TOWARDS Solar Economy

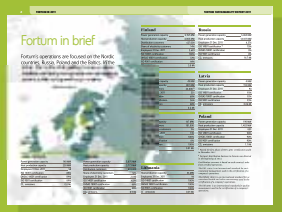
SUSTAINABILITY REPORT 2011

Fortum

Sustainability Report 2011 Sustainability Report 2011 Sustainability Report 2011 Sustainability Report 2011 Sustainability Report 2011

Reader's guide

SUSTAINABILITY REPORT 2011

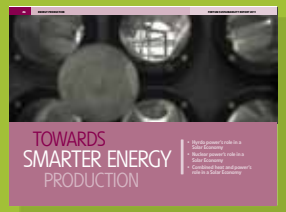


Fortum in 2011

This section provides general information about Fortum's performance in 2011. It summarises the countries in which Fortum operates, and the key indicators in terms of production capacity, customers, personnel, certified management systems and carbon-dioxide emissions. The Group's business structure by division and a summary of the key achievements in 2011 are also presented. This is followed by summaries of the Group's sales and production, market position and key financial, environmental and social figures. The section ends with an interview with the President and CEO.

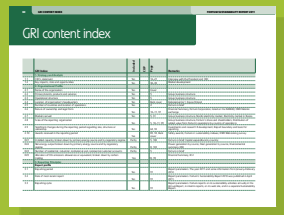
Strategy

Sustainability is at the core of Fortum's strategy; the section presents a breakdown of how the strategy was realised in terms of hydro power, nuclear power and combined heat and power (CHP) production in 2011 together with Fortum's key sustainability targets and achievements during the year. Market development section discusses the rising economic uncertainty, overarching megatrends, and the energy and climate policies at the global, the EU and the Russian level. The section ends with an introduction of the theme of the report: Towards Solar Economy.



Sustainability themes

This section discusses the key sustainability topics based on the materiality assessment, One Fortum Survey and Fortum's vision of the future Solar Economy: the roles of hydro power, nuclear power and combined heat and power in Solar Economy; Fortum's investments, research and development, fuels and procurement and Fortum's customers and personnel. Practical examples of our impacts on society as well as stakeholder engagement are presented throughout the report through various case stories and stakeholder quotes.



GRI index

Fortum reports on its sustainability activities annually based on the Global Reporting Initiative (GRI) G3.1 Guidelines, Application Level B+. In its reporting, Fortum has also followed the guidelines of the Electric Utility Sector Supplement of the GRI to the extent possible. Fortum adheres to the AA1000 Accountability Principles Standard (AA1000 APS), which is a principles-based framework for managing and reporting sustainability performance. This section discloses the GRI Index with indicators relevant to Fortum and Fortum's performance in 2011 presented as recommended by GRI.

Please read more about our report content and reporting principles on pages 91–93.

Financials 2011

Fortum's Financials include the Operating and Financial Review, the consolidated and parent company Financial Statements, the Corporate Governance Statement and the Salary and Remuneration report.

Online Annual Report 2011

Fortum's online Annual Report is a compiled version of the Sustainability Report and Financials and it also includes the division reviews.
http://annualreporting.fortum.com

Use QR code to access the online annual report directly.

Fortum's purpose is to create energy that improves life for present and future generations. We provide sustainable solutions that fulfil the needs for low emissions, resource-efficiency and energy security, and deliver excellent value to our shareholders. Our activities cover the generation, distribution and sales of electricity and heat as well as related expert services.

Fortum's operations focus on the Nordic countries, Russia, Poland and the Baltics. In the future, the further integrating European and fast-growing Asian energy markets provide additional growth opportunities. In 2011, Fortum's sales totalled EUR 6.2 billion and comparable operating profit was EUR 1.8 billion. We employ approximately 10,800 people. Fortum's shares are quoted on NASDAQ OMX Helsinki.

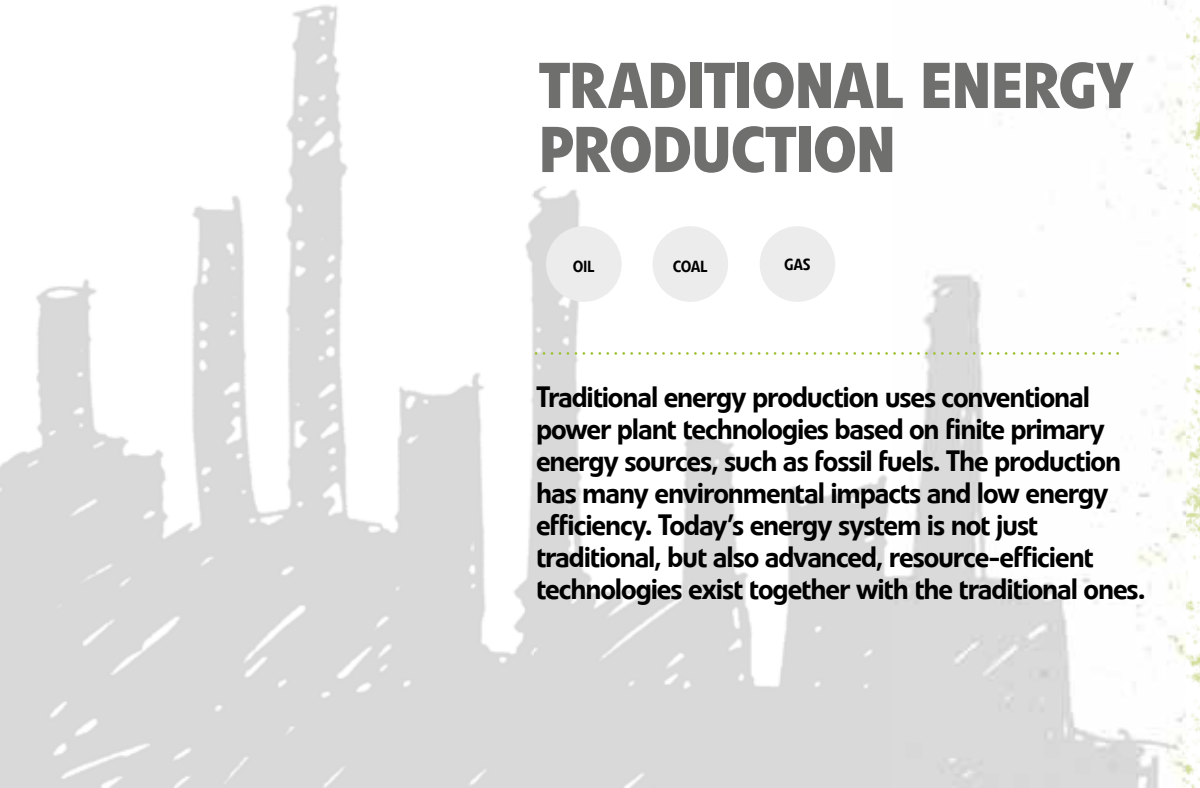
Contents

In this report, CO_2-free energy production refers to hydro, nuclear, wind, solar and wave power, which do not generate emissions in the production phase, and the use of biomass energy and the thermal energy generated by heat pumps from ground, water system or waste heat.

Acronyms and abbreviations used in the report are explained at www.fortum.com/sustainability

Towards Solar Economy

At Fortum, we believe that there is a need to make a transition from traditional energy production towards Solar Economy with infinite and zero-emission energy production and high resource and system efficiency – a development towards producing and consuming energy in a smarter way. This report discusses the different angles of Solar Economy and presents Fortum's view as well as activities regarding the future energy system.
A more detailed description of Solar Economy is presented on pages 40–43.



TRADITIONAL ENERGY PRODUCTION

OIL COAL GAS

Traditional energy production uses conventional power plant technologies based on finite primary energy sources, such as fossil fuels. The production has many environmental impacts and low energy efficiency. Today's energy system is not just traditional, but also advanced, resource-efficient technologies exist together with the traditional ones.

ADVANCED ENERGY PRODUCTION

HYDRO POWER NUCLEAR ENERGY BIO-ENERGY CHP

In advanced energy production, resource efficiency will be one of the main drivers for development. Combined heat and power (CHP) will play an important role as it increases primary energy efficiency considerably. With renewable or low-carbon fuels CHP is a key step towards Solar Economy. The efficiency of CO_2-free nuclear power can be increased significantly, if heat and electricity can be produced at the same time. In advanced nuclear energy production, the use of uranium's energy content can be improved considerably.

Solar Economy

SOLAR ENERGY

GEO-THERMAL HEAT

WIND POWER

HYDRO POWER

WAVE POWER

BIO-ENERGY

In Solar Economy, energy from the sun is utilised directly as solar electricity and heat, as well as indirectly as hydro, ocean, wind, bio and geothermal energy. Energy consumption and energy systems will be based on smart grids and flexible heating and cooling solutions. Ways to store energy are also required to achieve high system efficiency. Electricity will be transmitted from one geographical area to another in a more flexible way than before. Eco-efficient construction and electric transport solutions will change the world around us in many ways.

Fortum in brief

Fortum's operations are focused on the Nordic countries, Russia, Poland and the Baltics. In the future, the further integrating European and fast-growing Asian energy markets provide additional growth opportunities.

Great Britain

Power generation capacity	140 MW
Heat production capacity	250 MW
Employees 31 Dec. 2011	58
ISO 14001 certification	89%
OHSAS 18001 certification	89%
ISO 9001 certification	89%
CO_2 emissions	0.8 Mt

Sweden

Power generation capacity	5,875 MW
Heat production capacity	3,773 MW
Distribution customers	893,000
Share of electricity customers	12%
Employees 31 Dec. 2011	2,040
ISO 14001 certification	100%
OHSAS 18001 certification	66%
ISO 9001 certification	33%
CO_2 emissions	0.9 Mt

Finland

Power generation capacity	5,157 MW
Heat production capacity	4,003 MW
Distribution customers	627,000
Share of electricity customers	14%
Employees 31 Dec. 2011	2,683
ISO 14001 certification	100%
OHSAS 18001 certification	72%
ISO 9001 certification	44%
CO_2 emissions	5.8 Mt

Estonia

Power generation capacity	49 MW
Heat production capacity	801 MW
Distribution customers	24,000 [2]
Employees 31 Dec. 2011	331
ISO 14001 certification	68%
OHSAS 18001 certification	56%
ISO 9001 certification	68%
CO_2 emissions	0.2 Mt

Norway

Heat production capacity	167 MW
Distribution customers	101,000
Share of electricity customers	3%
Employees 31 Dec. 2011	139
ISO 14001 certification	100%
OHSAS 18001 certification	0%
ISO 9001 certification	100%
CO_2 emissions	0.01 Mt

Lithuania

Heat production capacity	36 MW
Employees 31 Dec. 2011	94
ISO 14001 certification	100%
OHSAS 18001 certification	100%
ISO 9001 certification	100%
CO_2 emissions	0.01 Mt

Russia

Power generation capacity	3,404 MW
Heat production capacity	14,107 MW
Employees 31 Dec. 2011	4,376
ISO 14001 certification [1]	70%
OHSAS 18001 certification	0%
ISO 9001 certification	0%
CO_2 emissions	14.7 Mt

Latvia

Power generation capacity	4 MW
Heat production capacity	192 MW
Employees 31 Dec. 2011	90
ISO 14001 certification	93%
OHSAS 18001 certification	93%
ISO 9001 certification	93%
CO_2 emissions	0.06 Mt

Poland

Power generation capacity	198 MW
Heat production capacity	1,403 MW
Employees 31 Dec. 2011	859
ISO 14001 certification	90%
OHSAS 18001 certification	90%
ISO 9001 certification	90%
CO_2 emissions	1.1 Mt

[1] *Passed the first phase of ISO 14001 certification audit in December 2011*

[2] *Fortum's distribution business in Estonia was divested in the beginning of 2012.*

Certification coverage is based on each country's sales from certified operations.

The ISO 14001 is an international standard for environmental management used in the certification of a company's operations.

The OHSAS 18001 is an international standard for occupational health and safety management used in the certification of a company's operations.

The ISO 9001 is an international standard for quality management used in the certification of a company's operations.

Group business structure

Divisions	Power	Heat	Russia	Electricity Solutions and Distribution (ESD)	
Business	The Power Division consists of Fortum's power generation, physical operation and trading as well as expert services for power producers.	The Heat Division consists of combined heat and power generation (CHP), district heating and cooling activities and business-to-business heating solutions.	The Russia Division consists of power and heat generation and sales in Russia. It includes OAO Fortum and Fortum's over 25% holding in TGC-1.	The Electricity Solutions and Distribution Division is responsible for Fortum's electricity sales and distribution activities. The division consists of two business areas: Distribution and Electricity Sales.	
Reporting segment	**Power**	**Heat**	**Russia**	**Distribution**	**Electricity Sales**
Sales	EUR 2,481 million	EUR 1,737 million	EUR 920 million	EUR 973 million	EUR 900 million
Comparable operating profit	EUR 1,201 million	EUR 278 million	EUR 74 million	EUR 295 million	EUR 27 million
Share of Fortum's sales	35%	24%	13%	14%	13%
Net assets	EUR 6,247 million	EUR 4,191 million	EUR 3,273 million	EUR 3,589 million	EUR 11 million
Comparable return on net assets	19.9%	7.4%	3.5%	8.6%	33.5%
Employees, 31 Dec. 2011	1,847	2,504	4,379	898	519
Market position	Second largest power producer in the Nordic countries; among the 15 largest in Europe and Russia	Leading heat supplier in the Nordic countries; growing operations in Poland and the Baltics	One of the leading operators in West Siberia and the Urals area in power and heat	Leading operator in electricity distribution in the Nordic countries: total of 1.6 million electricity distribution customers	Second largest electricity sales company in the Nordic countries: 1.2 million retail customers
Geographic area and scope of operations	**Production in Finland, Sweden and Great Britain. Expert services world-wide.** In Finland and Sweden 260 hydropower plants, ownership in two nuclear reactors, and co-ownerships in 8 nuclear reactors, two condensing power plants, and co-ownerships in wind power plants. A CHP plant in the Great Britain. Expert services worldwide.	**Finland, Sweden, Norway, Poland, Lithuania, Latvia, Estonia** 20 CHP plants and several hundred heat plants and centres in the Nordic and Baltic countries and in Poland.	**Russia** OAO Fortum has 8 CHP plants and 21 heat plants in the Urals and West Siberia region. Existing power generation capacity approximately 2,800 MW. Investment programme will increase power generation capacity by approximately 2,400 MW.	**Finland, Sweden, Norway, Estonia** [1] 1.6 million electricity distribution customers in the Nordic countries and Estonia.	**Finland, Sweden, Norway** 1.2 million retail customers in the Nordic countries.
Business drivers	• Nord Pool electricity price, stability through hedging • About 90% of production is hydro and nuclear power: hydrological situation, nuclear power availability, and prices of fuels and emissions allowances important	• Steady growth through investments • Fuel flexibility and efficiency play a key role • Recent investments into new CHP production to bring earnings	• Liberalised power markets • Investment programme: positive economic value added through new capacity and new volume • Efficiency upgrades • Gas and electricity price ratio	• Regulated, steady return • Very capital-intensive • Growth through investments • Long-term optimised levels of investment and maintenance • Cost-efficiency and quality of service	• Margin between Nord Pool wholesale purchase price and retail sales price • Efficient hedging of the margin • Leading seller of eco-labelled and carbon dioxide-free electricity in Finland, Sweden and Norway
Strategy drivers	• Flexible, market-driven production portfolio • Focus on CO_2-free hydro and nuclear power • Solid position on the Nordic power market, proven track-record from liberalised power markets an opportunity in the integrating European market	• Need for increased resource-efficiency will increase CHP's competitiveness • EU Directive to drive new CHP investment potential further • Potential for increased usage of local biofuels and waste • Organic growth potential in emerging markets • Utilisation of CHP competence in fuels and efficient production	• Power demand growth • Bringing the ongoing investment programme to completion • Development of modern, CHP-driven heat business	• Stable regulated earnings • Technical development utilised for a more efficient, reliable and smarter network enabling sustainable and energy-efficient solutions for customers	• Cost efficiency through efficient business processes • Growth in customer base through new offerings and innovative solutions • Economies of scale

[1] *Fortum's distribution business in Estonia was divested in the beginning of 2012.*

Fortum in 2011

January

3 JAN Fortum's deal of two Polish power and heat companies, Elektrociepłownia Zabrze S.A and Zespół Elektrociepłowni Bytom S.A., finalised

25 JAN Russia approves two Fortum Joint Implementation projects: a new unit at the Tyumen combined heat and power (CHP) plant, and the reconstruction of TGC-1's Newsky hydropower plant

28 JAN New Fortum biomass-fired combined heat and power plant inaugurated in Pärnu, Estonia

February

3 FEB The first new unit (190 MW) of Fortum's Russian investment programme is taken into commercial use in Tyumen CHP-1

11 FEB Fortum's lighting project completes the lighting of two new places – chosen by the public – in Stockholm, Sweden

March

24 MAR Europark and Fortum sign an agreement on smart parking solutions for electric cars in Sweden

25 MAR Fortum announces the plan to develop smart heating in Royal Seaport – new sustainable urban district in Stockholm, Sweden

28 MAR Fortum starts paying small-scale electricity producers for their own energy production in Sweden

31 MAR Fortum's divestment of heat operations outside Stockholm in Sweden completed

31 MAR Fortum holds the Annual General Meeting for Shareholders

April

4 APR Fortum published its renewed sustainability approach and targets in the Sustainability Report

15 APR Sollentuna Energi confirms participation in Fortum's new waste-fired combined heat and power plant in Sweden

19 APR Fortum, the Finnish State and Ilmarinen reach a final agreement over sale of Fingrid shares

May

11 MAY Fortum and Skellefteå Kraft announce the plan to purchase 60 wind turbines from Nordex to Blaiken onshore wind farm

16 MAY Fortum and Metso's joint development work on oxyfuel combustion technology makes headway

18 MAY Fortum issues EUR 500 million Eurobond

June

7 JUN Fortum commissions new production unit at its Chelyabinsk power plant in Russia

15 JUN Fortum invests in new biofuel-fired CHP plants in Järvenpää, Finland, and Jelgava, Latvia

17 JUN Fortum and Lukoil sign agreement on technology collaboration

Events in 2011

January

1 JAN The electricity wholesale market in Russia begins to function in a market-based manner

JAN The EU Industrial Emissions Directive (IED) enters into force

February

28 FEB The first-ever energy-specific European Council meeting

March

3 MAR The third EU internal energy market legislation enters into force

8 MAR The European Commission presents an energy-efficiency action plan

8 MAR The European Commission presents a Roadmap for moving to a competitive low-carbon economy in 2050

11 MAR Fukushima nuclear accident in Japan

April

27 APR The European Commission presents a proposal for EU rules for harmonised free allocation of emission allowances of the ETS for years 2013–2020

May

13 MAY The European Commission issues the methodology and timetable for the so-called EU nuclear safety stress tests

June

20 JUN The programme of the new government in Finland takes a negative stand towards new nuclear permits, and also proposes a windfall and possibly a uranium tax

22 JUN The European Commission presents a proposal for a new energy-efficiency directive

= activities aiming towards Solar Economy

July

12 JUL Fortum signs new EUR 2.5 billion revolving loan facility

12 JUL Fortum invests in smart metering in Norway

12 JUL Fortum begins futures trade at the Moscow energy exchange

August

27 AUG Fortum arranges Football Day in Espoo, Finland with the local football team FC Honka

31 AUG Fortum invests in hydropower in Sweden by refurbishing Skedvi power plant

September

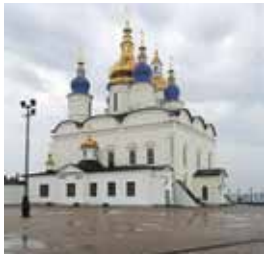
1 SEP Fortum introduces solutions for charging electric vehicles in Espoo, Finland

15 SEP Fortum ranked the best utility in Carbon Disclosure Leadership Index (CDLI) and listed in the Dow Jones Sustainability Index DJSI World for the ninth consecutive year

29 SEP Fortum announces that it brings new district heating products to the market in Sweden

October

3 OCT Fortum commissions new capacity (~210 MW) at Tobolsk in Russia



10 OCT Fortum and DCNS sign a letter of intent to develop wave power in France

21 OCT Fortum ranked best in the Nordic Climate Index

31 OCT Fortum submits Loviisa power plant's safety assessment to Finland's Radiation and Nuclear Safety Authority

November

2 NOV Fortum announces the plan to establish an office in India

8 NOV Fortum's greenfield investment under construction, Nyagan GRES, is connected to the gas supply system in Russia

16 NOV Fortum announces that it brings new district heating products to the market in Finland

21 NOV Fortum corporate website ranked second best among stock-listed Nordic companies in the KWD Webranking survey

December

9 DEC Fortum and Seabased AB sign an agreement on the construction of a joint wave power park in Sweden

12 DEC Fortum sets up business and appoints Philippe Stohr as Country Manager in France

15 DEC Fortum submits the requested additional safety assessments on Loviisa Nuclear power plant to Finland's Radiation and Nuclear Safety Authority

21 DEC Fortum makes Christmas donations to organisations supporting children

26 DEC Christmas storms bring widespread power outages to Fortum's network mainly in Finland

July

19 JUL The EU Nuclear Waste Directive adopted, Finnish and Swedish legislation in accordance with the directive

August

September

20 SEP The European Commission presents the Roadmap to a Resource Efficient Europe

October

19 OCT The Commission presents a proposal on guidelines for trans-European energy infrastructure together with a proposal for establishing a Connecting Europe Facility

November

1 NOV The Swedish electricity market is divided into four different bidding zones as a result of the decision of the European Commission

28 NOV – 10 DEC The 17th international climate conference takes place in Durban, South Africa

December

15 DEC European Union publishes Energy Roadmap 2050

22 DEC The EU Commission publishes its proposal for the new multiannual programme for research and innovation – EU Horizon 2020

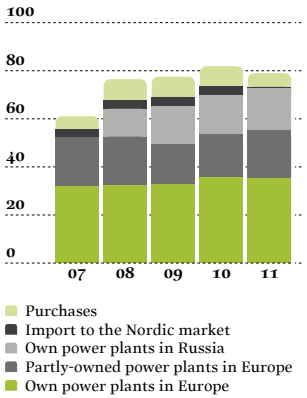
DEC The Energy Market Authorities in Finland and Sweden give their final decisions for the regulatory model of electricity distribution for period 2012–2015

WWW.FORTUM.COM/MEDIAROOM

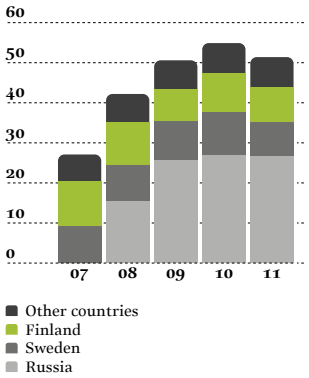
See all Fortum's press releases from 2011

Sales and production

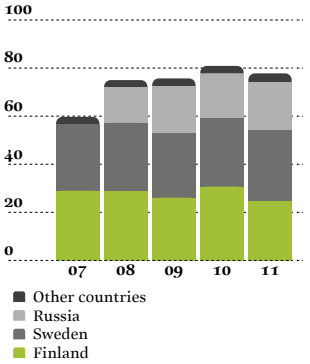
TOTAL ELECTRICITY PROCUREMENT BY TYPE, TWh



TOTAL HEAT SALES BY AREA, TWh



TOTAL ELECTRICITY SALES BY AREA, TWh [1]

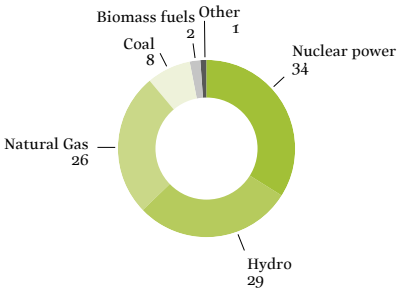


POWER GENERATION BY SOURCE

TWh	2011	2010	2009
Hydro	21.0	22.0	22.1
Nuclear	24.9	22.0	21.4
Thermal	9.4	9.7	5.8
Total in EU and Norway	**55.3**	**53.7**	**49.3**
Thermal in Russia	17.4	16.1	16.0
Total	**72.7**	**69.8**	**65.3**

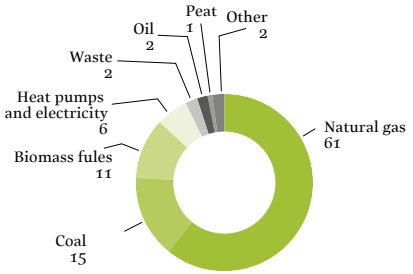
[1] *Power, Heat and Electricity Sales sell electricity to the Nordic power exchange or external customers and purchase electricity from the power exchange or other external sources. Fortum's power exchange transactions are calculated as net amount of hourly sales at the Group-level. The Russia Division sells electricity to the Russian wholesale market.*

POWER GENERATION BY SOURCE [2],%



[2] *Total power generation in 2011 was 72.7 TWh*

HEAT PRODUCTION BY SOURCE [3],%



[3] *Total heat production in 2011 was 47.4 TWh*

POWER GENERATION CAPACITY, 31 DECEMBER 2011

MW	Finland	Sweden	Russia	Other	Total
Hydropower	1,526	3,166	0	0	4,692
Nuclear power	1,444	1,787	0	0	3,231
Combined heat and power	808	518	3,404	391	5,121
Condensing power	1,376	297	0	0	1,673
Other	3	106	0	0	109
Total	**5,157**	**5,874**	**3,404**	**391**	**14,826**

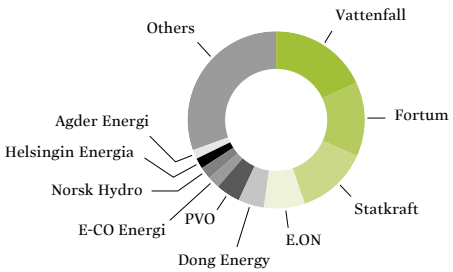
HEAT PRODUCTION CAPACITY, 31 DECEMBER 2011

MW	Finland	Sweden	Russia	Other	Total
Heat	4,003	3,773	14,107	2,849	24,732

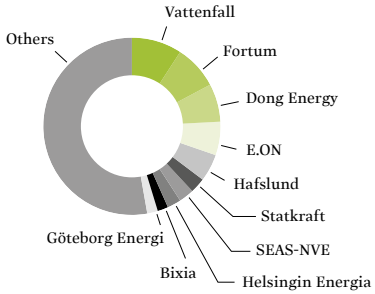
Read more about the divisions and their operations in 2011 online and in the Financials' Operating and financial review, pages 9–14 as well as in Note 5 on pages 60–64.

Market position

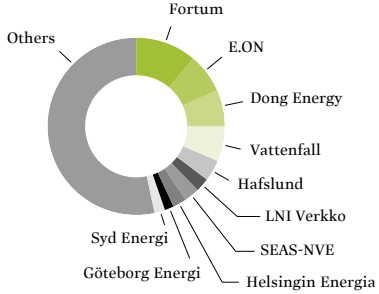
NORDIC POWER GENERATION, 382 TWh, over 350 companies



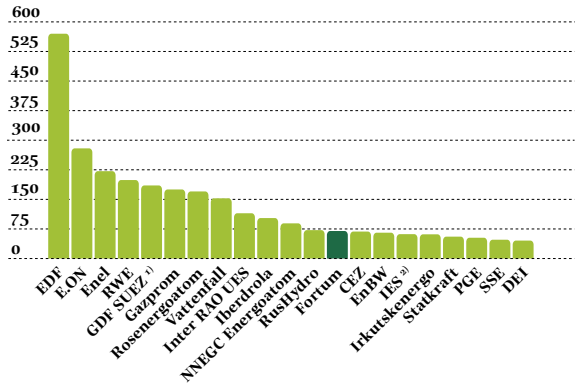
NORDIC ELECTRICITY RETAIL, 15 million customers, ~350 companies



NORDIC ELECTRICITY DISTRIBUTION, 15 million customers, ~500 companies

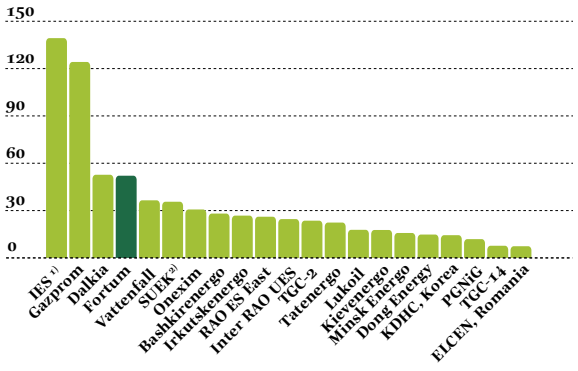


POWER GENERATION, TWh Largest generators in Europe and Russia, 2010



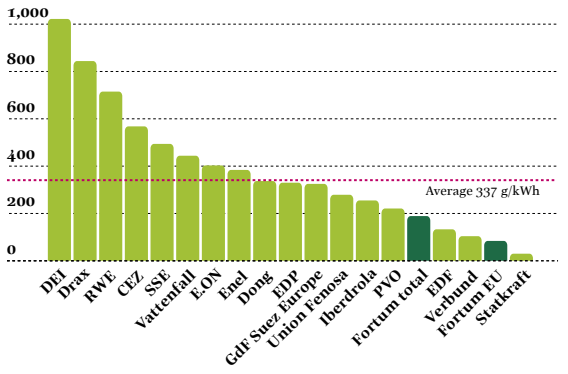
1) *incl. International Power*
2) *incl. TGC-5, TGC-6, TGC-7, TGC-9*

HEAT PRODUCTION, TWh Largest producers globally, 2010



1) *incl. TGC-5, TGC-6, TGC-7, TGC-9,*
2) *incl. TGC-12, TGC-13.*
Heat production of Beijing DH not available.

SPECIFIC CO_2 EMISSIONS OF MAJOR UTILITIES IN EUROPE, gCO_2/kWh electricity, 2010



Source: PWC & Enerpresse, Novembre 2011
Changement climatique et Électricité, Fortum

Note:
All figures, except Fortum total, include only European generation.

Source of all graphs, except the one on the right below: Fortum, company information, 2010 figures.
Effect of later structural changes taken into account.

Financial summary

KEY FIGURES

EUR million or as indicated	2011	2010	2009
Sales	6,161	6,296	5,435
EBITDA	3,008	2,271	2,292
Comparable EBITDA	2,374	2,396	2,398
Operating profit	2,402	1,708	1,782
Comparable operating profit	1,802	1,833	1,888
Profit for the period, owners of the parent	1,769	1,300	1,312
Capital employed	17,931	16,124	15,350
Interest-bearing net debt	7,023	6,826	5,969
Net debt / EBITDA	2.3	3.0	2.6
Comparable net debt / EBITDA	3.0	2.8	2.5
Return on capital employed, %	14.8	11.6	12.1
Return on shareholders' equity, %	19.7	15.7	16.0
Capital expenditure	1,408	1,222	862
Environmental and safety investments	82	91	61
Gross investments in shares	74	27	67
Net cash from operating activities	1,613	1,437	2,264
Emissions subject to EU's ETS [1], million tonnes CO_2	8.0	9.7	7.7
Free emissions allowances in EU's ETS, million tonnes CO_2	6.8	5.6	5.5
Support for society	4.6	5.2	2 .0

[1] *Emissions Trading System*

MONETARY FLOWS BY STAKEHOLDER GROUP

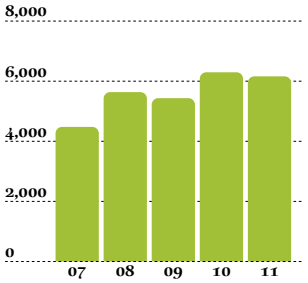
EUR million		2011	2010	2009
Generation of added value				
Income from customers	Income from products and services to customers, financial income, and sales proceeds from operations or production facilities	7,192	6,432	6,016
Purchases from suppliers	Cash payments to suppliers of raw materials, goods and services	–3,272	–2,923	–2,436
Fortum-produced added value		3,920	3,509	3,580
Distribution of added value				
Employee compensation	Wages, salaries, remunerations and other indirect employee costs	–529	–507	–495
Compensation for investors and shareholders	Dividends, interest and financial expenses paid	–1,431	–1,657	–1,179
Public sector	Income taxed paid, production taxes, support for society and donations	–728	–642	–468
Distributed to stakeholders		–2,688	–2,806	–2,142
Retained in business		1,232	703	1,438

SHARE KEY FIGURES

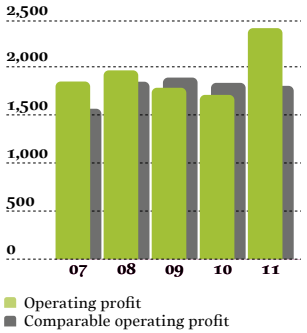
EUR or as indicated	2011	2010	2009
Earnings per share	1.99	1.46	1.48
Cash flow per share	1.82	1.62	2.55
Equity per share	10.84	9.24	9.04
Dividend per share	1.00 [1]	1.00	1.00
Payout ratio, %	50.3 [1]	68.5	67.6
Dividend yield, %	6.1 [1]	4.4	5.3

[1] *Board of Directors' proposal for the Annual General Meeting on 11 April 2012.*

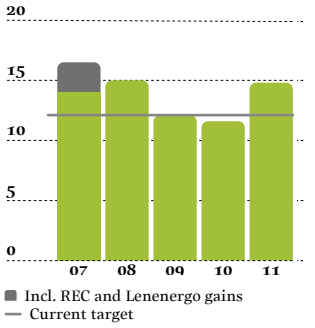
SALES, EUR million



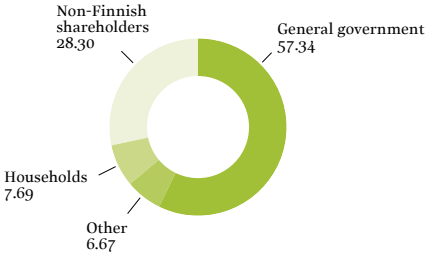
OPERATING PROFIT AND COMPARABLE OPERATING PROFIT, EUR million



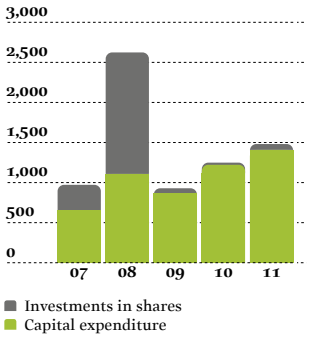
RETURN ON CAPITAL EMPLOYED, %



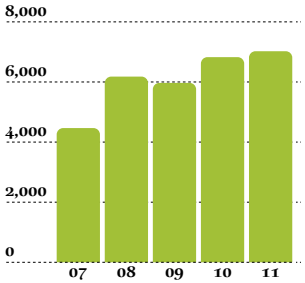
SHAREHOLDERS, BY SHAREHOLDER CATEGORY, %



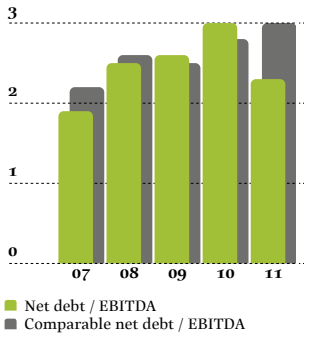
CAPITAL EXPENDITURE AND GROSS INVESTMENTS IN SHARES, EUR million



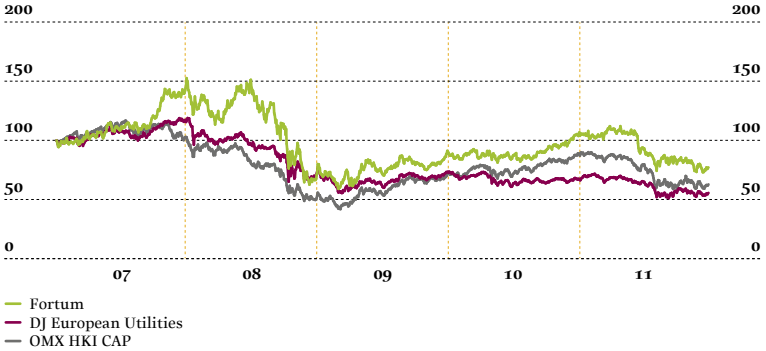
INTEREST-BEARING NET DEBT, EUR million



NET DEBT / EBITDA

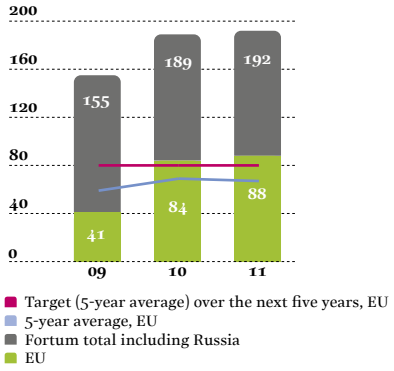


SHARE QUOTATIONS 2007–2011, Index 100 = quote on 2 January 2007

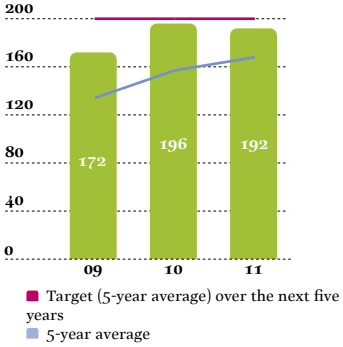


Environmental summary

SPECIFIC CO_2 EMISSIONS OF ELECTRICITY PRODUCTION, gCO_2/kWh



SPECIFIC CO_2 EMISSIONS OF TOTAL ENERGY PRODUCTION, gCO_2/kWh

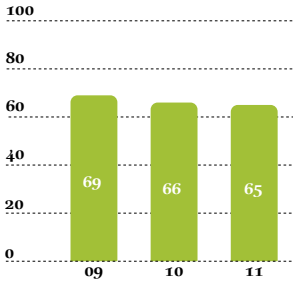


ENVIRONMENTAL RESPONSIBILITY KEY FIGURES

	2011	2010	2009
Carbon dioxide emissions, million tonnes CO_2	23.5	25.3	21.8
Sulphur dioxide emissions, tonnes SO_2	24,900	20,700	14,600
Nitrogen oxide emissions, tonnes NO_x	36,000	36,700	31,400
Particle emissions, tonnes	16,600	16,800	10,600
ISO 14001 certified operations (% of sales)	95	86	87
Specific CO_2 emissions of electricity production, g/kWh	192	189	155
5-year average in the EU, g/kWh	67	69	59
Specific CO_2 emissions of heat production, g/kWh	191	213	205
Specific CO_2 emissions of total energy production, g/kWh	192	196	172
5-year average, g/kWh	169	157	134
Overall efficiency of fuel use, %	67	68	67
5-year average, %	68	69	70
Share of CO_2-free electricity production, %	65	66	69
Share of renewable energy in electricity production, %	31	35	36
Share of renewable energy in heat production, %	16	18	17
Primary energy consumption, TWh	157	166	152
Utilisation rate of gypsum, %	89	92	91
Utilisation rate of ash, %	52	59	65
Environmental non-compliances	20	21	17
Water consumption, million m^3	3,850	3,860 [1]	2,460
of which cooling water, million m^3	3,750	3,550 [1]	2,390
Thermal load on waterways, TWh	21	23	20

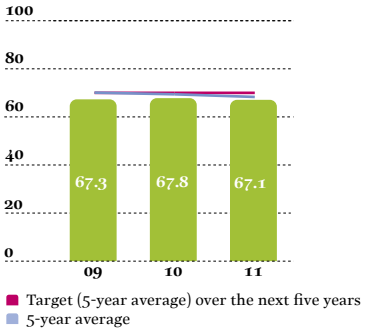
[1] *The figure differs from the 2010 report and is based on more complete data from Russia.*

SHARE OF CO_2-FREE ELECTRICITY PRODUCTION, %



SPECIFIC CO_2 EMISSIONS OF HEAT PRODUCTION, gCO_2/kWh

OVERALL EFFICIENCY OF FUEL USE, %



Social summary

SOCIAL RESPONSIBILITY KEY FIGURES

	2011	2010	2009
Average number of employees	11,010	11,156	13,278
Number of employees, 31 December	10,780	10,585	11,613
of whom permanently employed	10,379	10,307	11,332
Departure turnover, %	13.7	-	-
Female employees, %	29	29	30
Females in management, %	34	27	32
Health care expenditure, eur/person [1]	560	501	484
Number of sickdays	69,654 [3]	9,281 [4]	-
Lost workday injury frequency (LWIF), Fortum personnel [2]	1.6	2.4	2.4
Lost workday injury frequency (LWIF), contractors [2]	3.2	5.0	6.5
Fatalities	1	1	2
OHSAS 18001 certified operations (% of sales)	60	27	Not available

[1] *In Finland*

[2] *Injuries resulting in an absence of at least one day per million working hours. Russia Division included from 2010. Excluding Zabrze and Bytom operations in Poland in 2011 due to on-going integration process.*

[3] *Includes Finland, Sweden, Poland, Russia. Sickness absence days in Finland and Sweden have increased significantly due to more specific notice practice and more accurate recording systems.*

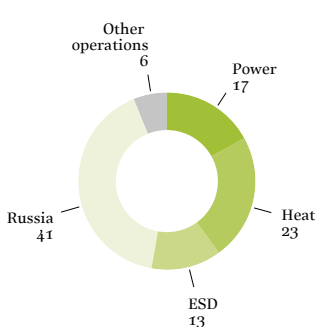
[4] *Includes Finland, Sweden*

FORTUM'S PERSONNEL STATISTICS FROM 2011, BY COUNTRY OF OPERATION

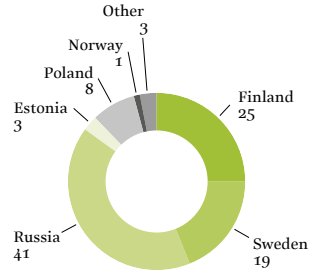
	Finland	Sweden	Russia	Estonia	Poland	Norway	Other
Personnel at year-end	2,683	2,040	4,376	331	859	139	352
Personnel, average	2,689	2,076	4,432	336	1,009	137	331
Number of new employment relationships	172	157	775	14	31	9	72
Number of employment relationships ended [1]	114	250	694	34	322	6	7
Departure turnover, %	4.2	12.3	15.9	10.3	37.5	4.3	2
Personnel expenses, 1,000 euros	209,462	180,786	79,752	7,426	20,945	13,620	16,620
Personnel expenses, per person, 1,000 euros	77.9	87.1	18.0	22.1	20.8	99.2	50.2

[1] *Includes operations sold and outsourced operations*

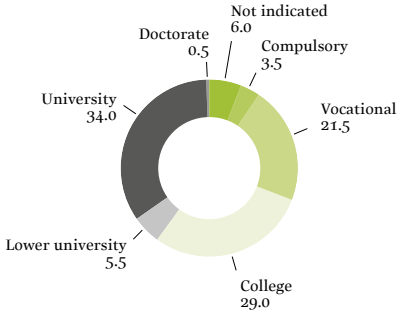
PERSONNEL BY DIVISION, 31 DEC. 2011, %



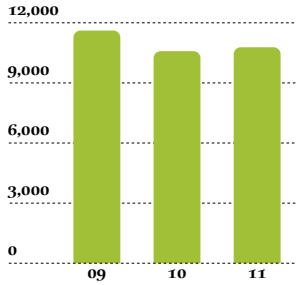
PERSONNEL BY COUNTRY, 31 DEC. 2011, %



LEVEL OF EDUCATION, 31 DEC. 2011, PERMANENT EMPLOYEES, %



PERSONNEL, TOTAL 31 DEC.



Impacts of energy production and use

1. ENERGY SOURCES

CLIMATE

- Harvesting of biomass reduces carbon sinks unless replantation is managed.
- Fossil fuels are used in mining operations and in harvesting of biomass resulting in greenhouse gases.

HEALTH AND SAFETY

- Mining operations pose health and safety risks for workers and local residents.

WATER SYSTEMS

- Damming of the river and construction of hydropower change the natural state of the water system.
- Hydropower production may impact biodiversity and fishing and recreational use of water systems.
- Impurities from coal mines and peat bogs may be released into water systems.

OTHER ENVIRONMENTAL ASPECTS

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

SOCIETY

- Mining, harvesting and processing of fuels have a significant employment impact and increase social and economic well-being.
- They also involve social risks, in regard to land ownership, human rights, labour rights and living conditions of communities near the fuel source.

Fortum's actions

- **In 2011, Fortum established position and actions for sustainable utilisation of bioenergy in electricity and heat production, read more on p. 70.**
- **Fortum has decided to join the Bettercoal initiative, a non-profit membership-based organisation promoting continuous improvement of corporate responsibility in the coal supply chain, read more on p. 71.**
- **Fortum conducts internal EHS reviews of the uranium supply chain annually.**
- **Fuels accounted for about EUR 900 million of Fortum's total purchases, from which fossil fuels accounted EUR 655 million and biofuels EUR 175 million.**

2. FUEL HANDLING AND TRANSPORT

CLIMATE

- 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

- Coal handling, especially loading and unloading, may cause adverse effects on the local environment and workers.

