

# Feed in, Certificates or investment subsidies: What games are the actors playing?

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Atle Midttun

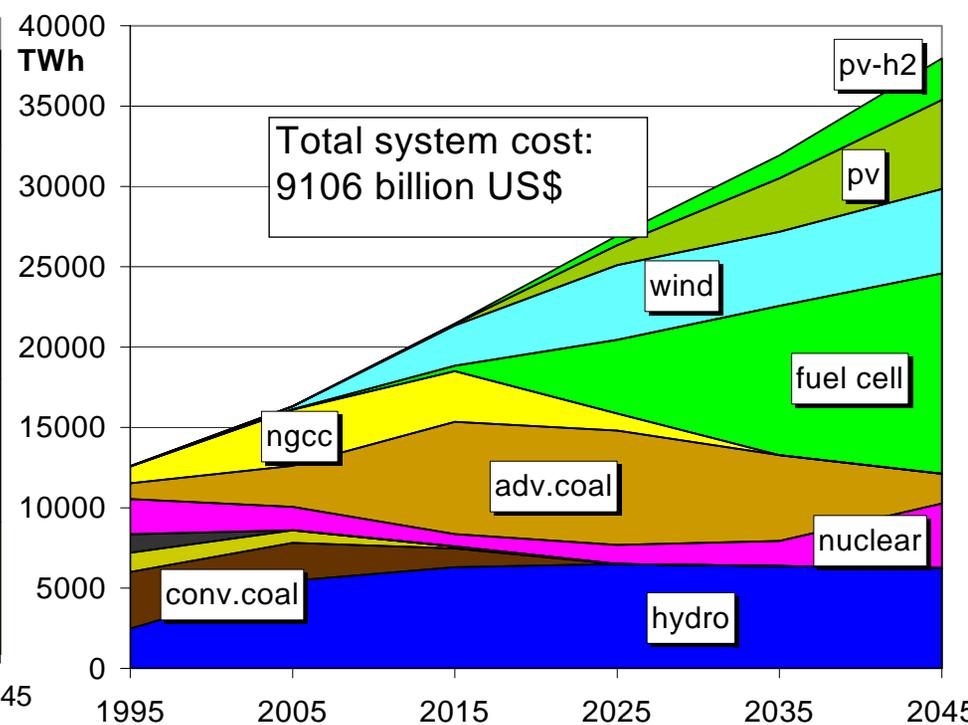
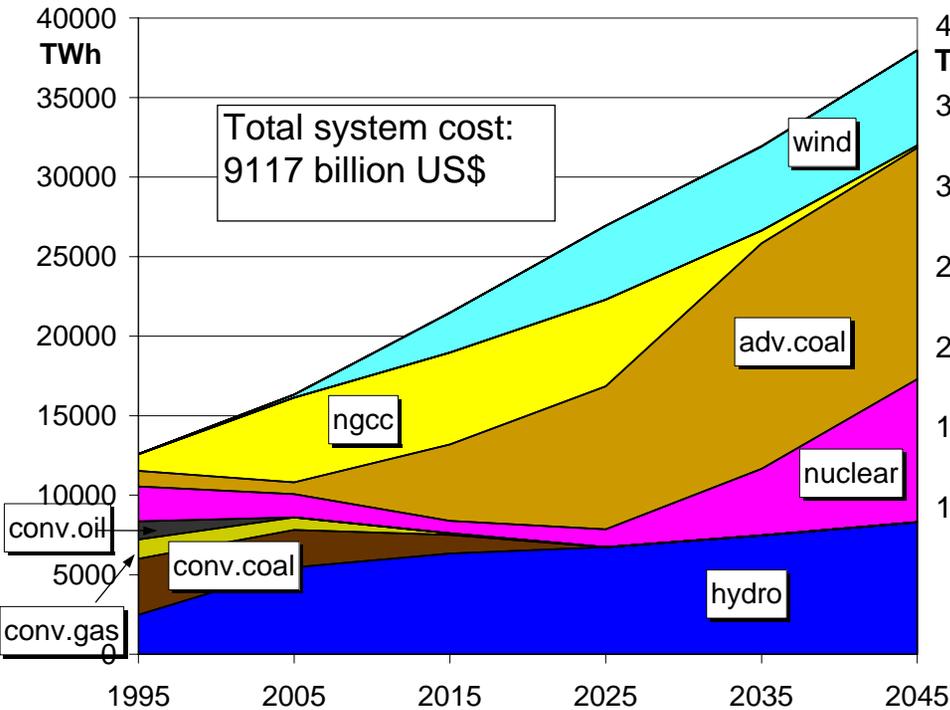
The Norwegian School of Management  
Presentation at the Maribor-Realise seminar  
May 10th

