

Waste heat becomes renewable electricity in Hofors

By capturing the waste heat from the steel processes of OVAKO Steel in an accumulator tank and using the biomass-fired boiler more efficiently, Hofors Energi is able to produce more electricity. The measure has led to increased energy production, reduced use of oil and lower carbon dioxide emissions.

The project is a good example of waste heating being able to replace fossil fuels in energy production and at the same time reducing emissions of greenhouse gases.

With support from the Local Investment Programme (LIP), Hofors Energi rebuilt the facility of OVAKO Steel (formerly SKF) so that it could make use of the waste heat from the steel mill. The actions taken included installation of a control system for the supply of waste heat. In addition to this, an accumulator tank of 8 500 m³ was installed. The aim was to obtain more efficient electricity production, more efficient energy use, reduce the use of fossil energy and reduce discharges of cooling water to the River Hoån.

POSITIVE ENVIRONMENTAL AND ECONOMIC IMPACTS

- Reduced emissions of carbon dioxide (around 1 400 tonnes/year).
- Reduced use of heavy oil (around 100 m³/year).
- Reduced thermal load on the River Hoån.
- Increased production of electricity (1 500 MWh/year).

Photograph: Claes Eriksson



IMPLEMENTATION

The measures were taken at the industrial site of OVAKO Steel in Hofors and among other things comprised installation of an accumulator tank, the “thermos”, for recycling and storage of the waste heat from air compressors and steel production. In addition, a control system was installed for the supply of waste heat and optimisation of operation of the various boilers and the sources of waste heat for maximum utilisation of the “thermos”. The aim was to use as much waste heat as possible, not to need to run the oil-fired boiler and to be able to produce more electricity with the biomass-fired boiler.

POTENTIAL AND FUTURE BENEFIT

District heating systems reduce air pollution locally, make it possible to utilise waste heat from other operations and make the production of combined heat and power possible. District heating systems that use waste heat utilise a resource that would otherwise have gone to waste, and have significant positive environmental and climate effects. As urbanisation increases globally, the conditions for expanding district heating are improving.

WHY BEST PRACTICE

The accumulator tank provides opportunities for other energy-intensive industry to become established on OVAKO's industrial site. The waste heat from that industry can then be recycled instead of being cooled away. The accumulator tank also provides opportunities for other heating projects with a low temperature need, for example floor and ground heating.

The actions also produced such good results while the project was in progress that a decision was made to expand and invest in another accumulator tank for steam. The possibility of further energy solutions means that the measures have yielded greater environmental benefit than planned. Hofors Energi supplied regular information on the project during the programme period, including the households in the municipality.

FOR FURTHER INFORMATION

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Fjärrvärmebyrån and Hofors Energi.

Further information on Best Practice:
www.swedishepa.se/bestpractice
www.naturvardsverket.se/mir

FACTS

LIP Hofors 2002
Action Nos 6, 8
Environmental investment: SEK 17.7m
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