



Combating Climate Change

The Danish Example



I'll talk about

- The Copenhagen Climate Summit
 - a few words
- Overall developments in DK last 30 years+
 - A visible succes
- Combating climate change in cities
 - Some examples



The Copenhagen Climate Summit

- Success or failure?
- Copenhagen Accord – a political agreement
 - Does not provide answer to all challenges of CS
 - Does provide a strong framework for immediate action and it defines important milestones
 - Build on this platform; not loose sight of ultimate objectives
 - Denmark continues to work hard to reach them



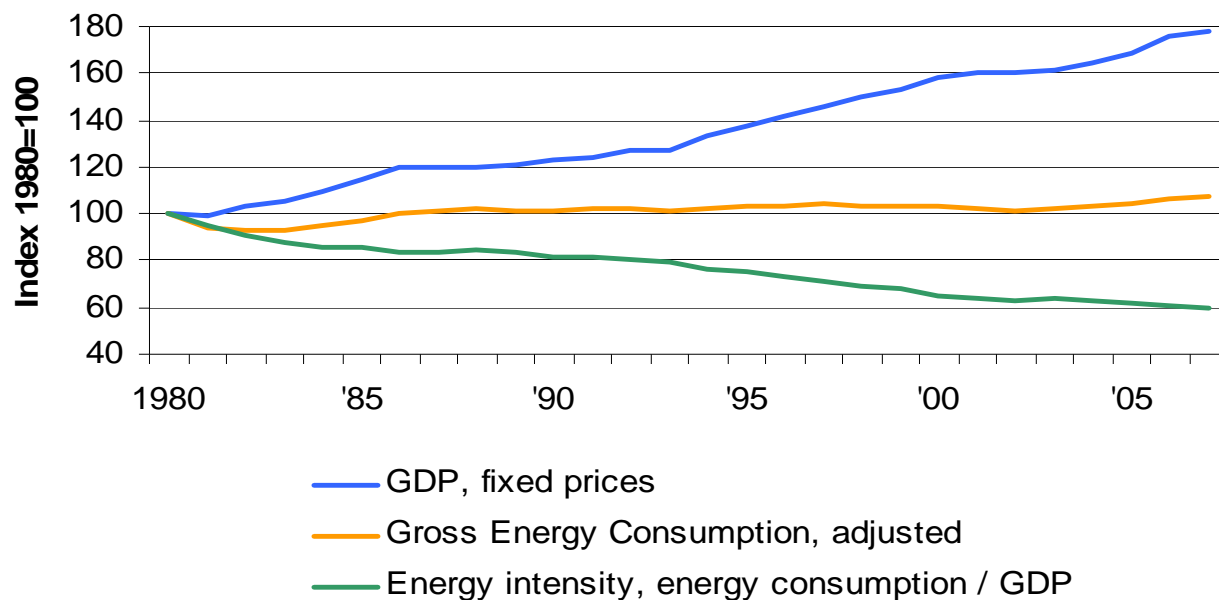
Copenhagen Climate Summit

- COP 15 was much more than the accord
 - Importance of high level attendance
 - A real WORLD summit - mass participation
 - Events leading up
 - Social media
 - Many side events
 - One particular import and successful: Mayors and other municipality officials meet and exchange ideas on specific and practical measures



Danish dynamite

De-linking Economic Growth and Energy Consumption

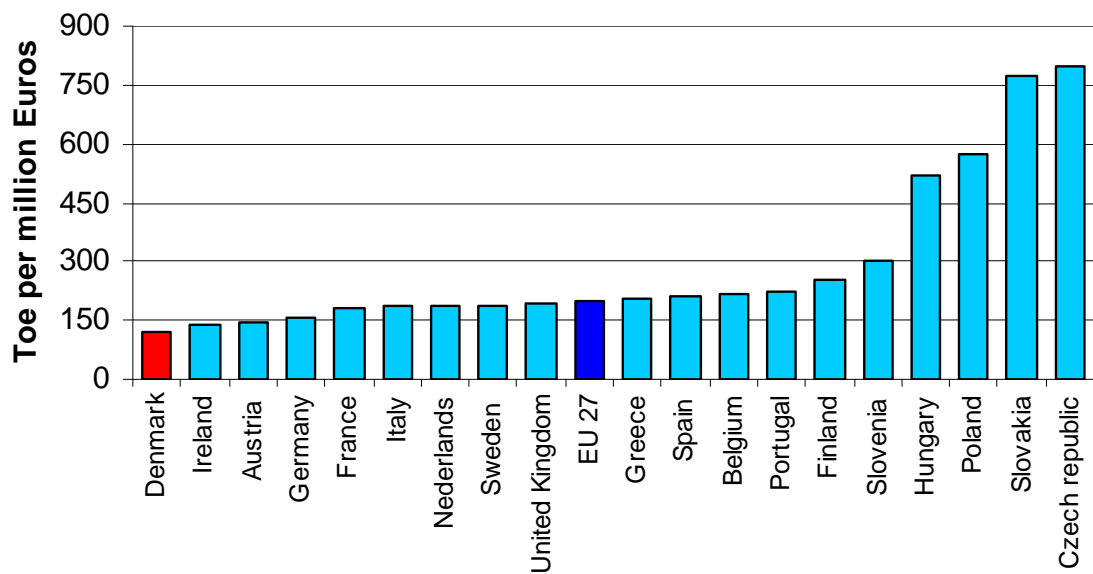




From oil crisis to energy efficiency

- 1973-74 oil crisis
 - Two countries in the world were 99% dependent on imported energy: Japan and Denmark (oil and coal)
 - Pollution caused by fossil fuels and environmentally harmful outlets from industry, agriculture and households
- 30 years later – Danish results
 - Net exporter of oil and gas – the only net-exporting country in the EU
 - Lowest energy consumption per unit GDP in EU
 - Highest contribution to electricity from new renewables in EU (and the world)

