May 11, 2021

Under Pressure: Gas Utility Regulation for a Time of Transition

RAP Webinar

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The Regulatory Assistance Project (RAP)®
Under Pressure: Gas Utility Regulation for a Time of Transition

By Megan Anderson, Max Dupuy and Mark LeBel
Questions?

Please send questions through the Questions pane.
Our Experts

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FACT SHEET: President Biden Sets 2030 Greenhouse Gas Pollution Reduction Target Aimed at Creating Good-Paying Union Jobs and Securing U.S. Leadership on Clean Energy Technologies

APRIL 22, 2021 • STATEMENTS AND RELEASES

Building on Past U.S. Leadership, including Efforts by States, Cities, Tribes, and Territories, the New Target Aims at 50-52 Percent Reduction in U.S. Greenhouse Gas Pollution from 2005 Levels in 2030
A Framework for Regulators

Revitalize Gas Utility Planning

Enhance EE and Electrification Programs

Reform Gas Rate-Making
Equity Is Integral

- Robust and inclusive processes to ensure that everyone’s needs are considered and planned for
- Programs that are accessible and put disadvantaged communities at the forefront of the transition to clean energy
- Rate-making reforms can mitigate risk of unsustainable rate increases and avoid unfair bill impacts on low-income customers
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Issues and Trends
Protecting Consumers During Transition
Drop in Gas Demand Per Customer

- Energy-efficient gas appliances
- More stringent building codes
- Electrification

Decline in home gas consumption under revised Washington state energy codes

Economic Building Electrification
Climate Policy and Safety Concerns

Note: Methane is colorless, but for purposes of illustration, leakage is represented in yellow.

Source: The Gas Index. (2020). *The United States' Natural Gas System Has a Serious Problem: It Leaks*
Infrastructure Costs Spread Across Fewer Customers = Higher Rates

Projected increase in gas consumers’ bills under high electrification

Monthly utility bills (2018 dollars)

2 Revitalize Gas Planning
Gas Planning Process

**Lay the foundation**
- Require inclusive, robust stakeholder process
- Set planning within policy context
- Coordinate with related processes

**Develop a system map**
- Assess existing infrastructure
- Identify current customer base
- Analyze demand, supply and risk

**Explore alternative scenarios**
- Develop scenarios
- Model scenarios
- Consider transition planning

**Create action and transition plans**
- Short-term action plan
- Long-term transition plan

*Prepare for next process*
Lay the Foundation

- Require inclusive, robust stakeholder process
- Set planning within policy context
- Coordinate with related processes
Develop a Dynamic System Map

Layers of information can facilitate system planning

- Assessment of existing infrastructure
- Identification of current customer base
- Analysis of demand, supply and risk
Explore Alternative Scenarios

- **Residential areas**: Transition away from gas to electric appliances, heat.
  - *New residential*: All electric; no gas infrastructure.
  - *Aging pipes*: Prioritize electrification.

- **Low and moderate income**: Prioritize electrification.

- **Commercial**: Some larger commercial infrastructure stays. Plan to transition.

- **Industry**: Gas infrastructure stays. Plan to transition to green hydrogen or biomethane.

- **Smaller commercial**: Phase out gas after electrification.
Create Action and Transition Plans

- Use the results of the scenario analysis to create:
  - Short-term action plan: 3 to 5 years
  - Long-term transition plan: 15 to 20 years
- Planning is a “no regrets” tool – ensures that regulators have the info they need to make decisions about utility gas filings
Enhance Energy Efficiency and Electrification Programs
Let Programs Work for Electrification

- Set goals in terms of primary energy or in terms of emission reductions

- Allow gas utilities to earn credit for contribution to electrification goals
Coordinate Programs With Consumers’ Lives

- Target soon-to-retire gas appliances
- Improve building shells alongside heating upgrades

**Reasons for purchasing a water heater**

- Planned replacement: 30%
- New construction: 20%
- Poor performance: 20%
- Complete failure: 30%

Go for Non-Pipeline Alternatives

- New gas customers? Consider electrification alternatives!
- Develop criteria to evaluate options, capturing all benefits and costs
Target Neighborhoods for Full Electrification

