

Comments on
*'Managing unilateral market
power in electricity'*

Chief Economist Lars Sjørgard
Norwegian Competition Authority

Electricity is different?

- Large scope for unilateral market power
 - Costly to store
 - Extreme capacity constraints
 - Inelastic demand
 - Potentially congested transmission networks
 - Concentrated ownership
- Potential abuse of dominance by what is called a *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

A need for intervention, or ...?

- US: Not illegal to exploit unilateral market power
- EU: Excessive prices can be illegal
 - A few cases in the EU (one is bananas)
- *Should we intervene?*
 - Shouldn't we encourage firms to maximize profits in general?
 - In some industries, high price-cost margin a reward for earlier investments or innovations?
 - Rather concentrate on abuse where an incumbent restricts competition?
- *Can we intervene?*
 - How to define an excessive price?
 - Supply shortage, caused by the producer or others?
 - Market manipulation is a vague concept, but do we have a more precise concept?

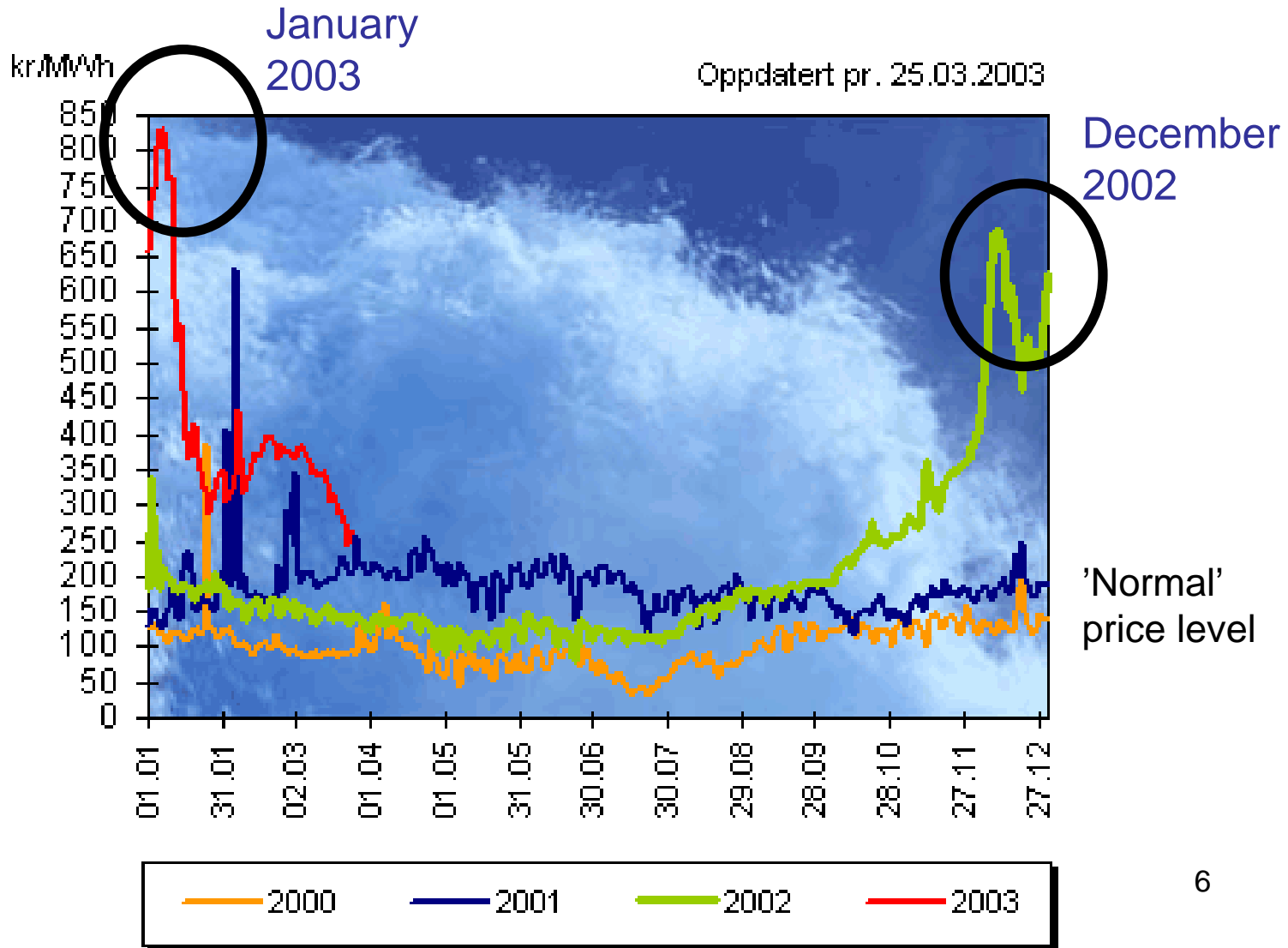
The Nordic market: Some special features?

