

Why the Market Needs a Public Service Obligation

2ND INTERNATIONAL CONFERENCE ON SMART
ENERGY SYSTEMS AND 4TH GENERATION
DISTRICT HEATING

Aalborg, September 2016

Søren Djørup, djoerup@plan.aau.dk



AALBORG UNIVERSITY
DENMARK

Costs and Prices: The PSO tariff is not a tax

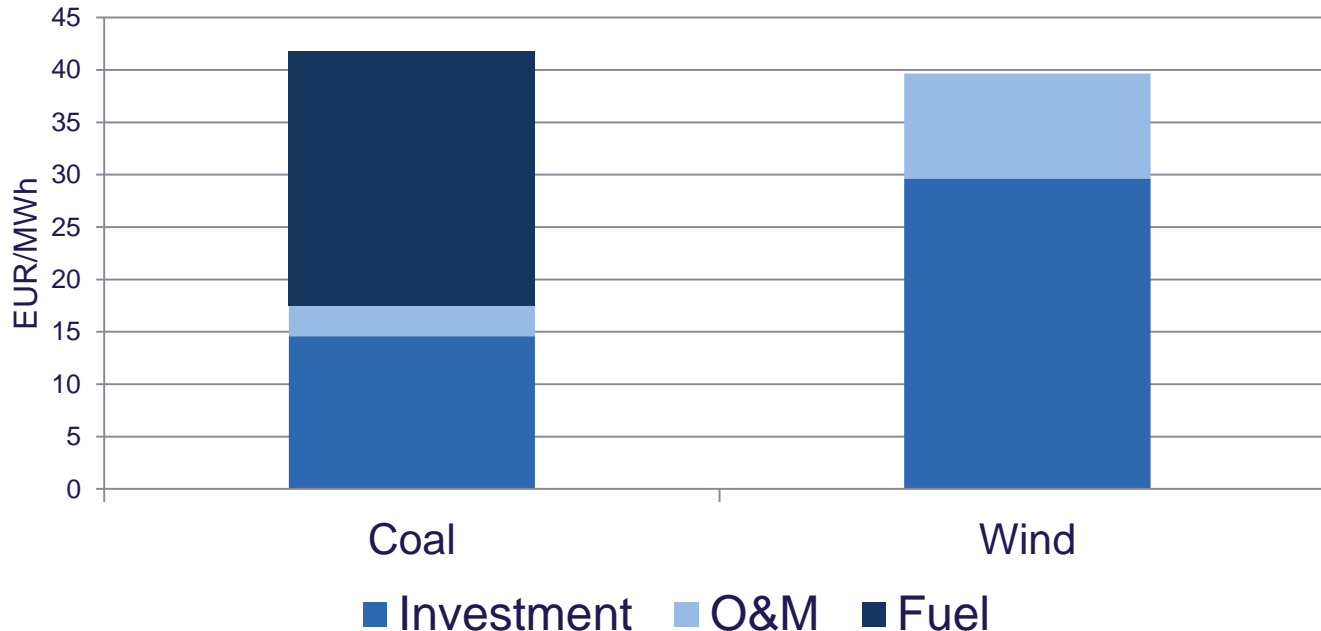
- It is widely assumed that Public Service Obligations (feed-in tariffs for wind power etc.) disturbs an efficient market allocation.
- My view is that this assumption is wrong and electricity markets cannot work without these non-market institutions.
- **This point is especially important for understanding the economics of renewable energy systems**

The Fundamental Change in Costs

In the transition to a renewable energy system:

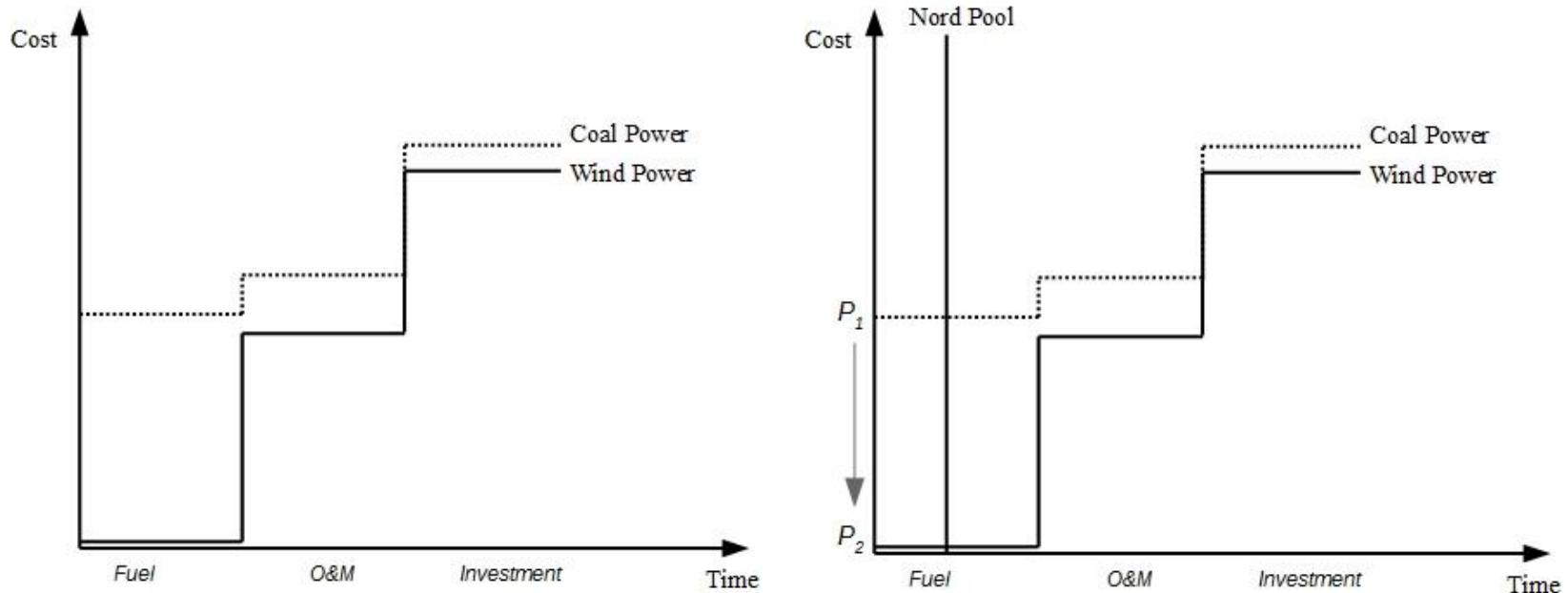
- The change does not happen in cost level.
- The change happens in cost structure.

Electricity production costs



The change in cost structure affects the market outcome

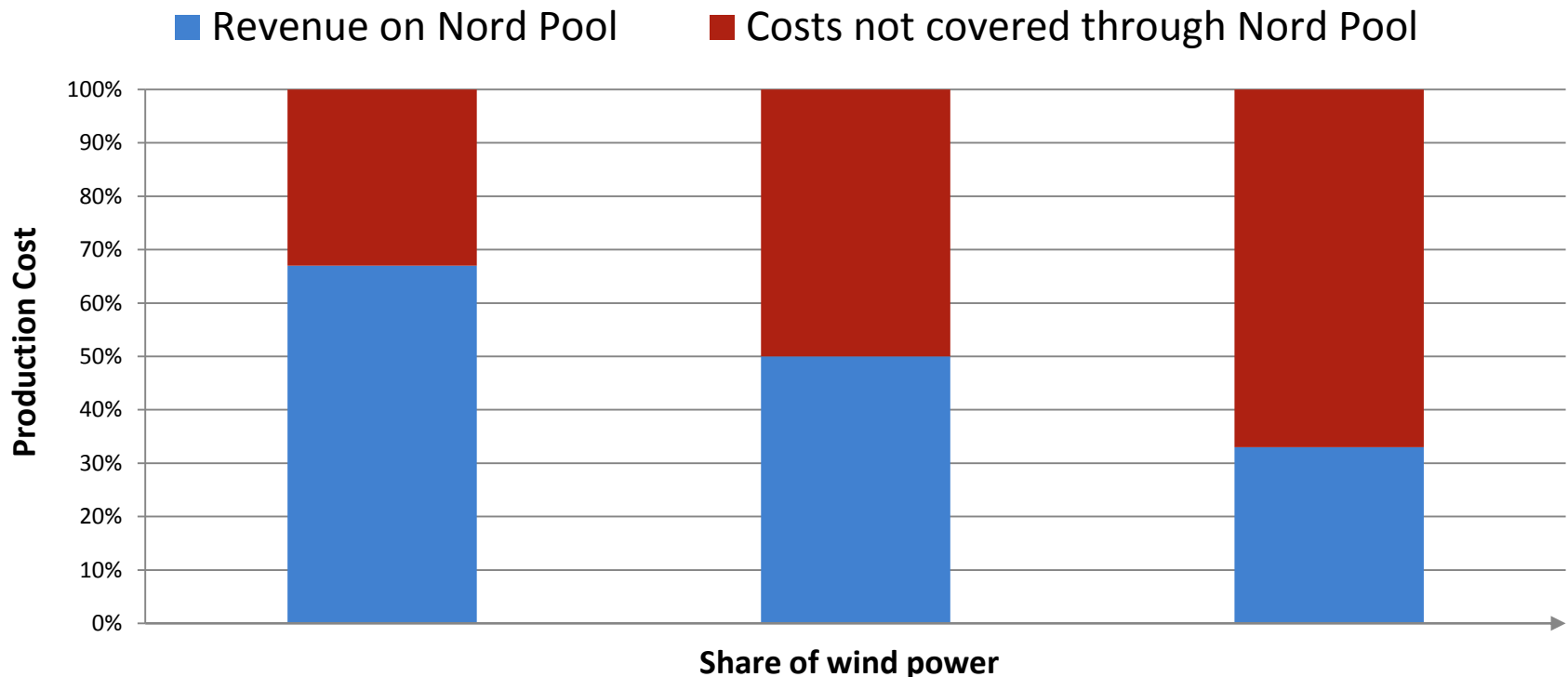
- **Price** levels will go down but total **costs** are stable.
- Capacity costs are not *avoidable* in the very short term; hence they do not enter the economic considerations that shapes the market prices in the electricity exchange.



