



SESSA Conference
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**Security of Supply in Competitive
Electricity Markets**

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Outline

- **Markets, Security of Supply and regulation**
- **Energy Security**
- **Adequacy of investments**
- **Reliability in real-time**
- **Conclusions**



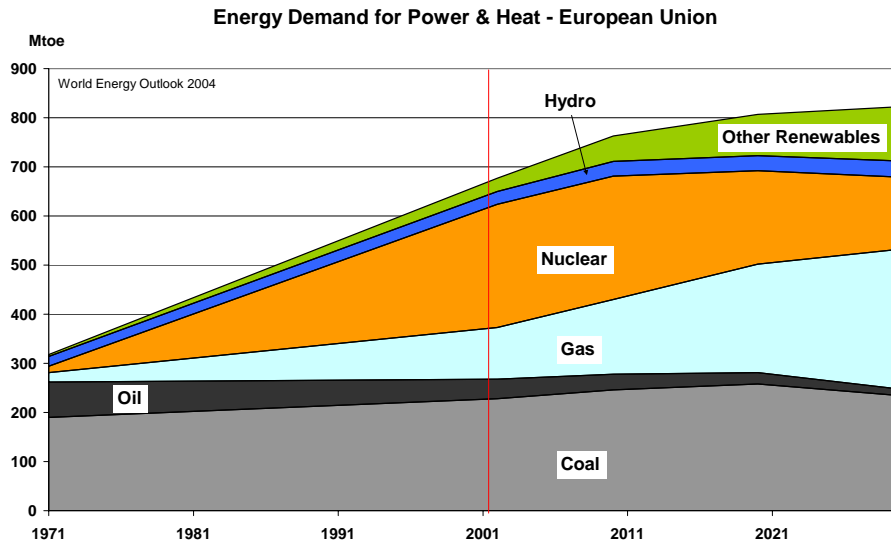
Security of Supply issues are raised assuming there are ***Market Failures***

- **Market failures due to:**
 - ◆ **Inherent nature of electricity?**
 - ◆ **Technical barriers?**
 - ◆ **Bad markets from regulatory failure?**

- **Market Failure => S.o.S. issues => Potential free ride across borders => Need for harmonised regulation**



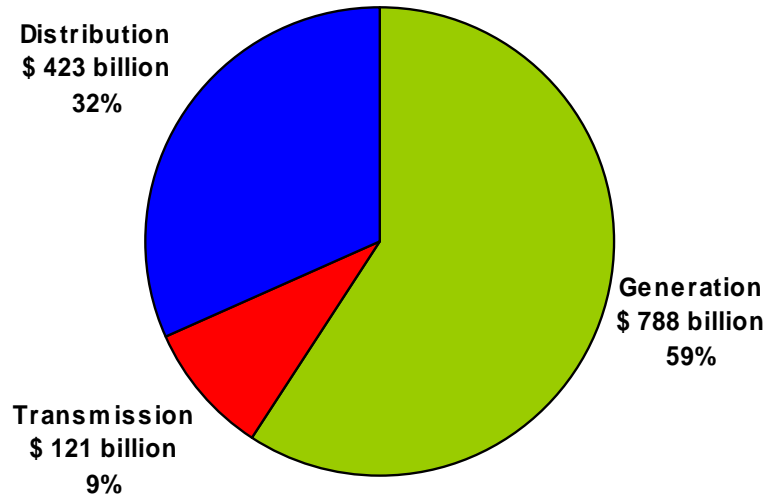
Does the market fail to supply energy for power generation?



- Diversification of gas supply
 - ◆ Liquefied Natural Gas
 - ◆ Pipelines
- Liberalised gas market needs to be implemented
- In principal markets can deliver. Thus far they have delivered.