WATER SYSTEMS

- Transporting fuels via waterways involves environmental risks such as oil spills.

SOCIETY

- Transportation and distribution of fuels have a positive impact on local employment and this increases well-being.

Fortum's actions

- **Fortum reports the greenhouse gas emissions from the fuel chain, including indirect emissions from the production and transportation of fuels, read more on p. 107.**
- **Fortum aims to mitigate local impacts e.g., from coal unloading in the harbour, read more on p. 110.**

3. ENERGY PRODUCTION

CLIMATE

- CO_2 emissions from fossil fuels and peat contribute to climate change.
- Hydro, nuclear, wind and solar power production do not result in CO_2 emissions in the production phase.
- The use of bioenergy is CO_2 neutral.

SOCIETY

- Energy production enables functioning of the modern society and has many economic impacts on society.
- Energy companies generate steady and long-term economic well-being in the society.

HEALTH AND SAFETY

- Flue gas emissions may have an impact on air quality and health.
- Nuclear fuel is radioactive, but in normal use nuclear power production has no impact on human health or environment.

OTHER ENVIRONMENTAL ASPECTS

- Production and maintenance creates e.g., ash, gypsum, scrap metal and waste oils.
- Production plants have impacts on the visual landscape and land use.

WATER SYSTEMS

- Hydropower regulation has an impact on water flows and surface levels and may impact fishing and recreational use.
- Cooling waters increase the temperature of water systems locally, while heat pumps cool water systems.
- Small amounts of impurities may be carried along with waste waters from production plants into water systems.

Fortum's actions

- **In 2011, 65% of Fortum's electricity production was CO_2-free, read more on our environmental impacts on pp. 102–110.**
- **Safety improvements of hydropower plants and dams as well as voluntary mitigation measures of impacts from hydropower production continued in 2011, read more on pp. 48–49.**
- **In nuclear power production, safety evaluations were carried out, read more on p. 51.**
- **In 2011 Fortum commissioned approx. 600 MW new CHP capacity in Russia.**
- **In thermal energy production, Fortum reduced the environmental burden of the Russian operations by increasing the use of better quality coal, read more on p. 108.**
- **Fortum's operations had both direct and indirect economic impacts, read more on pp. 67 and 97–101.**

4. ELECTRICITY AND HEAT DISTRIBUTION

HEALTH AND SAFETY

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

OTHER ENVIRONMENTAL ASPECTS

- Building and maintenance of over-head power lines impact environment, land use and the visual landscape.
- Underground cables improve the reliability of electricity distribution and reduce environmental impact.
- The construction of district heat network causes temporary disturbance for the surroundings, but the operation of the network does not have any major known impact on the environment.

SOCIETY

- Over-head power lines are more vulnerable to weather conditions like storms.
- Power cuts have an impact on modern societies, because they rely on electricity.
- Disturbances in heat delivery cause harm for heat consumers.

Fortum's actions

- **Fortum continuously maintains and rebuilds its distribution network. Underground cables account for about 50% of the network. Fortum's reliability in electricity distribution was 99.90% in 2011, read more on pp. 75–76.**
- **Fortum refurbishes its district heating networks in Russia and can reduce heat losses up to 20–30%, read more on p. 56.**

5. USE OF ELECTRICITY AND HEAT

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 future smart energy system, consumers can have an active role 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 the resource efficiency and reduces environmental burden.
- District heating reduces air pollution and local environmental burden when it replaces distributed heat production.

Fortum's actions

- **All Fortum's residential customers in Finland received CO_2-free electricity. In Sweden all Fortum's electricity was sold with an environmental value, read more on p. 75.**
- **Fortum develops future smart grids and provides solutions for low-carbon society, read more on p. 76.**

6. HANDLING OF WASTE AND BY-PRODUCTS

CLIMATE

- Fossil fuels used in transportation of waste and by-products generate greenhouse gases.
- Landfills release methane.

HEALTH AND SAFETY

- Health and safety risks are related to the handling of hazardous and radioactive waste. Especially the handling of spent nuclear fuel requires long-term research and planning before the final disposal.

WATER SYSTEMS

- Impurities from landfills or ash basins may be released into water systems.

SOCIETY

- Nuclear waste management and disposal is a highly sensitive issue in the society, subject to political and public acceptance.
- Utilisation of waste in energy production reduces the cost for the society.

OTHER ENVIRONMENTAL ASPECTS

- Utilisation of ash and gypsum reduces the amount of waste into landfills and the need for natural materials.
- Landfills and dumping areas have impacts on the visual landscape and land use, and may release impurities into the soil and groundwater.
- The use of waste to energy saves natural resources and reduces the load on landfills.

Fortum's actions

- **Fortum continued participation in the final disposal projects of nuclear waste in Sweden and Finland, read more on pp. 52–53.**
- **In 2011, 52% of Fortum's ash was utilised and 400 tonnes were landfilled. 89% of gypsum produced at Fortum's plants was utilised.**
- **Fortum's ash disposal (wet transport and ash basins) in Russia resulted in non-compliances. To reduce environmental burden, Fortum has reduced the amount of water and improved its treatment of waste water.**
- **In 2011, Fortum used 2.5 terawatt-hours (TWh) of waste derived fuels in its energy production.**

Interview with the President and CEO

Lately, the energy sector has been a focus of interest both politically and for the public at large. In 2011, the Fukushima nuclear accident, the Arab Spring and economic uncertainty, among other things, have challenged players in the sector. Fortum's President and CEO Tapio Kuula discusses how the company has fared in the volatile operating environment.

How has Fortum responded to the uncertainty factors of the operating environment in 2011?

Fortum has been through a turbulent year, and the instability in the European economy, among other things, has added to the operational challenges. The economic uncertainty in the eurozone has weakened the outlook particularly in the financial markets for the immediate years ahead. For this reason, we have paid close attention to our cash flow and have kept our balance sheet strong and our liquidity good. We have also drafted a flexible action plan in case the outlook darkens.

How did Fortum's strategy guide the company's activities in 2011?

Leveraging the Nordic business, creating economic added value in Russia and building a platform for future growth are at the core of Fortum's strategy. Our strategy guides our activities very specifically, and the execution of the strategy is supported by our strong competence in carbon dioxide-free hydro and nuclear power production, combined heat and power (CHP) production and in operating in the energy markets. Sustainability is a strategic cornerstone for us and also an integral part of our daily operations.

In 2011, we made progress in many important areas. We have implemented our Russian investment programme with

THE GLOBAL COMPACT
WE SUPPORT

GROUP FINANCIAL TARGETS

	Target	2011	2010	2009
ROCE, %	12	14.8	11.6	12.1
ROE, %	14	19.7	15.7	16.0
Comparable net debt / EBITDA	Around 3	3.0	2.8	2.5
Net debt / EBITDA		2.3	3.0	2.6

determination, and we've developed the production structure of the heat business in order to sharpen our focus on energy- and resource-efficient CHP production. At the same time, we are creating a new growth platform in France by preparing for the participation of the French hydro concession bidding. We've started mapping growth opportunities also in India, where we opened an office in February 2012.

In Finland, Fortum has an approximately 26% interest in TVO's Olkiluoto 3 nuclear power project under construction and in the new Olkiluoto 4 project, the bidding and engineering phase of which was launched in autumn. In Sweden, we have raised the output and improved the availability of nuclear power plants.

How did Fortum achieve its sustainability targets in 2011?

We achieved out climate targets, although the specific CO_2 emissions from our total energy production increased by nearly 10% from the previous year. The increase was due to the commissioning of new plants, which raised the relative share of our Russian mainly natural gas-based production in our total energy production.

Sustainability is and will continue to be a cornerstone of our operations, and we can be proud of the fact that our performance in the area of sustainability has received a lot of recognition – also internationally.

Our specific CO_2 emissions from electricity generation in the EU were slightly less than in 2010. In a European comparison, Fortum's specific CO_2 emissions, including Russian operations, were among the lowest in the sector and about half of the average in the sector.

I am particularly pleased with the improved occupational safety. In 2011, we achieved our best record ever in injury frequency for our employees. Contractor safety also improved. Unfortunately, in December, the good progress was overshadowed by a fatal accident involving one of our contractors in Sweden. I would like to extend sincere condolences to the victim's family and co-workers. The internal accident investigation has been completed and we will continue working with even more diligence to improve safety.

Sustainability is and will continue to be a cornerstone of our operations, and we can be proud of the fact that our performance in the area of sustainability has received a lot of recognition – also internationally. Among other things, our company was ranked the best utility in the world in the Carbon Disclosure Leadership Index measuring the management of climate issues.

How did Fortum achieve its financial targets in 2011?

In summer, Fortum's share price reacted strongly to the new Finnish Government's programme, which proposes investigating the implementation of a possible windfall and uranium tax. Moreover, the programme noted that the Government will not make any new decisions-in-principle on nuclear power.

However, the Government programme's policies have not had a direct impact on Fortum's earnings. Fortum's full-year earnings per share as well as operating profit developed favourably. This is partially due to the non-recurring revenue from the divestment of operations outside the scope of our strategy. Fortum's operating profit was also positively affected by IFRS accounting treatment of derivates mainly used for hedging Fortum's power production. Our profitability is still at a good level and the structure of our balance sheet and our liquidity are strong. Because of these factors, Fortum is well positioned for the future.

Hydropower and CHP production are key elements in Fortum's strategy. Why does Fortum see potential specifically in these activities?

Fortum has a long track-record and extensive experience in the design, construction and responsible use of hydropower. In fact, the company is one of the most significant hydropower producers in the Nordic countries. In 2011, we produced 72.7 terawatt-hours (TWh) of electricity; of which hydropower accounted for 21.0 TWh. Moreover, in many respects, hydropower is a very competitive production form because of its flexibility and eco-friendliness. CHP, in turn, is a very energy- and resource-efficient alternative for energy production, especially at Nordic latitudes, because its production capacity is the best during winter when the demand is higher.

When will the investment programme in Russia start to produce a positive economic value added?

Fortum continued its extensive investment programme in Russia in 2011 with the commissioning of three new units. The total output of the three units taken into commercial use is over 600 megawatts (MW) of our 2,400-MW investment programme in Russia. This new capacity, built under the Government's capacity supply agreement, will receive guaranteed payments for a period of 10 years. The impact of the new units we have built is already visible in the 2011 comparable operating profit, which in the Russia Division increased from EUR 8 million to EUR 74 million. We will continue implementing the programme in 2012 with the commissioning of two of the three 418-MW units at the new Nyagan power plant.

How has Russian electricity market reform progressed?

Russia had liberalised most of the wholesale markets for electricity by the beginning of 2011, but the work is ongoing in areas like development of financial products and capacity markets. For Fortum, realisation of the market reform was one of the key reasons for investing in Russia, and, indeed, we now see that the reform has progressed as planned.

Russia is also investing in energy efficiency improvements through several programmes and international collaboration. Russia's heat markets are of interest to Fortum because of the huge potential for energy-efficiency improvements in the country's heat sector.

How has Fortum performed with its sustainability targets in Russia?

Sustainability is at the core of our operations also in Russia, but the most urgent targets of improvement there differ somewhat from those in the Nordic countries, for instance. In Russia, we have put significant effort into improving occupational safety and reducing conventional environmental impacts, like nitrogen oxide, sulphur dioxide and particle emissions, limiting emissions into waterways and improving energy efficiency. By raising energy efficiency, we also reduce specific CO_2 emissions. In these areas, we have already achieved clear results. We have also switched to using a better quality of coal at the Argayash plant and improved efficiency in processing the wastewater from the ash

For Fortum, realisation of the market reform was one of the key reasons for investing in Russia, and, indeed, we now see that the reform has progressed as planned.

basins at several of our power plants in the Chelyabinsk and Tobolsk regions. OAO Fortum's operations recently passed the first phase of certification audit in accordance with the international ISO14001 standard.

How have the Fukushima nuclear accident in Japan and the ensuing political decisions in Europe affected Fortum's safety culture and business operations?

The accident at the Fukushima nuclear power plant last year sparked a lot of discussions; the attitudes towards the accident and the decisions made because of it have varied in different countries. As a nuclear power company, safety is always our most important and the primary factor behind all activities in nuclear power production. Over the years, the prepardness for severe reactor accident management has been improved significantly at our Loviisa power plant and at our co-owned plants. Nuclear safety is also the specific focus in a significant part of Fortum's research and development work. Based on this work, the Loviisa power plant's safety and preparedness for severe accidents has been and will continue to be improved over the long-term.

In the light of the safety evaluations by the Finnish Radiation and Nuclear Safety Authority and the EU-wide nuclear power stress tests, there are no critical safety-related changes in sight for Fortum-owned nuclear power plants. No significant new requirements, new threats or shortcomings requiring immediate corrective action were found in Finnish nuclear power plants. The results of assessments made in Sweden were similar to those in Finland. Based on the further assessment, the development targets to be selected later can be implemented within the framework of the Loviisa power plant's annual investment programmes, and they will not have a significant impact on the plant's availability.

Climate change is a global challenge in need of solutions. For this reason, I believe that the world will continue to need nuclear power. Fortum's nuclear power know-how is at a very high level internationally, and that's why we view, e.g., the development of existing nuclear power plants as an interesting business area.

How will Fortum develop its electricity grids and operations in preparation for storms and other natural phenomena?

The storm that raged in Fortum's grid area in Finland and Sweden at the end of the year knocked out power for more than 200,000 households and caused considerable financial damage for the company. I want to express my regrets to our customers for the difficulties and the widespread power outages caused by this storm. Although Fortum had prepared for the storm by quadrupling the number of service technicians, the situation was exceptional compared to the forecasts. Since the storm, we have carefully analysed our operations and have mapped the areas requiring improvement. In a power outage

situation, we must be able to serve a large number of customers more quickly, and that requires the implementation of, e.g., a text messaging service and improvements to our IT systems. Even though repairing the storm damage was successful in light of the difficult situation, we will continue developing also that aspect of our operations.

Society's growing dependence on electricity is another reason for the increasing importance of storm preparation. Climate change is also expected to increase extreme weather phenomena. Fortum is setting a long-term target to cut the number of power outages in half and to double the number of customers currently within the scope of weather-proof distribution by 2020. It is possible to accelerate underground cabling, particularly in places most critical for operational reliability, in addition to which areal lines can be moved from the forest to the roadside. The weather reliability of the distribution

The future energy system should be based on carbon dioxide-free electricity production and on energy security and efficiency.

network also can be improved by better management of adjacent forests and with grid automation.

Where will Fortum pursue growth in the future?

As I mentioned, we are committed to the extensive investment programme in Russia, which will increase our capacity significantly. Additionally, our investment programme in Europe will grow our electricity production capacity by a total of 800 MW and our heat production capacity by about 230 MW by 2015. We are exploring business opportunities also in India, which is one of the fastest growing markets in the world. Our growth platform there is based on our special expertise in energy-efficient CHP production, in which we can also use local biofuels.

The focus of global economic growth is shifting to Asia. What is the outlook for the European energy market?

There is still plenty of development potential in the European energy market, e.g., in market integration. I consider the market-driven development of the energy markets and stronger harmonisation of the rules of the operating environment to be very important. Efficiently functioning, broader markets benefit customers, society and the environment. They also enable the right investments in the right place, whether in bio, solar, wave or wind power.

Fortum's vision is that the future energy system is based on Solar Economy. How has Fortum prepared for such a sizable change in the energy system?

Fortum is already using production forms that are part of Solar Economy, such as hydropower and bioenergy. However, I believe that energy will have to be produced and consumed increasingly more sensibly in the future. In fact, the future energy system should be based on carbon dioxide-free electricity production and on energy security and efficiency. In our view the energy system will gradually shift from conventional electricity production technologies, exhaustible energy sources and fossil fuels towards so-called Solar Economy. However, with the exception of hydropower, wind power and bioenergy, Solar Economy production forms are still very much in the development phase. Therefore, also Fortum is actively researching future energy production technologies, like biofuels for CHP production, and wave power. We envision good opportunities also in the direct utilisation of solar power, and we believe that we can develop concrete business in this area in the near future.

What are Fortum's development steps moving forward?

Fortum's strong balance sheet and productive capital structure enable us to be well prepared also for a more uncertain outlook. In the future, the relative share of electricity in total energy consumption will grow, offering Fortum more business opportunities. I believe that we have good potential to grow in line with our mission and strategy.

The strong competence of our personnel has naturally been instrumental in implementing our strategy, and I want to take this opportunity to thank all Fortum employees for a job well done. And I want to extend a special thank-you to our customers. It is truly unfortunate that the winter storms resulted in some customers having to wait days – and in some cases even weeks – to have their power restored. We will do everything we can to serve our customers better also in exceptional circumstances like these.

Additionally, I would like to thank our shareholders for the past year. We will continue our work to grow shareholder value and to resolutely develop our operations in spite of uncertainty in the global economy.


In Solar Economy, the role of
electricity grows.

How?

Fortum's view:

1. A growing share of the world's population will gain access to modern energy systems

Currently, 1.3 billion people live without electricity. In the future, access to reliable electricity will be a priority, as electricity is an essential part of good living standards. The increase in energy consumption is weighted against the scarcity of natural resources, so there is more emphasis on energy efficiency.

2. Electrification of transportation

Electric vehicles will become more common and replace fossil-based transportation. This will lead to lower emissions and higher energy efficiency.

FORTUM IS RESPONDING TO THE GROWING DEMAND FOR ELECTRICITY

Fortum is contributing to fulfilling the constantly growing global demand for energy and is pursuing solutions that also meet the needs for sustainable development. Fortum believes that sustainability is one of the success factors for its business – also when exploring and entering growing markets, such as Russia and India. Fortum's growth platform in India, for example, is based on its special expertise in energy-efficient combined heat and power (CHP) production, in which the company can also use local biofuels. In Russia, Fortum is implementing its extensive investment programme of ~2,400 MW and has also put significant effort into reducing conventional environmental impacts. By increasing energy efficiency, the company also reduces specific CO_2 emissions.

Regarding the electrification of transportation, Fortum is preparing for the mainstreaming of electric vehicles by designing and implementing the charging station network and payment system. Fortum has more than 100 public charging stations in Scandinavia. In 2011, the company continued the development of solutions for electric vehicles and introduced a new turnkey concept that provides recharging services of electric vehicles for companies and municipalities in Finland, Sweden and Norway. Fortum's concept takes care of the whole process: installation of the charging poles, electricity, maintenance and outage service.

SUSTAINABILITY INTEGRATED IN STRATEGY

- Fortum's strategy
- Market development
- Towards Solar Economy

Fortum's strategy

Fortum's purpose is to create energy that improves life for present and future generations. We provide sustainable solutions that fulfil the needs for low emissions, resource efficiency and security of energy supply, and deliver excellent value to our shareholders. Fortum wants to be a forerunner in developing the future energy system – Solar Economy.

Energy plays a vital role in today's society and has become a focus of much political and public attention during recent years. Economic growth, prosperity and population growth will inevitably boost energy needs over the coming decades. At the same time, political, ecological, geopolitical, economic and social requirements create a dynamic and complex environment for the energy business.

The energy sector inherently faces new uncertainties every year. By evaluating the overarching megatrends that affect the energy business and following a clear strategy driven from them, Fortum can overcome the challenges in the operating environment. Read more about megatrends on page 32.

Sustainability integrated in Fortum's strategy

Fortum's mission captures our dedication to sustainability. For us, sustainability means balanced management of the economic, social and environmental responsibility in the company's operations. Fortum's values – accountability, creativity, respect and honesty – form the foundation for all our activities.

Fortum's strategy is consistent with our vision of the future energy system, Solar Economy (read more on pages 40–43). Our strategy aims for continuous development of existing operations and growth in CO_2-free hydro and nuclear power and in energy efficient combined heat and power (CHP) production. With our research and development we aim to contribute to the development of climate benign and efficient energy system in the society.

Fortum's core competences

Hydro and nuclear power are CO_2-free production forms, and competitive in terms of variable costs. Therefore, they both have a significant role in Fortum's production portfolio. In 2011, 83% of Fortum's power generation in Europe was based on hydro and nuclear power. As CO_2 has an economic value in Europe, the high proportion of CO_2-free production is a competitive advantage to Fortum. Hydropower also enables fast responses to market conditions and thus supports Fortum's competitiveness in electricity markets, where increased price volatility is foreseen in the future.

83 % HYDRO AND NUCLEAR POWER

In 2011, 83% of Fortum's power generation in Europe was based on hydro and nuclear power.

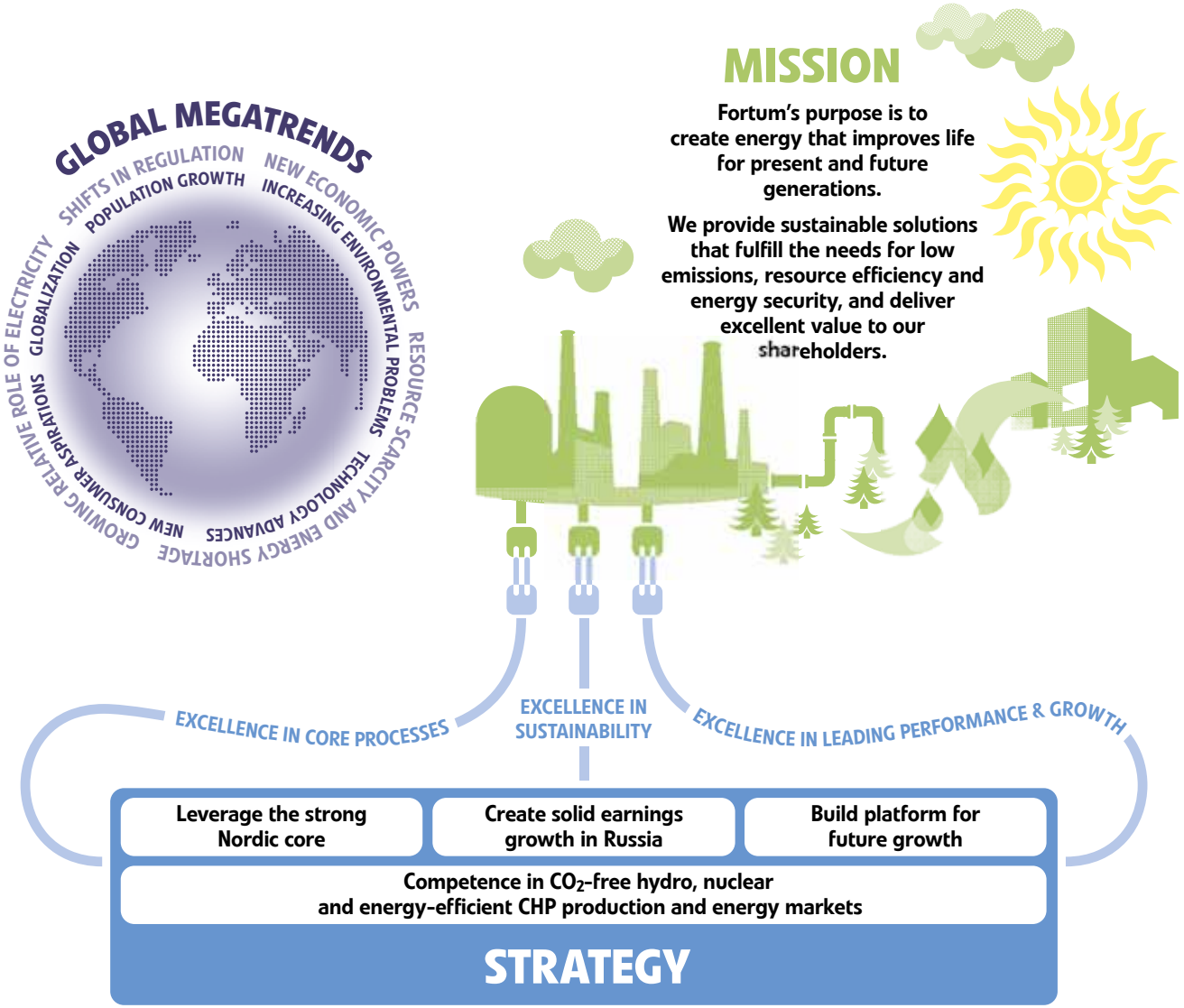
Hydropower's role in balancing production and consumption will be more important when an increasingly larger share of electricity is produced with, e.g., wind and solar energy. In terms of Solar Economy, hydropower is already today an important production form and the only proven CO_2-free renewable energy source with a long history of use.

Combined heat and power (CHP) contributes to the growing demand for resource efficiency and to the increased utilisation of local biofuels. Fortum considers itself as a globally leading expert in energy- and resource-efficient CHP production technology. In terms of total production volume, Fortum is the world's fourth-largest heat producer. Fortum's high competence in fuel flexibility makes it possible to use a wide selection of fuels, including bio-based and local fuels such as waste.

Energy market expertise and the ability to anticipate market development have enabled Fortum's success in the 2000s. They are also central when pursuing opportunities in the integrating European and fast-growing Asian energy markets.

Leveraging the strong Nordic core

The majority of Fortum's earnings are generated by power and heat production in the Nordic countries. Our goal in the short-term is the successful implementation of the existing investment programme in new production capacity. Fortum also aims to create more added



value from its electricity retail sales and distribution business. In the long-term, Fortum's aim is to secure its competitive position in the Nordic markets.

Creating positive economic value added in Russia

Russia has the world's fourth highest demand for electricity, and the country is a growth market for electricity production. In the long-term, Russia will have a bigger relative role in Fortum's business than it does currently. For the time being, Fortum is pursuing positive economic value added in Russia. OAO Fortum's sizable investment programme will increase the company's electricity production capacity in Russia by 85%. It will also play a key role in terms of profitability, which is expected to grow as new capacity is commissioned and the efficiency of existing business is improved.

Building a platform for future growth

Fast population growth in developing nations is shifting the growth in electricity demand mainly to Asia. At the same time, climate change and local environmental problems create a need for sustainable, CO_2-free and energy-efficient solutions. Also the liberalisation of power markets is advancing and the need for private capital is growing in the Asia's rapidly growing and developing economies. For Fortum, this creates new growth opportunities also in Asia.

Fortum's vision of the future energy system – Solar Economy – is the driver for the company's research and development.

Strategy realisation in 2011

2011 was unexceptionally turbulent for the energy sector. The Fukushima nuclear accident in Japan, the ongoing financial crisis in Europe and the unstable situation in the Middle East and North Africa, all have had implications to the energy sector, which is becoming more and more exposed to global phenomena. The slow progress towards a global climate deal has emphasised the need for clear long-term signals and predictability for energy investments.

Despite the circumstances, Fortum succeeded in the implementation of its strategy and in achieving operational enhancements. The company continued with investments in order to support its long-term goals. Key achievements in the strategic core areas have been presented on the right. Read more on our investments on pages 61–66.

Sustainability approach

Fortum's sustainability approach captures the balanced management of the economic, social and environmental responsibility in the company's operations. At Fortum, business and sustainability performance are tightly linked, underlining the role of sustainable solutions as a competitive advantage.

FORTUM'S STRATEGY AND ITS REALISATION IN 2011

Strategy core area	Priorities	Achievements in 2011
Leverage the strong Nordic core	Nordic countries and Baltic Rim: ensuring the result from the existing business and developing the asset base	• High level of availability in the Nordic generation assets • Securing cash flow stability through power price hedging • Inauguration of a new combined heat and power (CHP) plant using local fuels in Pärnu; investment desicion on two new biofuel-fired CHP plants to be built in Järvenpää, Finland and Jelgava, Latvia • Divestment of heat operations in Sweden and in Finland to focus more on large-scale CHP according to strategy • Nuclear power capacity upgrades in Forsmark and Oskarshamn, Sweden; preparing for Olkiluoto 4 with TVO in Finland • Ongoing hydropower refurbishments in Finland and Sweden • Several investments in electricity networks and installation of smart metering in Finland

Create positive economic value added in Russia	Delivering the extensive investment plan	• 85% of OAO Fortum's power production sold at a liberalised electricity price. New rules of capacity market approved.
		• OAO Fortum reached its targeted annual efficiency improvements of EUR 100 million compared to the level at the time of the acquisition in 2008
		• Inauguration of 3 new gas-fired generation unit's in Russia:
		  • Tyumen CHP-1, electricity production capacity 190 MW
		  • Chelyabinsk CHP-3, electricity production capacity 216 MW
		  • Tobolsk CHP, electricity production capacity 213 MW
		• Raising heat supply efficiency in Chelyabinsk and Tyumen

Build platform for future growth	New technologies and growth opportunities in Europe, Russia and Asia	• Preparations for hydro concession renewals in France; office established • Preparations for business development in India; office established • Initiating solar business development • Research and development activities, e.g., in the areas of solar energy, wave power, nuclear power, smart grids, pyrolysis, torrefaction, and the potential of integrating a CHP plant with bioethanol production

Case:

New capacity commissioned in Russia

Fortum's extensive investment programme in Russia is progressing. The new investments support the implementation of Fortum's strategy as they increase the CHP production of the company. In 2011, the new unit in Tyumen and the new power capacity in Tobolsk added production capacity together with 403 megawatts (MW) power and 256 MW heat. Also the new CHP unit at Chelyabinsk CHP-3 increased the plant's electricity generation capacity with 216 MW and heat production capacity with 56 MW.

The new investments provide clear environmental benefits. The new units represent the best available technology improving the efficiency of the plants and decreasing CO_2 emissions. For example, the energy efficiency of the new unit in Tyumen is over 85% and the CO_2 emissions in the area will reduce by 400 000 tonnes annually. In Chelyabinsk the new unit's fuel consumption is 20% lower than that of existing gas-fired units, and its efficiency increases to 77%. The investments also support the well-being of the local societies by employing workforce.

In total, Fortum's Russia Division invested EUR 670 million in 2011. The investment programme continues in Nyagan, where two out of three new units will be commissioned in 2012. The value of the remaining part of the investment programme was estimated to be approximately EUR 0.9 billion as of January 2012.

At Fortum, business and sustainability performance are tightly linked, underlining the role of sustainable solutions as a competitive advantage.

The economic responsibility for Fortum means competitiveness, performance excellence and market-driven production, which create long-term value and enable profitable growth. Fortum aims for performance excellence through continuous development of operational efficiency and core processes. We recognise that competitive advantage can be gained through benchmark operations in fuel management and trading, success in investments and customer processes, optimal operation and maintenance of power plants as well as core management of support processes.

The environmental responsibility at Fortum emphasises efficient use of resources and need to mitigate climate change and highlights our know-how in CO_2-free hydro and nuclear power production and in energy-efficient CHP production. Research and development activities create prerequisites for environmentally-benign energy solutions. Climate change mitigation and the reduction of carbon dioxide emissions are important goals that affect the energy sector and the development of electricity and heat production. In addition to new technical innovations, also low-emissions and efficient traditional production technologies will be needed for a long time.

In the area of social responsibility, Fortum's innovations and the secure supply of low-carbon power and heat support the development of society and increase well-being. Fortum's sustainability approach also includes being a good corporate citizen and taking care of its own personnel and the surrounding community. Fortum promotes well-being and safety in the work environment, respect for individuals and mutual trust, and responsible operations in society.

Sustainability targets and performance

Fortum's sustainability approach defines Group-level targets guiding operations and the key indicators used to monitor them. Based on these, the divisions define the division-level targets, which are partly monitored and reported also at the Group level.

The key indicators defined in the sustainability approach are the targets for specific CO_2 emissions from total energy production, specific CO_2 emissions from electricity production in the EU, the target for overall efficiency of fuel use, the target for environmental certification and the target for occupational safety. The sustainability results for 2011 are presented in the table on the right as well as in the respective sections of the GRI content index.

Revision of Fortum's Code of Conduct

In 2011, Fortum revised its Code of Conduct. Fortum's previous Code of Conduct originated from 2007 and was introduced to the employees in 2008. The Code of Conduct has since been part of the introduction of new employees. Fortum's strategic intent to enter emerging markets as well as other changes in corporate structure and the operating environment, including the launch of the UK Anti-Bribery Act, called for revision work. The Board of Directors approved the revised Code of Conduct in January 2012.

FORTUM'S SUSTAINABILITY TARGETS AND PERFORMANCE IN 2011

	Target period	Target setting		Performance	Remarks for 2011
Climate targets	Over the next five years	Specific CO_2 emissions from power generation per kilowatt-hour in the EU as a five-year average	<80 g/kWh	67 g/kWh	Emissions were 88 g/kWh. Rolling 5-year average has gone slightly down from 69 g/kWh in 2010.
		Specific CO_2 emissions from total energy production (electricity and heat) per kilowatt-hour as a five-year average	<200 g/kWh	169 g/kWh	Emissions were 192 g/kWh due to high emissions in Q1. Rolling 5-year average has gone up from 157g/kWh in 2010.
Other environmental targets		Overall efficiency of fuel use as a five-year average	>70%	68.3%	Efficiency was 67.1%. Rolling 5-year average has gone down from 69.4% in 2010.
	By year-end 2010	ISO 14001 environmental certification for operations in the EU	100%	99%	Certifications were obtained in Latvia, Estonia and Norway.
	By year-end 2012	ISO 14001 environmental certification for operations in Russia	100%	70%	OAO Fortum's operations were audited for certification in December, one year ahead the original schedule of the EHS Action Plan.
Occupational safety target	Year 2011	Lost workday injury frequency (LWIF) for own personnel	<1	1.6	29 LWI accidents to own personnel, 16 less than in 2010. Good performance shadowed by a fatal contractor accident in December.
Overarching target	Annually	Fortum included in the Dow Jones Sustainability Indexes World and Europe		1/2	Included in World Index but not in Europe Index. Compared to last year, score was improved in all dimensions of sustainability.

The implementation of the revised Code of Conduct with an advanced e-learning tool will be one of the key sustainability activity affecting all employees at Fortum during 2012.

In Russia, ethics ambassadors', network was established in June 2011. Their role is to foster compliance culture and to provide an additional channel for raising compliance concerns.

Market development

In 2011, global economic activity slowed and the European sovereign debt crisis got much of the political and market attention. Furthermore, the Fukushima accident led a number of countries to reconsider their standpoint towards nuclear energy, therefore increasing the uncertainty of energy sector's investments.

80–95 % LESS GREENHOUSE GAS EMISSIONS

The EU is targeting an 80–95% reduction in greenhouse gas emissions from 1990 by 2050.

European and Nordic economic growth slowed during the year, which was reflected in stagnant electricity demand. However, the European utility sector was on par with other European industry sectors' performance, as the equity markets were mostly affected by general economic uncertainty with relatively stable commodity prices.

While the Russian economy grew faster than the world average, growth there also slowed somewhat towards the end of the year. Fortum operates in the Chelyabinsk and Tyumen areas in Russia. In the Chelyabinsk area, where much of the metals industry is located, power demand increased by nearly 4% from the previous year, while power demand growth in the oil- and gas-rich Tyumen area was modest. Electricity demand in North-Western Russia overall increased by 2% in 2011.

Volatile operating environment

During the first half of 2011, commodity prices roller-coasted after the Fukushima nuclear accident; but, due to escalating sovereign debt worries and slowing growth, they started to even out in the summer and the latter part of the year. European CO_2 prices in particular were affected and fell in early summer, due to increased uncertainty in terms of economic development and hence the demand for CO_2 allowances. Speculations on the future European carbon reduction policies also contributed to the drop in European CO_2 prices.

Due to declining commodity prices in the latter part of the year and increasing precipitation, Nordic electricity prices were at EUR 47 per megawatt-hour (MWh) on average in 2011, which was nearly a tenth lower than the previous year. German EEX prices were EUR 51/MWh on average in 2011. They were a tenth lower than in the previous year. Russian spot power prices (excluding capacity fees) were at RUB 989/MWh (EUR 23/MWh) on average – about 12% higher than the previous year.

Average differences between area prices in Finland and Sweden compared to the Nord Pool system prices were smaller in 2011 than in 2010. In the autumn, however, the Finnish area prices were higher than the Swedish area prices and also above the system price level due to high rainfall in southern Norway and Sweden and limited available transmission capacity. Correlation of the wholesale price in Estonia with Nord Pool and Finnish area prices clearly strenghtened towards the end of the year.

The role of nuclear power uncertain after Fukushima accident

The Fukushima accident in March 2011 led a number of countries, including Germany, Italy, Switzerland and Belgium, to reconsider their standpoint towards nuclear power. In most cases those decisions coincided with political points of discontinuity like elections, forming a new government, etc. Germany took very drastic measures and quickly decided to close down all its nuclear power plants by 2022. Eight reactors were immediately closed down.

The EU also responded very quickly to the events in Japan. In May, the Commission agreed upon the methodology and timetable for the so-called EU nuclear safety stress tests. The purpose of the stress tests is to assess whether the current safety margins are sufficient to cover various unexpected events.

Nuclear power plant operators submitted their reports to national regulators at the end of October and the Commission reported preliminary findings to the European Council in December. The national reports will be peer-reviewed by multinational teams by 30 April 2012, and the Commission will submit its final report to the European Council in June 2012. The Commission is also considering updating the Nuclear Safety Directive from 2009 based on the stress test results.

It is too early to conclude, whether the Fukushima accident was an end of the so-called nuclear renaissance that was springing up throughout the world. Several new investments in Western European countries are on hold and delayed as a result of increased investor risks, challenges in financing new projects and expected new safety measures. In many Central and Eastern European countries, however, interest in new nuclear power has increased.

Investment challenge grows

Power utilities continued delivering according to their strategies announced the previous year, with the repeating themes of strengthening the balance sheet and executing efficiency programmes. As a consequence, many utilities divested parts of their assets during the year. Reducing CO_2 exposure also remained high on the utilities' agenda, despite the uncertainty. Due to the phase out of nuclear power in some countries and increasing shares of intermittent renewable energy sources, hydro assets are looking even more attractive than before. Power utilities also formed partnerships for participation in large-scale renewable energy investments, such as offshore wind power.

NORDIC ELECTRICITY MARKET

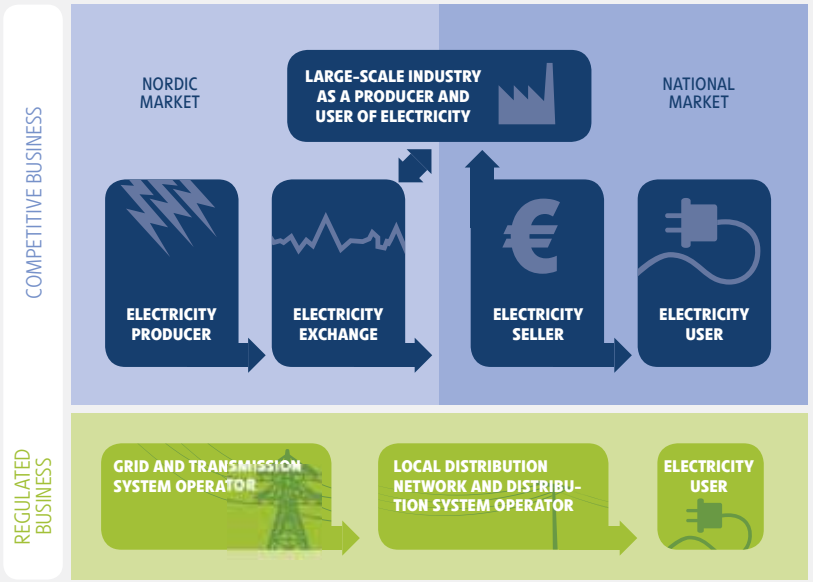
Electricity market covers the generation, transmission, distribution and sales of electricity. Electricity production and sales are competitive businesses, while electricity transmission and distribution are regulated.

The Nordic countries were the first to establish a regional, multinational electricity wholesale market. About three quarters of the electricity produced in the Nordic countries is traded on the Nordic electricity exchange (Nord Pool Spot). The producers use the rest of the electricity themselves or sell it directly to big industrial customers. There are about 350 players in the Nordic wholesale electricity markets. The balance of supply and demand, the price of fuel and emissions allowances and the hydrological situation affect the wholesale price. As the market is very volatile, both buyers and sellers can also hedge power prices with financial contracts.

Electricity transmission and distribution companies operate regionally because it is not cost-efficient to build multiple electricity networks in the same area. Authorities monitor electricity transmission and distribution, its costs and the business practices of the companies. The transmission and distribution companies must treat all electricity producers and buyers equally, regardless of the producer or buyer of the electricity they are transmitting.

Electricity retailers buy their electricity mainly from the NordPool Spot and sell it to households and companies. The retail price is mostly affected by the wholesale price. It is also subject to taxes and other fees by authorities, including subsidies for renewable energy.

NORDIC ELECTRICITY MARKET STRUCTURE



ELECTRICITY MARKET IN RUSSIA

The Russian wholesale electricity market has been liberalised from the beginning of 2011. All generating companies continue to sell a part of their electricity and capacity equalling the consumption of households under regulated prices. Households account for about 10% of the wholesale markets.

In addition to the electricity wholesale electricity market, Russia also has an electricity capacity market, in which an electricity producer receives earnings for the production capacity it offers for market use. The purpose of the electricity capacity market is mainly to encourage new investments in electricity production.

The long-term capacity market rules were approved by the Russian Government in 2010 and have been applied from the beginning of 2011. The so-called old capacity, built before 2007, will compete in competitive capacity selection. The first competitive capacity selection in accordance with the new rules of the long-term capacity market was held in December 2010. The new generation capacity, built after 2007 under government Capacity Supply Agreements (CSA), will receive guaranteed payments for a period of 10 years. Prices for capacity under CSA are defined to ensure a sufficient return on investments.

Global megatrends affect energy business

NEW CONSUMER ASPIRATIONS

Urbanisation, re-localisation of industries and the rise in living standards, particularly in the big growth centres of Asia, are changing consumer habits and increasing energy consumption. The growing environmental awareness of consumers in Europe is motivating energy companies to make their operations and service offering more eco-friendly.

GLOBALISATION

With globalisation the world's economies are becoming more dependent on each other and business cycles rarely occur on just a local level. The general development of the global economy has an impact on the energy sector through e.g., financial markets, fuel price development, localisation of industries and electricity demand.

SHIFTS IN REGULATION

The liberalisation of the electricity markets and market integration are examples of the changes countries are making in an effort to boost efficiency in energy production and market functioning. These changes also attract investments in new and replacement capacity.

POPULATION GROWTH

Fast population growth in developing nations is increasing the energy demand and requiring sizeable new investments. Meanwhile, decelerating population growth and changes in the dependency ratio in developed countries are putting pressure on public sector spending and funding. The energy sector's aging production capacity requires extensive replacement investments.

GROWING RELATIVE ROLE OF ELECTRICITY

Diminishing natural resources, growing environmental problems and the rising prices of fuels are increasing electricity's relative share of total energy consumption. With electricity replacing other energy use, the total energy need and emissions are decreasing.

INCREASING ENVIRONMENTAL PROBLEMS

Climate change and local environmental problems are challenges for which also the energy sector must find solutions. It is crucial to maximise efficiency in the use of the available natural resources and energy sources and to develop and implement new energy-saving and low-emitting technology.

RESOURCE SCARCITY AND ENERGY SHORTAGE

Growth in the global population and the rapid growth in energy demand in emerging economies impose huge challenges on the sufficiency of natural resources and energy supply. It is estimated that the global population is currently consuming 25% more of the earth's resources than is sustainable. With the current development, deficit deepens even further.

TECHNOLOGY ADVANCES

Advances in technology – particularly in information technology – have been very fast in recent decades and have fundamentally changed business globally. Technology development is also in a key position in the pursuit for solutions to climate change.

NEW ECONOMIC POWERS

The focus of the global economy is shifting from the western hemisphere to Asia, driven by China and India. China has already taken its place as the world's second largest economy, and it is expected to surpass the United States by 2020.

An increasing number of new investors has entered the utility sector – they are attracted by renewable energy policies with fixed feed-in-tariffs as well as power utilities' divestments of regulated businesses, such as distribution and transmission networks. Infrastructure funds and pension insurers are now competing in businesses that have been traditionally seen as a playing field for large utilities.

Energy policies high on global agenda

There were many elections that affected energy policies all around the world in 2011. In Fortum's operating areas, Finland, Estonia, Latvia, Poland and Russia held parliamentary elections in 2011. Major changes took place for example in Finland, where the government coalition changed considerably. The programme of the new government, consisting of six parties, took a negative stand towards new nuclear permits, and also proposes to investigate the possibility of windfall and uranium tax in spite of the fact that previous governments have considered such taxes legally questionable and counterproductive to energy and climate policy targets, since they would encourage the use of fossil fuels and electricity imports.

The presidential elections in 2012 in Russia and the US were also visible in policymaking: in Russia, many important decisions, including some affecting energy tariffs, were put off until the elections. The upcoming election in the US, which is considered to be in a key position in terms of global climate negotiations, will indicate the direction the country and, consequently, the global climate framework will take in the future.

