

Biomass CHP reduces CO₂ emissions



Project manager Josef Amrhein on the high-pressure steam boiler of the biomass heating plant. © Migros

The energy supply system was renewed and extended as part of the expansion of the Migros operating centre in Dierikon, located in the Canton of Lucerne. In this M-climate protection project, a biomass CHP plant produces warm and cold air as well as renewable electricity. Thanks to the reduced need for power from the normal power grid, greenhouse gas emissions normally produced due to resource and energy consumption for electricity generation are avoided.

Around 8,000 tons of waste wood in the form of wood chips are burned in the new biomass CHP plant each year. The heat produced is used for heating the Migros operating centre and adjacent buildings and also provides hot water. Based on the principle of combined heat-power-cooling (CHP), some of the heat is used for cooling and to produce electricity. Hot steam is produced from the warmth generated from biomass incineration which is then used to generate electricity via a steam turbine. With an output of 500 kW, the turbine generates enough electricity for its own requirements and for feeding surplus electricity into the grid. Another portion of the heat is used for cooling production halls and cold stores - with the help of a so-called absorption chiller. The new plant covers a large portion of the heating, electricity and cooling needs of the operating centre with wood, a CO₂-neutral energy source.

Migros Lucerne uses an holistic energy concept for its operations centre with waste wood serving as an energy source for heat, electricity and cooling.

**Kurt Odermatt, Head of Technology and Environment,
Migros Cooperative, Lucerne**

With investment costs of around ten million Swiss Francs, construction of the new plant was more expensive than a standard solution and also entailed greater risk. The M-climate fund therefore provided the project

Project type:

Biomass

Project location:

Dierikon, Switzerland

Project status:

In operation, exclusive

Annual CO₂ reduction:

750 t

Situation without project

Procurement of unspecific electricity

Project standard

VER

Partner

MIGROS

with a one-off investment as well as an annual contribution towards the operating costs.

This project contributes to 3 SDGs:



6,000 MWh of renewable electricity and 8,900 MWh of clean cooling energy produced.



Innovative combined heat, power and cooling (CHCP).



Purchase of 8,500 MWh consumer electricity avoided.