Adequate investment

Projected investments in the electricity sector
2003-2030, European Union

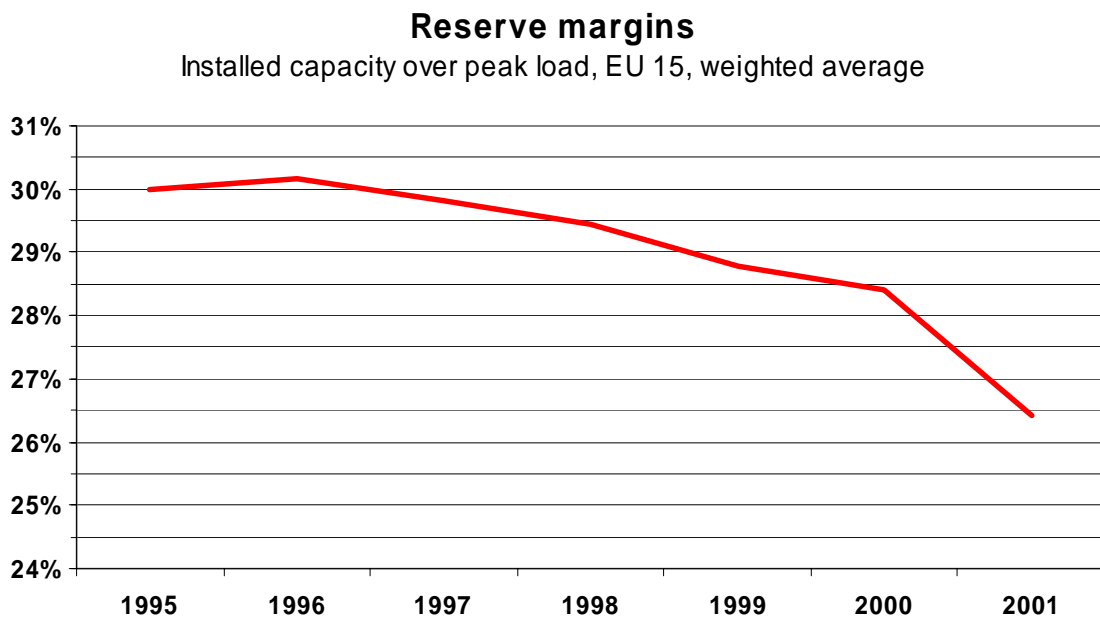


World Energy Outlook 2004

- Total expected investments in EU electricity sector until 2030: **1.3 trillion \$**
- Total expected addition of new generation capacity in EU until 2030: **766 GW**



Efficient and timely investment

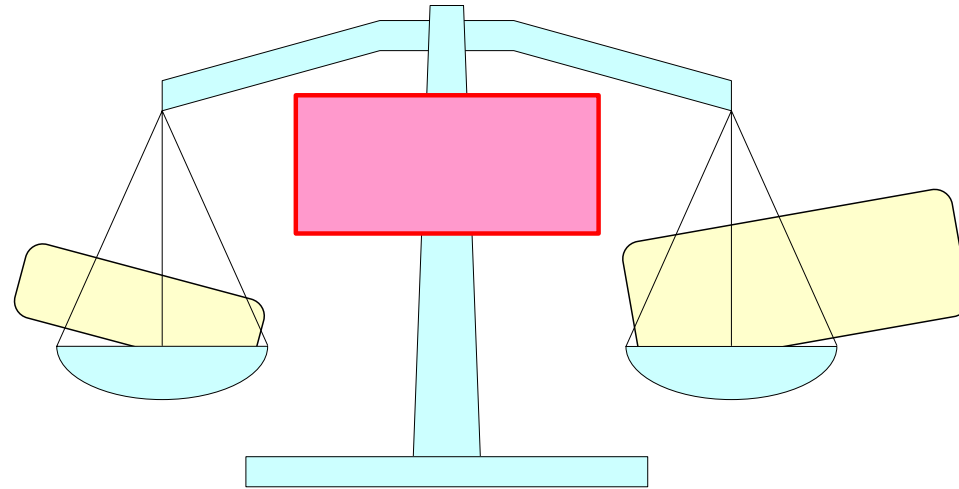


Source: IEA Database & EURELECTRIC

- Improved efficiency from competition
- A change in investment paradigm

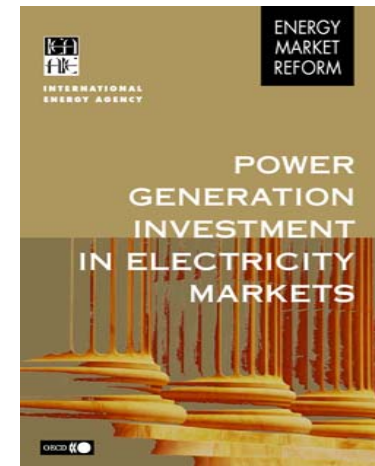


Can markets attract adequate and timely investments in generation capacity?



