

Storuman bioenergy combine



Sweden's most modern bioenergy combine

The bioenergy combine in Storuman is Skellefteå Kraft's largest project of its kind so far. The plant is the result of the company's development work within environmentally friendly energy production and builds on state-of-the-art technology for the production of district heating and renewable electric power. Skellefteå Kraft also produces the market's most eco-friendly biopellets, made in a process completely free of fossil fuels.



The production of bioenergy forms a natural part of the unending energy cycle. By promoting the development of bioenergy technology, Skellefteå Kraft is contributing to energy production which is sustainable in the long term.

With its vast experience within environmentally friendly energy production, Skellefteå Kraft is one of the driving forces behind the development of modern bioenergy technology. The plant in Storuman became operational in the autumn of 2008 and is considered the next generation of bioenergy combines. The company opened its bioenergy combine Hedensbyn in Skellefteå in 1996, with market-leading solutions for efficient and eco-friendly bioenergy production. The experience from Hedensbyn formed the basis for much of the modern technology in Storuman, including the energy-efficient steam kiln technology and a method for integrating this with a combined power and heating plant powered by biofuel.

Unique energy efficiency

This process was developed for Storuman and is a world-first in terms of the efficient handling of the bioenergy raw material. The bioenergy combine consists of a combined power and heating plant for the production of district heating and renewable electric power as well as a biopellet factory. By integrating both of these facilities, an energy efficiency of 98 per cent is achieved.

The plant uses mainly biofuel in the form of by-products from the region's sawmills, forests and farmlands.

Continuing development of steam kiln technology

The raw material used in pellet production has a moisture content of 50 per cent prior to being fed into the pressurized steam kiln. When the raw material has reached a suitable moisture content, it is then sent to be made into pellets. The principal components of a combined heating and power plant are a boiler, a steam turbine with a generator and a heat exchanger for district heating. Steam is produced in the boiler at a high pressure and temperature. First it is led to a turbine that drives a generator, which in turn generates electricity. The steam is then led away to a heat condenser, where it warms the water used for district heating. Steam is also extracted from the turbine to provide heat in the drying process. In total, the combined power and heating plant generates around 48 GWh of electricity and 40 GWh of heat for district heating every year.

Environmental benefits

An important reason why the company chose to establish a new energy combine in Storuman is the easy access to raw biomaterial. The environmental benefits from exploiting the plant's proximity to the raw material, sourced from the region's forests and sawmills, include reduced transportation distances, thus helping to minimise overall environmental impact. Local forest owners also improve their profitability by contributing raw materials to bioenergy production when thinning out their forest stands.



FACTS Storuman bioenergy combine

ONLINE	2008
BIOENERGY COMBINE	32 MW boiler 8 MW steam turbine 16 tonne/hr biopellets
ANNUAL PRODUCTION	40 GWh heat 48 GWh electricity 105,000 tonnes biopellets



Power, Reliability, Environmental Responsibility and Development

Skellefteå Kraft is one of Sweden's largest producers of electric power with its own hydroelectric energy resources. With our own expertise and continual development, we create quality, confidence and competence within bioenergy technology and processes, as well as wind power and other areas. This means we are able to offer our customers value-for-money, long-term, eco-friendly energy solutions as well as safe and secure energy delivery. Skellefteå Kraft AB is wholly owned by the municipality and has five business areas: Electric power, Electric networks, Heating, Real estate properties and Communication and it has the staff to support these business areas. Skellefteå Kraft consists of 485 employees. The turnover during the year of 2007 was SEK 3,076 million.

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