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# Under Pressure: Gas Utility Regulation for a Time of Transition

## RAP Webinar

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# 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



A screenshot of a GoToWebinar interface. The top section is titled 'Audio' and includes a 'Sound Check' indicator with a green signal strength icon. Below this, there are two radio button options: 'Computer audio' (selected) and 'Phone call'. A microphone icon is shown with the word 'MUTED' in red. Below the microphone, there are two dropdown menus for audio devices: 'Headset Microphone (Logitech...)' and 'Headset Earphone (Logitech Ste...'. The bottom section is titled 'Questions' and contains a text box with the message 'Thank you for joining us; the webinar will begin shortly.' Below this is another text box with the placeholder '[Enter a question for staff]' and a 'Send' button. At the bottom of the interface, it displays 'Retooling Regulation' and 'Webinar ID: 294-296-827', along with the GoToWebinar logo.

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# Our Experts



**Megan Anderson**



**Max Dupuy**



**Mark LeBel**



**Moderator:  
Richard Sedano**



BRIEFING ROOM

# 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*

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# A Framework for Regulators



**Revitalize Gas Utility  
Planning**



**Enhance EE and  
Electrification Programs**



**Reform Gas Rate-Making**

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# 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

# 1

# Issues and Trends





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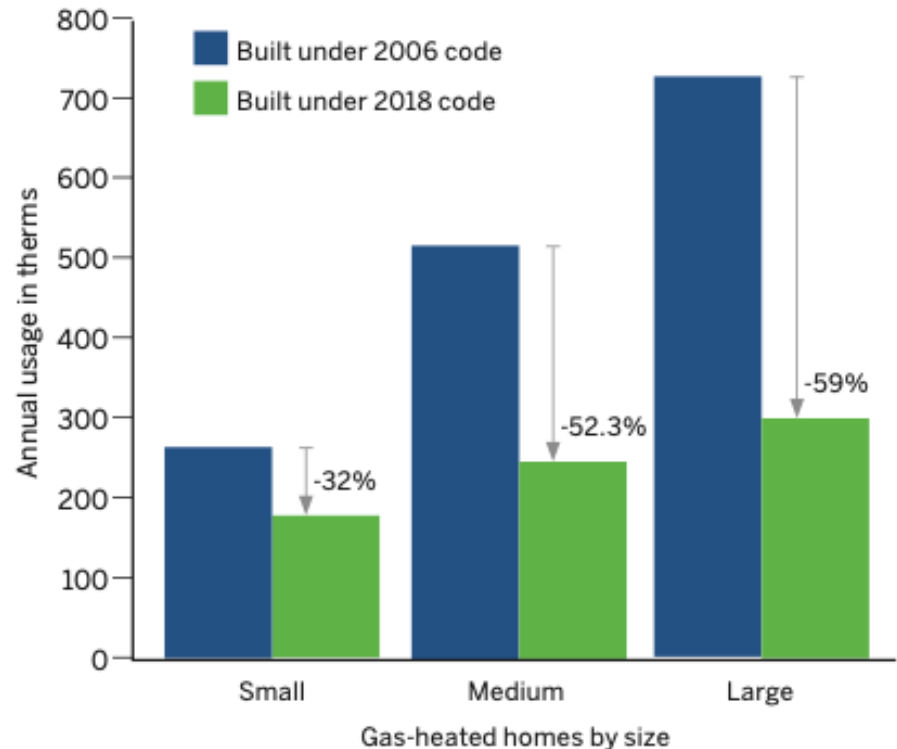
# Protecting Consumers During Transition



