

# New Utility Business Models (including Performance Based Regulation)

## Description:

Utility regulation varies to some extent by state Public Utilities Commission (PUC), or their equivalent. Most Commissioners and PUC staff, however, still adhere to the now over fifty year old regulatory principles outlined by James Bonbright in his 700 page text, *Principles in Public Utility Rates* (1961). At the writing of Bonbright's text, most utility companies were vertically integrated and were experiencing increases in load and had the ability to capitalize on huge economies of scale for new generation. These "natural monopolies" warranted a state regulatory body that could balance the tradeoff between efficiency (in the form of least cost production) and equity (consumer protection).

Historic electric and gas utility regulation could be characterized as somewhat simplistic in its backward accounting, heavily grounded in principles developed in the era of load growth and large central generation - a time before Energy Efficiency Resource Standards (EERS) or Renewable Portfolio Standards (RPS). Many have argued recently that the regulated utility industry needs a new set of principles that are far more sophisticated, more forward planning, and more incentive based.

In a conversation about the role of state policy in 21<sup>st</sup> century utility regulation, it is helpful to define the boundaries. Energy "policy" and "regulation" often tend to focus on the investor-owned utilities (IOUs), which supply the majority of the market with energy. Most public power entities (municipals, cooperatives, and subdivisions) are typically exempt from PUC jurisdiction, yet these utilities are heavily influenced by the market structures established for the regulated utilities and many legislative policies are equally applicable to all utilities regardless of their governing body.

## Discussion of the Policy:

The complexities of this topic are more than can be addressed in this short policy brief. Some policy makers believe that modernizing the public policy compact with electric and gas utilities is THE barrier to greater clean energy adoption. State efforts to reform the current regulatory construct have taken many forms, the most high profile of which are discussed below (Hawaii, New York and Massachusetts). In terms of the actual policy changes being proposed, some of the concepts that have emerged are focused on regulating and rewarding utilities base on their performance against certain metrics, rather than simply a rate of return based on their spending as has been traditional. In addition, rewarding utilities for reducing various forms of risk (examples include carbon emissions risk, water risk, financial risk, etc.) has emerged as a new way of thinking. Performance Based Regulation (PBR) and risk-aware regulation are both discussed below under Key Components.

Because PUCs generally fulfill the statutory directives of state policy, legislatures may want to use policy to direct the utility commission to open a docket with the purpose of investigating new utility business models. The legislation should identify the public objectives that would be incentivized through a new business model for utilities and directing the commission to identify ways in which to align the utility's financial incentives with public policy objectives.

## Example State Programs:

A concise summary of 2014 state utility business model initiatives was compiled by Advanced Energy Economy and can be found [here](#). The summaries below borrow heavily from this blog post.

Three states stand out as having taking significant action on utility business models:

**Hawaii:** Initiated by a [white paper issued by the PUC](#), Hawaiian Electric Company (HECO) has been directed in four decisions to implement changes to solar interconnection, demand response, renewable integration, and

cost reduction strategies. Their plan, submitted in August of 2014 would triple the amount of distributed generation by 2030. Given that Hawaii has the highest electricity rates in the nation, the chair of the Hawaiian PUC has referred to their experience as a “post card from the future” to other states.

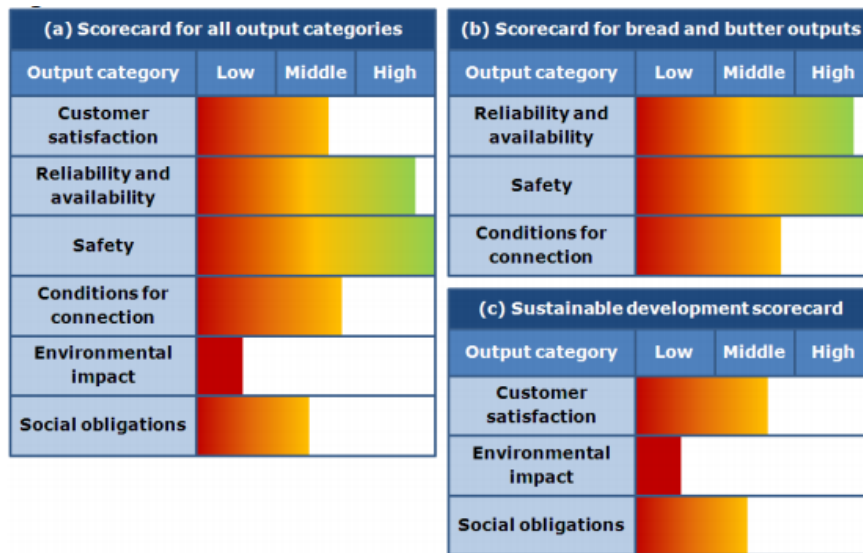
**New York:** The New York Public Service Commission (PSC) has initiated a [Reforming the Energy Vision \(REV\) proceeding](#). In the PSC’s words: “This initiative will lead to regulatory changes that promote more efficient use of energy, deeper penetration of renewable energy resources such as wind and solar, wider deployment of “distributed” energy resources, such as micro grids, on-site power supplies, and storage. It will also promote greater use of advanced energy management products to enhance demand elasticity and efficiencies. These changes, in turn, will empower customers by allowing them more choice in how they manage and consume electric energy.”

