of credit. Pre-selection is done when the volume of the purchase exceeds EUR 50,000 and, in the case of a Nordic supplier, EUR 100,000. A supplier questionnaire is used to gather general, sustainability and human rights information about suppliers. In 2014, the aim is to harmonise the Russia Division's pre-selection with the Corporate instruction.

Fortum's [Supplier Code of Conduct](#) is implemented in all of Fortum's operating countries and it is included in all purchase agreements exceeding EUR 50,000. With the Supplier Code of Conduct, Fortum aims to ensure that e.g. the supplier provides safe working conditions for its employees, complies with rules and regulations, and reduces environmental impacts caused by its operations.

In 2013, Fortum continued sustainability and human rights related audits of suppliers of services and goods; the audits assess how the supplier meets the requirements of Fortum's Supplier Code of Conduct. A target was set to audit three main risk country suppliers per division, excluding the Russia Division. Fortum audited a total of 13 suppliers (2012: 10), around 70% of which operate in risk countries. This represents 11% (2012: 13%) of the risk country suppliers, excluding the Russia Division's suppliers. The audited suppliers have either a direct

contractual relation with Fortum or act as a subcontractor to Fortum's supplier. The emphasis in the audits was on biofuel suppliers and contractors.

## Read more about

- [Sustainable supply chain management](#)

## HR3 Human rights-related training for employees

Fortum's online course for the [Code of Conduct](#) includes training in human rights-related issues.

Fortum's own personnel are responsible for [supplier audits](#). Auditors 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 conformance with the requirements. The training also includes human rights-related issues. After the training, supplier audits are started together with an experienced auditor. Fortum's goal is to train auditors from different divisions and operating countries. In 2013, a total of 11 auditors from Poland and Sweden were trained.

## HR4 Incidents of discrimination and actions taken

In 2013, there were no cases of discrimination reported (2012: 1).

## HR5 Supporting the right to freedom of association and collective bargaining in risk areas, HR6 Measures taken to eliminate child labour in risk areas and in operations of significant suppliers and HR7 Measures to eliminate forced labour in risk areas and in operations of significant suppliers

The majority of Fortum's [purchases](#) are from the Nordic countries. Fortum's purchases from risk countries are 11% (2012: 5%), excluding the Russia Division's suppliers. In risk country classification, Fortum utilises the assessments of ILO Decent Work Agenda, Human Development Index of the United Nations and the Corruption Perceptions Index by Transparency International. Violations related to the environment and social issues are more probable in these countries than in no-risk countries.

Fortum respects employees' right to freedom of association and collective bargaining as well as the inviolability and integrity of labour union representatives. In Fortum's operating countries, freedom of association and collective bargaining are guaranteed by law, with the exception of India, which has not ratified the International Labour Organisation's (ILO) Convention on the right to freedom of association and collective bargaining. Fortum's functions in India have in place the same practices as in other countries of operation, and Fortum doesn't limit or prohibit the right to freedom of association.

All forms of child labour and forced labour are strictly prohibited and in violation of Fortum's Code of Conduct. Of Fortum's operating countries, India has not ratified the International Labour Organisation's (ILO) Convention on the minimum age and the worst forms of child labour. Fortum's functions in India require job applicants to be of adult age.

All forms of forced labour are strictly prohibited and in violation of Fortum's Code of Conduct. There has been no risk related to the use of forced labour identified in Fortum's own operations.

In 2013, Fortum continued sustainability related audits of suppliers of services and goods; the audits assess how effectively the supplier meets the requirements of Fortum's Supplier Code of Conduct. This also includes an assessment of the supplier's guidelines on preventing the use of child and forced labour and how the right to freedom of association is realised by the supplier. Fortum audited a total of 13 suppliers in 2013 (2012: 10), around 70% of which operate in risk countries. This represents 11% (2012: 13%) of the risk country suppliers. The figures exclude the Russia Division's suppliers.

The audits conducted did not reveal non-compliances related to child or forced labour, nor were there any non-compliances related to freedom of association and collective bargaining. However, a recommendation was given to listen to employees' wishes on official unionisation through a trade union. In current model, co-operation in the workplace was conducted between the employer and employees without a trade union.

