July 24, 2017

Performance Regulation

A presentation and discussion with Michigan Energy Officials

Richard Sedano
President and CEO
The Regulatory Assistance Project (RAP)®

50 State Street, Suite 3
Montpelier, Vermont
United States

+1 802 498 0710
rsedano@raponline.org
raponline.org

1 Performance Regulation

An Overview

“All Regulation is Incentive Regulation”

- Incentives of traditional regulation
  - Build and own to grow rate base
  - Avoid disallowances

Performance Regulation

- Highlights what matters
- Motivates through ego, shame, profits
- Utility outputs
- Social outcomes

Performance Regulation: Why Now?

- Empowered customers
- Innovation potential significant, growing
- Unsettled direction of “role of the utility”
- Threatened utility revenues and net income
- Good government

Utility Outputs

Social Outcomes

Aren’t outcomes what citizens want?

How to Raise Performance in Regulation

- Administrative reporting
- Public reporting

Rate Utilities on Performance

- Reliability
- Customer service
- Power plant performance
- Safety
- Energy Efficiency

What matters to Michigan citizens?

How to Raise Performance in Regulation

- Administrative reporting
- Public reporting
- Financial implications
  - How much for a return on performance?

Is return on performance the icing?

Is return on performance a significant % of total earnings?

Generic Performance Reg Jargon (states will invent their own terms)

- Performance (Based) Regulation
  - The framework
  - Connects goals with targets
  - Measures, feeds back performance results
- Performance Incentive Mechanism
  - Specific performance metrics, targets, incentives connects to utility revenue/return

Performance Regulation Don’ts

- Focus on inputs* and spending
- Allow poor knowledge of baseline, BAU
- Set it and forget it
- Assume it will reduce cost of regulation
- Use confounding metrics
- Use hard-to-measure metrics
- Use hard-to-define metrics

Performance Regulation Don’ts

- Spend $10 million on energy efficiency
- Expect same PV interconnects next year as last
- Lock in a plan for 5 years with no reopeners
- Overlook innovation
- Use System Load Factor: the classic confounding metric
- Hard to measure metrics: Energy efficiency?
- Hard to define metrics: Technology

Performance Regulation Do's: Keep it Simple

- Consider goals of Michigan power sector
- Reflect clear public priorities/goals in outcomes
- Link outputs to outcomes
- Consider standard (national) definitions for metrics
- Consider precise targets that promote innovation
- Commit enough money to change management thinking (Not so much that the public revolts).

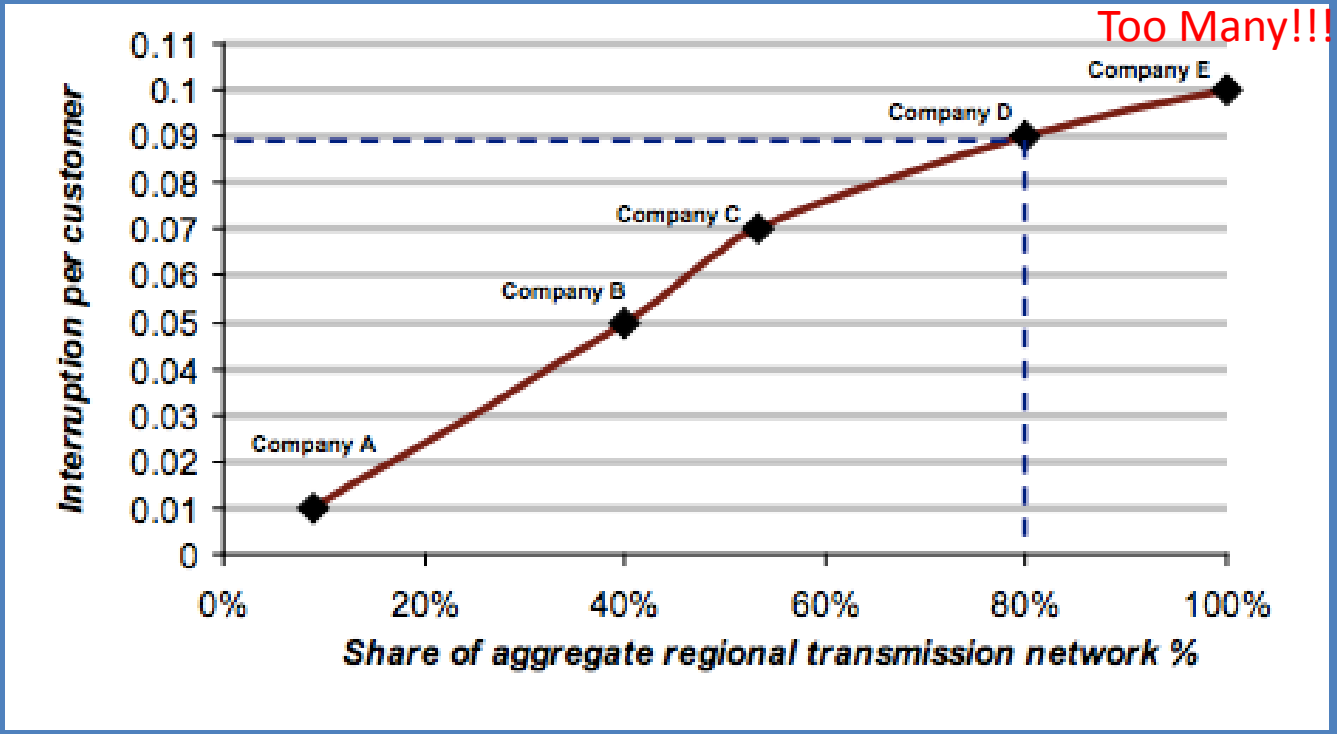
Performance Regulation Do's: Continuous Improvement