As energy has become much more political, increasing the awareness of citizens on energy matters is becoming a common challenge for both the policy makers and the energy sector.

EU energy policy proceeds

The term of the EU Commission is approaching its midpoint, which means that it is in a hurry to put forth proposals that it wants adopted before its term is over. The European Commission presented its Energy Strategy for 2011–2020 in November 2010. The strategy builds on five priorities with which the EU aims to meet its 2020 energy and climate targets: energy efficiency, energy market integration, empowered consumers, safety and security, technology and innovation leadership, and the external dimension of the EU energy policy.

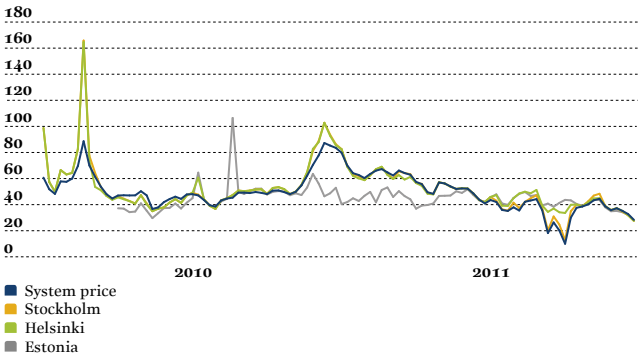
Fortum welcomed the overall approach of the strategy and especially the strong emphasis put on the completion of the internal energy market. In Fortum's opinion, a competitive and properly functioning internal energy market is a source of efficiency gains and is essential for achieving the environmental and security of supply goals – and at the lowest cost to society. Fortum also believes that the EU internal energy market development should lead to more efficient policy coordination between the EU member states and, ideally, towards harmonisation of all relevant energy market-related legislation.

In Fortum's opinion, a competitive and properly functioning internal energy market is a source of efficiency gains and is essential for achieving the environmental and security of supply goals – and at the lowest cost to society.

EU energy policy was given new impetus in February, when the first-ever energy-specific European Council meeting was held. Besides endorsing the new strategy, the heads of EU states decided to accelerate the timetable for the implementation of the internal energy market, which should now be in place by 2014.

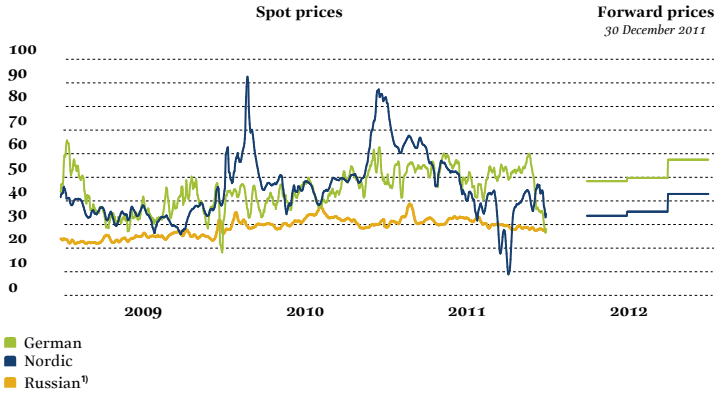
In March 2011, the Commission presented an energy-efficiency action plan, which was followed by a proposal for a new energy-efficiency directive in June. The controversial proposal contains, among other things, an obligation for energy suppliers or distribution companies (to be decided nationally) to achieve 1.5% annual energy savings among their customers. The proposal also strongly promotes combined heat and power (CHP) as an energy-efficient technology. The ambitious aim is to finalise the directive at the end of 2012, after which the member states would have one year to transpose it into their national legislation. In 2014, the Commission will assess

NORD POOL SPOT WEEKLY AVERAGE PRICES, EUR/MWh



Source: Nord Pool Spot

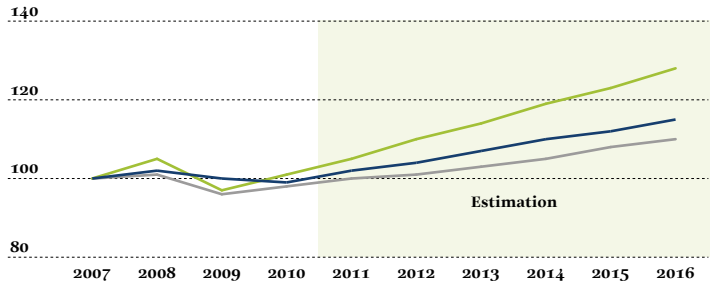
WHOLESALE PRICES FOR ELECTRICITY, EUR/MWh



1) *Including capacity tariff estimate. EUR 9.4/MWh for 2009 and 2010, EUR 6.8/MWh for 2011.*

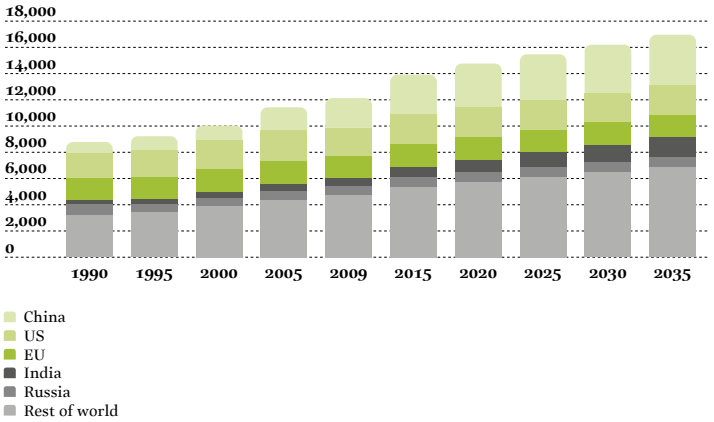
Source: Nord Pool Spot, NASDAQ OMX Commodities Europe, EEX, ATS

REAL GDP INDEX RELATIVE TO 2007, %



Source: International Monetary Fund, World Economic Outlook Database, September 2011

PRIMARY ENERGY DEMAND BY REGION IN THE IEA NEW POLICIES SCENARIO, Mtoe



Source: IEA World Energy Outlook 2011, IEA statistics

Fortum supports the use of EU financing in energy infrastructure investments of common interest and energy-related research activities, including demonstration of new technologies.

the success of the directive and propose, if needed, binding energy-efficiency targets for the member states. Energy efficiency is an undisputed policy target, but finding concrete tools to promote it has been problematic for the policy makers and this is clearly visible also in the Commission's proposal for a new directive. It is nevertheless among issues that Fortum is committed to turn into a competitive edge, especially by concentrating on energy-efficient CHP production.

In June 2011, the Commission published its proposal on the multiannual financial framework (2014–2020) with an idea to shift the EU financing more towards implementing the strategic goals relating, e.g., to climate, energy and research. Based on this thinking, the Commission tabled several sector-specific financing proposals in 2011, such as a proposal on infrastructure financing (Connecting Europe Facility), including energy networks, and a proposal for the next research and innovation programme (EU Horizon 2020). Fortum supports the use of EU financing in energy infrastructure investments of common interest and energy-related research activities, including demonstation of new technologies.

Electricity market models sparked discussions

The completion of the European internal energy market was progressing, but somewhat incoherently. The target date for the implementation of the so-called 3rd internal energy market legislation was 3 March 2011. Only a few member states were able to meet the target date; in September, the Commission opened infringement procedures against 17 member states for not implementing the package in time.

The market coupling development however progressed. European power exchanges and transmission system operators agreed to start a common price calculation for the Nordic and Central Western European markets by the end of 2012. The present so-called volume coupling was also enhanced during 2011 by incuding the Norway–Netherlands NorNed cable and the new UK–Netherlands BritNed Interconnector to it.

Many countries have started to realise the impacts of a larger penetration of intermittent and subsidised renewable energy on the market. Increasing the amount of such production in the market reduces the profitability of conventional capacity, although this capacity is needed to alleviate the fluctuations of intermittent solar and wind energy. For some countries, the main problem is to maintain reserve and back-up capacity in the market; for other countries, the main issue is guaranteeing incentives for new low-carbon investments.

Some member states have begun to tackle these challenges through national policy instruments, such as capacity remuneration mechanisms, which do not fit within the so-called energy-only market design that forms the basis of European electricity market. Energy utilities have aggressively addressed the discrepancy between the two approaches in an effort to draw the attention of the EU Commission to this development. Utilities are of the opinion that the approved legislation should first be implemented properly and that if additional capacity mechanisms are subsequently needed, they should be prepared at the EU level. Different national and hence incompatible capacity mechanisms would be the worst outcome with a potential to completely ruin the achievements in terms of internal electricity market.

The Russian electricity market reform, in turn, progressed as planned and, as of 1 January 2011, the wholesale market has functioned in a market-based manner. But also in Russia, where the dual market – electricity and capacity – is in use, the need to further develop the market model was discussed actively at the beginning of the year. The direction there is contrary to that in the EU, as the overwhelming idea is to move towards an energy-only market, also supported by Fortum. Furthermore, it was noted that the wholesale electricity market shall not be viewed separately; instead, its connections with other markets, like retail electricity and heat mar-

Fortum sees the need to develop electricity retail markets in all countries and has actively contributed to the process by participating in various preparatory bodies dealing with questions such as data exchange and billing issues.

kets, must be assessed and taken into account. It is expected that the discussion will continue after the presidential elections in 2012.

Investments in electricity distribution endangered

Achieving politically set targets regarding renewable energy and energy efficiency requires considerable investments in networks. According to the EU Commission, of the EUR 600 billion total investments needed in electricity networks, EUR 400 billion would be invested in distribution and the remaining EUR 200 billion in transmission networks by 2020. This would require regulation that encourages investments.

During 2011, regulatory authorities both in Finland and Sweden adopted new regulatory models applicable to distribution business for the four-year period 2012–2015. In both countries, the distribution industry assessed the regulatory model as being insufficient in terms of guaranteeing reasonable rate of return for distribution network investments, and launched court appeals against the regulatory model.

In Finland, the implementation of smart, hourly metering proceeded during 2011. In Sweden, the government has submitted a proposal to implement hourly metering instead of monthly, effective 1 August 2012, on a voluntary base. In Norway, a decision was made in June 2011 to install smart meters for all customers by 2017. In addition to hourly metering, many countries have started to consider additional incentives for smart grid investments.

Development of the Nordic retail market continued

The process to develop a harmonised Nordic retail market for electricity continued under the leadership of NordREG, the association of Nordic energy regulators. In 2011, clear progress was made in some key issues, such as a proposal to make the supplier the customer's main point of contact. The work is based on the task given by the Nordic Energy Ministers with the aim to implement a common Nordic retail market by 2015. The goal of the integrated Nordic retail market is to promote efficiency, increase competition, choice for customers and enhance the demand response by prompt reflection of price signals from the electricity wholesale markets. In addition, consumers will be able to choose their electricity supplier from any of the Nordic countries. Fortum sees the need to develop electricity retail markets in all countries and has actively contributed to the process by participating in various preparatory bodies dealing with questions such as data exchange and billing issues.

As of 1 November 2011, the Swedish electricity market was divided into four different bidding zones as a result of the decision of the European Commission in order to avoid bottle-necks on the Swedish–Danish border. The consequence of this is that electricity prices for consumers and producers will differ depending on the geographical location within the country. It is also expected that the division will decrease the number of active retailers in each bidding zone, due to higher risk and costs. This is an example of poorly coordinated decisions that affect negatively both the wholesale and retail markets.

Better transparency in the heat sector

In February 2011, an investigation on Third Party Access (TPA), i.e., competition in the district heating grid was completed in Sweden. The investigation also included a legal proposal to implement TPA. Most stakeholders have criticised the proposal for putting security of heat delivery at risk, increasing the costs and not benefitting the final customer. In Fortum's opinion, more transparent pricing is the way to go forward in order to increase confidence in heat pricing.

In Russia, a federal law on heat supply came into force on 1 January 2011, providing a general framework for the functioning of heat companies. In order to be enacted in practice, the law presupposes the implementation of 31 sub-laws. The process to develop those sub-laws started in 2011 and is expected to be

completed in 2012. Fortum is co-operating actively both with market participants and government agencies to ensure transparent and predictable rules on the heat market and is closely involved in the preparation of the sub-laws.

The EU's renewable energy targets and the need to improve fuel diversity have increased the demand for biomass in Poland. In addition to wood residues and agro-based biomass, also municipal waste is becoming an opportunity especially for CHP; currently over 90% of waste is put into landfills. New legislation in Poland on waste management, adopted in 2011, opens an opportunity for investments in waste-to-energy plants. To meet the EU requirements, land filling will have to be significantly reduced and other ways of waste treatment must be developed. Waste-to-energy plants are among the key solutions currently being considered by larger cities in Poland.

Global climate deal pending

The international climate negotiations continued throughout 2011, but the 17th Conference of the Parties (COP17) in Durban, South Africa, in late 2011 resulted in only modest progress. Consequently, the second commitment period under the Kyoto Protocol seems to include only the EU and a couple of small other parties, and negotiations on a legal global agreement are expected to continue for years. For carbon markets, this means that relevant measures like trading systems will be national or regional, though potentially interlinked. When it comes to flexibility mechanisms, the Clean Development Mechanism (CDM) will continue after 2012, but no new emission reductions from Joint Implementation (JI) are likely after 2012, as these units are linked to the Kyoto period.

EU roadmaps paving the way to a low-carbon economy

During 2011, the Commission published four different "2050 Roadmaps": low-carbon economy roadmap, white paper on transport policy, resource efficiency roadmap and lastly, energy roadmap. The aim of the roadmaps is to present sector-specific pathways for achieving a competitive low-carbon economy by 2050. The present EU targets for CO_2 reduction and renewable energy are set up to 2020 and the political discussion on possible milestones for reaching the 2050 target is expected to start during 2012.

All roadmaps emphasise EU-level policy steering and the increase of binding targets. The EU is targeting an 80–95% reduction in greenhouse gas emissions by 2050 with interim targets for 2030 (–40%) and 2040 (–60%). This would mean that the power sector would be virtually CO_2-free by 2050.

In June, Poland blocked the further processing of the 2050 low-carbon roadmap. Poland emphasised the competitiveness of EU industries over the climate targets. Even the usually very environmentally oriented EU Parliament was not unanimous in tightening the target.

Lack of progress in global climate negotiations and unclarity with regard to EU policy measures water down the competitiveness of early movers in climate change mitigation. Even though the EU roadmaps in general are supportive of Fortum's low-carbon strategy, overlapping and conflicting policy measures in terms of CO_2 reductions, renewable energy sources and energy efficiency are watering down the effectiveness of each other. Fortum would rather see the carbon price to steer energy production in a sustainable direction.

EU emissions trading rules fixed

The implementation of the EU's Emissions Trading Directive for 2013–2020 has almost been completed. The benchmarking rules for free allocation were approved, and the installations had to apply for the allowances in autumn 2011. Poland and Estonia, together with 8 other member states, are applying for derogation, enabling free allocation also for electricity production; as a rule, however, power generation will not receive any free allowances after 2012. The rules of allowance auctioning were finalised, and the first auctions are expected during 2012.

The EU Emissions Trading System continues to be the only major regional trading scheme. The price of CO_2 in the EU in 2011 decreased significantly from 2010 without any single, clear legal or political reason. It appears that economic situation

REGULATED HEATING BUSINESS

Heating, as well as the emerging cooling business, is local and subject to local legislation and regulation. The differences in approaches are considerable due to different backgrounds and the varying importance of district heating. In Sweden and Finland, district heating prices are set to be competitive with other heating methods. In all other countries where Fortum has district heating operations, some form of price regulation exists. Fortum as the fourth biggest heat producer in the world pays a lot of attention to the development of the heat sector regulation. It has obvious influence on Fortum's business but also on the competitiveness of district heating in general.

The price of CO_2 in the EU in 2011 decreased significantly from 2010 without any single, clear legal or political reason.

and the unclarity of EU's climate targets and tools as well as their overlapping nature are reasons for low CO_2 price. The low CO_2 price decreases incentives for low-emitting production.

Emerging trading schemes

Emissions trading schemes are evolving also in other parts of the world. Although the US has repeatedly failed to pass federal climate legislation, regional trading schemes like the Regional Greenhouse Gas Initiative (RGGI) are in operation in a number of states and expanding. China has announced to launch a national carbon trading scheme by around 2015 in order to cut its economy's carbon intensity by 40–45% below 2005 levels by 2020. In November, Australia approved legislation that will introduce a tax on carbon emissions from 2012 and move to an emissions trading scheme in 2015.

Price for CO_2 through JI in Russia

In Russia, climate policy is explicitly linked to economic interests, in particular to energy efficiency. There are no binding obligations for companies to reduce emissions and no price or market for CO_2. The only economic value for CO_2 is related to Joint Implementation projects. During 2011, the regulation on the selection of JI projects was changed from a tendering to a continuous approval process.

Divergent support schemes for renewables continue within the EU

In January, the Commission tabled a progress report on renewable energy in the EU and a communication on the financing of renewable energy sources (RES). The report will possibly lead to an assessment of the RES Directive earlier than in 2014, as originally planned. The Commission will address the impact of different RES support schemes on the electricity market in 2012. According to the national renewable energy action plans the consumption of RES in EU-27 would be 20.7% in 2020 (target 20%). The member states will give their next progress report by mid-2012 which will give a new outlook for the 20% target.

Divergent national support schemes are likely to result in subsidy competition and market distortions and retroactive changes of schemes in a few EU member states with increased investment risk. However, regional co-operation on RES support is also evolving: Norway and Sweden became the first countries to establish a common certificate system starting in January 2012. The system is planned to stimulate the development of 26.4 terawatt-hours (TWh) of new renewable electricity in the two countries by 2020.

The Finnish feed-in tariff scheme for wind power and electricity from wood fuel and biogas entered into force in March. The new Finnish Government, however, aims to cut the renewable energy support significantly outside the feed-in tariff system by 2015.

The EU Commission is expected to release a legislative proposal for sustainability criteria for solid biomass in early 2012. Fortum's position on the sustainable use of bioenergy is presented on page 70.

Evolving environmental legislation on hydropower

According to the EU Water Framework Directive (WFD) adopted in 2000, all European waters must achieve a good ecological and chemical status by 2015. The countries reported the river basin management plans and action programmes to the Commission in 2010; in Finland, regional implementation plans for these action programmes were prepared during 2011. In Sweden, the preparation of plans was delayed. The majority of the rivers and regulated lakes in the water system area of Fortum's hydropower plants in Finland meet the environmental target of the directive, while improvement measures might be needed in Sweden.

National implementation of the EU Floods Directive is under way and could impact hydropower production in Sweden and Finland. In addition, the EU is preparing a regulation on Baltic salmon protection actions. The proposal aims at improving naturally reproduced salmon populations and decreasing salmon stockings and would significantly change the methods used for mitigating the environmental impact of hydropower on fisheries. This proposal is likely to face resistance from countries around the Baltic Sea.

In Finland, the Water Act renewal has been finalised and the new law enters into force at the beginning of 2012. It has no major impacts on the operational environment of hydropower, but it may streamline licensing procedures.

Setting future requirements for thermal energy

In January, the EU Industrial Emissions Directive (IED) entered into force. The member states have two years to implement it into their national legislation.

In particular, the directive substantially tightens the emissions limits on sulphur dioxide, nitrogen oxides and particles in all thermal energy production plants from 2016 onwards. The directive also requires the use of Best Available Technology (BAT) and more precise monitoring and reporting of emissions. The review of the Best Available Techniques Reference Document (BREF) for Large Combustion Plants (LCP) began in 2011 and is expected to last up to three years. In the future, the BREF will serve as the reference for setting the permit conditions by the national authorities.

The IED tightens the emissions requirements for all of Fortum's thermal plants. A more precise cost effect of the requirements will become clear after the plant-specific permit conditions have been defined. The cost effect also depends on how flexibilities are applied in national legislation and at the plant level.

In Finland, a revision of the Environmental Protection Law started in 2011; in addition to implementation of the IED, it aims at coordinating the Environmental Impact Assessment (EIA) and licensing procedures. The Waste Law was adopted and will enter into force in spring 2012. The new law classifies ash and gypsum as products instead of waste, thus facilitating utilisation of these energy production by-products.

STAKEHOLDER VIEW:

Sue Howells

Co-Chief Operating Officer
Global Operations
Carbon Disclosure Project

With rising energy demands, increasingly scarce natural resources and growing pressure on commodity prices, investors require timely corporate information on climate change to help assess the long-term security of their portfolios. At the same time, there is significant low-carbon growth potential that brings opportunities. Fortum was listed as sector leader in the Carbon Disclosure Leadership Index in 2011, which demonstrates good internal data management practices and transparent disclosure of greenhouse gas emissions. The organisations that give clear consideration to measuring and reporting on climate change issues will be best placed to capitalise on the opportunities from managing them.

Introduction to the theme – Towards Solar Economy

Fortum's long-term aspiration is to be a carbon dioxide–free power and heat company. In recent years, Fortum has deepened its understanding of the future energy system – Solar Economy. Transition towards Solar Economy changes the way energy is produced and consumed as well as the whole energy system required to enable the realisation of the vision.

0 EMISSIONS IN STOCKHOLM'S ROYAL SEAPORT

Fortum is developing sustainable solutions for urban living in the Stockholm Royal Seaport area, which will be fossil fuel-free in 2030.

In conventional energy production, the combustion of fuels is the main source of energy. The traditional energy system results in an environmental burden and has a low total efficiency. As the global demand for energy – and particularly electricity consumption – is rapidly growing, the mitigation of climate change is becoming an increasingly important issue. Population growth will intensify competition for exhaustible natural resources, and therefore the use of limited resources and energy systems must be made more efficient.

Solar Economy provides solutions to the challenges of climate change and resource scarcity. In Solar Economy, there is no scarcity regarding the energy source: the energy from the sun during a single day would be enough to meet the total annual energy demand globally. An inexhaustible supply of energy from the sun thus enables a rise in the standard of living in developing countries while reducing the environmental burden.

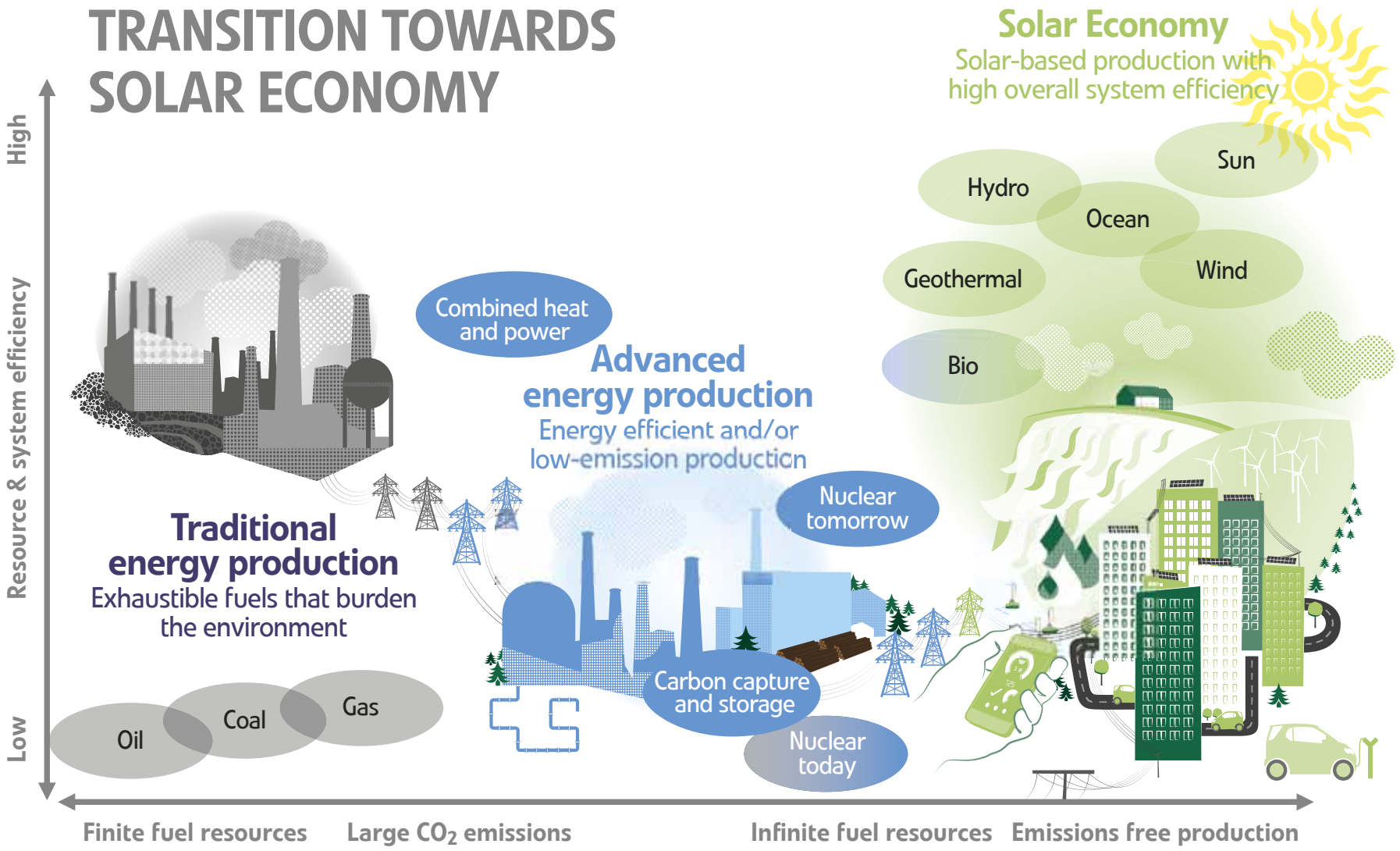
Today's energy system is not only traditional but also advanced, resource-efficient technologies coexist with the traditional ones. Even energy from the sun is widely utilised in the form of, e.g., hydropower and bioenergy.

In Fortum's view, the pathway towards Solar Economy will proceed step-by-step as the technology and society develops. The current energy production forms are likely to be utilised until they are no longer financially feasible and until the power plants have reached the end of their life-cycles. Along the way, advanced energy technologies, like biomass-based combined heat and power (CHP) production, will become important. Nuclear power will remain alongside the new forms of energy, and its development will also continue. For example, small-scale nuclear power plants with passive safety solutions will be developed.

Solar Economy is a flexible and smart energy system

Solar Economy is not based solely on one fuel or technology, it offers diverse opportunities. Energy from the sun will be used either directly as solar electricity or heat, or indirectly as hydro, ocean, wind and bioenergy and geothermal energy. Solar Economy is based on high resource and system efficiency and on power and heat production driven by an emissions-free and inexhaustible energy source. Electricity as an energy carrier enables high system efficiency and is taking an increasing share in the energy system.

In Solar Economy, the energy system is more dynamic and intelligent, always allocating resources in the most efficient way. This means for example using the cheapest possible production form. Electricity is produced in locations where the conditions are the most favourable in terms of the primary energy source and from a total system efficiency point of view. Electricity is generated both centrally and in a distributed manner. Characteristic of the system is that the electricity load also


TRANSITION TOWARDS SOLAR ECONOMY
Solar Economy
Solar-based production with high overall system efficiency
Sun
Hydro
Ocean
Wind
Geothermal
Bio
Combined heat and power
Advanced energy production
Energy efficient and/or low-emission production
Nuclear tomorrow
Traditional energy production
Exhaustible fuels that burden the environment
Carbon capture and storage
Nuclear today
Oil
Coal
Gas
High
Resource & system efficiency
Low
Finite fuel resources
Large CO_2 emissions
Infinite fuel resources
Emissions free production

STAKEHOLDER VIEW:

Liisa Rohweder,
CEO, WWF Finland

WWF's vision is based on an energy system in which less energy is consumed and all the energy is produced from renewable sources. This includes strict sustainability standards especially for biomass based energy, a phase-out of nuclear power latest by 2050 and decrease of global energy demand by 15% compared to 2005 level. It is a vision that challenges Fortum's progressive Solar Economy thinking to take one step further to an energy system that respects the boundaries of the planet. A combined system of central and distributed production based on renewable energy is significantly more sustainable – both environmentally and economically – than our current system. Transitioning to a smarter system is advantageous, but it also requires a lot.

Technology has a role in the transition to Solar Economy and in the related energy solutions, and most of the necessary technology already exists. So it is a matter of commercialisation and large-scale adoption of the existing technology. This requires political will, innovative companies and big lifestyle changes. In Western countries, the consumption of beef, for example, should be cut in half by 2050. And other natural resources must be used more sparingly: reduce, reuse and recycle. Reduction is the key to sustainable societies.

All forms of energy production have negative externalities in terms of the environment. That is why improving energy efficiency and energy conservation will play a key role in the future energy system.

adjusts to production. With the change, electricity consumers can also be electricity producers – customers become active players with more ability to track and adjust their electricity usage and its financial and ecological implications.

Increasing the share of renewable energy and decentralised energy in the future energy system means more volatility in energy production and energy flowing both directions. The two-way transmission of electricity requires investments in smart grids. In Solar Economy, energy can be stored, transmitted even long distances and used flexibly based on need.

Development of the smart societies of Solar Economy also requires collaboration between many sectors, for example the energy producers, information technology, transportation and construction. In addition to smart energy production and distribution, the future urban energy system is characterised by eco-efficient construction, electric transportation, and smart heating and cooling solutions. In the future energy system, electricity will replace other energy sources, e.g., in transport.

The transition towards Solar Economy requires not only research and innovation, investments and technology development and commercialisation, but also smart solutions on energy markets and in governance. This means consistent policies and joint target-setting of various parties (e.g. politicians, industry) in the society. A regulatory framework that

supports open, transparent, competitive electricity wholesale and retail markets in the long run is a prerequisite. Environmental and energy policy steering should be market-based and harmonised, thereby guaranteeing the optimal use of renewable and resource-efficient production at the lowest cost to society. The end result is an ecologically and socially sustainable and cost-efficient future energy system.

Fortum's approach to Solar Economy

The ambition towards low-emitting energy production has been part of Fortum's strategy for a long time. In 2011, around 65% of Fortum's total electricity production and 85% of the company's electricity production in the EU was CO_2-free. At the moment, Fortum uses a variety of energy sources and production technologies in its energy production. The company's large-scale, emissions-free electricity production technologies are hydropower and nuclear power. These will continue to be the cornerstone in Fortum's electricity production for a long time to come. Biofuels and waste-derived fuels constitute a significant share of the fuels in CHP and heat production. Fortum also utilises fossil fuels on a large scale, especially in Russia, where energy production is based on natural gas and coal. Read more on the roles of production technologies in the transition towards Solar Economy on pages 47–49 (hydropower), 50–53 (nuclear power) and 54–57 (CHP).

Fortum believes that it is possible to make a transition from traditional energy production and utilisation of exhaustible energy sources towards Solar Economy. The transition will happen gradually in tandem with the renovation of production capacity and the construction of new capacity. In addition to hydro and nuclear power, high-efficiency technologies, like gas- and multifuel-based CHP, will provide a significant contribution when Fortum gradually transforms its energy production towards Solar Economy.

Fortum already has many elements of Solar Economy in its production fleet. In addition to hydropower, these include bioenergy and wind power. Fortum is also actively researching many future Solar Economy production technologies, such as wave power, solar power and solar heat. Fortum has been participating in several projects to develop solar power and heat technologies and is moving from the research-only phase to priming for actual commercial operations in direct solar energy. Fortum is also actively contributing to the development of future solutions to customers. These include smart grids, innovative heating and cooling solutions, sustainable cities and electrification of transportation. Read more about Fortum's Solar Economy related investments, research and development on page 65–66 and future solutions for customers on pages 75–77.

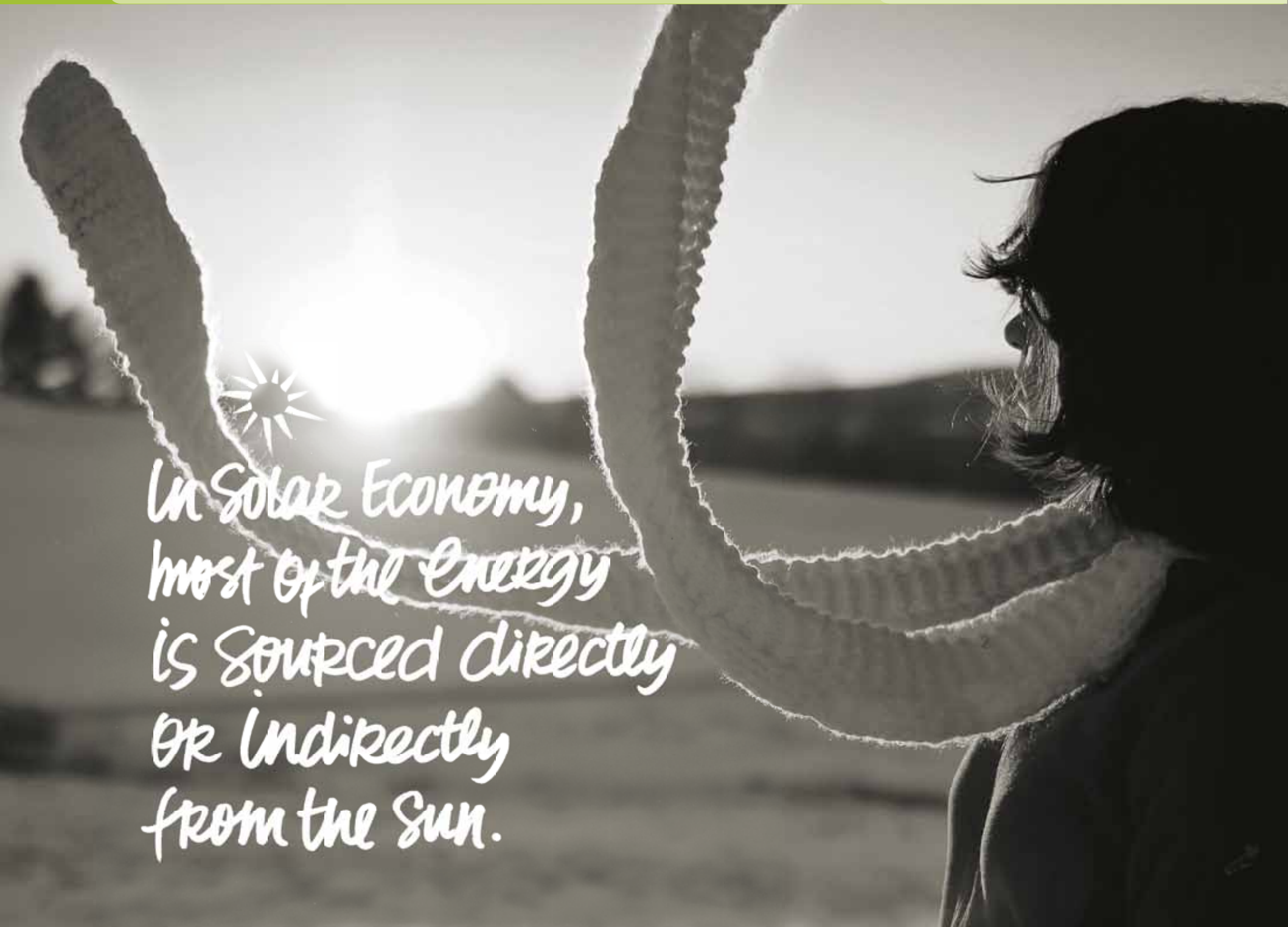
FAST DEVELOPMENT IN SOLAR TECHNOLOGY

During the last few years, solar technologies have advanced much quicker than expected. In 2011, 21 gigawatts (GW) of solar photovoltaic (PV) power was installed in the EU. This is the equivalent of all other power capacity additions in the EU last year. It is estimated that 15% of Europe's electricity could be produced with solar power and 20% with wind power by 2020.

The cost of photovoltaic (PV) technology has been falling by 20–40% annually. How widely and quickly it will be adopted depends largely on government incentives and regulation. Energy storage will be essential for the penetration of PV. Photovoltaics need to be connected to the grid to sell excess energy or to have some possibility for local storage. Smart metering is also required in systems where end users are generating some of their own energy and feeding their surplus back into the grid.

The maturity of PV has already been reached in many countries that have good solar conditions and fairly high electricity prices. This refers to the point at which it becomes profitable for electricity customers to install, e.g., PV modules on their homes and produce their own electricity, rather than buying from the utility.

Current projections indicate that solar energy might be able to compete against other energy sources, such as wind power, gas turbines, and even nuclear, in large-scale production as early as at the end of this decade in many regions.


In Solar Economy,
most of the energy
is sourced directly
or indirectly
from the sun.

How?

Fortum's view:

1. Technology development

Many of Solar Economy's production forms are still in the development phase and their commercialisation will take time and resources. Public acceptance and financial support are also needed for all the renewable energy production forms, in order to enable a smooth transition towards Solar Economy.

2. Change in consumer behaviour

The changing role of consumers and their energy choices are of significance in Solar Economy. Electricity consumers become active players by tracking and adjusting their consumption and its economic and ecological impacts, and even by being electricity producers themselves.

FORTUM IS RESPONDING TO THE DEVELOPMENT OF THE ENERGY SYSTEM

Fortum's main research and development (R&D) themes cover the most advanced technologies in the current energy system and the technologies and system solutions that will be needed to enable future Solar Economy. For example, a strong focus in 2011 was on researching the potential of various solar technologies. Fortum also teamed up with partners to develop smart grid technologies, sustainable urban solutions, and new integrated combined heat and power (CHP) concepts. Read more on Fortum's R&D on pages 65–66 and future solutions for customers on pages 75–77.

At the same time, Fortum aims to satisfy customer needs by offering them environmentally-benign energy products that provide an opportunity to reduce the carbon footprint. More and more private customers and companies are demanding that the electricity they buy comes with a guarantee of origin, i.e., information about how the electricity is produced. The increased demand for origin-certified electricity is a competitive advantage for Fortum in Finland and Sweden. Read more on page 75.

TOWARDS SMARTER ENERGY PRODUCTION

- Hydro power's role in Solar Economy
- Nuclear power's role in Solar Economy
- Combined heat and power's role in Solar Economy

Hydro power's role in Solar Economy

Hydropower is the most common and proven renewable energy technology and plays an important role in global power generation. In 2011, Fortum generated 21.0 terawatt-hours (TWh) of hydropower contributing to 29% of the company's total electricity production.

Hydropower is the most common and proven renewable energy technology and plays an important role in global power generation. CO_2-free and renewable hydropower is one of the key solutions in mitigating climate change and in the saving of scarce natural resources. Hydropower draws its essential energy from the sun, which drives the continuous hydrological cycle. According to the International Energy Agency (IEA), hydropower represents more than 90% of all global renewable energy production and continues to prevail as one of the most viable sources of new generation in the future energy system – Solar Economy.

In the Nordic electricity market, hydropower plays a key role in balancing the production and consumption of electricity. Hydropower plant start-up, regulation and shutdown is quick, and water stored in the reservoirs helps to balance the fluctuations in consumption. Hydropower's role in balancing production and consumption will be emphasised in Solar Economy, where an increasingly bigger share of electricity is produced with, e.g., wind and solar power. It also provides an option to store energy and to optimise electricity generation. Hydropower is both part of the traditional energy system and a major production technology in Solar Economy.

Fortum's hydropower

Fortum has a proven track record of efficient and sustainable hydropower production in Sweden and Finland. The company is one of the biggest hydropower producers and has long-term experience in the planning, refurbishing, operation and maintenance of hydropower plants in the Nordic countries.

About one third of Fortum's annual electricity production is based on hydropower. The share varies every year based on the hydrological situation. Fortum's hydropower capacity in the Nordic countries is nearly 4,700 MW with 260 fully- or partly-owned hydropower plants in Sweden and Finland. More than 80% of plants are located in central Sweden. The plants with the largest capacity are situated on the Dalälven, Indalsälven, Ljusnan and Vuoksi, Kemijoki and Oulujoki rivers.

Hydropower refurbishments continued in 2011

In 2011, Fortum generated 21.0 TWh of hydropower in the Nordic countries. Also the implemention of the long-term refurbishment programme of existing hydropower capacity continued.

In 2011, hydropower refurbishment projects were completed at the Montta plant in Finland, and at the Edsforsen, Eldforsen, Bergvik and Järpströmmen plants in Sweden. These refurbishments will result in additional annual electricity production of about 32 gigawatt-hours (GWh). Refurbishment projects generally result in positive impacts on environment, as the modern technology allows increasing efficiency without increasing adverse environmental effects. Most of refurbishment measures are carried out inside the hydropower plant (replacement of existing turbines etc). Furthermore, they increase safety and decrease environmental risks, e.g., oil leakage due to a smaller volume of oil in new turbines. For example, the amount of hydraulic oil in Montta was decreased thanks to the environmentally safe runners. Also new self-lubricated guide vane bearings were mounted.

Fortum also continued preparations for participating in the tendering process for hydropower concessions in France.

2.7 MILLION FRIES AND FISH

In 2011, Fortum stocked 2.7 million fries and fish in the Nordic rivers, lakes and the sea as a compensation measure of hydropower production for the fish population and fishing.

Climate change adaptation studied within hydropower

In addition to climate change mitigation, Fortum is also taking measures to adapt its operations to climate change. In 2011, a study regarding the impacts of climate change on hydrology in rivers with Fortum's hydropower in Sweden and Finland was finalised. The study analysed the changes in hydrology on Fortum's hydropower production and identified measures needed to adapt to hydrological changes.

On the grounds of the climate scenarios studied, the timing of inflows is changing in Finnish and Swedish rivers. Some changes are being implemented in inflow forecasting due to increasing winter inflows and decreasing spring inflows. Historical discharge duration curves as well as discharge duration curves for the future will be considered in invest-

FORTUM'S HYDROPOWER PLANTS IN SWEDEN AND FINLAND

ment planning. In the future, studies are needed to estimate how individual dams need to be adapted to climate change.

Hydropower non-compliances down to zero

The licence conditions for Fortum's hydropower plants and lake regulation define the limits for surface water levels and flow variations in the watercourse. The permits also define obligations to prevent and to compensate for environmental impacts.

Rapidly changing weather conditions or malfunctions in hydropower plants can lead to non-compliances of water regulation licences. In 2011, the number of non-compliances in Fortum's hydropower plants was zero due to careful operation and improved maintenance.

The main compensation measure for the fish population and fishing is to release young fish into rivers, lakes and the sea. During 2011, Fortum stocked about 346,000 salmon and trout and about 1,800,000 pike perch, grayling and lavaret fry in Finland. In Sweden, the fish stocking and release was about 540,000 young salmon and trout. Other compensation measures for the fish population are fish ladders, the catch and transport of fish to spawning areas and a combination of these.

Key impacts of hydropower

The most significant impact of hydropower on the environment results from the construction phase of plants and dams. Hydropower may alter a river system and riverside, including its course and natural flows. The key environmental aspects are related to the impact on river habitats due to the damming of watercourses.

Annual regulation of lakes and short-term regulation of rivers affects the surface water levels and flows. This impacts the aquatic environment and other use of watercourses.

Fortum is actively financing and participating in the research of hydropower impacts and the mitigation measures in Sweden and Finland.

Attention to nature and other uses of water

As a consequence of damming, there has been a significant decrease in the habitats suitable for migratory and local fish needing rapids for breeding. In most cases, dams have also prevented migrations to breeding areas in rivers and back to the sea or lake. This has impacted also the populations of mussel species depending on salmonoids. Improving the natural reproduction of local and migratory fish in hydropower rivers as well as the development of fish farming are the focus of extensive research at Fortum both in Sweden and Finland. The main areas of this research include possibilities to restore

spawning and breeding areas, enhancing migration to these areas and back to the sea or lake, and possibilities to improve fish farming in an effort to enhance smolt survival. In addition, and as part of the research, actual measures and plans are also being implemented.

The winter drawdown and low water levels of regulated lakes in springtime affect spawning grounds. Low water levels in springtime have negative impacts on recretional use of watersystems.

Safety improvements of hydropower plants and dams

Fortum works systematically to improve the safety of its hydropower plants and dams. In 2011, Fortum's dam safety activities in Finland included periodical and annual dam safety inspections and monitoring of the dams, improvement studies of safety arrangements and feasibility studies of the dam renovations at the Imatra and Peltokoski power plants. A major accident risk evaluation project was started in 2011 and aims to develop a systematic way of analysing the most crucial risks in power plants.

Voluntary measures in water regulation

Fortum regulates many rivers and lakes in Sweden and Finland for hydropower production, but in some cases regulation also serves other purposes, such as recreational use and flood control. Hydropower permits regulate how flows are allowed to fluctuate. In some cases, based on ecological motivations, so-called minimum flows have been determined to ensure a continuous water perimeter meaning that the flow is never allowed to fall below a set minimum level. It can be adjusted over time so that it reflects the variations of the natural flow, but at a lower water level.

