



Denmark

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History

- Viking Culture
- Transformed into modern, prosperous nation
- National Day: June 5
 - Est. Constitutional Monarchy in 1849
- 1949: NATO
- 1973: EEC → EU in 1993

Demography

- Danish Culture, Happy culture
- Population: 5, 569, 077
- Ethnicities: Scandinavia, Inuit, Faroese, German
- Languages: Danish, Faroese, Greenlandic
 - Predominant Second Language: English
- Religion: Evangelical Lutheran (80%)
- 87% in cities
 - 25% of total live in greater Copenhagen

Geography

- Northern Europe
- Borders Baltic Sea and North Sea
- Slightly less than twice the size of Massachusetts
- Includes Greenland and Faroe Islands




Climate

➤ Temperate

➤ Humid, overcast

➤ Cool summers

➤ Mild, windy winters

17	18	19	20	21	22	23
						
Sunshine	Sunshine	Abundant sunshine	Brilliant sunshine	Sunny	Partly sunny	Times of clouds and sun
58° Lo 49°	64° Lo 49°	63° Lo 49°	64° Lo 50°	65° Lo 50°	60° Lo 50°	59° Lo 46°
Hist. Avg. 61° Lo 46°	Hist. Avg. 61° Lo 46°	Hist. Avg. 61° Lo 46°	Hist. Avg. 61° Lo 46°	Hist. Avg. 62° Lo 47°	Hist. Avg. 62° Lo 47°	Hist. Avg. 62° Lo 47°
24	25	26	27	28	29	30
Hist. Avg. 62° Lo 47°	Hist. Avg. 62° Lo 47°	Hist. Avg. 63° Lo 48°	Hist. Avg. 63° Lo 48°	Hist. Avg. 63° Lo 48°	Hist. Avg. 63° Lo 48°	Hist. Avg. 63° Lo 48°

Government

- Official Name: Kingdom of Denmark
- Capital: Copenhagen
- Constitutional Monarchy
- 5 Metropolitan Regions
- Welfare

Government

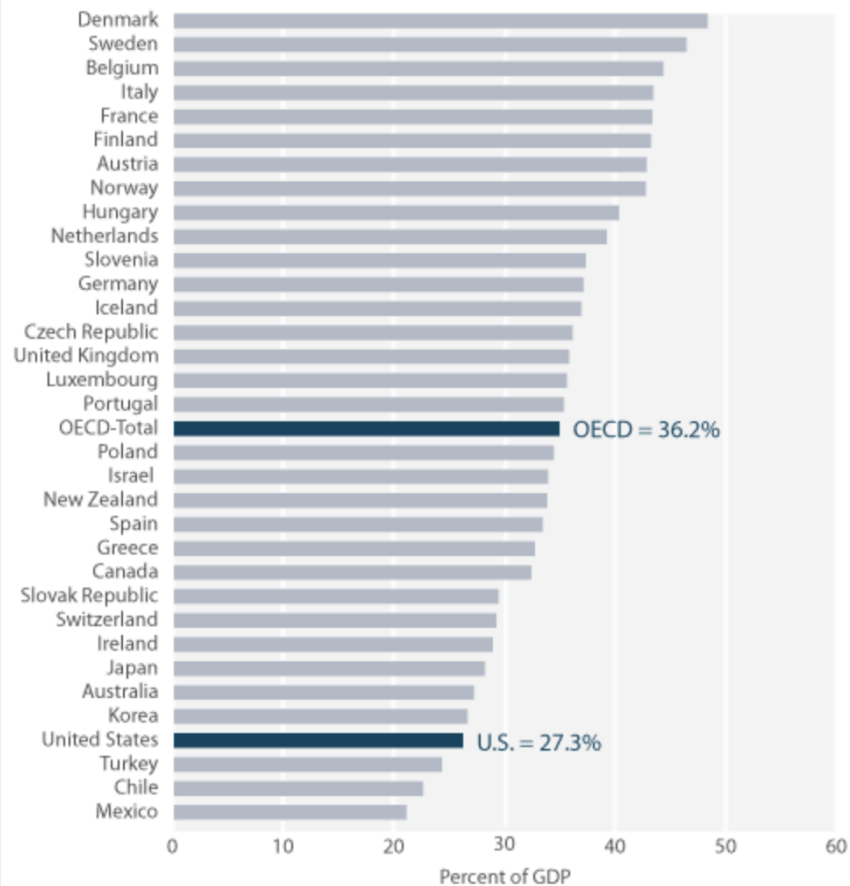
➤ Three Branches

- Executive
 - Chief of State: Queen Margrethe II
 - Head of Government: Prime Minister Helle Thorning-Schmidt
- Judicial
 - Supreme Court
- Legislative
 - Parliament: Folketing

