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SRI LANKA ELECTRICITY REFORM: ON COMPETITION AND INTERCONNECTIONS

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ADB-SKOP Conference – Colombo, January 30 2025

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Today's topic

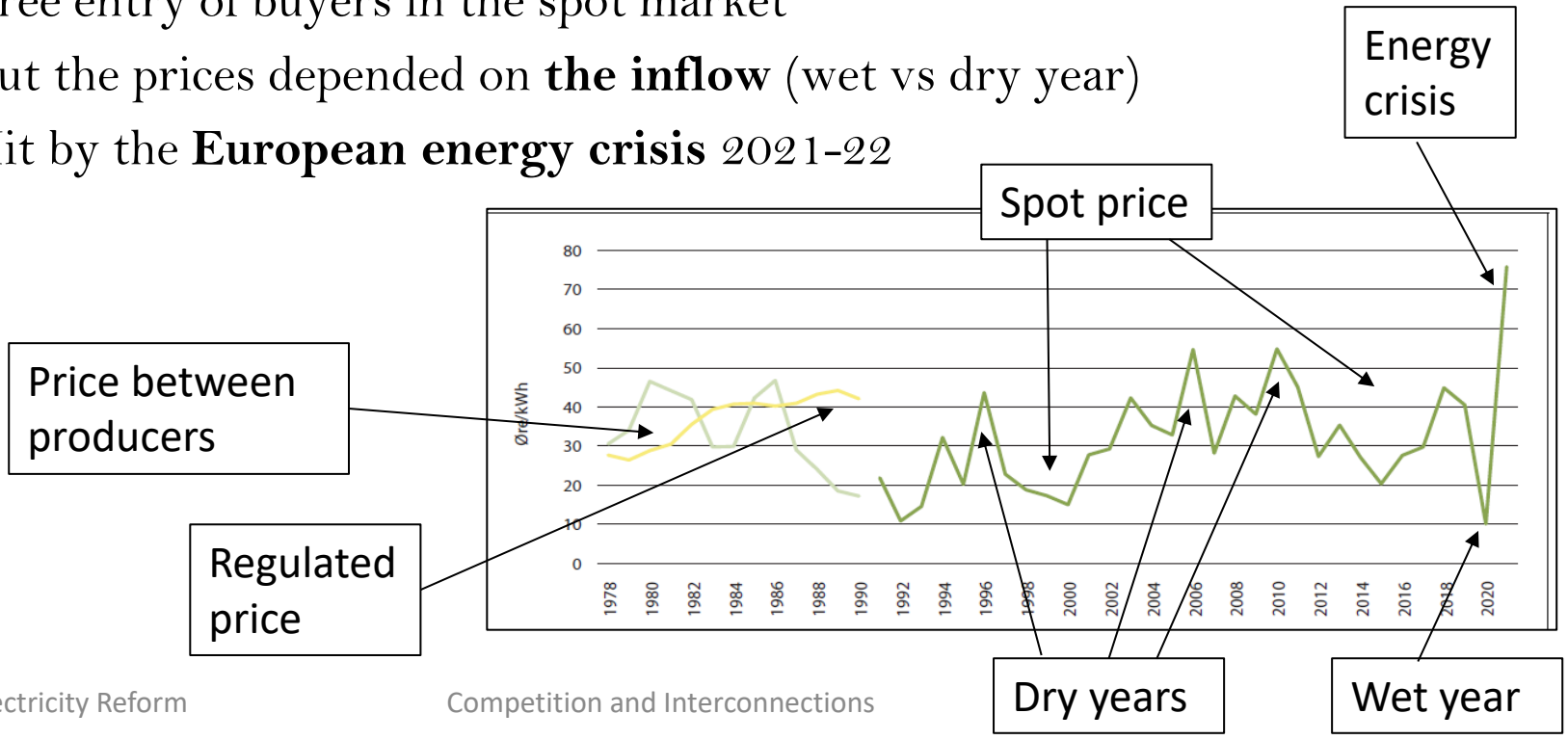
- The Norwegian experience
  - Electricity reform
- Competition
  - Potential for cost-reflective prices
  - Some potential challenges
- Interconnections
  - Pros and cons in general
  - Relevant issues for Sri Lanka