Fortum has co-operated with authorities and local interest groups to voluntarily agree on water levels or flows to improve the environment and facilitate other uses of the water systems. To support recreational use during summer, voluntary target values for water levels are set for many lakes. These values are more stringent than those specified in the permits.

Voluntary measures for fishing and other recreational use are carried out in co-operation with municipalities and local authorities. The Oulujoki multiple use agreement originally signed in 1998 is a good example of such voluntary measures. It is also important to enable other economic uses of water, such as professional fishing and the tourist industry.

In 2011, Fortum implemented several voluntary measures in water regulation. The normal regulation of Lake Vuokkijärvi in Finland was temporarily changed during the very dry spring season in order to reach the voluntary target value for the water level. In winter 2011, the annual drawdown of the water level of Lake Runn in Dalarna, Sweden, was postponed in order to enable ice skating on the lake. The water regulation of the Skifsforsen power plant in Vansbro (Vanån and Dalälven) was changed in order to make a swimming competition possible.

Case:

Mitigating effects of hydropower in Oulujoki

Fortum participates in several research projects to mitigate the environmental impacts of hydropower. The projects include, e.g., migratory fish routes, smolt migration to the sea, fish restocking as well as enhancing the habitat for fish and endangered fresh-water pearl mussels.

One of the projects is headed by the Finnish Game and Fisheries Research Institute. It helps to choose the most effective measures for fish management and to plan improvements in rivers with hydropower. Several interesting case studies are being carried out on the Oulujoki, Iijoki, Kemijoki and Kymijoki rivers. Fortum is funding the project with EUR 150,000 and uses its own expertise to support the research. In the project, habitat modelling is being applied to fish migration studies. Planning of the mouth of the fish way, the attraction flows as well as upstream and downstream migration can be simulated with the model and improvement measures can be developed.

Fortum is also working with many stakeholders to improve the recreational use of the water systems. The most important local partners in the Oulujoki area include municipalities, local environmental and fishery authorities, and fishermen. The key form of long-term collaboration in the region is Oulujoki multiple use programme. The programme aims to facilitate mobility and fishing in the water system and to restore habitats and improve landscaping. Annual funding for the programme is EUR 300,000, of which Fortum's share is 45%.

Nuclear power's role in Solar Economy

Nuclear power provides climate-benign, reliable and large-scale supply of electricity at a competitive and predictable costs. In 2011, Fortum generated 24.9 terawatt-hours (TWh) of nuclear power contributing to 34% of the company's total electricity production.

Nuclear power is an important part of the global solution to mitigate climate change and to provide a reliable, large-scale supply of electricity at competitive and predictable costs. Nuclear power production does not result in greenhouse gas emissions or air pollutants, and it has low greenhouse gas emissions over its full life cycle. In a life-cycle comparison, the carbon dioxide emissions of nuclear power are at about the same level as those of wind, hydro and solar power. The sustainable use of nuclear power requires the continuous improvement of nuclear safety and a long-term solution for nuclear waste.

Nuclear power accounts for 14% of global electricity production and 28% in the EU. After the Fukushima accident in March 2011, new investments in nuclear will be more challenging because of the increased investor risks, challenges in financing new projects and expected new safety measures. In 2011, a number of countries, including Germany, Italy, Switzerland and Belgium, started to reconsider their standpoint towards nuclear power. Germany decided to close down all its nuclear power plants by 2022.

Despite the uncertainty prevalent in a few countries, advanced nuclear energy is expected to prevail as an important technology in the transition towards Solar Economy. Nuclear power as a CO_2-free energy technology will be needed for a long time, and its efficiency can be increased significantly in combined heat and power mode. The use of uranium energy content can also be improved considerably.

The development of small- and medium-sized reactors is an interesting future trend. Over the years, the size of nuclear reactors has grown to more than 1,600 megawatts (MW), corresponding with the logic of having a centralised power production infrastructure with large power plants. Smaller units would potentially reduce capital costs and shorten construction time.

94.3 % AVAILABILITY

Loviisa nuclear power plant's load factor, 94.3%, is very high by international comparison. The plant was in full production throughout the operation cycle, except for a short production break at Loviisa unit 1.

Fortum's nuclear power

Nuclear power plays an important role in Fortum's climate-benign energy production. Fortum operates the Loviisa nuclear power plant in Finland and is a co-owner in eight reactors in Finland and Sweden. Fortum owns 26% of Teollisuuden Voima Oyj (TVO) operating Olkiluoto nuclear power plant in Finland and in Sweden Fortum is a co-owner in Forsmark and Oskarshamn nuclear power plants through its holdings in Forsmarks Kraftgrupp AB (26%) and OKG AB (46%).

Based on Fortum's calculations, annually six million tonnes of CO_2 emissions are avoided by producing electricity at the Loviisa nuclear power plant instead of production in a coal condensing power plant. Operating a nuclear power plant requires technology know-how and detailed safety specifications and monitoring. In 2011, nuclear power accounted for 34% of Fortum's total electricity production.

Increasing safety and availability

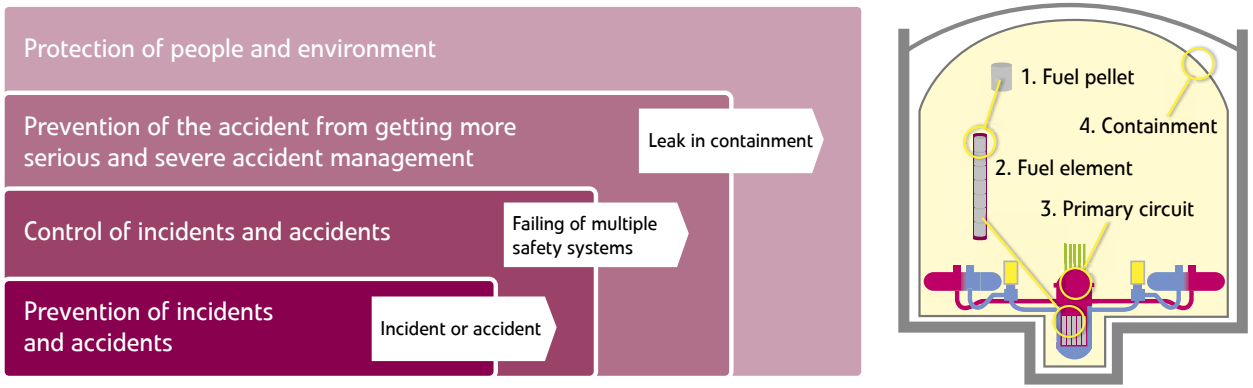
In 2011, Fortum generated 24.9 terawatt-hours (TWh) of nuclear power in the Nordic countries. The company continued the capacity upgrades at the Forsmark and Oskarshamn nuclear power plants in Sweden. Moreover, Fortum decided to participate in the financing of the bidding and engineering phase of TVO's (Teollisuuden Voima Oyj) fourth nuclear unit at Olkiluoto, Finland, with a stake corresponding to Fortum's share in TVO. The bidding and engineering phase commenced in December 2011.

2011 was a safe and good production year at Fortum's Loviisa nuclear power plant. There were no nuclear or radiation incidents reaching the International Nuclear Event Scale (INES) of significant events. The load factor describing Loviisa power plant's availability was 94.3 %, which is very high by international comparison, and the plant was in full production throughout the operation cycle, except for a short production break at Unit 1. The Loviisa power plant produced 8.06 TWh of electricity, which is about 10% of total electricity production in Finland.

The low- and intermediate-level waste repository in connection with the Loviisa power plant has been expanded in the volume of about 15,000 cubic metres. The expansion increases the temporary storage capability of maintenance waste, which improves the waste sorting possibilities and reduces the amount of waste to be disposed of. The expansion of the repository will be taken into operation in spring 2012.

As the renewal of the Loviisa power plant automation progresses, the operating staff will have improved opportunities for training and practicing in the new training simulator building. The building was completed in February 2011 and the installation of the simulator systems began in September. It is estimated to be ready for use in early 2012.

KEY ELEMENT OF NUCLEAR SAFETY MANAGEMENT IS THE MULTILAYER PROTECTION CALLED "DEFENCE IN DEPTH"



Stress tests and other safety evaluations topical in 2011

Nuclear safety, and especially preparedness for extreme external events, became a major concern in the European Union after the Fukushima nuclear accident. To make nuclear safety more transparent, the EU decided in May 2011 to carry out nuclear safety stress tests.

Safety evaluations were carried out in Loviisa and on Fortum's eight co-owned reactors in Sweden and Finland. The stress test addresses the safety of the nuclear power plant in conjunction with an earthquake, flood, weather phenomena, and loss of heat sink. It also assesses the operation of the organisation in case of a severe accident and how the plant is technically equipped to manage that.

The conclusions indicate that the design basis criteria for external events and related safety margins are robust enough at all Fortum's plants. Measures for further safety improvements will be implemented within the Loviisa nuclear power plant's normal annual investment programme. The improvements will not have an impact on the availability of the power plant. The Swedish and Finnish radiation safety

Safety evaluations were carried out in Loviisa and on Fortum's eight co-owned reactors in Sweden and Finland.

The conclusions of safety evaluations indicate that the design basis criteria for external events and related safety margins are robust enough at all Fortum's nuclear power plants.

authorities have given external conclusions for all Fortum's nuclear plants, see the statements at www.stuk.fi and www.stralsakerhetsmyndigheten.se.

In addition to stress tests, the national Radiation and Nuclear Safety Authority in Finland has carried out its own national safety evaluation in cases of power loss, exceptional weather and environmental conditions. No need for immediate safety improvements was identified. Fortum submitted a more detailed study and action plan regarding these issues in Loviisa in December 2011. In Sweden, a national coordination group led by the Swedish Radiation and Nuclear Safety Authority was established for stress tests.

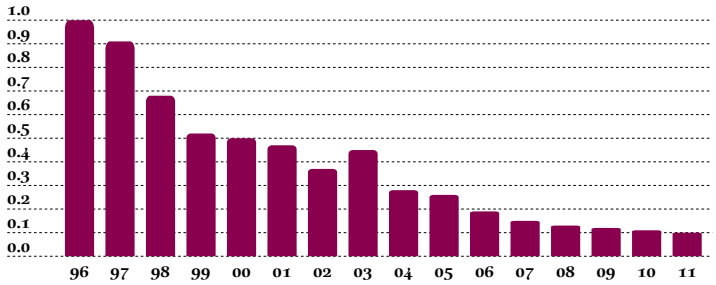
Key impacts of nuclear power

The key environmental, health and safety aspects of nuclear power are related to the thermal load of cooling water, nuclear waste management, nuclear safety and the risk of a nuclear accident.

Thermal load of cooling water

During 2011, 1,437 million cubic meters of cooling water was used in Loviisa, and the thermal load into the sea was 16 TWh. According to temperature measurements, 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.

RELATIVE DECREASE IN THE PROBABILITY OF A SEVERE REACTOR ACCIDENT AT THE LOVIISA NUCLEAR POWER PLANT AS A RESULT OF SAFETY IMPROVEMENTS [1)]



1) *The effect of severe weather conditions in shutdown states included from 2003 onwards*

Nuclear waste management in Loviisa

The waste generated during the power plant's operation is treated either in conventional (non-radioactive) or in radioactive waste management. Conventional waste is generated in, for example, the transporting of goods, in office work and in food preparation. Radioactive waste is categorised by source and original purpose into either low-, medium- or high-level waste. The low- and medium-level waste is disposed of in a waste repository built 110 metres deep in the bedrock of Hästholmen in Loviisa.

During 2011, the new waste-drum measurement equipment and the modernised facilities for the handling of metal waste were commissioned, and the repository was expanded to increase the temporary storage capacity of maintenance waste. The project of the handling systems for liquid waste continued and is planned to be completed by 2014.

Final disposal of nuclear waste

In Finland and Sweden, the legal nuclear companies are responsible for the management and final disposal of nuclear waste. All nuclear waste created must remain in the countries where generated. Globally, Swedish and Finnish nuclear companies are in the frontline in implementing geological final repository of spent nuclear fuel. The spent nuclear fuel from the Loviisa and Olkiluoto nuclear power plants in Finland is handled by Posiva Oy, which is owned by Fortum and TVO. Spent nuclear fuel will be placed in the final disposal repository in Eurajoki. Posiva Oy will submit the construction licence application to the Ministry of Employment and the Economy in 2012.

In Sweden, the Swedish Nuclear Fuel and Waste Management Company (SKB) implements the final disposal of the spent nuclear fuel from the existing plants. In March 2011, SKB submitted the application for the construction of a final disposal repository and encapsulation facility. The repository is planned at Forsmark, in the Östhammar municipality.

Fortum bears economic liabilities related to nuclear waste. Read more on page 98 in this report and on pages 89–90 in Financials 2011.

Improving nuclear safety is a continuous process

The management of nuclear safety is based on the principle of multiple isolation, parallel safety measures, systematic maintenance and modernisation, as well as continuous training. Improvement of nuclear safety at the Loviisa nuclear power plant has been a systematic process throughout the operation of the plant. The implementation of the safety measures has constantly decreased the probability of a severe reactor accident.

In 2011, the technical safety improvements at Loviisa included installation of new mesh for the containment sump strainers and the new independent air-cooled diesel generator that can replace an emergency diesel generator of both units.

Case:

Nuclear safety – an essential part of Fortum's research and development

A significant part of Fortum's research and development (R&D) activities focuses on nuclear power, aiming at first-class nuclear safety, nuclear waste management and good fuel economy. In 2011, more than half of Fortum's EUR 38 million R&D expenditure was used for nuclear energy research. In addition to its own research programmes, Fortum participates in national research programmes in Finland and Sweden.

Fortum has improved the safety of the Loviisa power plant extensively since the plant started its operations. As a result, the management of severe accidents has improved significantly.

In spring 2011, the nuclear accident in Fukushima raised a lot of concern about nuclear safety globally. After the accident, Fortum immediately started additional safety assessment in Loviisa. The assessment found that, regarding evaluated external events, the Loviisa power plant's design basis is proper and the existing technical solutions and safety margins are sufficient. Based on the assessment, however, Fortum identified some possibilities to further improve safety by, e.g., securing seawater cooling with air cooling, and securing of the fuel pond cooling in case of exceptionally long lasting accident situations.

In Finland, the nuclear power company bears the responsibility for the management of the radioactive waste produced in its own nuclear power plants. Fortum and TVO (Teollisuuden Voima Oyj) cooperate in the final disposal of high-level radioactive waste so that the long-term safety requirements can be met. As part of the study, a research space, ONKALO (cavity), at Olkiluoto is mined underground (about –400 m) in the bedrock. The bedrock is examined to ensure the safe final disposal of high-level waste. It is estimated to be ready by 2020.

Combined heat and power's role in Solar Economy

Combined heat and power (CHP) production is a significant technological solution to increase energy and resource efficiency in areas with demand for heat, like in the Nordic countries and Russia. In 2011, the share of CHP in Fortum's total power generation was 29% and in heat production 71%.

Thermal energy covers the production of electricity in CHP plants and in condensing power plants, as well as the production of heat in CHP plants or heating plants. CHP integrates the production of heat and electricity in a single process. Thermal energy production is the most common global electricity production method, while CHP is most advanced in areas with high demand for heat, like in the Nordic countries and Russia.

As an energy generation process, CHP is flexible in regard to fuels. This means that a CHP process can be applied both to renewable and fossil fuels. The specific technologies employed and the efficiencies they achieve will vary, but in every situation CHP offers the capability to make more efficient use of primary energy resources. CHP could also be utilised in connection with nuclear power.

Resource efficiency driving CHP

Due to increasing scarcity of global natural resources, resource efficiency – both in production and in energy use – will be further emphasised in the transition towards Solar Economy. Because traditional fuel combustion will still be required for a long time, efficiency is a key tool in reducing the environmental burden.

CHP will play an important role in enhancing resource efficiency, as it substantially increases primary energy efficiency. Almost 90% of the energy in CHP can be utilised. The heat generated during power production is utilised in district heating or as steam for industrial processes. CHP also reduces the environmental burden.

90 % ENERGY EFFICIENCY

Up to 90% of the primary energy can be utilised in CHP production, which is one of the focus areas in Fortum's strategy. CHP plays an important role in enhancing resource efficiency and mitigating climate change.

Fortum's CHP production

Fortum has extensive experience in CHP production in Finland, Sweden, Russia, Poland, the Baltics and the UK. Fortum operates 20 CHP plants in Europe and eight mostly gas-fired CHP plants in Russia. In 2011 the share of CHP plants in Fortum's total power production was 29% and of total heat production 71%.

The company provides district heat in almost 90 cities, including Stockholm, Sweden; Espoo, Finland ; Wroclaw, Poland as well as in Russia in Chelyabinsk and Tjumen areas, where it is the leading district heating supplier. A significant share of Fortum's district heat is produced in CHP plants. Fortum also produces heat and steam for industry in CHP plants.

Fortum produces electricity and heat from a diverse range of fuels: in Europe from natural gas, coal, oil, biomass, peat and waste-derived fuels, and in Russia from natural gas and coal.

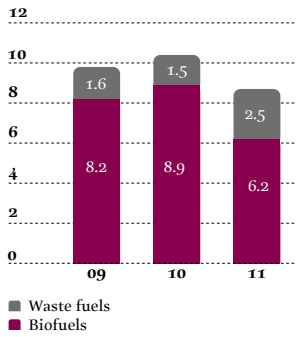
Fortum is also the leader in the Nordic countries in the use of waste-to-energy production in CHP. Energy recovery forms an integral part of sustainable waste management and simultaneously reduces the amount of waste otherwise deposited to landfills.

Bio-based CHP – even a more sophisticated solution

Bioenergy (electricity and heat produced from biofuels and biomass) as a renewable energy source and, to a large extent, as a local fuel has an important role in today's energy system and in the transition towards Solar Economy. Bioenergy is considered an important tool in mitigating climate change, because bioenergy is CO_2-neutral when taking into account its life cycle. The advantages of bioenergy are further improved when used in conjunction with CHP. The use of local bioenergy reduces dependence on imported fuels and supports local economies by employing people.

At Fortum, sustainable fuel procurement and fuel supply chain management are emphasised. In 2011, Fortum compiled guidelines and actions to improve the traceability and sustainability of bioenergy used in energy production. In Fortum's view, all bioenergy should be ecologically, socially and economically sustainable when purchased and used for energy production.

USE OF BIOFUELS AND WASTE FUELS IN FORTUM'S ENERGY PRODUCTION 2009–2011, TWh



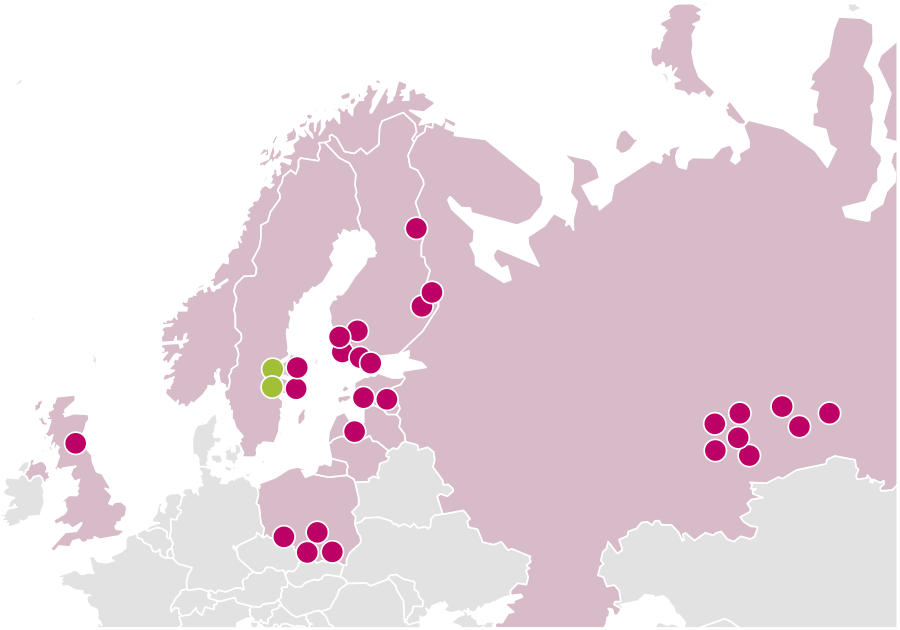
In 2011, Fortum used a total of 6.2 terawatt-hours (TWh) of biofuels, mostly in CHP and heat production. Biofuels are used as solid biomass and liquid biofuels in co-combustion with other fuels.

Advancing CHP production in 2011

In 2011, Fortum commissioned around 600 MW of new CHP capacity in Russia. Read more on Fortum's CHP investments on pages 28 and 62–64.

Fortum has also several biofuel-fired CHP plants under construction: in Klaipeda, Lithuania, in Brista, Sweden, and in Järvenpää, Finland. Increasing the use of bioenergy in co-combustion with coal using gasification or bio-torrefaction

FORTUM'S CHP PLANTS IN 2011



Case:

Raising the efficiency of heat distribution in Russia

As the fourth largest global heat producer, Fortum brings proven expertise and technologies to the Russian heat sector. In November, Fortum commenced the first phase of the integrated district heating project, Chelyabinsk Heat Ring.

Fortum operates 370 km of district heat network in Chelyabinsk. The heat losses in the existing network are high, up to 60%, whereas ,e.g., in Espoo, Finland, the corresponding figure is 20%.

The project changes the way heat is delivered to homes and businesses across the city. The Ring makes it possible to use the most efficient heat production plants depending on the heat loads. The installation of metering and regulation allows consumers themselves to regulate heat consumption. When finished, by 2017, the efficiency of the heat supply in this city of one million residents in the southern Urals area will increase by some 30%. The efficiency increase will generate savings of up to EUR 60 million annually.

In Tyumen, the second largest heat market for Fortum Russia, the company completed the automated metering system that ensures transparency in heat transfer between the trunk and distribution networks. More than 150 stations have been installed to enable the online collection of information about the status of the trunk networks.

was studied at many plants during 2011 and permit applications have been submitted to the authorities for increased use of biomass.

Key impacts of CHP

CHP is based on the combustion of fuels and resulting in emissions and environmental burden. The most significant environmental impacts of thermal energy production are related to flue-gas emissions, emissions to water, and wastes and by-products.

Emissions to air

The most significant environmental impact from fossil fuel combustion in CHP is CO_2 emissions and their impact on global warming and climate change. Energy production and use are the main source of global greenhouse gas emissions.

The combustion of fuels results in emissions of sulphur dioxide (SO_2), nitrogen oxides (NO_x) and particle emissions. Particles and heavy metals are harmful for the environment and also pose a health risk. Sulphur dioxide and nitrogen oxides have an impact on acidification. These emissions are reduced by flue gas cleaning and are controlled in power plant-specific environmental permits.

In 2011, Fortum continued preparations for the investments needed to fulfil the new emissions requirements set by the Industrial Emissions Directive (IED) from 2016 onwards in the EU countries. The IED tightens the emissions requirements for practically all Fortum's thermal power plants in the EU. Plant-specific feasibility studies and cost estimates were carried out during 2011. A more precise cost effect of the new requirements, however, will become clear after the plant-specific permit conditions have been defined during the next few years.

Waste and waste water

The waste generated from thermal energy production mainly consists of various kinds of ash, bottom slag and gypsum created as a by-product of the desulphurisation process. In Fortum's European operations, waste and by-products are utilised and recycled as efficiently as possible. In Russia, ash is stored in basins, because there is no demand for ash usage, and the wet ash handling makes utilisation more difficult.

The impacts of thermal energy production on water systems are mainly caused by the thermal loads of cooling waters, the release of solids, and nitrogen, phosphorus and heavy metal emissions. CHP is an effective way of reducing the thermal load on water systems. This also reduces the need for cooling water.

Case:

Finland's biggest hybrid plant taps into geothermal heat and bioenergy

Fortum has built Finland's biggest geothermal- and bioenergy-based hybrid plant for S-Group's logistics centre in Sipoo. Virtually all the heating and cooling energy needed by the huge logistics centre is produced with renewable energy. It is also Finland's biggest geothermal site. The hybrid plant utilises geothermal energy to produce the baseload energy for the logistics centre for as much of the operating time as possible. Heat pumps utilise solar energy that has been absorbed in the ground. The increased need for heating during winter is supplemented with wood pellets. Heavy fuel boilers are reserved for peak consumption situations only.

The fibre optics-based real-time monitoring system installed in the geothermal field is used to acquire research information about the behaviour of the geothermal field. If the heating needs of the logistic centre were covered with heavy fuel oil, it would generate 6,400 tonnes of CO_2 emissions annually. By comparison, the GeoBio hybrid plant reduces emissions by 95%, i.e., about 6,100 tonnes per year.

The plant was built and is owned by Fortum Energiaratkaisut Oy, which was divested in the beginning of 2012.


In Solar Economy,
resources can be
utilised at the
lowest possible cost.

How?

Fortum's view:

1. Market-driven system

Investments will be efficiently allocated based on supply and demand. In the long run, renewable energy production will not rely on government subsidies – it will be financially sound on its own merit.

2. Transmission infrastructure

In order to increase competition and decrease the total cost of the system, electricity needs to flow over national borders. This requires heavy investments in national electricity distribution networks as well as cross-border transmission lines.

FORTUM IS RESPONDING TO THE CHANGING MARKET

As an energy industry expert, Fortum engages in an active dialogue with authorities and decision-makers about key issues in the energy sector. For Fortum's investments, the starting point is always an economically viable balance between increasing demand and emissions reduction targets. A strong balance sheet and good profitability are important to Fortum. They help to ensure that Fortum can implement its strategy with flexibility, carry out planned investments and seize new opportunities when they arise.

Fortum envisions good opportunities in the direct utilisation of solar power, among other sources of renewable energy, and believes that it has the potential to be commercially competitive.

The extensive increase in renewable energy, especially intermittent wind and solar energy, will create a major challenge for the operation of the present energy transmission infrastructure. Fortum owns, operates and develops regional and local electricity networks and supplies electricity to a total of 1.6 million customers in Finland, Sweden and Norway. Continuous investments are being made to renew, maintain and further improve network reliability. In 2011, EUR 289 million was invested in new power lines, isolating overhead lines, underground cables and automation of critical parts of the grid.

GENERATING LONG-TERM PROFITABLE GROWTH

- Investments and research & development
- Fortum's economic impacts
- Fuels and procurement

Investments and research & development

In line with the company's strategy, Fortum pursues growth in carbon dioxide-free hydro and nuclear power and in energy-efficient combined heat and power (CHP) production. In 2011, the investments to support Fortum's long-term goals and financial targets continued according to the strategy. In research and development, Fortum is actively investigating the future Solar Economy production technologies, such as solar and wave power.

Most of Fortum's growth investments in 2011 were implemented by the Russia, Heat and Power Divisions. In the Distribution business area, Fortum is investing in further improving the reliability of its grid and in the installation of new smart electricity meters in Finland.

In 2011, Fortum's capital expenditures and investments in shares totalled EUR 1,482 million (2010: EUR 1,249 million). Investments, excluding acquisitions, were EUR 1,408 million (2010: EUR 1,222 million), 262 million (2010: 214 million) of which was for CO_2-free production. The biggest investments were made in Russia, EUR 670 million (2010: 599 million), and in Sweden, EUR 392 million (2010: 300 million). Investments in renewable energy forms were EUR 247 million (2010: 182 million). These investments were mainly new CHP investments. Furthermore, Fortum invested a total of EUR 82 million (2010: 91 million) in the environment and safety in 2011.

Fortum currently expects its capital expenditure in 2012 to be around EUR 1.6–1.8 billion and in 2013–2014 around EUR 1.1–1.4 billion, excluding potential acquisitions. The main reason for the high capital expenditures in 2012 is the acceleration of Fortum's Russian investment programme. The annual maintenance capital expenditure is estimated to be about EUR 500–550 million in 2012.

Fortum pursues growth from energy-efficient CHP production

In January 2011, Fortum finalised the acquisition of two Polish power and heat companies, Elektrociepłownia Zabrze S.A. and Zespół Elektrociepłowni Bytom S.A. from the Polish State. Fortum also inaugurated a new combined heat and power plant in Pärnu, Estonia. The plant uses local fuels, like woodchips, wood residues from industry and milled peat. The production capacity of the new CHP plant is 24 megawatts (MW) of electricity and 50 MW of heat.

2,400 MW MORE CAPACITY IN RUSSIA

Fortum's extensive investment programme in Russia will increase the company's power production capacity by approximately 2,400 MW.

Furthermore, Fortum and the municipal energy company Sollentuna Energi signed a final agreement according to which Sollentuna Energi will participate with a 15% share in Fortum's new waste-fired CHP unit, Brista 2, which is being built in the Stockholm area in Sweden. The new unit will be able to process a total of 240,000 tons of household and industrial waste per year. According to the plan, Brista 2 will be ready for production in 2013 and its capacity will be 57 MW heat and 20 MW electricity.

In June 2011, Fortum decided to invest in two new biofuel-fired CHP plants in Järvenpää, Finland, and Jelgava, Latvia. The investments total around EUR 160 million and the plants are estimated to start commercial operation in 2013. The new plants replace oil and gas with biofuels.

In October, Fortum decided to approve the co-ownership agreement to consolidate Turku region energy production to the co-owned production company Turun Seudun Maakaasu ja Energiantuotanto Oy (TSME) in Finland.

Most of Fortum's growth investments in 2011 were implemented in Russia and Sweden.

TSME shareholders are Fortum, Turku Energia and the municipalities of Naantali, Raisio and Kaarina. The arrangement was realised at the beginning of 2012. Fortum's shareholding in TSME is 49.5%.

During the year, Fortum divested businesses that were not consistent with the company's strategy to focus on large-scale CHP. In the beginning of the year, Fortum finalised the divestment of its district heat operations and heat production facilities outside the Stockholm area in Sweden to Macquarie European Infrastructure Fund II (MEIFII) and to Macquarie Power and Infrastructure Corporation (MPIC). In December, Fortum agreed to sell Fortum Energiaratkaisut Oy and Fortum Termest AS to the EQT Infrastructure Fund. The divestment was completed in February 2012.

New plants taken into commercial use in Russia

Fortum is committed to a EUR 2.5-billion investment programme in Russia, with the last new units scheduled for commissioning in 2014. Altogether, Fortum's extensive investment programme consists of eight new units, and it will increase OAO Fortum's power production capacity by approximately 2,400 MW and heat production capacity by 662 MW. The investment programme is based mainly on the use of natural gas. The value of the remaining part of the investment programme is estimated to be approximately EUR 0.9 billion as of January 2012. Fortum is also investing in improving the energy efficiency of the production plants and district heating systems.

Upon completion of the ongoing investment programme, Fortum targets a positive economic value added for the Russia Division. According to the rules of the capacity market, the generation capacity built after 2007 under the government capacity supply agreements (CSA – "new capacity") will receive guaranteed payments for a period of 10 years. Prices for capacity under CSA are defined to ensure a sufficient return on investments.

OAO Fortum's new capacity will bring income from new volumes sold and will receive considerably higher capacity payments than the old capacity. However, the price differs depending on the age, location, type and size of the plant as well as seasonality. The first and fourth quarters have higher old capacity income than the second and third quarters.

The first three units of Fortum's investment programme in Russia started commercial operation in 2011 in Tyumen, Chelyabinsk and Tobolsk. Also the construction of the new power plant in Nyagan in North Urals continued. Once completed, the plant will have three natural gas-fired units with a 418 MW production capacity each. The first two units, Nyagan 1 and Nyagan 2, will be commissioned in 2012.

Improving the availability of nuclear power

In Finland, Fortum is participating in the construction of TVO's (Teollisuuden Voima Oyj) third nuclear power unit Olkiluoto 3 (1,600 MW). The power plant is being constructed by TVO, of which Fortum holds an about 26% share. AREVA-Siemens Consortium, which is constructing Olkiluoto 3 on a fixed-price turn-key contract, has informed TVO that the unit is scheduled to be ready for commercial electricity production in August 2014.

Moreover, Fortum decided to participate in the financing of the bidding and engineering phase of TVO's fourth nuclear unit at Olkiluoto, Finland, with a stake corresponding Fortum's share in TVO. The bidding and engineering phase commenced in December 2011. According to the decision-in-principle, made by the Finnish Parliament in July 2010, the application for a building permit for the Olkiluoto's fourth unit must be filed latest in June 2015.

Fortum has two fully-owned reactors in Loviisa and the company is a co-owner in eight reactors at the Olkiluoto, Oskarshamn and Forsmark power plants. Forsmark and Oskarshamn nuclear power plants are undergoing capacity upgrades in Sweden. The Swedish nuclear investment programmes will enhance safety, improve availability and increase the

capacity of the current nuclear fleet. Fortum's share of the planned capacity increases will be about 290 MW.

Growing investments in renewable energy

In 2011, Fortum continued to develop its existing hydro assets. Fortum's long-term hydropower refurbishment programme aims to improve the production, efficiency and safety of hydropower plants. The investment programme will increase Fortum's hydropower capacity by about 100 MW by 2020.

Fortum is also preparing to participate in the tender processes for hydropower concessions in France, which are expected to officially start in 2012. In the frame of the European directive, France is to open up the hydro concession renewal process for competition. The French Government is thus putting the first tranche of ten concessions with a total capacity of 5,300 MW into a tender process in 2012–2015.

In October, Fortum and the French DCNS signed a Letter of Intent on co-operation in the field of wave power research and development in France. A joint feasibility study for a wave power demonstration project located in France was started in 2011.

Fortum and Seabased AB signed an agreement in the end of the year on the construction of a joint wave power park in Sotenäs, Sweden. The construction of the park will start in 2012. After completion, the wave power park will be the world's largest full-scale demonstration project of this kind. The Swedish Energy Agency has decided to grant investment support for the project.

Fortum and the Swedish Skellefteå Kraft are also constructing an onshore wind farm in Blaiken, Sweden. The wind farm will be constructed in phases and is expected to be completed in 2015.

Investments in electricity network and smart metering

Fortum owns, operates and develops regional and local electricity networks and supplies electricity to a total of 1.6 million customers in Finland, Sweden and Norway. The total length of the company's network is 156,000 km, which is almost four times the circumference of the earth. Continuous investments are made to renew, maintain and further improve network reliability. In 2011, EUR 289 million was invested in new power lines, isolating overhead lines, underground cables and automation of critical parts of the grid, i.e., a step towards a smarter grid with fewer and shorter outages. The severe storms at the end of 2011, among the strongest in 30 years in Finland, damaged Fortum's network and caused power outages for hundreds of thousands of customers, and thus put additional focus on a more weather-proof network.

Case:

Investments in new biofuel-fired CHP plants

Fortum is building two new biofuel-fired combined heat and power (CHP) plants in Jelgava, Latvia, and in Järvenpää, Finland. The value of the investment is around EUR 160 million and the plants are scheduled to start commercial operation in 2013.

The new Jelgava plant is the first in its scale to use biofuels in Latvia and it will replace heat production based on natural gas. The plant will reduce the region's CO_2 emissions by approximately 30,000 tonnes annually. In Jelgava, the biofuels to be used include woodchips from forest and industry. The plant also can utilise waste fuels and peat. The annual production of the plant will be approximately 230 gigawatt-hours (GWh) of heat and 110 GWh of electricity.

The new plant in Järvenpää will replace current natural gas and heavy fuel oil heat production, and the region's CO_2 emissions will decrease by 70,000 tonnes annually. The biofuels to be used in the Järvenpää plant are mainly wood chips and by-products of the forest industry, such as sawdust and bark, in addition to some peat. The annual production of the plant will be about 280 GWh of heat and about 130 GWh of electricity.

FORTUM'S EUROPEAN INVESTMENT PLAN AS OF 2011

	Plant	Production/Fuel type	Heat (MW)	Electricity (MW)	Supply starts[2]
Power Division [1]	Forsmark 1, Sweden	Nuclear		25	Decision in 2013
	Forsmark 2, Sweden	Nuclear		30	2012
	Forsmark 3, Sweden	Nuclear		35	Decision in 2013
	Oskarshamn 2, Sweden	Nuclear		95	2015
	Oskarshamn 3, Sweden	Nuclear		110	
	Olkiluoto 3, Finland	Nuclear		400	2014
	Nordic hydropower upgrades, Finland and Sweden	Hydropower		10–20 MW annually	by 2015
Heat Division	Klaipeda CHP, Lithuania	Waste	60	20	2013
	Brista CHP, Sweden	Waste	57	20	2013
	Järvenpää CHP, Finland	Biofuel	63	23	2013
	Jelgava CHP, Latvia	Biofuel	45	23	2013
Total new capacity			**225**	**~800**	

[1] *Capacity increases reported under Power Division, represent Fortum's share of increase.*

[2] *Start of commercial operation preceeded by test runs, licencing etc.*

INVESTMENT PROGRAMME IN RUSSIA

Plant	Fuel	Existing capacity electricity, MW	New capacity electricity, MW	Total	Supply starts[1]
Argayash CHP		195		195	
Chelyabinsk CHP-1		149		149	
Chelyabinsk CHP-2		320		320	
Chelyabinsk CHP-3	Gas	360	216	576	2011
Chelyabinsk GRES		82		82	
Tyumen CHP-1	Gas	472	190;2x248	1,157	2011, 2014
Tyumen CHP-2	Gas	755		755	
Tobolsk CHP	Gas	452	213	665	2011
Nyagan (1-3)	Gas		1,254	1,254	2012–2013
Total capacity		**2,785**	**2,368**	**5,153**	

[1] *Start of capacity sales, preceeded by test runs, licencing, etc.*

ACQUISITIONS 2011

		Capacity (MW)		
Plant	Fuel	Heat	Electricity	Acquisition completed
ZEC Bytom	coal	373	55	03/01/2011
EC Zabrze	coal/gas/biofuels	430	73	03/01/2011

PLANNED NEW HEAT CAPACITY IN RUSSIA [1]

		Planned additional capacity (MW)	
Plant	Fuel type	Heat	Supply starts
Tyumen CHP-1	Gas	2x175	2014
Total new capacity		**350**	

[1] *New heat capacity already built in Chelyabinsk CHP-3 (56 MW) and Tyumen CHP-1 (256 MW). Total new heat capacity will be 662 MW.*

The installations of smart metering for all customers in Finland continued in 2011. The installation of the new meters will begin in 2013 in Norway; altogether 100,000 households as well as small business customers in Fortum's network area will be connected to the system by 2015.

In April 2011, Fortum finalised the agreement to sell its 25% shareholding in the Finnish transmission system operator Fingrid Oyj to the Finnish State and Ilmarinen Mutual Pension Insurance Company. The State bought approximately 81% and Ilmarinen approximately 19% of Fortum's Fingrid shares. Fortum sold its holding in Fingrid as a result of the EU's third energy market package calling for the separation of high-voltage transmission and power generation. The package entered into force in September 2009.

Fortum signed an agreement to sell its Estonian subsidiary Fortum Elekter to Imatran Seudun Sähkö in December 2011. In connection with the agreement, Fortum also sold its ownership in Imatran Seudun Sähkö Oy. The closing of the deal was made in the beginning of January 2012.

Research and development

The purpose of research and development (R&D) is to improve Fortum's competitiveness and to create a foundation for new profitable business. The long-term aspiration of R&D is to enable a sustainable carbon dioxide-free future for Fortum. Each new development activity is assessed against the criteria of carbon dioxide emissions reduction and resource efficiency. R&D focus areas are performance excellence of current operations, enabling growth and contributing to an emissions-free energy system in the long-term.

Fortum's main R&D themes cover the most advanced technologies in the current energy system and the technologies and system solutions that will be needed to enable future Solar Economy. In 2011, a strong focus in R&D was on understanding the potential of various solar technologies. Fortum also teamed up with partners in large programmes to develop smart grid technologies, sustainable urban solutions, and new integrated CHP concepts. Nuclear R&D continued to be the largest and most valuable part of Fortum's R&D portfolio. Furthermore, the work in the areas of pyrolysis, torrefaction, and the potential of integrating a CHP plant with bioethanol production continued actively.

The growth and potential of solar energy, and the price development of solar photovoltaic (PV) modules in particular, were analysed carefully as one of the main strategic topics in Fortum in 2011. The conclusion was that solar PV is approaching grid parity from an electricity consumer point of view on several markets, even without additional subsidies. In addition, there is still potential for significant cost reductions in the modules and the system. The decision was made to move from the R&D and monitoring phase to

Case:

New wave power research opportunity in France

At the end of 2011, Fortum and the large-scale French marine company DCNS started wave power research and development co-operation in France. This offers both parties an opportunity to investigate wave power's full potential and to utilise their complementary expertise in marine renewable energy. In 2011, Fortum also established a country organisation in France in order to participate in the long-term development of the renewable energy in France.

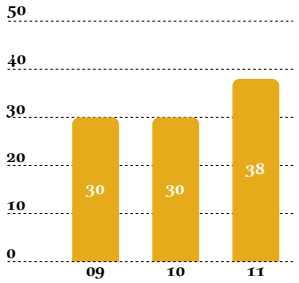
Fortum has been active in wave energy development since 2007, researching both offshore and nearshore technologies in demonstration plants in Sweden and Portugal. Thus, studying wave power's potential is a significant step in the transition towards Solar Economy.

the development of the basis for a potential new business for Fortum.

In the area of smart grids, Fortum participated in successful piloting activities in Finland. At Masala substation, Finland, Fortum has developed a highly automatised grid that can be considered as a key step towards a self-healing grid. Fortum participated in testing the electricity grid automation concepts and improving grid reliability. In Mäkkylä, Finland, Fortum tested sustainable urban living solutions with partners such as ABB, Skanska and KONE. Several other studies were also carried out on topics of interest to Fortum, including microgrid planning and grid impact of fast charging of electric vehicles.

The pre-study for the Smart Grid project in Stockholm Royal Seaport was finalised during the spring. It confirmed that the various parts of the energy system can be connected, which will enable the consumer to participate more actively in the electricity market. The pre-study was managed by Fortum in a consortia consisting of 13 different partners. The project then proceeded with planning for the next phase of implementation and tests including partner negotiations and financing.

R&D EXPENDITURE, EUR million



Moreover, activities within Fortum's solid nuclear R&D portfolio progressed from development towards implementation. For example, the use of higher burnup nuclear fuel and antimony-free pump seal materials at the Loviisa nuclear power plant were developed. The Fukushima accident strengthened the focus on nuclear safety also within nuclear R&D. After the accident, the contents and priorities of all Fortum nuclear R&D programmes were reviewed.

Fortum's R&D expenditure in 2011 was EUR 38 million (2010: 30 million) or 0.6% of sales (2010: 0.5%) and 1.1% of total expenses (2010: 0.8%).

Case:

Fortum's lighting projects are an example of support for society

Fortum supports organisations and communities working for the common good in the countries where it operates. In 2011, Fortum's support for society totalled approximately EUR 4.6 million.

One example of Fortum's support for society is the lightning projects that aim to light up dark areas in cities in Finland and Sweden. The areas are chosen by public vote and are usually places people have deemed to be unsafe due to insufficient lighting. Fortum provides the planning and construction of the lighting, and the cities are responsible for maintaining and servicing the infrastructure.

In 2011, the concept was developed further in Stockholm. The "Ljusruset" campaign, involving the City of Stockholm and the Swedish Athletic Association, is an exercise contest involving three local jogging circuits competing against each other. The aim of the campaign is to showcase Fortum's expertise in energy efficiency and to link it to the residents' well-being through exercise and safety. The campaign won gold in the "Green Event" category in the European Best Event Award and silver in the "PR" category in the Eurobest Award.

Fortum's economic impacts

Fortum's operations have both direct and indirect economic impacts. The graph below shows how Fortum's operations impacted the company's most important stakeholders in 2011 (the corresponding figure for 2010 is in parentheses).

Generation of added value

DIRECT

CUSTOMERS

- Fortum offers electricity, heating, cooling and town gas as well as related expert services
- 1.2 million private and business customers and 1.6 million electricity distribution customers in the Nordic countries and Estonia
- District heat customers in eight countries and almost 90 cities

INDIRECT

- 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 enable sustainable community planning

MEUR 7,192 (6,432)

DIRECT

SUPPLIERS

- Fortum refines natural energy sources into electricity and heat
- Fortum purchases fuels, goods and services from local and global suppliers
- Some 75% of the goods and services Fortum purchases are from suppliers operating in Europe
- Uranium, gas and majority of coal were purchased from Russia in 2011

INDIRECT

- 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

Fortum

Distribution of added value

MEUR 1,431 (1,657)

DIRECT

INVESTORS AND SHAREHOLDERS

- 104,496 shareholders, the Finnish State owns 50,76% of Fortum
- Dividends EUR 888 (888) million
- About 70% of dividends to Finnish shareholders

INDIRECT

- 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

MEUR 1,347 (1,162)

DIRECT

INVESTMENTS

- Majority of growth investments in the Heat and Russia Divisions
- The majority of the planned investments in Europe target CO_2-free production
- Maintenance, productivity and legislation-based investments EUR 635 (436) million
- Growth investments EUR 712 (726) million
- Research and development expenditure EUR 38 (30) million

INDIRECT

- Fortum's view is that the future energy system should be based on CO_2-free electricity production and energy efficiency
- 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

MEUR 529 (507)

DIRECT

PERSONNEL

- Operations are concentrated to the Nordic countries, Russia and the Baltic Rim area
- Fortum employed an average of 11,010 (11,156) people
- Women account for 29% (29%) of the personnel at 31 December 2011

INDIRECT

- 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

MEUR 3,272 (2,923)

MEUR 728 (642)

DIRECT

PUBLIC SECTOR

- Fortum's income, property and production taxes EUR 721 (634) million
- Support for society approximately EUR 4.6 (5.2) million
- Donations to universities about EUR 2.8 (2.3) million

INDIRECT

- 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

The figures are derived from the consolidated cash flow statement and the income statement.