**Massachusetts:** In June of 2014, the Department of Public Utilities (DPU) [issued an order](#) requiring all utilities to submit 10-year grid modernization plans, which are to include advanced metering deployment plans for the first five years. The DPU has also opened proceedings on electric vehicle charging and time varying rates.

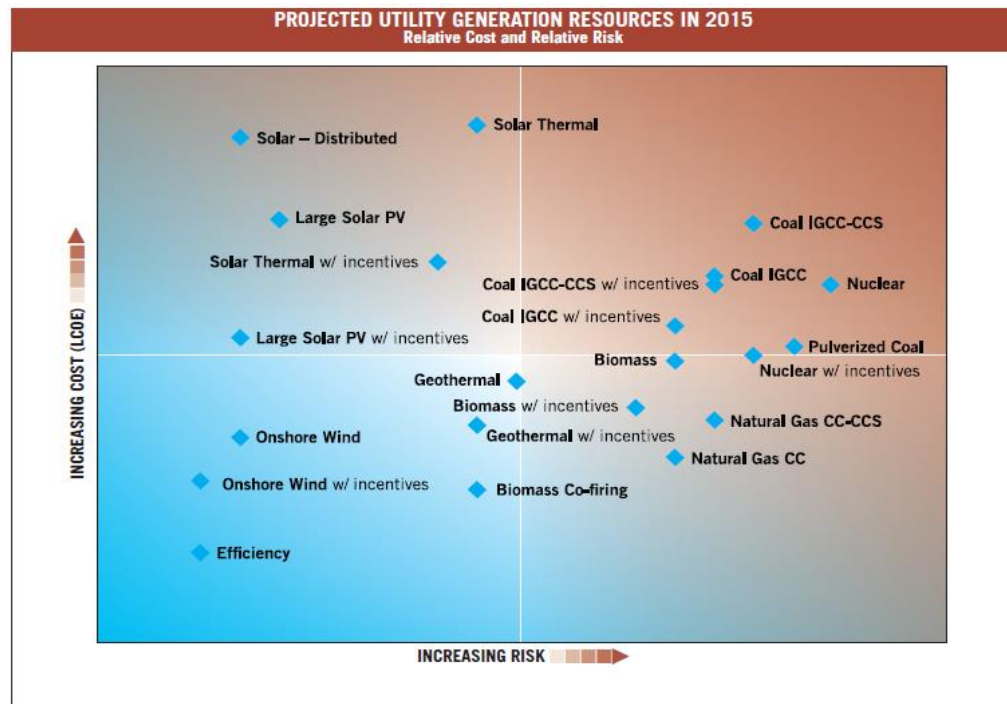
## Key Components:

- **Performance Based Regulation (PBR)**

Some of the earliest innovation around PBR was developed by the utility regulator in the UK - the Office of Gas and Electricity Markets (Ofgem). Ofgem has implemented the RIIO Model (Revenue = Incentives + Innovation + Outputs) for the regulated utilities in the UK. RIIO is unique in that the utility rate of return is a function of performance against key, pre-determined, performance metrics rather than a regulated rate of return on capital invested. A snapshot of a balanced metric “scorecard” is below, which lists typical performance criteria.



Source: Ofgem, Handbook for Implementing the RIIO Model



Source: Ronald J. Binz Public Policy Consulting & Regulatory Assistance Project

- **Risk Aware Regulation**

A recent analysis on “Practicing Risk Aware Regulation” explores the risk inherent in utility and regulator asset decisions. The figure below depicts one outcome of this approach with various utility generation options plotted in relation to their levelized cost of energy (LCOE) and relative risk. The report states that: “Utilities must endorse regulatory efforts to minimize investment risks on behalf of consumers and utility shareholders. This means promoting an inclusive and transparent planning process, diversifying resource portfolios, supporting forward-looking regulatory policies, continually reevaluating their strategies and shaking off “we’ve always done it that way” thinking.”

### More Information:

- America’s Power Plan - New Utility Business Models:  
<http://americaspowerplan.com/power-transformation-solutions/ratemaking-and-utility-business-models/>
- Ron Binz/RAP/CERES, Practicing Risk Aware Regulation:  
<http://www.ceres.org/resources/reports/practicing-risk-aware-electricity-regulation/view>
- Ofgem, Handbook for Implementing the RIIO Model:  
<https://www.ofgem.gov.uk/ofgem-publications/51871/riiohandbook.pdf>
- Advanced Energy Economy (AEE) Study on New York 21<sup>st</sup> Century Utility System:  
<http://info.aee.net/advancing-grid-modernization-and-smart-grid-policy>
- AEE, Top 10 Utility Commission Actions of 2014:  
<http://blog.aee.net/year-in-review-top-10-utility-commission-actions-of-2014>

- Minnesota's E21 Initiative, Working Paper: Overview of the Current Utility Business Model in Minnesota:

[http://www.betterenergy.org/sites/www.betterenergy.org/files/e21\\_Current\\_UTILITY\\_Business\\_Model\\_MN.pdf](http://www.betterenergy.org/sites/www.betterenergy.org/files/e21_Current_UTILITY_Business_Model_MN.pdf)