4DH - 4

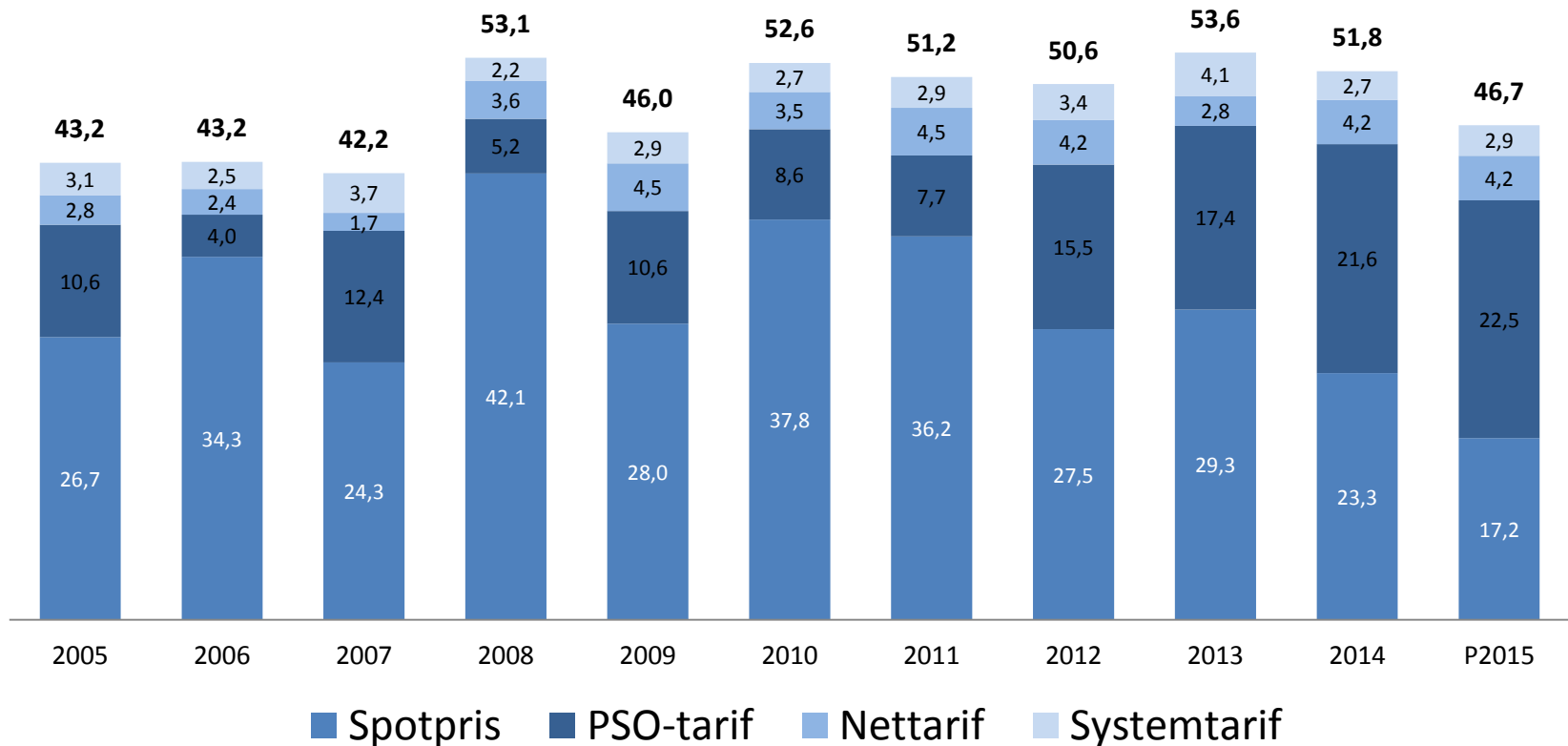
The electricity exchange market is marginalised as a source of revenue

