Recitations 2 & 3 . February 12 & 19, 2010

Regulation of the US power sector

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Policy Timeline: 1920 - 2009

Source: Andy Whitaker
North American Organized Markets
Roughly half the installed capacity
Geographic footprint of organized wholesale markets in North America

The electricity crisis of California

- Low hydraulicity
- Climate
- High Demand

- Regulatory uncertainty (responsibility not clear)
- No regulatory instruments to ensure enough firm capacity
- Administrative difficulties

- Market design & structure
- Lack of demand response

- Risk allocation (CTC, contracts)
- Natural Gas
- NOx
- SDG & E
- PG & E, SCE
- High prices
- Rationing
- Bankruptcy
- Bankruptcy
2000-01 Crisis

There are other explanations...

“The California crunch really is the result of not enough power-generating plants and then not enough power to power the power of generating plants”

George W. Bush (then President elect)

*(Interview by the New York Times, January 14, 2001)*
Regulatory U-Turn

- 2007 Nationwide survey confirmed dramatic reversal of support among state utility regulators for “deregulated” energy markets
- One third of regulators in currently competitive states said they are seriously considering “re-regulating” utilities in their jurisdictions
- Asked to identify states operating most successful deregulated energy markets, majority of commissioners replied, “None”
- Survey found no measurable support among state regulators for any form of retail competition in foreseeable future

RKS Research & Consulting, 2007

The “textbook model” of the restructured & liberalized power sector

Some material for this section has been borrowed from S. Littlechild & P. Joskow in Electricity Market reform: An international perspective, Elsevier, 2006.
Components of the “textbook model”
(the 10 commandments)

- **Privatization**, to enhance performance & reduce the interference of the government
- **Vertical separation** of competitive & regulated monopoly activities
- **Horizontal restructuring** to create a level playing field for competition
- **Independent System Operator**
- Voluntary energy & ancillary services **markets & trading arrangements**

(continuation)

- **Open access to the transmission network**, plus adequate locational signals
- Free choice of supplier with an adequate design & utilization of **retail tariffs**
- Creation of **independent regulatory agencies**
- Provision of **transition mechanisms**
- ... & **nothing more!**
The standard structure of full fledged electricity markets

... however, avoid “cut & paste”

- Models which appear to work well in some circumstances & places may not be easily transferable to countries facing different circumstances

  (peak load, level of development, industry initial structure & ownership, fuel mix, interconnections, institutional framework)
**Successes…**

- Where the textbook model has been basically followed the new regulation has been quite successful
  - Nordic countries
  - UK
  - Argentina *(before the country’s financial crisis)*
  - Texas & Northeast of the US
  - Australia

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**… & failures**

- And where the textbook model has been abandoned because of omission or commission, there have been problems
  - Omission: France *(no comprehensive wholesale market)*, Germany *(lack of true open network access)*, New Zealand *(no independent regulator)*, …
  - Commission: California *(poor assignment of risk)*, Chile *(pioneer but too restrictive market & transmission rules)*, Spain *(too much governmental intervention & horizontal concentration)*, …
Most frequent failures

“When structure is not conducive to competition, the regulator & pool operator will find themselves unsuccessfully chasing after conduct. The solution is not a better rule, but a change in structure”(*)

(or a gradual introduction of competition, with rules that restrict the freedom of the market agents & prevent market power abuse)

Frequent failures

- Inadequate sector structure for competition
  - Horizontal concentration
  - Insufficient vertical / diagonal unbundling
    ★ Generation & system operation
    ★ Distribution & retailing
    ★ Generation & retailing (¿?)

- Incorrect risk allocation in the regulatory design
  - Default tariff design (*pass through of costs to consumers*)
  - Authorized trading instruments
  - Ultimate responsibility to supply

Frequent failures

(continuation)

- Attempting to apply “textbook-like reforms” in countries without an appropriate power sector structure &/or an adequate institutional framework

- No liquid &/or supra-national balancing markets

- Insufficient competition in the markets for fuel
Frequent failures

(continuation)

- Absence of executive **regional institutions** in supra-national markets
  - Lack of needed harmonization
  - Inadequate cross-border trading rules
- Scarce available commercial **capacity of interconnectors**
  - Physical capacity / long-term previous contracts

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**Model 1: Monopoly**
Model 2: Purchasing agency (single buyer)

Model 3: Wholesale competition
4: Retail & wholesale competition

FIN DE LA PRESENTACIÓN