

IMPLEMENTATION-CONCEPTS FOR THE INTEGRATION OF HEAT FROM SOLAR ENERGY AND BIOMASS INTO THE AUSTRIAN FOOD INDUSTRY



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Abstract

Development of concepts for the implementation of a "Solar Industry Approach" in the food industry, based on an energetic and economic analysis of representative plants taking into account the integration of solar thermal energy as well as the use of other renewable energy sources and efficiency measures. The approach will include a planning tool, a guideline and a solar-roadmap for the Austrian food industry.

Keywords

Industrial integration concepts, solar process heat, biomass, food industry

Motivation and Objectives

The food industry uses large amounts of thermal energy in the temperature range between 30 and 150 °C. It is possible to provide these temperatures with carbon-neutral solar thermal systems. The aim of this study is to create implementation-concepts for the integration of solar heat into the Austrian food processing industry sub-sectors in close cooperation with affected sites and industry representatives. The concepts include energy efficiency measures as well as the possible integration of other renewable energy technologies. As in the food industry organic waste flows can potentially be used for anaerobic digestion, besides solar thermal systems this is the second most important renewable technology in this project.

Approach

In order to design these implementation-concepts the following steps are taken:

- **Survey of the status quo** of energy and resource use in the Austrian food industry based on selected production sites: Comprehensive technical and economic analyses and database on the existing processes in selected companies.
- **Development of a process balancing tool** that displays the essential processes in the food industry at the level of unit operations and the characteristic process variables. The tool should allow for simplified balancing of plants in the food industry.
- **Survey of the framework** for selected companies and sub-sectors: The underlying economic, legal and site-specific conditions are identified and documented.
- **Integration of solar heat, biogas and other renewable energies into the processes:** examples for implementation approaches with a focus on energy efficiency and process integration of solar thermal collectors as well as biogas and other renewable energies which are developed on the basis of the analyzed and compared plants and including experiences and examples of former projects.
- **Food Industry 2020+ – medium to long-term implementation strategies:** Design of a long-term implementation strategy for the food industry sector in the form of a solar roadmap and identification of the necessary framework and policies.
- Finally, results are placed in a **consistent industry approach**.

Expected Results

An implementation guide which is designed in close cooperation with industry partners is the core result available at the end of the project. It includes:

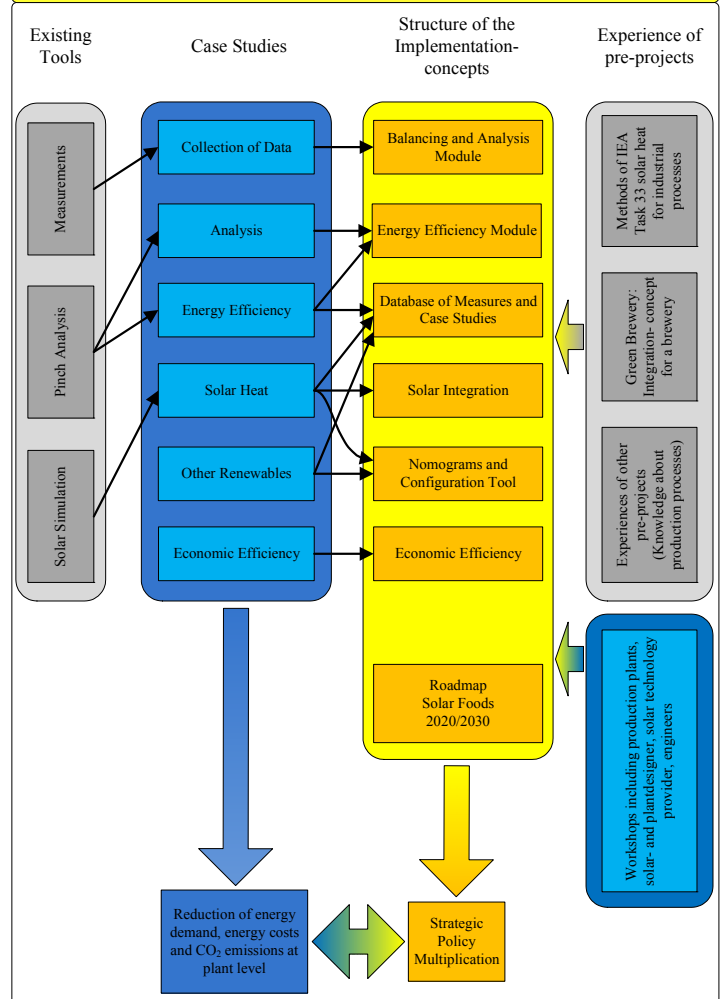
- (1) a planning and design tool for solar heat which takes into account the potential for efficiency improvements and the use of other renewable sources,
- (2) guidelines for the integration of solar heat in different plant types and for various sub-sectors, and
- (3) a description of a solar roadmap for the food industry in Austria by the year 2020/2030 and the required policies and frameworks.

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Structure and Impact



Team



Contact and further informations

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