

Utility Integrated Resource Planning
with
Renewable Energy

Integrated Resource Planning Division
Maryland Public Service Commission
<http://www.psc.state.md.us>

Outline

- Traditional Power Industry Structure
- Traditional IRP Framework
- Restructured Industry Structure in Maryland
- Complexities in Resource Planning
- Renewable Portfolio Standard
- Other Options

Traditional Power Industry Structure

- Local electric utility operated as a franchised monopoly, supplying end-use customers with three services:
transmission, distribution, and generation.
- Regulatory objectives:
 - Minimize cost and price of power
 - Reduce environmental impacts
 - Provide local economic benefits

Traditional IRP: Utilities

- Utilities
 - Forecast load obligations
 - Develop a plan to meet those obligations
 - Using supply and demand side resources
 - Evaluate various resource scenarios (e.g., plant construction, power purchases, DSM)
 - Over a long period of time (e.g., 10 years)
 - Plans must consider various policy objectives: reliability, reasonable prices, environmental considerations

Traditional IRP: State Oversight & Review

- Provides IRP guidelines to the utilities
- Analyze and review utility submissions
- Determine if submissions are reasonable and in the public interest
- If so, approve IRPs

Restructured Industry Structure in Maryland

- Electric utilities have sold power plant assets to unaffiliated companies or transferred assets to unregulated subsidiaries.
- With the elimination of generation functions from regulation, the Maryland Public Service Commission no longer determines the need for additional supply sources as was the case prior to the implementation of restructuring.

Traditional vs. Restructured

- Franchised monopoly providing “wires” & power plants
 - Regulation of these vertically integrated firms for consumer protection
- “Independent” generation*
 - Competitive market structure: generators, marketers & brokers sell to retail customers
 - Transmission & distribution remain regulated

**subject to applicable regulations and land-use requirements*

MD Restructured Electric Industry:

- Most Maryland electric customers may obtain generation supply from either the competitive retail market or their local utility under market rates.
- For retail customers choosing not to shop, the electric utilities (“wires companies”) acquire requisite power supplies from the wholesale market.
- Customer pays for the power costs, a profit margin, and administrative costs.
- Most small residential & commercial customers are still provided power from the electric utilities.

Complexities in Resource Planning

- Traditional regulation: facilitates least-cost planning.

Now:

- Utilities procure electricity competitively,
- Foster competitive markets,
- Limit customer risks (i.e., stable bills),
- Protect credit ratings of utilities,
- Technological base may shift (legislation, obsolescence)

What can happen with public policy programs when restructuring occurs in the electric industry?

- Regulated utilities retain only certain transmission and distribution functions.
- Retail customers may choose an electricity supplier the same way a wireless telephone provider is selected.
- But, what becomes of the mandated energy efficiency, renewable energy, and other public-purpose programs mandated in a regulated, vertically integrated systems?
- Initially, public purpose programs are eliminated; then, reconstituted via enabling legislation.

Enrolled Maryland Legislation

- Maryland Electric Deregulation (1999)
- Renewable Portfolio Standard (2004)
- Partial Re-integration/restructuring (2006)
- EmPOWER Maryland Energy Efficiency Act (2008)
- Reduction of Greenhouse Gases (2009)

MD Restructured Electric Industry (2006)

- Maryland Public Service Commission: In order to meet long-term, anticipated demand for “utility supplied” electricity service, PSC may require or allow an investor-owned electric company to construct, acquire, or lease, and operate, its own generating facilities, and transmission facilities...subject to appropriate cost recovery.

Renewable Concern in Restructured Markets

- Electricity is provided in the retail market by two groups
 - Competitive electric suppliers
 - The electric utilities (“wires companies”)
- The Regulator can order one group, but not both groups to build high cost power plants (e.g., renewable generation)

A Renewable Concern

- If an electric utility is required to build or enter into a long-term contract for renewable energy to secure development financing, the cost of generating power using renewable energy sources is higher than the cost of generation using conventional technologies.
- Retail customers bear risks; not unregulated shareholders.

A Renewable Concern

- Retail customers have the option to price shop:
 - They leave the higher priced utility service, and
 - purchase power from the competitive electric suppliers.
- The smaller base of remaining utility customers must support the renewable investment
- Price between the two options separate, creating additional incentives for the remaining customers to leave the utility

A Renewable Concern

- Therefore, in a restructured environment, utility ownership and the need for cost recovery reassurance would require:
 - The elimination of retail choice
 - Imposing a stranded cost recovery mechanism that permits cost recovery regardless of where the customer shops.
- Is this true? Potentially not – depends on the price difference & information barriers
(e.g., suppliers now offer retail products that cost less than utility supplied service, but limited response)

The Renewable Portfolio Standard (RPS) in MD's Restructured Market

Requires a specific portion of all electricity sold in the State to be generated from renewable energy sources.

RPS Policy Considerations

- Selection of Renewables
- Single vs. Multi-tiered Approaches (“baskets”)
- Appropriate RPS Level
- Product vs. Company Standard
- New vs. Existing Renewables
- Regional vs. State Standard
- Cost Cap (“Steam release valve”)
- Sunset Provisions

Other Policy Options

- **Systems Benefits Charge (SBC)**
 - The RPS, as a market mechanism, favors the most cost effective renewable technologies
 - An SBC, working in tandem with an RPS, could target renewables with longer time frames until viable
- **Financial Incentives: tax deductions/credits**
- **Government purchases: procurement solicitations (UM/DGS)**