

Swedish Program for Energy Efficiency in Energy Intensive Industry (PFE)

A photograph of an industrial facility, likely a steel mill, with several tall smokestacks emitting white smoke. In the foreground, there are two large cranes on a pier or dock. The sky is blue with some clouds, and the water in the foreground is dark blue.

**Solutions for Sustainable Cities and
Energy Efficiency, 12 January 2007**

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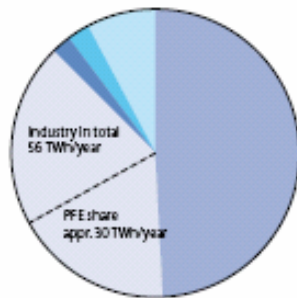
PFE

- Aim is to increase the energy efficiency in energy intensive manufacturing industry
- Background: Adjustment to EU energy tax directive
- Incentive: Tax reduction 0,5 €/ MWh => 0 €/ MWh
- Commitments to a series of activities to increase energy efficiency
- Voluntary program

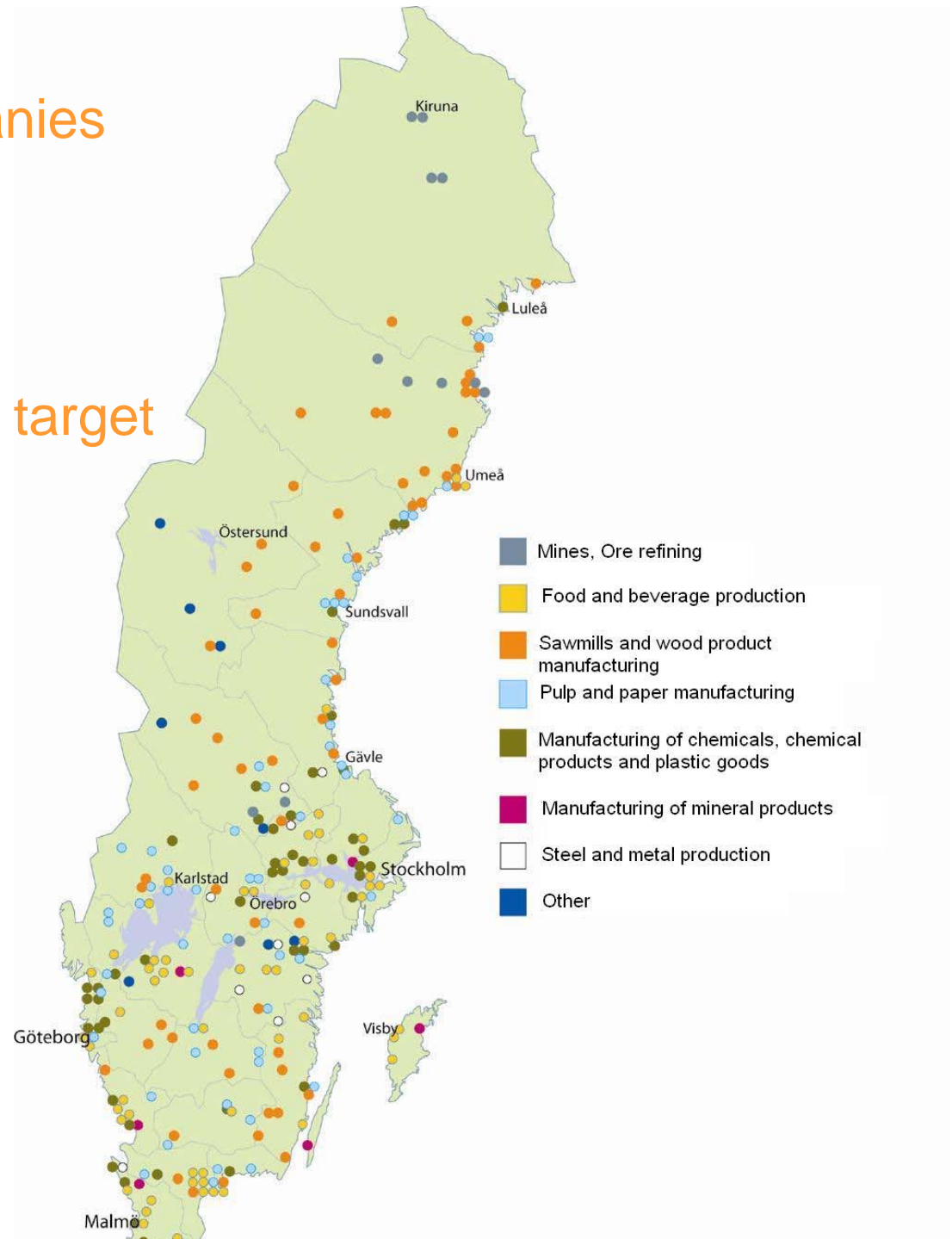


- 126 participating companies
- 250 plants
- 30 TWh electricity/year
- 85 % electricity used by target group

Electricity consumption in Sweden



■ Dwellings and services 72 TWh
 ■ Industries, 56 TWh
 ■ Domestic transports, 3 TWh
 ■ District heating, refineries, 4 TWh
 ■ Distribution losses, 11 TWh
 Total: 146 TWh



■ Mines, Ore refining
 ■ Food and beverage production
 ■ Sawmills and wood product manufacturing
 ■ Pulp and paper manufacturing
 ■ Manufacturing of chemicals, chemical products and plastic goods
 ■ Manufacturing of mineral products
 ■ Steel and metal production
 ■ Other

PFE: A five year program

Program start

2 years
Report to the
Swedish Energy Agency

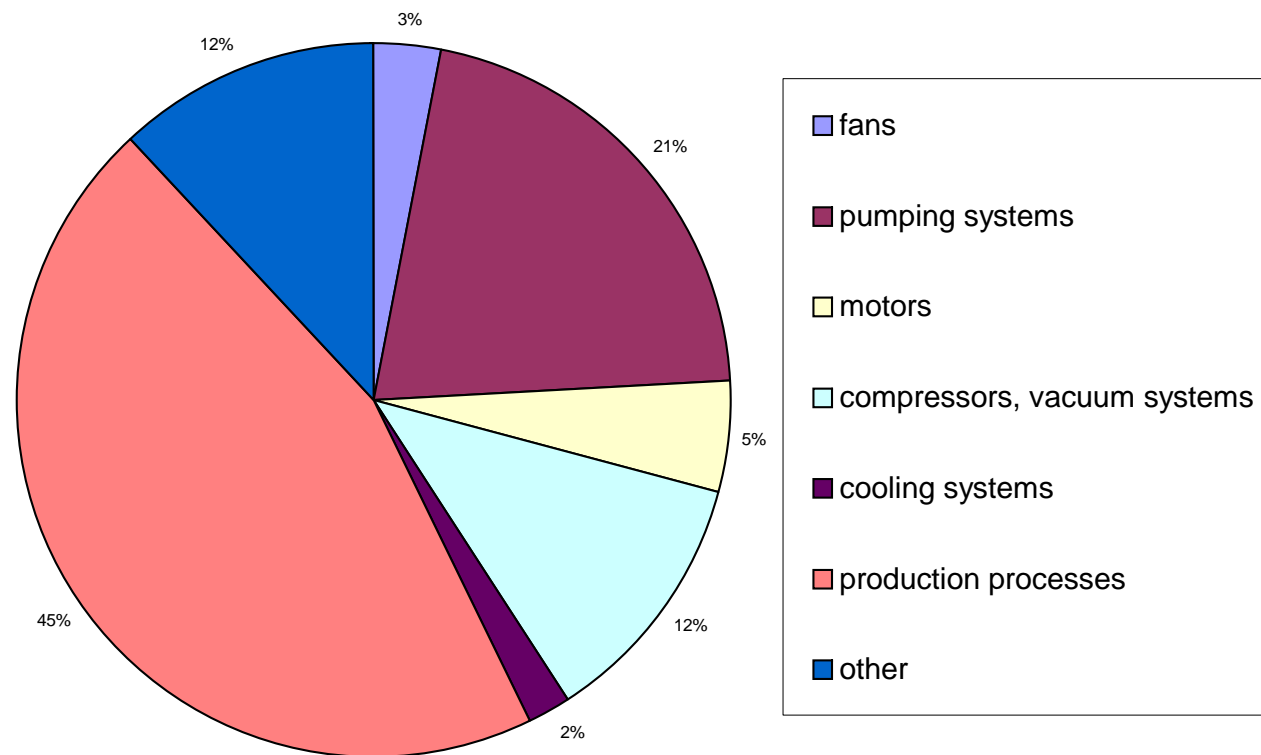
5 years
Final report to the
Swedish Energy Agency