# The Challenge of Transition

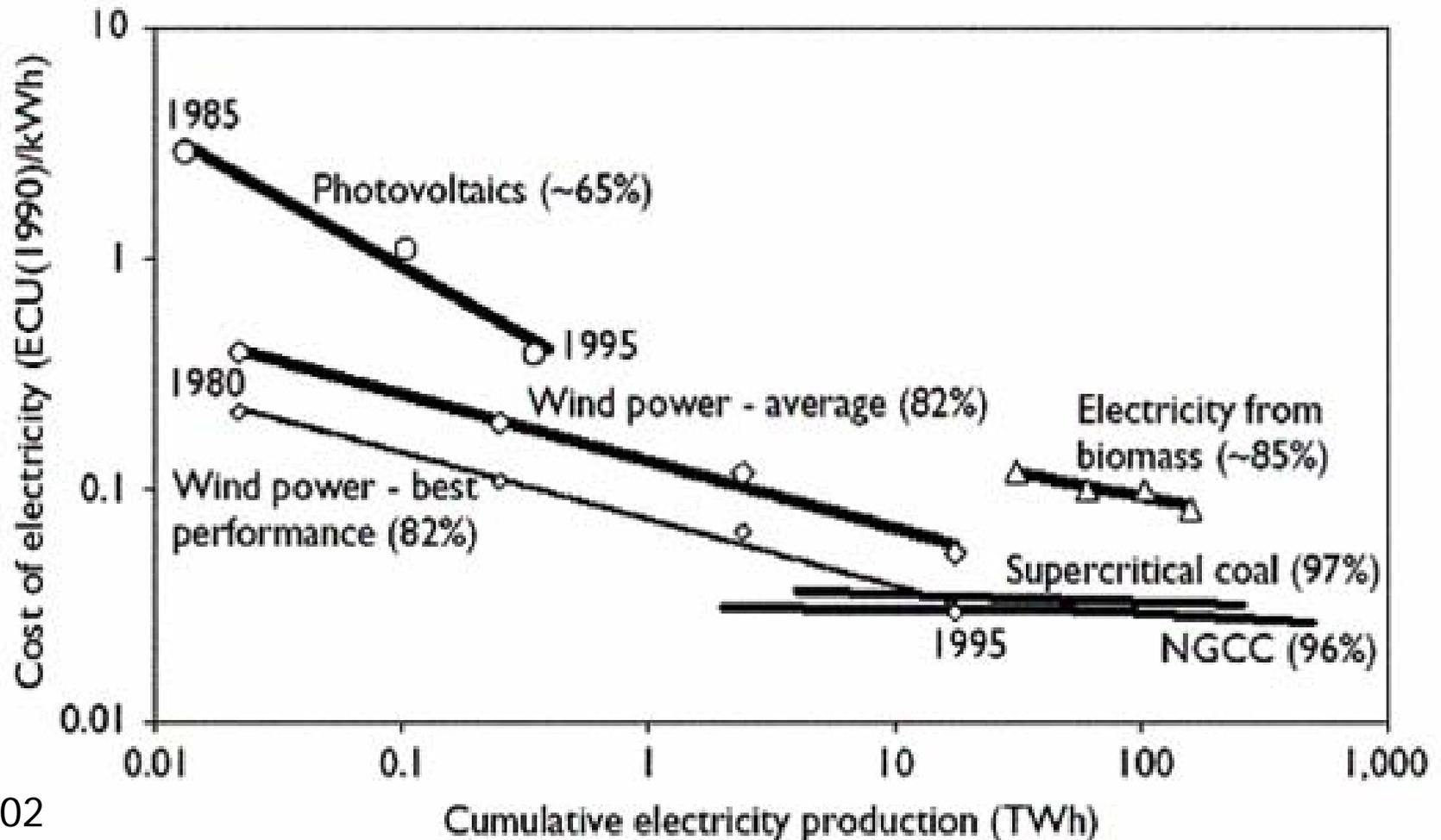
(IEA-Genie Model runs 1997)

Technology Path with Fossil Fuels, Nuclear and Wind

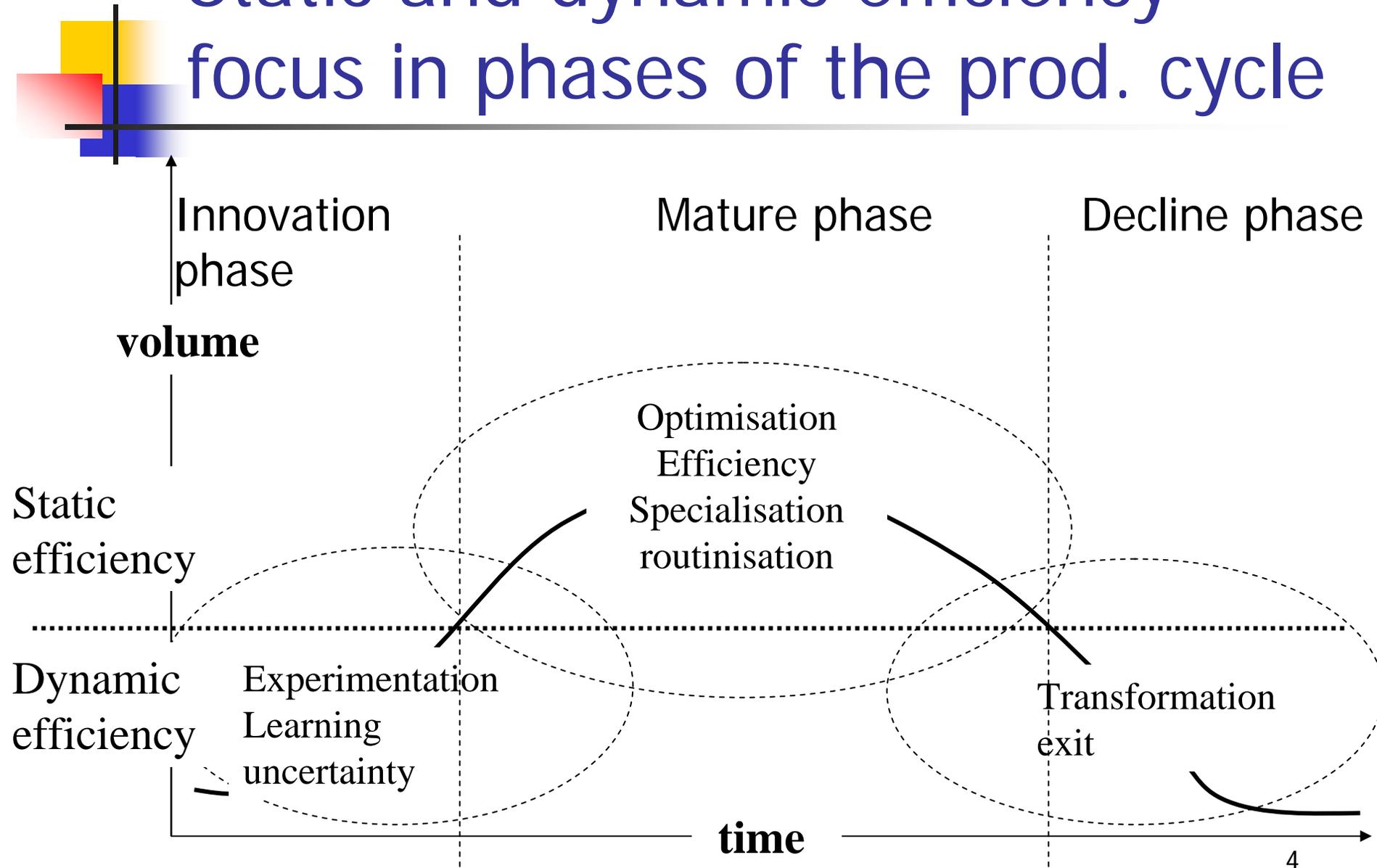
Technology Path with Fuel Cells, PV and Wind



