



RAP

Energy solutions
for a changing world

Risk-Aware Electricity Regulation: Risk Mitigation Benefits of Energy Efficiency in Long Term Utility Investment

North America PEPDEE Workshop
Washington DC

Presented by Richard Sedano

April 18, 2012

The Regulatory Assistance Project

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Introducing RAP and Rich

- RAP is a non-profit organization providing technical and educational assistance to government officials on energy and environmental issues. RAP Principals all have extensive utility regulatory experience.
 - Richard Sedano directs RAP's US Program. He was commissioner of the Vermont Department of Public Service from 1991-2001 and is an engineer.

New Work Published this week by CERES

- Authors
 - Ron Binz with
 - Richard Sedano
 - Denise Furey
 - Dan Mullen

PRACTICING RISK-AWARE ELECTRICITY REGULATION: What Every State Regulator Needs to Know

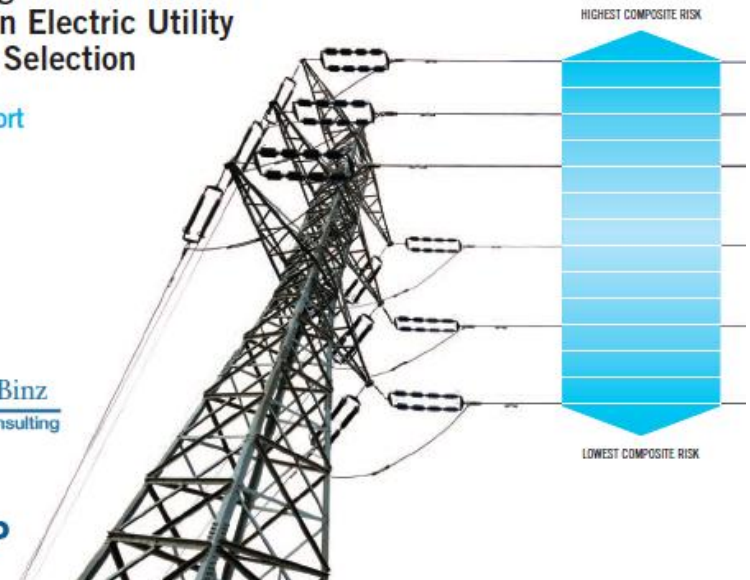
How State Regulatory Policies
Can Recognize and Address
the Risk in Electric Utility
Resource Selection

A Ceres Report

April 2012

Authored by
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and
Richard Sedano
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Dan Mullen

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High Stakes

- Higher Rate of Capital Spending: Big Bets and Long Bets into a Changing Future
 - Aging infrastructure
 - New Transmission
 - Air and water regulation
 - Demand Side and Smart Grid
 - Uncertain economy
 - Financial metrics less forgiving than 1980s
- Rate of investment >
Rate of depreciation
Means upward rate pressure!

A Framework of Investment Risk

- Cost-related
 - Construction
 - Capital
 - Operations
 - Fuel
 - “Bet the company”
 - Management
 - Resources limited
 - Reaction to rates
- Time-related
 - Construction
 - Markets
 - Environment
 - Load
 - Technology
 - Catastrophe
 - Contingencies
 - Government

Rewards for Sound Decision-making

- For consumers: Keep more \$\$, Quality
- For utilities: Corporate health, purpose
- For investors: Safety, value, expectations
- For employees: safety and welfare, pride
- For the regulatory process: confidence
- For society: key role for power in society

A process that promotes shifting risk rather than minimizing risk is inherently unstable

In Fact, though often not in appearance,

- Consumer, Utility and Investor interests are intertwined
- All are served by strategies that limit risk
- **But who advocates for this societal perspective?**

Realism

- Risks should be managed and minimized
 - Nobody is perfect
- Consequences of poor outcomes will be shared
- Ignoring risk (hope) is not a strategy
- **All regulation is incentive regulation**
(Kahn)

Five Biases in Regulation

- Information Asymmetry
- Averch-Johnson Effect
- The Throughput Incentive
- Rent Seeking
- “Bigger is Better”