# Drop in Gas Demand Per Customer

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

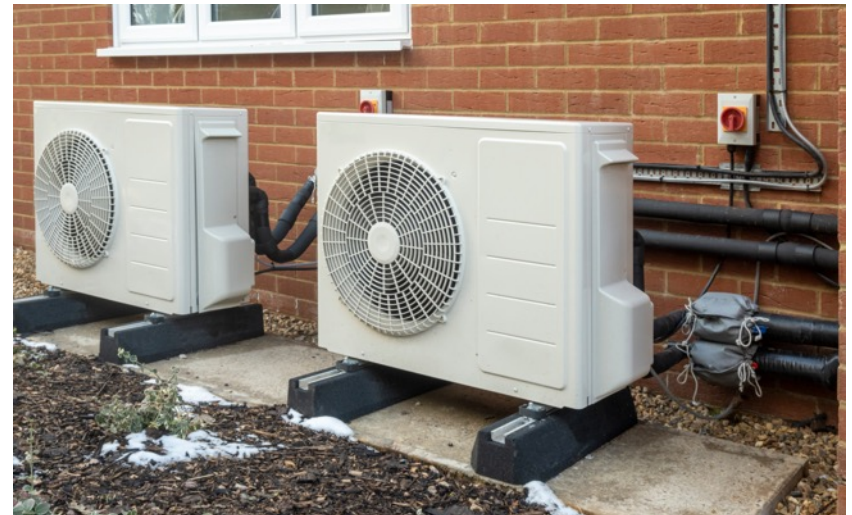
Decline in home gas consumption under revised Washington state energy codes



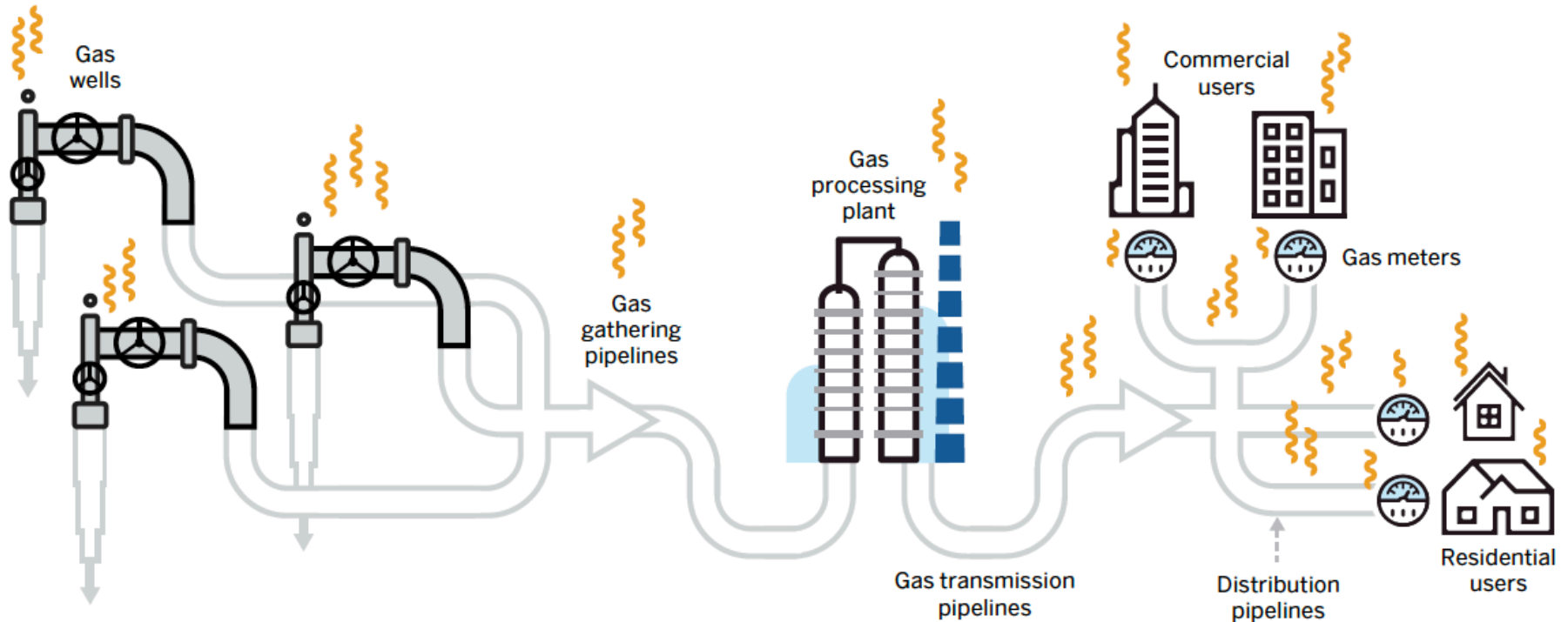
Source: Based on Odum, H., Spielman, S., Banks, A., Kintner, P., Frankel, M., Reddy, D., & Peng, J. (2020, September). *Modeling the Washington State Energy Code: 2006 & 2018 Baseline Energy Consumption*