Case studies:

- Ontario
- South Australia



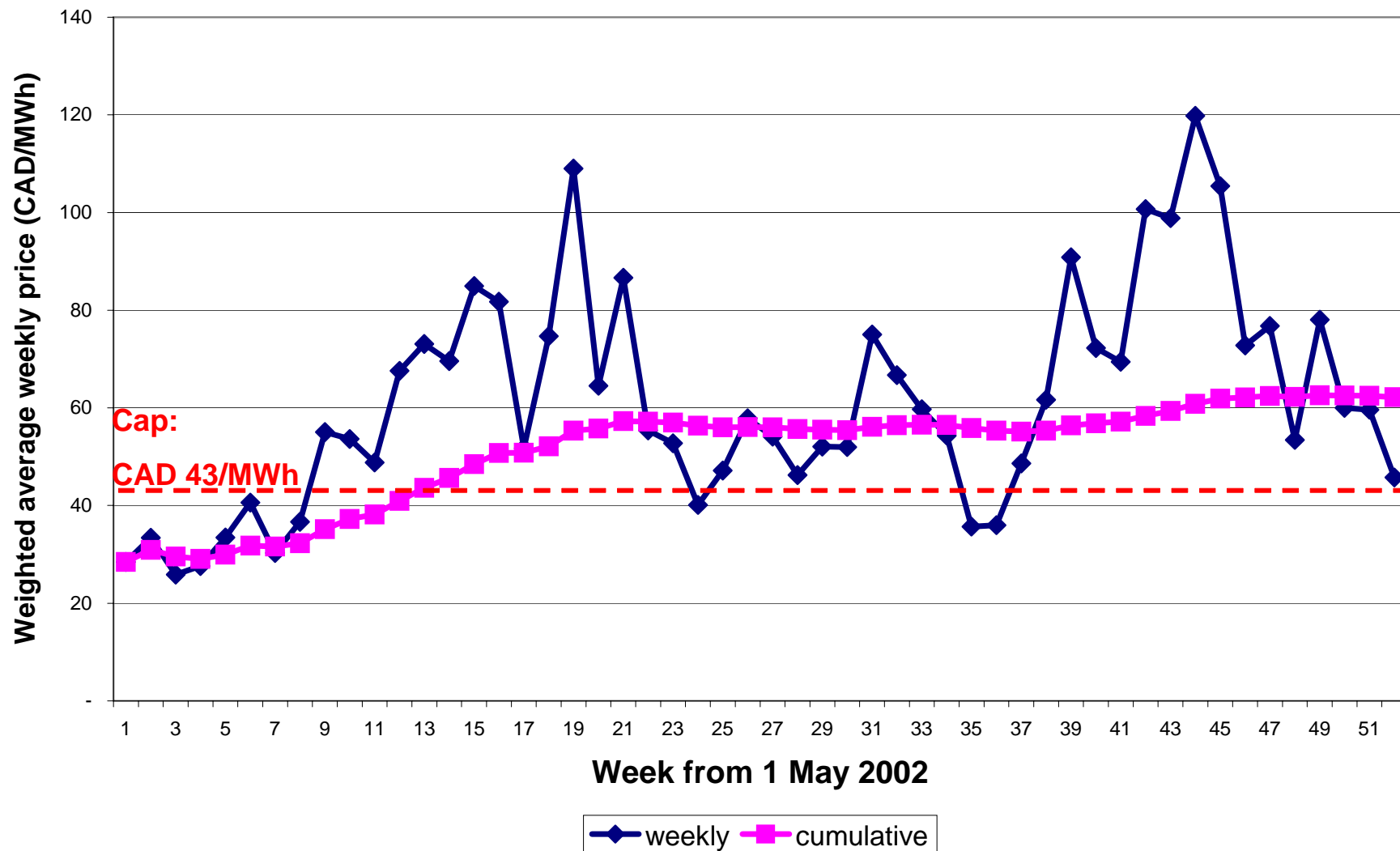


Ontario market

- **Government opened market to all consumers in May 2002**
- **Tight market + hot summer = wholesale price rises 30%**
- **Nov 2002: Govt. capped retail prices below cost until 2006 for about 50% of the market**
- **Consumers effectively “borrowing” to pay for their current consumption**