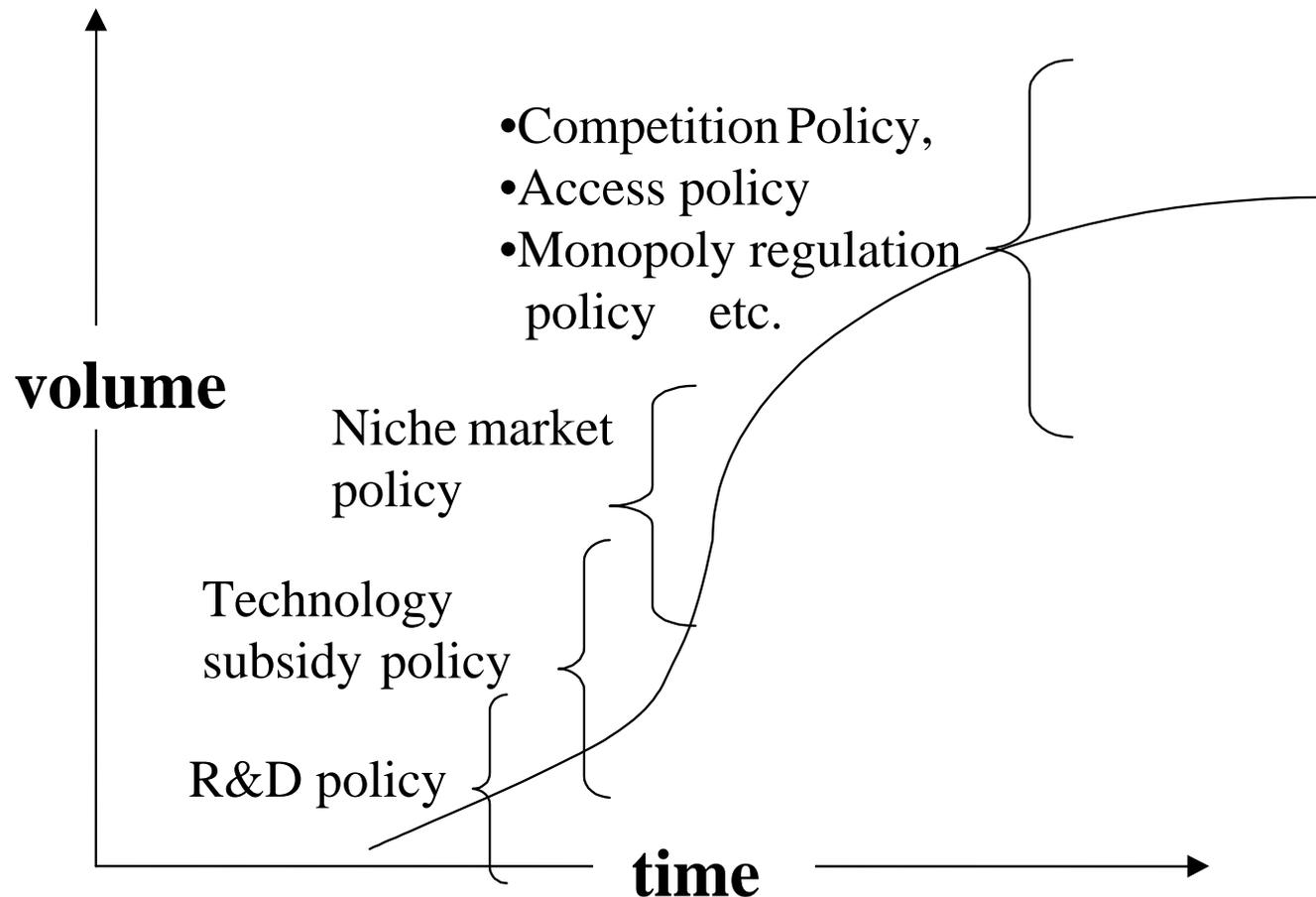
# Support systems and Learning Curves



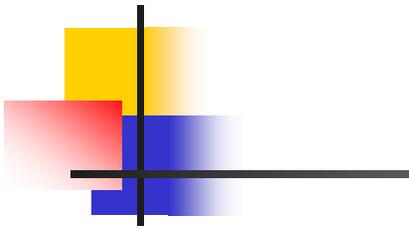
# Static and dynamic efficiency focus in phases of the prod. cycle



