

Vienna Conference, June 8-9 2006  
Efficiency, Environment & Employment 2006

# Danish Energy Policies, Job Creation and Innovation Experiences

Henrik Lund  
Aalborg University  
Denmark

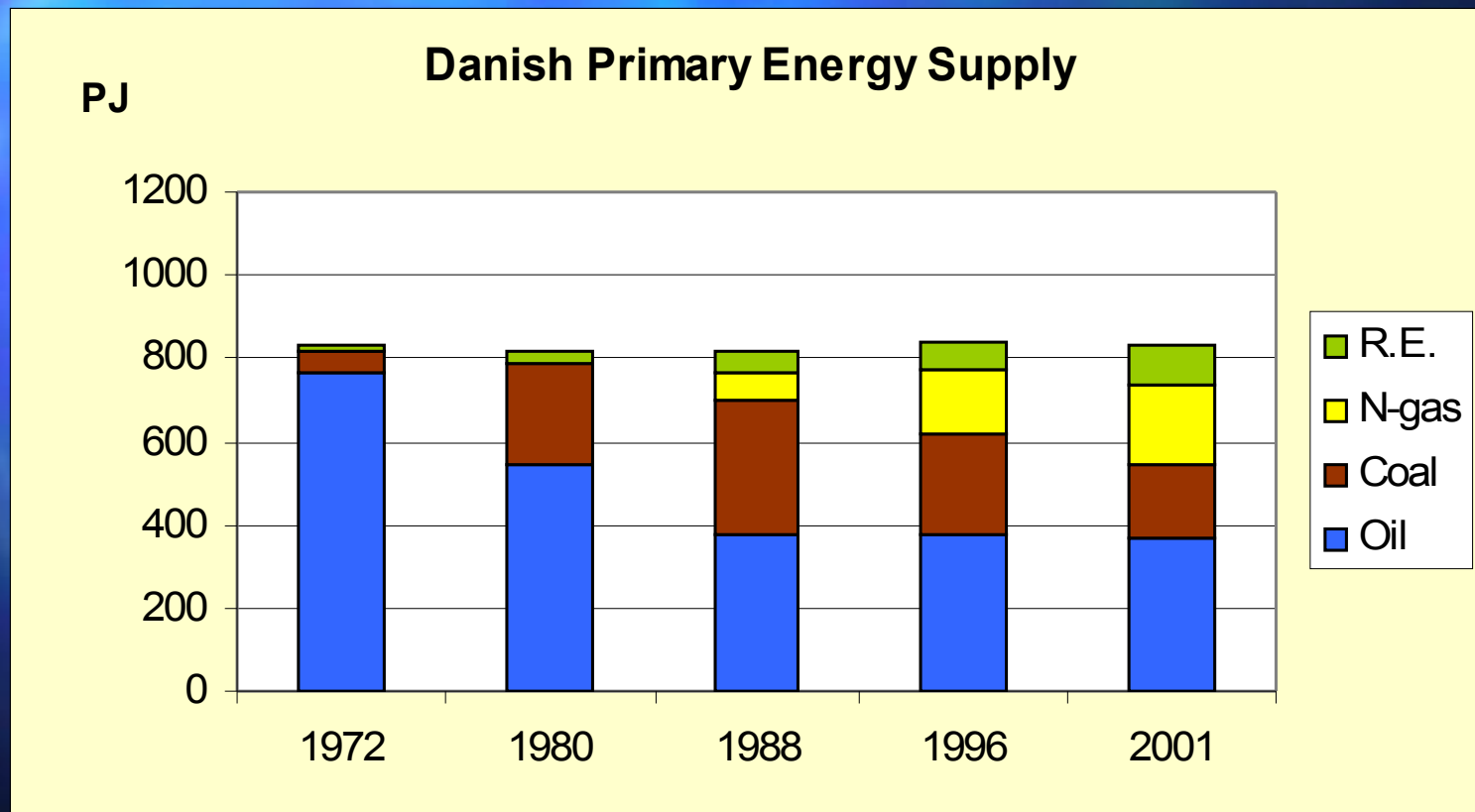


# Content:

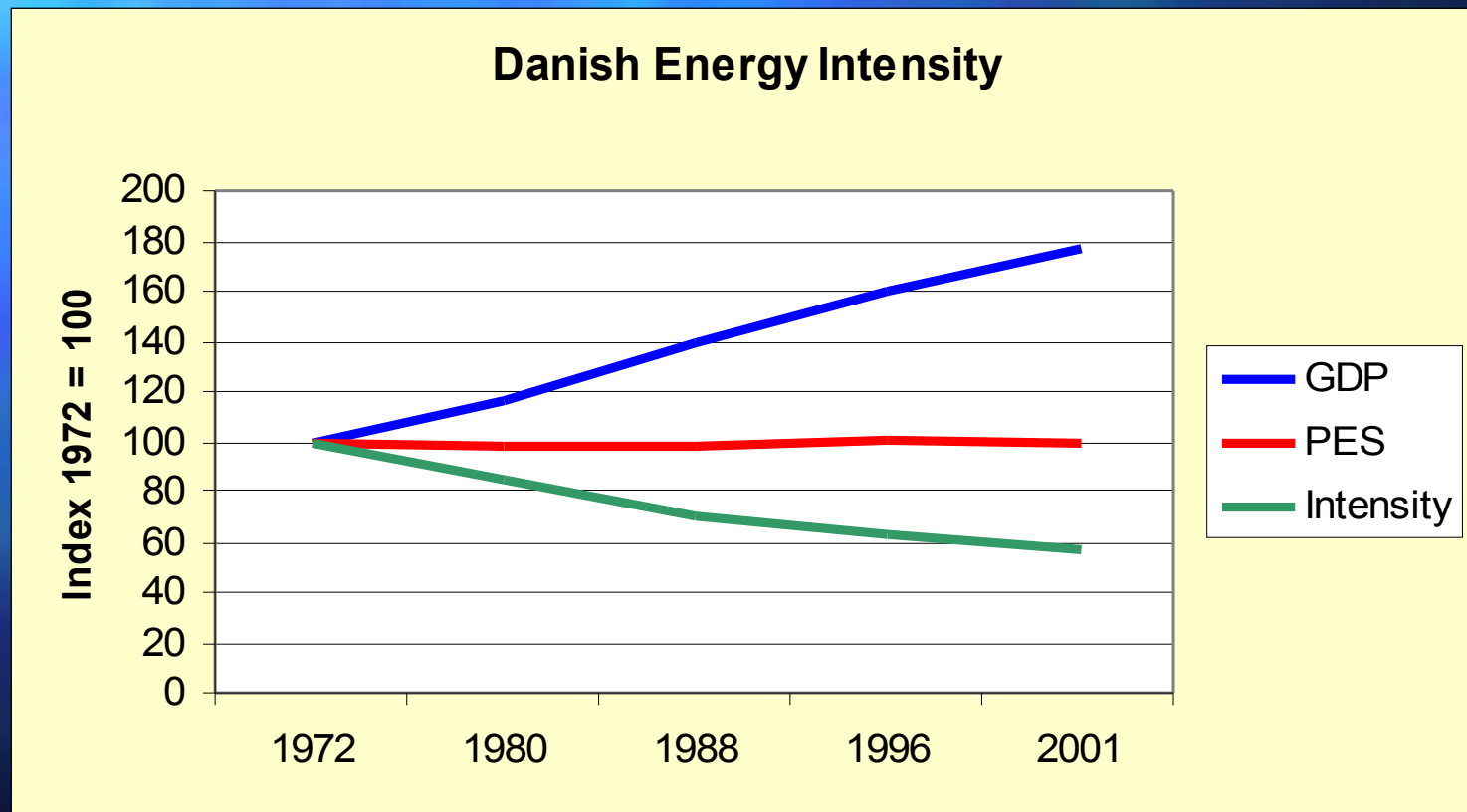
---

- Danish Energy Planning Experiences
- Danish Energy Policies and Job creation
- The results in terms of Jobs, Innovation and export of green energy technologies