Expected Development in Cost Structure



4DH – 5

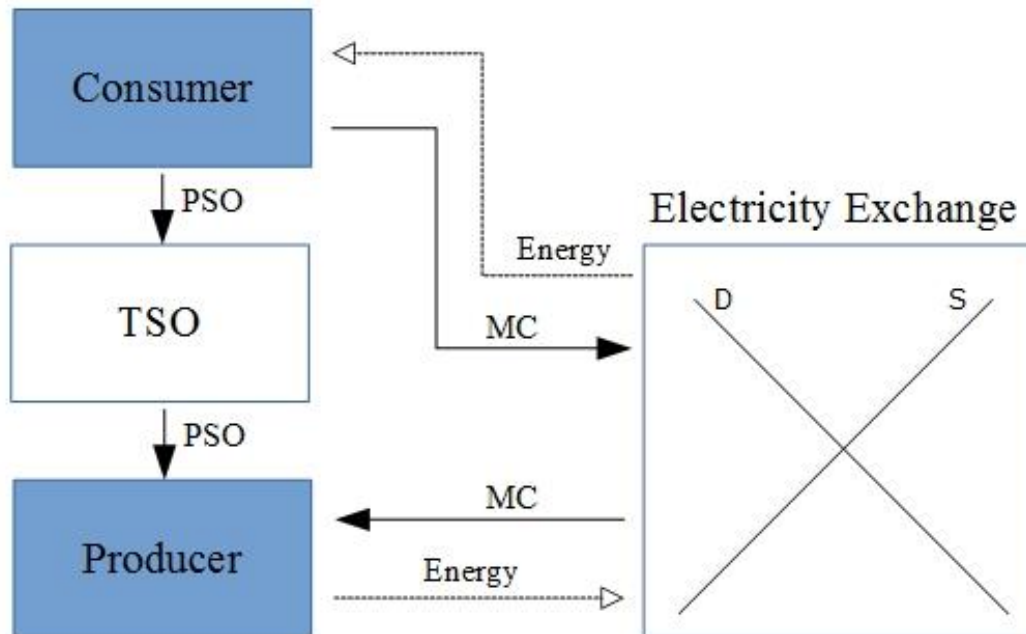
The empirical trend confirms the theoretical presumptions