Economy

- Modern market with high-tech agricultural sector
- World-leading pharmaceutical firms
- High standard of living
- Renewable energy
- Maritime shipping
- Government welfare measures

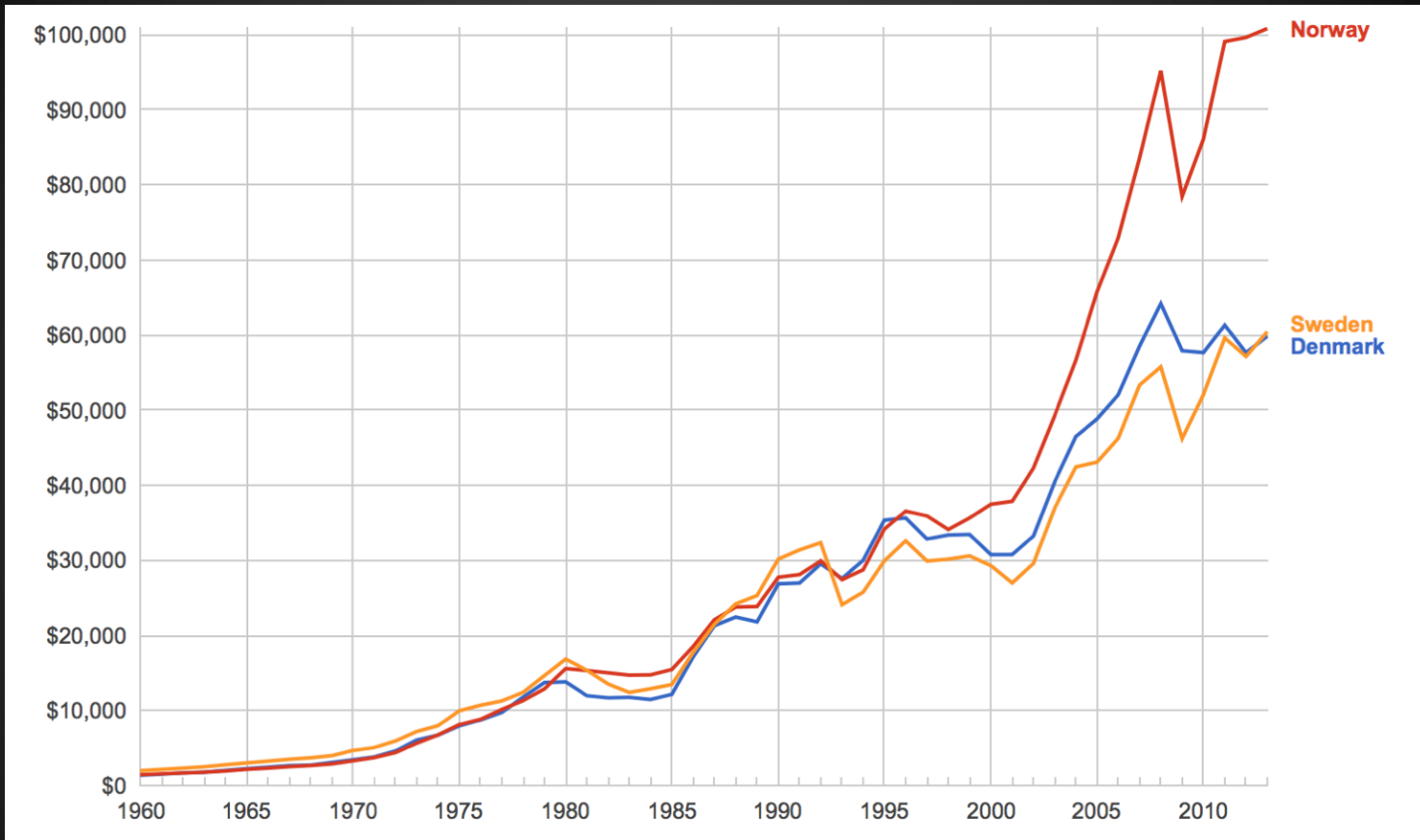
Taxes as a Share of Gross Domestic Product, 2008



