Capacity Market Case Study
Great Britain

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Policy Areas and Targets

Many European countries have moved ahead with capacity mechanisms
The Diagnosis

- Existing "eco-system" - co-existent market and regulatory system has delivered to date

- An energy-only market (today’s retail technology) requires extreme price spikes
  - Their unpredictability makes investing risky
  - Characterized by on-peak market power
  - Investors fear political and/or regulatory intervention
  - Capacity mechanisms not new and can de-risk markets e.g. former E&W Power Pool

- Weakness in electricity market theory
  - Very occasions when return on investment is expected market fails to clear

- Deficiencies in the functioning of the GB electricity market

- Structural changes to the supply cost curve
  - Subsidized near-zero incremental supply

Peak Energy Rents – Missing Money

![Graph showing demand and price fluctuations from 2010 to 2013, highlighting peaks in demand and price spikes in Dec 2010 and Dec 2012.]

Acknowledgements: Peter Cramton
Security-of-Supply Problem

Ofgem and DECC estimates of de-rated capacity margins

Ofgem estimates of Loss of Load Expectation

The Intervention

1st Solve the Public Good
- Political intervention required
- Secretary-of-State set a long-term standard of 3 hours/year

2nd Solve “Missing Money” - Determine
- Quantity
- Who is deprived
- How to Distribute

- Incremental Reform – Part of Electricity Market Reform Programme
  - Market Design
  - Institutional Design
  - Codification and Governance
  - Concurrent Implementation

- Lengthy development cycle and coordination with other regulatory proceedings
  - Promote business-as-usual and avoid investment hiatus
  - Widespread public consultation

- Benefits
  - To solve the investment problem and provide value-for-money
**Market Design**

**Guiding Principles**

- **Energy-Only Market**
- **Adjunct Capacity Market**
- **Best* Implementation of an Energy Market**

**Systemic Whole**

* "Best" – given use and usefulness of prices to consumers

- CM Design Principle: Include proposed design components only if they provide identical incentives to an energy market
- Test for Investability

**Market Design**

- Quantity of the Missing Money?
  - Determined by competition in the capacity auction
- Who receives net CM payments?
  - Those successful in auction (low bidders)
- How much?
  - Upfront CM Payment; missing money depends on de-rated capacity
  - Then take-back any payments they would have missed in an EO market

- An auction is used to reveal the amount of the missing money
- Reverse, multi-round combinatorial
- Price-only selection (pre-qualification of resources)
- Prospects are participants or new supply who can demonstrate physical ability,
- The ‘missing money’ is distributed in the same way as it would otherwise be earned in an energy-only market
- Base payment – fixed for agreement length and adjusted for performance
- Costs recovered from Suppliers
Institutional Framework
Guiding Principles

• Pre-Existing Roles & Norms

• Investor certainty and regulatory risk

• Legal constraints

• Governance

• Practicalities