



Panel discussion

Examples of successful partnering initiatives
in the Bio economy in Europe

Use and processing of biomass and waste

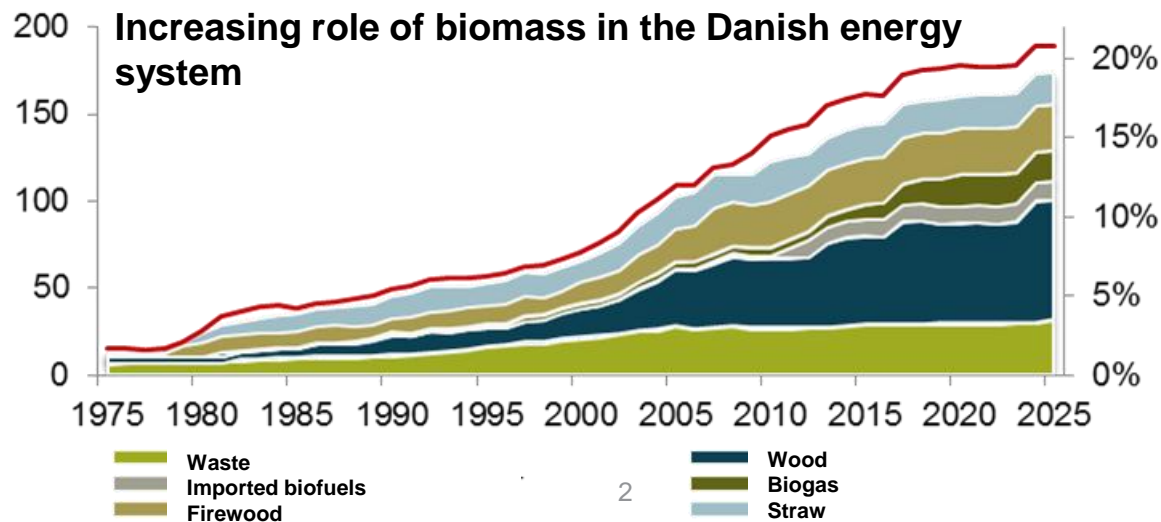
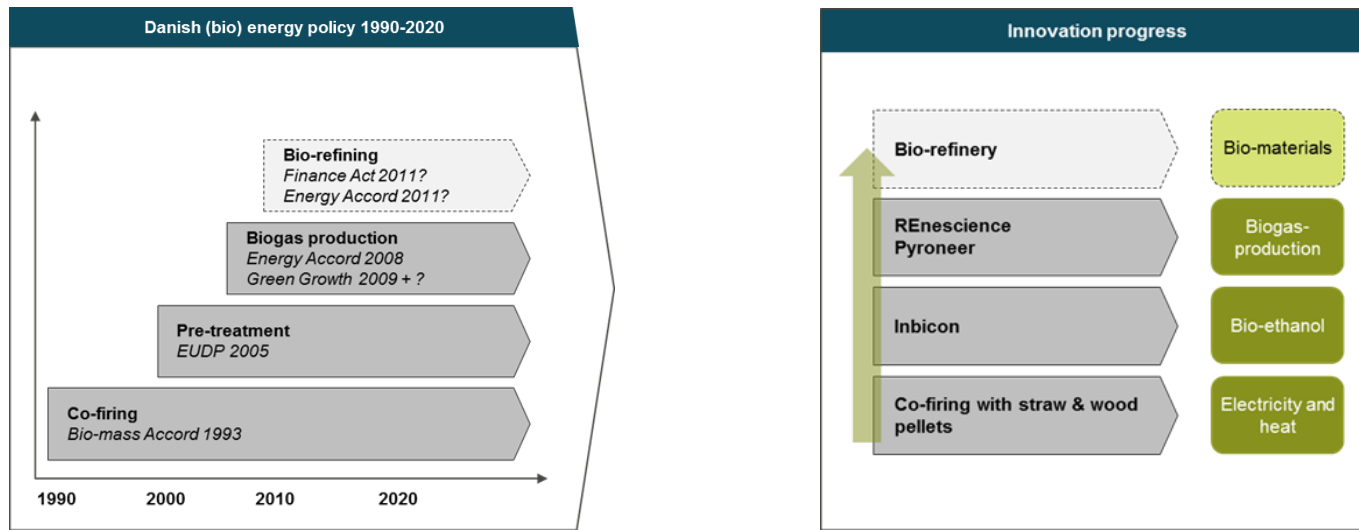
Charles Nielsen
Director R&D
DONG Energy