**SOURCE AND FIGURE:
ENERGINET.DK**

Our 'Price+PSO' system is basically in economic balance

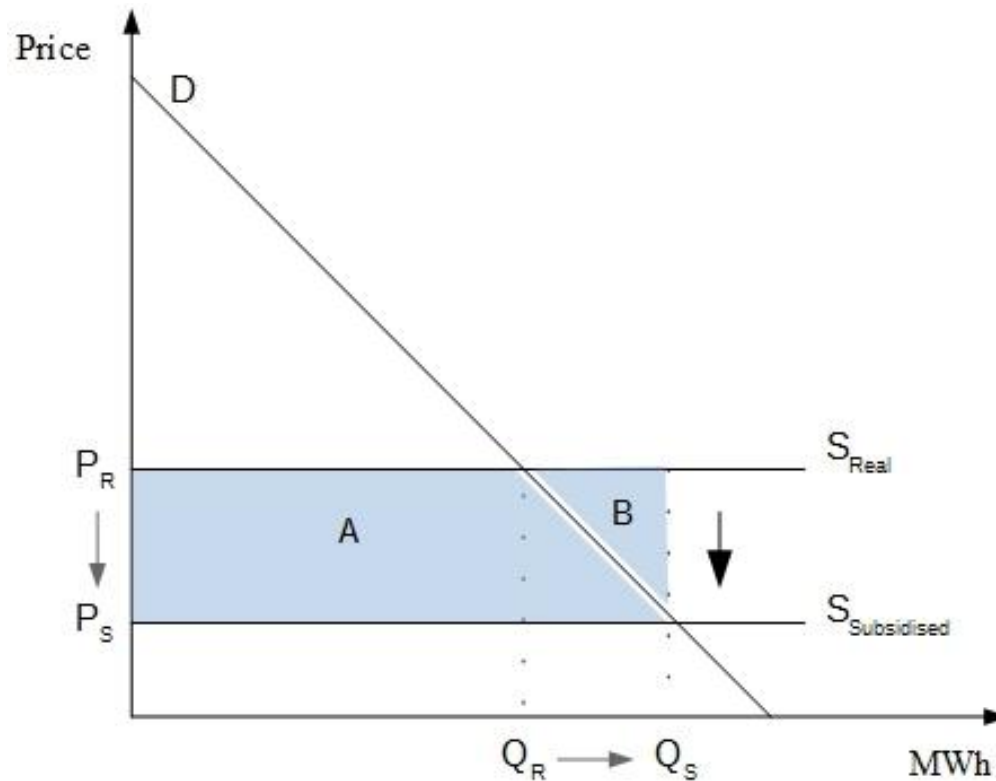
Given the change in cost structure, the PSO system is a vital component of the energy economy.



4DH - 7

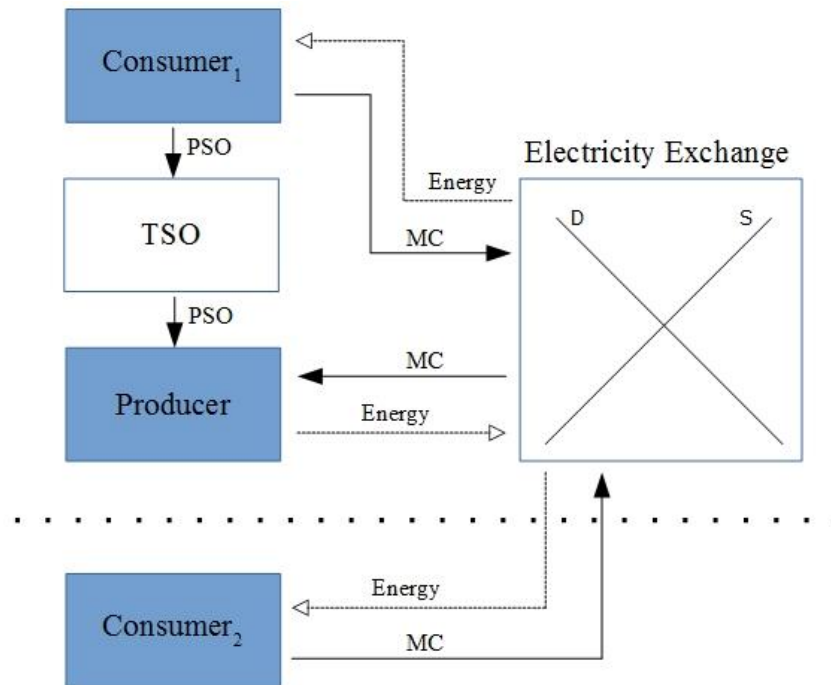
The PSO must be internalised in the electricity trade

Removing the PSO from the electricity bill to the state budget subsidises energy production.



International Electricity Markets and the Real Challenge

- The problem is not that imported electricity is subject to a PSO tariff.
- The problem is that exported electricity is not subject to a PSO.



4DH - 9

Summarising

- 1) The PSO tariff is a capacity payment.
- 2) Capacity payments are here to stay.
- 3) Capacity costs should be/remain internalised in the energy trade.



AALBORG UNIVERSITY
DENMARK

**Søren Djørup, email:
djoerup@plan.aau.dk**