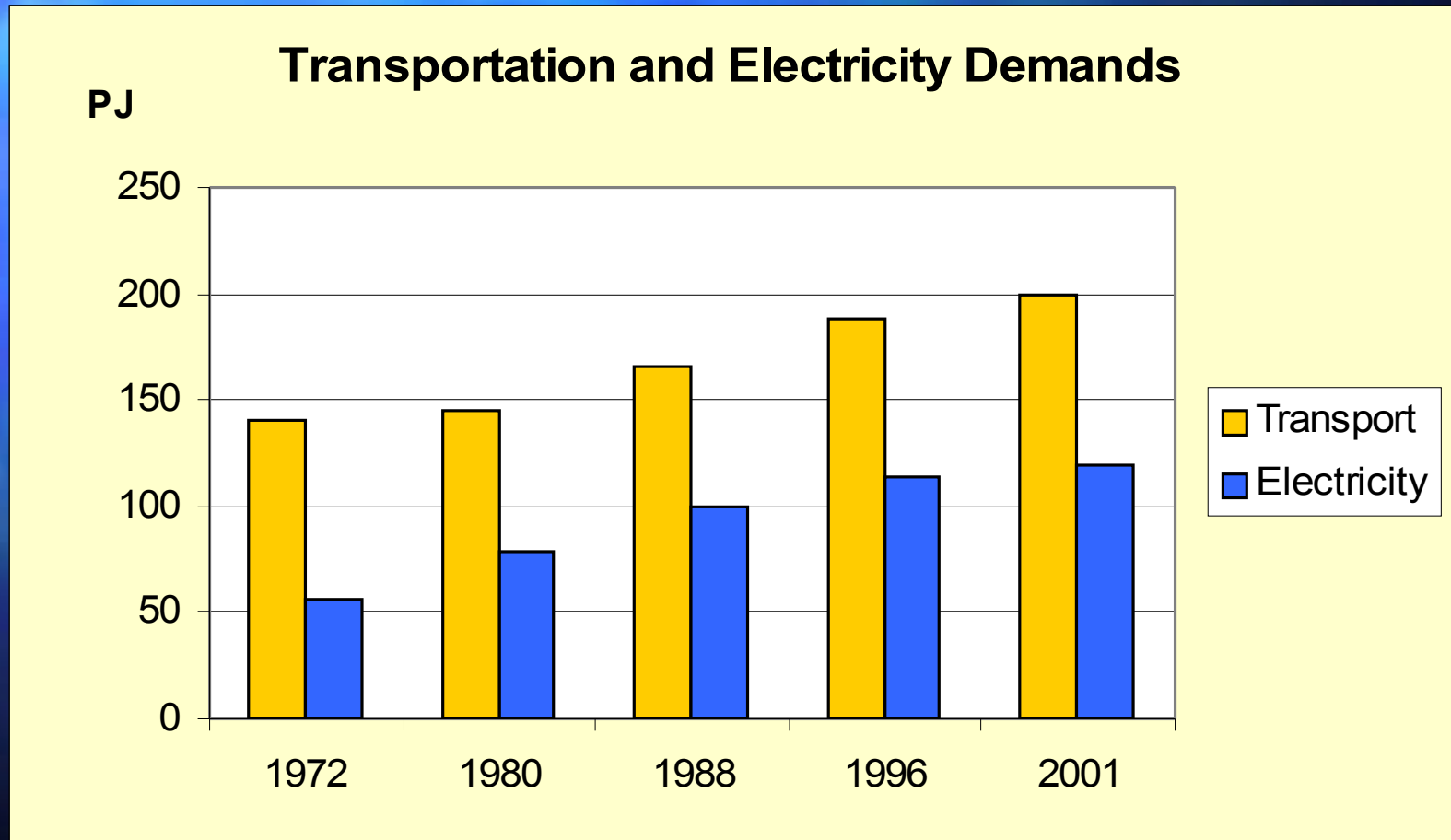
# 30 years Primary Energy Supply



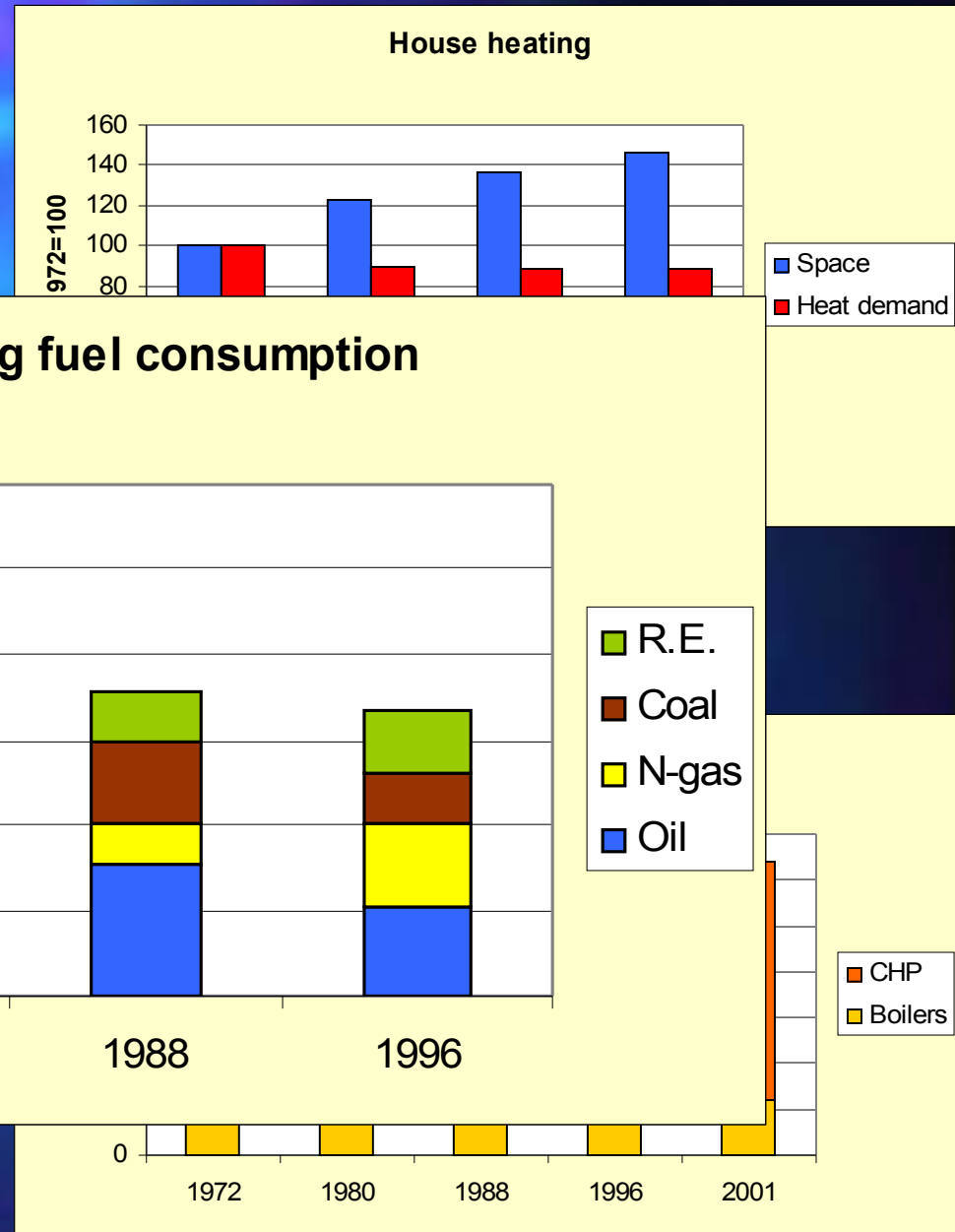