The Norwegian experience:
Unbundling

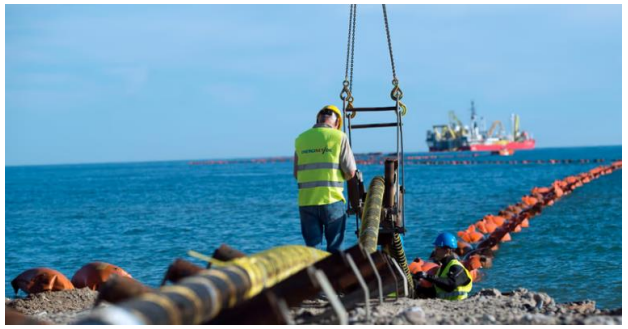
- The Norwegian electricity market (90 % hydro)
  - Many publicly owned hydropower companies (largest one Statkraft 40-50% of national market), with large reservoirs
  - 90 % hydropower (rest from onshore wind, mostly privately owned)
- Unbundling from the early 90s
  - **Competition**: generation (upstream) and sale (downstream)
  - **Regulation**: transmission and distribution
- **Spot market** established in 1992 (Nordpool), later Sweden joined and then other EU countries
  - Competitive bidding both on the supply and the demand side
- Competition for **households** from early 2000s

The Norwegian experience:
Competition and prices

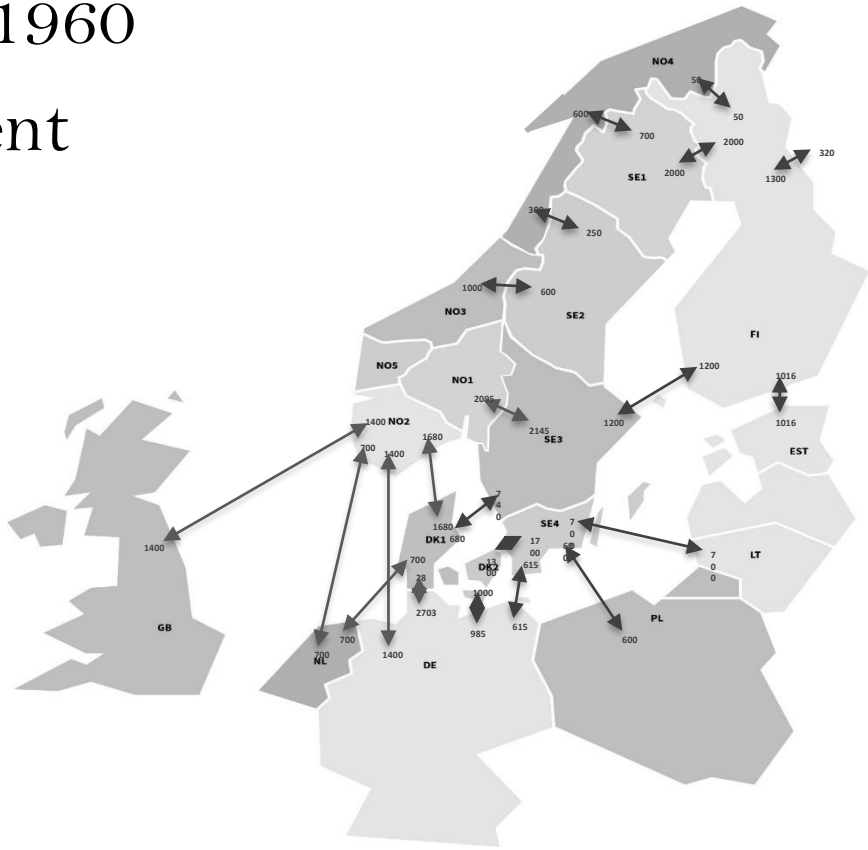
- From regulation to competition in 1992 led to often **lower spot prices**, benefitting households and industry
  - Unbundling led to independent, publicly owned generators
  - Free entry of buyers in the spot market
  - But the prices depended on **the inflow** (wet vs dry year)
  - Hit by the **European energy crisis** 2021-22