- Show to public; deliver value to public
- Consider reporting system before attaching financial implications
- Consider long commitment, but with re-looks
- For financial metrics, associate reward with social value
- Reflect priorities in relative size of financial impact
- Consider benchmarking

Illustrative Example of Danish Quality of Supply Benchmark

The example includes five DSOs: A, B, C, D and E. Company A has the lowest weighted SAIFI while Company B has the second lowest and so forth. Together, Company A, Company B, Company C and Company D have precisely 80 % of the aggregate transmission network.

Source: DERA (2009)



Company D has a weighted SAIFI of 0,09. Thus, companies which have a weighted SAIFI higher than 0,09 are penalised with an up to 1 % reduction in their allowed operational costs. In this example, Company E is penalised.

Two kinds of metrics

Bread and Butter

Existing Service (conducive to penalty)

- Reliability
- Customer Service

Innovation

New (conducive to reward)

- Demand response enrollment, use
- Electrification
- Resilience

Utility Sources of Net Income

- Return on rate based investment
- More sales than forecast between rate cases
- Return on performance
- Return on certain expenses
- Services based on monopoly role
  - Data
- Competitive services

Check your codes of conduct and affiliate rules

Complementary Policy Idea #1 *Return on Expenses*

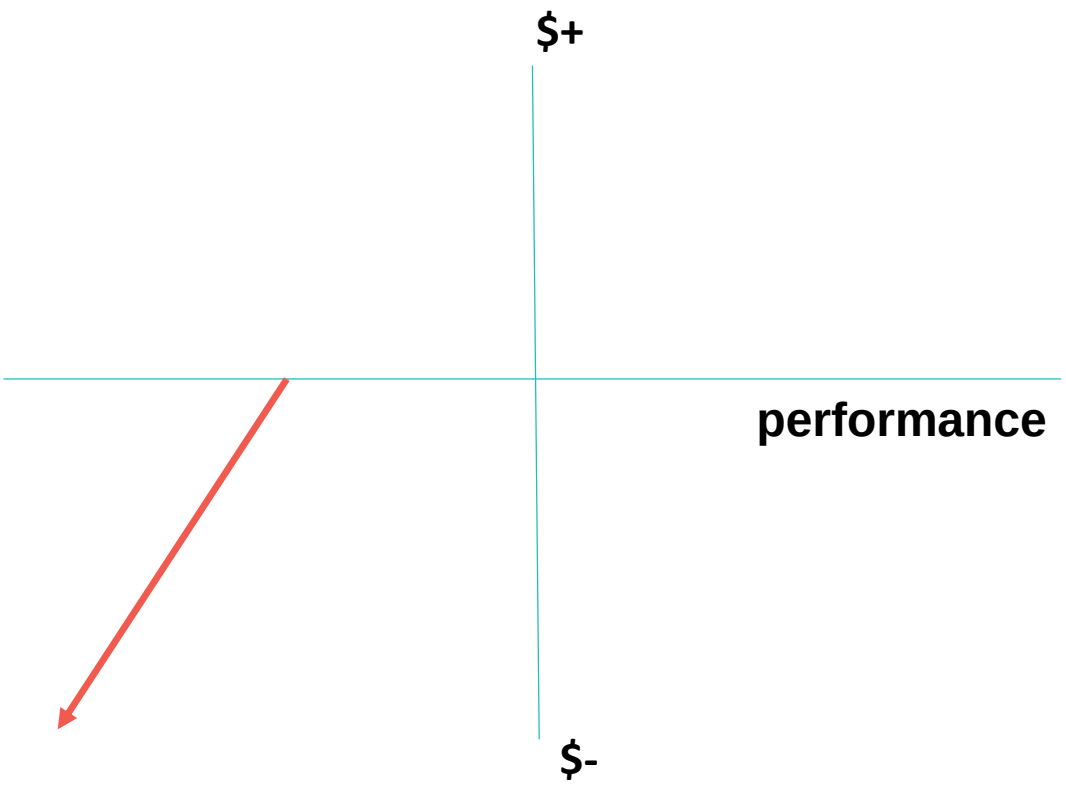
- Consider customer alternatives to utility capital
  - EE, DR, DG, CHP, Storage
- What is utility incentive to deploy if cheaper?
- Idea:
  - ID utility capital before need date
  - Assess whether customer resources are cheaper
  - If so, allow capitalization of, or return on, expenses to secure customer resources