Income from customers (EUR 7,192 million) includes income from products and services to customers, financial income, and sales proceeds from fixed assets and shares.

Compensation to investors and shareholders (EUR 1,431 million) includes dividends paid to shareholders, interest expenses, and other financing costs.

Fuels and procurement

Fortum is a significant purchaser of goods and services, the annual purchasing volume being approximately EUR 2–3 billion depending on the investment volume. Beyond investments, a significant part of the purchasing volume is related to purchasing of fuels, while the rest comes from purchasing of various goods and services. Sustainability is an integral part of Fortum's supply chain management. Our goods and service providers as well as contractors play an important role in our efforts towards sustainability.

In 2011, Fortum had about 17,000 suppliers of goods and services. Some 75% of the goods and services were procured from suppliers operating in Europe, mostly in Finland and Sweden. Fortum's purchasing volume totaled EUR 2.6 billion (2010: 2.8).

Responsible supply chain management

Fortum wants to conduct business with viable companies that act responsibly and comply with Fortum Code of Conduct and Supplier Code of Conduct. While Fortum Code of Conduct provides the basis for ethical business conduct, Fortum Supplier Code of Conduct sets the basic sustainability requirements on what is expected from suppliers of services and goods. It is based on the ten principles of the United Nations Global Compact and is divided into four sections: business practices, human rights, labour standards and the environment. Monitoring of suppliers that was started with revised methodology in 2011 will help Fortum to identify potential risk suppliers and thus recognise and focus the need for further actions.

Responsible fuel purchasing

Fortum purchases fuels from international and local suppliers. In 2011, fuel purchases represented 35% of the total purchasing volume out of which roughly half originated from risk countries. From the total annual purchasing volume (EUR 2.6 billion) fuels accounted for about EUR 900 million (2010: 960), with fossil fuels accounting for EUR 655 million and biofuels EUR 175 million.

Sustainability of fuel procurement and especially sourcing of fossil fuels and biomass has become a topic of concern. Industry wide dialogue is required to address issues systematically. Fortum has been actively participating in industry and stakeholder dialogues on responsible fuel sourcing, read more on page 70.

130 PERSONS TRAINED TO EVALUATE SUPPLIERS

In 2011, Fortum's 130 purchasing persons and project managers in Finland, the Baltic countries, Poland and Sweden were trained to evaluate suppliers based on sustainability criteria.

Uranium

The fuel assemblies of the existing power plant units in Loviisa are both Russian and British. The uranium used in the assemblies of both manufacturers originates from Russia. The zirconium material manufacturing plant and the plant responsible for manufacturing uranium oxide pellets and fuel assemblies, are certified in accordance with the ISO 14001 environmental management standard.

Fortum carries out regular reviews of the quality, environmental and health and safety management systems of its nuclear fuel suppliers. Fortum also controls regularly the manufacture of nuclear fuel assemblies. In 2011, Fortum's nuclear and sustainability experts visited both the nuclear fuel assembly and the conversion unit in Russia. In summer 2012, a similar visit is scheduled to take place in one of the uranium mines operated by Fortum's Russian supplier.

Natural gas

Natural gas used in Fortum's operations in 2011 in Russia, the Baltic countries, Poland and Finland originated from Russia. In Russia gas is purchased from several suppliers. In the UK, Fortum purchases natural gas from the national supplier and it originates mostly from the UK and Norwegian gas fields in the North Sea.

All the natural gas consumed in Finland is imported from the Western-Siberian natural gas fields of Yamburg and Urengoy in Russia, some 3,300 km from the Finnish-Russian border. The Western-Siberian gas fields are the richest in the world, and the natural gas obtained is very pure.

Coal

In 2011, the majority (88%) of the coal used by Fortum in Finland and Sweden originated from Russia, but there were also small purchases from Columbia. Coal used in Polish power plants originated from Poland and Russia, and Fortum's Russian power plants used coal from Russia and Kazakhstan.

In Russia coal is transported in open cars by railway from a coal strip mine to a power plant. Coal to other Fortum's operating countries is transported by sea.

The coal Fortum uses has specific quality requirements and is usually purchased as a blend. The country of origin is always known but when coal is purchased as a blend the exact share of each mine is not known. In case of other than blend deliveries, the origin is known at the mine level. In early 2012, Fortum decided to join Bettercoal initiative to promote the principles of sustainable development in coal mining, read more on page 71.

Biofuels

In 2011, the majority (70%) of the biofuels used consisted of wood pellets, wood chips and industrial wood residues, and they originated mainly from Sweden, Finland and Germany. Other types of biofuels were also acquired for example from the United States, Spain and Malaysia. Fortum recognises the challenges related to the origin of biofuels and thus cannot be absolutely confident about the country of origin. Fortum's position and actions for the sustainable utilisation of bioenergy approved in late 2011 will contribute to improved traceability.

In Finland, biomasses consumed were forest chips, by-products from forest industry, black liquor, recycled wood from industry and construction and a minor amount of wood pellets, reed canary grass and biogas. Additionally, solid refined recovered waste fuel was used in one power plant. The biofuels used originate mainly from Finland, only minor volumes of Russian wood were consumed. Aim is to increase the use of solid biofuels originating from certified sources in the coming years and also to report the share of this biofuel.

ORIGIN OF FUELS USED IN 2011 [1]

Fuel	Country of origin
Biofuel	Sweden, Finland, Germany and other countries
Coal	Russia, Poland, Columbia, Kazakhstan
Natural gas	Russia, UK, Norway
Uranium	Russia
Oil	Mainly Russia
Peat	Finland, Estonia

[1] *The biggest countries of origin based on the purchasing volumes in 2011*

MATERIALS AND SERVICES PURCHASED 2009–2011, EUR million [1]

	2011	2010	2009
Nordic countries	1,753	1,982	1,508
Russia	584	546	372
Poland	128	113	89
Estonia	64	58	43
Other countries	37	147	15
Total	**2,566**	**2,846**	**2,027**

[1] *Based on the income statement*

FUEL USE BY COUNTRY IN 2011, GWh

	Biofuels	Waste fuel	Natural gas	Coal	Peat	Uranium fuel	Other fuels
Estonia	1,061		393		1,111		63
Finland	1,922	381	5,091	12,716	2,695	24,300	901
Poland	253		166	3,222			6
Russia			65,516	4,104			17
Sweden	2,887	2,140	113	1,752			440
UK			4,002				86
Other countries	40		319				23

THE USE OF BIOENERGY SHALL BE SUSTAINABLE AND TRACEABLE

In Fortum's opinion all types of bioenergy – solid as well as liquid and gaseous – shall be ecologically, socially and economically sustainable when it is purchased and used for energy production. Responsible supply chain management for fuels and transparent reporting on the origin and use of bioenergy are the key tools in ensuring sustainability and traceability.

SUSTAINABILITY CRITERIA SHOULD APPLY TO THE ORIGIN OF ALL BIOENERGY

Due to an increasing demand for bioenergy for different end-use purposes and international trade of bioenergy, there is a clear need to define the sustainable use of all biomass. Sustainability criteria should apply to the origin of bioenergy, irrespective of whether it is being used in industry, energy production or as traffic fuel.

SUSTAINABILITY CRITERIA ARE NEEDED FOR SOLID BIOMASS, TOO

Harmonised sustainability criteria would build confidence in and boost the development of an international market for bioenergy. The current system of variable requirements of certification schemes and national/local sustainability schemes for biomass is confusing from the biomass supplier, user and investor point of view. However, the criteria for biofuels and bioliquids, as defined in the EU Renewable Energy Directive, cannot be applied to solid biomass as such.

SUSTAINABILITY CRITERIA SHOULD BE LEGALLY BINDING

A biomass sustainability scheme should be legally binding, where only bioenergy that meets the sustainability criteria would count towards the national renewable energy targets and would be eligible for financial support.

THE TARGET SHOULD BE GLOBAL SUSTAINABILITY CRITERIA, BUT AT MINIMUM, COMMON EU REQUIREMENTS

EU-wide standardisation (incl. sustainability criteria) for bioenergy is needed and important also for the opening and widening of the fuel market. It can also improve competition in the EU. Sustainability criteria should be introduced at least at the EU level, but the ultimate goal should be an international scheme.

SUSTAINABLE FOREST MANAGEMENT AND GENERALLY RECOGNISED AGRICULTURAL PRACTICES ESTABLISH THE BASIS FOR THE SUSTAINABLE PRODUCTION OF BIOMASS

Forestry is a well regulated sector and takes sustainability into account. The forest certification schemes acknowledge the economic, social and environmental aspects of forest management. Thus there is no need for overlapping schemes with forest certification. The certification schemes should be embedded into the EU bioenergy sustainability scheme.

In 2011, Fortum compiled position and actions for the sustainable utilisation of bioenergy in electricity and heat production.

Sustainable bioenergy procurement

The sustainable production and use of bioenergy is an increasingly topical issue worldwide. The European Union has defined the sustainability criteria for biofuels and bioliquids in transport and is considering enlarging the scope of criteria into solid biomass in energy production.

Bioenergy is an important energy source for Fortum. In 2011, Fortum compiled position and actions for the sustainable utilisation of bioenergy in electricity and heat production. The position and actions contribute to improved traceability of biomass fuels and responsible management of fuel purchases. Actions include, for example, the pre-selection and audit of suppliers, certification of the wood biomass chain, risk analyses and participation in international initiatives on sustainable bioenergy. Position and actions were approved in December 2011 and their implementation will start in 2012.

Read more about Fortum's principles on the sustainable use of bioenergy at www.fortum.com/sustainability.

Stakeholder collaboration in bioenergy sourcing

In Sweden, Fortum's subsidiary Fortum Värme is a participant in the WWF Global Forest and Trade Network (GFTN) through GFTN Sweden. The GFTN is a WWF initiative to eliminate illegal logging and to drive improvements in forest management. The network members are committed to promoting responsible forestry and credible certifications. Fortum has an action plan for 2011–2013 to increase the amount of wood purchased from certified forests. The share of certi-

fied fuel has increased, due to higher standards for goods suppliers and better procedures in purchasing. As part of the collaboration, Fortum reports its annual targets to WWF and engages in an active dialogue.

In order to successfully reach the target, buyers, suppliers and subcontractors need to have an adequate knowledge and understanding of what sustainable forest management means. In 2011, Fortum Värme organised training on the Forest Stewardship Council (FSC) requirements and certification to enhance the knowledge of fuel purchasing personnel. Fortum Värme uses more than 350,000 tonnes of wood chips and 300,000 tonnes of pellets at its plants in Sweden every year. The wood used originates from the Baltic countries, Russia, Sweden, Finland, North America and South Europe. In 2011, Fortum Värme analysed the possibility of joining the FSC and decided to apply for membership starting in 2012.

Fortum Värme has been a member of the Roundtable of Sustainable Palm Oil (RSPO) since 2005. RSPO is a collaborative body of palm oil producers, consumers and non-governmental organisations. The organisation has developed criteria for sustainable palm oil production and the use of palm oil. RSPO organises annual meetings for its members to exchange views and experiences among various stakeholders; Fortum representatives participate in these meetings. In 2011, Fortum used about 137,750 cubic meters of fractions that are residues of palm or soy oil production, and some residues of oil from the chemical industry and paper industry. Fortum has special requirements for all residual products and works actively with traceability. The bio oils used by Fortum come from Malaysia, Indonesia, the United States, Brazil and Europe. All palm oil residuals come from RSPO member companies.

Case:

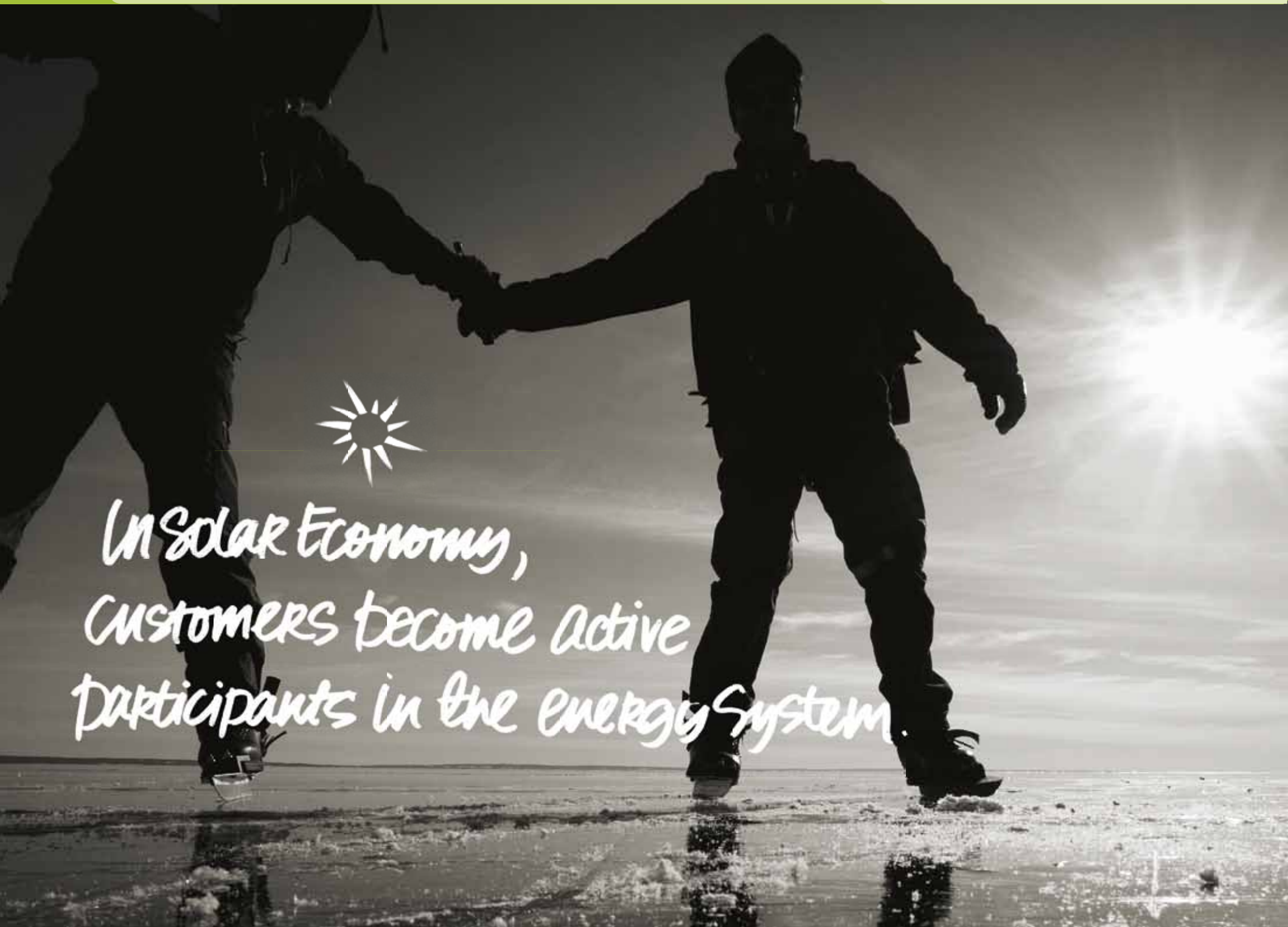
Bettercoal – promoting improvements in coal mining

Bettercoal is an independent, non-profit organisation that works to advance the continuous improvement of corporate responsibility in the coal supply chain.

Coal is mined by opencast or underground mining. Surface mining can be more challenging in terms of environmental protection, whereas working conditions in the underground mines can create occupational health and safety concerns.

The basis of the work of Bettercoal initiative is the Bettercoal Code that will build upon existing standards applied to mining, setting out the social, environmental and ethical standards that coal mining companies are expected to comply with. The compliance will be assured by suppliers' self-assessments and site-assessments performed by independent third party assessors. Over time Bettercoal also expects to develop appropriate tools, training and capacity building activities to further support suppliers. Bettercoal will produce a public Annual Report of Activity including performance data and qualitative information such as good practices from the mines and special topics relating to emerging issues that Bettercoal will strive to address.

Bettercoal is working closely with its stakeholders and has established an independent Stakeholder Advisory Group to provide advice and guidance on a variety of topics including the draft Bettercoal Code and the public consultation process that will be launched later in 2012. The group is made up of experts from civil society (including non-governmental organisations and academic experts), international unions, and the private sector (mining companies).


In Solar Economy,
customers become active
participants in the energy system.

How?

Fortum's view:

1. Customers adjusting consumption

Customers can use real-time consumption and market information to adjust their own consumption from peak hour prices to hours when the price is lower. Software applications support customers in optimising their consumption.

2. Customers as producers of energy

Customers themselves can produce some of the electricity they use with, e.g., their own solar panels. Smart grids enable customers to sell surplus electricity to the grid.

FORTUM IS RESPONDING TO THE NEEDS TO ACTIVATE CUSTOMERS

Fortum is installing smart meters for all its customers to offer better control of electricity usage. The advantage of smart meters is that customers can now see their actual household electricity consumption data via the internet. Fortum has also launched in-home displays – in Sweden in 2010 and in Finland in 2011 – to enable customers to track their own consumption in real time.

In addition, Fortum engages in several smart grid-related R&D and demonstration projects. In Finland, Fortum has participated in successful piloting activities on automation concepts to improve grid reliability and sustainable urban living solutions with partners such as ABB, Skanska and KONE. In Sweden, Fortum is contributing to the development of smart grids and smart heating and cooling solutions for the Royal Seaport of Stockholm. According to a pre-study conducted in 2011, the various parts of the energy system can be connected in a way that enables the consumer to participate more actively in the electricity market.

ENGAGING WITH PEOPLE

- Serving customers
- Personnel – promoting employee wellbeing

Serving customers

Essential parts of Fortum's customer service are products and services that respond to customer needs, securing the electricity and heat supply, solutions for the future energy system and regular assessments of customer satisfaction. In 2011, Fortum continued to develop its offering for customers, but also suffered from a severe storm that damaged the electricity network and caused power outages for many customers in Finland.

For many years, Fortum has built a relationship of trust with its customers. Customer satisfaction and meeting customer expectations are high on Fortum´s agenda. In order to meet customer expectations, Fortum assesses customer feedback regularly and involves customers in the development of existing and entirely new products and services.

Customer satisfaction is monitored regularly during the year. Monitoring is done by general customer satisfaction surveys and process specific measurements. Surveys are standardized and executed in all countries where Fortum has customers enabling benchmarking between countries and business areas. Large amount of customer transactions enables continuous monitoring of satisfaction in main customer processes. Fortum also regularly tests development ideas by discussing them at customer advisory councils in Finland and at one-off customer meetings in other countries.

Climate-benign products to electricity customers

Since 2009, Fortum has only offered CO_2-free electricity for its household customers in Finland and Sweden. More and more private customers and companies are demanding that the electricity they buy comes with a guarantee of origin, i.e., information about how the electricity is produced. All electricity sold by Fortum is guaranteed by the European Guarantee of Origin certificate. In Sweden, some products are certificated also by Bra Miljöval and in Finland by SLL Ekoenergia.

In Finland, all Fortum's private customers automatically receive 100% hydropower or 100% wind power. The electricity sold to small and medium size business customers is a mix of nuclear power and electricity from renewable sources: bio-, wind and hydropower. In Sweden, customers can choose between electricity produced with nuclear, hydro or wind power. Customers in Norway are offered the CO_2-free product produced with 100% renewable energy.

100 % HYDRO OR WIND POWER FOR CUSTOMERS

In Finland, all Fortum's household customers automatically receive 100% hydropower or 100% wind power.

In Finland, Fortum established electricity sales and advice points in three cities in 2011. The sales points provide customers with advice on finding a power agreement suitable for their purposes.

Reliable electricity supply becoming increasingly important

Fortum owns, operates and develops regional and local electricity networks and supplies electricity to a total of 1.6 million customers in Finland, Sweden and Norway. The total length of the company's network is 156,000 km, which is almost four times the circumference of the earth. Continuous investments are made to renew, maintain and further improve network reliability. In 2011, EUR 289 million was invested in new power lines, isolating overhead lines, underground cables and automation of critical parts of the grid, i.e., a step towards a smarter grid with fewer and shorter outages.

The severe storms at the end of 2011, and one of the strongest in 30 years in Finland, damaged Fortum's network and caused power outages for many customers, and thus put additional focus on a more weather-proof network. The reliability of Fortum's grids is high. For a number of years, the reliability trend was positive

Case:

December storms devastated the electricity grid in Finland

The storm on 26 December 2011, one of the strongest in 30 years in Finland, and the smaller storm on the following day caused major damage to Fortum's electricity distribution grid in Finland. Fortum had prepared for the storm by quadrupling the number of service technicians on duty. However, the conditions exceeded the forecasts. At the worst point, more than 190,000 Fortum customers in Finland were simultaneously without electricity. In addition to Finland, the storms caused some power outages and damage also in Sweden.

Since the storm, Fortum has carefully analysed its operations and has mapped the areas requiring improvement. For example, the implementation of a text messaging service and developments in the IT systems were identified as essential. Fortum is also setting a long-term target to cut the number of power outages in half and to double the number of customers currently within the scope of weather-proof distribution. This will be done by accelerating underground cabling and moving areal lines from the forest to the roadside. The weather reliability of the distribution network also can be improved by better management of adjacent forests and with grid automation.

and reached 99.98%. The strong storms affected the reliability significantly and the figure decreased to 99.90% for 2011. As a result, the average interruption duration per customer increased by 5-fold. Fortum will increase investments in a more weather-proof network and has set a target to cut the number of power outages in half. The aim is also to double the number of customers currently within the scope of weather-proof distribution by 2020.

Installation of smart meters to electricity distribution customers

Smart meters offer better control of electricity usage and thus are a step towards smarter energy consumption. In Finland, approximately 580,000 customers will receive new meters before the end of 2013. In 2011, the rollout of smart metering to network customers in Finland proceeded according to plan; by the end of 2011, 160,000 customers had received meters. The new Finnish legislation on hourly meter reading will become effective on 1 January 2014. In Sweden, bringing smart metering to customers was completed in 2009. The installation of new meters in Norway will begin in 2013; altogether 100,000 customers in Fortum's network area will be connected to the system by 2015. The regulation on hourly meter reading in Norway will come into effect on 1 January 2017.

The advantage of smart meters is that a large number of customers can now see their actual monthly household electricity consumption data via the internet. The benefits of the new system also include invoicing based on actual electricity consumption, better control over electricity usage and a platform for new services.

Towards smarter grids

An increased share of renewable energy, distributed energy systems and demands for energy efficiency are all part of the future society and put new demands on the grid. Smart meters and smart grids will change the electricity market in the years ahead. Smart grids enable customers to produce some of the electcity they use, e.g., through their own solar panels, and to sell their excess electricity to the grid.

Fortum is actively developing the solutions for sustainable urban living. Fortum's focus in building the future smart grid has especially been on electricity grid development, distributed energy systems and smart-home solutions. Read more on Fortum's smart grid related research and development activities on page 66.

Energy storage solutions are being developed in the Fortum Flexible Energy research project. One example of such solutions is the integration of the electric vehicle charging infrastructure into the energy system to enable the use of car batteries as energy storage units. Another storage solution is to store heat or cold in large reservoirs until it is needed. It is therefore possible to heat a city on a cold winter day using the heat produced on a sunny summer day.

The progress towards smarter grids also enables electricity retail companies to offer their customers completely new services. In addition to installing smart meters for customers, Fortum has launched in-home displays in Sweden, in 2010, and in Finland to enable customers to track their own consumption in real time. The users receive direct feedback on energy efficiency in both monetary and consumption (kWh) terms.

Electrification of transportation

One step towards smarter consumption of electricity is the electrification of transportation. Transportation is a major source of emissions in urban societies, and switching to electric vehicles reduces carbon dioxide emissions significantly. Fortum is preparing for the mainstreaming of electric vehicles by designing the charging station network and payment system. Fortum has more than 100 public charging stations in Scandinavia. In 2011, the company continued the development of solutions for electric vehicles and introduced a new turnkey concept that provides recharging services of electric vehicles for companies and municipalities in Finland, Sweden and Norway. Fortum's concept takes care of the whole process: installation of the charging poles, electricity, maintenance and outage service.

Serving heat customers

Fortum's heat customers are businesses, municipal and private consumers. The company has about 1,400 km of district heat network in Finland, about 2,400 km in Sweden, about 860 km in Poland, about 280 km in the Baltic countries and about 480 km in Russia. The reliability of the district heat networks is being improved by repairing anomalies found in conjunction with scheduled maintenance and by investing in new capacity when needed. When carrying out repairs that may cause interruptions, the aim is to schedule them outside the heating season. All of Fortum's district heat customers in Finland have been within the sphere of the smart meters since the beginning of 2010. With smart meters, the meter data is received in real time and the monitoring of heat consumption is more efficient.

In the autumn 2011, Fortum launched new products for district heating customers in Sweden and Finland; customers can now choose between different types of products instead of only one. Fortum provides assistance with the choice and also offers energy advice to help customers improve their energy efficiency. The company has also developed a Fortum climate neutral product for its Finnish and Swedish district heating customers. The idea behind the Fortum climate neutral product is to offset the greenhouse gas emissions of district heating, in the same way that airline companies offer their customers an opportunity to offset the greenhouse gas emissions of aviation.

Fortum is also actively developing its heating services for customers in Russia by modernising the Chelyabinsk and Tyumen heating systems. In November 2011, Fortum commenced operations of stage one of the ambitious district heating project, the Chelyabinsk Heat Ring. The project will increase the efficiency of the heat supply in this city of one million residents in the southern Urals area by some 30%. The project also changes the way heat is delivered to homes and businesses across the city; the heat will be supplied via an encircling pipeline rather than a radial one. Fortum also installed an automated metering system in Tyumen to improve the monitoring of the trunk and district heat networks.

Smart heating and cooling solutions

Fortum is the owner and operator of the biggest district cooling network in the world. In Stockholm the district cooling network supplies more than 400 business customers with around 440 gigawatt-hours (GWh) of cooling energy. Fortum has an installed capacity of 300 megawatts (MW), and all of its cooling is CO_2-free. Most of the cooling is generated by free cooling from the sea waters around Stockholm.

Fortum is also the first utility in Finland to develop cooling solutions for industry. For example, the new, eco-friendly server centres and their cooling solutions are examples of smart cooling solutions; heat generated by the servers is utilised in district heating. In the new solution, the consumption of fossil fuels can be reduced by an amount equal to about 15,000 tonnes of CO_2 emissions per year. Local environmental impacts are also reduced with the decreased NO_x, SO_2 and particle emissions. The solution will completely eliminate the adverse effects of the server centres' waste heat previously released into the environment.

Personnel – promoting employee well-being

Fortum believes that good leadership is fundamental to employee well-being, commitment and performance, and that it is essential in supporting the strategic goals of the company. At the year-end 2011, approximately 10,800 employees worked at Fortum.

Fortum's goal is to be a preferred employer that engages competent employees at all levels. In 2011, an average of 11,010 employees (2010: 11,156) worked at Fortum. The biggest number of employees was in Russia, 4,432 employees on average. Subcontractor employees worked at Fortum sites for a total of approximately 1,769,000 days during the year. Some 1,230 (2010: 1,052) employees joined Fortum in 2011.

Leading Performance and Growth supports an open and engaging work environment

Fortum believes that performance and growth can be improved by having an open and engaging work environment, where all employees feel empowered and willing to take responsibility. In 2011, Fortum continued the Leading Performance and Growth (LPG) initiative, which aims to improve the company's performance and growth by increasing employees' involvement in implementing the strategy, by developing business planning and by strengthening leadership and organisational culture.

During 2011, the LPG initiative focused on increasing the understanding of Fortum's key behaviours: challenge, co-create, coach and celebrate. Events were organised through out the company to reflect on what the key behaviours mean to us in our daily work. In Russia, more than 65 workshops were conducted covering over 3,000 employees. In the workshops, employees had the opportunity to discuss key behaviours and their involvement in the strategy. Fortum employees also had the opportunity to discuss the initiative with senior management at the Fortum Dialogue personnel events.

A development programme called Leadership Impact, targeting all Fortum managers, was launched in 2011. It provides leaders with an opportunity to deepen the understanding and skills that are needed to support and drive the LPG initiative. In 2011, over 200 top-level managers started the programme, and it will continue in 2012.

The key behaviours were incorporated in the business planning process more widely in 2011 by creating more opportunities for challenging and co-creation between the units and teams. In addition, the work has begun to integrate the content and findings of the LPG initiative in existing processes, practices and tools – for example in recruitment, onboarding and employee development processes.

34 % WOMEN IN THE MANAGEMENT

Women account for 34% of Fortum's management team members at the Group and division level.

Sensor survey measures the implementation of the strategy and key behaviours

At the beginning of 2011, a team development tool called Sensor was introduced at Fortum. Sensor includes a survey conducted twice a year to help the teams recognise and discuss their own development areas.

During the second Sensor round, 4,227 Fortum employees gave feedback to their team by answering the Sensor on-line questions. The results indicate improvement in how coaching and challenging are used to improve performance as well as how success is celebrated in different teams.

The Fortum-wide employee survey – Fortum Sound – focusing on measuring employee engagement was last conducted in 2009. During 2010–2011, Fortum has prioritised team development through Sensor. The next Fortum Sound survey will be conducted in autumn 2012.

PERSONNEL BY DIVISION, 31 DEC.

	2011	2010	2009
Power	1,847	1,819	3,063
Heat	2,504	2,394	2,246
Russia	4,379	4,294	4,090
ESD	1,417	1,487	1,699
Other operations	633	591	515
Total	10,780	10,585	11,613

PERSONNEL STATISTICS FROM 2011, BY COUNTRY OF OPERATION

	Finland	Sweden	Russia	Estonia	Poland	Norway	Other
Personnel at year-end	2,683	2,040	4,376	331	859	139	352
Personnel, average	2,689	2,076	4,432	336	1,009	137	331
Number of new employment relationships	172	157	775	14	31	9	72
Number of employment relationships ended [1]	114	250	694	34	322	6	7
Departure turnover, %	4.2	12.3	15.9	10.3	37.5	4.3	2
Personnel expenses, 1,000 euros	209,462	180,786	79,752	7,426	20,945	13,620	16,620
Personnel expenses per person, 1,000 euros	77.9	87.1	18.0	22.1	20.8	99.2	50.2

[1] *Includes operations sold and outsourced operations*

Case:

Control room is the human core of a power plant

As a part of Fortum's ForCARE well-being programme, Fortum conducted a research and conceptualisation project, Fortum Core, in 2010–2011 in cooperation with Aalto University.

The purpose of Fortum Core is to provide a control room working environment that supports the operators' well-being, situation awareness and is overall inspiring, hence leading to operational excellence, the highest profitability and a longer lifetime of the power plant. The control room is seen as the human core of a power plant.

The concept is based on research done with operators of three control rooms in three power plants in Finland, Sweden and Estonia. Studies have shown that people who enjoy their work environment are usually more productive. The project has resulted in a user's manual and concrete guides on how to plan a new control room when building a power plant or how to improve existing ones.

The Fortum Core control room is a combination of different zones for different activities. These activities are part of the daily routines of all people involved in the use of the control room. In addition to the operators' main working point, the Fortum Core control room has, for example, an area for eating, an area for activating tasks and an area that visitors can access without disturbing the operators.

The Core concept will be used within the Heat Division´s large combined heat and power (CHP) investment programme and parts of the concept will be used in the existing power plants. Under the umbrella of the Core project, there are also other initiatives that promote the well-being, motivation and performance of personnel working at power plants.

Competent personnel a prerequisite for success

Fortum aims to create attractive career and development opportunities for individuals to continuously grow their professional skills and know-how. Personnel development is supported through annual performance and development reviews in which all Fortum employees are in scope, personnel training and internal job rotation.

During the first half of 2011, Fortum conducted two different types of leadership training programmes, Fortum Manager and Fortum Expert. The Fortum Manager training programme is designed for all supervisors in need of basic skills related to daily management. The Fortum Expert programme is tailored to the experts' needs in managerial, communication and collaboration skills. In addition to Finland and Sweden, Fortum Master courses, aimed for all Fortum's managers, were organised also in the Baltic countries and Poland. In 2011, a total of 347 participants attended in the courses, and the number of Fortum Master training days totalled 38.

Fortum Forerunner is a trainee programme meant for recent university graduates. During the 18-month-long programme, trainees have the opportunity to work at variable assignments in different business environments and to get acquainted with Fortum's operations and the energy industry. The current trainee programme started in January 2011, and the trainees are from Finland, Sweden, Russia, Poland and Latvia.

Employer image developed continuously

A strong employer image is extremely important for attracting new and retaining current employees. In 2011, Fortum was ranked among the top ten ideal employers in Finland. Among technical students, Fortum ranked the eighth most ideal employer in Finland (2010: 6th) and 26th in Sweden (2010: 34th).

An important activity for enhancing employer image internally and externally is the Fortum Ambassador Network. Fortum Ambassadors work at, for example, fairs, events and seminars to enhance Fortum's positive employer image and to give students concrete examples of different career opportunities at Fortum. The Fortum Ambassador Network includes 130 employees from different divisions and professions in Estonia, Finland, Sweden and Poland.

Occupational health and safety focus on prevention

Fortum's target is to ensure a safe workplace for employees and service providers. Fortum continuously invests in the well-being and safety of its employees and contractors at its sites.

In 2011, an average of 2,700 (2010: 2,700) employees in Finland were within the sphere of Fortum's occupational health care. About 80% (2010: 75%) of them used the company's own occupational health care services and about 20% (2010: 25%) used contracted health clinics. The total costs of Fortum's own occupational health care in Finland were about EUR 1.2 million (2010: 1.1 million). The occupational health care costs per person, calculated from the share paid by Fortum, were EUR 560 (2010: 501) in Finland, and EUR 92 (2010: 99) in Sweden. Preventive activities accounted for 39% (2010: 36%) of occupational health care visits in Finland. Prevention was also the focus of all the occupational health care activities in Sweden.

Fortum covers all Swedish, Norwegian, Polish and German employees' occupational health care 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.

Fortum's employees in Finland have the option to join the Enerkemi insurance

STAKEHOLDER VIEW:

ANNA ANDERSSON,
Marketing Assistant,
Heat Scandinavia, Sweden

I think that when it comes to all our key behaviours combined, they all point to a single point: to promote togetherness. We need to work across borders – borders between countries, over units as well as in our own office buildings. Together we are a strong organisation, a real melting pot of amazing ideas for the future.

fund. The fund offers benefits in accordance with the Finnish Health Insurance Act and additional benefits in accordance with its own regulations. Over 90% of Fortum's Finnish employees participate in the fund. Other countries do not have a similar practice in place.

ForCARE programme promotes well-being

ForCARE, Fortum's well-being model, is a common denominator for all the activities that Fortum does to promote the well-being of its employees. The programme goals are to promote safety, support employees' capacity to work throughout their career and contribute to the functionality of work communities at Fortum. Promoting well-being benefits all parties: employees, the employer and the surrounding society.

The ForCARE programme started in Finland in 2010 and was rolled out to Sweden and Norway in 2011. The aim is to implement it in all countries of operation. It will be customised according to each country's legislation in collaboration with local occupational health organisations, the HR department and management.

In Finland, Fortum launched a three-year, work well-being programme with Varma Mutual Pension Insurance Company. During 2011, focus areas of the programme were mapped by interviewing supervisors as well as other personnel. These include aging, challenges of shift work, including nutrition, sleep and recovery, as well as the challenges of mobile work.

Preventive occupational health care adds to work years

Fortum encourages employees to remain in the working world. In 2011, a total of 151 employees retired from Fortum. The figure includes age-related, early and disability retirement. In 2011, Fortum had 773 (2010: 758) employees over the age of 60.

Proactive safety measures

In Fortum's Power Division, the positive trend in the development of safety indicators came to a halt in 2010 and the goals for safe operations were not met. The Division started to tackle the negative trend in spring 2010 by organising team discussions at every workplace in order to get ideas for safety development at everyone's own workplace. In 2011, Power Division launched a change programme called "365 safe days". Safety development is the responsibility of all employees and the programme enjoyed the full support of the Division's management team right from the start. One of the major tools for change has been training. A safety refreshment training focusing on safe behaviour and targetting the whole Power Division's personnel was started. Feedback from the organisation has been good.

STAKEHOLDER VIEW:

NATALIA SMORYAKOVA,
Sustainability Manager,
OAO Fortum, Russia

Fortum as a company offers me diverse opportunities; at Fortum I can exploit my knowledge and experience to its full extent. The year 2011 was remarkable for me: we implemented an environmental management system at OAO Fortum and passed the first phase of certification for ISO 14001 in December. The way I see it, the certification opens the possibility for positive change for Fortum personnel in Russia: people will learn to look at and manage all operations through the prism of sustainability. This same approach applies to safety. The voice of our employees is extremely important when accomplishing our development projects.

STAKEHOLDER VIEW:

KATARINA VON TROIL,
Vice President,
Corporate Talent Development

The Leading Performance and Growth journey has continued during 2011 focusing on increasing the understanding of our strategy and key behaviors. The Sensor team development tool has been used to deepen the discussion within the teams and to develop our leaders to act as role models on this change journey.

Examples of the division's own incidents were regarded useful, awareness increasing and applicable for own work. The training also encouraged people to think about safety at home and in their free-time. The training will continue in 2012. In addition to training, the emphasis was on implementing the agreed measures and procedures.

As a whole, 2011 turned out to be a very good safety year for the division. Almost all the environmental, health and safety (EHS) targets included in the Power Division's business plan for 2011 were achieved. The injury frequency for own employees was the best ever at the yearly level (LWIF 0.9) and as a three-year rolling average. There were no licence non-conformities, INES-rated (the International Nuclear Event Scale) nuclear safety incidents or market conduct incidents. The total number of fires, leaks and other environmental incidents in the Power Division was three; the target was to stay below ten. However, the contractor injury frequency was clearly above the target, and in 2012 it will be one of the focus areas in the Power Division.

Fortum's Heat Division introduced a new, proactive safety index measurement covering safety walks by managers, safety inspections, the use of protective equipment and work permit management in Sweden. In Finland, the division developed a common safety induction tool, carried out a systematic assessment of safety management at power plants, established an expert network to drive an aligned approach to safety improvements and started behavioural-based safety training at the Joensuu combined heat and power (CHP) plant.

In Poland, one of the major activities was the integration of the Zabrze and Bytom CHP plants. A comprehensive integration plan was defined with the main actions focusing on safety training, reporting and investigation, personal protective equipment, contractor safety, management safety walks and high-risk work procedures. The performance of the plants significantly improved: the number of lost work days dropped from 144 in 2010 to 12 in 2011. Fortum's target is to improve the overall environmental, health and safety management of Zabrze and Bytom and to certify the operations in accordance with the ISO 14001 environmental management system and the OHSAS 18001 health and safety management system by 2013. In the Baltic countries, the Heat Division focused on the safe operation of the new units, safety at construction sites and development of the EHS management process.

In the Electricity Solutions and Distribution Division, the main focus was on improving contractor safety. An e-learn-

ing package was developed, the contractor auditing process was improved and safety elements were emphasised in the contracts.

In the Russia Division, the implementation of the EHS action plan continued. Extensive efforts to improve contractor safety included training the managers of 28 companies. In addition, preparations for OHSAS 18001 certification, effective communication via the intranet and safety boards were a focus. Elimination of the asbestos risk is one of the goals of the EHS action plan in Russia. About 340 tonnes of asbestos were removed during the year, and improvements in the procedures for handling and removing asbestos were implemented. An external assessment of asbestos handling was carried out in 2011.

Case:

Grangemouth CHP plant – a history of zero accidents

Fortum's combined heat and power (CHP) plant in Grangemouth, Scotland, has had no work-related accidents for 10 years, i.e., since the beginning of its commercial use. Grangemouth is the workplace of 23 Fortum employees.

In addition, the power plant's availability is high: 98.6% on average. The power plant provides Ineos (former BP) with approximately half of its yearly demand for steam.

For Grangemouth's customers, reliability and high availability are key. The close partnership with Ineos in near-miss reporting, effective use of risk assessment, continuous development of environment as well as health and safety processes and practices are behind the good performance. Risk assessments are usually made together with the client in order to maintain high availability at all times.

In 2011, Grangemouth's personnel received Fortum's own Safety Award for their safe and reliable operations. Fortum's Safety Award is granted yearly to one person and one team, who have showed commitment to safety and contributed to developing a safer work environment at Fortum. The team in Grangemouth has set up several practices to prevent accidents: work permits, strict requirements for wearing safety equipment and striving towards a non-accusatory work environment, among other things.

Grangemouth's good performance has been noticed in the United Kingdom as well. Since 2006, it has received several awards from the Royal Society for the Prevention of Accidents.

GRI content index

	GRI Index	Included	COP	Page	Remarks
	1. Strategy and Analysis				
1.1	CEO's statement	Yes		16–21	Interview with the President and CEO
1.2	Key impacts, risks and opportunities	Yes		30–39	Market development
	2. Organisational Profile				
2.1	Name of the organisation	Yes		Cover	
2.2	Primary brands, products and services	Yes		5	Group business structure
2.3	Operational structure	Yes		5	Group business structure
2.4	Location of organisation's headquarters	Yes		Back cover	Keilaniementie 1, Espoo Finland
2.5	Number of countries and location of operations	Yes		4	Fortum in brief
2.6	Nature of ownership and legal form	Yes		10–11, 97	Financial Summary, Fortum Corporation, listed on the NASDAQ OMX Helsinki exchange
2.7	Markets served	Yes		5, 31	Group business structure, Nordic electricity market, Electricity market in Russia
2.8	Scale of the reporting organisation	Yes		5, 10–11, 99	Group business structure, Fortum's share and shareholders, Distribution of added value from Fortum's operations by country of operations
2.9	Significant changes during the reporting period regarding size, structure or ownership	Yes		64, 92	Investments and research & development, Report boundary and basis for reporting
2.10	Awards received in the reporting period	Yes		83, 94, Back cover	Safety awards, Fortum in sustainability indexes, KWD Webranking survey
EU1	Installed capacity, broken down by primary energy source and by regulatory regime	Partly		5, 100	Fortum in brief, Capital expenditure by country
EU2	Net energy output broken down by primary energy source and by regulatory regime	Partly		8, 103	Power generation by source, Heat generation by source, Environmental summary, EN3
EU3	Number of residential, industrial, institutional and commercial customer accounts	Partly		5	Fortum in brief
EU5	Allocation of CO_2 emissions allowances or equivalent, broken down by carbon trading	Yes		10, 99	Financial Summary, EC2
	3. Reporting Principles				
	Report profile				
3.1	Reporting period	Yes		91	Report parameters. The year 2011 and some information from January–February 2012.
3.2	Date of most recent report	Yes		91	Report parameters. Fortum's Sustainability Report 2010 was published in April 2011.
3.3	Reporting cycle	Yes		91	Report parameters. Fortum reports on its sustainability activities annually in the Annual Report, in interim reports, on its web site, and in a separate Sustainability Report.