Ontario prices well above cap level



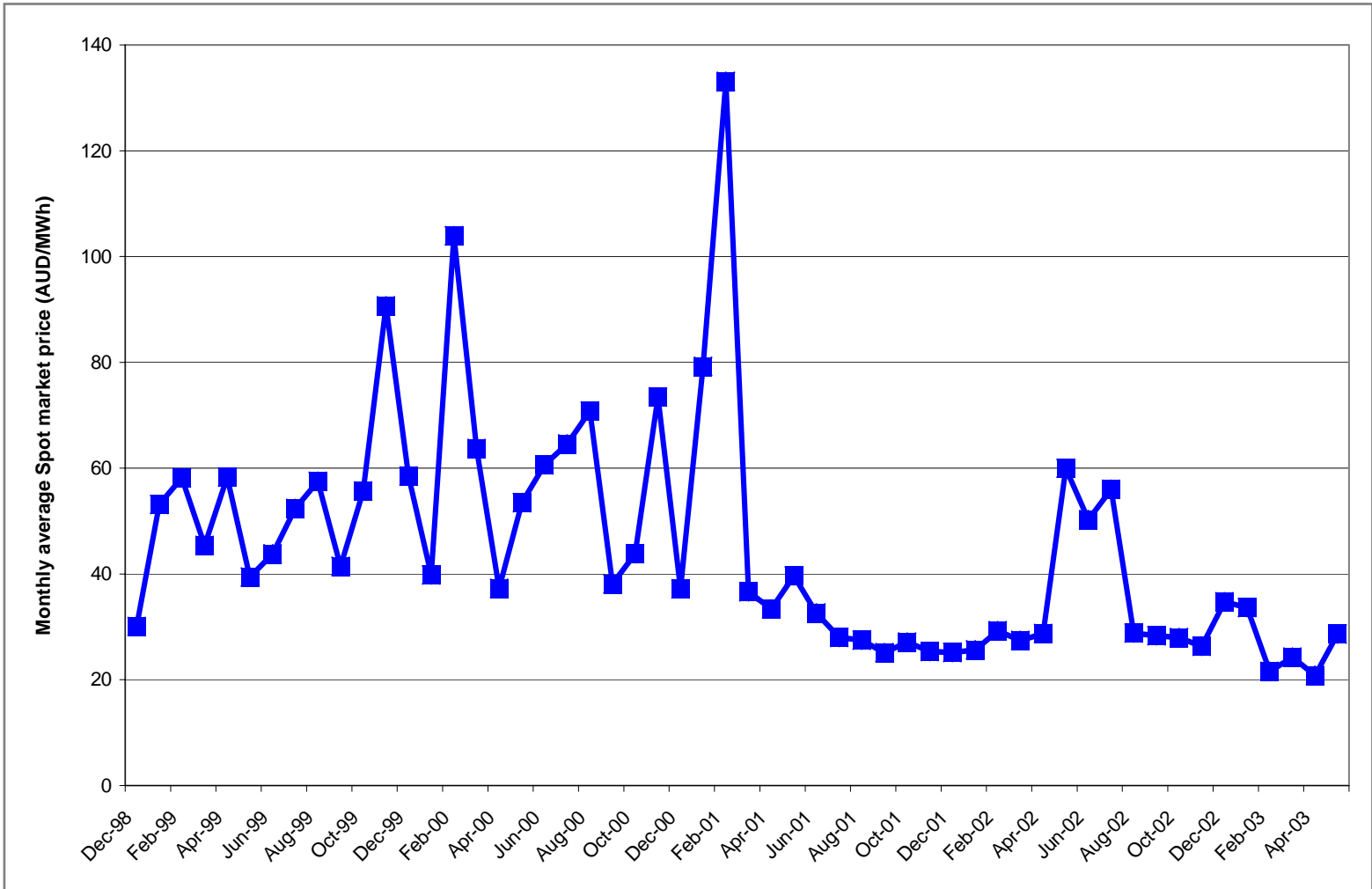


Consequences

- **Government is caught in a trap**
 - ◆ **Government “temporarily” intervenes to subsidise retail prices well below entry price for new generation**
↓
 - ◆ **higher demand and discouraged investment (political risk)**
↓
 - ◆ **even higher wholesale prices**
↓
 - ◆ **higher government subsidies and blackout risks**
↓
 - ◆ **Direct investment by government in new capacity**
 - ◆ **Government trapped itself into paying for higher prices and new supply!**

