HighEFF

Case study, industrial cluster sector

External Utilization of waste heat

Investigate the utilization of low temperature waste heat from e.g. aluminum plants externally in food production.

Analyse the potential production facility size based on a reference value of 100 GWh heat available, distributed evenly over the year.

Investigate the market situation for the tomato production from greenhouses (the following values), fish production, and insect production.

Potential savings*:

75 % Less CO_2-equivalents/yr	Reduction in water consumption	Reduction in dependency on food imports

*Assumptions:

- Tomato production in the Netherlands (with CHP) with a CO_2 intensity of 1.1 kg CO_2/kg tomatoes as reference. A large part of tomatoes consumed in Norway are produced in the Netherlands.
- Assuming that 93 % of emissions of Norwegian greenhouses are related to heating the greenhouse and the current intensity is 4 kgCO_2/kg tomatoes in Norway (Bioforsk Report Vol. 5 Nr. 135, 2010: Klimagassregnskap for norske veksthusprodukter).
- The waste heat is assumed to have no CO_2 emissions.

CENTRE FOR ENVIRONMENT-FRIENDLY ENERGY RESEARCH

The Research Council of Norway