



Bioenergy policy in Sweden

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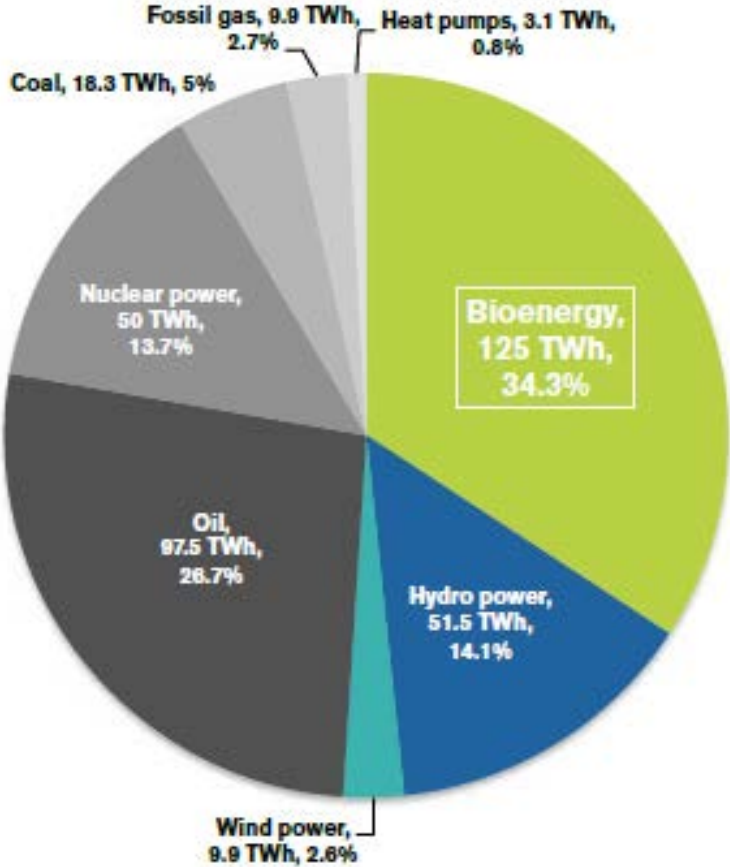


Photo: Kristiina Kontoniemi



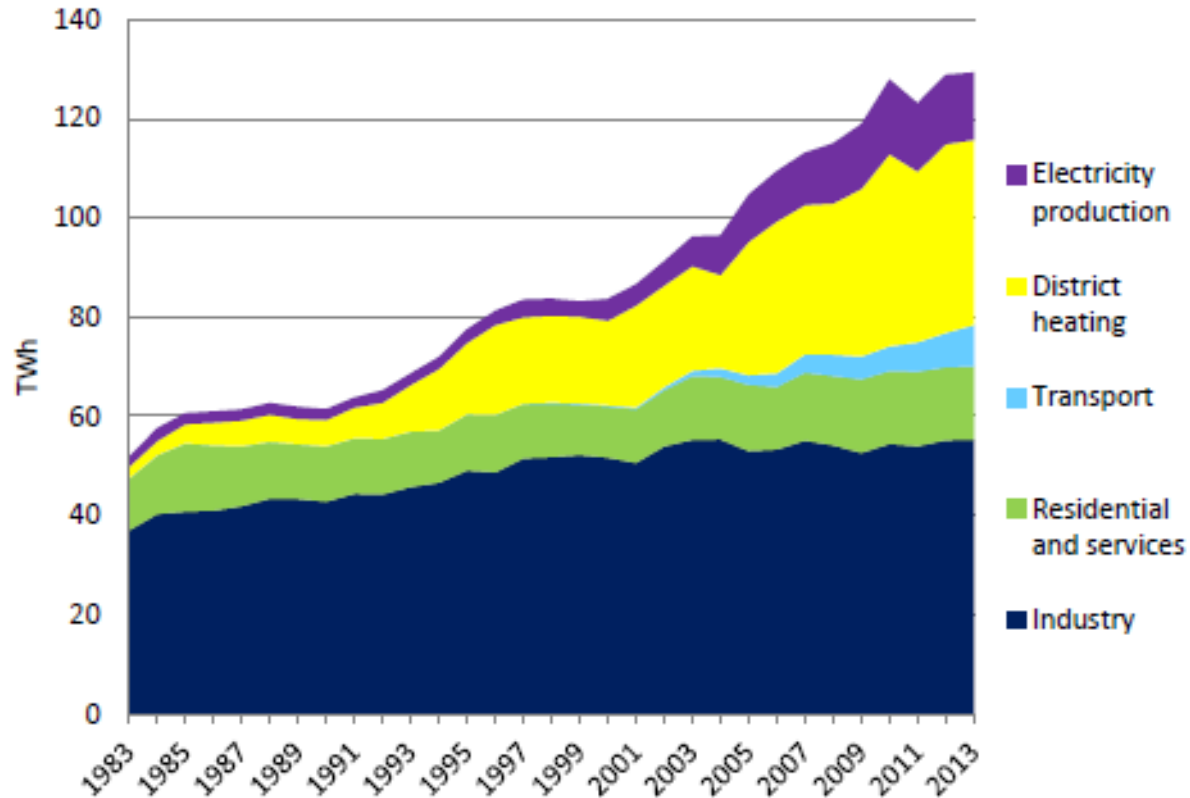
Photo: Melker Dahlstrand

Final use of energy in Sweden by source 2014



Source: Svebio

Use of biomass per sector 1983-2013



Source: Swedish Energy Agency and Statistiska Sweden.