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# Economic Building Electrification



# Climate Policy and Safety Concerns

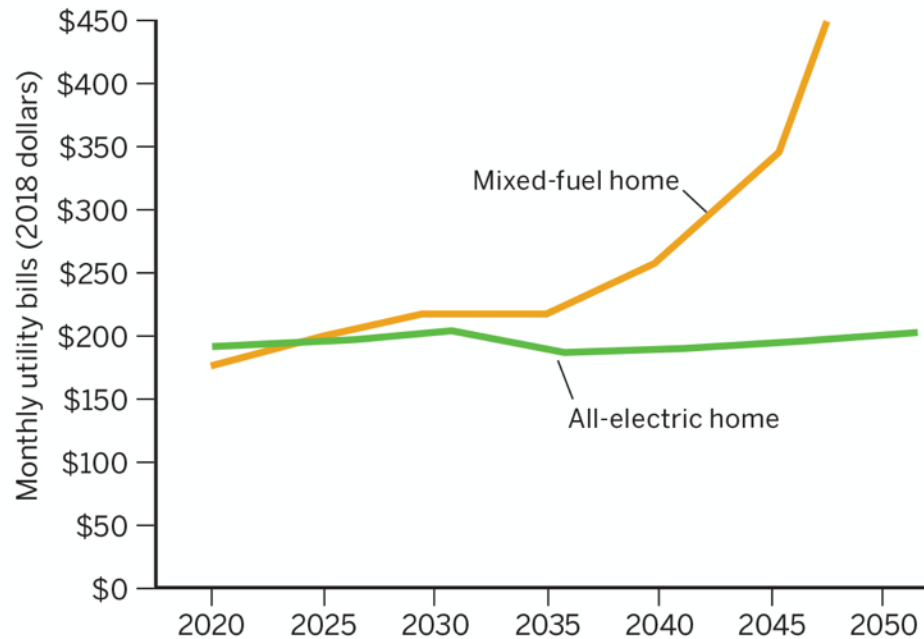


Note: Methane is colorless, but for purposes of illustration, leakage is represented in yellow.

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



Source: Aas, D., Mahone, A., Subin, Z., Mac Kinnon, M., Lane, B., & Price, S. (2020). *The Challenge of Retail Gas in California's Low-Carbon Future: Technology Options, Customer Costs, and Public Health Benefits of Reducing Natural Gas Use*

# 2

## Revitalize Gas Planning



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# 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*