Complementary Policy Idea #2
Multi-Year Rate Plans

- Promote cost management
- Promote utility management focus on performance, service, strategic planning
- Requires comfort with revenue, cost forecasting

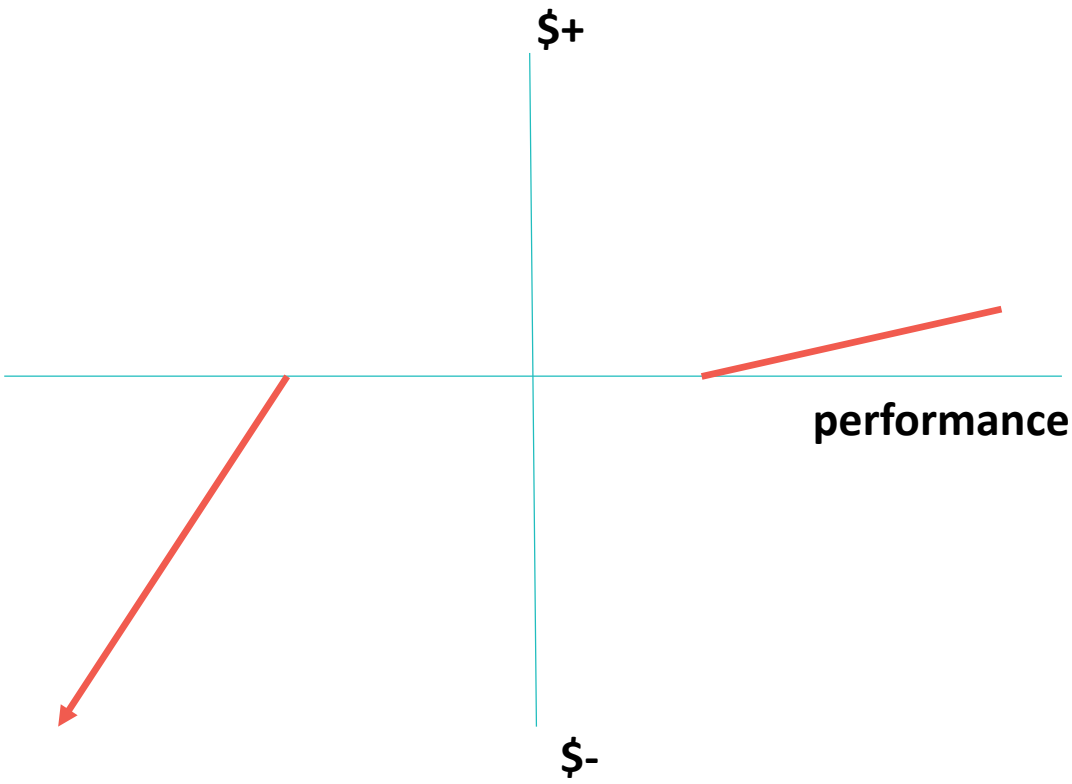
Visualizing Performance

A bread and butter metric



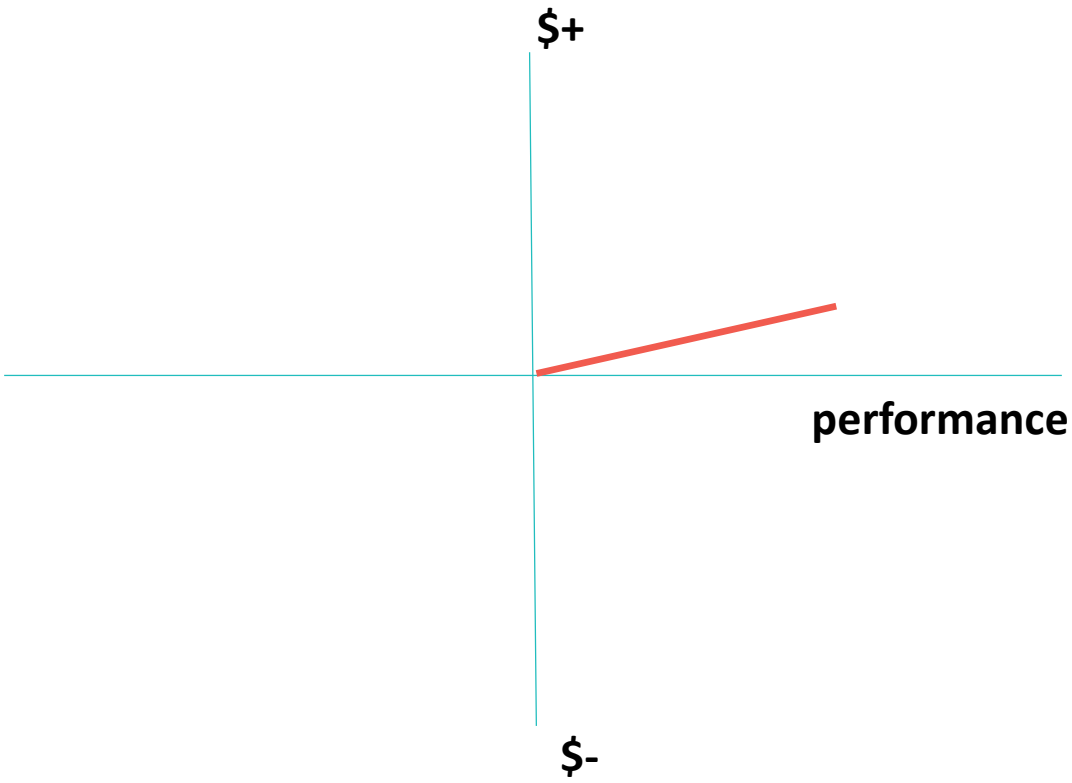
- No upside
- Deadband from adequate performance
- Severe penalty for poor