Policy measures

- Research, development, demonstration
- Carbon tax
- Investment support
- Green certificate scheme (Sweden-Norway)
- Emission trading (EU ETS)

Success factors

- Economic incentives for **both heat and electricity**
- Well-developed **district heating** systems, involvement of local governments
- Long-term **R&D cooperation** gov-industry
- Strong industry, support for small forestry owners, cooperation within bioenergy sector (Svebio)

Energy agreement 2016

- No net emissions of GHG in 2045
- 100% renewable electricity production in 2040
- Certificate system: Increased level of ambition
- Nuclear power: no political phase-out decisions, no subsidies
- Sweden to be a net exporter of electricity

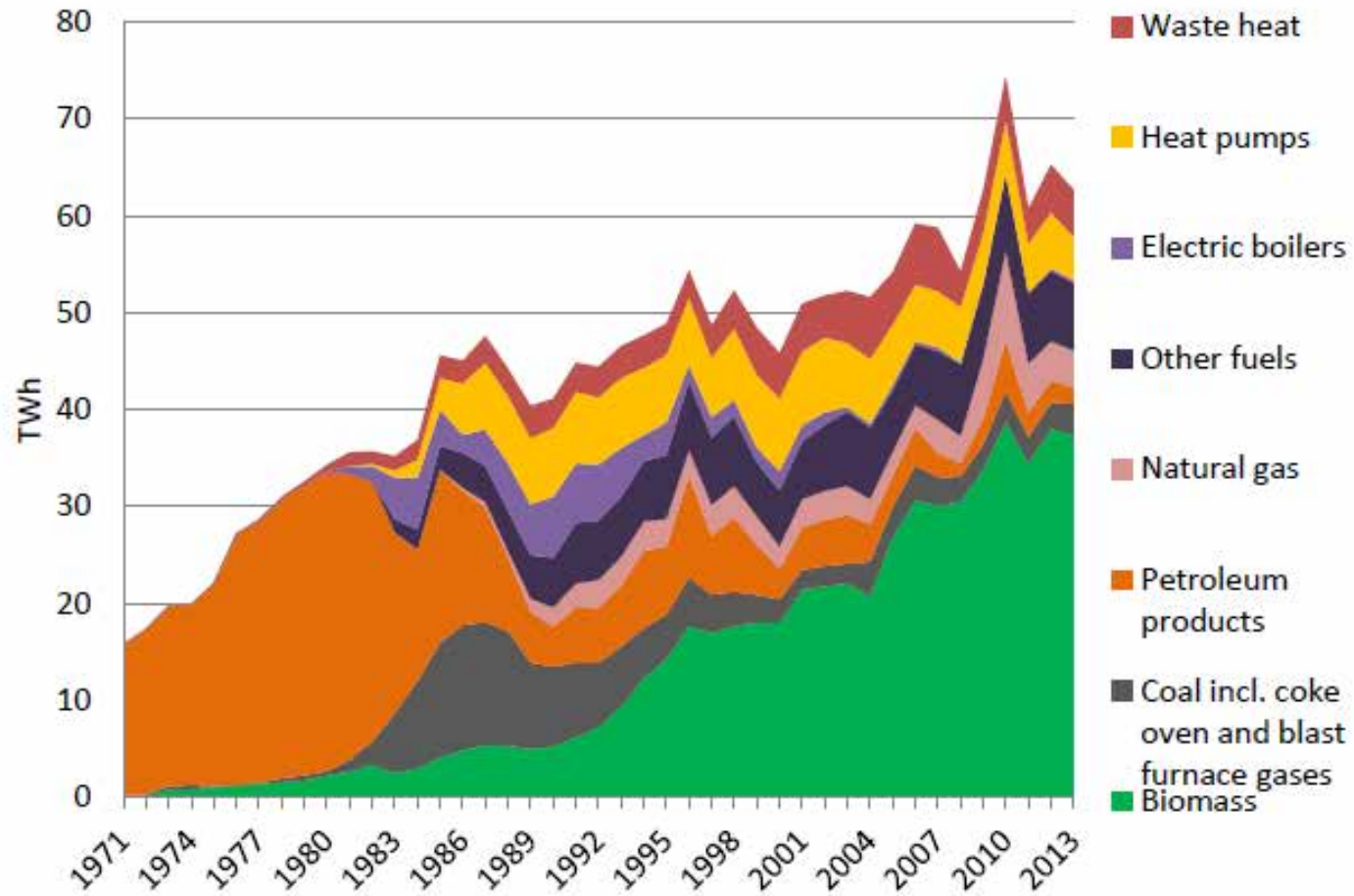
Carbon pricing is working

- Sweden first (1991) to implement a carbon tax that provided real incentives for renewables
- Designed to achieve change in heating sector
- Gradual increase of tax level
- Strong shift from coal and oil to biomass



Igelsta plant in Södertälje, 200 MW heat, 75 MW electricity
(source: Söderenergi)

Input energy used in the production of district heating



Source: Swedish Energy Agency and Statistics Sweden

Why was the carbon tax possible?

- Climate change on the agenda
- Part of broad tax reform
- Well-designed proposal ready when political window was open
- “Vested interests” not so strong
- Tax experts on board
- Political leadership

Industry

- Strong increase of biobased electricity production in forest industry because of certificate system
- Biomass replacing fossil fuels in a number of industry sectors including agriculture, as a result of increased carbon taxation

A few words on transport

- Biofuel share increasing – 19 per cent of all vehicle fuel in 2016 (highest in EU)
- Tax reduction, investment support, quota, R&D
- Political target: vehicle fleet independent of fossil fuels in 2030
- Sustainability criteria



ありがとう
THANK YOU!

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