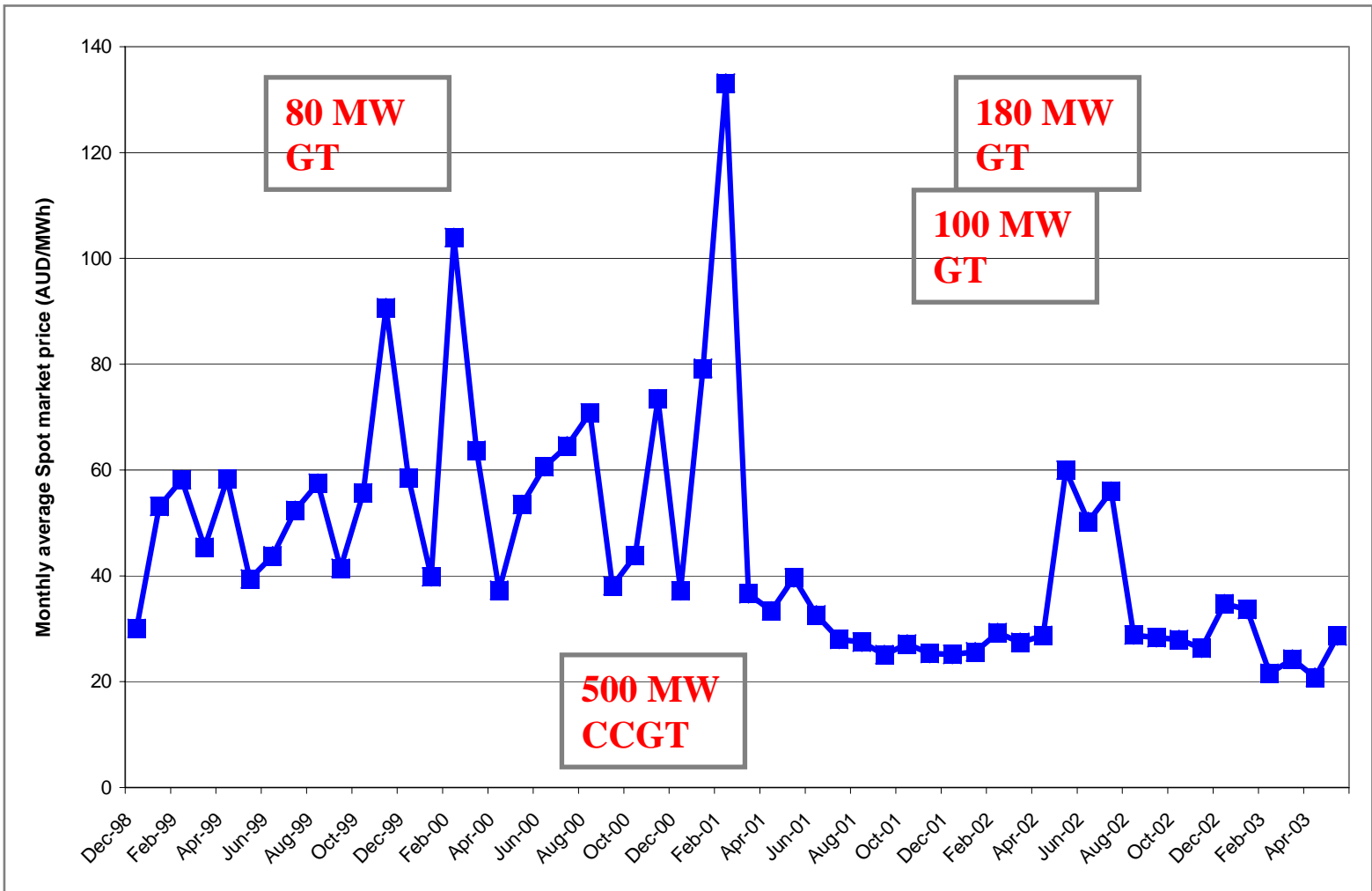


South Australia – high prices when market opened





led to 30% capacity increase



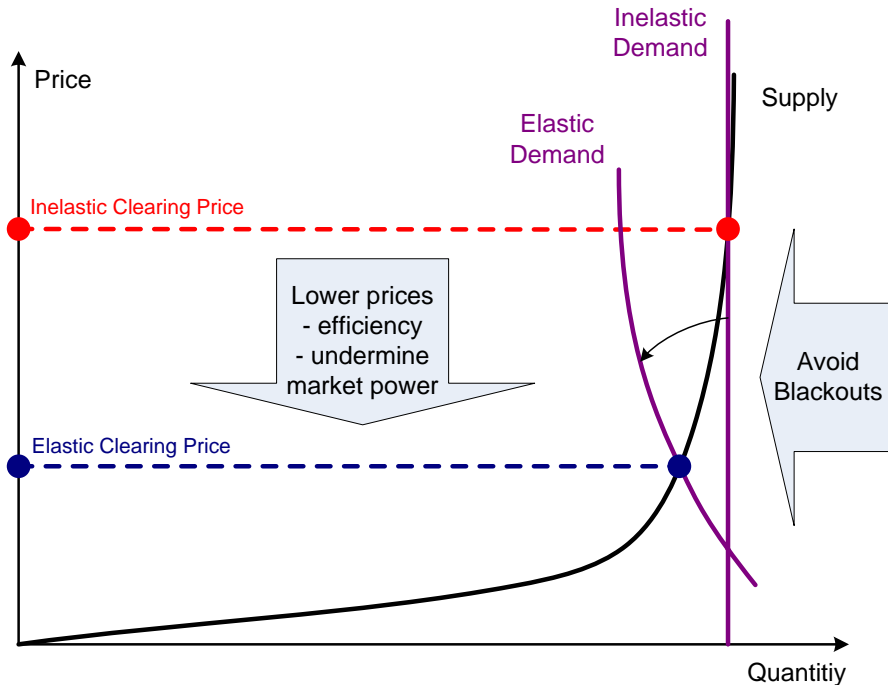


Can markets attract adequate and timely investments in generation capacity?

- **Markets can be made to do the work**
 - ◆ **Transparent prices in all parts of the value chain.**
 - ◆ **Harmonised rules to achieve benefits of internal market**
- **Policy option: a capacity measure at the cost of loss of efficiency.**
 - ◆ **Capacity measures in internal markets necessitate harmonised rules to avoid free-riding.**



...and demand participation makes markets work better.



- Consumption is *not* homogenous
- Need something to respond to
 - ◆ Real uncapped prices from scarcity
- From *Demand Management* to *Price Management*
- Framework for product innovation



Adequate investment in Transmission

Projected cumulated transmission investments 2001-2010

OECD Europe, billion dollars, World Energy Investment Outlook 2003

Electricity	49
Gas	36

TEN-E – Investments in priority projects until 2013

EU countries, billion Euro, estimates by European Commission

Electricity	5
Gas	15

- Investment still regulated
- Influence from reliability criteria, market power and market rules still create too much uncertainty as a barrier for merchant lines



Electricity Reform and Grid Reliability: New IEA Study

- **Electricity reform is not to blame for the blackouts in 2003**
- **Electricity reform has led to:**
 - ◆ **trade and regional markets**
 - ◆ **longer distance use of transmission**
 - ◆ **Greater, less predictable & more volatile usage**
- **Creating new real-time challenges for system operators**



Some lessons from the 2003 blackouts

- The story of **3 T's: Tools, Training and Trees**
- ...and **3 C's: Communication, Coordination and Cooperation.**
- Need to re-think reliability criteria in the context of liberalised markets
- Role for harmonised regulation?



Reliability of supply – monetise the public good

- **Contracts cannot be physically enforced in real-time => market failure => need for centralised system operation**
- **Physical** responsibility with TSO
- **Financial** responsibility remain with market players
- **Is there a role for regulation to ensure greater financial enforceability?**



Conclusions

- **Policy and regulatory focus on getting regulatory framework right rather than alleged market failures**
- **Policy initiatives to address security of supply issues should be specific and objectively justified**
- **Rethink reliability of system operation to create market consistent incentives**