A bread and butter metric



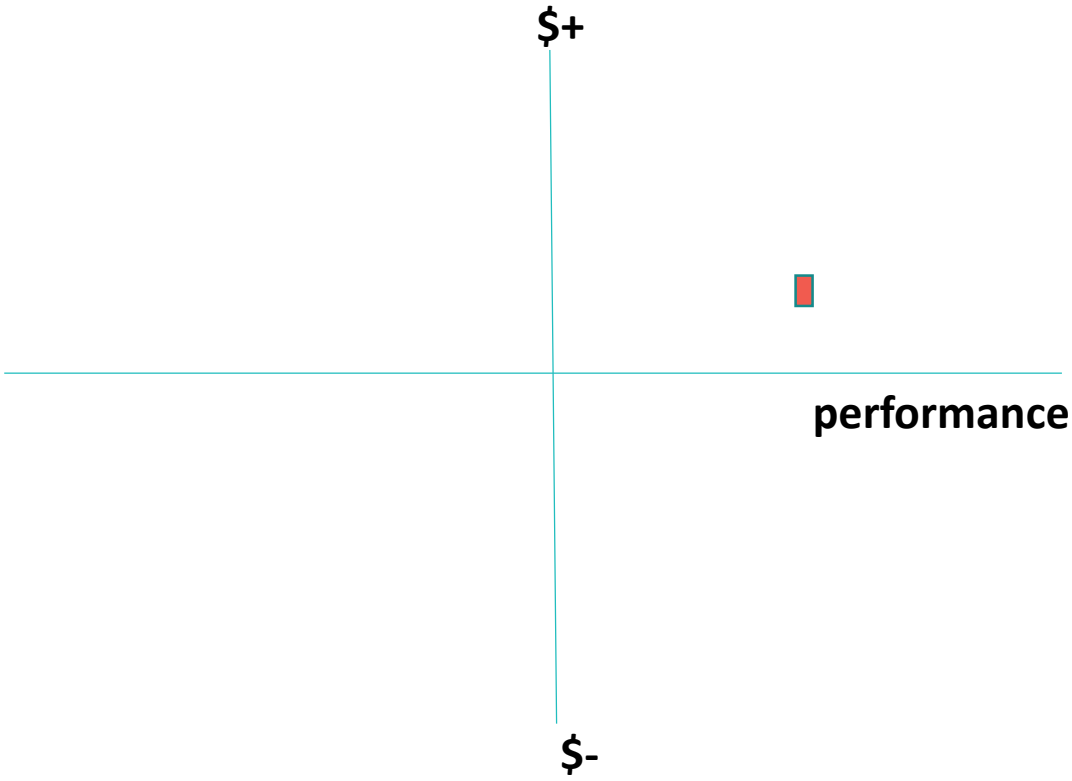
- Upside
- Capped, for superior performance
- Deadband from adequate performance
- Severe penalty for poor performance

An innovation metric



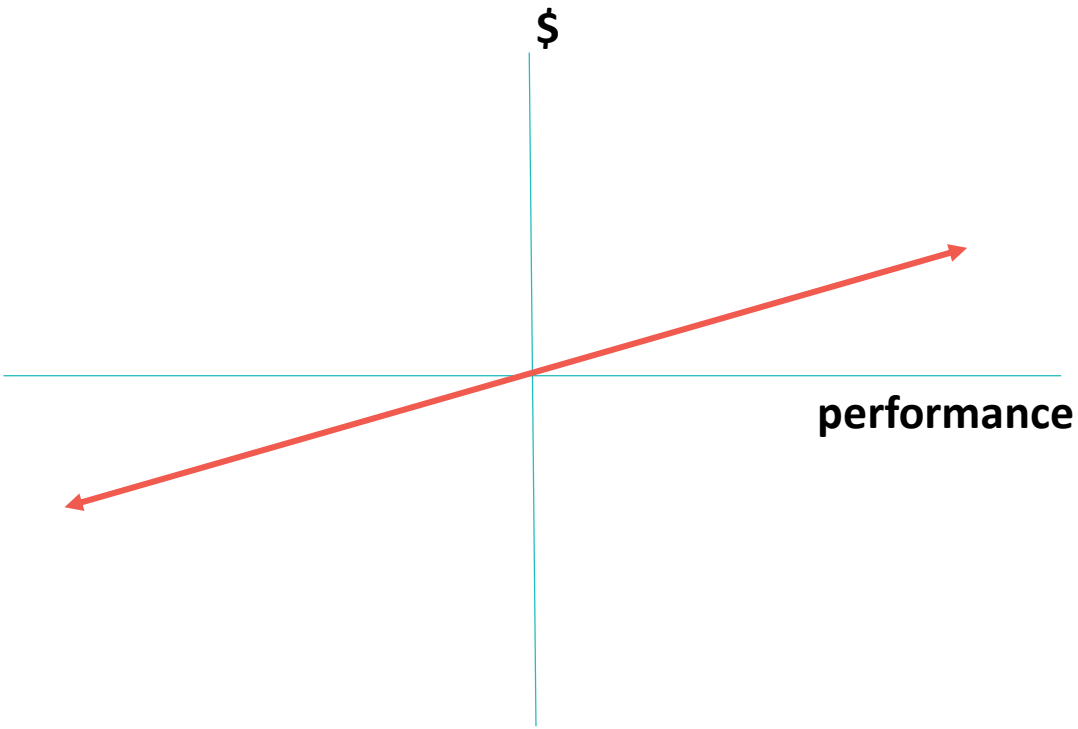
- Upside
- Capped for superior performance above present level
- No penalty

An innovation metric



- Upside bonus
- Capped for significant specific superior performance
- No penalty