# Community

## S01 Managing impacts of operations on communities

Open, honest and proactive communication and listening to our stakeholders are of key importance when striving for our strategic aims. Special attention must be paid to the local communities and people around our production plants.

Fortum conducts environmental impact assessments (EIA) in accordance with legislative requirements. Stakeholder

consultation is part of the EIA process. The environmental impact assessment programmes and reports are publicly available. In addition, relevant stakeholders are heard in all licensing procedures.

## EU19 Stakeholder participation in the decision-making process related to energy planning and infrastructure development

Fortum engages in an active dialogue about key issues in the energy sector and is involved in different associations and organisations at the EU level and in countries where it operates. Stakeholder participation in the decision-making process related to

energy planning and infrastructure development is discussed in the section regarding [stakeholders](#).

## **EU21 Management approach to disaster/emergency planning and response; contingency planning measures, disaster/emergency management plan and training programmes, and recovery/restoration plans**

Fortum's Operational Risk Management Instructions require our businesses to have solid business continuity plans in place.

Corporate Security is responsible for crisis management development and Corporate Communications is responsible for crisis communication and for development of the related emergency preparedness. Fortum's crisis communication instructions have been prepared for the Group, country, division and unit level. In addition to the general guidelines, Fortum uses separate crisis communication guidelines for e.g. power and heat outages and for crisis situations that involve the Loviisa nuclear power plant. Crisis management is the responsibility of the respective division and line organisation. Crises that affect Group operations are managed at the Group-level. Testing and updating plans is the responsibility of the respective units.

In 2013, extensive emergency training related to nuclear accident was held. In addition to Fortum's Management Team, Communications, and Power Division representatives, it also included other sectors of the society such as the national rescue services. In addition, training for crisis situations due to electricity outages was held, the most significant was joint rehearsal in the Helsinki capital area in Finland.

# **Corruption**

## **SO2 Business units analysed for corruption risks**

Compliance risks related to corruption are managed as part of Fortum's risk management and control procedures in all Fortum's operating countries and business units. The assessment of compliance risks is periodic and documented. Fortum has procedures to ensure the prevention, oversight, reporting and enforcement based on the requirements prescribed in international legislation. A systematic compliance risk assessment is included in business plans, and follow-up is part of the business performance review. Line management regularly reports on the compliance activities to the Fortum Management Team and further to the Audit and Risk Committee.

In 2013, Fortum's compliance processes were further developed in terms of compliance reporting and the assessment of the country and partner risks. In addition to the assessment of risks related to corruption, the country and partner risk assessment also includes the assessment of other environmental, social and governance (ESG) related risks.

## **Read more about**

- [Compliance management and Code of Conduct, Governance 2013](#)

## **SO3 Anti-corruption training**

Fortum's anti-corruption principles have been included in the [Fortum Code of Conduct](#) since 2007, and all Fortum employees have participated in the Code of Conduct training.

The Fortum Code of Conduct was updated in 2012. At the end of February 2013, 99% of all personnel had completed the training. The implementation of the updated Code was seen as completed in March 2013, and as of April 2013, the Code of Conduct e-learning has been part of the induction programme of new Fortum employees.

During the year, the Group's Legal department supplemented the training organised in 2012 and gave training to Fortum's Indian operations. In Russia all new employees received face-to-face compliance induction training. In October a Supplier Forum was organised and compliance training given for the top managers and key experts of the Russia Division suppliers. During the session Fortum representatives confirmed their zero tolerance to corruption, informed their counterparties about the key compliance policies and explained how one can report misconduct. In Poland, two training sessions were organised on anti-competitive behaviour.

At the beginning of 2014, extensive anti-corruption training was started in Fortum's different functions. The different risk profiles of various activities have been taken into account when planning the training. In addition purchasing authorities of a certain

monetary value have been used as a specific criterion.