# Energy and Economic Growth



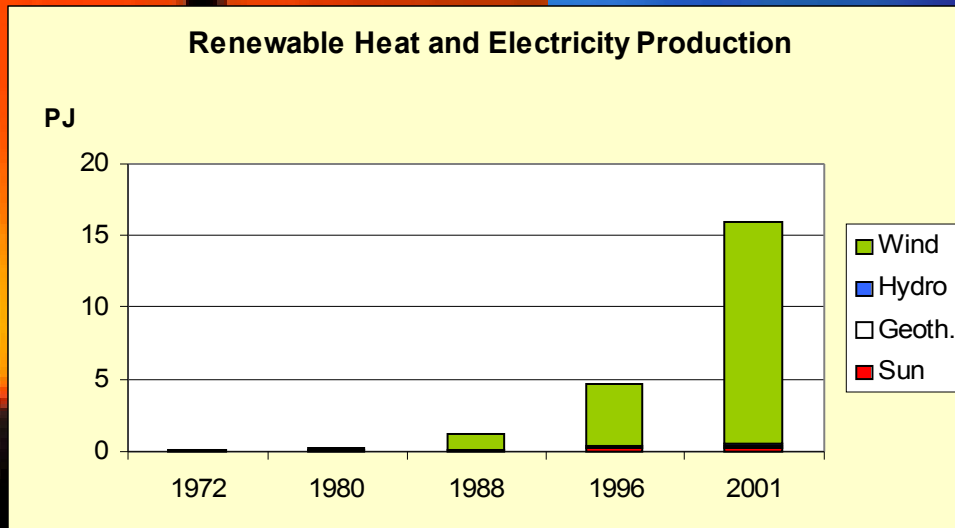
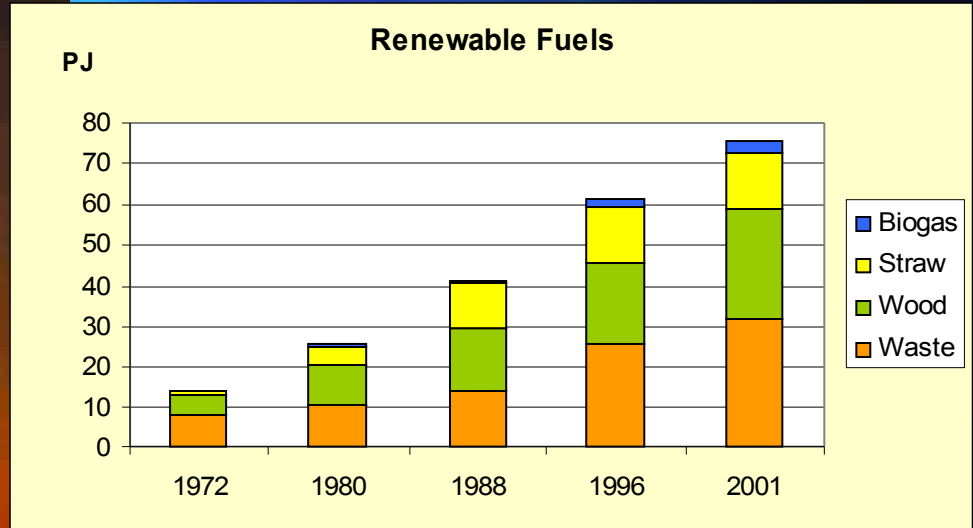
# Electricity and Transportation