# Sequential application of regulatory instruments



# Feed in tariffs in Germany and Certificate prices in Sweden

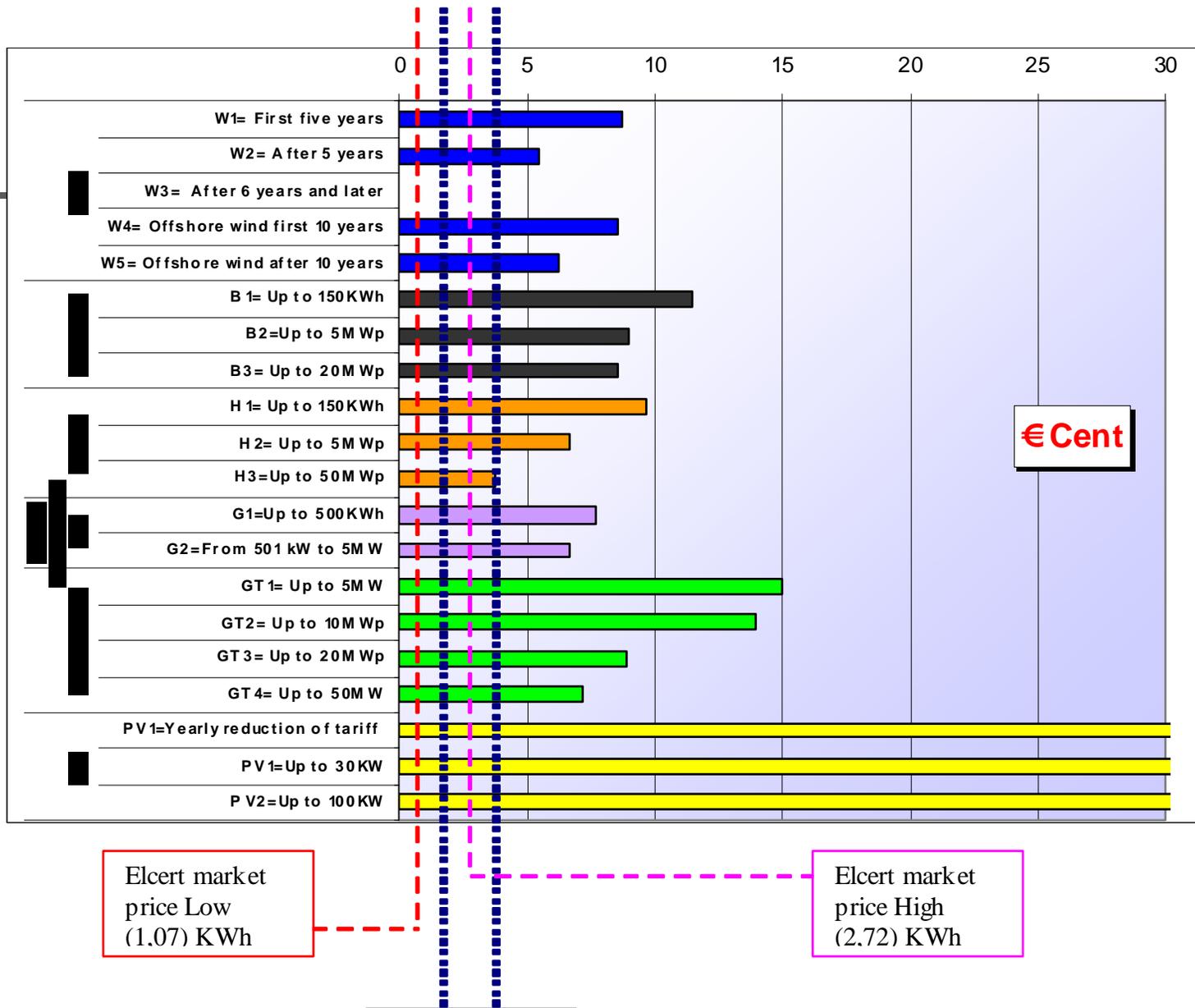


## Feed in:

- Differentiation
- Stability?
- Strong boosting effect

## Certificates:

- Non-differentiated
- Low cost?
- Market exposed

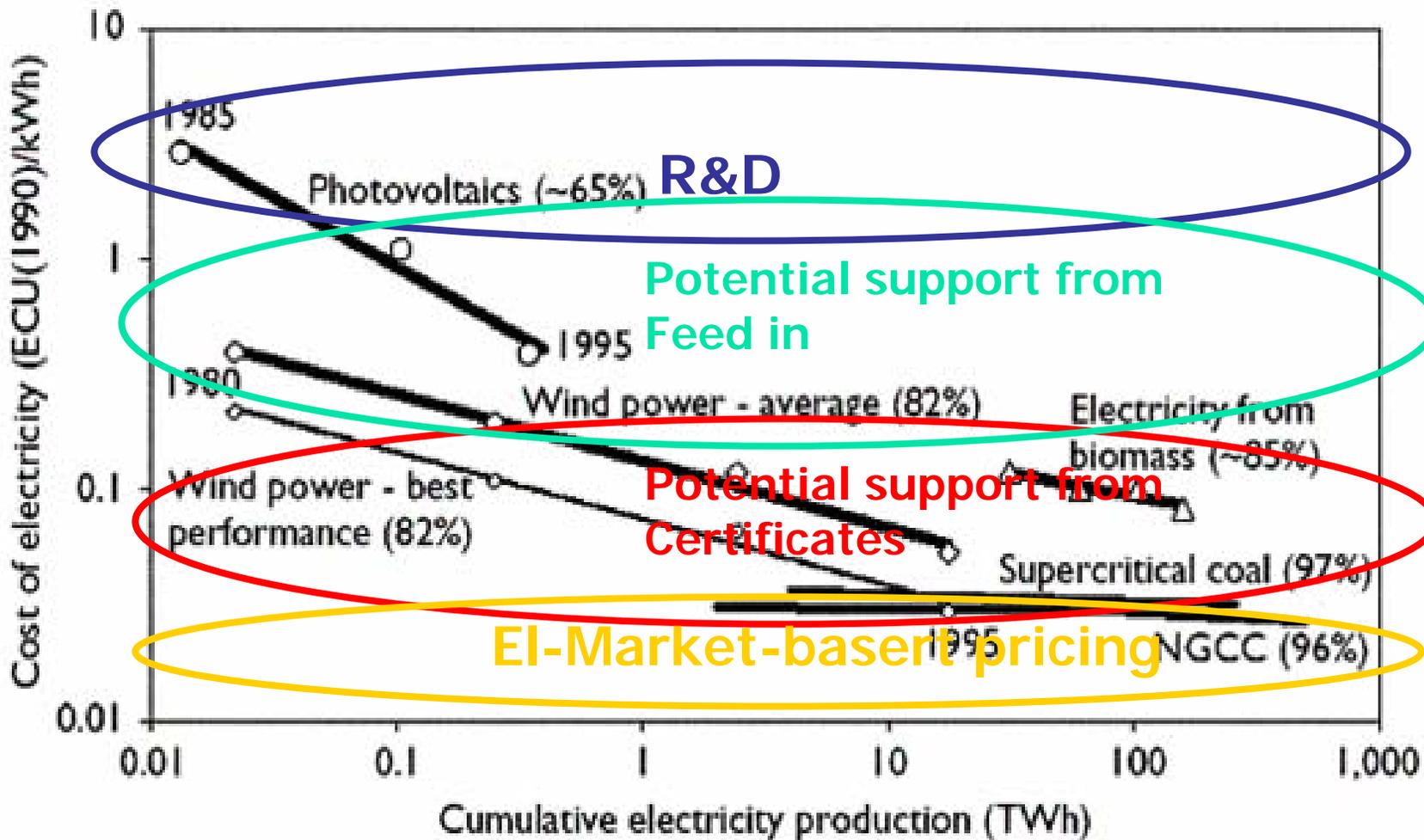


Elcert market price Low (1.07) KWh

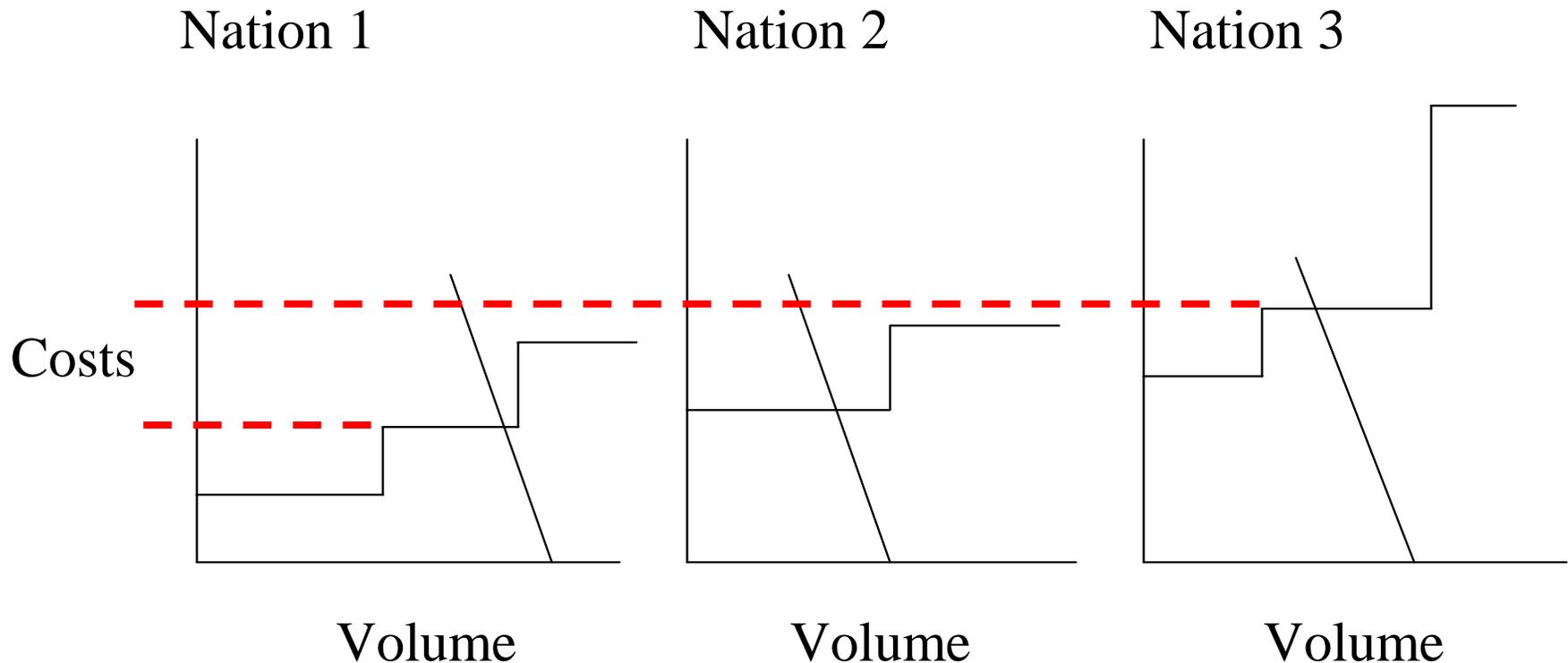
Elcert market price High (2.72) KWh

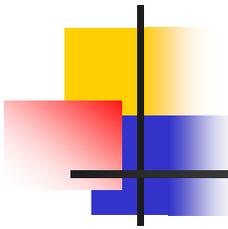
2 € cent el price included

# Support systems and Learning Curves



# An argument for Europeanisation: Ricardian trade advantages

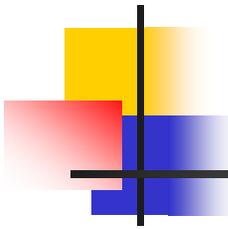




# An argument for Europeanisation: Possibility for Technology differentiation

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- Larger market
- Greater scope for specialisation without efficiency loss



# Who are the main actors?

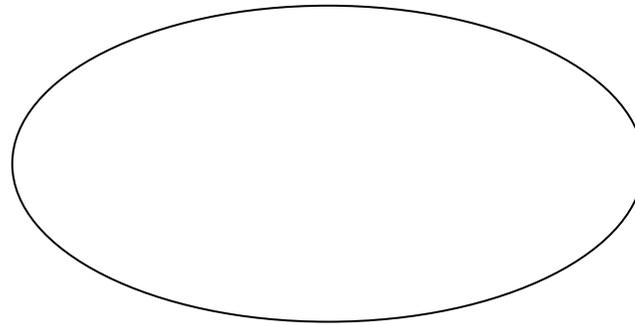
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Environmental  
Movement/ NGOs