- 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)
 - Large flexibility by a marginal producer
 - Flexibility can lead to limited production and excessive prices

Competition or ...?

- We have observed volatile prices, and periods with quite high prices
 - Abuse of market power?
 - High prices to clear the market?
- 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
 - Nobody claims this is a serious problem today
 - Reshuffle water to other periods [*difficult* to observe?]
 - Dump water summertime, to achieve a high price in the winter?
 - High price behind a bottleneck in the winter?

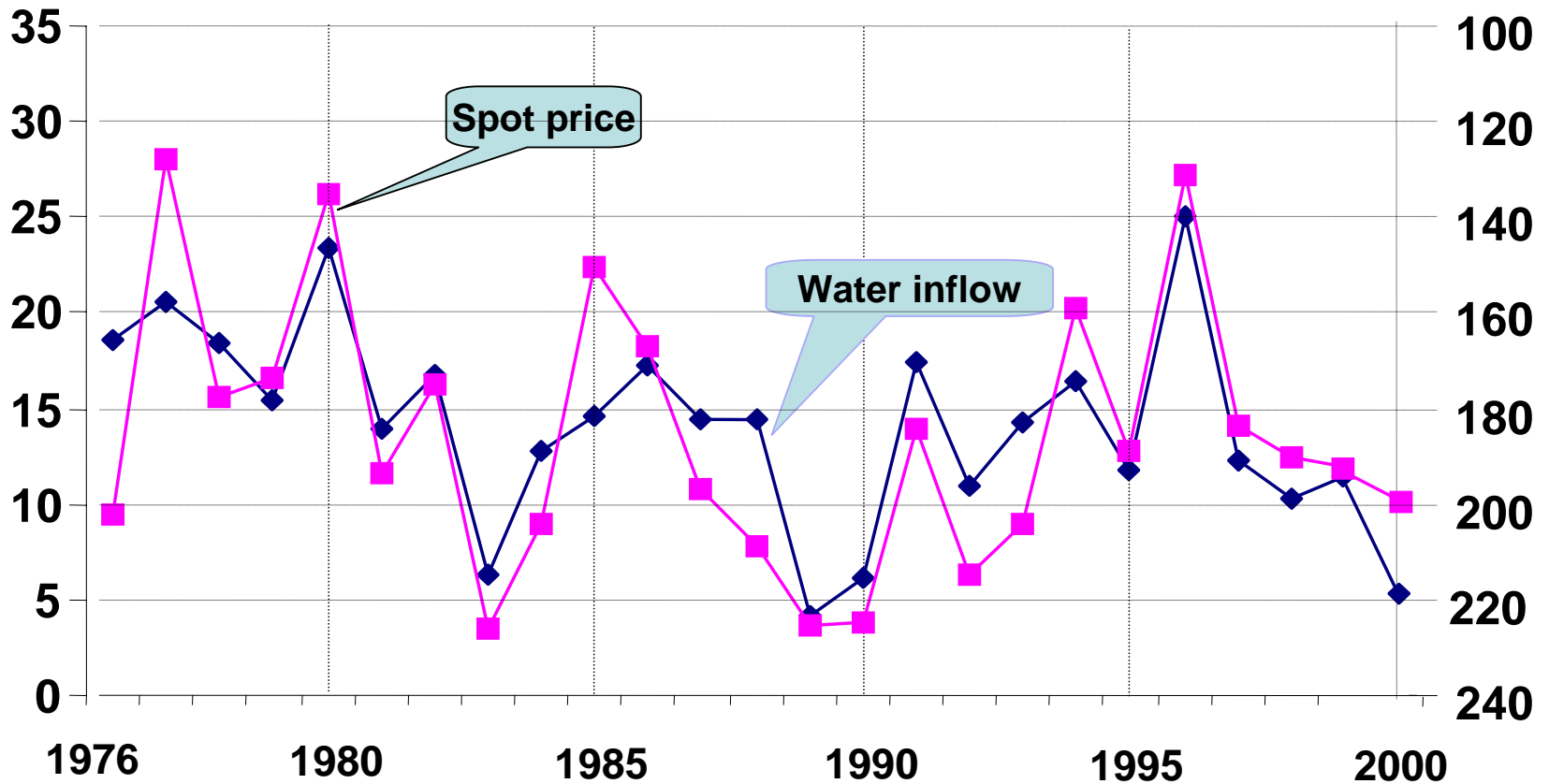
Dramatic price increase winter 02/03



Water inflow important for prices during a year

Spot price *)
(Øre/kWh)

Water inflow **)
(TWh)



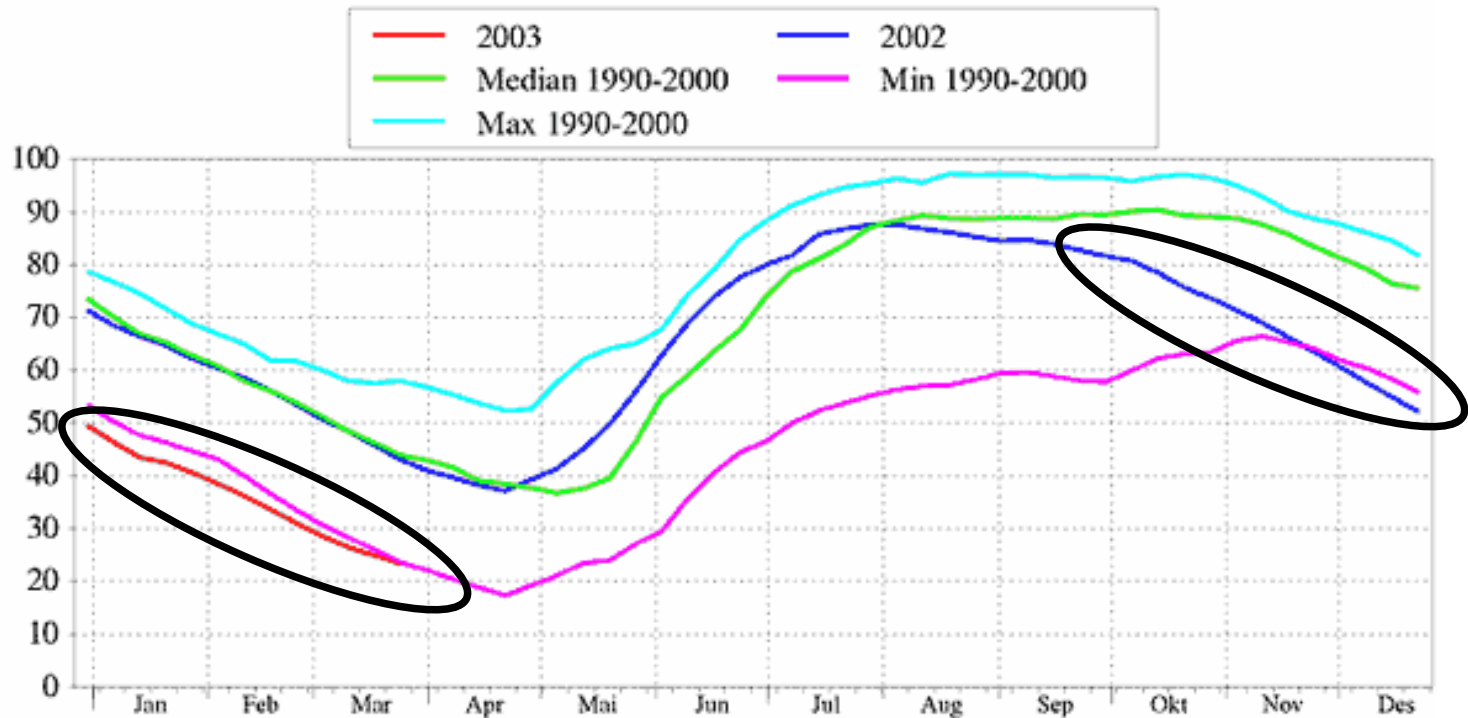
*) Average spot price in 1996 prices

**) Annual water inflow in Norway and Sweden

Limited rainfall fall 2002 in Norway (as in Sweden)

