

Allocation of Risk and Development of Capacity Markets



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Disclaimer

- **These are my views**, not necessarily the views of my CRA colleagues or anyone else.
- **I am not speaking on behalf of any client.** I've testified on capacity market issues in the past for utilities (ConEdison, Dominion), governments (City of New York, Rhode Island House), and merchant generators (Boston Generating, Entergy, FPL Energy, Mirant, NRG Energy, Williams).
- **My conclusions today are general** and are not intended to be a proposal to adopt a certain market design, or change any existing market design, in any particular market. Good market design takes into account local conditions and requirements.

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- Lance Hoch
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Some Observations about Risk

- Risk is not a zero-sum game
- Markets charge for accepting risk and uncertainty
- Risks can also be incentives

Risks and Uncertainties Facing Generation Developers

Development

Technology
Fuel
Location
EPC costs
Permits

Market/Economy

Weather
Growth
Fuel costs
Competitors' actions
Technology

Operational

Efficiency
Outages
Maintenance
Transmission

Institutional

Market access
Regulatory
Environmental
Political

Cost-of-Service Model

Regulatory Oversight

Technology
Fuel
Location
EPC costs
Permits

Efficiency
Outages
Maintenance

Fuel costs

Environmental

Customer Risk

Weather
Growth
Technology Change

Utility Risk or Internalized

Boom/Bust

Market access
Regulatory
Political

Transmission

Energy-Only Markets (but No Bilaterals)

Supplier Risk

Technology
Fuel
Location
EPC costs
Permits

Weather
Growth
Boom/Bust
Technology change

Efficiency
Outages
Maintenance
Transmission

Regulatory
Environmental
Political

Customer Risk

Weather
Growth

Transmission

Market access

Response to Risk in Energy-Only Market

- **Financing development without contracts unlikely now**
 - Capital cost recovery implies high spot price volatility
 - Political/regulatory risks
- **In open-access markets, who is the counter-party?**
 - Absent a reserve requirement, incentives are to under-hedge, especially for non-POLR
 - Move to New Jersey's BGS approach valuable
 - Competitive retailers cannot lock in customers, but price benefit from new development is non-excludable
- **Elsewhere, will customers take on “too much” risk?**

Is Long-Term Contracting the Answer?

- **Contracts will be long-term**
 - New entrants may require long-term contracts to protect themselves against later rent extraction
- **Contracts can get some incentives right...**
 - EPC costs and timetables
 - Operational and availability
- **...but may leave customers with substantial risks**
 - Technology / fuel choice
 - Quantity
 - Cost structure

Who is the Counter-Party?

- **POLR IOUs?**

- Without regulatory backstop, risks unrecoverable stranded costs
- Some states preclude long-term contracts or ownership

- **Competitive LSEs?**

- Absent a mandatory reserve requirement, incentive is to under-hedge
- Dumping customers to POLR provides a free option
- Litigating prices after the fact provides a regulatory hedge
- Short duration of customer contracts or BGS-type auctions makes buy-and-hold strategy risky

Can We Develop a Market for Capacity Bilaterals?

- **Currently, energy/capacity contracts are not ready substitutes one for the other**
- **Likely would require creation of standardized capacity contracts to permit ready trading**
- **Counterparty risks require an financially sound guarantor (who will charge for this service)**

Or Should the RTO Make the Market?

- **RTOs have superior information about physical units backing financial contracts**
- **RTOs need to define the product to ensure consistency with reliability**
- **Allows creative design that links capacity payment to performance of units, to avoid blunting the operational incentives**
- **Allows for automatic balancing across LSEs, minimizing transactions costs**

Can a Capacity Market Better Allocate Risks?

- **Yes, if well designed**

- Investors retain risk of developing good projects on time, on budget
- Operators retain risk of efficient, high-availability plant operation
- Loads and suppliers mutually hedge demand-side risks
- Payment stability reduces political and regulatory uncertainty
- Predictability damps boom/bust building cycles
- New technologies compete on equal footing

What is Needed in a Capacity Market Design To Manage Risk Optimally

- **Close linkage with energy market**
- **Minimize use of administrative parameters**
- **Allow parameters to respond to market signals**
- **Symmetric obligations on all LSEs**
- **Symmetric treatment of all resources**

Short-Run or Long-Run?

- **Short-run design in New York is a weak basis for financing**
 - Payment stability / predictability threatened by over-investment (either by boom/bust issues or intentionally by LSEs)
 - Locational premiums can be destroyed too readily by efficiently scaled entry
- **Heated political opposition to New York model:**
 - Buying “too much” (although not paying too much)
 - Paying for what’s already there
 - Pay for performance

Long-Run Shifts Balance of Risks Acceptably

- **NE FCA addresses these short-run issues:**
 - Predictable revenue stream for 8+ years from date of auction to new units, secured under Mobile-Sierra tariff
 - Locational premium locked in for 5 years for new units
 - Buys no more than ICR, releases over-bought capacity
 - Although paid to all, market price driven almost exclusively by new entrants
 - Includes strong availability penalties for hours of high system stress
- **FCA minimizes risks retained by consumers:**
 - Small part of fleet under ISO-guaranteed multi-year contract
 - FCA price shifts to reflect current market conditions
 - Development costs and risks retained by suppliers

Capacity Market Model

Suppliers

Technology
Fuel
Location
EPC costs
Permits

Efficiency
Outages
Maintenance

Environmental
Political

Customer Risk

Weather
Growth
Fuel Costs
Technology Change

ISO Responsibility

Boom/Bust

Transmission

Market access
Regulatory

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