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# Lay the Foundation

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





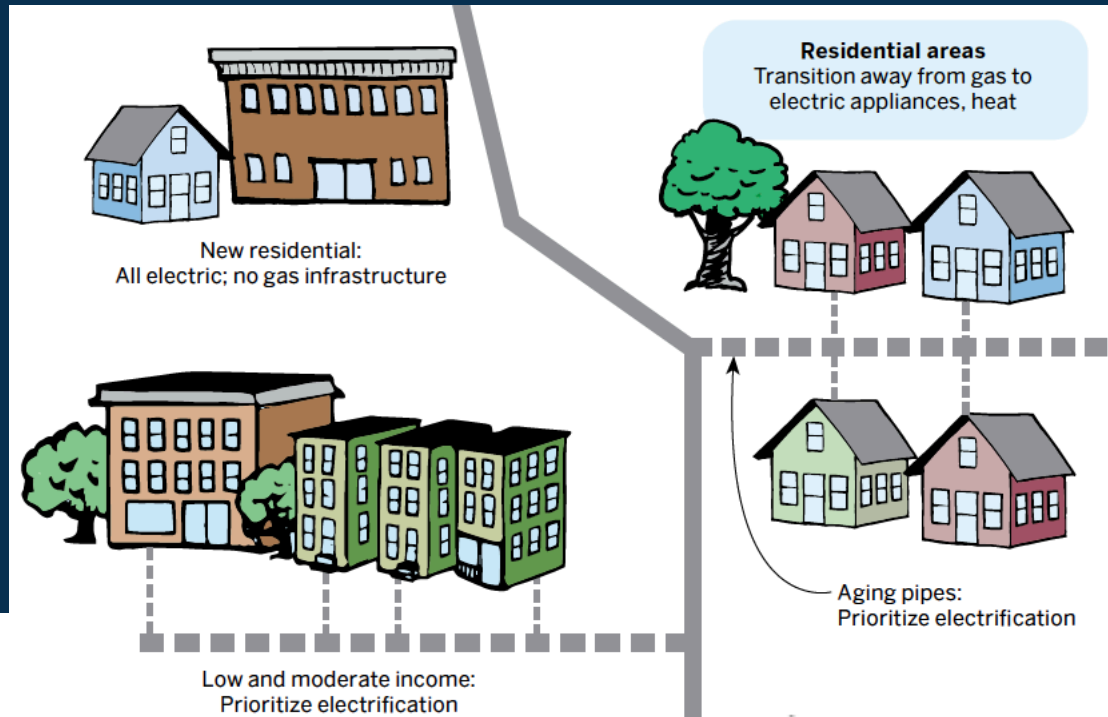
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# Develop a Dynamic System Map

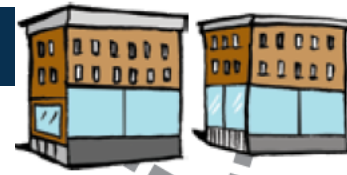
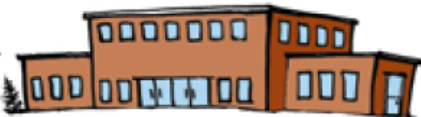
*Layers of information can facilitate system planning*

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

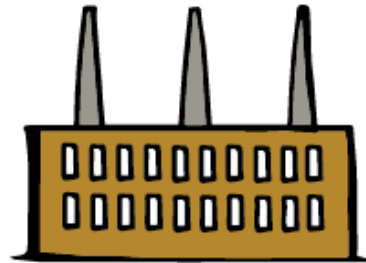
# Explore Alternative Scenarios



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



**Smaller commercial**  
Phase out gas after electrification



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

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# 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

# 5

## Enhance Energy Efficiency and Electrification Programs



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# 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



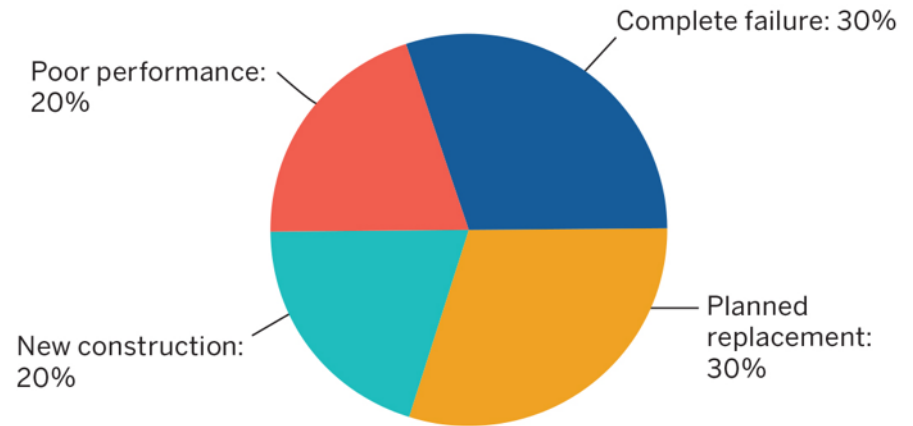
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# Coordinate Programs With Consumers' Lives