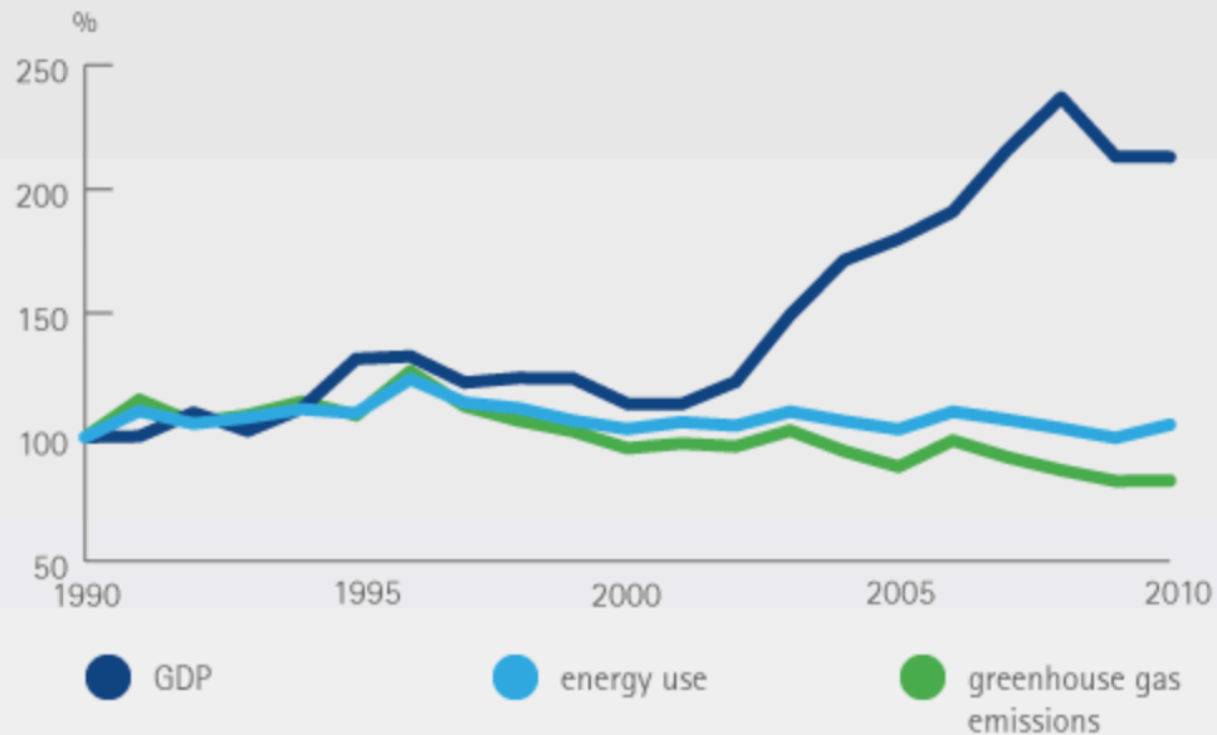
Source: OECD Tax Statistics, 2010

Economy

- Dependent on foreign trade
- Imports
- Exports
- European Union
 - Not part of European Economic and Monetary Union
 - 1 US Dollar about 7 Danish Krone