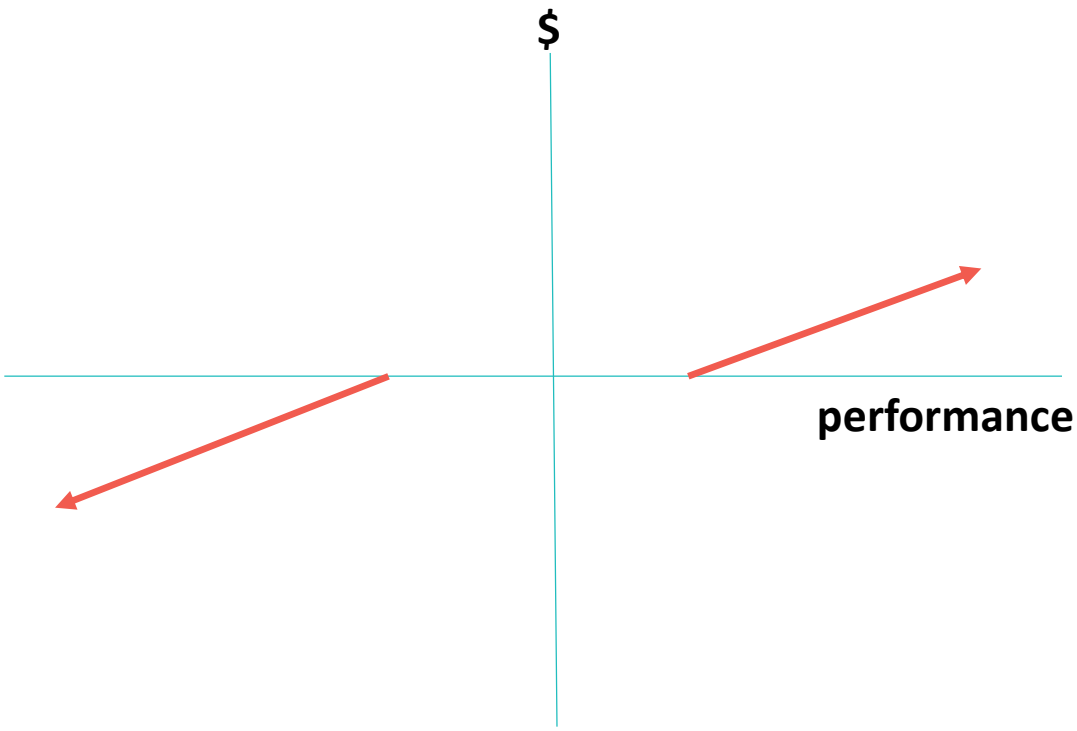
Shared Savings



- Based on a compliant result at the origin
- Utility wins or loses revenue based on performance
- Dollar for unit, no limits

Note pressure on measurement and verification of savings

Shared Savings



- Based on a compliant result around a deadband at the origin
- Utility wins or loses revenue based on performance
- Dollar for unit
- No limits

