

## **EFFICIENT ENERGY UTILIZATION IN THE FISH PROCESSING INDUSTRY.**

### **Objectives**

Develop optimized control and energy efficient systems for the fish processing industry, resulting in reduced power demand and 20 % lower energy consumption.

### **Technological**

- Optimize control strategies and control systems in existing production plants and sub-systems, dealing especially with their highly time varying refrigeration and heating demand, in order to reduce energy consumption and power demand.
- To develop knowledge and tools for efficient production of chilled and frozen fish dependent of product, packing, cooling/freezing equipment and refrigeration plant to achieve low energy consumption and lean environment load in existing plants.
- Develop and adapt energy efficient and environmentally friendly refrigeration and heat pump systems, mainly based on CO<sub>2</sub> technology that gives improved possibilities for energy recovery and low temperature applications. Investigate retrofitting (replacement) of HCFC-22 by switching to CO<sub>2</sub> in existing freeze and cooling applications.
- Evaluate the possibility of using thermal energy accumulation systems in order to reduce power demand and energy cost. This activity will be coordinated with ongoing projects.

### **Implementation**

- Identify and invite two processing factories to take active part in the technology development carried out the present project. It is further the aim to implement the different improved alternatives in the factories.

### **Educational**

- Support an ongoing PhD study by covering travel costs and support to field measurement program. The title of the PhD is "Efficient energy utilization in the fish processing industry". The activity in the present project will be of high interest for the study, and the PhD student will contribute to the present project by carrying out essential measurements for the project.