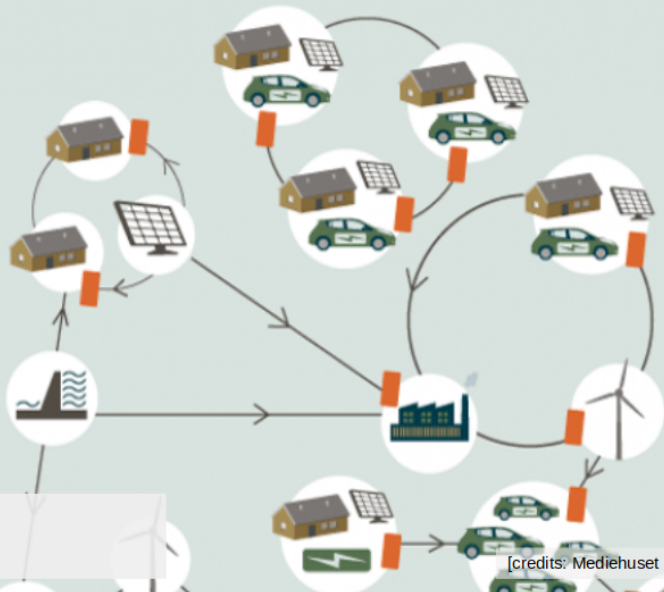
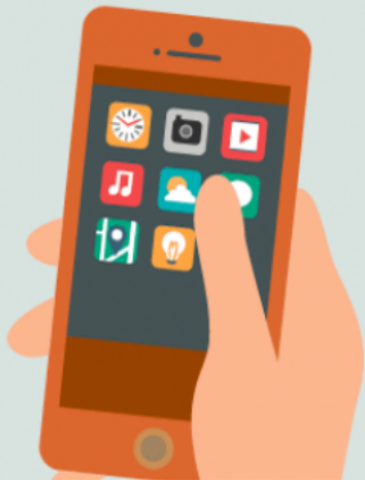


# Module 1 – Fundamentals of Electricity Markets

## 1.1 Historical perspective



**Pierre Pinson**  
Technical University of Denmark

[credits: Mediehuset Ingeniøren]

## REGULATED

Prices are all determined by the regulatory/government bodies:

- energy prices
- transmission and distribution prices

Vertically integrated structure

Cannot choose supplier

## DEREGULATED

Prices are determined by “invisible hand” of the market

Horizontal restructuring

Competition among a set of suppliers

[Chicago Boys (ca. 1957) - Photo by Ernesto Fontaine]

1980s



- First ideas for liberalization of the electricity sector
- Introduction of electricity market concepts in Chile (influence of the “Chicago Boys”)

1990



- UK (under the leadership of Margaret Thatcher) privatizes the electricity supply industry
- ... to be followed by other Commonwealth member countries e.g. New Zealand and Australia

1991

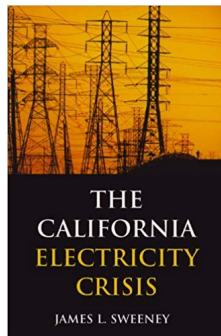


- Beginning of deregulation in Scandinavia...
- ... to be further detailed since zooming on Scandinavia in a few slides

1996



2000-2001

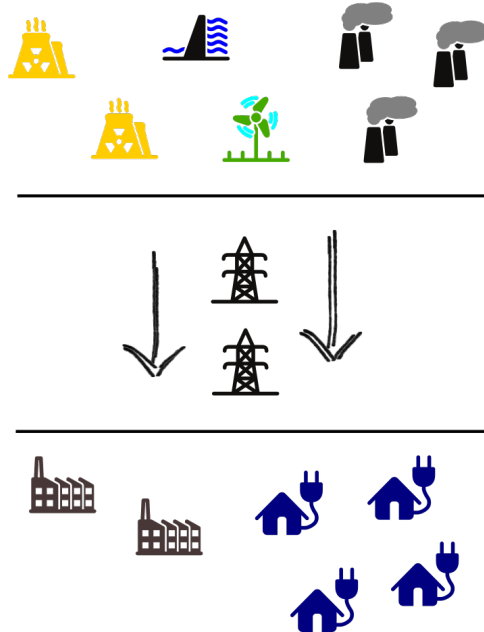


- Deregulation in California...
- California electricity crisis!  
*In short:* shortage of electricity supply, rise in prices, multiple black-outs, state of emergency, bankruptcies, investigation of Enron's role

|             |   |
|-------------|---|
| <b>1991</b> | Deregulation of the Norwegian electricity market  |
| <b>1996</b> | Norwegian-Swedish exchange called <b>Nord Pool</b>  |
| <b>1998</b> | Inclusion of Finland  |
| <b>1998</b> | Western Denmark joins the nordic power exchange area                                      |
| <b>2000</b> | Eastern Denmark's turn to join  |
| <b>2002</b> | Nord Pool Spot established as a new and separate entity                                   |
| <b>2008</b> | Nord Pool aquired by NASDAQ   |
| <b>2009</b> | Market coupling between Scandinavia and Germany   |
| <b>2009</b> | Negative prices accepted  |
| <b>2013</b> | All Baltic countries have joined Nord Pool<br>(Estonia-2010, Lithuania-2012, Latvia-2013) |