	GRI Index	Included	COP	Page	Remarks
3.4	Contact point for questions regarding the report	Yes		Inner back cover	sustainability@fortum.com
	Report scope and boundary				
3.5	Process for defining report content (materiality, prioritizing topics and stakeholders using the report)	Yes		91, 94–96	Materiality analysis 3.5, Stakeholder engagement 4.14–4.17
3.6	Boundary of the report	Yes		91	Report scope and boundary 3.6–3.11
3.7	Limitations on the report's scope or boundary	Yes		91	Report scope and boundary 3.6–3.11, exceptions noted in conjunction with the figures
3.8	Basis for reporting subsidiaries, joint ventures, and other entities affecting comparability	Yes		92	Report scope and boundary 3.6–3.11, New and acquired capacity, Leased and divested capacity, exceptions noted in conjunction with the figures
3.9	Data measurement techniques and bases of calculations	Yes		92	Report scope and boundary 3.6–3.11, data measurement techniques and bases of calculations reported with the figures.
3.10	Explanation of re-statements	Yes		92	Report scope and boundary 3.6–3.11
3.11	Significant changes from previous reporting periods in the scope, boundary or measurement methods	Yes		92	Report scope and boundary 3.6–3.11
	GRI content index				
3.12	GRI content index	Yes		84–90	
	Assurance				
3.13	Assurance policy and practice	Yes		93, 119–120	Assurance 3.11, Independent Assurance Report
	4. Governance, Commitments and Engagement				
	Governance				
4.1	Governance structure of the organisation	Yes		116–123	Fortum Financials 2011, Corporate Governance
4.2	Position of the Chairman of the Board	Yes		119	Fortum Financials 2011, Corporate Governance
4.3	Independence of the Board members	Yes		119	Fortum Financials 2011, Corporate Governance
4.4	Mechanism for shareholder and employee consultation	Yes		114, 116–118	Collaboration between employees and Fortum management, page 114. Fortum Financials 2011, The shareholders have the right to make decisions over company matters in a General Meeting of the Shareholders and 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 on pages 116–118.
4.5	Executive compensation and linkage to organisation's performance (incl. sustainability)	Yes		113, 124–127,	LA3, page 113, Fortum Financials 2011, Remuneration, pages 124–127
4.6	Processes for avoiding conflicts of interest	Yes		119	Fortum Financials 2011, Corporate Governance, In the annual self-assessment of the Board of Directors analyses the members' ability to contribute to an independent judgement.
4.7	Processes for determining expertise	Yes		117–120, 93	Fortum Financials 2011, Corporate Governance, Descriptions of the Shareholders' Nomination Board, the Board of Directors' and the Board committees on pages 117–120. Sustainability report 2011, sustainability management. The Board of Directors rely on the expertise of the Fortum's Management Team and Sustainability and Public Affairs steering group, page 93.
4.8	Implementation of mission and values statements, Code of Conduct and other principles	Yes		25–29, 93–94	Sustainability integrated in strategy. Sustainability governance.

	GRI Index	Included	COP	Page	Remarks
4.9	Procedures of the Board for overseeing management of sustainability performance, including risk management	Yes		93, 121–123	Sustainability governance. Fortum Financials 2011, pages 121–123
4.10	Processes for evaluating the Board's performance	Yes		119	Fortum Financials 2011, Corporate Governance, the Board of Director's annual self–assessment
	Commitments to External Initiatives				
4.11	Addressing precautionary approach	Yes		93, 26	Sustainability governance, Risk assessment. Sustainability assessment is part of acquisitions and investments. Fortum Financials 2011, page 26
4.12	Voluntary charters and other initiatives	Yes		93–96	Commitment to external initiatives, 4.11–4.13, stakeholder engagement 4.14–4.17
4.13	Memberships in associations	Yes		94–96	Stakeholder engagement 4.14–4.17. More information on the web site www.fortum.com/sustainability
	Stakeholder Engagement				
4.14	List of stakeholder groups	Yes		94	Stakeholder engagement 4.14–4.17, Key stakeholders
4.15	Identification and selection of stakeholders	Yes		91–92, 94	Stakeholder analysis. More information on www.fortum.com/sustainability
4.16	Approaches to stakeholder engagement	Yes		94–96	Stakeholder engagement 4.14–4.17
4.17	Key topics raised through stakeholder engagement	Yes		92, 94–96	Assessment of sustainability aspects, page 92, Stakeholder engagement 4.14–4.17. More information on www.fortum.com/sustainability.
	Economic Performance Indicators				
	Management approach to economic responsibility	Yes		97	
	Economic Performance				
EC1*	Direct economic value generated and distributed	Yes		10–11, 67, 98–100, 27–31	Sustainability report 2011, Financial summary, Fortum's economic impacts, Distribution of added value by country, Personnel expenses, Pensions, Purchases, Investments, R&D. Value shared to investors and shareholders includes dividends and interest payments. Fortum Financials 2011, Fortum share and shareholders, pages 27–31.
EC2*	Financial implications, risks and opportunities due to climate change	Yes	x	98–100	
EC3*	Coverage of defined benefit plan obligations	Yes		91–93, 100	Fortum Financials 2011, pages 91–93, Sustainability Report 2011, page 100
EC4*	Significant subsidies received from government	No			
	Market presence				
EC5	Entry level wage compared to local minimum wage	No	x		
EC6*	Policy, practices and spending on local suppliers	Partly		68–69, 100–101	Fuels and Procurement
EC7*	Local hiring procedures and proportion of local senior management	Partly	x	101	Local hiring policy not available
	Indirect Economic Impacts				
EC8*	Development and impact of infrastructure investments provided for public benefit	Partly		67, 101	Fortum's economic impacts, Indirect impacts of investments
EC9	Significant indirect economic impacts	Partly		67, 101	Fortum's economic impacts, Indirect impacts to stakeholders
EU6	Management approach to ensure short and long-term electricity availability and reliability	Partly		97	
EU7	Demand-side management programs including residential, commercial, institutional and industrial programs	Yes		97–98	

	GRI Index	Included	COP	Page	Remarks
EU8	Research and development activity and expenditure aimed at providing reliable electricity and promoting sustainable development	Yes		98	
EU9	Provisions for decommissioning of nuclear power sites	Yes		89–90, 98	Fortum Financials 2011, Nuclear related assets and liabilities, pages 89–90. Sustainability report 2011, page 98
EU10	Planned capacity against projected electricity demand over the long term, broken down by energy source and regulatory regime	Yes		30–39, 64, 101	Market development, Investments
EU11	Average generation efficiency of thermal plants by energy source and regulatory regime	Partly		101	Not split by regulatory regime.
EU12	Transmission and distribution losses as a percentage of total energy	Partly		101	Not split between transmission and distribution losses or between technical and non–technical losses.
	Environmental Performance Indicators				
	Management approach to environmental responsibility	Yes		102	Environmental responsibility
	Materials				
EN1*	Materials used by weight or volume	Yes	x	103	Sales and production, page 8. Combined heat and power's role in Solar Economy, page 55. Fuels and procurement page 68
EN2*	Percentage of materials used that are recycled input materials	Partly	x	103	Combined heat and power's role in Solar Economy, page 55
	Energy				
EN3*	Direct energy consumption by primary energy source	Yes	x	103	Environmental summary, page 12. Fuels and procurement, page 68
EN4*	Indirect energy consumption by primary energy source	Partly	x	104	
EN5	Energy saved due to conservation and efficiency improvements	Yes	x	104	Combined heat and power's role in Solar Economy, pages 56–57. Energy EN5–EN7
EN6	Initiatives to provide energy-efficient or renewable energy based products and services, and reductions in energy requirements as a result of these initiatives	Yes	x	104, 109	Serving customers pages 75–76, Products and services EN26
EN7	Initiatives to reduce indirect energy consumption and reductions achieved	Yes	x	104	Serving customers pages 75–76, Products and services EN26
	Water				
EN8*	Total water withdrawal by source	Yes	x	104	Environmental summary, page 12.
EN9	Water sources significantly affected by withdrawal of water	Yes	x	105	
EN10	Percentage and total volume of water recycled and reused	Yes	x	105	
	Biodiversity				
EN11*	Location and size of land owned, leased, managed in, or adjacent to, protected areas and areas of high biodiversity value outside protected areas	Yes	x	105	Hydro power's role in Solar Economy pages 48–49
EN12*	Description of significant impacts of activities, products, and services on biodiversity in protected areas and areas of high biodiversity value outside protected areas	Partly	x	105	Hydro power's role in Solar Economy pages 48–49
EN13	Habitats protected or restored	Yes	x	105	
EN14	Strategies, current actions, and future plans for managing impacts on biodiversity	Yes	x	106	Hydro power's role in Solar Economy pages 48–49
EN15	Number of IUCN Red List species and national conservation list species with habitats in areas affected by operations, by level of extinction risk	Partly	x	106	Levels of extinction risk not reported
	Emissions, Effluents and Waste				
EN16*	Total direct and indirect greenhouse gas emissions by weight	Yes	x	106–107	Environmental summary, page 12. Economic responsibility EC2, pages 98–100
EN17*	Other relevant indirect greenhouse gas emissions by weight	Yes	x	107	

	GRI Index	Included	COP	Page	Remarks
EN18	Initiatives to reduce greenhouse gas emissions and reductions achieved	Yes	x	107	Investments, page 64. Combined heat and power's role in Solar Economy, pages 56–57
EN19*	Emissions of ozone-depleting substances by weight	Yes	x	107	
EN20*	NO_x, SO_x, and other significant air emissions by type and weight	Yes	x	107–108	Environmental summary, page 12. Combined heat and power's role in Solar Economy, page 56–57
EN21*	Total water discharge by quality and destination	Yes	x	108	Compliance EN28. Combined heat and power's role in Solar Economy, page 56–57
EN22*	Total weight of waste by type and disposal method	Yes	x	108	Environmental summary, page 12. Nuclear power's role in Solar Economy, page 52–53. Combined heat and power's role in Solar Economy, pages 56–57
EN23*	Total number and volume of significant spills	Yes	x	109–110	Compliance EN28
EN24	Weight of transported, imported, exported, or treated waste deemed hazardous under the terms of the Basel Convention Annex I, II, III, and VIII, and percentage of transported waste shipped internationally	No	x	109	Not relevant in Fortum's operations
EN25	Identity, size, protected status, and biodiversity value of water bodies and related habitats significantly affected by the reporting organization's discharges of water and runoff	Partly	x	109	Hydropower's role in Solar Economy, pages 48–49. Energy EN12 and EN14
	Products and Services				
EN26*	Initiatives to mitigate environmental impacts of products and services, and extent of impact mitigation	Yes	x	109	Serving customers pages 75–77
EN27*	Percentage of products sold and their packaging materials that are reclaimed by category	No	x	109	Not relevant in Fortum's operations
	Compliance				
EN28*	Monetary value of significant fines and total number of non-monetary sanctions for noncompliance with environmental laws and regulations	Yes	x	109	
	Transport				
EN29	Significant environmental impacts of transporting products and other goods and materials used for the organization's operations, and transporting members of the workforce	Partly	x	110	Emissions, effluents and waste EN16
	Overall				
EN30	Total environmental protection expenditures and investments by type	Yes	x	110	Economic responsibility EU9
	Social Performance Indicators				
	Management approach to social responsibility	Yes		111	Social responsibility
	Labour Practices and Decent Work				
	Employment				
LA1*	Total workforce by employment type, employment contract and region	Yes		113	Social summary, page 13
LA2*	Total number and rate of employee turnover	Partly	x	113	Social summary, page 13. Not split by age group, gender or region
LA3	Employee benefits to full-time employees	Yes		113	Economic responsibility EC3
	Labour/Management Relations				
LA4*	Coverage of collective bargaining agreements	Partly	x	114	Fortum does not monitor the degree of unionisation of its employees
LA5*	Minimum notice period regarding operational changes	Partly	x	114	

	GRI Index	Included	COP	Page	Remarks
	Occupational Health and Safety				
LA6	Representation in joint health and safety committees	Yes	x	114	
LA7*	Rates of injury, occupational diseases, lost days, fatalities and absenteeism	Yes	x	114–115	
LA8*	Education and prevention programmes regarding serious diseases	Partly	x	115	
LA9	Health and safety topics covered in formal agreements with trade unions	No	x		According to local legislation
	Training and Education				
LA10*	Average hours of training per year per employee by employee category	No			
LA11	Programmes for skills management and lifelong learning	Yes		115	Leading performance and growth, page 78. Competent personnel a prerequisite for success, page 80
LA12	Employees receiving regular performance and career development reviews	Yes		115	Competent personnel a prerequisite for success, page 80
	Diversity and Equal Opportunity				
LA13*	Composition of governance bodies and breakdown of employees	Yes	x	115, 128–131	Social summary, page 13. Fortum Financials 2011 pages 128–131
LA14*	Ratio of basic salary of men to women by employee category	Partly	x	116	Only reported in Finland and among white collar workers
EU 16	Policies and requirements regarding health and safety of employees and employees of contractors and subcontractors	Yes		111–112	
EU17	Days worked by contractor and subcontractor employees involved in construction, operation and maintenance activities	Yes		78	
EU 18	Percentage of contractor and subcontractor employees that have undergone relevant health and safety training	Partly		113	
	Human Rights				
HR1*	Investment agreements that include human rights clauses	Yes	x	116	
HR2*	Suppliers and contractors that have undergone human rights screening	Partly	x	116	
HR3	Human rights related training for employees	Partly	x	116	
HR4*	Incidents of discrimination and actions taken	Yes	x	116	
HR5*	Supporting right to freedom of association and collective bargaining in risk areas	Yes	x	116	Social responsibility LA4
HR6*	Measures taken to eliminate child labour in risk areas	Partly	x	116	
HR7*	Measures taken to eliminate forced labour in risk areas	Partly	x	116	
HR8	Human rights related training for security personnel	No	x		
HR9	Incidents involving rights of indigenous people and actions taken	No	x		
	Community				
SO1*	Managing impacts of operations on communities	Partly		116	
	Corruption				
SO2*	Business units analysed for corruption risks	Partly	x	116–117, 154	Risk assessment, Fortum Financials 2011, page 154
SO3*	Anti-corruption training	Partly	x	117	Sustainability integrated in the strategy, page 29
SO4*	Actions taken in response to incidents of corruption	Partly	x	117	The number of incidents not reported

	GRI Index	Included	COP	Page	Remarks
	Public Policy				
SO5*	Public policy positions and participation in public policy development and lobbying	Yes	x	95–96, 117	Public affairs and collaboration with authorities, page 95. Collaboration with non-governmental organisations, pages 95–96
SO6	Contributions to political parties and related institutions	Yes	x	117	Economic responsibility EC8
SO7	Legal actions for anti-competitive behaviour, anti-trust, and monopoly	Yes		117	
	Compliance				
SO8*	Fines and sanctions for non-compliance with laws and regulations	Yes		117	
EU19	Stakeholder participation in the decision making process related to energy planning and infrastructure development	Partly		112	
EU21	Contingency planning measures, disaster/emergency management plan and training programs, and recovery/restoration plans	Partly		112	
	Product Responsibility				
	Customer Health and Safety				
PR1*	Assessment of health and safety impacts of products	No	x		
PR2	Non-compliance with regulations concerning health and safety impacts of products	No	x		
	Product and Service Labeling				
PR3*	Product information required by procedures	Partly	x	118	
PR4	Non-compliance with regulations concerning product information and labelling	No	x		
PR5	Customer satisfaction	Yes		118	Serving customers, page 75
	Marketing Communications				
PR6*	Adherence to marketing communications laws, standards and voluntary codes	No			
PR7	Non-compliance with marketing communications regulations and voluntary codes	Yes		118	
	Customer Privacy				
PR8	Complaints regarding breaches of customer privacy	No	x		
	Compliance				
PR9*	Fines for non-compliance concerning the provision and use of products and services	Yes		118	
EU28	Power outage frequency	Yes		118	
EU29	Average power outage duration.	Yes		118	

** GRI Core indicator*

Sustainability management

3. Reporting principles

Report profile (3.1–3.4)

This year Fortum's Annual Report consists of two parts: the Financials and the Sustainability Report. The theme for reporting is "Towards Solar Economy".

Fortum's long-term aspiration is to be a carbon dioxide-free power and heat company. In recent years, Fortum has deepened its understanding of the future energy system – Solar Economy – and outlined the roadmap towards it. Fortum's Solar Economy concept encompasses not only how energy is produced, but also how it is used more smartly and the energy system required to enable Solar Economy. This report reflects Fortum's activities in 2011 and includes some information from January–February 2012. The Sustainability Report 2010 was published in April 2011 and the 2012 report will be published in April 2013.

The report structure is divided into four sections. The first part of the report describes Fortum as a company and provides key information in terms of production capacity, customers, personnel, certified management systems and carbon-dioxide emissions. The Group's business structure by division and a summary of the key achievements in 2011 are also presented. The second part focuses on Fortum's strategy and sustainability's core role in it, as well as on market development. The key themes of Fortum's sustainability approach supporting our vision of the future Solar Economy are discussed in the third part of the report. The standard disclosures of the Global Reporting Initiative (GRI) Guidelines are presented in the fourth section of the report in order to give a better view of GRI compliance.

Contact details for questions and additional information regarding the Sustainability Report 2011 are presented on the back cover of the report.

Report scope and boundary

Defining report content (3.5)

In 2010, Fortum carried out an assessment of the most significant sustainability issues for the company and its stakeholders. As part of the assessment, a comprehensive stakeholder analysis was also conducted. In 2011, Fortum introduced a new method to measure stakeholder expectations in relation to the reputation of the company – the One Fortum survey. Read more about the One Fortum survey on pages 94–95, Stakeholder engagement.

Based on the materiality assessment, the One Fortum Survey and Fortum's vision of the future Solar Economy, the following themes were chosen as key topics for Fortum's sustainability reporting: Energy production – the roles of hydropower, nuclear power and combined heat and power (CHP) in the Solar Economy, Investments and Research and Development, Fuels and Procurement, Customers and Fortum's personnel. In addition to these themes, the Market development section discusses the rising economic uncertainty, overarching megatrends, and the energy and climate policies at the global, the EU and the Russian level. The identified themes and issues reflect aspects that are the most important for our key stakeholders and that represent the key sustainability impacts, risks and opportunities in Fortum's business.

Report stakeholders

The most important target groups for Fortum's annual reporting include shareholders, investors, analysts, decision makers and the media. Other stakeholders, such as employees, customers, suppliers and non-governmental organisations, are also regarded as important target groups. Fortum's intention with this approach of selected key themes and a separate GRI Content Index is for a reader-friendly solution for a broader audience. A shortened, albeit not assured, version of the Sustainability Report will also be published in Swedish, Russian and Polish in spring 2012.

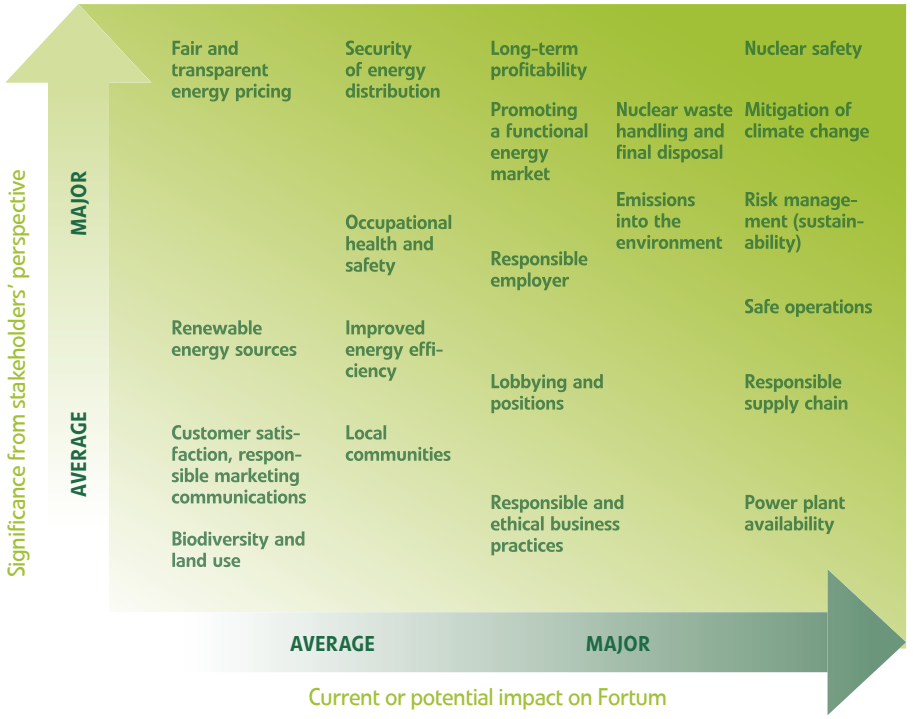
Report boundary and basis for reporting (3.6–3.8, 3.10)

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 limitations.

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 GRI Boundary Protocol, entities with 50% ownership or less and with significant impacts should be included in the management approach disclosures. In Fortum's case, management practices of the Olkiluoto nuclear power plant (26% ownership) and Kemijoki Oy (18% ownership in equity capital, 64% ownership in hydro power shares) in Finland, together with 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.

ASSESSMENT OF SUSTAINABILITY ASPECTS



New and acquired capacity

Capacity and assets acquired during the year are included in the reporting starting from the date of possession. The same applies to the new capacity built and the new capacity and assets commissioned during the year.

In January 2011, Fortum finalised the acquisition of two Polish power and heat companies in Zabrze and Bytom. In Russia, the first three units of Fortum's extensive investment programme started commercial operation: Tyumen CHP-1 in Western Siberia started capacity sales at the beginning of February, Chelyabinsk CHP-3 in the Urals region at the beginning of June, and the new capacity in Tobolsk was taken into commercial operation in the beginning of October 2011.

Leased and divested capacity

The Kirkniemi power plant's capacity was leased out for the entire year, as it was in the previous year. Fortum's share of Meri-Pori was leased out until the end of June 2010 with no leasing arrangements in place in 2011. The production and emissions of the leased capacity are not included in Fortum's specific emissions figures, in order to present an accurate view on emissions in relation to production. However, the leased units have been included in the absolute emissions figures.

In 2011, Fortum divested its district heat operations outside the Stockholm area in Sweden and the old production line for Stockholm city gas was closed. The key figures of the divested plants are not included in the reporting for 2011.

Data measurement techniques (3.9–3.11)

Data for economic performance indicators is collected from the audited financial statements and 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 is calculated in the specific emissions figures.

Fortum utilises a Group-wide database with instructions for collecting site-level environmental, health and safety data. Sites are responsible for data input, emissions calculations and assurance at the site level. The Corporate Sustainability unit compiles all data and is responsible for published sustainability information. In 2011, Corporate Sustainability conducted internal site assessment visits to the 16 biggest production sites in Finland, Sweden, Poland and Russia.

Fortum's CO_2 emissions subject to EU Emissions Trading Scheme are annually verified at 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 resouces (HR) management system HeRMeS is currently used in Finland, Sweden and Norway, and it is the main system for all employee-related personal and job data. During 2011, HeRMeS was upgraded to better support the global HR processes and to enable the roll-out of the system to other Fortum countries. The upgrade was the first in a series of investments in the global HR management system. The next step is to implement HeRMeS in other Fortum countries, starting with Poland. Other social data, such as data related to occupational health originates from various source systems and is collected by the relevant contact persons and delivered to Corporate Sustainability in the format recommended by GRI. Fortum recognises that due to various source systems the process for HR data compilation is not robust enough. The development of HR data management is one of the key action items for 2012.

Global Compact reporting

Fortum has been a member of the United Nations Global Compact 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.

Assurance (3.13)

Fortum's Sustainability Report 2011 is published in print in Finnish and English and can be read online at www.fortum.com/sustainability. The English printed version of the Sustainability Report is given limited assurance by Deloitte & Touche Oy, Fortum Corporation's financial auditors. 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 Guidelines.

The Assurance Report is published on pages 119–120. The report content is not updated after assurance, and any amendments to the content will be reported the following year.

4. Sustainability governance

Governance (4.1–4.10)

Corporate governance at Fortum is based on laws, the company's Articles of Association and the Finnish Corporate Governance Code. The Corporate Governance Statement is issued annually and it presents also the standard disclosure elements for the sustainability governance defined by the GRI guidelines. More information on Fortum's Governance structure (4.1), the independence (4.2) and position (4.3) of the Board of Directors, the mechanisms for shareholder resolutions and employee representations (4.4), remuneration of the Members of the Board of Directors and company management (4.5), avoidance of conflict of interests (4.6), qualification and expertise of the Members of the Board of Directors (4.7), internal control framework, values, Code of Conduct and their implementation (4.8), Board-level processes for overseeing performance (4.9) and the self-assessment of the Board of Directors is described in the Corporate Governance Statement 2011.

Sustainability management and organisation

Fortum has a line responsibility in sustainability governance. The management of the divisions and the Group functions, and ultimately the President and CEO and the Board of Directors, are accountable for sustainability at Fortum. The Board of Directors has not appointed any of its members specifically conversant in sustainability thus relies on the expertise and information provided by the Fortum Management Team and the Sustainability and Public Affairs steering group. Fortum's corporate governance is discussed on pages 116–123 of the Financials 2011.

The Corporate Relations and Strategy[1)] (CR&S) function is responsible for coordinating and developing sustainability at the Group level. The Executive Vice President of CR&S reports to the CEO and is a member of the Fortum Management Team. The Executive Vice President of CR&S also serves as Chairman of the Sustainability and Public Affairs steering group. The steering group comprises representatives from all divisions and Group functions. Among other things, the steering group's tasks include managing consistent, systematic and efficient implementation of Fortum's sustainability approach throughout the organisation.

[1)] *In 2011, Corporate Relations & Sustainability*

The CR&S function is responsible for the operations of the Group's sustainability networks. Regularly operating networks include the Climate network, which convened four times in 2011, and the Environment, Health and Safety (EHS) network, which met six times. Other networks are established on an ad hoc basis; in 2011, a cross-divisional network of bioenergy experts focused on Fortum's positions and actions regarding the sustainable use of bioenergy. The CR&S function 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. The procedure and guidelines were revised during 2011.

Sustainability targets and performance

The Fortum Management Team decides on company-level strategy and Group-level target setting, including sustainability targets, to guide annual planning. 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 sustainability indicators are reported quarterly and the detailed safety and environmental indicators monthly. The Fortum Management Team regularly monitors the achievement of the targets in its monthly meetings and in quarterly performance reviews.

In 2011, sustainability-related issues, such as the new Group-level target setting and the Code of Conduct revision, were regarded as being of pivotal importance and therefore discussed and decided upon directly by the Fortum Management Team. Therefore, no Sustainability and Public Affairs steering group meetings were organised in 2011.

Group-level sustainability targets and Fortum's performance in 2011 are presented on page 29.

Sustainability risk management

Fortum's Board of Directors approves the Group's risk policy, which defines risk management goals, principles and areas of responsibility as well as Fortum's risk management process. Risk management and control processes are described on pages 21–26 of the Financials 2011.

The assessment of sustainability risks is also included in the assessment of business risks. The CR&S function assesses the risks related to Group operations and its own operations as part of the annual planning. The divisions assess the risks identified by the CR&S function in their own annual planning and prepare for their control. Business divisions with ISO 14001 certification manage their environmental risks and their preparedness to operate in exceptional and emergency situations in compliance with the requirements of the standard. EHS risks arising in investments are evaluated in accordance with Fortum's Investment Evaluation and Approval Procedure.

Commitment to external initiatives (4.11–4.13)

Fortum supports the ten principles of the UN Global Compact and respects and promotes these principles in its operations. Companies that have signed the Global Compact initiative are committed to voluntarily respecting human rights, upholding labour standards, supporting environmental protection and a pre-

cautionary approach as well as working against corruption in their business. By signing the Global Compact initiative and by publicly supporting it, Fortum wants to emphasise the importance of responsible business throughout the whole value chain of energy production.

Fortum in 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. Fortum was ranked the best utility in Carbon Disclosure Leadership Index (CDLI) and listed in the Dow Jones Sustainability Index DJSI World for the ninth consecutive year. Fortum's target is to be included also in the DSJI Europe index; Fortum's total score was 76, and the threshold score to the Europe index was 77 in 2011.

Fortum was awarded SAM Bronze Class in the Sustainability Yearbook 2011 published by the SAM Group, and a Prime Status (B-) rating by the German oekom research AG in April 2011. Prime Status means that Fortum is among the best companies in its sector and fulfils industry-specific best-in-class requirements.

Fortum is also included in the STOXX Global ESG Leaders indices which list global leaders in terms of environmental, social and governance (ESG) criteria, and in the NASDAQ OMX and GES Investment Service's new OMX GES Sustainability Finland index.

Memberships in associations

Fortum's memberships in various associations are discussed on page 95 and at www.fortum.com/sustainability.

Stakeholder engagement (4.14–4.17)

Fortum assesses the expectations of its key stakeholders through co-operation with various stakeholder groups. The company also conducts stakeholder surveys and continuously monitors and evaluates the public discussion in its operating countries. Fortum's assessment of the sustainability aspects most material to its stakeholders is presented on page 92.

Fortum has a special function, Corporate Relations and Strategy* (CR&S), for managing the company's reputation and stakeholder relations. In 2011, Fortum's CR&S function focused on promoting the following areas: Fortum's image and reputation in sustainability, sustainable and carbon dioxide-free power and heat production, and solutions for sustainable urban living and communities. The goal was also to increase knowledge about power and heat markets.

One Fortum measures stakeholder expectations

In 2011, Fortum introduced a new method to measure stakeholder expectations in relation to the company's reputation – The One Fortum survey. The survey makes it possible to review the differences in expectations between stakeholder groups and countries and also enables the assessment of stakeholder opinions and expectations about sustainability. The One Fortum survey covers several stakeholder groups, including customers, governmental bodies, capital markets, non-governmental organisations and Fortum's personnel. In Finland and Sweden, the survey covers also the general public. The results are reviewed by the top management at Fortum and are utilised in business planning and development.

STOXX ESG LEADERS INDICES

CARBON DISCLOSURE PROJECT

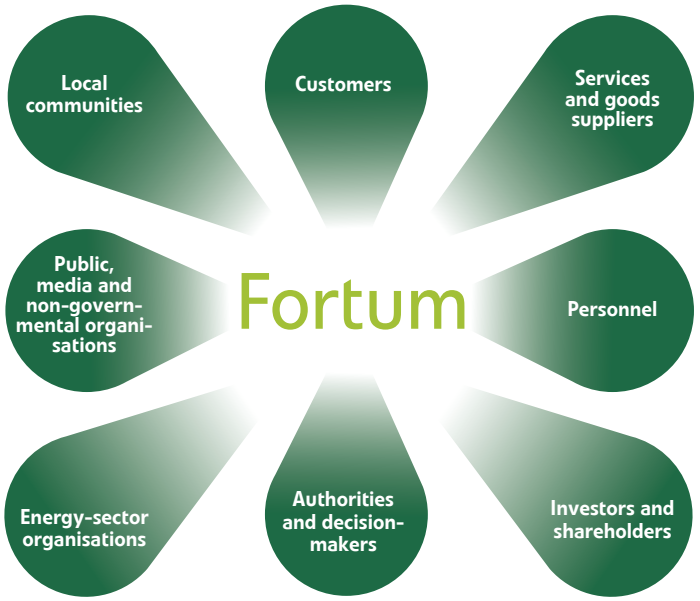
sam 2012 bronze class

Dow Jones Sustainability Indexes

OMXSUSTAIN INDEX NASDAQ OMX OMX GES SUSTAINABILITY FINLAND

Corporate Responsibility Prime rated by oekom research

KEY STAKEHOLDERS



FORTUM ENDORSES:

- The United Nations (UN) Universal Declaration of Human Rights
- The UN Convention of the Rights of the Child
- The core conventions of the International Labour Organisation (ILO)
- Fortum has endorsed the UN Global Compact Initiative and is a member as of June 2010

SUSTAINABILITY AT FORTUM IS DIRECTED BY:

- Strategy and values
- Code of Conduct
- Supplier Code of Conduct
- Sustainability Policy
- Sustainability approach and its targets

The survey was conducted for the first time in spring 2011 in Finland, Sweden, Norway, Poland, the Baltic countries and Russia. In Russia, the survey covered only personnel. For the Power Division, the survey also covered customers in other countries, such as Germany, Denmark and Great Britain.

According to the survey, Fortum has the strongest reputation within the capital market and the weakest relationship with general public. Fortum's operations and leadership received high scores and had a strong impact on Fortum's reputation. The areas that strongly affect Fortum's reputation but received relatively low scores were social responsibility, customer orientation and Fortum as an employer. Based on the results, social responsibility and local community co-operation are included as high-priority areas for Fortum's Corporate Relations and Strategy function for 2012. Efforts to promote Fortum as an employer also will be emphasised.

Public affairs and collaboration with authorities a priority in the energy sector

As an energy sector expert, Fortum feels obligated to express its views on energy policy issues and to offer its energy sector expertise also to decision-makers and various organisations. Fortum engages in an active dialogue about key issues in the energy sector and publishes position papers on significant topics. In 2011, Fortum also published an overview on the energy policy in Finland, Sweden and Poland.

At the EU level and in countries where it operates, Fortum is involved in 74 lobbying associations and organisations, including Eurelectric, Finnish Energy Industries (ET), Svensk Energi, International Energy Agency (IEA) and the World Business Council for Sustainable Development. In 2011, public affairs efforts in Finland focused on the programme of the new government elected in April. The public affairs activities in Sweden, Poland and the Baltics focused on issues related to, e.g., hydropower and the heating sector. At the EU level, Fortum representatives had several meetings with officials from European institutions.

In December 2011, Fortum registered to the joint transparency register set up and operated by the European Parliament and the European Commission. The register provides parties with information about persons engaged in activities aiming at influencing the EU decision making process, which interests are being pursued and what level of resources are invested in these activities.

In Sweden, Fortum joined the Haga Initiative, which is a network of companies that works to reduce carbon emissions and highlights the climate issue by showing that ambitious climate strategies can create business advantages and improve profitability.

In Poland, the law regarding waste management changed in 2011. Fortum joined the discussion on the best solutions in effective waste management and, in co-operation with Deloitte, prepared a report about municipal waste management in light of the EU requirements and national law changes. Fortum also attended the Responsible Energy conference bringing together energy companies, government representatives and non-governmental organisations as a party to the Treaty signed by energy companies committed to corporate social responsibility (CSR) principles.

In October 2011, Fortum participated in the Finnish Business in Moscow event, organised by the Finnish-Russian Chamber of Commerce and involving more than 400 business representatives and authorities. Fortum also participated in the second EU-Russia Innovation Forum, held in May 2011, in Lappeenranta, Finland. The purpose of the forum is to promote collaboration between companies operating in the EU and Russia.

In Chelyabinsk, Russia, Fortum met with federal and local government officials as well as media representatives at the inauguration event of the new Chelyabinsk CHP-3 unit in June 2011. Fortum's investment programme as well as its contribution to the development of the region was discussed at the event.

Read Fortum's position papers at www.fortum.com/publicaffairs

Additional information about Fortum's activities in energy sector organisations at www.fortum.com/sustainability

Collaboration with non-governmental organisations

Fortum collaborates with environmental organisations regarding the eco-labelling of electricity products and participates in projects related to environmental conservation and maintaining biodiversity. Some of the funding for the projects comes from the sales of eco-labelled electricity (read more on page 106). Fortum also supports John Nurminen Foundation's Clean Baltic Sea initiative. In Sweden, Fortum participates in WWF Global Forest and Trade Network to promote responsible forestry and credible certifications (read more on page 70).

In Finland, Fortum organised a stakeholder event discussing Solar Economy and prerequisites of the future energy system in June 2011. World Wildlife Fund (WWF) participated the event as a keynote speaker. Fortum was also a main partner of Global Dignity Day 2011, organised by the Global Dignity organisation. The profit from the event was used to help young people in threat of displacement in society.

In addition, Fortum collaborates with non-governmental organisations in various sponsoring projects. Fortum's sponsorship programme was reviewed in 2011 and new sponsorship projects will be launched in 2012. The new programme will focus on the areas of environmental and social responsibility, and the projects will be targeted mostly to young people and local activities.

Additional information about Fortum's activities in society at www.fortum.com/corporation and at www.fortum.se/pl/ru

Active dialogue with media and the general public

Media representatives are an important stakeholder group for Fortum. The media also provides a channel for dialogue with other stakeholders. Fortum's communications is guided by the company's communications principles, which emphasise impartial, correctly-timed and open communication. Fortum's communications activities are governed by insider guidelines and the obligations of a listed company. Social media is also used actively to support the dialogue with the general public. It is also utilised in various campaigns.

Fortum uses a survey called "PR Barometer" to annually map journalists' opinions of Fortum and their satisfaction with its communications activities. In Finland and Sweden, Fortum also monitors the discussion in social media.

In 2011, Fortum participated in "Almedalen week" in Gotland in Sweden. The annual event brings together more than 14,000 participants interested in current issues related to the environment, climate and energy. The event is also an important meeting place for individuals involved in Swedish politics. As part of the event, Fortum arranged four seminars about sustainable energy solutions and nuclear power, attended by nearly 300 participants.

More information at www.fortum.com/mediaroom

Projects with local communities

Fortum works closely with local communities in the municipalities where it has power plants. Local communities are taken into account in power plant maintenance and improvement work. The local residents have also been invited to open-house days at the plants. Furthermore, Fortum works with local municipalities in lighting projects in Finland and Sweden and collaborates with the cities of Espoo and Stockholm to promote future energy-efficient living and electric motoring.

In Poland, Fortum supports municipalities in their efforts to introduce measures that mitigate climate change. In Chelyabinsk, Russia, Fortum hosted a visit of the delegation of the Finnish Ambassador to Russia in 2011. The visit targeted the local community, particularly students in the Chelyabinsk region.

Fortum is also co-operating with local schools in the Nordic countries and Poland to educate students about energy issues. The company also interacts with universities in various research and development programmes.

Fortum's customer relationship management, offerings to customers as well as customer satisfaction are discussed on pages 75–77 and on page 118, Practices related to customer satisfaction, PR5.

Economic responsibility

Management approach

Fortum's approach to sustainability management is discussed on pages 28–29 and on sustainability governance on pages 91–93. The key figures by which Fortum measures its financial performance include return on capital employed (target: 12%), return on shareholders' equity (target: 14%) and capital structure (target: comparable net debt/EBITDA around 3).

The majority of Fortum's key financial figures are published in the Financials 2011 prepared and presented in compliance with International Financial Reporting Standards (IFRS). Fortum uses 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.

Fortum's shares and shareholders

Fortum Corporation's shares are listed on the NASDAQ OMX Helsinki exchange. At the end of 2011, Fortum had 104,496 shareholders. The Finnish State owned 50.76% of Fortum's shares. Of the shares, 28,3% were in foreign ownership (2010: 30.2%). More information on Fortum's shares and shareholders is available on pages 10–11 (Financial summary) and in the Financials 2011 on pages 27–31. Fortum's dividend policy is discussed on page 31 of the Financials 2011.

Fortum provides information to investors fairly and publishes investor information in Finnish, Swedish and English on the company's website at www.fortum.com/investors. Summaries of investor and company information in Polish, French, German and Russian are also available on the website.

Market presence and execution of strategy

Fortum's operations focus on the Nordic countries, Russia, Poland and the Baltics. Fortum in brief and the Group business structure describing our market presence, including business and strategy drivers, are discussed on pages 4–5.

Fortum's strategy aims for continuous development of existing operations and growth in CO_2-free hydro and nuclear power and in energy-efficient CHP production. Our goal is to achieve excellent financial performance in strategically selected core areas through strong competence and responsible ways of operating. Read more on Fortum's strategy and its realisation in 2011 on pages 25–27.

In 2011, the majority of Fortum's growth investments focused on the Russian investment programme as well as energy-efficient CHP production, discussed on pages 61–64. In research and development, Fortum is actively investigating the future Solar Economy production. Each new development activity is assessed against the criteria of carbon dioxide emissions reduction and resource efficiency; read more on pages 65–66.

Availability and reliability

EU6 Management approach to ensure short- and long-term electricity availability and reliability

Reliability of electricity distribution

Fortum distributes electricity to 1.6 million customers and operates about 156,000 km of power transmission and distribution network in Finland, Sweden and Norway. About 50% of the distribution network is underground cables. Underground cables are prioritised in network construction, and about 60% of the new distribution network in Finland is today constructed underground. Fortum's investment and maintenance costs for the distribution network totalled approximately 289 million euros in 2011.

In 2011, Fortum's reliability in electricity distribution was 99.90%. Distribution reliability was affected by Christmas storms that caused considerable damage to the power grids and exceptionally long outages for Fortum's customers in Finland and Sweden. Power outage frequency and average power outage duration are presented on page 117, EU28 and EU29.

For Electricity Solutions and Distribution division the storm accounted for a EUR 57 million negative impact on the comparable operating profit of the fourth quarter of 2011.

Fortum's long-term target is to cut the number of power outages into half and to double the number of customers currently within the scope of weather-proof distribution by 2020.

Demand-side management

EU7 Demand-side management programmes, including residential, commercial, institutional and industrial programmes

Fortum encourages customer demand response by offering market-based hourly pricing to business customers and time-of-use energy pricing and distribution grid tariffs to private customers. It is also possible to choose a contract with the energy price based on a monthly average of the spot price in the Nordic power exchange Nord Pool Spot. Fortum also sells home displays showing the real time electricity consumption. This information helps the customer to shift consumption to off-peak, cheaper time periods.

For Fortum's own generation portfolio management, Fortum uses the peak-load flexibility of its hydro and thermal power plants. In several countries Fortum has major CHP plants that generate peak-load power with high efficiency as the heat demand coincides with the peak power demand.

Seasonal or two-time tariffs are also available encouraging reduction of consumption during peak loads in the winter. In hot water heating, a two-time tariff promotes shifting the demand to the night-time throughout the year. For B2B customers, there is also a variety of different electricity tariffs suitable for the customers' situation.

Our distribution business has load-based network tariffs for B2B customers. Load-based tariffs support efficient usage of the electricity system by making demand-side management profitable for the customer. For all distribution customers, it is possible to choose a two-period metering and tariff with a higher day-time winter energy price. This is suitable especially for distribution customers with storable electric heating. Load management services are also offered to large customers.

A huge programme to replace old meters with new hourly-based metering will improve the possibilities for both load management and energy savings. In Finland, approximately 580,000 customers will receive new meters before the end of 2013. In 2011, the rollout of smart metering to network customers in Finland proceeded according to plan; by the end of 2011, 160,000 customers had received new meters. The new Finnish legislation on hourly meter reading will become effective on 1 January 2014. In Sweden, bringing smart metering to customers was completed earlier. The planning of a smart meter system in Norway continues, and the preliminary regulation regarding it will come into effect on 1 January 2017.

Fortum is also actively promoting the introduction of electric vehicles and is developing solutions for the smart charging of vehicle batteries based on the actual power market situation and price.

Research and development

EU8 Research and development activity and expenditure aimed at providing reliable electricity and promoting sustainable development

The purpose of research and development (R&D) is to improve Fortum's competitiveness and to create a foundation for new profitable business. The long-term aspiration of R&D is to enable a sustainable carbon dioxide-free future for Fortum. Each new development activity is assessed against the criteria of carbon dioxide emissions reduction and resource efficiency. R&D focus areas are performance excellence of current operations, enabling growth and contributing to an emissions-free energy system in the long-term.

Fortum's main R&D themes cover the most advanced technologies in the current energy system and the technologies and system solutions that will be needed to enable a future Solar Economy. In 2011, a strong focus in R&D was on understanding the potential of various solar technologies. Fortum teamed up with partners in large programmes to develop smart grid technologies, sustainable urban solutions, and new integrated combined heat and power (CHP) concepts. Nuclear R&D continued to be the largest and most valuable part of Fortum's R&D portfolio, read the case on page 53.

Fortum's total R&D expenditure in 2011 was EUR 38 million (2010: 30 million). Fortum's R&D expenditure in 2011 was 0.6% of sales (2010: 0.5%) and 1.1% of total expenses (2010: 0.8%). Read more on pages 65–66.

Plant decommissioning

EU9 Provisions for decommissioning of nuclear power sites

In Finland, Fortum owns the Loviisa nuclear power plant and also has a 26.6% share of the Olkiluoto plant. Fortum also has a 25% share in the new power plant unit under construction in Olkiluoto. In Sweden, Fortum owns a share in the Forsmark (26%) and Oskarshamn (46%) nuclear power plants.

Nuclear provisions are related to future obligations for nuclear waste management including decommissioning of the power plants and disposal of spent fuel. In Sweden and Finland, payments have to be made yearly to the State nuclear waste funds. In Finland, a fee including low- and intermediate-level waste, disposal of spent nuclear fuel and decommissioning of the nuclear power plant is paid every year to the fund. As regards Loviisa NPP, for which Fortum bears the full responsibility as the licence holder, the legal liability for nuclear waste management according to the Nuclear Energy Act at the end of 2011 was EUR 968 million (2010: 944 million).

In Sweden, payments to nuclear waste fund are made yearly by paying fees based on the amount of electricity production. Fortum has given the Swedish Nuclear Waste Fund guarantees on behalf of Forsmark and Oskarshamn to cover its share of nuclear waste liability. Fortum's share of guarantees was SEK 2574 million in 2011.

The liability in Sweden and Finland is based on the technical planning of radioactive waste management carried out every third year.

Nuclear-related assets and liabilities are reviewed in more detail on pages 89–90 of the Financials 2011.

Economic performance indicators

Economic performance

EC1 Direct economic value generated and distributed

Fortum analyses the economic impacts and produced well-being 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.

Fortum's economic impacts and produced well-being, measured in euros, to different stakeholder groups in 2009–2011 is presented in the table beside. The difference between added value generated and distributed to stakeholders was EUR 1,232 million (2010: EUR 703 million) for the development of own operations.

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 on page 67, as their annual volume and impact on society is significant.

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

Climate change poses both regulatory and physical risks and 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 supporting policy framework and preconditions of society are in place.