Conference "Partnering for the Bio economy in European Regions"

12 October 2012, Brussels

DONG
energy

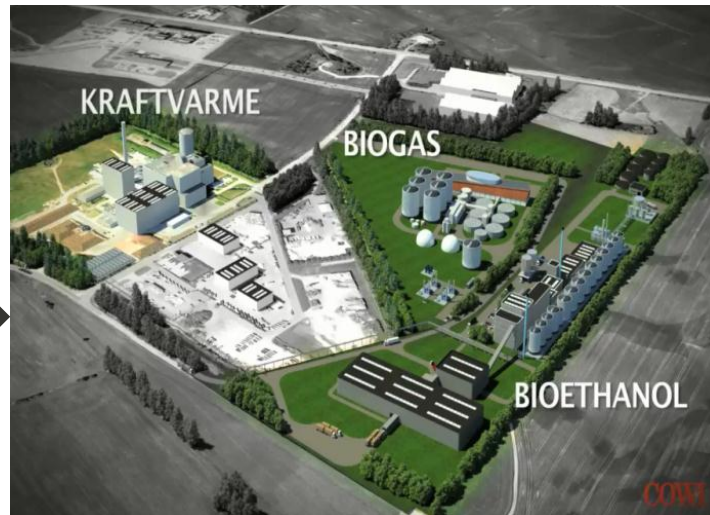
A proactive Danish energy policy has created a world leading position within the intelligent use of bio mass



Next step: The Måbjerg bio refining concept – FID - 2013

INPUT:

- 95 GWh power (wind turbine)
- 50.000 t household waste
- 47.000 t business waste
- 80.000 t sewage sludge
- 200.000 t biomass from food industry
- 450.000 t liquid manure
- 400.000 t straw and other biomass



OUTPUT

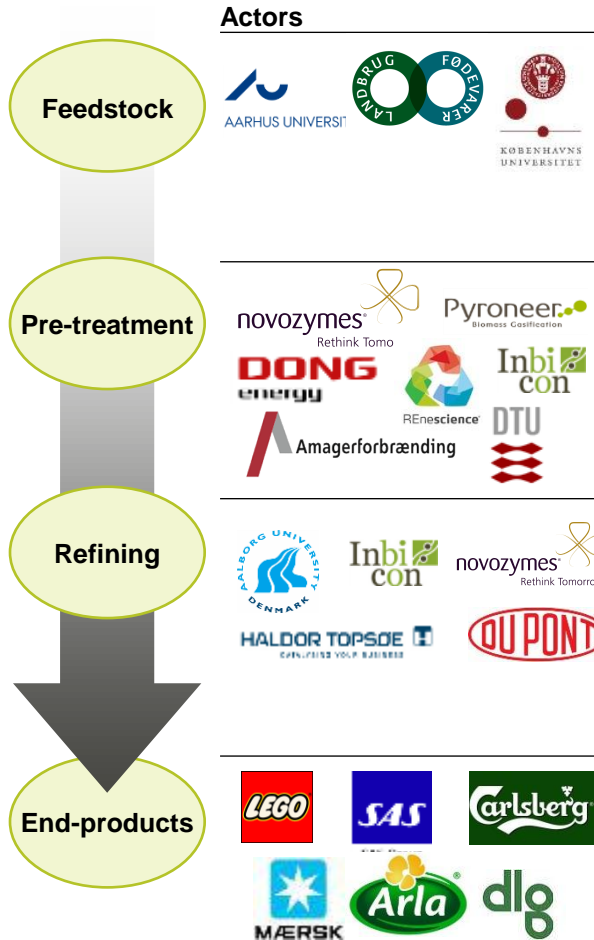
- 100 mio. m³ biogas
- Electricity to 25.000 households
- Heat to 20.000 households
- 73 mio. l bioethanol
- 51.000 t biofuel
- 513.000 t fertilizer
- 494 t phosphorus
- Other nutrients
- 3500 new jobs in the construction phase
- 2000 permanent jobs

Vision:

- To establish an integrated sustainable energy solution based on local and CO₂-neutral biomass from residues.
- Becoming the world's first full scale 2G bio refinery plant.