Note pressure on measurement and verification of savings

3 Examples

New York
Reforming the Energy Vision

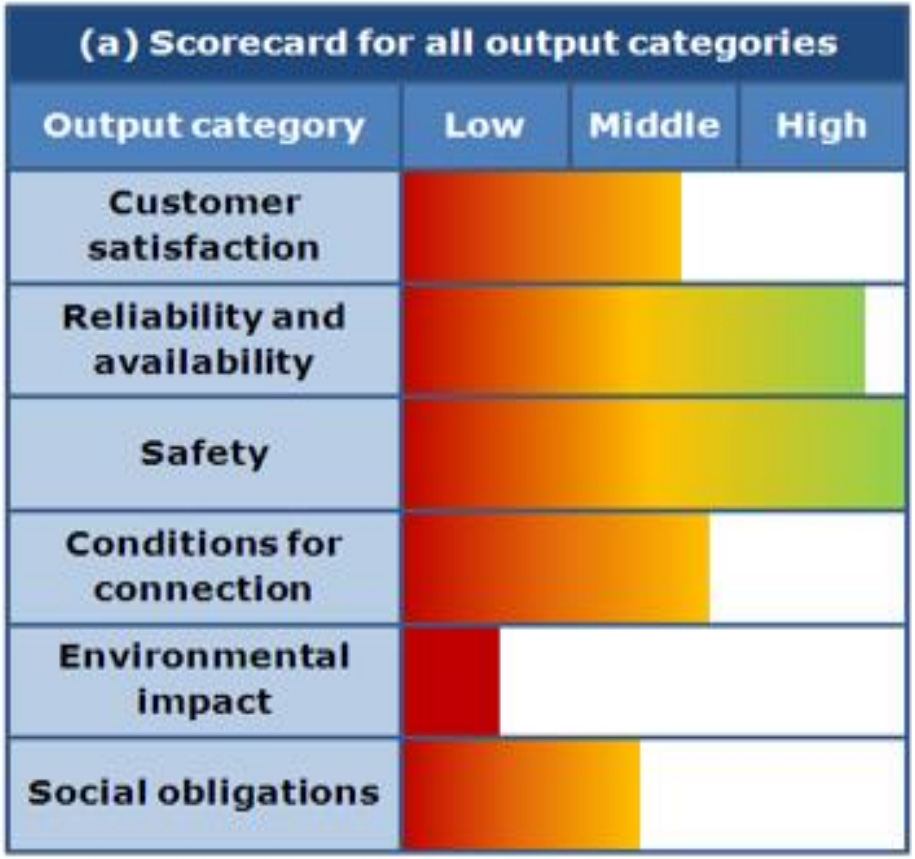
- Scorecard Metrics
  - On-going task force looking at this
- Earnings Adjustment Mechanisms
  - Peak reduction and system efficiency
  - Energy efficiency
  - Interconnection
  - Customer Engagement and Information Access
  - ~~Affordability~~ (scorecard for now)
  - GHG reduction?

Outputs, but also Outcomes

- Integrate activities of market participants to optimize the distribution system
- Encourage Innovation
- Enterprise-wide effort from utility
- Stimulate Competitive Market
- Utilities have never controlled everything

OFGEM: Revenue = Incentives + Innovation = Outputs (RIIO)

- Move from a productivity-based system
- Longer term of stability: 8 years
- Remove capital bias
- Measures of success
  - With rolling averages



How is the utility doing?

Implementation
(typical, small sample size)

- Regulator lays out general criteria
- Utility makes a proposal
  - Stand alone proceeding (RIIO)
    - With fast track opportunity
  - Rate Case (NY)
- Collaboration

4 Innovative Uses for Performance Regulation

A Host of Reasons to Focus on Outcomes and Outputs

- Promote DER Deployment
- Share Utility Data
- Drive Clean Energy Performance
- Emphasize Locational Value
- Focus on GHG and other Emission performance
- Deploy Electric Vehicles
- Improve Power Plant Performance
  - Heat rate targets

A Host of Reasons to Focus on Outcomes and Outputs

- Operations
  - Interconnection
  - System efficiency improvements
  - Reliability
- Customer Empowerment
- Competitive Activity
  - Codes of Conduct conformance

Table 1 - Mandated Timeframe for DG Interconnection Application Processing[19]

Activity	Responsible Entity	Maximum Working Days for Response
Registry of the request	Retail Provider	1
Verification of information	Distribution Utility	2
Letter of acceptance when no study or infrastructure is required	Distribution Utility	4
Letter with study or infrastructure budget	Distribution Utility	10
Documentation review	Retail Provider	1
Modification of the interconnection infrastructure	Applicant or Distribution Utility	TBD*
Relocation of meter	Distribution Utility	5
Signment of agreement	Retailer	2
Integration to the commercial scheme	Retailer	1
Total time without study or infrastructure modification		13
Total time with study or infrastructure modification*		18

*These times do not include the construction of specific upgrades or the response times of the activities that correspond to the Applicant. In Mexico, either the Applicant or the Distribution Utility can make the required grid upgrades.

Mexico Interconnection Metrics

A Host of Reasons to Focus on Outcomes and Outputs

- Peak Load Reduction
- Time-varying rate participation
- Smart Meter deployment and functionality
  - Including use of Meter Data management
  - Including use of Distributed Energy Resource management

About RAP

The Regulatory Assistance Project (RAP)® is an independent, non-partisan, non-governmental organization dedicated to accelerating the transition to a clean, reliable, and efficient energy future.