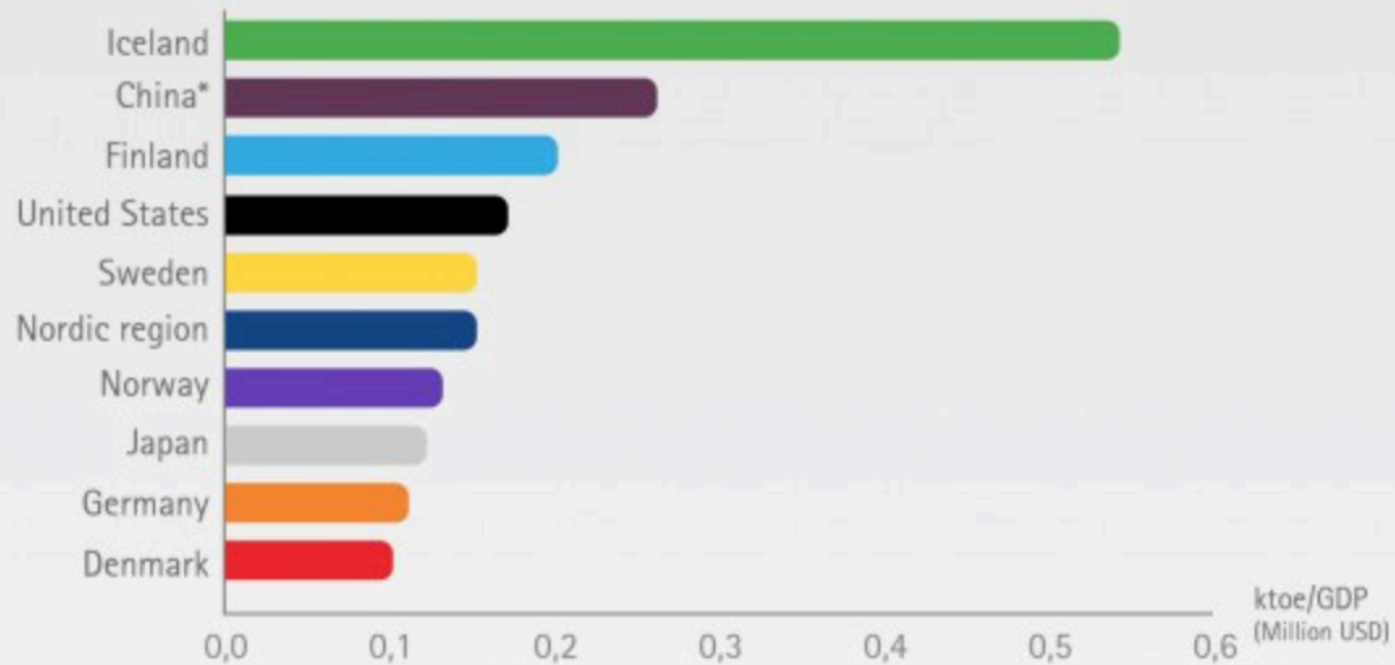


Danish GDP, energy use and emissions



©Nordic Energy Research 2012. Source: EEA/World Bank 2010

Energy intensity in 2011



*Data for 2010 ©Nordic Energy Research 2013. Source: IEA/OECD/World Bank 2013

Economy

- One of the strongest supporters of trade liberalization in the EU
- GDP: 55th in world (2013)
- GDP per capita: 32nd in world (2013)
- Industries

Environmental Issues

- Air pollution
 - Vehicles
 - Power Plant Emissions
- Nitrogen and Phosphorus in North Sea
- Drinking and surface water polluted
 - Animal waste
 - Pesticides

Energy Profile

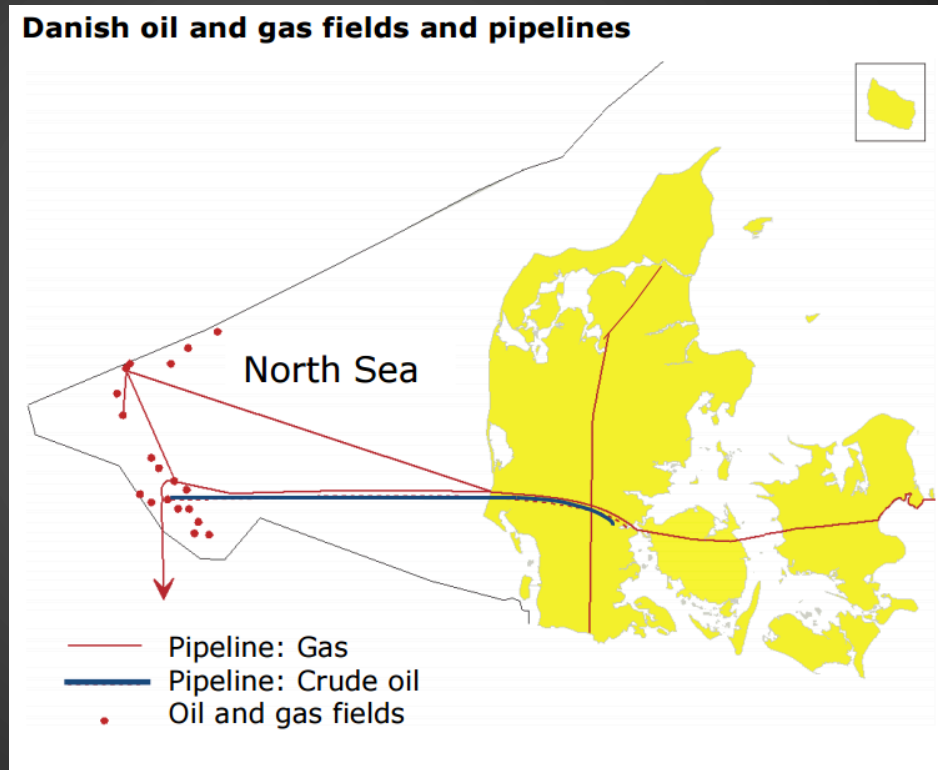
➤ Natural Resources

- Petroleum
- Natural Gas

➤ Electricity

- Fossil fuels: 63%
- “Other Renewables”: 36.9% (as of 2010, 2nd in world)