## **SO4 Actions taken in response to incidents of corruption**

Fortum has procedures to ensure the prevention, oversight, reporting and enforcement based on the requirements prescribed in international legislation. Fortum also has [a channel](#) that is available for all stakeholders to report misconduct.

In January 2013, Fortum's Management Team approved a Business Ethics Compliance Reporting model based on the updated Code of Conduct. According to the compliance reporting model, line management regularly reports on the compliance activities to the Fortum Management Team and further to the Audit and Risk Committee.

Fortum has internal procedures in place for dealing with the potential cases of corruption professionally, in accordance with applicable laws and with respect to the rights and personal integrity of the persons and parties involved. Each incident will be first properly investigated, including a hearing of the relevant persons and parties, and then the appropriate sanctions and corrective actions, if deemed necessary, will be considered.

Furthermore, after each incident an assessment is made regarding the need to raise awareness of the Fortum Code of Conduct. This can be done through e.g. e-learning or face-to-face training in the relevant business organisation to ensure that employees are fully aware of what is

considered appropriate conduct at Fortum and what their responsibility is in case of non-compliance. During the year one potential case of malpractice targeting a Fortum employee was identified. The police investigation was still ongoing at the time of

publishing this report. The incident resulted in the termination of employment.

Based on publicly available sources, the assessment of country and partner risks revealed suspicion of corruption in

connection with a few potential partners. Vagueness in relation to legal compliance was also detected; thus no business relation with these actors was initiated.

## Public policy

### S05 Public policy positions and participation in public policy development and lobbying

As an energy sector expert, Fortum actively expresses its views on energy and climate policy issues and offers expert advice to [decision makers and non-governmental organisations](#) pertaining to the policy areas mentioned. Fortum engages in an active dialogue about key issues in the energy sector and publishes position papers on significant topics.

In 2013, a particular focus in public affairs was on developing the EU emissions trading and establishing the EU energy and climate policy framework for 2030. Fortum published [position papers](#) on, e.g. emission allowance supply management and the EU consultation on structural options to strengthen the EU Emissions Trading Scheme. In 2013, we also published a response on the Commission's green paper and on the development of capacity mechanisms. During the year, Fortum representatives had several meetings with different decision makers and officials at the EU level and in its operating countries.

Fortum's lobbying in Finland focused on tax issues, such as the power plant tax, as well as on the revision of the Energy Market Act and its effects on electricity distribution. In Sweden, tax issues related to hydro and nuclear power were also high on the agenda. In Poland, Fortum contributed to advancing the energy legislation renewal. Heating costs for end-customers is a significant issue in all the Baltic countries. In Lithuania, waste management issues are followed closely due to the newly opened waste-to-energy power plant in Klaipėda.

In Russia, Fortum focused on energy efficiency and on Russian electricity and heat market legislation. During 2013, Fortum hosted a several groups of Russian federal and regional authority representatives visiting Sweden, Finland and Norway. The groups were introduced to the urban planning, waste handling systems, and heat and power market models in the Nordic countries.

At the EU level, our representatives discussed issues related to the EU's future climate and energy policy targets, the functioning of the Emissions Trading Scheme and the internal energy market, as well as energy prices and their impact on the competitiveness of EU industry.

In November 2013, Fortum updated the company's information in [the Transparency Register](#) maintained jointly by the European Parliament and European Commission. The register offers information about organisations that aim to influence EU decision making.

Fortum is directly and indirectly involved in 62 sector associations and organisations at the EU level and in its countries of operation. The most important are Eurelectric, Energiateguutus ry, Svensk Energi, International Energy Agency (IEA), FORATOM and EuroHeat & Power.

### S06 Contributions to political parties and related institutions

Fortum does not award donations for any kind of political activities, religious organisations, authorities, municipalities or local administrations.

## Compliance

### Anti-competitive behaviour

#### S07 Legal actions for anti-competitive behaviour, anti-trust, and monopoly

In 2013, there were three final court decisions in Russia holding the heat business of Fortum Russia liable for abuse of dominant position. The related fines imposed are presented under indicator S08. The three cases derive from proceedings initiated during 2012.