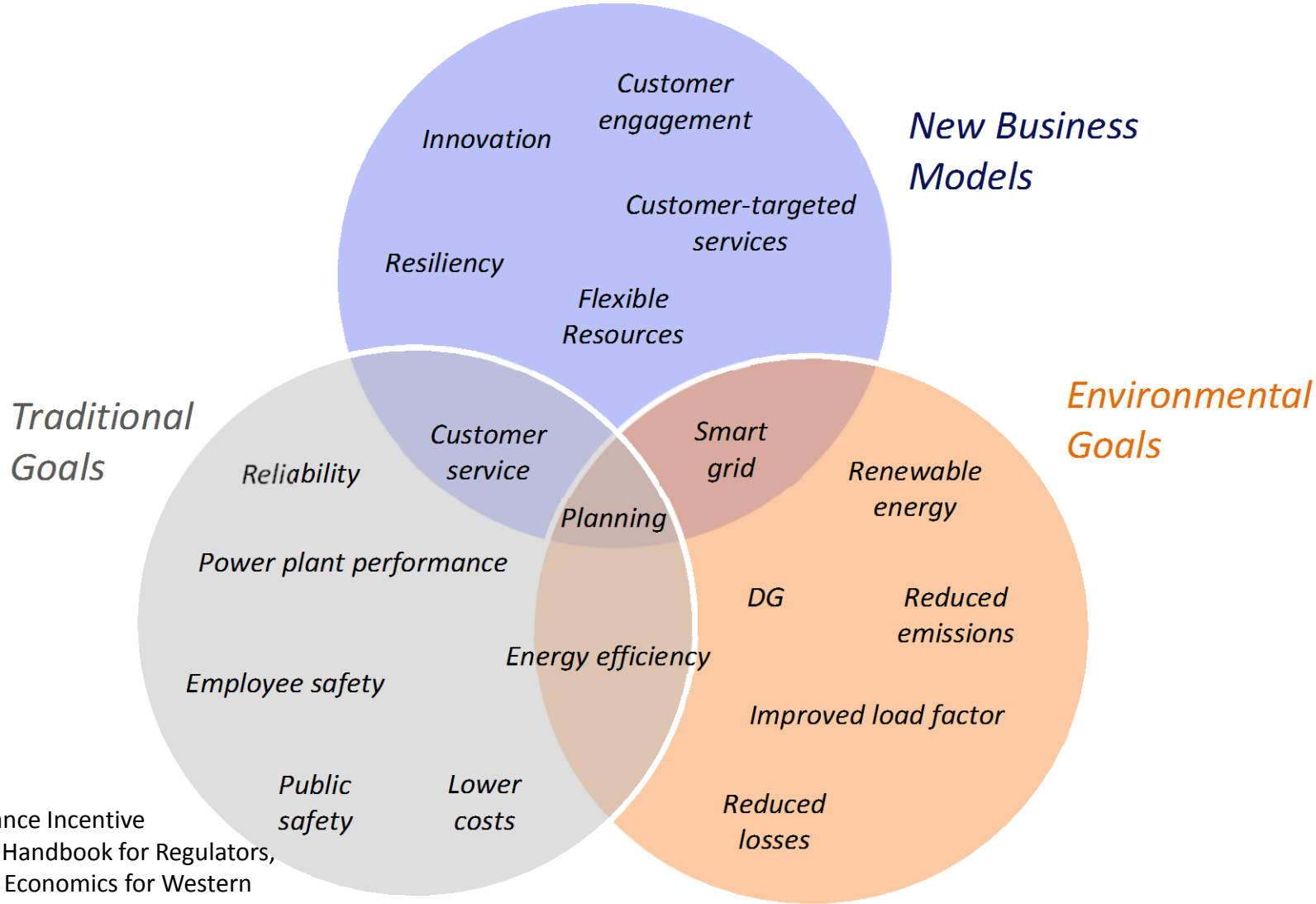
Learn more about our work at raponline.org

Richard Sedano
President and CEO
The Regulatory Assistance Project (RAP)®

50 State Street, Suite 3
Montpelier, Vermont
United States

+1 802 498 0710
rsedano@raponline.org
raponline.org

Figure 2. Dimensions of Utility Performance That May Warrant Tracking or Incentives



Utility Performance Incentive Mechanisms: A Handbook for Regulators, Synapse Energy Economics for Western Interstate Energy Board, March 9, 2015

New Performance Based Outcomes and Metrics: An Illustration

- A zero-based approach
  - Before performance is considered, utility earns 8% based on rate base
    - You can also start at normal return and go up and down
- Normally allowed return consistent with compliance-based performance
- Higher return available for increasing, exemplary level of measured performance