The Norwegian experience: Interconnections

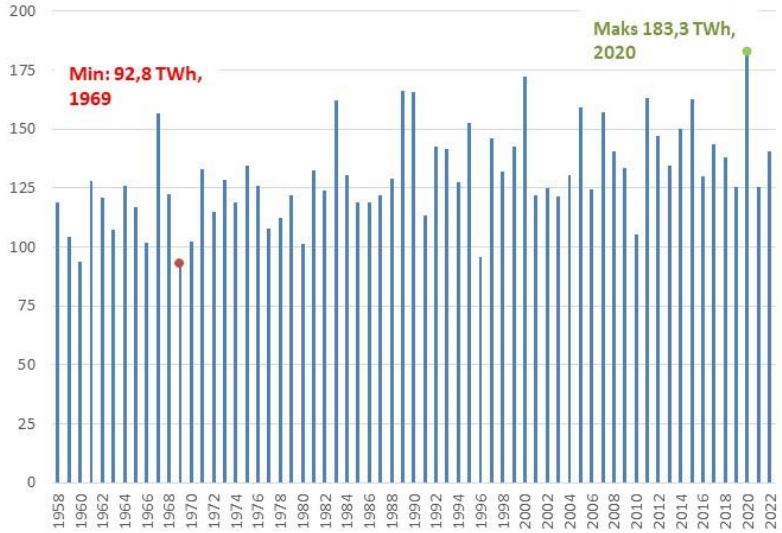


- First international **interconnection** built in 1960
- Now 17 cables to 6 different countries
- Harmonized regulation with neighbors
  - Power flows to the high price region



The Norwegian experience:
Pros and cons of interconnections

- **Hydropower** system leads to **flexibility** in the short run, but large variation in inflow from year to year
  - Security of supply
    - Import in **dry** years
    - Export in **wet** years
  - Short term gain
    - **Import** when unregulated wind/sun abroad at a **low price**
    - **Flexibility** of hydropower



- **Net price effect** depends on the starting point
  - If **dry** (**wet**) year, interconnectors leads to **lower** (**higher**) prices

Competition:
Potential for cost-reflective prices

- Merit order system in the **wholesale market** would lead to a uniform price equal to last unit of production
  - In EU (and Norway) discussed alternatives, but the recent EU reform did not change that part of the system
  - Should consider carefully the potential drawbacks of a single buyer
- If **capacity constraints** (e.g., no gas from Russia to EU), substantial potential for profit to inframarginal generators
- A need for **expanding generation** capacity to meet demand, for competition to drive down prices to reflect costs
  - Large enough supply a **necessary**, but not sufficient, condition for cost-reflective prices
  - An alternative, build interconnections to have import

Competition:
Some challenges

- **Market power** can lead to high price-cost margin
- Must avoid generators from being **pivotal** in the spot market
  - Pivotal: A firm needed to clear the market
  - Sri Lanka divestiture of generation sufficient to avoid pivotal firms?
- A need for an **independent competition agency**
  - A ban of abuse of dominance and anti-competitive agreements
  - Merger control to avoid market concentration if firm enters
- Must avoid **market manipulation** of firms selling to households and industry
  - A need for **independent consumer protection agency**, to avoid exploitative and misleading contracts

Interconnections: Pros and cons

Short run (day to day)

- Pros
  - If flexible home production, import at days with low prices abroad
  - If flexible home production, export at days with high prices abroad
  - Can partly mitigate lack of unregulated power on some days
- Cons
  - Can 'import' high foreign price level, ref debate in Norway
  - But if higher prices at home, then import leads to lower prices

Long run (yearly)

- Pros
  - Import to compensate for dry years or other scarcities
  - If net import, then lower average prices at home
- Cons
  - Dependent on foreign markets functioning well
  - Ref EU energy crisis, spreading high prices to Norway

Interconnections:
Relevance for Sri Lanka

- Some questions to be asked:
  - Expecting higher prices in the future in Sri Lanka than in neighboring countries?
  - Possible to pump/store water to some extent, to take advantage of unregulated power (and volatile prices) abroad?
- The need for independent and harmonized regulation
  - A system where power flows to high price country, some type of arbitrage mechanism, to be considered?
  - Split the bottleneck revenues with foreign country?
  - Harmonized regulation across countries, independent of energy regulator and generators?

Some lessons

- **Unbundling:** A prerequisite for triggering competition in the wholesale (and end user) market
- **Competition:** Potential for cost reflective prices, but a need for sufficient capacity expansion
- **Interconnections:** Potential for providing gains both in the short run (daily) and long run (yearly)
- A need for **independent regulators**