



Green Transition

A Perspective From Denmark



Thomas Lehmann, Ambassador



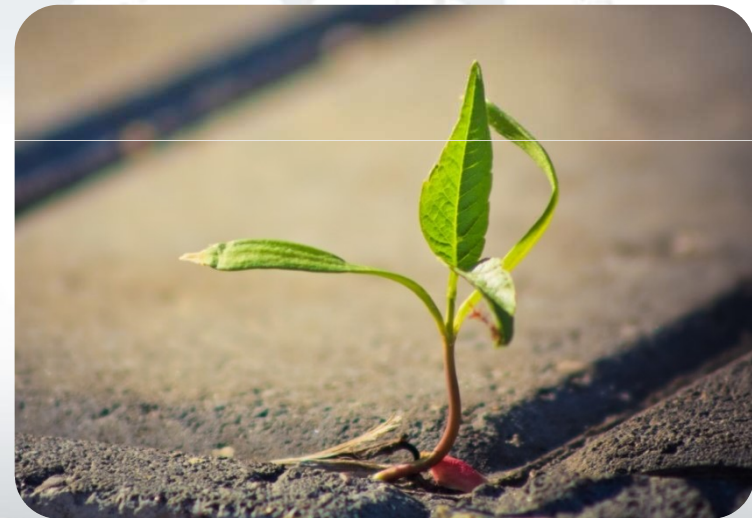
- Thomas Lehmann: Danish Ambassador to Korea since summer 2014
- My background
- Working at an Embassy



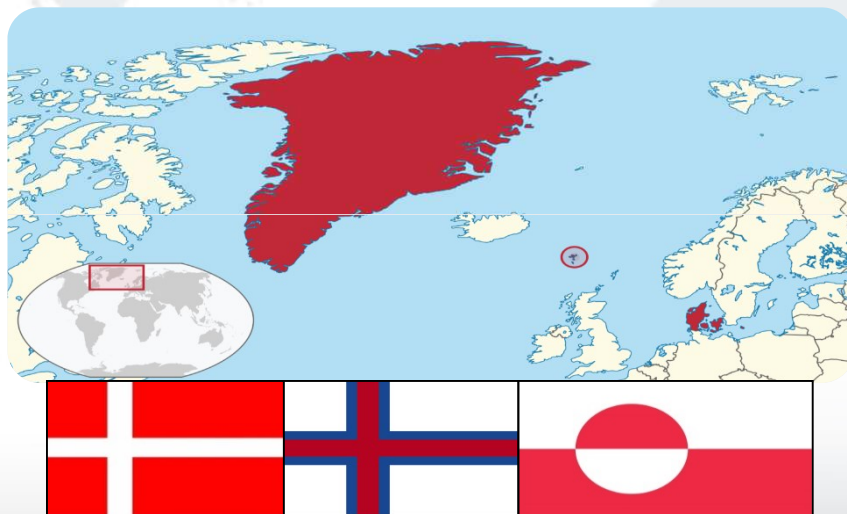
Agenda



- Presentation of Denmark
- The climate challenge, the Paris agreement and the SDGs
- The Danish climate policies
 - The beginning, decoupling and status
 - Denmark's policies, goals and targets
 - Cases: CPH 2025, environmental awareness and circular economy
 - Denmark's international rankings
- Denmark and Korea's cooperation
- Q&A



Denmark and Korea



	Denmark	South Korea
Population	5,7 million	51,3 million
Area	42,916 KM2	100,210 KM2
Nominal GDP (USD)	\$306 billion	\$1,410 billion
GDP (PPP) per capita (current international dollars)	\$47,990	\$37,740

Climate Change



Challenges



- Within the next 20 years the World Economy will double
- The population of the world will increase from 7 to 9 billion people
- The global middle class will grow by 3 billion people
- Green growth is vital in order to decrease the pressure on our globe's natural resources



COP21 – Paris agreement



- Global and politically binding agreement made to replace Kyoto from 2020
- 180 signatory countries = 96% of global emissions
- Goal: Keep the rise in the global average temperature under 2 degrees Celsius
- Signatories to contribute with more ambitious goals and be more transparent with their progression
- Developed countries to mobilize 100 billion USD/year from 2020 to finance the green transition in developing countries





United Nations Sustainable Development Goals

- 17 goals and 169 sub-goals focusing on sustainable development adopted by United Nations members 2. December 2015.
- They build on the Millennium Development Goals (2000-2015) and lead the way to 2030
- Denmark's "The World 2030" Strategy for development cooperation and humanitarian action is based on the STG's →

Third strategic objective: Inclusive, sustainable growth and development

- Along with the Paris Agreement, the goals also serve as a baseline for Denmark's export strategy for the energy sector





