

GLOSSARY

Availability Actual electricity generation capability in relation to the maximum possible generation.

CHP Combined heat and power plant. A plant that generates heat and electricity in the same process.

CCS Carbon Capture and Storage – sequestration and storage underground of carbon dioxide that is emitted in the combustion of fossil fuels.

CO₂e Carbon dioxide equivalent. The internationally recognised measure of greenhouse gas emissions. Indicates the amount of carbon dioxide with the same climate impact of other greenhouse gases.

CSR Corporate Social Responsibility – How a company, on a voluntary basis, integrates economic, social and environmental concerns in its business activities and in contacts with its stakeholders.

Deep repository Underground facility for the final disposal of spent nuclear fuel. See also SKB's website <http://www.skb.se>.

Deregulation Abolishing monopoly rights and obligations to open up for competition. Used here as a synonym for liberalisation.

Derivative instruments Financial instruments where the value or change in value is derived from an underlying instrument. Examples of derivative instruments include options, forwards and swaps. Derivative instruments are often used in risk management.

DSO Distribution System Operator. Responsible for operating, ensuring the maintenance of and developing the distribution system in a given area (compare with TSO).

EEX European Energy Exchange, in Germany.

Electricity spot market Short-term physical trading in electricity on an exchange.

EPD Environmental Product Declaration. A system based on certified environmental declarations.

EU 27 The 27 Member States constituting the European Union following the enlargement on 1 January 2007.

Ex-ante tariff regulation The approval of tariffs prior to implementation.

Ex-post tariff regulation Tariffs are examined by the regulator after implementation, if necessary.

Forward market A market in which buyers and sellers agree on a fixed price for the future delivery of an underlying instrument, such as electricity. (See also Derivative Instruments.)

Green Certificates/electricity certificates Tradeable certificates issued for renewable energy. Called electricity certificates in Sweden.

Gross capacity The electrical power that is delivered directly from a plant's generator.

IAEA International Atomic Energy Agency – the UN's nuclear energy agency.

Installed capacity Production capacity of a plant according to design data, normally measured in megawatts (MW).

IPCC The UN's Intergovernmental Panel on Climate Change.

ISDA agreement A bilateral general agreement prepared in accordance with guidelines established by the International Swap Dealers Association. The agreement regulates the parties' legal obligations in derivative transactions with each other.

ISO 14001 International standard for environmental management systems.

Kyoto Protocol International agreement to reduce greenhouse gas emissions.

Local network An electricity network in Sweden within the 0.4–20 kV range.

Margin call Marginal security that the holder of a derivative position must pledge to cover the credit risk of its counterparty (OTC or exchange)

Merit order The order in which capacity is put into use.

Net capacity The electric power a plant delivers to connected networks, i.e., gross capacity less the plant's own electricity use.

Nord Pool The Nordic electricity exchange.

NO_x A collective term for various oxides of nitrogen.

NTPA Negotiated Third Party Access. Access to a network granted on the basis of bilateral negotiations between the network owner and the network user.

OTC Over the Counter. Trading (directly or via a broker) outside the official exchanges in physical and financial contracts.

Oxyfuel combustion Combustion of fossil fuel in pure oxygen.

POLPX The Polish electricity exchange, Towarowa Gielda Energii.

Post-combustion Separation of CO₂ after combustion.

PSE Polskie Sieci Elektroenergetyczne – Polish Power Grid Company.

Regional network An electricity network in Sweden within the 40–130 kV range.

Renewable energy sources Non-finite energy sources such as hydro power, biofuel, wind, solar power, tidal power, wave power, geothermal power.

SKB Svensk Kärnbränslehantering AB, the party responsible for managing radioactive waste in Sweden.

SO₂ Sulphur dioxide.

Spot market A market where trade is conducted with immediate delivery.

Swap A financial instrument that is a combination of spot and forward transactions, a type of financial exchange agreement.

Thermal power Electricity generated via a heating process, such as a gas turbine or a steam process in a coalfired or nuclear power plant (compare with CHP).

TSO Transmission System Operator. Responsible for operating, ensuring the maintenance of and developing the transmission system in a given area (compare with DSO).

Unbundling Legal separation of transmission and distribution from other activities of a company (generation and sales).

Value chain Process for creating value. Within the electricity sector this includes the generation, transmission, distribution, trading and selling of electricity.

Volatility A measure of how the price of a commodity varies over a particular period.