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

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Reasons for purchasing a water heater



Source: U.S. Department of Energy. (2009). *New Technologies, New Savings: Water Heater Market Profile*

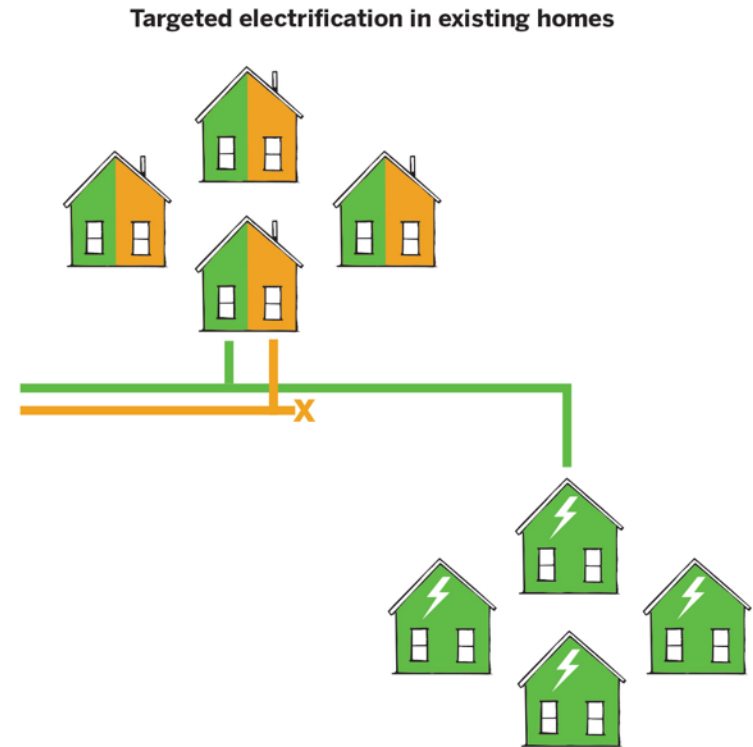
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# Go for Non-Pipeline Alternatives

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



# Target Neighborhoods for Full Electrification



Source: Graphic concept inspired by Aas, D., Mahone, A., Subin, Z., Mac Kinnon, M., Lane, B., & Price, S. (2020). *The Challenge of Retail Gas in California's Low-Carbon Future: Technology Options, Customer Costs, and Public Health Benefits of Reducing Natural Gas Use*; graphic modified by RAP.



# 4 Reform Gas Rate-Making



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# 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

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# 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

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# 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