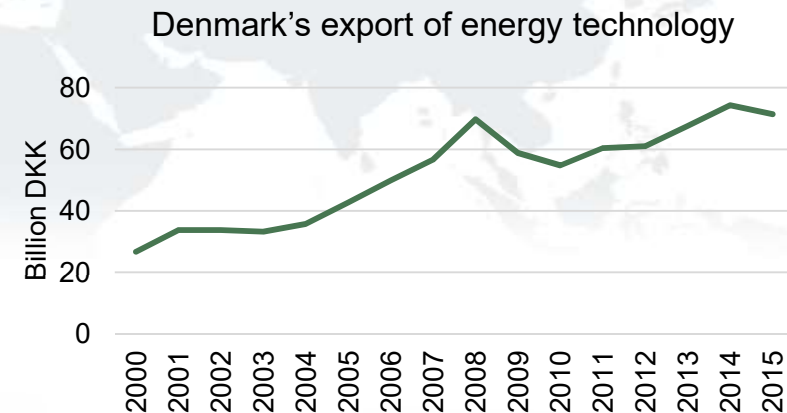
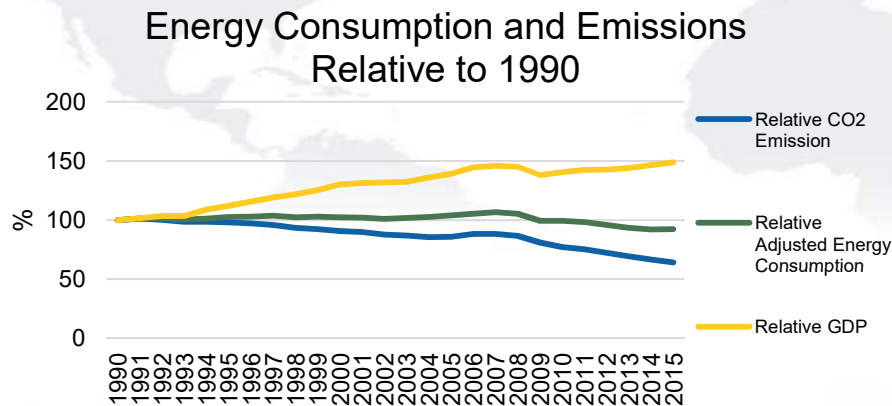
The beginning of the Green Transition



- 1973 – 74 oil crisis
- 99 % dependent on imported energy
- Public concerns about environmental policies
- First Danish Energy Plan in 1976 (one of the first of its kind in the world)
- Green transitioning with ambitious goals and firm policies



Decoupling – Green business



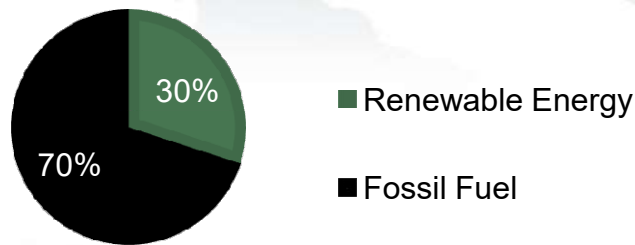
Source: Eurostat, Energistyrelsen, DI & Dansk Energi, 2016

- Danish Economy has grown by more than 50% since 1990 while energy consumption has been reduced almost 10%
- In 2015, Denmark cut greenhouse gasses by 31% compared to 1990
- In 2015, total water consumption has been reduced by 40 % since 1980
- Danish exports of clean energy technology have almost tripled since 2000
- In 2015, exports of energy technology constituted 9,5 billion Euros or 11,1% of Denmark's total export of goods (DK is EU's biggest exporter)
- The green sector employs 67,000 in 2017, and is expected to rise with 95,000 towards 2035.

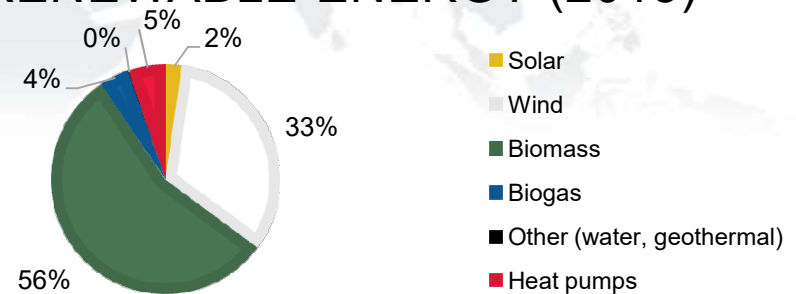


Status: Current energy mix in Denmark

DK'S ENERGY CONSUMPTION (2015)



DK'S PRODUCTION OF RENEWABLE ENERGY (2015)



- Oil and gas consumption has fallen steadily since the 1990's
- In 2015, 30% of energy produced by various renewable energy sources
- Denmark is a technological leader within sectors such as wind, water and energy efficiency

DK's Energy and Climate policies



- **2012: New Danish energy agreement**
 - Broad political agreement on ambitious goals
 - Long time horizon (2012-2020) with supplementing initiatives in 2018
- **2014: Danish Climate Law on transition to 100% renewables in 2050**
 - Establishment of a politically independent and expert-based climate council
 - Annual presentation of a climate-political review in the Danish Parliament
 - New climate ambitions every 5 years
- **2017: Energy Commission's policy-recommendations for 2020-2030**
 - Focus on increasing export of energy-technologies, energy efficiency, digitalization, electrification and cost-efficiency
- **International obligations: Kyoto, Paris, SDGs, EU 2020 and EU 2030 Goals**