**RELATIVE COST RANKING OF
NEW GENERATION RESOURCES**

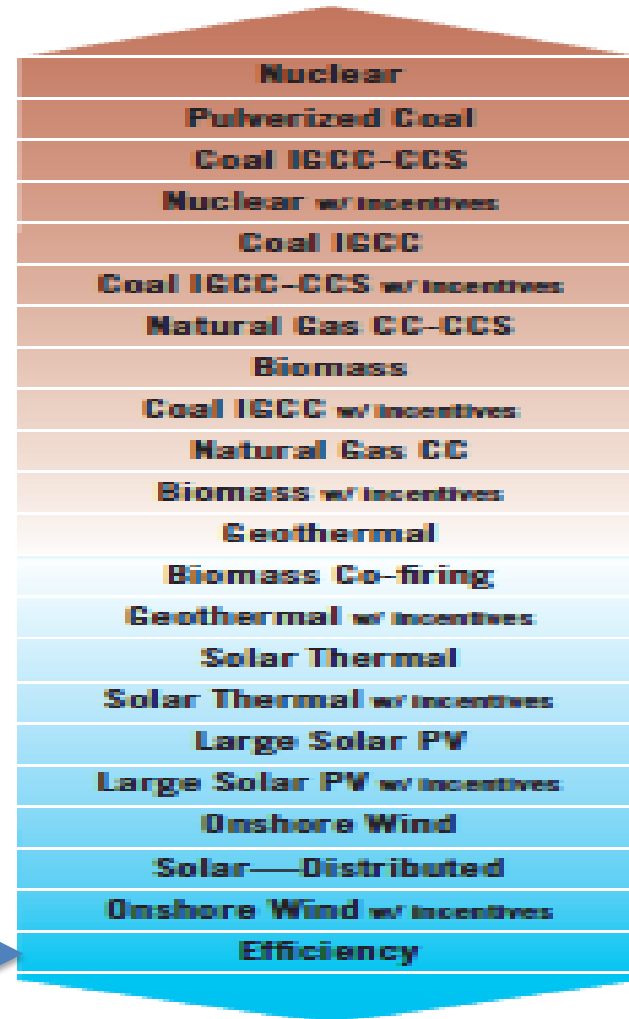
**HIGHEST LEVELIZED COST
OF ELECTRICITY (2010)**



**LOWEST LEVELIZED COST
OF ELECTRICITY (2010)**

**RELATIVE RISK RANKING OF
NEW GENERATION RESOURCES**

HIGHEST COMPOSITE RISK



LOWEST COMPOSITE RISK

Indicative Composite Risk

- Scoring considers risks from
 - Construction cost
 - Fuel and Operating cost
 - New Regulation
 - Carbon Price
 - Water Constraints
 - Capital Shock
 - Planning

PROJECTED UTILITY GENERATION RESOURCES IN 2015

Relative Cost and Relative Risk



Energy Efficiency

- **Scores best on cost**
- **Scores best on risk**
- Yet is unlikely to be deployed to the extent of its value without regulatory intervention and changes to traditional regulatory and ratemaking practices
 - See five biases

Seven Essential Strategies for Risk-Aware Regulation

- Diversify Utility Supply
- Utilize Robust Planning Processes
- Employ Transparent Ratemaking Practice
- Use Financial and Physical Hedges
- Hold Utilities Accountable
- Active, “Legislative” Regulation
- Reform, Re-invent Ratemaking Policies

Conclusions

- Regulation and Operating Utilities will get more challenging, with more risk
- New business models, regulatory practices and paradigms are timely
- Affirmative risk management can avoid expensive mistakes
- Ratepayer funds are a precious resource
- **Energy efficiency will do well in risk-aware regulation**

Conclusions

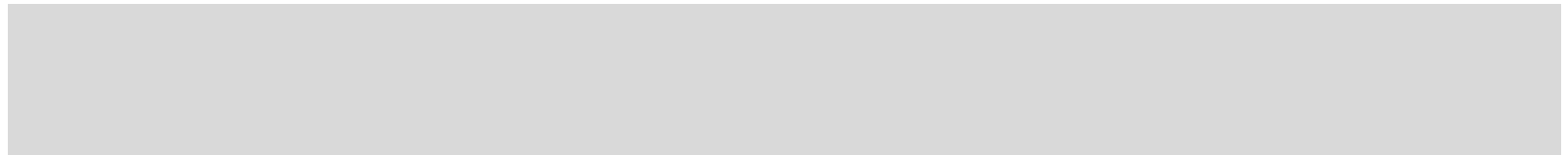
- Risk shifting is not risk minimization
- Investors more vulnerable in this build cycle
- Some, not all “credit positive” cost recovery mechanisms are sustainable policies
- Some current best practices will still be good ideas
- Regulators have the tools they need, though some can be sharpened, but they should strive to be **informed, active, consistent, curious and courageous**

About RAP

The Regulatory Assistance Project (RAP) is a global, non-profit team of experts that focuses on the long-term economic and environmental sustainability of the power and natural gas sectors. RAP has deep expertise in regulatory and market policies that:

- Promote economic efficiency
- Protect the environment
- Ensure system reliability
- Allocate system benefits fairly among all consumers

Learn more about RAP at www.raonline.org



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