Fortum's long-term aspiration is to be a CO_2-free power and heat company. Fortum is continuously developing its energy production capacity and looking for opportunities to reduce emissions. The company's most important tool in curbing climate change is to increase CO_2-free

MONETARY FLOWS BY STAKEHOLDER GROUP

EUR million		2011	2010	2009
Generation of added value				
Income from customers	Income from products and services to customers, financial income, and sales proceeds from operations or production facilities	7,192	6,432	6,016
Purchases from suppliers	Cash payments to suppliers of raw materials, goods and services	–3,272	–2,923	–2,436
Fortum-produced added value		3,920	3,509	3,580
Distribution of added value				
Employee compensation	Wages, salaries, remunerations and other indirect employee costs	–529	–507	–495
Compensation for investors and shareholders	Dividends, interest and financial expenses paid to investors	–1,431	–1,657	–1,179
Public sector	Income taxes paid, production taxes, support for society and donations	–728	–642	–468
Distributed to stakeholders		–2,688	–2,806	–2,142
Retained in business		1,232	703	1,438

DISTRIBUTION OF ADDED VALUE FROM FORTUM'S OPERATIONS, EUR million

	Capital expenditure [1]		Employee costs [2]		Taxes [3]		Total	
	2011	2010	2011	2010	2011	2010	2011	2010
Finland	239	190	209	212	250	210	698	612
Sweden	392	300	181	181	440	383	1,013	864
Russia	670	599	80	69	15	20	765	688
Estonia	12	53	7	8	0	3	19	64
Poland	18	45	21	10	8	4	47	59
Norway	19	15	14	11	1	1	34	27
Other countries	58	20	17	16	7	13	82	49
Total	**1,408**	**1,222**	**529**	**507**	**721**	**634**	**2,658**	**2,363**

[1] *Gross investments*
[2] *Based on the income statement*
[3] *Includes paid income taxes, production taxes and property taxes*

FORTUM'S CO_2 EMISSIONS AND EMISSIONS ALLOWANCES IN 2009–2011

(million tonnes, Mt)	2011	2010	2009
Total emissions	23.5	25.3	21.8
Emissions subject to ETS	8.0	9.7	7.7
Free emissions allocation	6.8	5.6	5.5
Emissions in Russia	14.7	14.6	13.8

or low-carbon energy production and to improve energy efficiency. In 2011, a marginal abatement cost analysis of CO_2 emissions reduction measures was carried out. The analysis identified potential emissions reduction measures, their reduction volumes and the level of abatement cost. In the short-term, however, Fortum's CO_2 emissions are increasing due to the expansion of energy production in Russia.

The primary impact of climate regulation for Fortum is the cost for carbon dioxide as a result of the EU Emissions Trading System (ETS) and a corresponding value for reductions of emissions. The price of CO_2 increases the production cost of fossil-based energy, but it also raises the prices of energy products. Fortum's key action to reduce exposure to the increasing prices of CO_2 is to increase CO_2-free and low-carbon production capacity. In 2011, 85% of Fortum's electricity production in the EU was CO_2-free. In 2011, Fortum had a total of 102 plants in six member states within the EU's emissions trading scheme. About 91% of the CO_2 emissions in the EU area were included in the emissions trading system. In 2011, Fortum was granted 6.8 million tonnes in free emissions allowances. The company's emissions in the EU emissions trading scheme were 8.0 million tonnes. Thus, in terms of emissions allowances, Fortum was short.

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

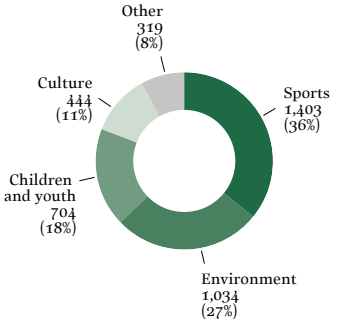
In Russia, CO_2 emissions have an economic value through the Joint Implementation (JI) mechanism that can be applied during the Kyoto period 2008–2012, but most likely not beyond that. Preparations of two JI projects for approval by the Russian government continued in 2011. Fortum's all JI projects are estimated to generate a total of 2.4 million emission reduction units (ERU) by the end of 2012. The conditions of transferring of emission reduction units from Russia are still pending. Fortum is also participating in two international climate funds, the Prototype Carbon Fund (PCF) and the Testing Ground Facility. During 2011, Fortum received 110,000 emission reduction units from these funds.

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. In 2011, a study regarding the impacts of climate

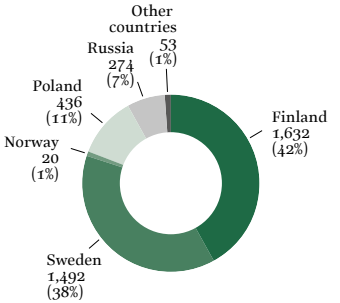
CAPITAL EXPENDITURE BY COUNTRY, 2010–2011, EUR million

EUR million	Finland 2011	Finland 2010	Sweden 2011	Sweden 2010	Estonia 2011	Estonia 2010	Poland 2011	Poland 2010	Norway 2011	Norway 2010	Other countries, total 2011	Other countries, total 2010	Total 2011	Total 2010
Power														
Hydropower	9	10	60	42	-	-	-	-	-	-	-	-	69	52
Nuclear power	34	39	-	-	-	-	-	-	-	-	-	-	34	39
Fossil-based electricity	8	5	-	-	-	-	-	-	-	-	-	-	8	5
Renewable-based electricity	-	-	16	-	-	-	-	-	-	-	-	-	16	-
Other	1	1	2	-	-	-	-	-	-	-	1	-	4	1
Total Power	**52**	**55**	**78**	**42**	**-**	**-**	**-**	**-**	**-**	**-**	**1**	**-**	**131**	**97**
Heat														
Fossil-based heat	5	16	5	24	-	1	8	38	-	-	-	-	18	79
Fossil-based electricity	2	5	-	-	-	-	2	-	-	-	-	-	4	5
Renewable of which	22	14	84	57	-	41	-	-	-	-	56	18	162	130
Waste	-	1	71	35	-	-	-	-	-	-	47	18	118	54
Biofuels	22	13	11	15	-	41	-	-	-	-	8	-	41	69
Other	-	0	2	7	-	-	-	-	-	-	1	-	3	7
District heat	9	19	32	36	10	9	8	7	7	5	1	1	67	77
Other	12	-	34	12	-	0	-	0	-	-	-	1	46	13
Total Heat	**50**	**54**	**155**	**129**	**10**	**51**	**18**	**45**	**7**	**5**	**57**	**20**	**297**	**304**
Distribution	**118**	**73**	**157**	**128**	**2**	**2**	**-**	**-**	**12**	**10**	**-**	**-**	**289**	**213**
Electricity Sales	**5**	**0**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**5**	**0**
Other	**14**	**8**	**2**	**1**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**16**	**9**
Total excluding Russia segment	**239**	**190**	**392**	**300**	**12**	**53**	**18**	**45**	**19**	**15**	**58**	**20**	**738**	**623**
Russia														
Fossil-based electricity													627	544
Fossil-based heat													43	21
Other													0	34
Total Russia													**670**	**599**
Total including Russia													**1,408**	**1,222**

FORTUM'S SUPPORT FOR SOCIETY IN 2011 BY TARGET, 1,000 EUROS



FORTUM'S SUPPORT FOR SOCIETY IN 2011 BY COUNTRY, 1,000 EUROS



change on the hydrology in rivers with hydropower in Sweden and Finland was finalised. Based on the results, changes are being implemented in inflow forecasting and in production planning.

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_2-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_2-free production in Europe and sees business opportunities in providing climate-benign energy solutions for sustainable cities and the electrification of transport.

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 arrangements are discussed in detail on pages 91–93, note 37 of the Financial 2011. Pension arrangements primarily cover retirement, disability, unemployment and survivors' pensions as well as some early retirement coverage.

In addition to statutory employment schemes, Fortum operates several retirement plans with defined benefits arranged either through Fortum Pension Funds in Finland and Sweden or by insurance companies. The number of persons included in these defined benefit plans totalled 2,346 in 2011. Pensions with defined benefits were paid to a total of 4,336 persons.

Market presence

EC6 Policy practices and spending on local suppliers

Fortum buys fuels, goods and services from international and local suppliers. In 2011, the economic benefits generated to suppliers totalled EUR 2.6 billion (2010: 2.8 billion) which corresponds to 42% (2010: 44%) of Fortum's sales. Altogether, Fortum had some 17,000 suppliers of goods and services, nearly 75% of them were operating in Europe, mostly in Finland and Sweden based on the volume of purchases. Of the fuels, Fortum acquired uranium from Russia. The majority (88%) of the coal used in Finland and Sweden also originated from Russia, with small purchases from Colombia. Coal used in Polish power plants originated from Poland and Russia, and Fortum's Russian power plants used coal from Russia and

Kazakhstan. In Russia, Fortum uses local gas, which is purchased from several suppliers. In the UK, Fortum uses partly local gas, which is purchased from the national supplier and partly Norwegian gas from the North Sea. Gas used in Finland originates from Russia.

The majority (70%) of the biofuels used consisted of wood pellets, wood chips and industrial wood residues, and they originated mainly from Sweden, Finland and Germany. Other types of biofuels were also acquired from Malaysia, Spain and Brazil. Read more on the criteria and origin of biofuels used by Fortum on pages 68–71.

Of the total annual purchasing volume (EUR 2.6 billion), fuels accounted for about EUR 900 million (2010: 960 million), with fossil fuels accounting for EUR 655 million and biofuels EUR 175 million.

In 2011, Fortum's investments, excluding acquisitions, were EUR 1,408 million (2010: EUR 1,222 million), 262 million (2010: 214 million) of which was for CO_2-free production. Investments totalled 22% of sales (2010: 19%). 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 670 million (2010: 599 million), and in Sweden, EUR 392 million (2010: 300 million). Investments in renewable energy forms were EUR 247 million (2010: 182 million).

EC7 Local hiring procedures and proportions of local senior management

In local hiring, Fortum uses advertised recruitment and direct search methods. In Finland and Sweden, 100% of senior management are locals. In Russia, the corresponding figure is 77%. In Poland, the only Vice President position is held by a Finn.

EC8 Development and impact of infrastructure investments and services provided primarily for public benefit, through commercial in-kind or pro bono engagement

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.

In 2011, Fortum's support for public good totalled about EUR 4.6 million (2010: 5.2 million), of which the share of grants awarded by the Fortum Foundation was about EUR 700,000 (2010: 650,000). The purpose of the Fortum Foundation is to support research, education and development in natural, technical and economical sciences within the energy area. In 2011, Fortum Foundation granted scholarships to 39 students.

In addition to this, Fortum donated for R&D cooperation about EUR 2.8 million (2010: 2.3 million) to universities in Finland. The single largest donation, EUR 1.5 million, was awarded to Aalto University.

Fortum's investments in infrastructure – especially in the Chelyabinsk heat ring in Russia – provide public benefits. However, as Fortum's investments in heat rings have also economic and environmental benefits, they are not regarded as the investments referred to in the GRI.

The amount to be 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 Understanding and describing 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 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.

Fortum's total tax impact depends on the profitability of operations, the scale of the local operations and the investments being implemented. In 2011, Fortum paid income, property and production taxes totalling EUR 721 million (2010: 634 million), of which EUR 250 million (2010: 210 million) was paid in Finland and EUR 440 million (2010: 383 million) in Sweden. Fuel taxes totalled EUR 74 million (2010: 58 million), of which 22% (2010: 45%) comprised a carbon dioxide tax and 2% (2010: 1%) a sulphur tax.

The dividend income on the Finnish State shares has an impact on maintaining social infrastructure. Fortum's indirect economic impacts are discussed on page 67.

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 with a total capacity of 2,400 MW electricity and 662 MW heat; the last units are scheduled for commissioning in 2014. The Russian investment programme is based mainly on natural gas, whereas the investments in Europe (~800 MW electricity and 225 MW heat under construction) target mainly CO_2-free production. Fortum's European investment plan, extensive investment programme in Russia and acquisitions in 2011 are presented on pages 62–64. Fortum's understanding of European and Russian power demand expectations as well as the development of primary energy demand by region is discussed on pages 30–39 (Market development).

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, see page 29. Efficiency in 2011 was 67.1% and the 5-year rolling average 68.3%. 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.

EU12 Transmission and distribution losses as a percentage of total energy

Fortum's power transmission and distribution losses totalled 1.4 TWh in 2011. This corresponds to 3.3% of the total volume of power transmission and distribution in 2011. Guarantees of origin (CO_2-free electricity) were acquired for all the electricity purchased for network losses.

Environmental responsibility

Management approach

Fortum's approach to sustainability management is discussed on pages 28–29 and on sustainability governance on pages 91–93. Policies and instructions to guide environmental management include: Fortum's Sustainability Policy and environmental principles, biodiversity guidelines, commitment to the UN Global Compact, and compliance with the ISO 14001 standard for environmental management.

Environmental responsibility at Fortum emphasises the efficient use of resources and the need to mitigate climate change and highlights our know-how in CO_2-free hydro and nuclear power production and in energy-efficient CHP production. Research and development activities create requisites for environmentally benign energy solutions. Climate change mitigation and the reduction of carbon dioxide emissions are important goals that affect the energy sector and the development of electricity and heat production. In addition to new technical innovations, also efficient and low-emission traditional production technologies will be needed for a long time.

Certified environmental management

Fortum's target is to certify all its operations according to ISO 14001. At the end of 2011, Fortum's overall certification rate was 95%. The operations of Jelgava in Latvia, Pärnu in Estonia and as well as Fortum Fjernvarme in Norway were certified in 2011. In Fortum's Russian operations, preparations for ISO 14001 certification continued actively during 2011 and were well ahead of the original schedule. In December 2011, OAO Fortum's operations passed the first phase of the ISO 14001 certification audit representing 70% of Fortum's operations in Russia. The plan is to expand the scope of the certificate also to include the new Nyagan power plant as well as the district heating networks in OAO Fortum during 2012.

The certification rates are based on the share of net sales generated in certified operations (2011 net sales values) out of Fortum's total sales.

ENVIRONMENTAL MANAGEMENT SYSTEM CERTIFICATION AT FORTUM, YEAR-END 2011

	ISO 14001
FORTUM	95%
Europe	99%
Power	
Finland	100%
Sweden	100%
UK	89%
Germany	100%
Heat	
Finland	100%
Sweden	100%
Norway	100%
Estonia	68%
Latvia	93%
Lithuania	100%
Poland	90%
Electricity Solutions and Distribution	
Finland	100%
Sweden	100%
Norway	100%
Estonia	100%
Russia	70%

Environmental targets and performance

Fortum's Group-level environmental targets are related to CO_2 emissions, energy efficiency and environmental management system (ISO 14001) certification. In addition, the divisions have defined their own environmental goals related to their respective business.

The achievement of the Group-level environmental targets is monitored through quarterly and annual reporting. In addition, leaks of more than 100 litres into the environment, significant permit violations and environmental non-compliances are monitored monthly as part of environmental, health and safety (EHS) reporting. As there have been no Group-level targets for environmental non-compliances or leaks, the divisions have set their own goals, which have been reviewed and followed-up in the Group's EHS network.

GROUP-LEVEL ENVIRONMENTAL TARGETS AND FORTUM'S PERFORMANCE IN 2011

	Target period	Target setting	Goal	Status at year-end 2011
Climate targets	Over the next five years	Specific CO_2 emissions from power generation in the EU per kilowatt-hour as a five-year average	<80 g/kWh	67 g/kWh
		Specific CO_2 emissions from total energy production (electricity and heat) per kilowatt-hour as a five-year average	<200 g/kWh	169 g/kWh
Other environmental targets	Over the next five years	Energy efficiency: Overall efficiency of fuel use as a five-year average (produced energy divided by primary energy of fuel)	>70%	68.3%
	By year-end 2010	ISO 14001 environmental certification for all operations in the EU	100%	99%
	By year-end 2012	ISO 14001 environmental certification for operations in Russia	100%	70%

Environmental performance indicators

Materials

EN1 Materials used by weight or volume

Fuel and energy use

Fortum's major materials and energy use 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. In order to decrease the environmental impacts, the operations are continuously improved with modern technology as well as efficient operating and maintenance procedures.

Detailed fuel and energy use is described in EN3.

Other materials use

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

USE OF CHEMICALS IN 2011

	tonnes
Chemicals used for flue-gas purification	69,000
Chemicals for water treatment	14,000
Other chemicals and additives	3,200
Lubricants	470

EN2 Percentage of materials used that are recycled input materials

Waste-derived fuels from industrial and municipal waste are recycled input materials and an increasingly important part of Fortum's fuel mix. Waste-derived fuels are used for heat and electricity production in waste incineration plants and in co-combustion with other fuels. In 2011, Fortum used 754,000 tonnes of waste-derived fuels in Sweden and Finland. Fortum used 40,000 tonnes of imported waste for energy production in Sweden. The waste originates from Norway and is municipal, burnable waste (code: EWC 191210). 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 2% of the energy content of Fortum's total fuel use.

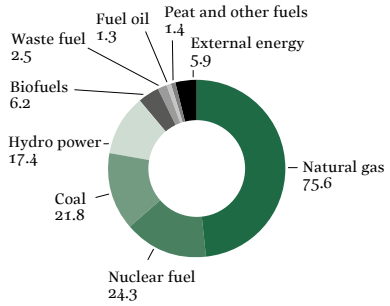
Energy

EN3 Direct energy consumption by primary energy source

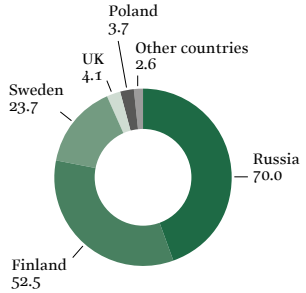
Fortum's primary energy consumption in own energy production in 2011 was 151 terawatt-hours (TWh).

The figures for Fortum's power and heat production by energy source in 2009–2011 include production from own power plants and shared companies.

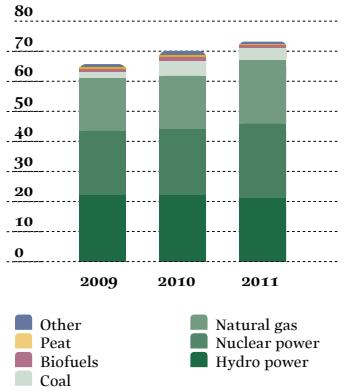
DIRECT ENERGY CONSUMPTION BY ENERGY SOURCE IN 2011, TWh



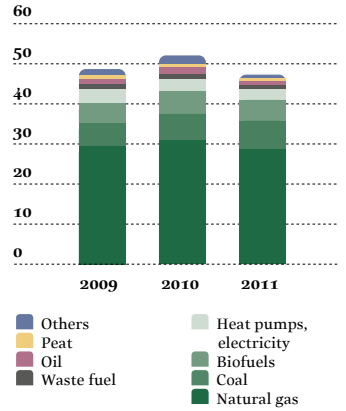
DIRECT ENERGY CONSUMPTION BY COUNTRY IN 2011, TWh



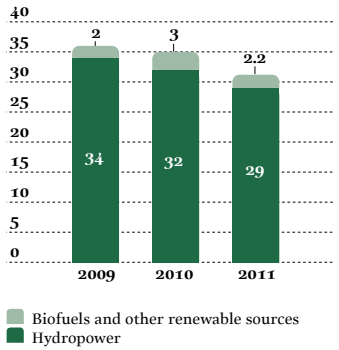
FORTUM'S POWER PRODUCTION BY ENERGY SOURCE IN 2009–2011, TWh



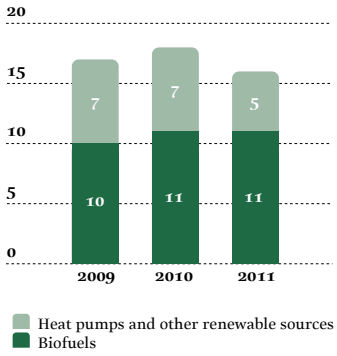
FORTUM'S HEAT PRODUCTION BY ENERGY SOURCE IN 2009–2011, TWh



SHARE OF RENEWABLE ENERGY SOURCES IN FORTUM'S POWER PRODUCTION 2009–2011, %



SHARE OF RENEWABLE ENERGY SOURCES IN FORTUM'S HEAT PRODUCTION 2009–2011, %



EN4 Indirect energy consumption by primary source

Fortum's indirect energy consumption in 2011 was 5.9 TWh. The largest part of this is heat and electricity acquired from external sources for operating power plants and compensating network losses in power distribution.

A major part of the external heat originates from the Enocell pulp mill in Finland and is produced from biomass. Electricity is bought from various suppliers and the exact primary energy sources are not known. Guarantees of origin (CO_2-free electricity) were acquired for all the electricity for network losses.

INDIRECT ENERGY USE 2011, GWh

	GWh
External heat supply	2,780
Electricity for distribution network losses	1,870
Other external electricity supply	1,230

In case of external energy supply, the reported consumption has been converted to primary energy by assuming 75% energy efficiency for power production and 85% for heat production.

EN5 Energy saved due to conservation and efficiency improvements

In fuel-based energy production Fortum aims to utilise the fuel as efficiently as possible. In 2011, Fortum's efficiency of fuel use was 67.1 % (target 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 efficiency of fuel use. CHP plants accounted for 29% of Fortum's total electricity production and 71% of heat production in 2011.

The implementation of the energy analyses, energy-efficiency training and technology measures related to Fortum's 2008–2016 energy efficiency programme continued in 2011. 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_2-free production. About 30 projects will be implemented every year. In 2011, the efficiency improvements resulted in an energy savings of about 90 GWh.

Hydropower refurbishment projects and heat recovery measures in Kuusamo, Nokia and the Suomenoja CHP plants as well as the Ecotuning™ project at the Kauttua power plant were among the energy-efficiency improvement projects implemented in 2011. Additionally, the optimisation of the district heat networks continued in Stockholm, where Fortum produces about 650 GWh of heat by recovering heat from flue gases.

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. The programme reports are available at www.eurelectric.org.

In addition to improving the energy efficiency of energy production, Fortum also aims to improve the efficiency of electricity distribution by reducing distribution losses. In 2011, distribution losses amounted to 1.4 TWh (2010: 1.5 TWh)

EN6 Initiatives to provide energy-efficient or renewable energy-based products and services, and reductions in energy requirements as a result of these initiatives

Fortum is contributing to a low-carbon society by offering products and services that can help mitigate climate change also in other sectors of society. A more detailed description of environmentally benign products is given in EN26.

In addition, Fortum provides customers with energy advice, offers energy-efficiency consulting services to industrial customers as well as energy-saving products like energy consumption metering devices (e.g. Kotinäyttö/Home Display).

EN7 Initiatives to reduce indirect energy consumption and reductions achieved

Indirect energy consumption (own use of energy) in the operation of power plants is reduced by increasing the operational efficiency of the plants. The energy efficiency of a power plant can be enhanced with structural modifications, systematic and preventive maintenance, and by training personnel in the optimal operation and monitoring of the plant's operational economy. Fortum's portfolio of services and expertise covers all these areas.

Fortum has invested heavily 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 the most loaded lines and replacing obsolete transformers with new, more energy efficient ones.

Distribution losses decreased by about 7% from 2010 to 2011. Fortum's distribution losses were about 3.3% of total power distribution in 2011. The amount of electricity acquired from external sources for operating power plants decreased from 1759 GWh in 2010 to 969 GWh in 2011 (a 45% decrease).

Water

EN8 Total water withdrawal by source

In 2011, Fortum used a total of 3,850 million (2010: 3,860[1] million) cubic meters (m^3) of water, of which the majority, 3,750 million m^3 (2010: 3,550[1] million m^3), was used as cooling water in thermal power plants and in the Loviisa nuclear power plant.

[1] *The figure differs from the 2010 report and is based on more complete data from Russia.*

WATER INTAKE BY SOURCE IN 2009–2011, MILLION m³

	Sea water	Fresh surface water	Tap water	Other source
2009	2,040	399	9.3	10.3
2010	2,070	1,780	6.0	2.5
2011	1,950	1,880	6.1	15.1

Power plants in Russia use cooling towers where part of the water is evaporated into the atmosphere. In Russia, Fortum uses water also for pumping ash from thermal energy plants into ash ponds.

In hydropower production, water is entirely passed through the turbines; the volume and quality of water remains unchanged.

EN9 Water sources significantly affected by withdrawal of water

Fortum withdraws water from the sea, lake or river, and the withdrawn volume is small compared to the watercourse volume and flow, none of these water sources is significantly affected. Water scarcity is not an issue in the operation areas of Fortum's power plants.

In Poland, Fortum uses mainly municipal tap water. Poland is the only Fortum's area of operation defined as a water-stressed area. Fortum's sites in Poland are mostly small, but a few are medium-sized. The aggregated water consumption is about 800,000 m³ annually. No risk of shortage in the municipal water supplies has been identified in the cities in which Fortum operates. All of our operations in water-stressed areas have an ISO 14001 certified environmental management system, and they measure and report their water consumption according to the ISO 14001 standard.

EN10 Percentage and total volume of water recycled and reused

The volume of water recycled in 2011 was 36 million m³, which was 3% of the process water intake.

Biodiversity

EN11 Location and size of land owned, leased, managed in, or adjacent to, protected areas and areas of high biodiversity value outside protected areas

Fortum's Gisela system includes information on real estate and other properties of the company. The system contains data on protected areas and areas of high biodiversity value in close proximity to Fortum's activities.

Fortum owns and operates several energy production facilities adjacent to protected areas. For example, the Loviisa nuclear power plant in Finland is located near nature conservation areas belonging to the Natura 2000 network: the Källaudden-Virstholmen area is located approximately two kilometres from the power plant, a sea conservation area about two kilometres, and the Kullafjärden bird waters and bird nesting area, and the bays seven kilometres from the Loviisa power plant.

In addition, the Kuggen bird conservation area is about 3 km and the nature conservation area of islands Hudö and Lilla-Hudö about 4 km from the power plant. North of Hästholmen, on the mainland, the nearest nature conservation areas are located about 2 km from the power plant.

The Loviisa nuclear power plant area is made up of 170 hectares of land and 240 hectares of water areas.

There are many nature conservation areas close to Fortum's hydro power plants in Finland and Sweden. In Finland, two hydropower plants on the Paimionjoki river are located in a Natura 2000 area of 156 ha. The area is a habitat of e.g., thick shelled river mussel (Unio Crassus). The Mustionjoki river, which has four of Fortum's hydropower plants, is included in the Natura 2000 network and is an important habitat for thick shelled river mussel and river pearl mussel (Margaritifera margaritifera). The size of this Natura 2000 area is 188 ha.

In Sweden, a 100-km-long stretch on the Klarälven river between two Fortum's hydropower plants is a protected area according to the Environmental Code and Natura 2000. The protected species is salmon. Fortum's real estate at the Untra Hydro Power Plant on the Dalälven river has Natura 2000 areas with a size of 460 ha. Båtfors is a large nature conservation area and Natura 2000 area located directly downstream the Untra plant. The water part of Dalälven river also belongs to Natura 2000. Fortum's real estate outside the conservation areas at Untra has recently been voluntary protected by Fortum. Out of the total 350 ha, an environmental management plan covers 260 ha.

EN12 Description of significant impacts of activities, products, and services on biodiversity in protected areas and areas of high biodiversity value outside protected areas

Fortum's impacts on biodiversity – flora and fauna species – are often local and mainly linked to the use of land and water areas and the exploitation of renewable energy sources. Fortum's activities in hydropower production and electricity distribution may have a negative impact in areas of high biodiversity. The impacts of hydropower production are, in some cases, connected to dams as migration barriers for fish and reduction of rapids as habitats. Cooling waters from thermal and nuclear plants also may affect the biodiversity of the aquatic environment.

For example, cooling waters raise the sea water temperature near the Loviisa power plant. The temperature of the surface water during the vegetation period (May-October) increases by 1–2.5 centigrades within a one- to two-kilometre distance from the power plant. The impact of the power plant on biodiversity is the eutrophication of the aquatic vegetation in the shorelines near the power plant.

EN13 Habitats protected or restored

Habitats for fish reproduction were restored at the Utosjoki river, a tributary of the Oulujoki river in Finland. The aim of the restoration was to create spawning and juvenile habitats for salmonoid fish. The restoration was carried out within the Oulujoki multiple use agreement in co-operation with municipalities and environmental authorities and was finalised in 2011.

In Sweden, restoration of a spawning area for fish in the Bredforsen nature reserve on the Dala river was carried out during 2011. In Tylleropsön, an island in the Dala river, upstream from the Untra Power plant, a controlled environmental forest fire was carried out in 2011 to create habitats for species that need burnt forests. The effects will be followed by biologists.

EN14 Strategies, current actions, and future plans for 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. We want to make a positive contribution to the conservation of biodiversity in all areas where we operate.

The main impacts on biodiversity are assessed in the pre-study phase of any project, e.g., a hydropower project, before the investment decision. For example, in the pre-study of the refurbishment project for the Imatra Hydro Power Plant, the fish spawning areas, the impacts and the habitat restoration possibilities are being assessed with habitat modelling and field measurements.

Biodiversity impacts are assessed in depth as part of the EIA (Environmental Impact Assessment) process. If an investment project impacts a specific species, it may result in a modification in the design of the plant, in measures to preserve a high ecological value, including relocating the plant if the existing biotope could be damaged as a result of the project, or in restoration measures.

One example is the development of the Untra Hydro Power Plant in Sweden, where a new unit/station will be built. Extensive environmental inventories have been done in connection to the EIA. Insect and bird habitats have been listed and descriptions of area development measures are part of the EIA. There will be no increase in water discharge, due to high ecological values. The planned hydropower plant was moved to the other side of the river in order to minimise the environmental impact. Cultural aspects have been considered as well; the Untra Power Plant dates back to the beginning of 1900, so changes in and outside of the buildings are restricted.

Fortum inventories the biodiversity in areas where it operates in order to preserve and increase the knowledge of the ecological values. In Sweden, for example, rehabilitation of spawning areas of migratory fish in the Dala river was studied in 2011. The work of creating biodiversity action plans for Fortum's hydropower production is ongoing. Fortum also encourages authorities and NGOs to suggest ways in which Fortum can minimise its impact on biodiversity.

Fortum's Environmental Fund supports projects that reduce the adverse environmental impacts of hydropower production and support biodiversity in built-up water systems. Funds originate from the sales of "Ekoenergia" eco-labelled electricity in Finland and "Bra Miljöval" eco-labelled electricity in Sweden. During 2011 approximately EUR 300,000 was invested in various projects. The Fund's research or practical projects are chosen in collaboration with national nature conservation organisations.

In addition to Environmental Fund projects, many voluntary projects and studies were carried out by Fortum in co-operation with authorities, municipalities and research institutes in 2011. A unique, natural diversion channel, or "biochannel", was built in 2010 in Eldbäcken, Sweden, to bypass a hydropower plant. A diverse habitat for fish and fresh-water pearl mussels will be created in the channel. Follow-up of the functionality of the channel continued in 2011.

In the Oulujoki river in Finland, plans for a fish way in the main channel were finalised in 2011. To restock the fish in the area, the stocking of juvenile salmon was tested in tributaries.

The effects of different breeding methods and changes in fish farming pools on smolt quality as well as the effects of different release locations and times was studied in Finland. In Sweden, Fortum has its own project focusing on salmon released in Lake Vänern.

Enhancing the habitat for the salmon population and the endangered fresh-water pearl mussel in the Mustionjoki river in Finland was studied in 2009–2010. During 2011, the fertility of fresh-water pearl mussels and spawning conditions for salmonoid fish were studied in more depth in the Mustionjoki river area.

Fortum's biodiversity guidelines set the principles for taking biodiversity into consideration in grid operations. Underground cabling protects biodiversity and reduces the impact on the landscape and birds. Measures to avoid 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. Whenever possible, new networks are constructed in public areas and along road sides.

EN15 Number of IUCN Red List species and national conservation list species with habitats in areas affected by operations, by level of extinction risk

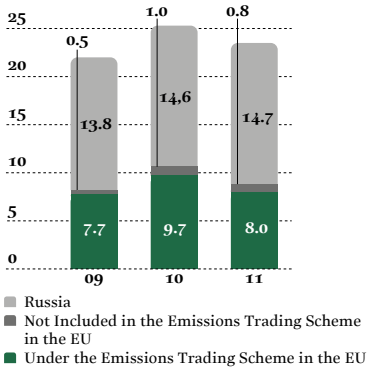
Saimaa ringed-seal *(Pusa hispida saimensis)* in Finland is one of the world's most endangered seals. Fortum has been working long to protect this species with Finnish Association for Nature Conservation. Fortum has supported fishermen to replace fishing nets with fish traps to prevent seals from dying in nets. During certain years, Fortum's discharges in river Vuoksi have helped seal calves to survive in the nests. This is an example of species positively affected by Fortum's actions.

The Gullspång population of the Atlantic salmon *(Salmo salar)* was red-listed in Sweden until 2010 and Fortum has a responsibility for its survival. Successful efforts have been made downstream from the Gullspång hydropower plant in Sweden, in co-operation with authorities. In addition to the restoration of spawning areas, other extensive measures also have been done to preserve the salmon.

At the Untra hydropower plant in Sweden, an inventory of the real estate was made and 65 red-listed species where identified. The species are listed in the inventory report and the level of extinction risk is also presented.

In Sweden, an eel protection project was launched during 2011. The aim is to initiate measures to protect the IUCN red-listed eel (*Anguilla anguilla*) in the most important eel rivers in the country. The objective is to decrease eel mortality in turbines through trap-and-transport and the release into safe waters. The project is being carried out in collaboration with other hydropower companies and the Swedish Agency for Marine and

FORTUM'S CARBON DIOXIDE EMISSIONS IN 2009–2011, $MtCO_2$



Water Management (Havs och vattenmyndigheten).

Emissions, effluents and waste

EN16 Total direct and indirect greenhouse gas emissions by weight

Carbon dioxide (CO_2)

In 2011, Fortum emitted 23.5 million (2010: 25.3 million) tonnes of CO_2. 63% of the amount resulted from the Russian operations, 25% from Finland and 5% from Poland. Fortum's total emissions decreased slightly from the previous year, due to the decreased use of fossil-fuelled power plants in the Nordic countries.

The specific CO_2 emission of total energy production decreased to 192 g/kWh (2010: 196). The five-year average, including 2011, increased to 169 g/kWh (2010: 157) as a consequence of the increased share of Russian energy production in the total mix. The specific CO_2 emission of power production in the EU was 88 g/kWh (2010: 84) and the five-year average, including 2011, is 67 g/kWh (2010: 69).

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). The reporting covers direct and indirect CO_2, methane (CH_4), and dinitrogenoxide (N_2O) emissions. Indirect emissions are calculated using literature based emission factors and assumptions on different parts of the fuel chains.

In 2011 80% of Fortum's greenhouse gas emissions were direct CO_2 emissions (scope 1), which are generated when burning fossil fuels to produce electricity and heat. Additionally, the direct emissions include the CO_2 emissions of company cars. The share of indirect emissions from electricity, heat and steam purchased from outside sources (scope 2) was 0.7% of all greenhouse gas emissions. Indirect emissions from the production and transportation of fuels, from employee air travel and from the use of our products (scope 3), accounted for 19% of greenhouse gas emissions.

The share of carbon dioxide of CO_2 equivalent emissions was 88% and the share of other greenhouse gases (CH_4 and N_2O) was about 12%.

EN17 Other relevant indirect greenhouse gas emissions by weight

SF_6 is used as isolation gas in switchgear at a number of substations located in urban areas. SF_6 is a strong greenhouse gas, but the gas volume is low and the gas is well confined in the equipment. In 2011, about 14 kg of SF_6 was leaked into the atmosphere from Fortum's installations.

EN18 Initiatives to reduce greenhouse gas emissions and reductions achieved

New CO_2-free and low-carbon capacity

Fortum's most important measure in curbing climate change is to increase CO_2-free or low-carbon energy production and to improve energy efficiency.

In line with its strategy, Fortum is focusing on CO_2-free hydro and nuclear power and on energy-efficient combined heat and power (CHP) production. Emissions trading and the use of Kyoto mechanisms are also important climate actions at Fortum.

New CO_2-free and low-carbon production capacity commissioned during 2011 is described on page 64.

Switching to biofuels

Increasing the use of bioenergy was studied at many plants during 2011. An environmental permit application to use 2% of biomass with coal in the Naantali combined heat and power (CHP) unit 1 was submitted in 2011. A permit application to start using biomass with a share of 5–15% of the plant's total fuel consumption at the Suomenoja CHP plant was also submitted. Furthermore, Fortum will increase the use of biofuels in Värtan, Sweden. The share of olive stones will be doubled from the current 10% to 20% during 2012. Small biofuel-fired, heat-only boilers were constructed in Vaasa, Vaajakoski and Oulu, in Finland. Replacement of coal with biofuels using gasification or bio-torrefaction was researched in 2011.

In February 2012 Fortum made a decision on a pyrolysis plant to be built at the Joensuu CHP plant. The plant will produce 50,000 tonnes (corresponding to 200–220 GWh of fuel energy) of bio-oil annually, and it will be 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_2 emissions by about 60,000 tonnes.

Cutting emissions by improving energy efficiency

Fortum's activities in improving energy efficiency are described in EN5.

CCS as future abatement technology

In Fortum's view, carbon capture and storage (CCS) will be an important abatement measure of CO_2 emissions and has to play a pivotal role in energy system transformation in the future. In 2011, Fortum participated in CCS research programmes in Finland and the EU. Fortum was the main financer of Cleen's CCS research and

TOTAL GREENHOUSE GAS EMISSIONS, 2009-2011, $MtCO_2eq$

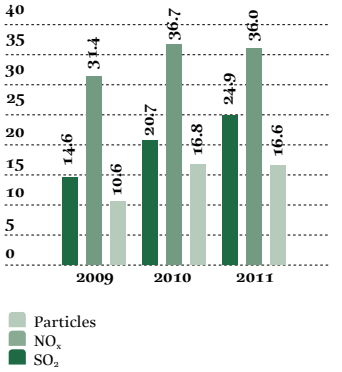
	2009				2010				2011			
	CO_2	CH_4	N_2O	Total	CO_2	CH_4	N_2O	Total	CO_2	CH_4	N_2O	Total
Scope 1	21.8	0.1	0.2	22.1	25.3	minor	0.3	25.6	23.5	minor	0.2	23.7
Scope 2	0.2	minor	minor	0.2	0.1	minor	minor	0.1	0.2	minor	minor	0.2
Scope 3	2.1	3.0	minor	5.1	2.3	3.4	minor	5.7	2.2	3.3	minor	5.5
Total	24.1	3.1	0.2	27.4	27.7	3.4	0.3	31.4	25.9	3.3	0.2	29.4

is represented in ZEP, the Zero Emission Platform. However, the feasibility of CCS still faces major technical, economic, social and political challenges. Fortum currently considers the so-called second generation CCS concepts and technologies more promising than the technologies previously researched. The current cost level of CCS does not yet offer solid business cases for successful investments.

EN19 Emissions of ozone-depleting substances by weight

Fortum has 148 tonnes of R-22 (HCFC-22 refrigerant) in the heat pump facilities at Värtaverket and Hammarbyverket in Stockholm. In 2011, emissions of R-22 into the atmosphere were 1,133 kg.

FORTUM'S SO_2, NO_x AND PARTICLE EMISSIONS IN 2009–2011, 1,000 TONNES



EN20 NO_x, SO_2, and other significant air emissions by type and weight

In 2011, Fortum's thermal energy production emitted 36,000 tonnes (2010: 36,700 tonnes) of NO_x, 24,900 tonnes (2010: 20,700 tonnes) of SO_2 and 16,600 tonnes (2010: 16,800 tonnes) of particle emissions. SO_2, NO_x and particle emissions from Fortum's European production plants have decreased significantly in recent decades as a result of advancements in flue-gas cleaning technology and combustion process control. About 59% of the flue-gas emissions (SO_2 and NO_x) and about 92% of the particle emissions originated from the Russian operations. The most significant source of particle emissions, 9400 tonnes in 2011, is the Argayash plant in Russia.

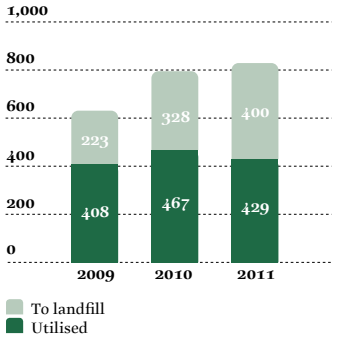
The single most important emissions reduction measure in 2011 was the change of the coal used at Argayash CHP and Chelyabinsk CHP-2 in Russia. About 55% of the annual consumption of coal has been switched to a higher quality coal with an ash content of 17–21%, compared to the previous coal with an ash content of 41–46%. The sulphur content has also decreased from 0.9% to 0.5%. The annual reduction of particle emissions per used tonne of coal is estimated to be 30%. However, due to the increased coal consumption, the total particle and SO_2 emissions in Russia increased in 2011.

EN21 Total water discharge by quality and destination

Energy production impacts on water systems are mainly caused by thermal loads, the release of solids, and by nitrogen, phosphorus and heavy metal emissions. All waste water is conducted directly to municipal sewage treatment plants or cleaned on-site before being discharged into the environment.

In 2011, Fortum used a total of 3,750 million m^3 (2010: 3,550 million) of cooling water that was mostly discharged to the watercourse. The thermal load on the water systems was 21 TWh (2010: 23). The biggest single water consumption and effluent volume in 2011 was at the Loviisa Nuclear Power Plant in Finland, where 1,437 million m^3 of cooling water was used, and 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.

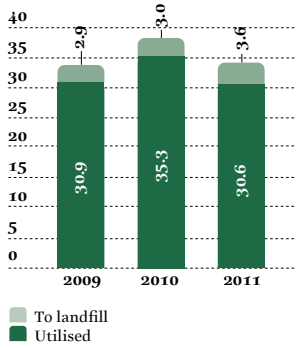
ASH HANDLING IN 2009–2011, 1,000 TONNES



In Russia, the wet method is used to pump ash from coal-fired power plants into ash basins. Waste waters from the basins are led into water systems. The water consumption is quite large and the allowed pollutant concentration levels in the discharged water were exceeded at six power plants a total of 20 times during the year. To correct the situation, arrangements for minimising water flows from the plants to ash ponds were made and water treatment was improved. The coal change is also likely to result in a reduced amount of effluent.

Emissions to water from Fortum's thermal energy plants included 117 tonnes of solids, 2.9 tonnes of oil, 14 tonnes of nitrogen, and 0.7 tonnes of phosphorus.

GYPSUM HANDLING IN 2009–2011, 1,000 TONNES

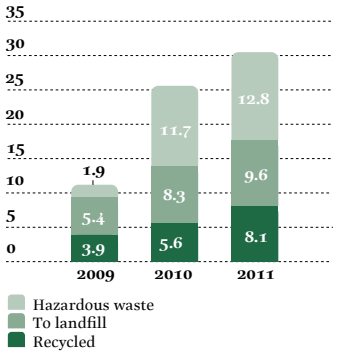


EN22 Total weight of waste by type and disposal method

Ash and by-products from thermal energy

About 829,000 tonnes of ash and 34,200 tonnes of gypsum were generated in 2011. About 30% of the ash was generated at Finnish plants, 34% in Russia and 19% in Sweden. In Europe, waste and by-products

WASTE HANDLING IN 2009–2011[1], 1,000 TONNES



[1] *Waste volumes differ from 2010 report because gypsum handling is now presented in a separate graph. Substantial increase in hazardous waste volume from 2009 is based on more comprehensive reporting from Russian operations during 2010–2011.*

are utilised and recycled as efficiently as possible. In Russia, ash is stored in basins because, excluding building embankments for ash basins, it does not have other usages, and the wet ash handling makes utilisation more difficult. In 2011, the ash recycling rate at Fortum was 52% and the gypsum recycling rate 89%.

Gypsum is utilised in the gypsum board industry. Fly ash was used in the construction material industry, in road construction, as made-up ground and in backfilling mines. New product development for ash was carried out in 2011 in collaboration with different parties. A CE mark covering the cement and concrete industry was received for coal fly ash at the Naantali CHP plant. In Sweden, a project to build a test road with slag from municipal waste incineration at Högdalen, in Stockholm, continued.

Remaining waste that cannot be utilised is deposited in landfills or intermediate storage. In 2011, about 400,000 tonnes of ash and 3,600 tonnes of gypsum were piled.

Nuclear waste

In 2011, Fortum used 23 tonnes of uranium fuel at the Loviisa Nuclear Power Plant and produced a corresponding amount of high-level radioactive nuclear waste. In addition, about 120 m^3 of low- and intermediate-level radioactive waste was produced. After measuring the radioactivity, some of the low-level waste was reclassified as non-radioactive waste and was disposed of like other conventional waste.