Green energy  
industry

Local districts

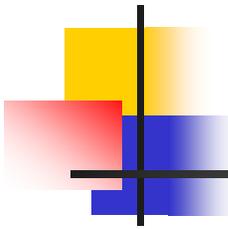
Energy industry



EU commission

Energy consuming  
industry

National  
government



# What are their main goals?

Environmental  
Movement/ NGOs

Promoting  
green energy  
in specific form

Green energy  
industry

Gaining support

Local districts

Local  
employment  
effects      Local  
siting  
issues

Energy industry

Building European  
and global  
commercial  
competitiveness?

National  
government

Building  
National  
champions      Fulfilling  
Kyoto  
obligations      Minimising costs,  
Increasing  
security of supply

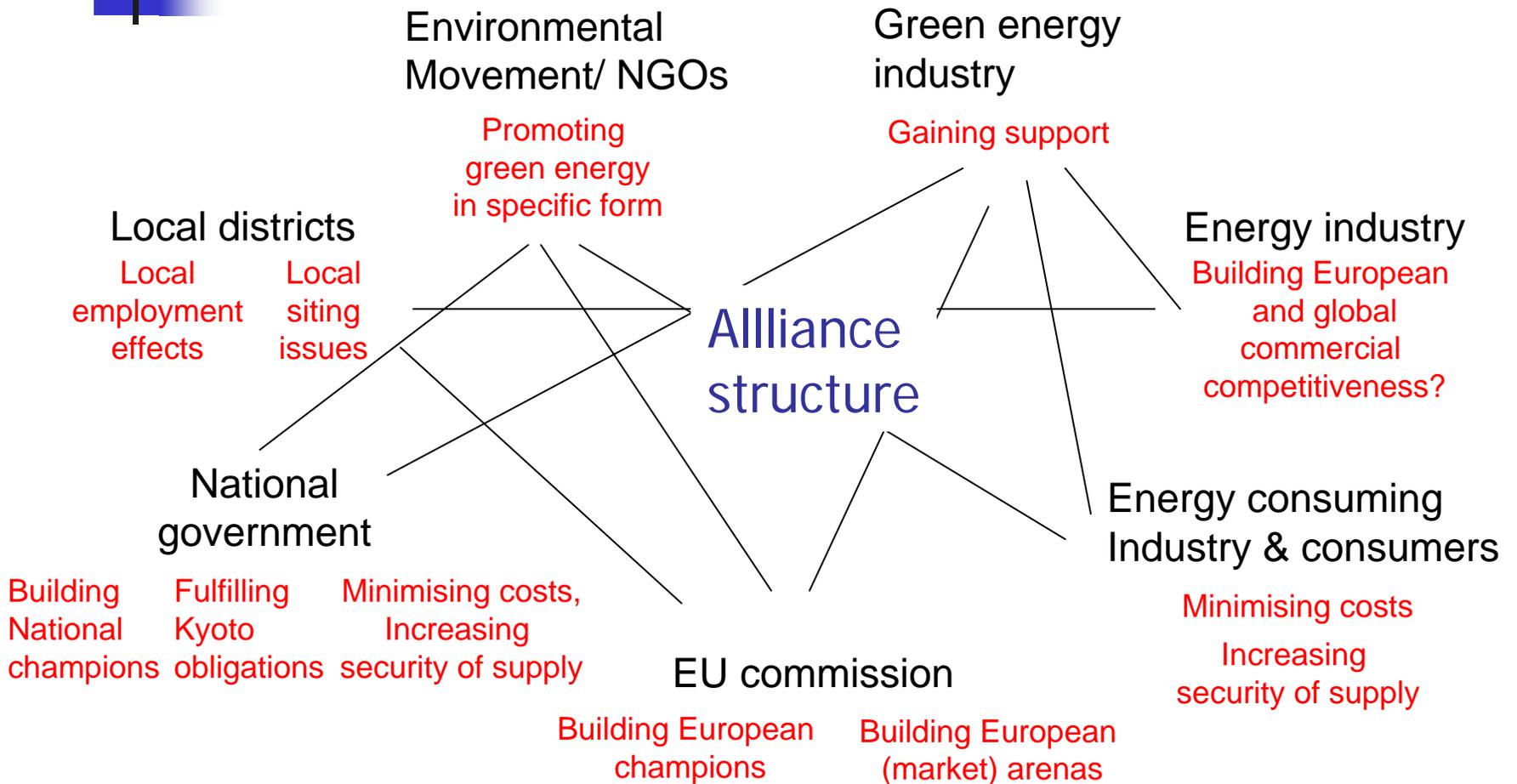
EU commission

Building European  
champions      Building European  
(market) arenas

Energy consuming  
Industry & consumers

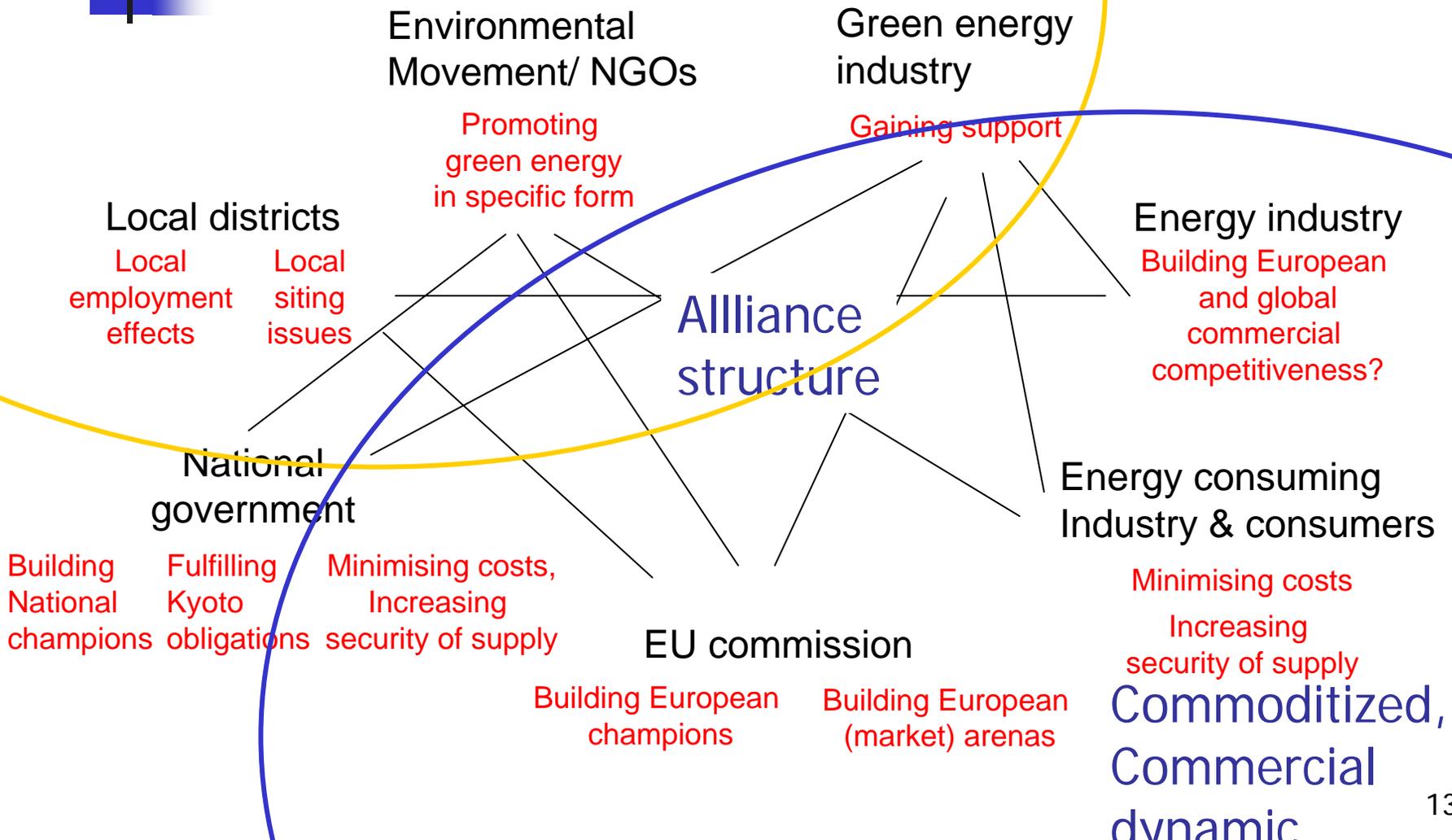
Minimising costs  
Increasing  
security of supply

# What are their main goals?

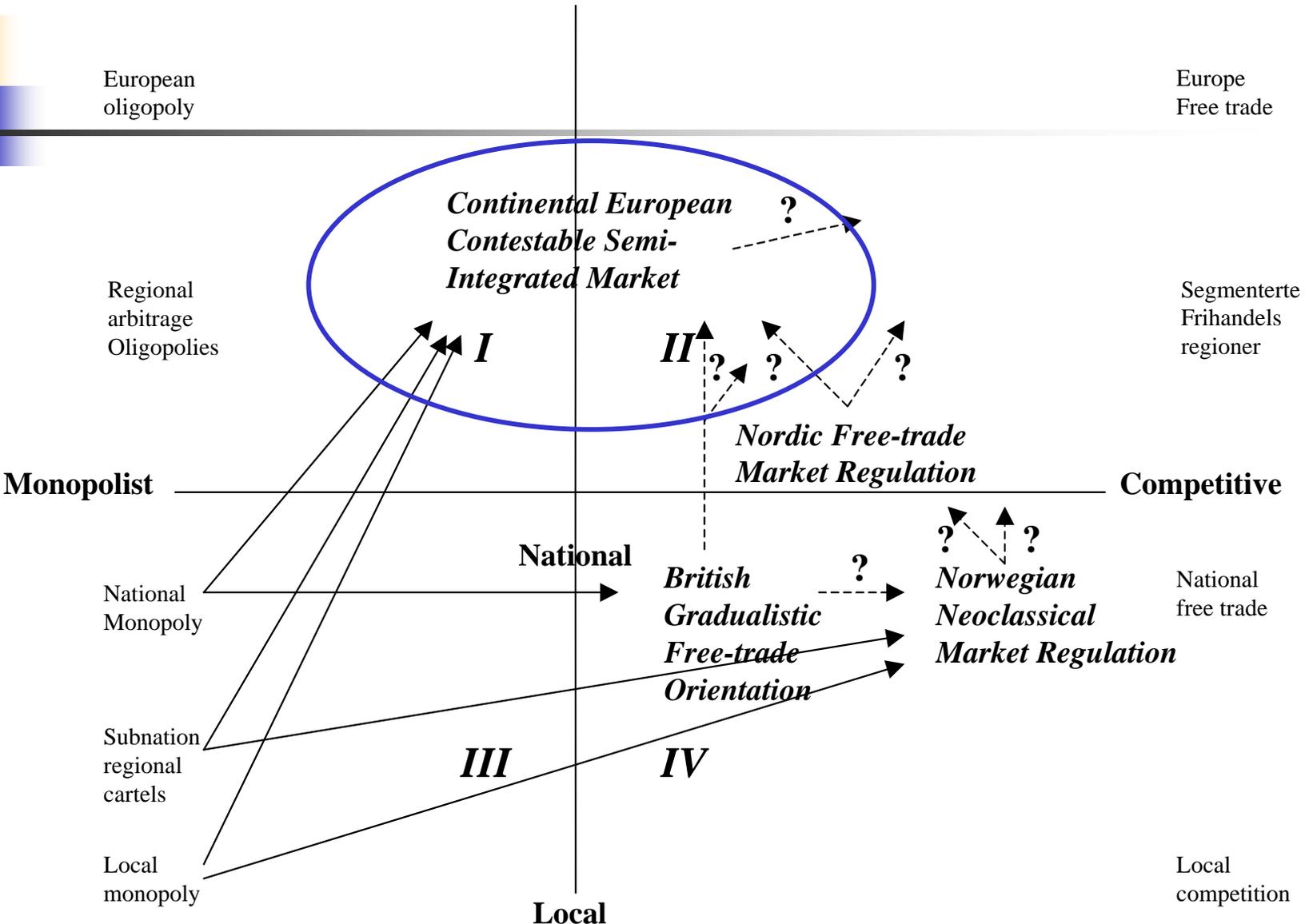
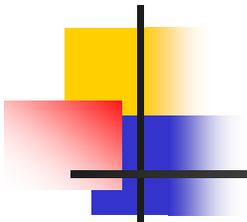