[More on the history of Nord Pool on NASDAQ's website: [NASDAQ OMX - Our history](#)]

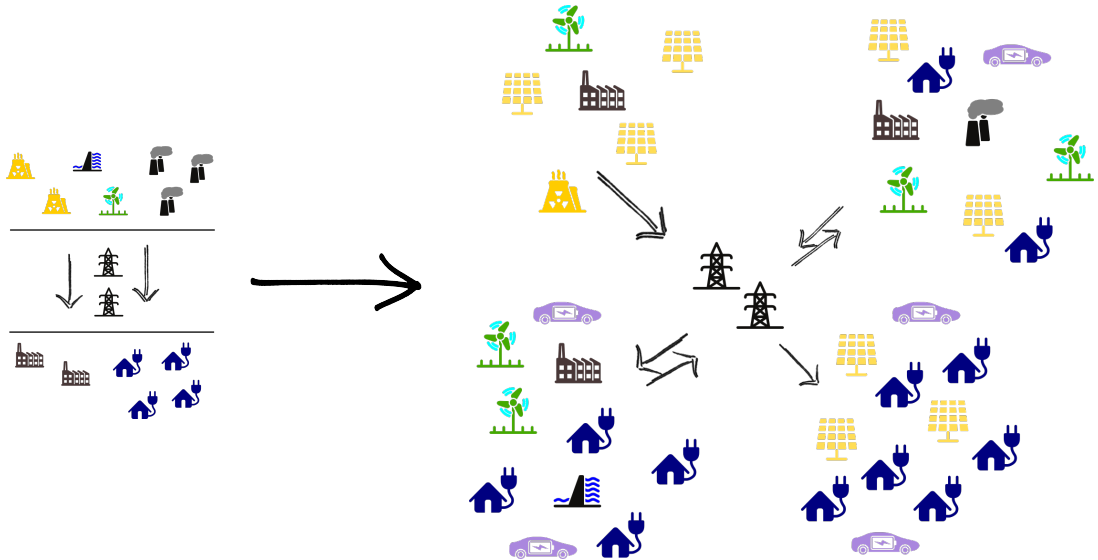
# Today, from a supplier-centric model...



Actors of the electric power network are traditionally organized in a *hierarchical* and *supplier-centric* manner

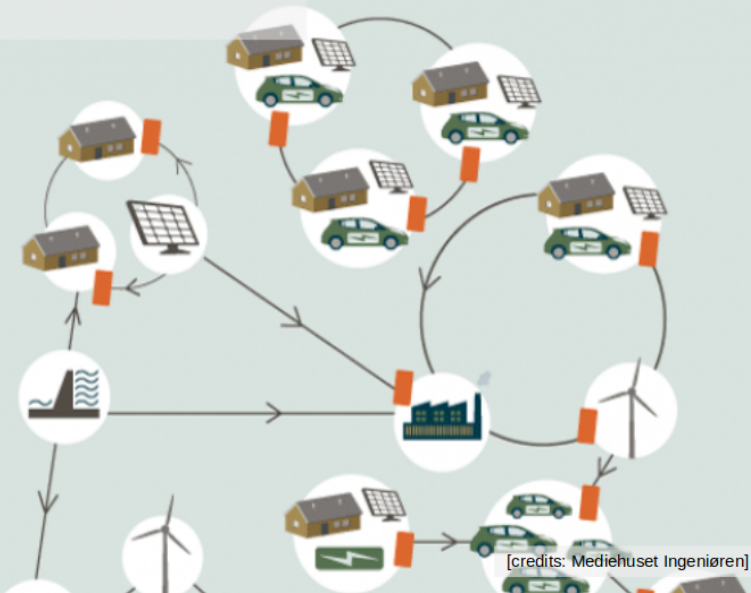


## ... to a more decentralized and consumer-centric model



Electricity markets are substantially evolving to adapt to this new reality

**Use the self-assessment quizz to check your understanding!**



[credits: Mediehuset Ingeniøren]