Vannmagasinstatistikk, 2003 uke 13

Figur 1. Fyllingsgrad i prosent, hele landet



Kilde: SSBs Energistatistikk, på grunnlag av tall fra Norges vassdrags- og energidirektorat.
Tallene gjelder per mandag

Reshuffling of water

- Rainfall is crucial to understand the producers' annual capacity
 - But sale in summer leads to lower prices in its own market
- Must still decide:
 - Sell in July, or wait until December?
- But in July, large uncertainty concerning rainfall the next months
 - If **limited** rainfall, would have been smart not to sell in July
 - If **large** rainfall, would have been smart to sell now to avoid spill of water in October
- If rainy summer/fall, may have spill of water in October

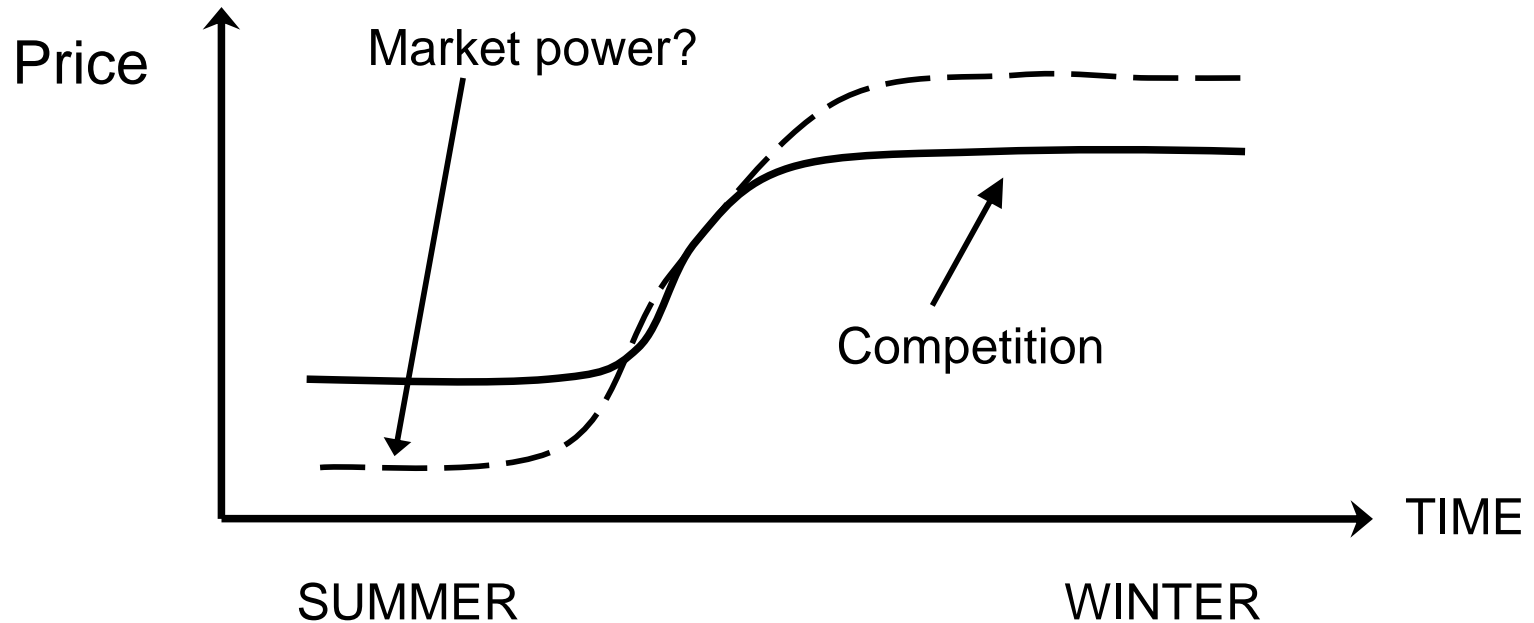
A producer's problem

- Sell one unit with certainty in July at $p = p_1$
- Store one unit, and then
 - Spill the unit in October, with prob. q
 - Sell the unit in January at $p = p_2$ with prob. $1-q$
- If no market power, then the following market clearing condition:

$$p_1 = (1-q) p_2$$

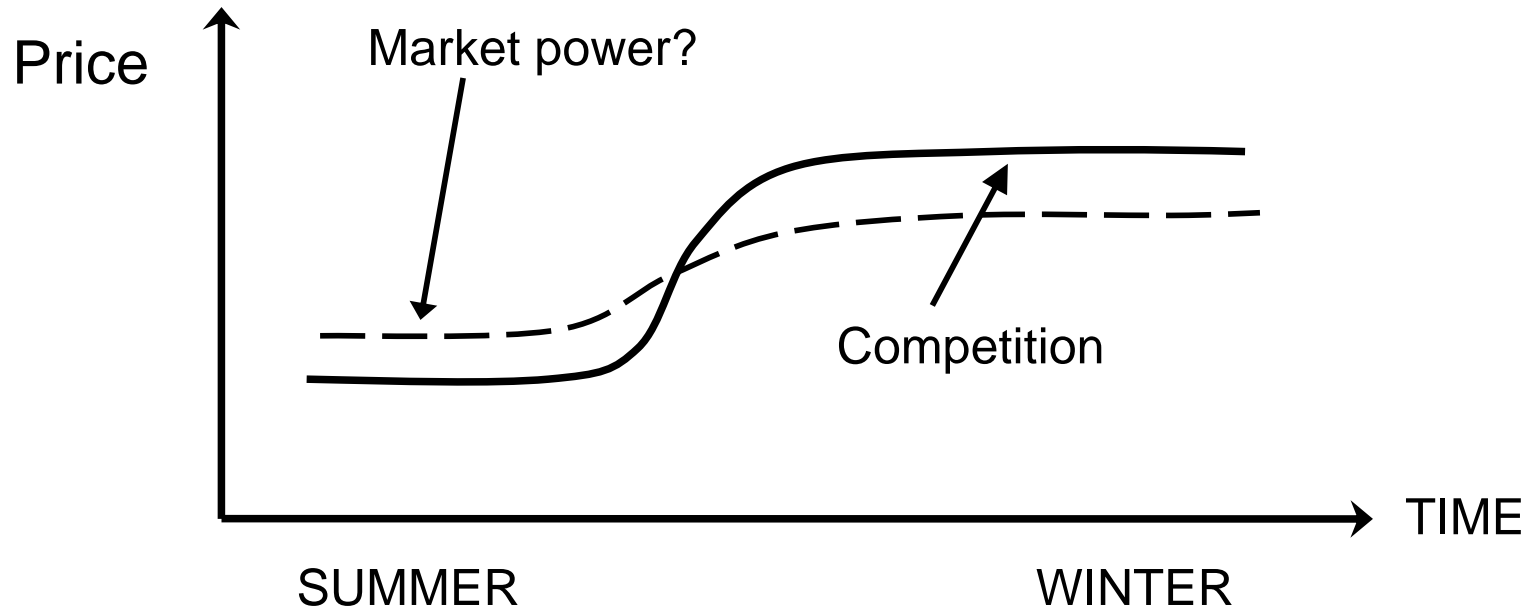
- Then it follows that $p_1 < p_2$ in equilibrium
- So low prices in summer even with no market power?
- How then distinguish between market power and no market power?

Prices during a year like this ..



- Lower prices in summer with market power, to exploit low demand elasticity during winter ...

... or this?



- .. or higher prices in summer with market power, to exploit low demand elasticity during summer?

A new system for 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
- A new system, so we are now working on improving the 'alert system' further

Some concluding remarks

- Nordic market a success story so far, despite no transparency at all
 - Counterexample to Australia vs. England
- Extremely difficult to define an excessive price in a hydropower system
 - High price to save water *can* be OK
 - But important to be on alert; check whether there are large price changes and why
- More important to look for structural remedies?
 - Eliminate bottlenecks, as a security against dry years and a to dampening the abuse of market power
 - Intervene against M&As, especially those where hydro and thermal are merging