Energy Profile

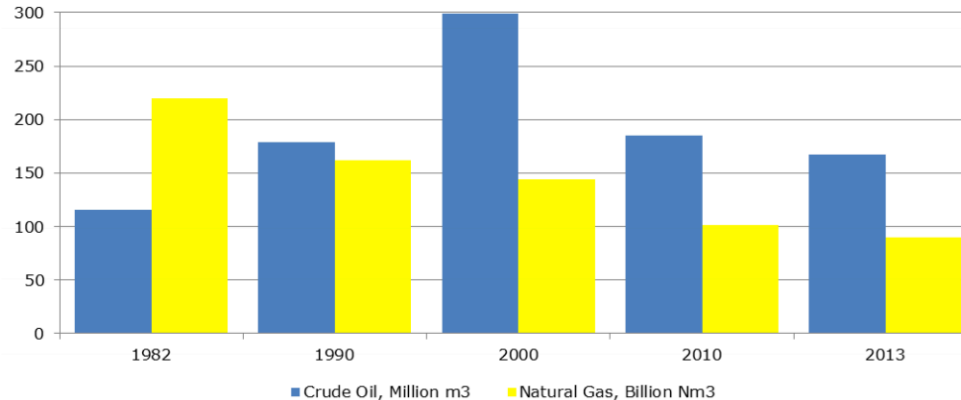


Energy Production

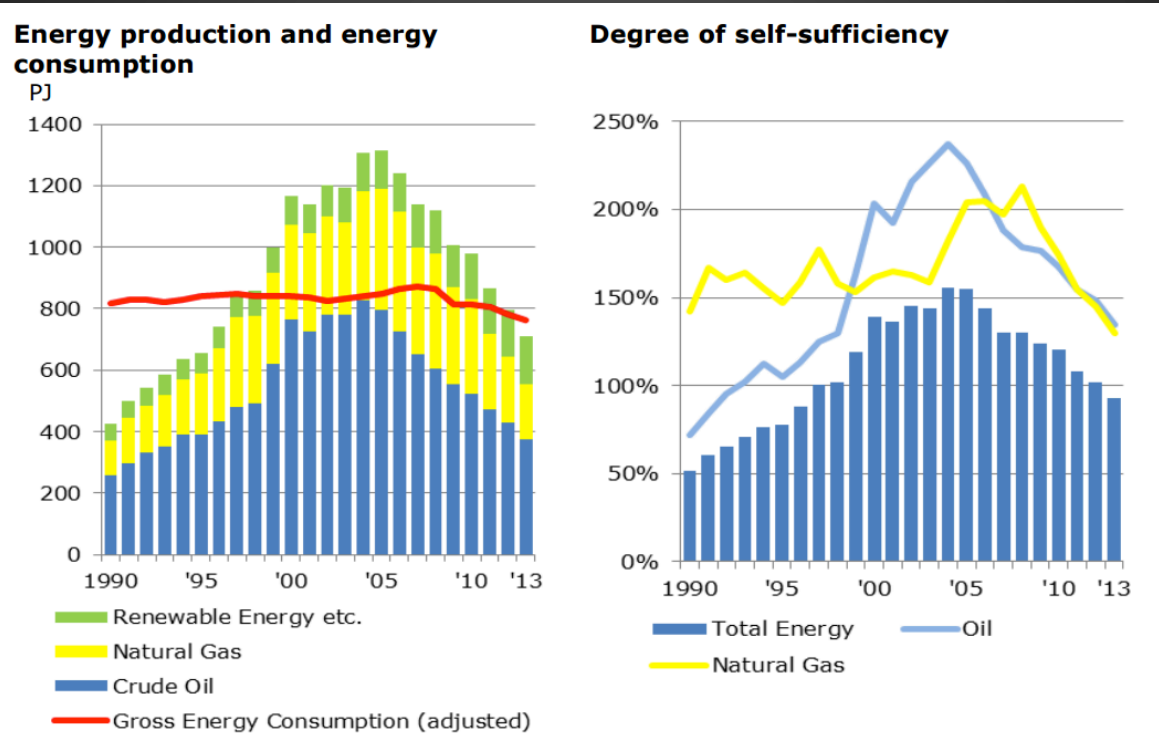
Energy production [PJ]	1980	1990	2000	2010	2013
Total production	40	425	1 165	980	709
Crude oil	13	256	765	523	373
Natural gas	0	116	310	307	179
Waste, non-renewable	5	7	14	17	17
Renewable energy	23	46	76	133	140

* Petajoule (PJ) is equal to one quadrillion (10^{15}) joules.