In 2013, there was one case initiated and decided by the Russian Federal Competition Authority (FAS) holding the heat business of Fortum Russia liable for entering into an agreement that could limit competition. The Russia Division had entered into a heat distribution organisation agreement with Tyumen Administration and the municipality's heat networks operator. The FAS recognised that certain terms of the agreement could limit competition. There were no further court proceedings and no fines were imposed on the parties. The respective agreements entered into were terminated by the parties before implementation.

#### S08 Fines and sanctions for non-compliance with laws and regulations

In Russia, the fines paid amounted to about EUR 86,500. These court decisions are described in indicator S07.

# Product responsibility

## Access

### EU28 Power outage frequency

Fortum applies international indicators (SAIFI, SAIDI and CAIDI) to measure [electricity distribution reliability](#). The number of fault based power outages per customer (SAIFI) was 1.74 (2012: 1.40).

### EU29 Average power outage duration

In 2013, the average duration of power outages per customer (SAIDI) was 220 minutes (2012: 103). The average duration of power outages caused by faults (CAIDI) was 115 minutes (2012: 61). In 2013, these indicators (SAIDI and CAIDI) were affected by the severe winter storms in the Nordic countries in December. The set target for SAIDI for 2013 was 110 minutes, meaning that actual SAIDI was double compared to the target.

## Product and service labelling

### PR3 Product information required by procedures

Fortum follows EU-based national legislation on the origin of electricity. This requires the electricity producer to report the origin of the produced electricity, the CO<sub>2</sub> emissions and the amount of radioactive waste.

In 2013, Fortum Markets sold electricity to residential and business customers in Sweden, Finland and Norway. Electricity was acquired from Nord Pool. Depending on the type of electricity contract, customers receive electricity generated from different energy sources. Origin of the electricity is declared in accordance with the European Guarantee of Origin system.

Sources used to produce all the electricity sold by Fortum Markets in 2012:

- 36.4% renewable energy (33.3% was sold as environmental electricity)
- 58.4% nuclear power
- 5.2% fossil fuels

Emissions generated in the production of electricity sold by Fortum:

- Accumulation of spent nuclear fuel: 1.7 mg/kWh
- Carbon dioxide (CO<sub>2</sub>): 47 g CO<sub>2</sub>/kWh

Due to the Nordic reporting practice, figures for 2013 will be available in summer 2014.

## Read more about

- [Kotitalouksien käyttämän sähkön alkuperä](#) (in Finnish)
- [Ursprungsmärkning](#) (in Swedish)

### PR5 Customer satisfaction

Fortum monitors [customer](#) satisfaction through regular EPSI customer satisfaction surveys in Finland, Sweden and Norway. In 2013, Fortum reached its all-time best score in the annual EPSI rating in Sweden and Finland. In Norway, [customer satisfaction](#) was slightly down compared to 2012. The longer term customer satisfaction trend towards Fortum has developed favourably in Finland, Sweden and Norway. The trend has been upward and faster than the average in the sector.

In all three countries, Fortum's perceived price-value has increased. In Finland, customer loyalty was significantly increased. In Sweden and Norway, Fortum's awareness and brand preference remain the main areas of improvement.

### Customer satisfaction\* in 2011-2013

	Finland	Sweden	Norway
2013	71	65	69
2012	68	64	69
2011	70	60	63

\* In Finland and Norway research method was EPSI, in Sweden Svenskt Kvalitetsindex

Fortum annually measures customer satisfaction and the company's reputation and factors affecting it also with the extensive [One Fortum survey](#) targeting different stakeholder groups: customers, the general public, governmental bodies, capital markets, non-governmental organisations and Fortum's personnel. In 2013, the survey was conducted in Finland, Sweden, Norway, Poland, the Baltic countries and Russia.

According to the survey, Fortum's reputation is still the strongest within the capital markets and remains weakest amongst the general public. Compared to the 2012 results, Fortum's reputation among the general public has developed favourably in Finland and Sweden. Positive development was also seen among government officials in Finland and Sweden. Fortum's reputation among its own employees weakened somewhat. The One Fortum survey indicates that customers in all divisions were more

satisfied than in 2012. Especially the Power Solutions business unit in the Power Division achieved very high customer satisfaction levels.