- Implement and certify EMS
- Energy audit and analysis
- Find measures
- Implement routines for procurement & planning

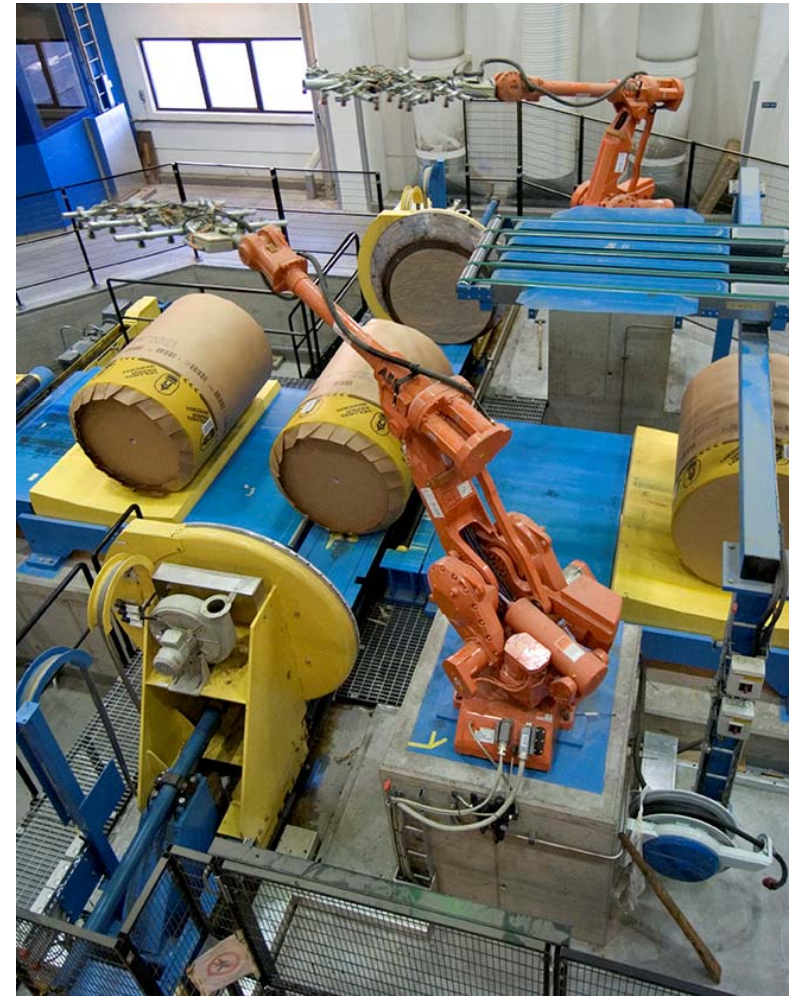
- Apply EMS
- Realize reported measures
- Apply routines
- Effects of routines

What kind of measures?



Measures

- Processes 367 GWh
 - ✓ Demand control
 - ✓ Optimization
- Motors, pumps, fans 238 GWh
 - ✓ Inverters
 - ✓ Energy efficient equipment
- Air Compressing systems 95 GWh
 - ✓ Leak seeking and sealing
 - ✓ Waste Heat Recovery
- Cooling systems 17 GWh
- Other 95 GWh
 - ✓ Ventilation (waste heat recovery & demand control)
 - ✓ Lighting (energy efficient appliances & demand control)



Results so far...

- 900 measures
- 800 GWh/year

- Investments 700 million SEK
(100 million USD)
- Savings 400 million SEK
(60 million USD)
- Average pay back time 1,75 years
- Tax reduction 150 million SEK

Corresponds to:

- Total use of electricity for
32 000 Swedish villas
- Total Swedish wind power
production (900 GWh)



**Thank you for your
attention!**

Camilla Ottosson