Oil and gas reserves (Ultimo)



Energy Production



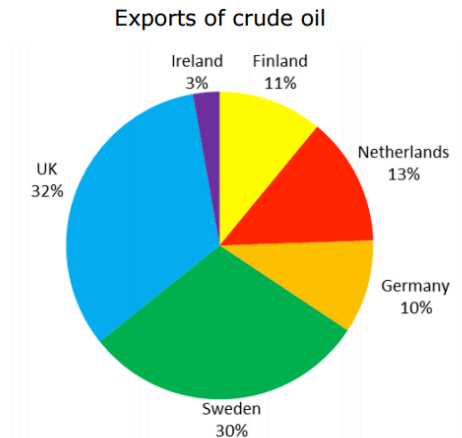
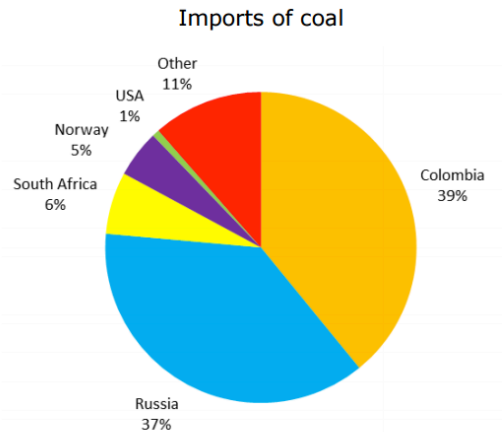
* PJ = (10¹⁵) joules.

Energy Imports and Exports

Imports and exports of energy products, 2013

	Imports	Exports
Crude oil [1000 tonnes]	4 670	6 165
Oil products [1000 tonnes]	7 312	6 619
Natural gas [million Nm ³]	1 292	2 120
Coal [1000 tonnes]	4 952	52
Electricity [GWh]	11 459	10 377

Imports of coal and exports of crude oil by country, 2013



Energy Profile

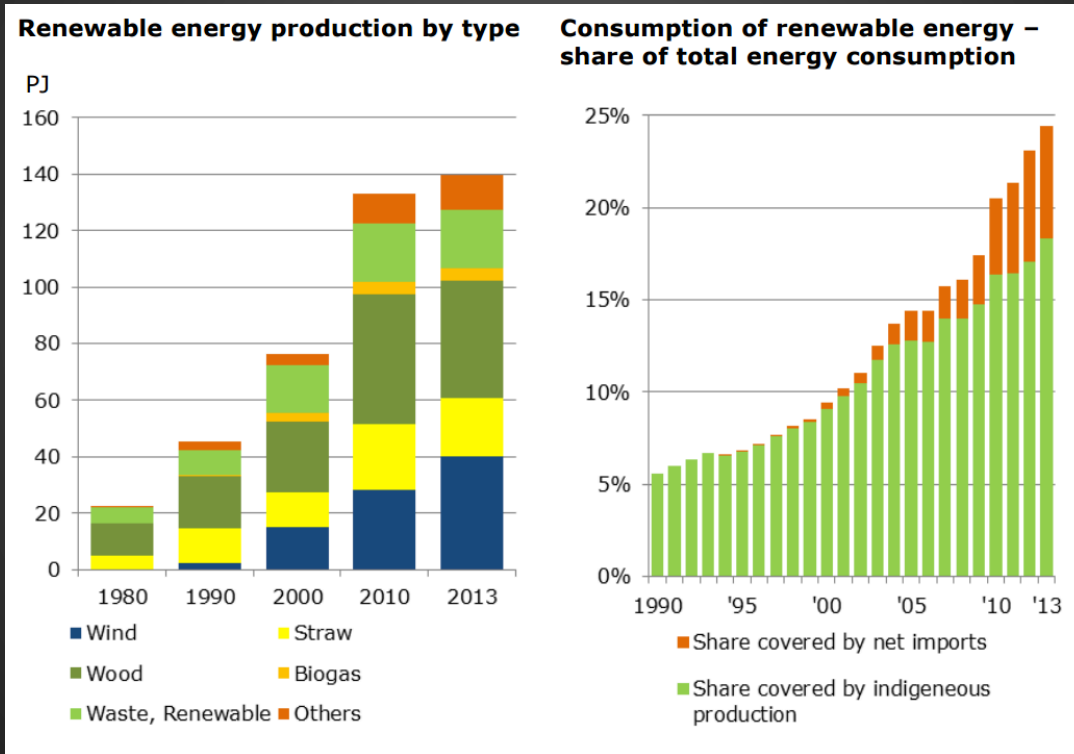
- As the first country in the world, Denmark is leading the transition to a green growth economy by introducing a goal of becoming independent from fossil fuels by 2050
- Wind Energy, Waste Energy

Energy Policy

➤ Goals:

1. Security of Energy Supply.
2. Environmental and Climate aspects related to Energy Use.
3. Economical aspect, cost effectiveness of energy supplies.