# House Heating



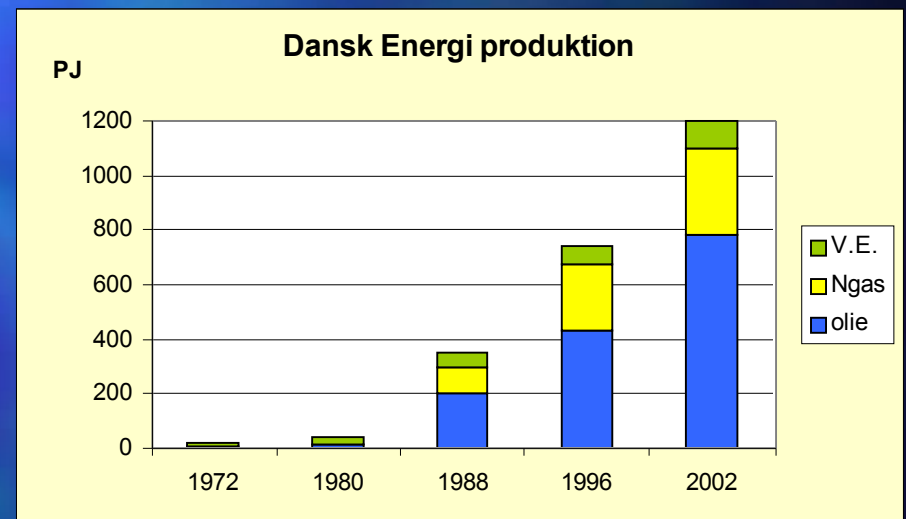
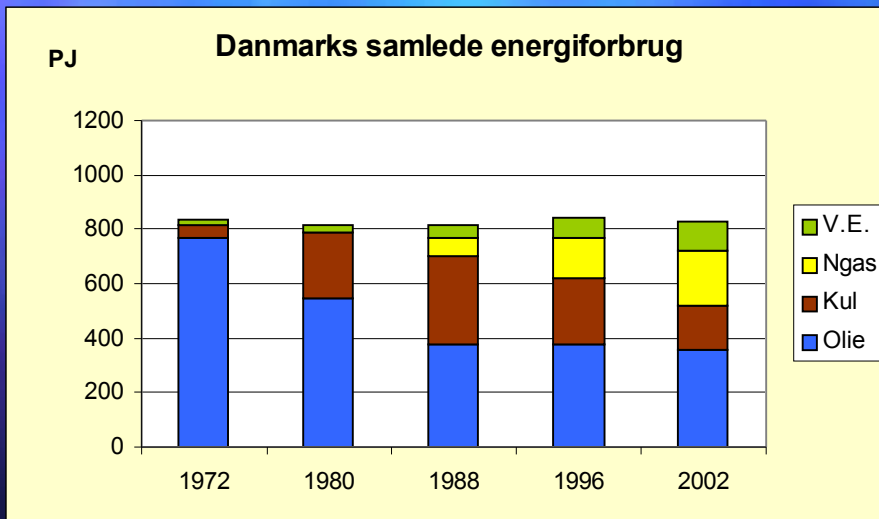
# Renewable Energy Sources