Danish goals and targets



2020

40% reduction of greenhouse gas emissions compared to 1990

35% renewables in final energy consumption

50% wind energy in electricity consumption

2030

50% of Danish energy consumption is covered by renewables

Double export of energy-tech to 19 billion euros

2050

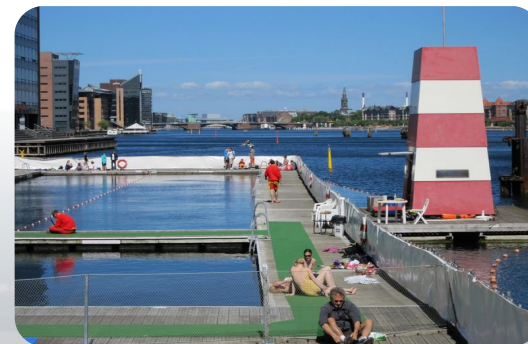
The Danish energy supply is based 100% on renewables

Emissions from other sectors, such as transport, is significantly lower

CPH 2025 Climate Plan



- More than 70% of the world's CO2 emission comes from cities
- Copenhagen's vision: First capital to become **CO2-neutral** in 2025
- Copenhagen has already reduced CO2 emissions by 38% in the period 2005-2015
- Copenhagen won European Green Capital 2014 and the European City 2017 Urbanism Awards



Danish Environmental awareness

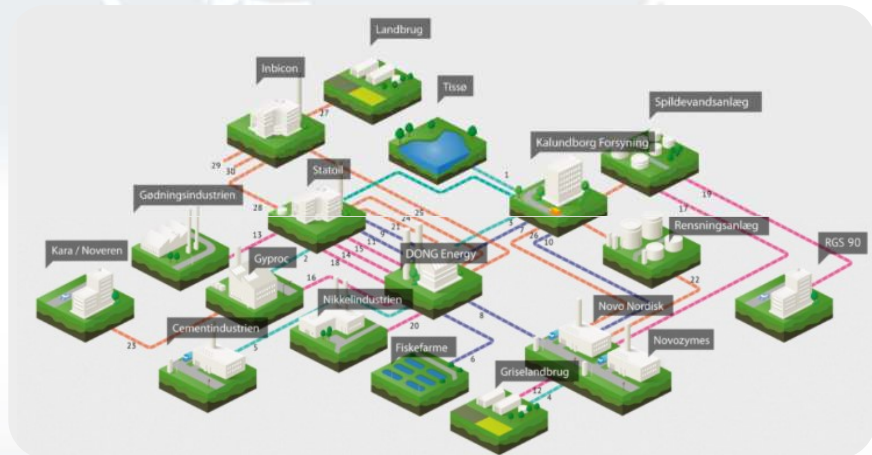


- Large environmental awareness among the Danes
- Initiatives: Education, recycling, "Pant" system, turning off devices, green taxes

Circular economy



- Recycling waste and re-use by-products in the construction, food, mechanical and electronics industries
- Great potential for economic and climate benefits. Towards 2030 Denmark can:
 - Increase the GDP by 0.8-1.4% (create 7,000-13,000 jobs)
 - Reduce emissions by 3-7%
 - Reduce consumption of selected resources by 5-50%
 - Increase net exports by 3-6%
- The Kalundborg Symbiosis





Denmark – a global frontrunner

Climate Change Performance Index 2016 (Germanwatch)

Rank	Country
4. (1.)	Denmark
5. (2.)	United Kingdom
6. (3.)	Sweden
...	-
57. (54.)	Republic of Korea

Indicators: Emissions level, development of emissions, renewable energies, efficiency and expert evaluation of national climate policies

Energy Trilemma Index 2016 (World Energy Council)

Rank	Country
1.	Denmark
2.	Switzerland
3.	Sweden
...	-
44.	Republic of Korea

Indicators: Energy security, energy equity (accessibility and affordability) and environmental sustainability.

Cooperation – Green Growth Alliance



- Launched in 2011
- Increase cooperation at bilateral and multilateral level
- Join efforts for a paradigm shift
- Cooperation on issues such as politics, R&D, innovation and trade

At the 6th meeting in 2016 in the alliance discussions were held on Denmark and Korea's energy plans, sharing solutions and success factors. An MoU was signed in the presence of the Prime Minister of Denmark and the Prime Minister of Korea.





What should I take with me?

- Green transition is an opportunity for export, growth and innovation
- Setting and honouring ambitious goals and is essential for the green transition
- Huge potential in being a front-runner in the green transition and climate
- Cities also play a mayor role in the green transition
- The world's states and cities must work together and inspire each other



Q & A



www.twitter.com/DKAMBinkorea

www.stateofgreen.com

www.sydkorea.um.dk