Renewable Energy Profile



Wind Energy

Number of wind turbines by size

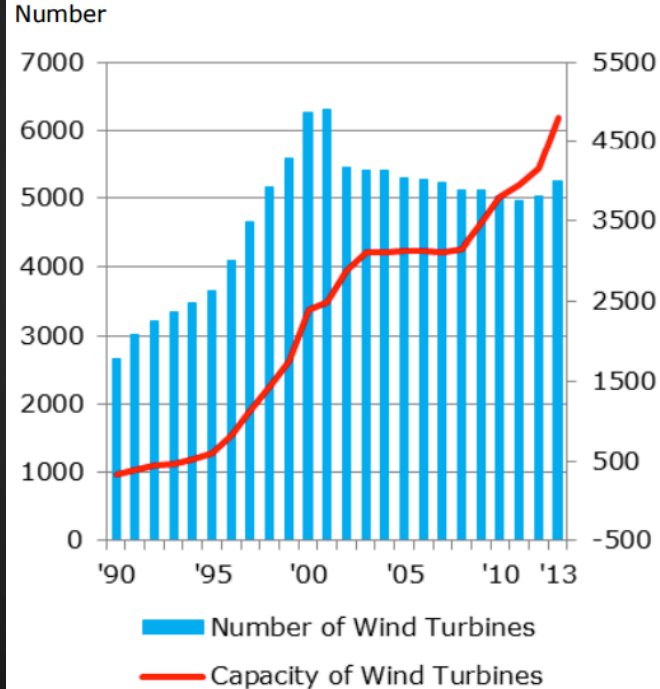
	1990		2000		2013		
	Onshore turbines	Onshore turbines	Offshore turbines	Total	Onshore turbines	Offshore turbines	Total
Total	2 666	6 219	41	6 260	4 721	519	5 240
- 499 kW	2 656	3 677	11	3 688	1 397	14	1 411
500 - 999 kW	8	2 283	10	2 293	2 551	10	2 561
1000 - 1999 kW	2	251	-	251	359	-	359
2000 - kW	-	8	20	28	414	495	909

Total capacity of wind turbines by size [MW]

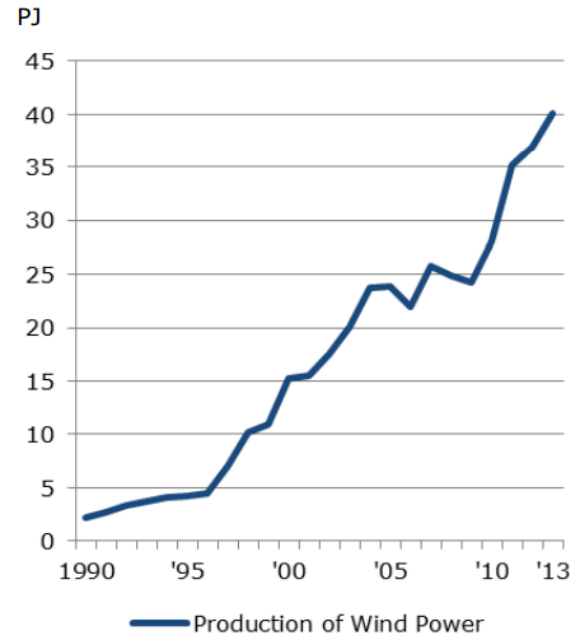
	1990		2000		2013		
	Onshore turbines	Onshore turbines	Offshore turbines	Total	Onshore turbines	Offshore turbines	Total
Total	326	2 340	50	2 390	3 539	1 271	4 810
- 499 kW	317	533	5	538	232	5	237
500 - 999 kW	6	1 512	5	1 517	1 734	5	1 739
1000 - 1999 kW	3	279	-	279	438	-	438
2000 - kW	-	16	40	56	1 135	1 261	2 396