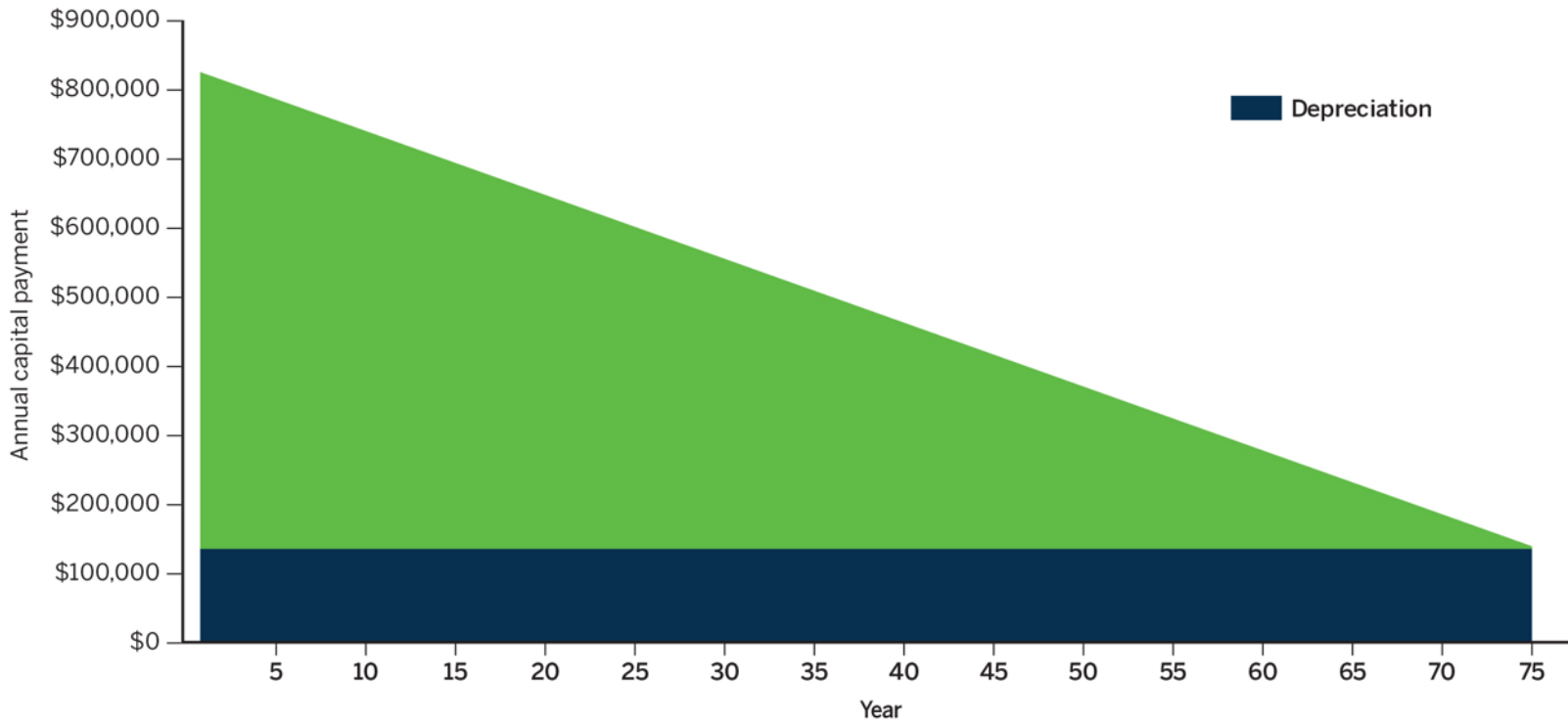
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# Repaying Utility Capital Investments

