

Regulation versus Competition: The Norwegian electricity system

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Policy substitutes

(At least) three different policy alternatives

1. Organisation and market design
 - How to organise the market place
 - Separation between net and production?
2. Regulation
 - Rate of return
 - Access price
 - Final price
3. Competition policy
 - Merger policy
 - Intervention against abuse of dominance



An optimal policy mix

- Trade off between those three policy alternatives
 - No such thing as one perfect policy alternative
- Efficiency of each policy alternative varies from sector to sector
 - Ex: separation between network and production more difficult in telecom than energy?
- Should tailor-make policy mix to each country-specific sector according to idiosyncratic features
 - What works in a hydro power system, might be a bad idea in a thermal system
 - If difficult to detect abuse of dominance, more important with regulation and organisation

Regulatory authorities in Norwegian electricity industry



Coordinates supply and demand, and owns main power grid

NORD POOL

Organises Nordic market for physical and financial contracts



Overall responsibility

NVE

Responsible for national power supply; flooding, regulation of networks etc



Konkurransetilsynet
Norwegian Competition Authority

Responsible for merger policy and reaction against abuse of dominance

The optimal policy mix in a hydro power system

- My perspective:
 - The potential for an efficient competition policy in such a system is limited, unfortunately
- Market design even more important than in other markets
 - How to organise the transmission lines crucial for restricting the potential for market power
 - An alert system needed for detecting abuse of dominance
 - But then different regulatory authorities have to share information, and cooperate

The Nordic market: Some special features?

- Hydropower plays a major role
 - Almost all production in Norway is hydropower
- Some special features
 - Can store water
 - Large flexibility concerning changes in production
- Can have competition between few?
 - Bertrand-like competition when large flexibility
- But still a fear for unilateral abuse by a dominant firm (the marginal producer)
 - A producer that has to produce to clear the market
 - If no price cap, *'the sky is the limit'* in the short run
 - Flexibility can lead to limited production and excessive prices

Abuse of dominance?

- How can a hydro producer exploit market power?
 - Exploit short term constraints [*possible* to observe?]
 - Price setting at a certain time period
 - Send water into the ocean (spill) [*possible* to observe]
 - Few examples after liberalisation in 1991
 - Reshuffle water to other periods [*difficult* to observe?]
 - Dump water summertime, to achieve a high price in the winter?
- Extremely difficult to define an excessive price in a hydropower system
 - High price to save water *can* be OK
 - How to prove in the court that there has been an abuse of dominance?
- Need detailed data to detect abuse of dominance
 - Individual bid data needed from Nord Pool

Imperfect merger policy?

- A ban on mergers & acquisitions can limit the potential for abuse of dominance
- This has been done in the Norwegian market
 - Statkraft not allowed to acquire any other Norwegian power producers
- But can merger policy prevent abuse of dominance in the future?
 - Difficult to use possible abuse of dominance in the future as an argument?
 - What if politicians in Nordic countries decide to support *electricity champions*?



Market design helps a lot

- The organisation of the network is a unique pro-competitive device
- If deficit in an area, then flow of electricity into that area
 - Tends to reduce, or eliminate, price differences
- Less scope for abuse in a deficit area with the network operator as an arbitrage player
 - Imports to the region in question, and then an increase in the supply
- But not a common Nordic system
 - National grid operators with different market clearing systems
 - Why so often bottlenecks at the border?



An example: Southern Norway

- Statkraft a large market share
 - An increase from 40 to 50 % after acquiring Agder Energi
- Statkraft can manipulate prices if a bottleneck (constraint on transmission lines)?
 - High price behind a bottleneck?
- But grid operator as an arbitrage player can to a large degree prevent that
 - Imports into the area if a high price
- If deficit area, data shows the following:
 - Statkraft a marginal producer only in 3 % of the time
 - Then difficult for Statkraft to raise prices above neighbouring area, because it triggers imports

Investment in transmission lines

- Transmission lines important in two respects concerning abuse of dominance
- Can prevent short term market power
 - High prices in a particular hour
 - Important with few bottlenecks within the market area
- Can prevent strategic reshuffling of water
 - Price differences between summer and winter
 - Important with transmission lines to the continent
- Statnett recently hosted a conference where we discussed network investment decisions
 - How to include the competitive effect?

Monitoring (mainly short term) prices

- NCA is checking for variation in prices during every 24 hours in the spot market
 - Index for average markup in the high price hours (18 out of 24 hours)
 - Index for the highest price during 24 hours relative to the lowest price
 - If one index is above a threshold level, we investigate the incidence further
- Close cooperation with NVE to try to understand why prices differ from the expected prices
- Need detailed data to verify that there has been an abuse of dominance
 - Individual bid data is needed from Nord Pool



Some concluding remarks

- Competition policy is imperfect in this market
- Market design is a pro-competitive device
 - Network operator as a de facto arbitrage player
 - Investments in transmission lines to curbe abuse of dominance
- Cooperation between authorities today
 - NVE and NCA concerning an alert system
 - Statnett asks for advice on network investment decisions
- But scope for even more cooperation
 - Individual bid data from Nord Pool?
 - A joint effort to model the market?
 - Better coordination between Nordic grid operators?

