

Data:

Boiler type:	CFB (Circulating Fluid Bed) with reheating
Fuel input power:	170 MW
Steam pressure:	171/40 bar
Steam temperature:	540 C
Boiler efficiency:	91%
Flue gas condensation power:	48.5 MW
Flue gas cleaning:	Textile/bag filters for separation of dust. Calcium oxide admixture for reduction of sulphur. Ammonia injection for reduction of nitric oxides Catalyser for reduction of nitric oxides and residual ammonia.
Estimated operational time:	8000 hrs/year
Fuel demand:	1060 GWh/year (approx. 1 100 000 m ³ /year)
Fuel:	Forestry waste (branches, tops and needles), saw mill waste, recycled wood, peat, coal and oil.
Fuel transport:	Road, boat or train
Fuel supply:	200 m ³ biofuel per hour in full operation



BIOFUEL

- FOR A BETTER ENVIRONMENT



A long-term environmental investment



The conversion from coal to biofuel began with the construction of Boiler 5 in 2000. From 2001 we have continued to replace coal with peat in Boiler 4.

Powerful motives

Since the combined power and heating plant was built at the end of the '60s, emissions of sulphur, nitric oxides and dust have reduced significantly and are today almost non-existent. The advanced purification plants remove 97% of all sulphur dioxide and approximately 90% of all nitric oxide that arises as a result of combustion. The air in Västerås is therefore very clean compared to other towns.

Effective purification

The purification of dust and heavy metals is also very effective. Indeed, 99.7% of all dust is removed. The ashes from firing are processed and reused as cement stabilised materials in building and construction works. When the new biofuel-fired boiler was put into operation at the combined power and heating plant, our contribu-



tion to the greenhouse effect was significantly reduced. When fossil fuels such as coal and oil are burned, carbon dioxide that would not normally be formed in the ecological system of today is released. If we cut down a tree and burn it up then carbon dioxide is also released when it is burned. But that carbon dioxide is, so to speak, part of today's living ecological

system. The carbon dioxide that is released when biofuels are burned is in turn taken in by new trees that are growing. This is the greatest difference between fossil fuels and biofuels. That is why biofuels are not regarded as contributing to the greenhouse effect. Mälarenergi concentrates on burning up wood pellets, peat and pine tar oil. That is why all district heating produced at the combined power and heating plant in Västerås comes from biofuels.

Maximum utilization

Another of the boiler's subtleties is that it can be connected to the existing turbine in Block 4. By doing this it can be used to its maximum capacity.

All monitoring and management takes place in the heating and power plant's control room, which also controls the rest of the production in the combined power and heating plant.



Even better for the environment

There are powerful motives for Mälarenergi having built a biofuel-fired boiler. The first motive is the environmental aspect. By firing with biofuel we reduce the emission of carbon dioxide by a third. It is important that we do not increase the carbon dioxide layer over the Earth. The layer that keeps in heat and contributes to the greenhouse effect. Secondly, it is important to have a plant that contributes towards lower energy taxes. Since 1991, the group has paid approximately SEK 1.5 billion in carbon dioxide tax. Through the new bioboiler we save approximately SEK 100 million each year based on the present taxation rules.