Energy intensity in selected EU countries, 2006





Three main reasons for de-linking economic growth and energy consumption

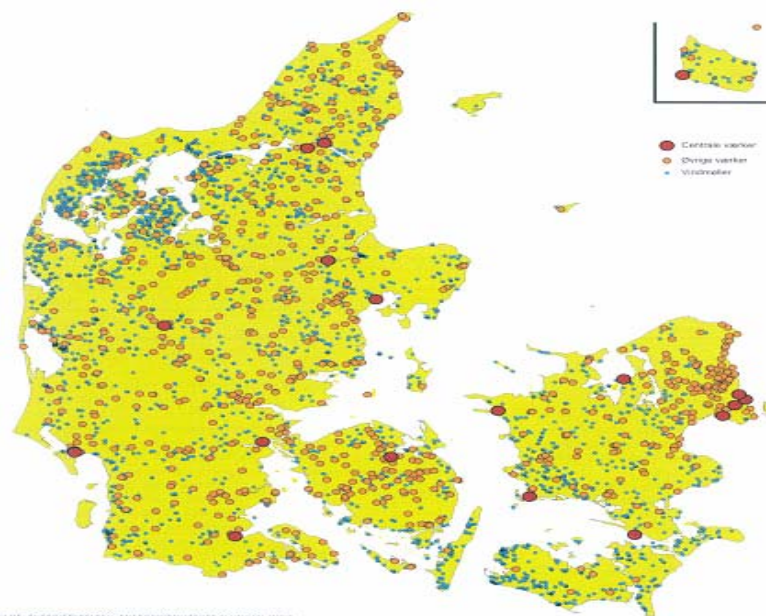
- District heating and combined heat and power generation
- Energy efficiency
- Renewable energy

From centralized to decentralized combined heat and power generation

Centralized production in the mid 80's



Decentralized production of today



KILDE: ENERGISTYKKESEN ENERGIPRODUKTIONENS 2000.
VAIKUTUSLAKKOONNAT, KORTI A. MAITINEN/STYKKESEN 2007

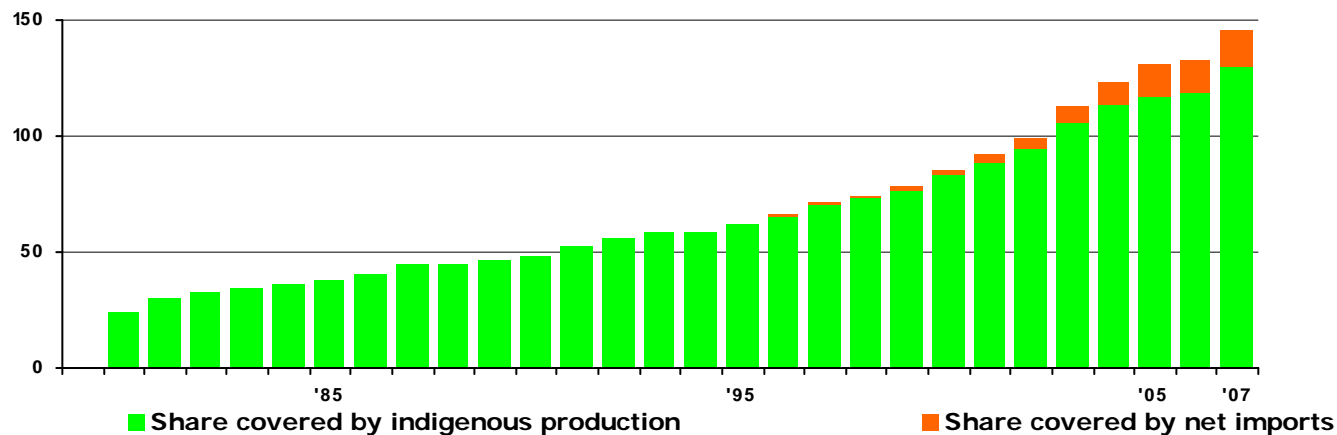


Measures to increase end use energy efficiency

- High energy standards for buildings
- Energy labeling schemes for electrical appliances
- Public campaigns for energy savings in households
- Energy savings agreements with industry
- Taxes on energy consumption



Renewable energy use in Denmark





Combined heat and power and energy efficiency

- Combined heat and power
- District heating and cooling
- Energy-efficient power plant
- Micro combined heat and power
- Building solutions and components
- Pumps
- Efficient electric motors



Eco-efficient solutions

- Waste to energy
- Solid/industrial/household waste management
- Water supply
- Water sanitation
- Water resource management
- Ventilation
- Renewable energy storage



Renewable energy

- Wind energy
- Biomass/biogas
- Bioethanol–2.generation
- Solar energy
- Fuel cells
- Hydro and wave power
- Geothermal energy



Six Danish EcoCities

- The challenges may be global, but the solutions must be found locally. Six municipalities have been designated forerunners in the field of climate and energy
- <http://www.energibyer.dk/en-US/Sider/forside.aspx>



Find more about Danish energy

- [Danish Energy Agency](#)
- [Samsø Energy Academy: Renewable Energy Denmark](#)
- [Climate Action Map](#)