Denmark has significant strongholds and with the potential for increasing employment and generate growth

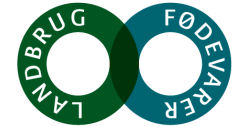
General



BioRefining Alliance

Innovation alliance founded by strong industrial partners

- Industry-driven innovation within agriculture, technology and new products
- Strengthen Danish position within bio-refining
- Create growth, jobs and technology exports
- Supporting sustainable transformation towards a low carbon society



The vision for the Danish energy system in 2050



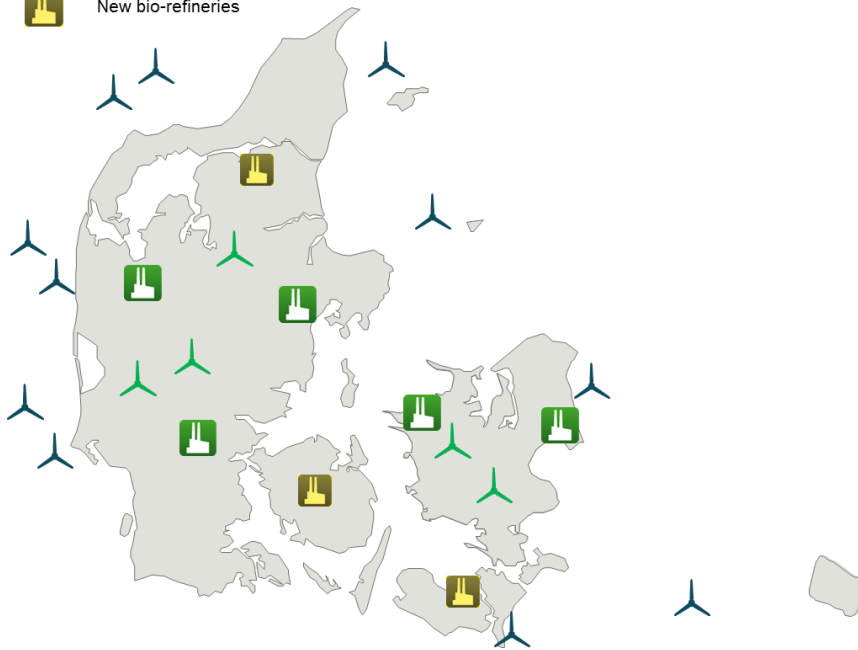
Wind farms



Central bio-refineries

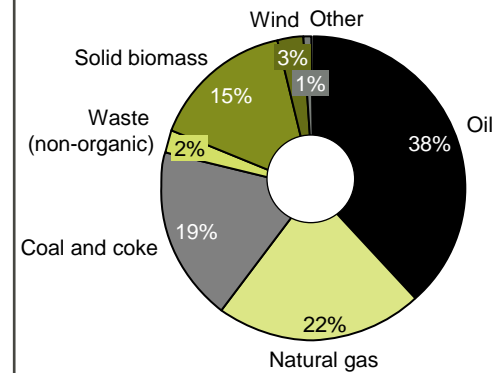


New bio-refineries



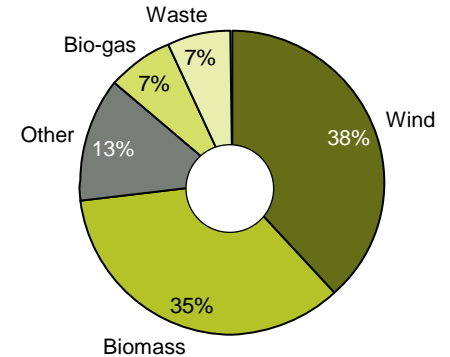
Biomass and Bio refining is a cornerstone in a future, independent of fossil fuel.

Gross energy consumption 2010 (DK)



Danish Energy Agency

Gross energy consumption 2050 (DK)



Energinet.dk, Wind track

Growing Green

