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.

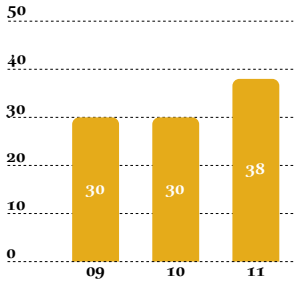
Fortum has been active in wave energy development since 2007, researching both offshore and nearshore technologies in demonstration plants in Sweden and Portugal. Thus, studying wave power's potential is a significant step in the transition towards Solar Economy.

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).