Low- and intermediate-level nuclear waste is disposed of in the final repository at the power plant site in Loviisa. During 2011, 486 barrels (200 litres each) of low-level maintenance waste were disposed of in the repository. In 2011, 70% of the capacity of the repository was in use. In 2011, 130 m^3 of liquid waste was produced. This liquid waste, like evaporation waste and the ion exchange resins, will be solidified before final disposal. The volume of the evaporation waste is further reduced with a caesium removal system before solidification.

Other waste

In 2011, Fortum's operations generated a total of 30,500 tonnes of waste (excluding gypsum and ash deposited in landfills), 12,800 tonnes of which was hazardous.

EN23 Total number and volume of significant spills

In 2011, there were 28 leaks of more than 100 litres (2010: 13) into the environment. Most of the leaks were oil, 13 of them were from transformers, and they were mainly caused by lightning. None of the leaks caused major environmental damage. The most extensive clean-up actions involved the replacement of the soil around the transformers.

EN24 Weight of transported, imported, exported, or treated waste deemed hazardous under the terms of the Basel Convention Annex I, II, III, and VIII, and percentage of transported waste shipped internationally.

Not relevant for Fortum.

EN25 Identity, size, protected status, and biodiversity value of water bodies and related habitats significantly affected by the reporting organisation's discharges of water and runoff

Fortum's discharges of 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 Initiatives to mitigate environmental impacts of products and services, and extent of impact mitigation

Fortum is building a low-carbon society by offering products and services that can help mitigate climate change also in other sectors of society.

In 2011, all electricity sold to private customers in Finland was CO_2-free and produced 100% by hydropower. With an additional fee, customer could choose also 100% wind power. The origin of hydro and wind power was guaranteed with European Guarantees of Origin or with the Ekoenergia label of the Finnish Association for Nature Conservation.

In 2011, all electricity in Sweden was sold with an environmental value. Customers can actively choose between a mix of wind and hydro, which is also labelled with Bra Miljöval, or they can choose to have their energy entirely from either wind or hydropower. The Bra Miljöval eco-label was founded and reviewed by the Swedish Society for Nature Conservation. The electricity sold as entirely wind or hydropower is based on European guarantees of origin. Customers not making an active choice receive nuclear power, which is CO_2-free in the production phase. Assigned deliveries (Fortum Enkel) have Bra Miljöval eco-labelled wind and hydro power in their delivery. In Finland, Fortum launched a carbon-neutral heating product in 2011 to offer customers the opportunity to influence their CO_2 emissions. Companies are able to offset their CO_2 emissions resulting from their use of heat. The product is flexible and enables the customer to increase the amount of compensation each year. The compensation is done by purchasing international carbon offsets. Fortum has been offering the corresponding heat product in Sweden, where the current volume is about 150 GWh/a.

The extent of impact mitigation can be assessed by assuming that all electricity sold by Fortum (14.4 TWh in 2011) would have had the specific CO_2 emission of the Nordic electricity mix. The consequent CO_2 emissions would have been about 1.5 million tonnes. Fortum's sales of CO_2-free electricity resulted in no greenhouse gas emissions.

ENVIRONMENTAL NON-COMPLIANCES BY DIVISION IN 2011

Division	Significant environmental non-compliances and permit violations	Leaks > 100 litres into air, water or ground
Power	0	1
Heat	0	14
Electricity Solutions and Distribution	0	13
Russia	20	0
Fortum total	20	28

EN27 Percentage of products sold and their packaging materials that are reclaimed by category

Not relevant for Fortum.

Compliance

EN28 Monetary value of significant fines and total number of non-monetary sanctions for noncompliance with environmental laws and regulations

In Fortum's European operations, no significant environmental non-compliances or permit violation occurred in 2011 (2010: 7). In the Russian operations, challenges with waste water emissions continued in spite of the improvement actions. The total number of non-compliances (20) increased from the previous year (14).

The amount of fines paid for waste water exceedances decreased and totalled EUR

2,000 (2010:16,400). Improvement actions in 2011 included a detailed environmental dashboard for monitoring the performance and improvement of water treatment. The dashboard contains data on emissions and waste, environmental aspects and environmental fees. The water treatment systems at Chelyabinsk CHP1, CHP2 and CHP3 and at the Tobolsk power plant were improved by deploying chemical treatment and closed loop water systems operation.

In the Distribution business area, the impacts of network operations on ground water areas received attention. In Norway, for instance, a project to change the transformer oil to a biodegradable oil was carried out.

In 2012, numerical Group-level goals will be set on environmental non-compliances and leaks. A special focus will be on the reduction of environmental non-compliances in Russian operations and the reduction of leaks in the Heat Division and Distribution business area. In the Power Division, the target is to maintain the achieved level of zero environmental non-compliances.

Transport

EN29 Significant environmental impacts of transporting products and other goods and materials used for the organisation's operations, and transporting members of the workforce

Fortum reports the greenhouse gas emissions of its company car fleet and the company benefit cars operated by its employees. In 2011, the CO_2 emissions from Fortum's cars were 3,900 tonnes. Fortum also reports the CO_2 emissions from the flights of its employees and offsets for the emissions annually. In 2011, the CO_2 emission from Fortum's air travel was 4,600 tonnes. Together, Fortum's cars and air travel accounted for 0.03% of the total GHG emissions.

The indirect emissions from the transportation of coal, oil and wood fuels have been roughly estimated. The CO_2 emission was of the order 260,000 tonnes in 2011, contributing to less than 1% of Fortum's total GHG emissions.

Transporting fuels and materials by road and rail results in emissions of SO_2, NO_x and particles. Fortum has no relevant information on the transport equipment of the fuel suppliers and therefore these emissions cannot be calculated.

Neighbours of the Inkoo and Meri-Pori coal-fired power plants as well as the local authority have brought attention to dusting of coal when it is offloaded from ships. The origin of the problem was the cold weather in the coal mining area that resulted in a higher dry solids-content of the coal and the consequent dusting. In order to mitigate the local impact, Fortum aims to avoid coal deliveries during the winter season.

Overall

EN30 Total environmental protection expenditures and investments by type

EHS costs

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 2011, Fortum's investments in environment and safety were a total of EUR 82 million (2010: 91 million). The investments were mainly related to air pollution prevention, waste management, and health and safety. Operating costs related to the environment, health and safety were EUR 89 million (2010: 60 million). 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 the calculation principles for EHS expenses and investments are not yet completely uniform throughout Fortum. In 2011, guidelines for the accounting and reporting of EHS costs were developed in order to clarify the EHS cost categories, the evaluation of EHS investments and the estimation of costs of own work. Guidelines will be applied in full from 2012 onwards.

Environmental liabilities

Environmental liabilities in relation to past operations relate to the dismantling of buildings and structures on contaminated land. The main part of the provision is estimated to be used within ten years. In 2011, the provisions for any future remedial costs concerning environmental damage amounted to a total of EUR 12 million.

In 2011, Fortum finalised soil remediation projects in Imatra and Hausjärvi, Finland. Both cases included the clean-up of old dumping areas for municipal waste. The final approval from environmental authorities is still pending. Costs in 2011 were about 30,000 euros, but the total cost of remediation at these sites was over 500,000 euros. Small-scale soil investigations and remediations were implemented also in Lithuania and Sweden.

Fortum has a shared dam liability insurance program in place that covers Swedish dam failures up to SEK 9,000 million.

Nuclear provisions have been described in the economic responsibility indicator EU9.

Social responsibility

Management approach

Labour practices

Fortum's approach to sustainability management is discussed on pages 28–29 and on sustainability governance on pages 91–93. Policy and related instructions to guide labour practices and Human resources (HR) management include: Code of Conduct and Human resources (HR) policy based on Fortum's values and on the international declarations and conventions Fortum endorses. The different subareas of the HR policy have been defined in more detail in Group-level, division or country-specific instructions. The implementation of the policy is monitored through employee surveys, annual performance and development reviews as well as other feedback channels. The Senior Vice President, Corporate HR, is a member of the Fortum Management Team.

The focus areas of Fortum's HR management for 2010–2012 include: development of Fortum's leadership and culture, development and harmonisation of people processes in all countries of operation, enhancement of competence and resource planning, improvement of employer image, and talent and successor planning.

Fortum aims to create attractive career and development opportunities for individuals to continuously grow their professional skills and know-how. Personnel development is supported through annual performance and development reviews, personnel training and internal job rotation.

Employer image development is monitored through employer image surveys and induction programme feedback surveys. In 2011, Fortum was ranked among the top-ten ideal employers in Finland. Among technical students, Fortum ranked the eighth most ideal employer in Finland (2010: 6th) and 26th in Sweden (2010: 34th).

Fortum respects and supports the fundamental human and labour rights as defined by the United Nations Universal Declaration of Human Rights and the core conventions of the International Labour Organisation. Fortum values diversity and fosters 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.

Occupational health and safety

Fortum's safety management is based on laws and regulations. Instructions guiding safety management include Fortum's safety principles, Group-level safety guidelines and EHS requirements, supplemented with division- and site-specific instructions. 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 with the legislation in Fortum's countries of operation.

Fortum's line management is responsible for safety management, and safety performance is a part of Fortum's incentive system. In 2011, the incentive system was harmonised in order to improve performance; accident frequencies, number of fires, leaks and other deviations were included as main elements in defining the incentive pay-ratio.

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 guidelines. There are some 20 Group-level safety instructions, such as instructions for contractor management, incident investigation, electrical safety, asbestos management, EHS integration of newly acquired companies, EHS issues in change management, work permit system requirements and risk assessment practices. Additionally, there are common minimum requirements also for EHS meetings, personal protective equipment and high risk works. Local organisations address their relevant safety issues, such as nuclear power plant safety and dam safety in more detail.

Certified safety management

Fortum's target is to certify all its operations according to OHSAS 18001. At the end of 2011, 60% of Fortum's operations were OHSAS 18001 certified (2010: 27%). Certification covered Power Division's operations, excluding the operation and maintenance activities of Sullom Voe in Great Britain. In the Heat Division, certification covers all operations except some parts of the Estonian and Latvian operations. In 2011, Heat Division's operations in Pärnu in Estonia received certification as well as Heat Scandinavia's operations in Sweden. In January 2012, Fortum Jelgava representing 95% of the operations in Latvia were certified. The goal is to get certification for the Russia Division's operations during 2012. The Electricity Solutions and Distribution (ESD) Division does not have OHSAS 18001 certification. Certification coverage by country is presented on page 4.

Safety targets and performance

Fortum is developing safety management and target-setting based on a principle of continuous improvement. Fortum has defined one Group-level safety target: a lost workday injury frequency of less than one (LWIF <1) per million working hours

for Fortum's own personnel. In addition, all divisions have shared targets for contractor LWIF, total recordable injury frequency for own personnel, fires, leaks, the number of safety observation tours made by managers, safety reporting, and implementation of corrective measures.

Additionally, some key areas are selected annually as focus areas based on performance evaluations. Group-wide safety management focus areas in 2012 are: the further reduction of serious accidents, enhancement of process and electrical safety management systems, full implementation of the Group-level minimum EHS requirements, roll-out of a new incident management system, and precise implementation of the agreed development programmes and actions.

The realisation of safety targets is monitored through monthly, quarterly and annual reporting.

Human rights

Fortum's approach on human rights is described in the Fortum Code of Conduct, Supplier Code of Conduct and Human Resources policy. Fortum endorses the human and labour rights as defined in 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. Fortum has also signed the United Nations Global Compact initiative and has been a registered member since 30 June 2010.

Supply chain

Sustainability is an integral part of Fortum's supplier selection. Fortum wants to conduct business with viable companies that act responsibly and comply with Fortum's Supplier Code of Conduct.

Fortum's Supplier Code of Conduct provides the basic sustainability guidance on what is expected from suppliers of services and goods. It is based on the ten principles of the United Nations Global Compact and is divided into four sections: business practices, human rights, labour standards and the environment.

In 2011, some 75% of the services and goods purchased by Fortum were procured from goods suppliers operating in Europe. Fuel purchases represented 35% of the total volume, out of which about half originated from risk countries. 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.

Fortum revised its monitoring methods for suppliers of services and goods in 2011. Implementation of these revised monitoring methods is a key action item for 2012. A rule calling for supplier screening and the attachment of the Supplier Code of Conduct to any procurement agreement exceeding 50,000 euros is applied. Screening includes a supplier questionnaire and verification of credit. The supplier questionnaire is used to gather general and sustainability information about suppliers, and it helps suppliers to understand Fortum's expectations for conformance with the Supplier Code of Conduct. On the other hand, the supplier questionnaire helps Fortum to identify potential risk suppliers and thus the need for further actions.

Society

The Fortum Code of Conduct guides our management approach to society. Fortum follows good business practices in all of its operations. We compete fairly and ethically and work within the framework of applicable competition laws and Fortum's Competition Guide. We avoid all situations where our own personal interest may conflict with the interest of the Fortum Group. We base our customer relations on honesty and trust. We treat our suppliers and subcontractors fairly and equally and choose them based on merit, and with the expectation that they will consistently comply with our requirements. In all relationships with customers and suppliers, we comply with Fortum's guidelines and ethical principles. Notably, we never accept or give a bribe or other improper payment for any reason. 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 in different ways. 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 of key importance when targeting our strategic aim of becoming the energy supplier of choice. Special attention is paid to the local communities and people around our production plants.

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 Stakeholder engagement section on pages 94–96.

EU21 Management approach to disaster/emergency planning and response; Contingency planning measures, disaster/emergency management plan and training programs, 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. Crisis management is the responsibility of the respective division and line organisation. Testing and updating plans is the responsibility of the respective units. During 2012 there is an initiative led by Corporate Risk Management to ensure dialogue regarding end-to-end plans covering more than one unit or function.

Product responsibility

Fortum's products are electricity, heating and cooling energy. Sustainability aspects relating to electricity and heat production are discussed comprehensively in other sections of this report. Electricity itself does not pose environmental, health or safety risks, but a risk may arise when electricity is being used. Relevant product responsibility aspects to Fortum include product quality, reliability of electricity and heat distribution, customer service and customer privacy. Fortum is under a duty to compensate damages suffered by a customer due to fault or delay in accordance with the Electricity Market Act and the terms of customer agreements. As regards damages caused by electricity, as an owner of the electricity grid, Fortum is subject to strict liability, not dependent on negligence.

Fortum's electricity is to a large extent sold as environmentally labelled product. A guarantee of origin ensures that environmentally labelled electricity is produced

from renewable energy sources according to Directive 2001/77/EC. Verification is done at production plant level on a yearly basis by an external auditor. Information on Fortum's electricity products and prices can be found at: www.fortum.com.

Reliability of power and heat distribution is monitored regularly. Fortum's efforts to continuously improve the reliability of electricity distribution are described on pages 75–76.

Fortum provides a variety of channels for customers to contact and request information, e.g., national toll-free telephone services during working hours, 24/7 feedback channel via internet and social media networks like Facebook and Twitter. SMS text message service has been launched in early 2012 to inform customers immediately about power outages. Our customer service function collects continuously immediate customer feedback after solving various customer errands.

Unbundling training is given regularly to employees working in electricity distribution and sales to ensure high level of customer privacy in electricity business.

Social performance indicators

Labour practices and decent work

Employment

LA1 Total workforce by employment type, employment contract and region and LA2 Total number and rate of employee turnover

In 2011, an average of 11,010 employees (2010: 11,156) worked at Fortum. The biggest number of employees was in Russia, 4,432 employees on average. Subcontractor employees worked at Fortum sites for a total of approximately 1,769,000 days during the year. The figure is based on the job cost estimates and the average hourly rates. The figure has been calculated on the basis of an 8-hour day.

The number of Fortum's permanent employees on 31 December 2011 was 10,379 (2010: 10,307), i.e., 96.3% (2010: 97.4%). The number of full-time employees was 10,109 and part-time 270. The percentage of fixed-term employees was 3.7% (2010: 2.6%).

During the year, 1,230 (2010: 1,052) new employees joined Fortum and 1,427 (2010: 1,954) employment relationships were terminated. Divestments reduced the number of personnel by a total of 122 (2010: 344). There were 47 (2010: 62) employees on international assignment. Departure turnover in 2011 was 13.7%.

PERSONNEL BY DIVISION, 31 DEC.

	2011	2010	2009
Power	1,847	1,819	3,063
Heat	2,504	2,394	2,246
Russia	4,379	4,294	4,090
ESD	1,417	1,487	1,699
Other operations	633	591	515
Total	10,780	10,585	11,613

EU18 Percentage of contractor and subcontractor employees that have undergone relevant health and safety training

The Safety of contractors' employees is as important as the safety of Fortum's own employees. Contractor safety targets are set based on a continuous improvement principle, safety KPIs are measured, and accidents are investigated. Fortum is committed to contractor safety in all aspects of contractor management from contractor selection and job performance to the post-performance contractor evaluation. Corporate-level safety instruction and purchasing organisation's instructions set the requirements.

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, required personnel protective equipment, near-miss and incident reporting, emergency response, inspections, housekeeping, fire protection, first-aid system, 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.

FORTUM'S PERSONNEL STATISTICS FROM 2011, BY COUNTRY OF OPERATION

	Finland	Sweden	Russia	Estonia	Poland	Norway	Other
Personnel at year-end	2,683	2,040	4,376	331	859	139	352
Personnel, average	2,689	2,076	4,432	336	1,009	137	331
Number of new employment relationships	172	157	775	14	31	9	72
Number of employment relationships ended [1]	114	250	694	34	322	6	7
Departure turnover, %	4.2	12.3	15.9	10.3	37.5	4.3	2
Personnel expenses, 1,000 euros	209,462	180,786	79,752	7,426	20,945	13,620	16,620
Per person, 1,000 euros	77.9	87.1	18.0	22.1	20.8	99.2	50.2

[1] *Includes operations sold and outsourced operations*

LA3 Employee benefits for full-time employees

Employee benefits vary between Fortum's operating countries and are in compliance with local legislation. Benefits include, for example, occupational health care, long service awards, and recreational and leisure activities. In 2011, 296 employees had company car benefits.

Fortum encourages its employees to exercise and to enjoy culture. In Finland and Sweden, Fortum employees can join different personnel clubs offering sports-, nature- and arts-related activities. These benefits are mainly for permanent employees. In 2011, Fortum's support for employees recreational and leisure activities in Finland was EUR 416,000. The support in Finland included clubs, fitness and culture vouchers, and activities related to holiday homes. In Sweden, the support for clubs was EUR 120,203. In Russia, employees recreational and leisure activities focused on organised family and sports days; these activities received EUR 148,500 in 2011.

Remuneration

Remuneration at Fortum is directed by the Group's remuneration principles and Fortum's general remuneration and benefits practices. Remuneration in 2011 is discussed on pages 124–127 of the Financials 2011.

Fortum's short-term incentive scheme, i.e., bonus system, supports the realisation of the Group's financial performance targets, sustainability targets, values and structural changes. The system ensures that the performance targets of individual employees align with the targets of their respective division and the Group. All Fortum employees, with the exception of certain personnel groups in Poland and Russia, are covered by the bonus system.

In 2011, a total of 151 employees retired from Fortum. The figure includes age-related, early and disability retirements. Pension arrangements are covered under indicator EC3.

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-specific, and representatives are selected by personnel groups. Group collaboration meetings in Finland are held at least twice a year in conjunction with the Group's financial statements and interim reports.

In Sweden, the system is fundamentally identical. Collaboration between personnel representatives and Fortum management in Sweden 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.

In Estonia, the Working Council convened four times during 2011. The Working Council meets on an as-needed basis.

In other countries of operation, collaboration is being implemented in Councils between personnel representatives and employer representatives. Councils meet either regularly or on an as-needed basis.

As a rule, the Fortum European Council (FEC) convenes once a year. In May 2011, it had participants from Finland, Sweden, Poland, Estonia and Norway. Issues on the Council's agenda include the Group's financial statements, strategy and amendments, future outlook for Group production, employment, productivity and cost structure, and other fundamental changes taking place in the operations, as well as general issues related to the company's practices. In 2011, the FEC members participated in the revision work of the Fortum Code of Conduct.

LA4 Coverage of collective bargaining agreements

Fortum respects its employees' freedom of association and collective bargaining, but 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

Fortum's performance in occupational safety for its own personnel improved clearly in 2011, although the LWIF target was not reached. The LWIF for Fortum's own personnel decreased to 1.6 (2010: 2.4). The result was Fortum's all-time best. Fortum's target is to avoid fatalities and accidents with serious injuries. In 2011, there was one fatal accident for our contractor, and the total number of serious accidents to Fortum personnel and contractors was 11 and decreased slightly (2010: 13).

There was an improvement in other performance indicators as well: the number of accidents resulting in an absence dropped from 45 to 29. However, personnel absences resulting from work injuries increased to 1,134 days (2010: 769) due to some long-term sick leaves. Fortum personnel's total recordable injury frequency (TRIF), which includes also minor injuries that do not lead to an absence, improved from 4.6 in 2010 to 3.5 in 2011.

Fortum's safety management equally encompasses contractors working at Fortum sites. A clear improvement was achieved also in contractor accident frequency; the LWIF for contractors decreased from 5.0 to 3.2. The good safety performance continued in ongoing, large investment projects in 2011. For example, the LWIF for contractors working within the major Nyagan investment project in Russia was 1.1.

In 2011, the proactive indicator targets (safety reports and initiatives, completion of the agreed actions and safety observation tours) were achieved at the Group level.

In 2011, the sickness absence days in

KEY SAFETY FIGURES, 2009–2011

	2011[3]	2010	2009
Lost workday injury frequency, own personnel [1]	1.6	2.4	2.4
Lost workday injuries, own personnel	29	45	37
Lost workday injury frequency, contractors [1]	3.2	5	6.5
Lost workday injuries, contractors	45	43	51
Total recordable injury frequency, own personnel [1, 2]	3.5	4.6	6.0
Fatalities, own personnel	0	1	0
Fatalities, contractors	1	0	2
Number of safety observation tours	15,324	8,790	8,480
Number of improvement proposals and near-miss reports	10,087	4,440	4,080

[1] *Per million working hours*

[2] *Excluding Russia Division*

[3] *Excluding Zabrze and Bytom operations in Poland due to on-going integration process*

Finland were 16,782, in Sweden 12,273, in Russia 30,993 and in Poland 9,606. In 2010, the sickness absence days were collected only for Finland and Sweden, 9,281 days in total. The significant increase in the number of sickness absences in Finland and Sweden from 2010 to 2011 was due to the more specific notice practices and more accurate recording systems. In Poland, the figures may suffer from inaccurancies as the compilation of sickness absence data was not in full compliance with the definition. Fortum's goal is to decrease the sickness absence rate in the long term by monitoring, investigating and eliminating the causes of sickness-related absences.

In 2011, there were 8 (2010:13) cases of occupational diseases. Four cases were still under review at the end of the year and four were determined as not entitled to compensation. Suspected occupational diseases are related mainly to noise and possible exposure to asbestos.

A good performance was achieved also in most of the process safety indicators. There were no INES > 0 incidents at the Loviisa nuclear power plant and no dam safety incidents. However, the number of fires remained at the same level as in 2010. The reduction of fires will be of special focus in 2012.

LA8 Education and counselling to assist workforce members regarding serious diseases

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. Occupational health care participates in various discussions and assessments in the work community. The occupational health care professionals also 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 actions.

In 2011, an average of 2,700 (2010: 2,700) employees in Finland were within the sphere of Fortum's occupational health care. About 80% (2010: 75%) of them used the company's own occupational health care services and about 20% (2010: 25%) used contracted health clinics. The total costs of Fortum's own occupational health care in Finland were about EUR 1.2 million (2010: 1.1 million). The occupational health care costs per person, calculated from the share paid by Fortum, were EUR 560 (2010: 501) in Finland and EUR 92 (2010: 99) in Sweden.

Fortum covers all Swedish, Norwegian, Polish and German employees' occupational health care 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.

Training and education

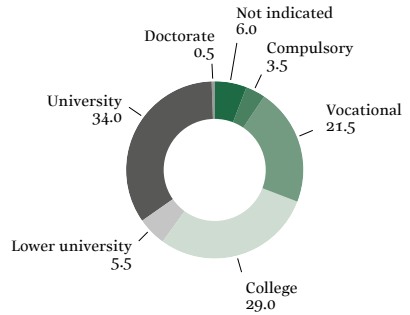
LA11 Programmes for skills management and lifelong learning

Fortum offers its employees several internal training programmes to support the various development needs. During the first half of 2011, Fortum conducted two different types of leadership training programmes, Fortum Manager and Fortum Expert. The Fortum Manager training programme is designed for all supervisors in need of basic skills related to daily management. The Fortum Expert programme is tailored to the experts' needs in managerial, communication and collaboration skills. In addition, Fortum has the Fortum Master training courses, which aim to improve manager readiness in everyday tasks related to leadership and development. The courses also support the Fortum way of carrying out HR practices. The Master training consists of one-day courses, and all the course modules are independent. In addition to Finland and Sweden, some of the Master courses were organised also in the Baltic countries and Poland. In 2011, a total of 347 participants attended the courses, and the number of Master training days totalled 38.

Fortum Forerunner is a trainee programme meant for recent university graduates. During the 18-month-long programme, trainees have the opportunity to work at variable assignments in different business environments and to get acquainted with Fortum's operations and the energy industry. The current trainee programme started in January 2011, and the trainees are from Finland, Sweden, Russia, Poland and Latvia.

Additionally, new employees participate in a standard introduction programme, Fortum Passport. The programme also includes a feedback survey conducted four months after the start of employment. The survey is used to monitor the implementation of the programme and to develop its content.

LEVEL OF EDUCATION, 31 DEC. 2011, PERMANENT EMPLOYEES %



Fortum's Leading Performance and Growth initiative and Leadership Impact programme are discussed on pages 78-80.

LA12 Employees receiving regular performance and career development reviews

Fortum employees in all operating countries are in the scope of the performance and development discussion process. However, the scope varies from individual level to team level reviews. The annual performance and development reviews aim to commit and motivate employees, engage them in the strategy, business goals and operating plans, and improve operational planning, the workplace atmosphere and the flow of information.

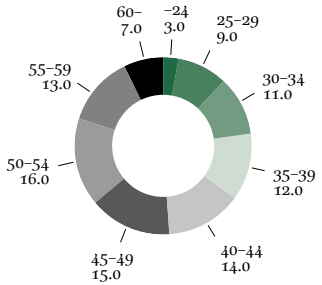
Personal or team goals are set in the performance and development reviews. The achievement of these goals is linked to the employee's incentive bonus. With the exception of the employees of recently acquired businesses, the permanent employees at Fortum are included in the incentive programme. The aim, however, is to gradually implement a Fortum-wide performance and development model also at new Fortum sites.

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

PERSONNEL AGE DISTRIBUTION, 31 DEC. 2011, PERMANENT EMPLOYEES, %



addressed immediately. In Finland and Sweden, Fortum has separate guidelines for workplace harassment and discrimination. In 2011, there were no cases of discrimination reported.

The average age of Fortum's permanent employees in 2011 was 41 years (2010: 44), and the share of employees over 50 years was 30% (2010: 36%).

In 2011, women accounted for 29% (2010: 29%) of Fortum's total personnel. Women accounted for 34% (2010: 27%) of the Group- and division-level management teams. In 2011, the Board of Directors comprised seven members, three including the chairman were women.

LA14 Ratio of basic salary of men to women by employee category

In line with its HR policy, Fortum offers all its employees a competitive incentive system. Salaries and wages are based on laws and agreements, and are compliant with established practices in each country. Salary levels are based on personal work performance, job size, competence grade, and on defined competence requirements. The market situation also has an impact on the salary level. In Finland, the pay equality for men and women in white- and upper-white-collar positions has been monitored since 2005. Comparisons in the 'workers' personnel group have not been possible due to the small group sizes. In 2011 the salary differences between male and female white-collar employees was just under 7 percentage points, on average, and the dispersion was 3–14 percentage points. The differences are partly explained by age and seniority differences. Similar differences in salaries were not observed in the upper-white-collar employee group for either gender. Similar studies have not been made in other countries.

Human rights

Investment and procurement practices

HR1 Investment agreements that include human rights clauses

A sustainability assessment is carried out for all 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 subject to an assessment and approval by Group-level sustainability experts.

In 2011, the investment proposals requiring FMT approval did not include human rights assessment. During 2011, Fortum revised the instructions on investment assessment to also include human rights evaluation.

HR2 Suppliers and contractors that have undergone human rights screening

Fortum's Supplier Code of Conduct is implemented in all Fortum's operating countries and it is included in all purchasing agreements exceeding 50,000 euros. However, the number of suppliers subject to supplier screening and auditing was not available in 2011. Fortum's target is to start publishing this data in 2013.

HR3 Human rights-related training for employees

In 2011, the key purchasing personnel and project managers in Finland, the Baltic countries, Poland and Sweden, 130 people in all, were trained to use the revised supplier pre-selection questionnaire and the new evaluation form.

In addition to the training mentioned above, the internal competence build-up for conducting the Supplier Code of Conduct audits was also started in 2011. Auditor candidates from Finland, Poland and Sweden received 1.5 days of internal training on the requirements of the Supplier Code of Conduct and on how to audit against the requirements, the elements of the audit and the tools to be used. Supplier Code of Conduct audits will be started in 2012 with the target to audit three main risk country suppliers per division.

Non-discrimination

HR4 Incidents of discrimination and actions taken

The equal and fair treatment of employees is a cornerstone of well-being and working capacity. The principles of equal treatment are included in Fortum's HR policy and Code of Conduct, which are followed in all countries in which Fortum operates. 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 disabilities. Any form of harassment is forbidden and addressed immediately. In Finland and Sweden, Fortum has separate guidelines for workplace harassment and discrimination. In 2011, there were no cases of discrimination reported.

Freedom of association and collective bargaining

HR5 Supporting the right to freedom of association and collective bargaining in risk areas

Fortum respects employees' right to freedom of association and collective bargaining as well as the inviolability and integrity of labour union representatives. Unionisation in Fortum is covered under indicator LA4.

Fortum's Supplier Code of Conduct addresses freedom of association and collective bargaining and it is included in all purchasing agreements exceeding 50,000 euros.

Child and forced labour

HR6 Measures taken to eliminate child labour in risk areas and HR7 Measures taken to eliminate forced labour in risk areas

All forms of child labour and forced labour are strictly prohibited and in violation of Fortum's Code of Conduct. Fortum's Supplier Code of Conduct also prohibits all forms of child and forced labour, and it is included in all purchasing agreements exceeding 50,000 euros.

Society

Community

SO1 Managing impacts of operations on communities

Open, honest and proactive communication and listening to our stakeholders are of key importance in our strategic aim of becoming the energy supplier of choice. Special attention must be paid to the local communities and people around our production plants.

Fortum conducts environmental impact assessment (EIA) as required by legislation. Stakeholder consultation is part of the EIA process. The environmental impact assessment programmes and report are publicly available. In addition, relevant stakeholders are heard in all licensing procedures.

The Loviisa nuclear power plant publishes a stakeholder magazine called "Naapurina voimala" and holds regular discussions with the representatives of the city of Loviisa.

Examples of local community projects are available at www.fortum.com.

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. The assessment of compliance risks assessment is periodic and documented, with the Fortum Management Team having oversight of the process. A systematic compliance risk assessment is included in business plans, and follow-up is part of the business performance review. Line management reports regularly on compliance activities to the Fortum Management Team.

The ranking of Fortum's operating countries in the Corruption Perceptions Index 2011 by Transparency International is as follows: Finland 9.4, Sweden 9.3, Norway 9.0, Germany 8.0, United Kingdom 7.8, Belgium 7.5, France 7.0, Estonia 6.4, Poland 5.5, Lithuania 4.8, Czech Republic 4.4, Latvia 4.2, India 3.1 and Russia 2.4.

SO3 Anti-corruption training

Fortum's anti-corruption principles have been included in the Fortum Code of Conduct since 2007 with all Fortum employees participating in the Code of Conduct training. The revision of the Fortum Code of Conduct began in 2011, see page 29. In that connection the revised anti-bribery and conflict of interest instructions were approved by the Fortum Management Team. The Group-wide roll-out of the revised Code of Conduct and the new business ethics instructions, including the revised anti-bribery and conflict of interest instructions, will take place in 2012.

The Fortum Code of Conduct e-learning tool will have a key role in the roll-out, and every Fortum employee is expected to pass the training through the e-learning tool. The material will be published in 10 different languages.

SO4 Actions taken in response to incidents of corruption

Fortum has always had a strong focus in the prevention of any type of corruption. In connection with the revised Fortum Code of Conduct, Fortum has reviewed its procedures to ensure the prevention, oversight, reporting and enforcement based on the requirements prescribed in international legislation. For appropriate business ethics compliance management, Fortum ensures and arranges:

- continuous training and communication
- procedures and reporting
- appropriate controls
- line management has always the primary responsibility for ensuring compliance
- compliance risks assessment is periodic and documented with the Fortum Management Team having oversight of the process; a systematic risk assessment is included in business plans, and follow-up is part of the business performance review.

Line management regularly reports on compliance activities to the Fortum Management Team, including the President and CEO. The Audit and Risk Committee annually receives a report on compliance activities. The Fortum Code of Conduct and compliance topics and instructions are communicated through internal and external communication channels. The communication is made applying the tone from the top management principle and following the principles of transparency in sustainability reporting.

However, if incidents of corruption occur, Fortum has internal procedures to deal with the incident professionally, in accordance with applicable laws and with respect to the rights and personal integrity of the persons and parties involved. Thus, 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 is considered. 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.

Public policy

SO5 Public policy positions and participation in public policy development and lobbying

As an energy sector expert, Fortum feels obligated to express its views on energy policy issues and to offer its energy sector expertise also to decision-makers and various organisations. Fortum engages in an active dialogue about key issues in the energy sector and publishes position papers on significant topics. In 2011, Fortum has published country specific energy policy reviews regarding Finland, Sweden and Poland. Read more at www.fortum.com/publicaffairs.

In December 2011, Fortum registered to the joint transparency register set up and operated by the European Parliament and the European Commission. The register provides parties with information about persons engaged in activities aiming at influencing the EU decision-making process, which interests are being pursued and what level of resources are invested in these activities.

Fortum's public affairs activities in 2011 are discussed on page 95.

SO6 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.

Anti-competitive behaviour

SO7 Legal actions for anti-competitive behaviour, anti-trust, and monopoly

In Russia, there have been two court cases decided in 2011 on the alleged abuse of dominance under Russian utility legislation by the heat division of Fortum Russia. In both cases, the allegations were dismissed.

Compliance

SO8 Fines and sanctions for non-compliance with laws and regulations

No such cases in 2011.

Product responsibility

Public health

Fortum's products are electricity, heating and cooling energy. Electricity itself does not pose environmental, health or safety risks, but a risk may arise when electricity is being used. Relevant product responsibility aspects to Fortum include product quality, reliability of electricity and heat distribution, customer service and customer privacy.

Access

EU28 Power outage frequency and EU29 Average power outage duration

Fortum uses international indicators (SAIDI and CAIDI) to measure electricity distribution reliability. In 2011, the system average interruption duration indicator (SAIDI) per customer was 565 minutes (2010: 104). The customer average interruption duration indicator (CAIDI) was 240 minutes (2010: 62). The increased interruption durations were due to the severe Christmas storms in Finland and Sweden.

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_2 emissions and the amount of radioactive waste. In 2010, Fortum Markets Oy sold electricity to residential and business customers. Electricity was acquired from Nord Pool. Residential customers in Finland received 100% hydro or wind power. In Sweden customers can choose between electricity produced with nuclear, hydro or wind power. In Norway customers are offered CO_2 -free product produced with 100% renewable energy. Nuclear and hydropower was delivered mainly to business customers. In addition, Fortum Markets has long-term electricity contracts with large business customers, which received so called mixed electricity.

The origin of sold electricity in 2010 was:

- 42.5% renewable energy (34.5% was sold as environmental electricity)
- 49% nuclear power
- 8.5% fossil fuels

Emissions from the produced electricity:

- Accumulation of used nuclear fuel: 1,449 mg/kWh
- Carbon dioxide (CO_2): 62 g CO_2/kWh.

Due to the finalisation of the Nordic statistics figures for 2011 will be available in summer 2012.

PR5 Customer satisfaction

Fortum monitors the satisfaction and loyalty of private and business electricity customers through regular EPSI customer satisfaction surveys in Finland, Sweden and Norway. In 2011, Fortum reached its all-time best score in the annual EPSI rating in Finland. At the same time, the average scores of the other large energy companies and the industry dropped. Looking at different factors, Fortum received the best score in Finland in product quality, and, in Sweden and Norway, in meeting customer expectations. In Finland and Sweden, Fortum received the lowest scores in customer loyalty and, in Norway, in price value.

At the end of 2010 and beginning of 2011, Fortum developed a new common stakeholder and customer satisfaction survey - the One Fortum survey. The survey aims to bring all Fortum's stakeholders and divisions under the same umbrella and to measure Fortum's reputation and customer satisfaction in a unified way throughout the organisation. The One Fortum survey replaced many previously separate reputation and customer satisfaction surveys. The survey covers several stakeholder groups, including customers, governmental bodies, capital markets, non-governmental organisations and Fortum's personnel. In Finland and Sweden, the survey covers also the general public.

The survey was conducted for the first time in spring 2011 in Finland, Sweden, Norway, Poland, the Baltic countries and Russia. For the Power Division, the survey also covered customers in other countries, such as Germany and Great Britain.

The results of the One Fortum survey are reviewed by top management at Fortum and utilised in business planning throughout the organisation, both in the divisions and in the corporate functions.

The severe Christmas storms in Finland and Sweden and the widespread and long power outages are expected to influence Fortum's customer satisfaction index. Fortum is working determinedly to raise the customer satisfaction and loyalty back to the level before the year end 2011.

Marketing communication

PR7 Non-compliance with marketing communications regulations and voluntary codes

Finland's Energy Market Authority required Fortum Markets Oy to take actions to correct its procedure in violation of the Decree on Verification and Notification of Origin of Electricity. According to the regulation, the sales promotion material regarding 100% hydropower was missing the notification on electricity stock exchange or the amount of electricity purchased outside the European economic area in relation to the total amount of electricity sold. Fortum Markets Oy has performed corrective actions and has reported those to Energy Market Authority. This non-compliance case took place in autumn 2010 and the Energy Market Authority gave its decision in March 2011.

In Sweden, Fortum Power and Heat AB received a judgment from the advertisement ombudsman about misleading advertising in violation of the article 5 of International Chamber of Commerce regarding advertising and communication. The advertisement concerned Bra Miljöval, which is a label for electricity produced from renewable energy sources. There were no fines for this non-compliance case.

Compliance

PR9 Fines for non-compliance concerning the provision and use of products and services

No such fines in 2011.

Independent assurance report

To the Management of Fortum Corporation

We have performed a limited assurance engagement on the Fortum Corporate Sustainability report for the reporting period of January 1, 2011 to December 31, 2011.

Management's responsibility

Management is responsible for the preparation of the Corporate Sustainability report 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. This responsibility includes: designing, implementing and maintaining internal control relevant to the preparation and fair presentation of the Corporate sustainability report 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 2011 Fortum Corporate Sustainability report 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 on page 91–96 of the Corporate Sustainability report.

Auditor's responsibility

Our responsibility is to draw a moderate assurance conclusion on the Fortum Corporate Sustainability report based on our engagement. We conducted our engagement in accordance with International Assurance Standard ISAE3000. In addition, we have used the criteria in AA1000AS (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 about whether the Fortum's Corporate Sustainability report is free of material misstatement.

We did not perform any assurance procedures on the prospective information, such as targets, expectations and ambitions, disclosed in the Corporate Sustainability report. Consequently, we draw no conclusion on the prospective information.

A limited assurance engagement with respect to a Corporate Sustainability report involves performing procedures to obtain evidence about the information disclosed in the Corporate Sustainability report. 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:

- Review of the processes and systems for data gathering, amongst others the aggregation of the data as included in the Corporate Sustainability report;
- 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 Corporate Sustainability report;
- Conducting interviews with senior management responsible for Corporate Sustainability at Fortum;
- Performing analytical review procedures;
- Inspecting internal and external documentation and verifying to what extent these documents and data support the information included in the Corporate Sustainability report;
- Evaluating whether the information presented in the Corporate Sustainability report is in line with our overall knowledge of Corporate Sustainability at Fortum.
- Site visits to selected sites in Poland and Russia to review compliance to reporting policies and review the process of reporting;
- Evaluating the application of the AA1000APS principles;
- 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 moderate 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 conclusion:

- Inclusivity - Fortum has an extensive stakeholder inclusiveness process and throughout this process Fortum has identified a broad range of relevant key stakeholder groups. We encourage Fortum to enhance the presentation of the relation between Stakeholder

dialogue, strategy and identification of key issues and targets.

- Materiality – Fortum has implemented a systematic process in determining what issues are important and material for Fortum´s stakeholders. We recommend that Fortum further emphasizes the presentation of this relation between materiality for each stakeholder group.
- Responsiveness – The report addresses well the specific issues and how Fortum has managed and responded to those issues. We recommend Fortum to develop the presentation of the organization's performance in accordance with the wider context of GRI sustainability context principle, in order to further illustrate a balanced view to each stakeholder group.
- Other recommendations – The data for the Sustainability Report is processed and collected by several units. We encourage the company to further improve and develop the central coordination process and related internal controls in order to further develop the systematic and efficient management of the reporting process.

Our independence and competences in providing assurance to Fortum

We complied with Deloitte's independence policies which preclude us from taking financial, commercial, governance and ownership positions which might affect, or be perceived to affect, our independence and impartiality and from any involvement in the preparation of the report. We have confirmed to Fortum that we have maintained our independence and objectivity throughout the year and in particular that there were no events or prohibited services provided which could impair our independence and objectivity.

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 the Fortum Corporate Sustainability report for the year from January 1, 2011 to December 31, 2011, 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.

Espoo 12.3.2012

Jukka Vattulainen
Authorized Public Accountant

Lasse Ingström
Authorized Public Accountant

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Deloitte.

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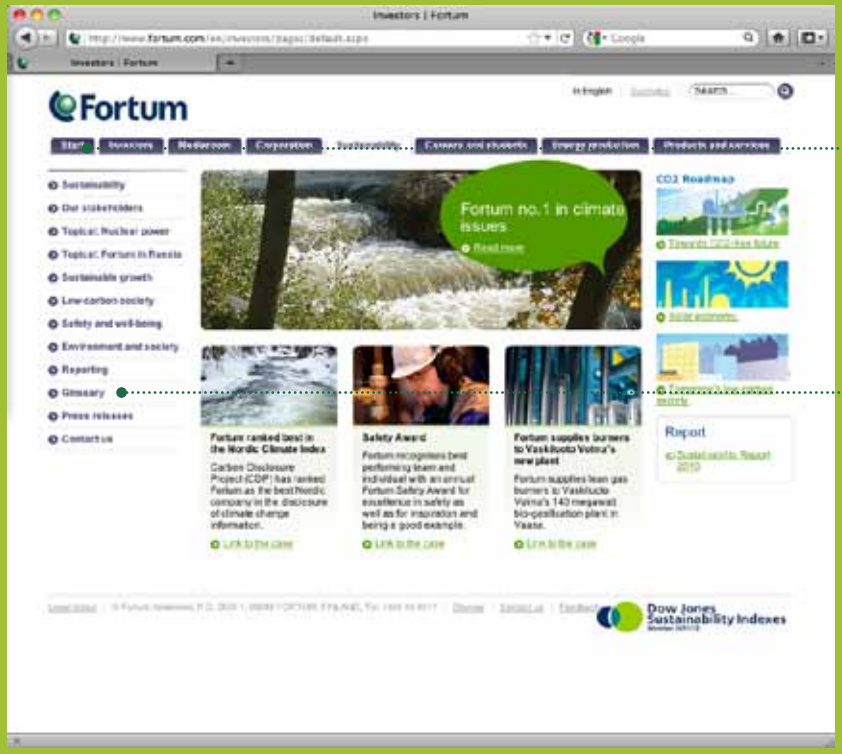
Feedback

We welcome all feedback on the report at sustainability@fortum.com.

Information online



Sustainability information

Glossary with the abbreviations and terminology used in the report

Fortum's 2010 Annual Report package (consisting of Review of Operations, Financials and Sustainability Report) was placed 4th in the global annual report ranking by e.com's Report Watch.

SUSTAINABILITY REPORT 2011

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At Fortum we believe that energy will have to be produced and consumed in a smarter way in the future. In our view, the energy system will gradually move from conventional energy production and fossil fuels towards Solar Economy, where most of the energy is sourced directly or indirectly from the sun.

This Sustainability Report covers Fortum's performance in 2011 and presents Fortum's view on the future energy system with the theme "Towards Solar Economy". The report also describes how the company generates long-term profitable growth and engages with different stakeholders. The report follows the Global Reporting Initiative's (GRI) G3.1 Guidelines. In the GRI Index Fortum discloses indicators relevant to the company and its performance in 2011. Fortum's reporting follows the GRI Application Level B+.

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