- 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

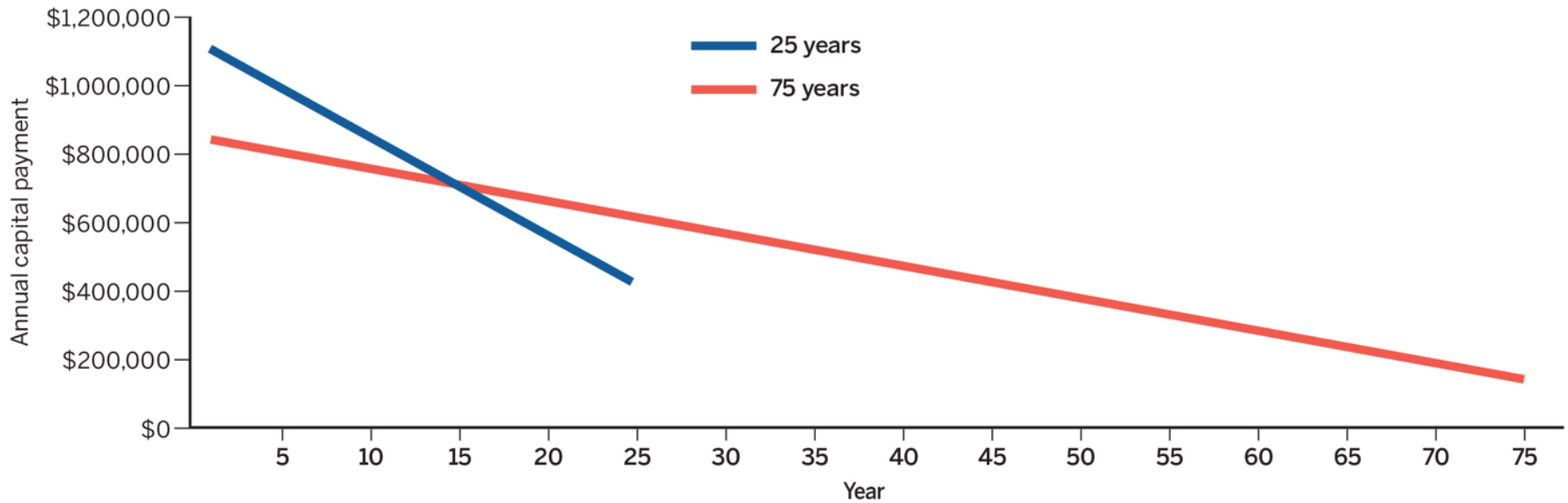


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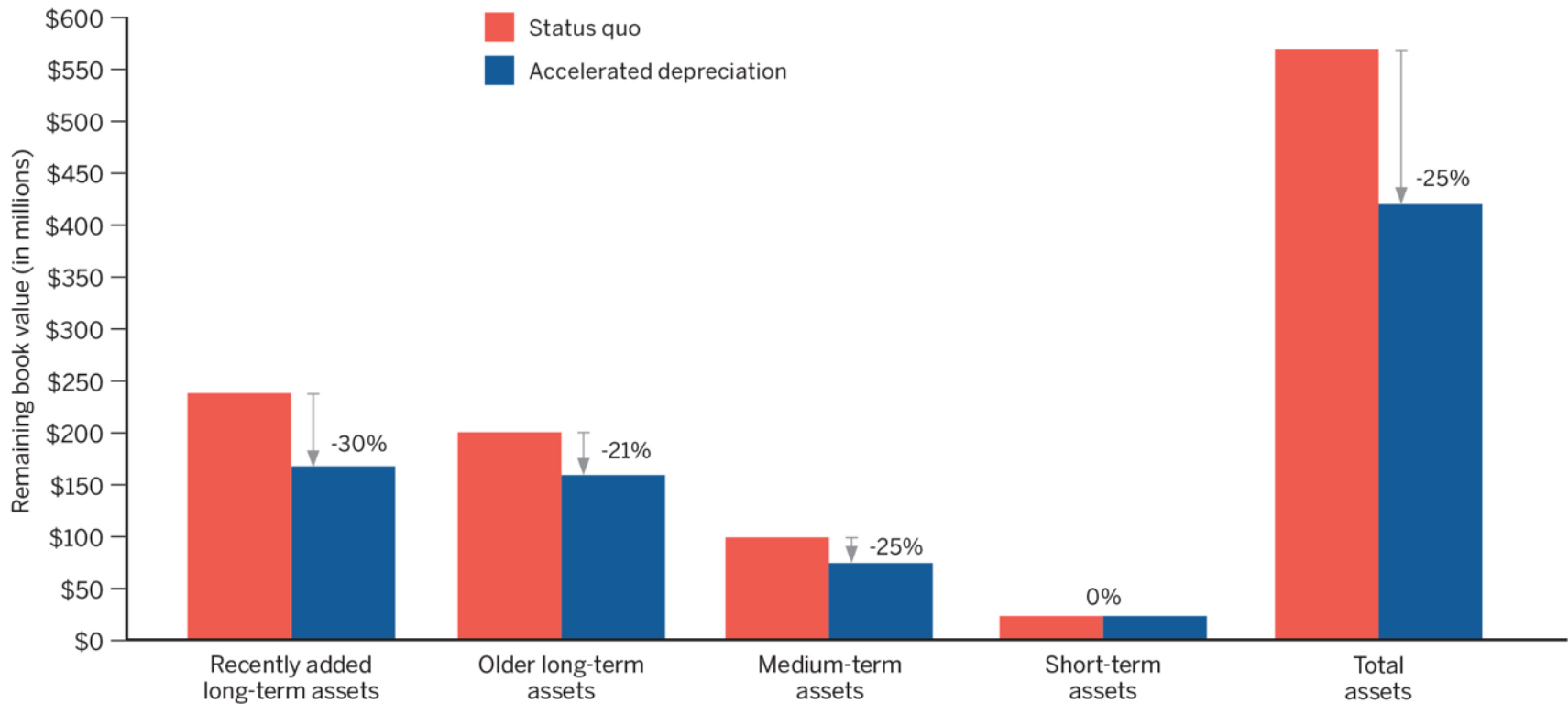
# Changing the Depreciation Timeline