## Market Communication

### PR7 Non-compliance with marketing communications

Fortum Markets AB in Sweden was found in violation of the International Chamber Commerce Code for Advertising and Marketing Communication for an advertisement from 2012 related to a winter price offer for electricity. No fines were levied.

In November 2013, Fortum Markets AB was issued an injunction by the Electricity Markets Inspectorate to cease the use of contract terms that had entered into force on September 1, 2013. The grounds for the injunction were that Fortum Markets AB had not been clear in communicating the new contract to the end customers prior to the contract terms entering into force.

The inspectorate lifted the injunction in December 2013, after Fortum Markets AB took steps to correctly inform all affected

customers about the new contract terms as well as set a new starting date for the new contract terms to enter into force (February 1, 2014). No fines were levied.

## Compliance

### PR9 Fines for non-compliance concerning the provision and use of products and services

No such fines in 2013.



# Assurance statement

## Independent assurance report on Fortum's sustainability reporting

### To the Management of Fortum Corporation

We have performed a limited assurance engagement on the Fortum Oyj (hereafter: Fortum) sustainability reporting for the reporting period of January 1, 2013 to December 31, 2013. The information subject to the assurance engagement is the Finnish version of the sustainability reporting published in the website <http://annualreport2013.fortum.com/>.

### Management's responsibility

Management is responsible for the preparation of the sustainability reporting in conformity with the Sustainability Reporting Guidelines (G3.1) of the Global Reporting Initiative and principles of inclusivity, materiality and responsiveness as set out in the AA1000 Accountability Principles (AA1000APS). This responsibility includes: designing, implementing and maintaining internal control relevant to the preparation and fair presentation of the sustainability reporting that are free from material misstatement, whether due to fraud or error, selecting and applying appropriate criteria and making estimates that are reasonable in the circumstances. The scope of the 2013 Fortum sustainability reporting and the information included therein depends on the Fortum's Corporate Sustainability priority areas as well as the reporting policies applied which are set out in [reporting principles](#).

### Auditor's responsibility

Our responsibility is to draw a limited (moderate) assurance conclusion on Fortum's sustainability reporting based on our engagement. This assurance report has been prepared in accordance with the terms of our engagement. We do not accept, or assume responsibility to anyone else, except to Fortum for our work, for this report, or for the conclusions we have reached. We conducted our engagement in accordance with

International Assurance Standard ISAE3000. In addition, we have used the criteria in AA1000 Assurance Standard (2008) to evaluate adherence AA1000APS (2008) for type 1 assurance engagement. This requires that we comply with ethical requirements and plan and perform the engagement to obtain limited assurance whether nothing has come to our attention that causes us to believe that Fortum's sustainability reporting is not in all material aspects prepared in accordance with the reporting criteria.

We did not perform any assurance procedures on the prospective information, such as targets, expectations and ambitions, disclosed in the sustainability reporting. Consequently, we draw no conclusion on the prospective information.

A limited assurance engagement with respect to sustainability reporting involves performing procedures to obtain evidence about the information disclosed in the reporting. The procedures performed depend on the practitioner's judgment, but their nature is different from, and their extent is substantially less than, a reasonable assurance engagement. It does not include detailed testing of source data or the operating effectiveness of processes and internal controls and consequently they do not enable us to obtain the assurance necessary to become aware of all significant matters that might be identified in a reasonable assurance engagement.

Our procedures on this engagement included:

- Assessing the suitability of the reporting policies used by management and the consistent application such policies, including assessing of the suitability of the reporting criteria, the inclusiveness of the responses on the stakeholder dialogue and the overall presentation in the sustainability reporting;
- Conducting interviews with senior management responsible for sustainability at Fortum to gain an understanding of Fortum's targets for sustainability as part of the business strategy and operations;
- Inspecting internal and external documentation and verifying to what extent these documents and data support the information included in the sustainability reporting and evaluating

whether the information presented in the sustainability reporting is in line with our overall knowledge of sustainability at Fortum;

- Conducting interviews with employees responsible for the collection and reporting of sustainability information and review of the processes and systems for data gathering, amongst others the aggregation of the data as included in the sustainability reporting;
- Performing analytical review procedures and testing data on a sample basis to assess the accuracy of the presented sustainability information;
- Site visits to selected sites in Finland and Russia to review compliance to reporting policies, to assess the reliability of the sustainability data reporting process as well as to test the data collected locally for sustainability reporting purposes and;
- Assessing the Company's stated application level according to GRI's guidelines.