Politicized, Negotiated dynamic

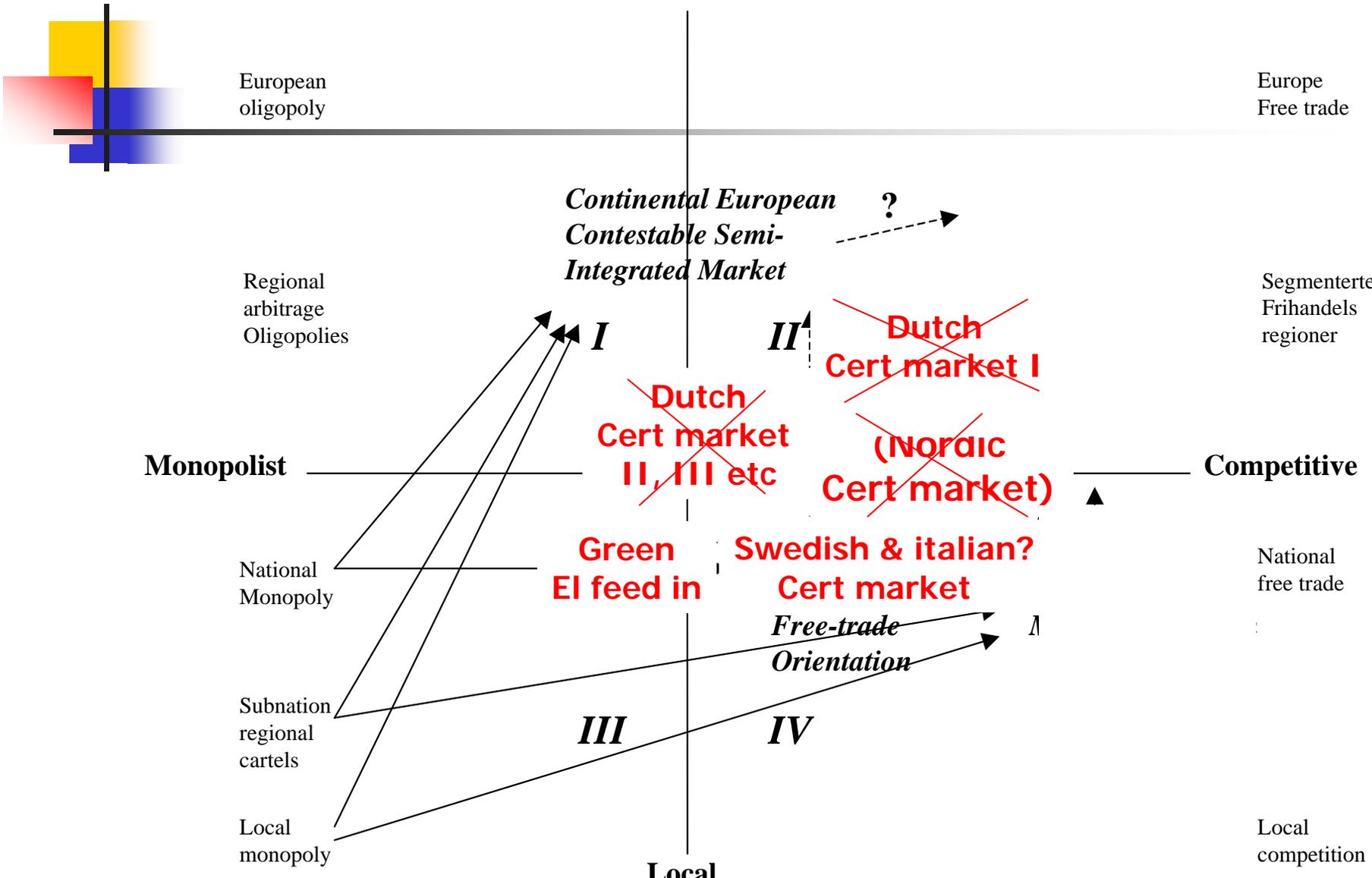
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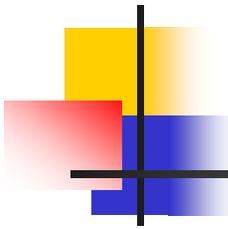


**Integrated  
International**



**Integrated  
International**





# Variation from supplier to input technology

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## **National market segmentation**

### **(supplier)**

- Segmented arenas for national technology development
- Pluralistic European industry development
- Securing “right” distributive effects

## **European scale and scope**

### **(input technology)**

- Mainstreaming European best practice
- Building momentum towards global competition
  - Advantages of optimal location & technology