# More than self-supplied

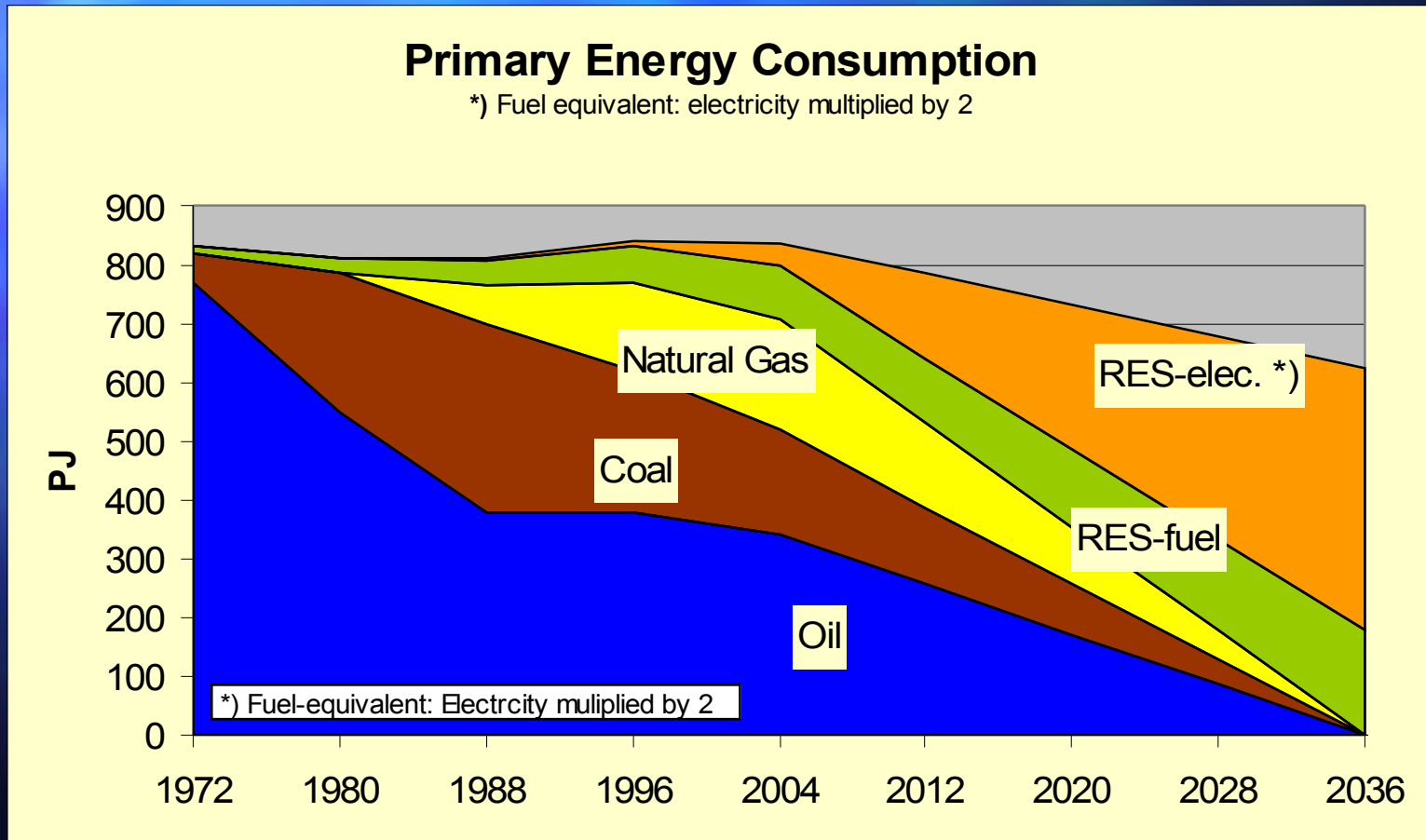
Net income year 2002: + 13 billion DKK



Oil price: app. 32 \$/barrel



# Danish 100% RES alternative



# Content:

---

- Danish Energy Planning Experiences
- Danish Energy Policies and Job creation
- The results in terms of Jobs, Innovation and export of green energy technologies

# Energy Policies: The 70ies

Objective in focus:

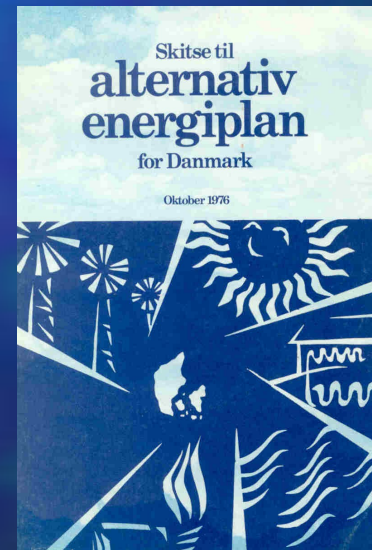
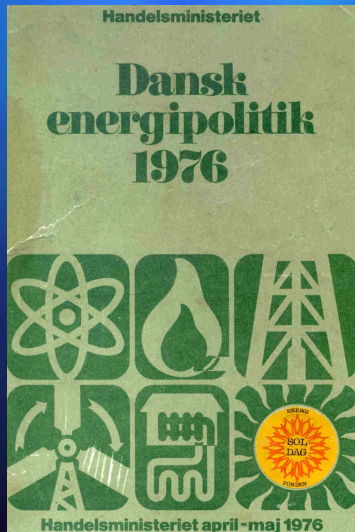
Oil dependency

Government Approach:

Coal and Nuclear

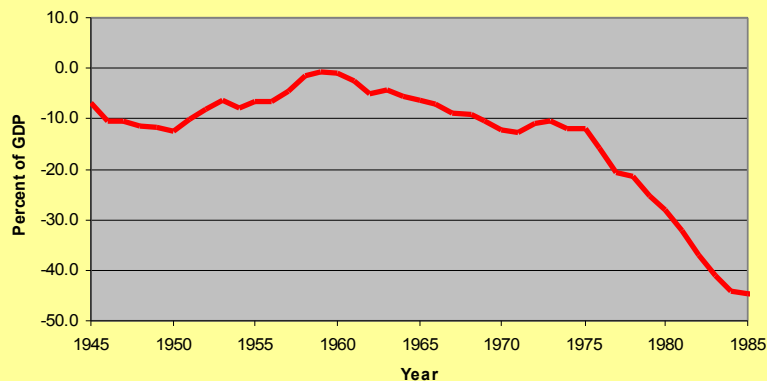
Draft Alternative Energy Plan:

- Energy Conservation
- CHP and
- Renewable Energy

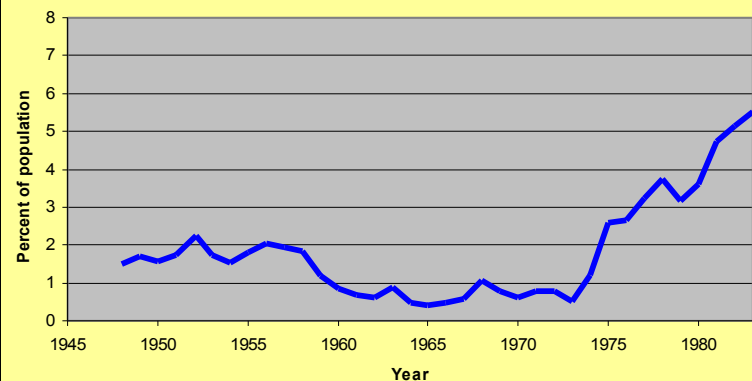


# Difficult Economical situation In Denmark in the early 80ies

## Net Foreign Debt in Denmark



## Unemployment in Denmark





# Energy Policies: The 80ies

Objective in focus:

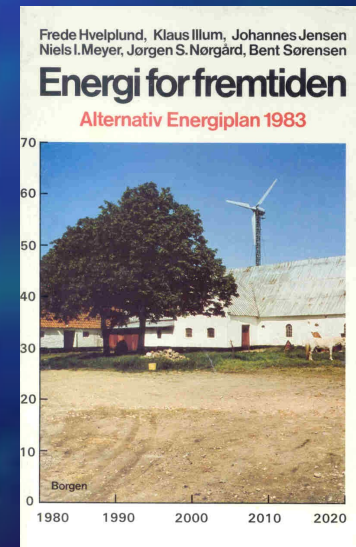
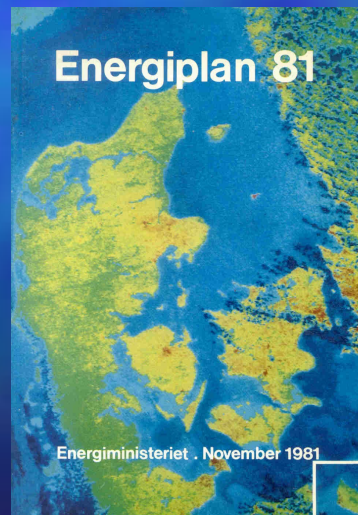
Socio Economy  
(Jobs and  
balance of payment)

Alternative Energy Plan:

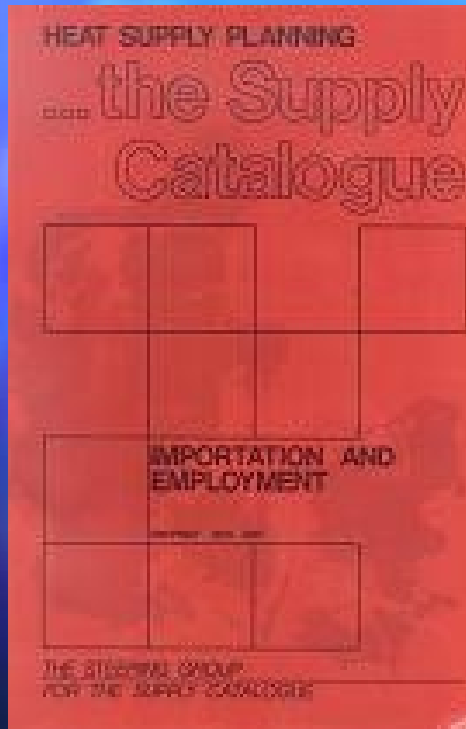
- Energy Conservation
- CHP and
- Renewable Energy

Approach:

3 Alternatives:  
Coal + Conservation  
Coal + Nuclear  
Coal + Natural Gas



# Feasibility Studies methodologies



Mid 80 'ies:

- Heat planning procedure in all municipalities
- feasibility studies including jobs and balance of payment issues in the priority
- made possible for authorities to run job creation and innovative energy policies and planning

# Content:

---

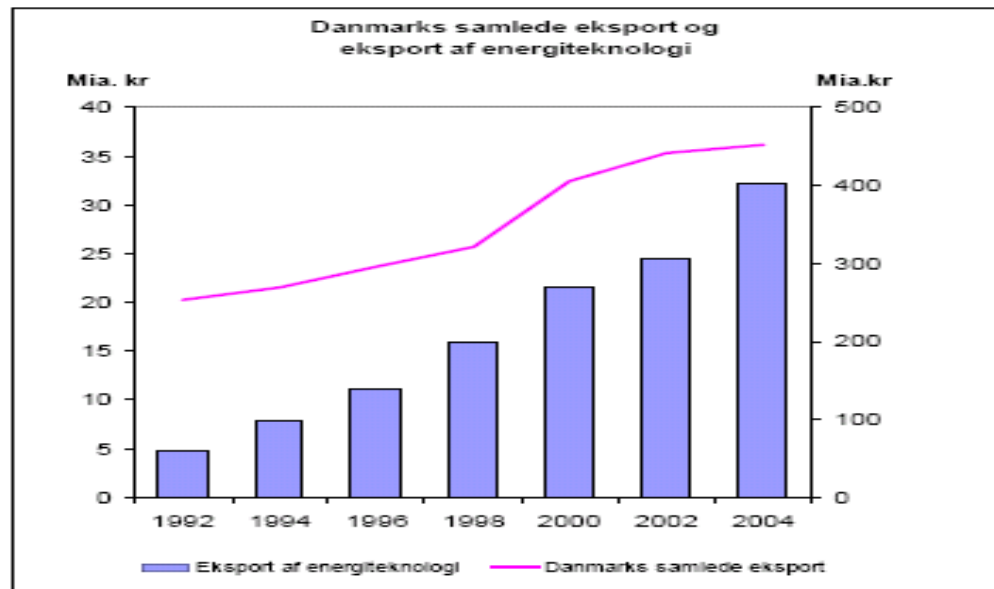
- Danish Energy Planning Experiences
- Danish Energy Policies and Job creation
- The results in terms of Jobs, Innovation and export of green energy technologies



# Export of Energy Technologies

## 2. Eksport af energiteknologi

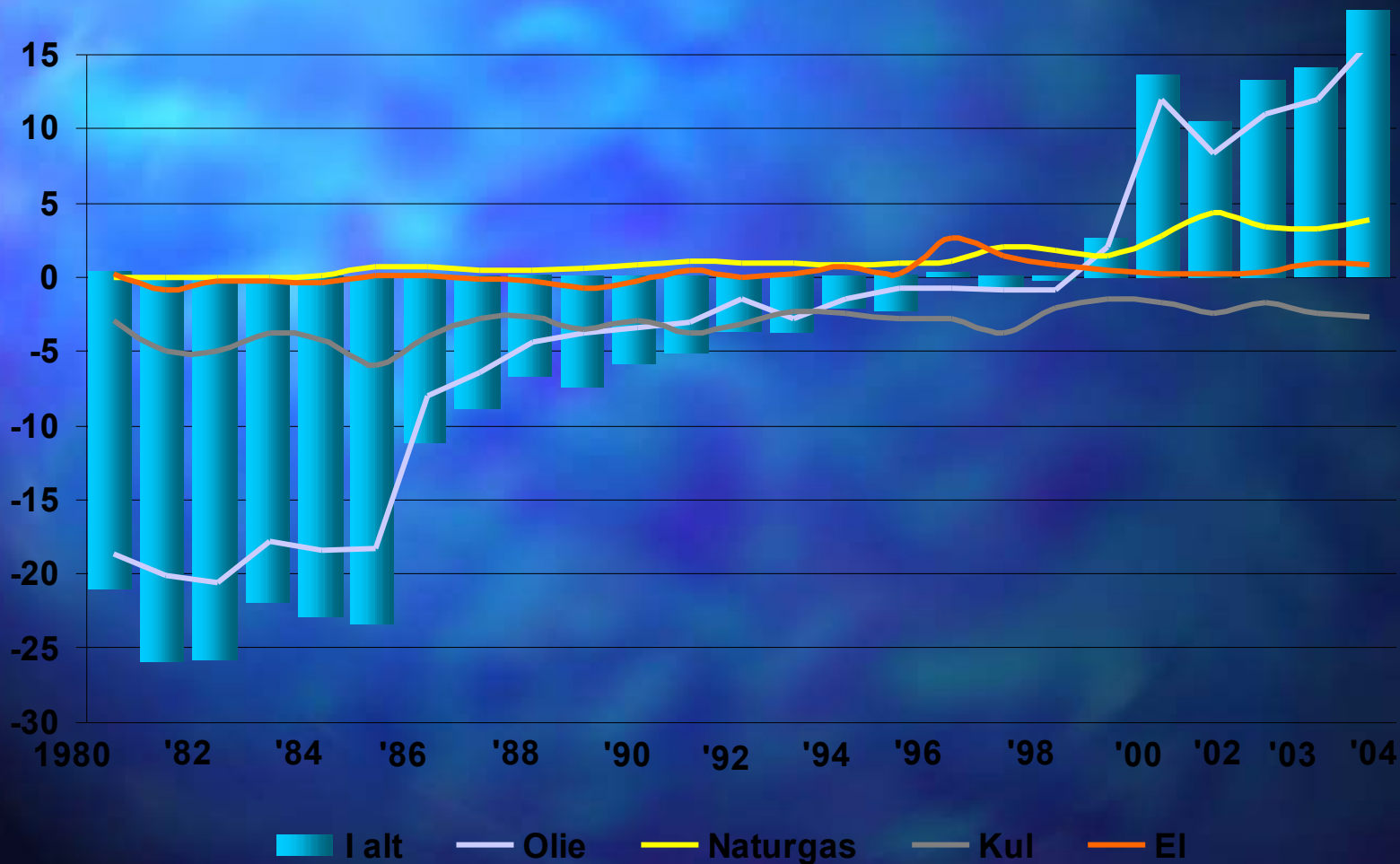
Værdien af eksporten af energiteknologi mv. er i år 2004 opgjort til 32,1 mia. kr. Det svarer til 7,1 % af Danmarks samlede eksport i år 2004. Eksporten er gennem de seneste år vokset mere end værdien af Danmarks samlede eksport. For 6 år siden udgjorde den således ca. 5 % af Danmarks samlede eksport.