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Illustrative trajectory of capital payments for two amortization periods

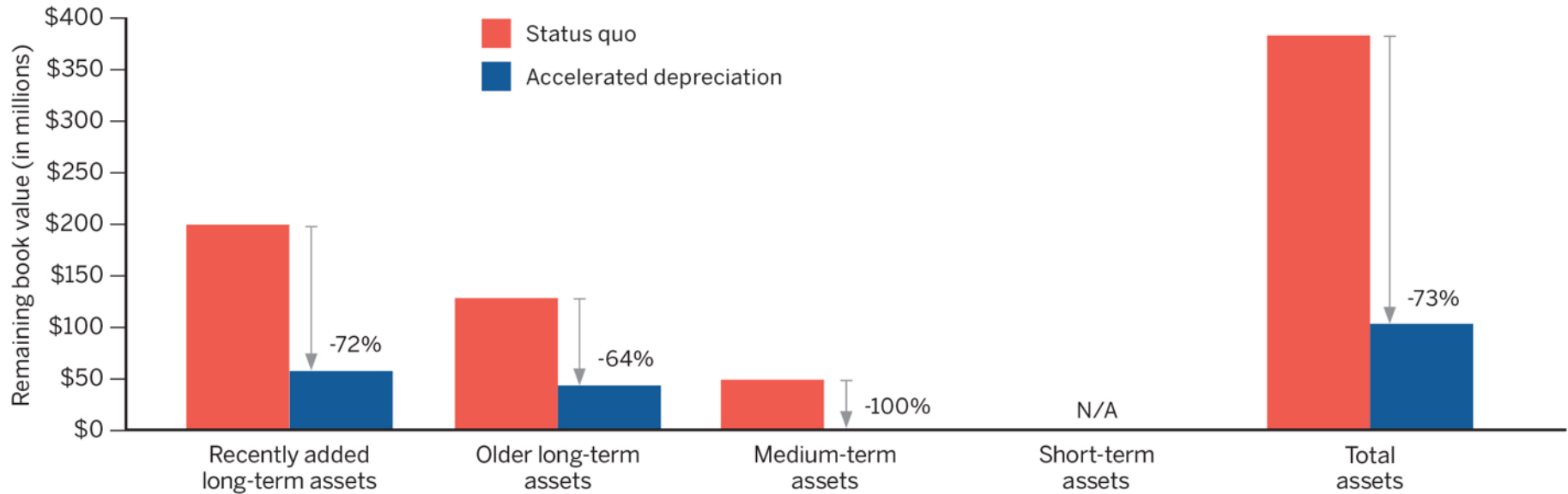


# Pre-2021 Asset Book Value in 2031





# Pre-2021 Asset Book Value in 2041



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# 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

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# 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

	Summer	Winter
First 20 therms	\$0.50 per therm	N/A
First 60 therms	N/A	\$0.50 per therm
Additional usage	\$1.29 per therm	\$1.29 per therm

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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



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# 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](https://raponline.org)