Energy terms

Units of power

Power is energy per unit of time

Power is expressed in Watts (W)

1 kW (kilowatt) = 1,000 W

1 MW (megawatt) = 1,000 kW

1 GW (gigawatt) = 1,000,000 kW

Units of energy

Energy is power multiplied by time

1 kWh (kilowatt hour) = 1 kW expended over an hour

1 MWh (megawatt hour) = 1,000 kWh

1 GWh (gigawatt hour) = 1,000,000 kWh

1 TWh (terawatt hour) = 1,000,000,000 kWh

Voltage

1 kV (kilovolt) = 1,000 volt (V)

VATTENFALL'S HISTORY



Olidan, on the Göta River, was one of the first hydro power stations built from 1909–1916 by the newly formed Swedish State Power Board.

1909 The restructuring of Trollhätte kanal- och vattenverk to Kungliga Vattenfallsstyrelsen (Swedish State Power Board) marks the birth of Vattenfall. The Swedish state had bought the water rights in Trollhättan a few years earlier and was now taking an active involvement in this emerging electricity generation technology.

1909–1916 The first large hydro power plants – Olidan, Porjus and Älvkarleby – are built.

1951 Inauguration of the Harsprånget hydro power plant, the world's largest hydro power plant in many respects. During the same year, the world's first 400 kilovolt transmission line is put in operation, stretching from northern Norrland to Hallsberg in Central Sweden.

1952 The entire Swedish national electricity grid is hooked together.

1954 Vattenfall commissions the world's first commercial high-voltage direct current line – between the mainland and the island of Gotland.

1975–1976 Vattenfall's first two nuclear reactors, Ringhals 1 and 2, are commissioned. During the 1970s and '80s, twelve reactors were built across Sweden, of which seven are owned by Vattenfall.

1992 Vattenfall is transformed from a state enterprise to the limited liability company Vattenfall AB. Responsibility for the national grid – the Swedish high-voltage network – is transferred to the newly formed state authority Svenska Kraftnät.

1995 Vattenfall's board charts out an international growth strategy for Vattenfall.

1996 The Swedish electricity market is deregulated. The electricity grid operations are legally separated from electricity generation and sales.

European expansion

1996 Vattenfall's international expansion is initiated in 1996 through the acquisition of Hämeen Sähkö, a Finnish electricity distribution company. A representative office is opened in Hamburg, and Vattenfall begins working in the German market through the joint venture company VASA Energy.

1998 The German electricity market is deregulated in April.

1999 Vattenfall agrees to acquire 25.1% of the shares in HEW from the City of Hamburg, with an option for the city to sell another 25.1% to Vattenfall. The Barsebäck 1 nuclear reactor is decommissioned following a decision by Swedish parliament.

2000 In January, 55% of the Polish heat production company EW is acquired in Warsaw, Poland. In August an agreement is signed with E.ON to acquire a majority shareholding in Berlin's energy company, Bewag. However, the deal is blocked by the US company Southern Energy (now Mirant).

2001 In February a 32% stake is acquired in the Polish distribution company GZE. In May Vattenfall becomes a majority owner in HEW through share purchases from E.ON and Sydkraft. Also in May, HEW acquires the electricity generator VEAG, which also owns the electricity grid in eastern Germany, and the lignite producer LAUBAG.

2002 In January Vattenfall acquires all of Mirant's shares in Bewag. Vattenfall's various acquisitions in Germany are gathered under the name Vattenfall Europe AG, which is formally established in August through the merger between HEW and VEAG, including LAUBAG. Vattenfall thereby becomes Germany's third-largest electricity generator.

2003 In January/February, Bewag is merged into Vattenfall Europe AG. Vattenfall increases its stake in the Polish company EW to 70% and in GZE to 54%.

2005 In April, 35.3% of the shares in the Danish company Elsam A/S are acquired. The nuclear reactor Barsebäck 2 is closed 31 May. In August, Vattenfall announces that it has gained possession of more than 95% of the shares in Vattenfall Europe AG and initiates compulsory redemption of the minority owners' shares.

2006 On 1 January the local German brands HEW and Bewag, and the Polish brands EW and GZE, are replaced with the Vattenfall brand. Vattenfall increases its ownership in both Polish companies to 75%. On 1 July a number of Danish wind power and combined heat and power assets are acquired from the Danish company DONG in exchange for ownership stakes in Elsam A/S and I/S Avedøre 2. Construction begins of a pilot Carbon Separation and Storage plant at Schwarze Pumpe.

2007 The Lillgrund wind farm, with 48 turbines, is commissioned and begins delivering electricity at the end of the year. In December the decision is made to merge Business Group Europe and Business Group Poland into the single Business Group Central Europe.

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