Figur 2.1

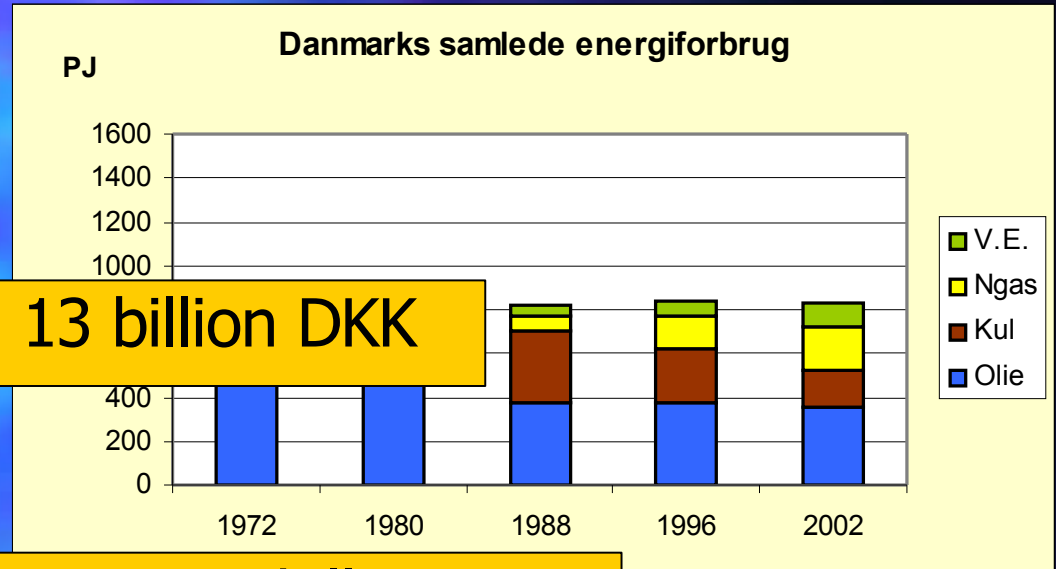
# Net income from trade of fuel and electricity

