Horizon2020 Information Days on Public-Private Partnerships

Brokerage event
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ENEFF ENERGY EFFICIENCY IMPROVMENT IN PROCESS INDUSTRY

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SPIRE
Sustainable Process Industry through Resource and Energy Efficiency

ORGANIZATION/COMPANY

The Future Energy Center at Mälardalen University consists of 29 researchers and 45 PhD students. Research is organized in three tracks:

1. Renewable energy with focus on biomass conversion and solar power
2. Energy efficiency improvements in industry and building systems
3. Development of new mathematical methods utilizing physical and statistical models for process optimization and control

In this project we focus on:

- Process modeling, diagnostics, optimization and control.
- Software development.
- Automation of process industries and power plants where large amount of data is analyzed and utilized

The project combines close industry cooperation with academic excellence (MNCS 1.94 according to Leyden Univ analysis).

PROJECT IDEA

The objective of this proposal is to develop and demonstrate tools and methods to decrease the energy consumption in energy intensive industries, like power plants, pulp and paper industry, ceramic and chemical production industries. This is done by:

- Iterating between process simulation and real plant operations to create advanced models and process development integrated with development of automation and control.

- Using new mathematical algorithms like adaptive Bayesian nets together with dynamic simulation models. New preditcion tools will be developed and implemented for diagnostics, optimization and decisión Support.

- From advanced physical process models simplified models are made for on-line applications and production planning, both locally and plant wide.

EXPECTED IMPACT

- Analytics and Automation for Process industries and power plants: 100th of billion $/year
- Development of holistic measurements and activities.
- Analysis and optimisation tools for flexible energy use and material flow integration should be developed, aiming at a holistic approach for resource management in process industries, suitable both for small and large scale in a flexible approach.
- Rapid transfer from lab-scale and conceptual design into testing at demonstration sites. In our project this is on SW for process optimization.
- New approaches that perform cost-saving optimisation of energy and resources by simulator based SW
- Will utilize the development on very different branches like pulp and paper, power plants and ceramic industry.

EXISTING PROJECT CONSORTIUM

We have both academic and industrial companies, but mostly industrial partners so far, from the following countries:

- Sweden,
- Austria,
- Czech Rep,
- Finland,
- Turkey,
- UK

Companies in process industry and suppliers of SW solutions with focus on energy efficiency improvements.

LOOKING FOR PARTNERS

We need some more SMEs and academic partners developing SW solutions in modelling/optimization/control.

CONTACT DETAILS

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