Wind Energy

Number of wind turbines and size of capacity

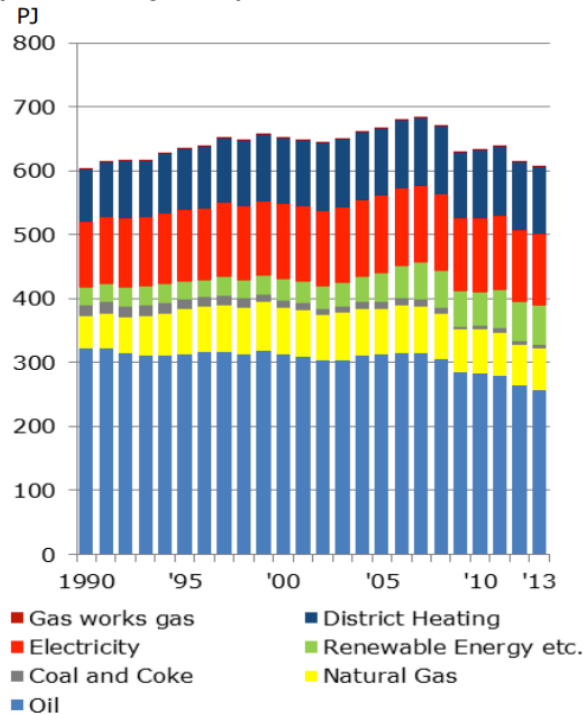


Production of wind power

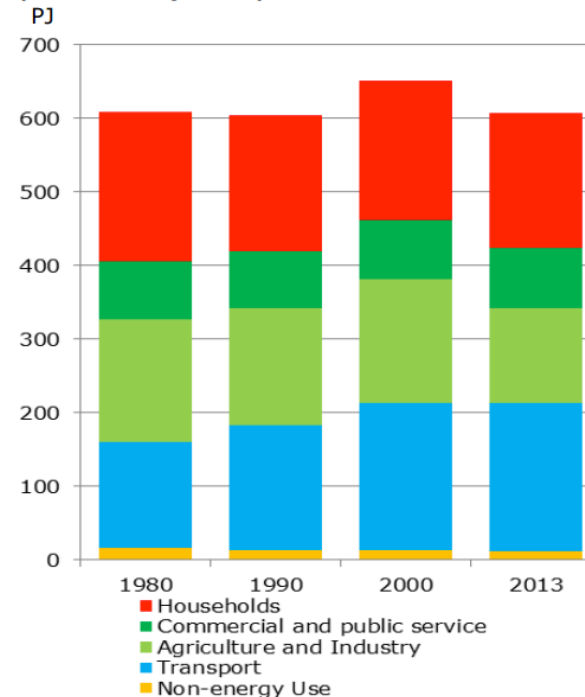


Energy Consumption

Final energy consumption by fuel
(Climate adjusted)

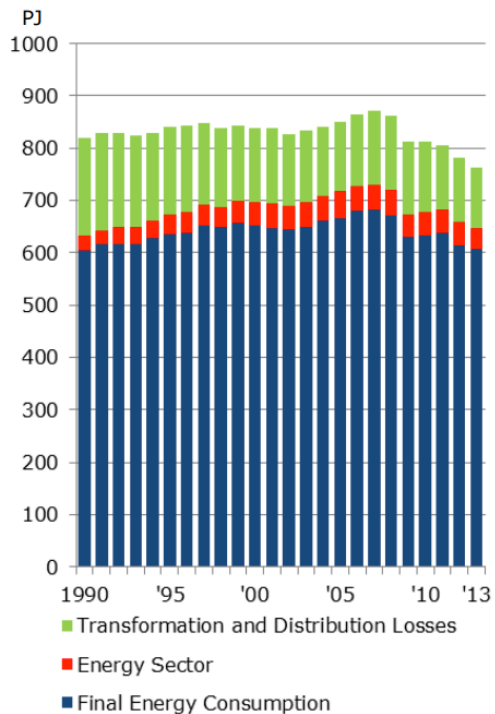


Final energy consumption by sector
(Climate adjusted)

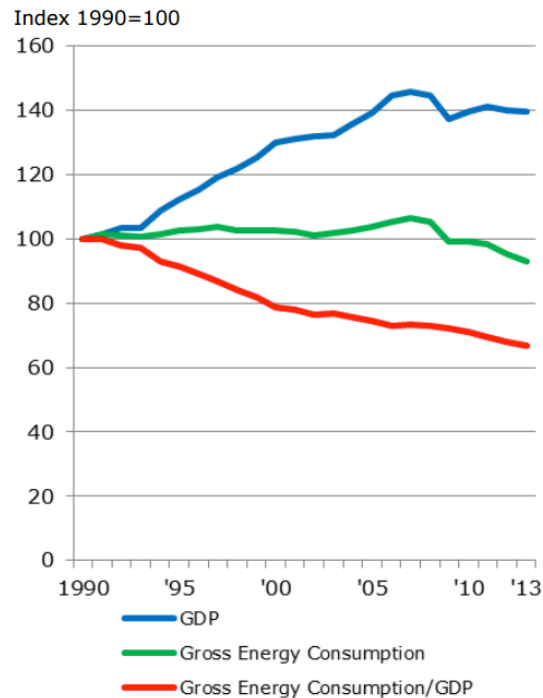


Energy Consumption

Gross energy consumption and final energy consumption
(Adjusted)



GDP, gross energy consumption and energy intensity
(Adjusted)



Locations to Visit

➤ Copenhagen

- Danish Energy Agency
- Ministry of Climate and Energy Policy