Billion DKK

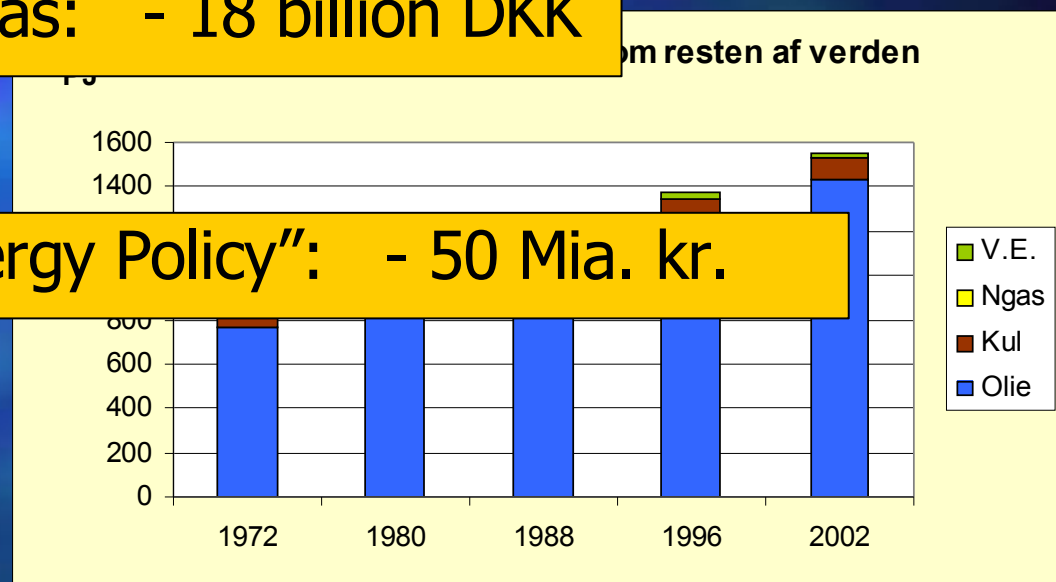


# What if?

Net income year 2002: + 13 billion DKK



Without the DK Oil and Gas: - 18 billion DKK

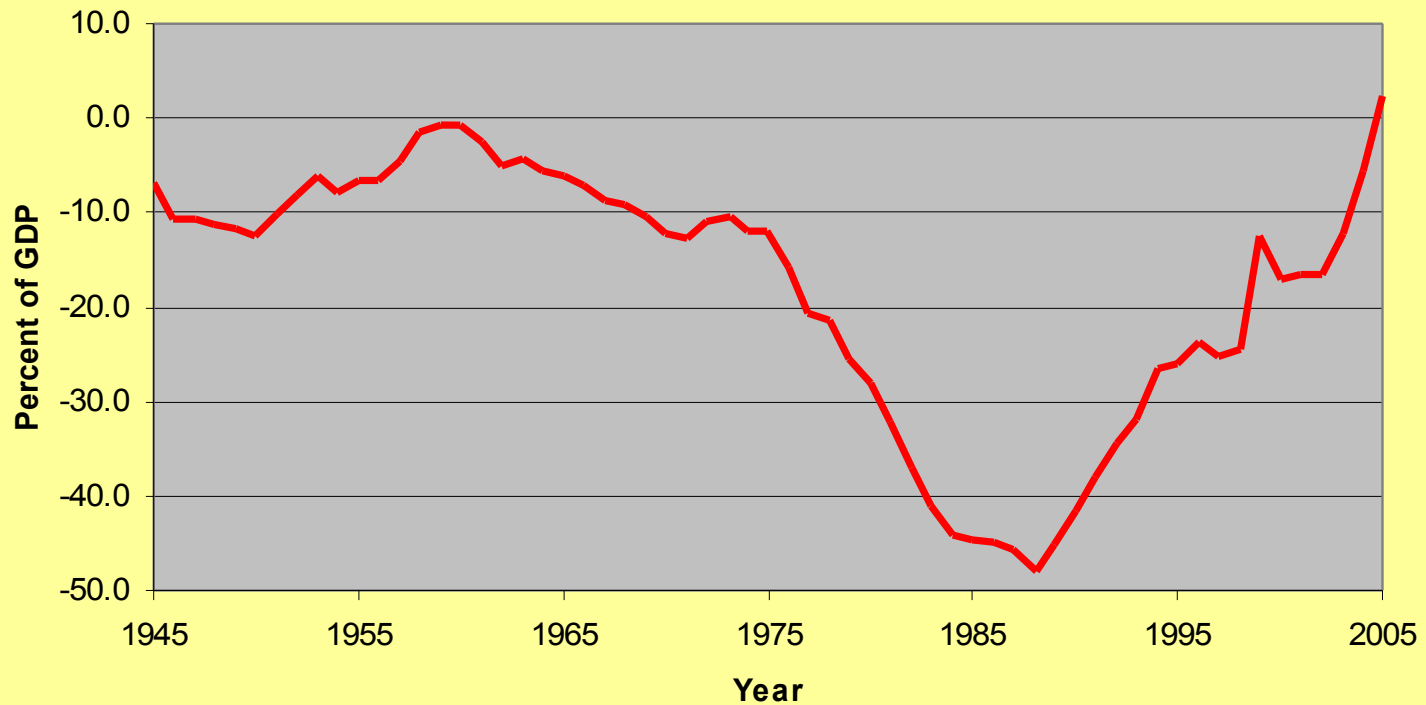


Without "30 years Energy Policy": - 50 Mia. kr.

Oil price: app. 32 \$/barrel

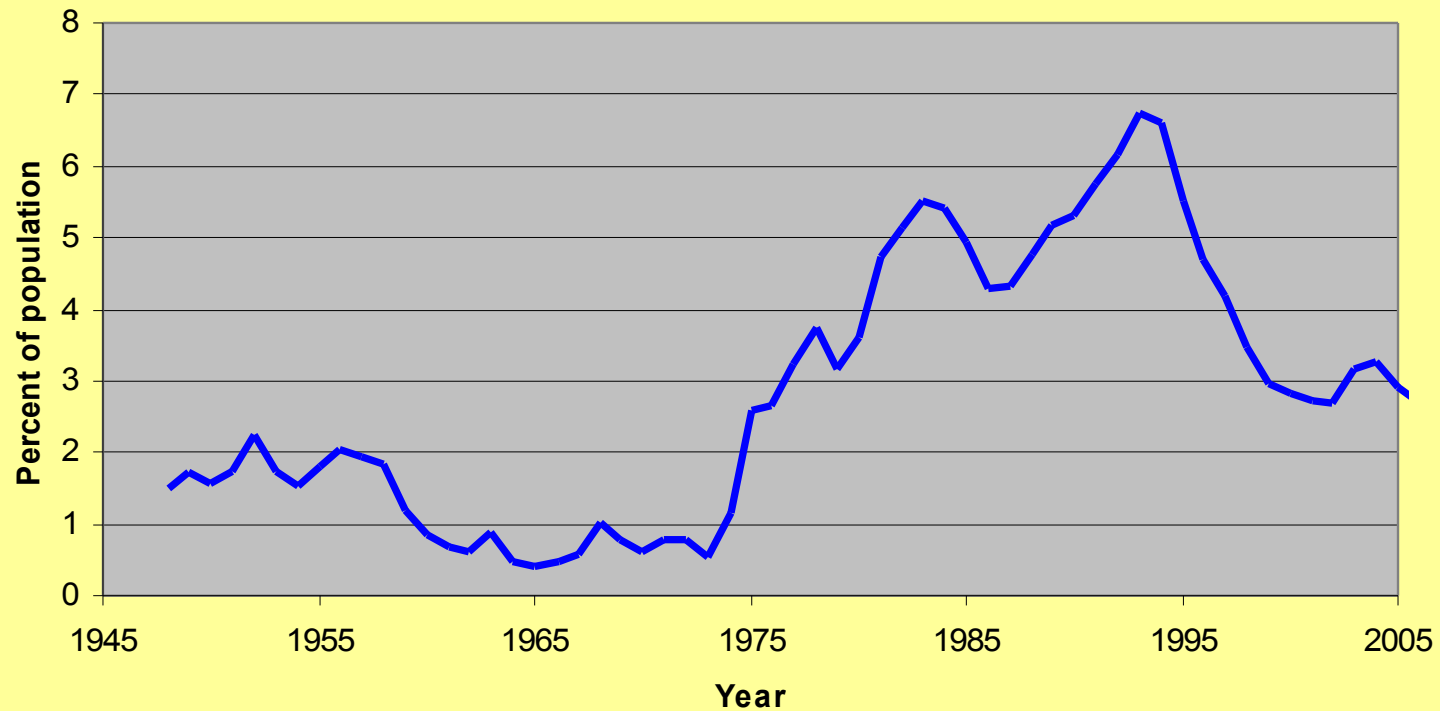
# Foreign Depth

## Net Foreign Debt in Denmark



# Job creation

## Unemployment in Denmark



# Final remarks

---

- In a situation of high un-employment and foreign debt Denmark conducted an active energy policy with emphasize on technological development and job creation.
- Such policy turned out to be very success full in terms of jobs, balance of payment and export



Vienna Conference, June 8-9 2006  
Efficiency, Environment & Employment 2006

# Danish Energy Policies, Job Creation and Innovation Experiences

Henrik Lund  
Aalborg University  
Denmark