We believe that the evidence we have obtained is sufficient and appropriate to provide a basis for our conclusion.

## Observations & Recommendations

Based on our limited assurance engagement, we provide the following recommendations in relation to the Accountability Principles AA1000APS (2008) and GRI G3.1 principles. The recommendations are to improve management and reporting of sustainability in future and do not affect our conclusions:

- **Inclusivity** – Fortum has a comprehensive stakeholder inclusiveness process in place and throughout this process Fortum has identified a broad range of relevant key stakeholder groups. We recommend that Fortum continues an open and regular dialogue with all relevant stakeholders and further strengthen its internal communication of issues raised by stakeholders to ensure they are appropriately considered across Fortum's decision-making processes.
- **Materiality** – Fortum has a process in place to define what matters are important and material for Fortum's stakeholders. We recommend that

Fortum further develops the process to be more systematic to ensure that all material issues are acknowledged.

- **Responsiveness** – The report included a significant amount of issues and how Fortum has managed and responded to those issues. In 2013 Fortum has further developed balanced presentation in its reporting and reports more consistently on challenging aspects as well. We recommend Fortum to maintain balanced reporting on sustainability themes and continue to transparently discuss issues and events that have an impact on aspects, material to stakeholders, over the reporting period and in the future.

## Our independence and competences in providing assurance to Fortum

We comply with independence and other ethical requirements, which are included in

the Code of Ethics for Professional Accountants issued by the International Ethics Standards Board for Accountants IESBA (International Ethics Standards Board for Accountants).

This engagement was conducted by a multidisciplinary team including assurance and sustainability expertise with professional qualifications. Our team has many years of experience in providing sustainability reporting assurance.

## Conclusion

On the basis of the procedures we have performed nothing has come to our attention that causes us to believe Fortum's sustainability reporting for the year from January 1, 2013 to December 31, 2013, is not prepared, in all material respects, in accordance with the Sustainability Reporting Guidelines (G3.1) of the Global Reporting Initiative and to the AA1000 AccountAbility

Principles. The reporting fulfills the requirement of GRI G3.1 Application Level B+.

Espoo 21.3.2013  
Deloitte & Touche Oy

Jukka Vattulainen  
Authorized Public  
Accountant

Lasse Ingström  
Authorized Public  
Accountant



# Acronyms, quantities and units used in the report

## Quantities and units used in the report

### 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)

### Capacity

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

### Volume

1 cubic metre (m<sup>3</sup>) = 1,000 litres (l)

1 normal cubic metre (Nm<sup>3</sup>) = 1 m<sup>3</sup> 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)

## Acronyms used in the report

Acronym	Term	Definition
GRI	Global Reporting Initiative	International organisation promoting sustainability reporting
EHS	Environment, Health and Safety	-
CHP	Combined Heat and Power	-
LWIF	Lost Workday Injury Frequency	Frequency of injuries that lead to absence from work for one or more days
TRIF	Total Recordable Injury Frequency	Frequency of all injuries that require medical treatment
SAIDI	System Average Interruption Duration Index	Cumulative duration of power outages per customer in a specified time interval
CAIDI	Customer Average Interruption Duration Index	Average duration of power outages in a specified time interval
SAIFI	Customer Average Interruption Frequency Index	Number of power outages per customer in a specified time interval
CER	Certified Emission Reduction	Emission reduction unit in projects under Clean Development Mechanisms
ERU	Emission Reduction Unit	Emission reduction unit in Joint Implementation projects
IUCN	International Union for Conservation of Nature	-

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