Untargeted electrification in existing homes

Targeted electrification in existing homes

4 Reform Gas Rate-Making
Key Rate-Making Principles

• Effective recovery of revenue requirement and access to reasonably priced capital
• Customer understanding, acceptance, and bill stability
• Equitable allocation of costs
• Efficient forward-looking price signals
• Achievement of public policy goals
  • Efficient competition and control of monopoly pricing
  • Reliable provision of service
  • Societal equity (e.g., universal access and affordability)
  • Environmental and public health requirements
Lower Rate Base and Decrease Risk of Rate Impacts

1. Increase customer contributions to line extensions
2. Accelerate depreciation timelines
3. Improve planning and decision criteria for new investments (and contracts)
4. Explore alternative funding sources or authorization for securitization
Customer Contributions for Line Extensions

- Line extension allowance formulas dictate how much a utility is allowed to invest in new infrastructure for new customers
- Updated calculations should reflect lower expected gas usage and higher probability of future disconnections from gas system
  - Lower line extension allowances
  - Conversely, higher contributions from new customers towards any new extensions
Repaying Utility Capital Investments

- Depreciation expense is based on the original cost of each investment, which is spread over the asset’s projected lifetime.
- Return on investment is based on the rate base and the weighted average cost of capital.
  - Rate base is defined as original cost minus accumulated depreciation.
Payments for a Long-Lived Utility Capital Investment

Illustrative depreciation expense and return on $10 million investment

Year

Annual capital payment

$0

$100,000

$200,000

$300,000

$400,000

$500,000

$600,000

$700,000

$800,000

$900,000
Changing the Depreciation Timeline

Illustrative trajectory of capital payments for two amortization periods

- Blue line: 25 years
- Red line: 75 years

Annual capital payment vs. Year
Pre-2021 Asset Book Value in 2031

- Recently added long-term assets: -30%
- Older long-term assets: -21%
- Medium-term assets: -25%
- Short-term assets: 0%
- Total assets: -25%
Pre-2021 Asset Book Value in 2041

- Recently added long-term assets: -72%
- Older long-term assets: -64%
- Medium-term assets: -100%
- Short-term assets: N/A
- Total assets: -73%
Equitable Cost Allocation

- Customer-related costs should be determined using the basic customer method, not the minimum system method.
- Recovery of shared capacity costs should be balanced between energy throughput and peak demand based on load patterns.
- Program costs can be allocated based on the benefits provided by the investments:
  - For some programs, a split between electric customers and gas customers is appropriate when feasible.
Efficient Rate Design

- Higher prices in peak seasons are appropriate
- Even higher prices or incentives to reduce on peak days are appropriate for many customers
- Inclining block structures with higher levels of inexpensive usage in the winter can balance efficiency and concerns about bill impacts for low-income gas heating customers

<table>
<thead>
<tr>
<th></th>
<th>Summer</th>
<th>Winter</th>
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<tbody>
<tr>
<td>First 20 therms</td>
<td>$0.50 per therm</td>
<td>N/A</td>
</tr>
<tr>
<td>First 60 therms</td>
<td>N/A</td>
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</tr>
<tr>
<td>Additional usage</td>
<td>$1.29 per therm</td>
<td>$1.29 per therm</td>
</tr>
</tbody>
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Change Utility Incentives

• Adopt decoupling using overall revenue target, not revenue per customer
• Implement performance-based regulation
  • Multi-year rate plans
  • Eliminate unnecessary trackers
  • Performance incentives for achieving important consumer and public policy outcomes
• Consider whether broader structural reforms for the gas utility will be necessary
5 Takeaways
What Regulators Need to Keep in Mind

- A transition is happening, and it will require an elevated, revitalized focus on gas utility regulation.
- Impact of changes will be major:
  - 70 million residential customers
  - 5.7 million C&I customers
- PUCs will need to:
  - Avoid unneeded investment
  - Give customers alternatives
  - Evaluate alternatives based on evidence
  - Protect gas customers in short and long term
A safe transition is a *planned* transition.

An *affordable* transition is a *planned* transition.

An *equitable* transition is a *planned* transition.
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