Not Just A Pipe Dream: Non-Pipeline Alternative Framework, Analysis and Experiences

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Commissioner Megan Gilman, Colorado Public Utilities Commission

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December 4, 2023

This work was funded by the U.S. Department of Energy Office of Policy and Building Technologies Office under Contract No. DE-AC02-05CH11231.

Logistics

- We are recording the webinar.
- Because of the large number of participants, everyone is muted.
- Please use the Q&A box to send us questions at any time during the presentation.
- We will put the link to the slides in the Q&A box. We will send links to the recording and slides to everyone registered for the meeting a few days after the webinar.
- The reports, slides and webinar recording will be available here: https://emp.lbl.gov/publications/framework-non-pipeline-alternatives

Agenda and Speakers

- Opening remarks
- Colorado policy context
- Non-pipeline alternatives framework
- Non-pipeline alternative experieces in the Northwest
- Q&A

Commissioner Megan Gilman, Colorado Public Utilities Commission

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NPA Webinar

Megan Gilman, Commissioner

Colorado Public Utilities Commission

The views expressed in this presentation are those of the presenter and do not necessarily reflect the views of the Colorado Public Utilities Commission or any other individual Commissioner.

COLORADO
Department of Regulatory Agencies
Public Utilities Commission

Decarbonizing Heating

SB21-264 Clean Heat Statute

Requires gas utilities to submit Clean Heat Plans and reduce emissions from distribution and end-use of gas.

-4% by 2025 (from 2015)

-22% by 2030 (from 2015)

Additional clean heat targets to be set by PUC

Establishes list of Clean Heat Resources.

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Rulemaking 21R-0449G

21R-0449G Rulemaking to establish rules for clean heat plans and gas infrastructure plans.

Gas Infrastructure Plans

- **Intended to provide a more proactive look at investments in gas infrastructure as we undergo a transition to decarbonize the heating of our buildings.**

Gas Infrastructure Plans

First plan accepted May 2023

Gas infrastructure plans are required to include:

- Localized forecasting inclusive of local building codes, incentives, etc.
- Detailed information on projects above a certain dollar threshold
- Evaluation of non-pipeline alternatives for some projects

Follow Our Current Proceedings

First Gas Infrastructure Plan (GIP) – 23M-0234G
Filed by Public Service Company of Colorado in May 2023
Expected Conclusion – End of 2023

First Clean Heat Plan (CHP) – 23A-0392EG
Filed by Public Service Company of Colorado in Aug 2023
Hearing in March 2024

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Non-Pipeline Alternative Framework

Brad Cebulko | December 4, 2023

Two Reports: Literature Review and Framework

Contributors

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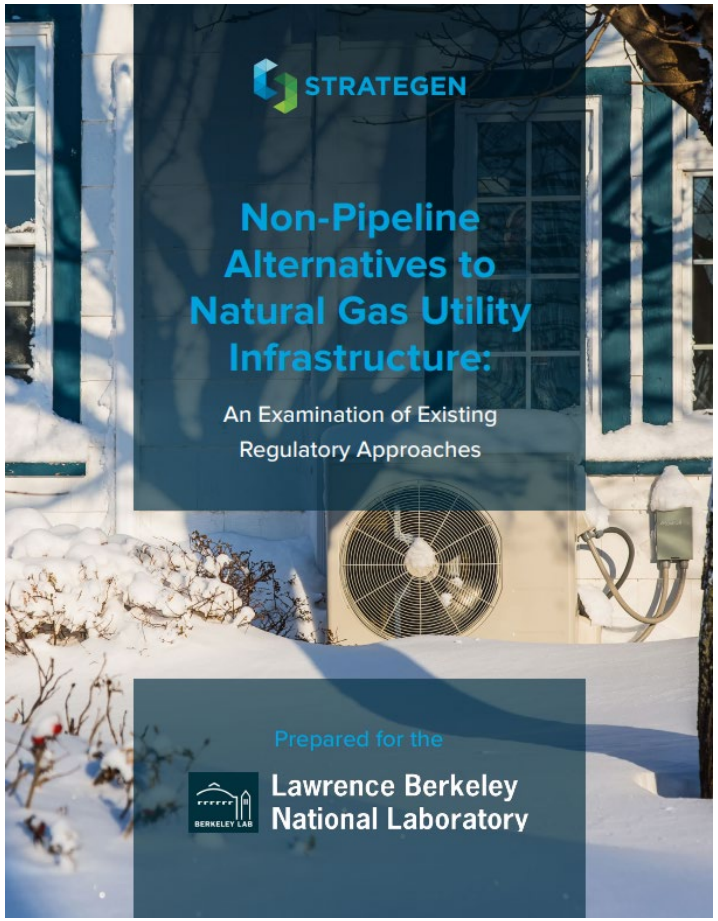

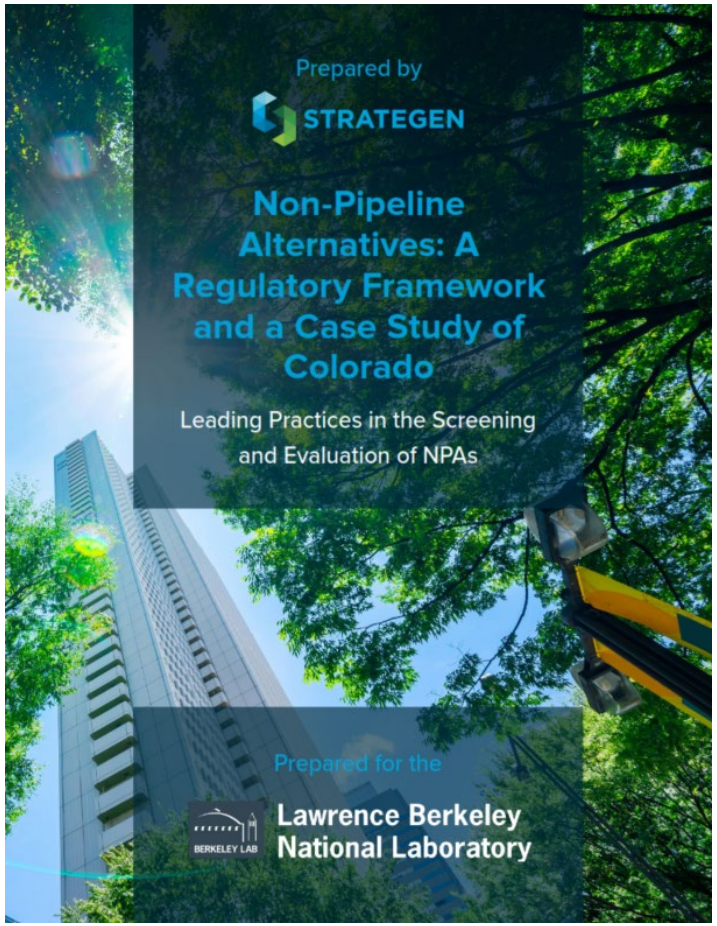

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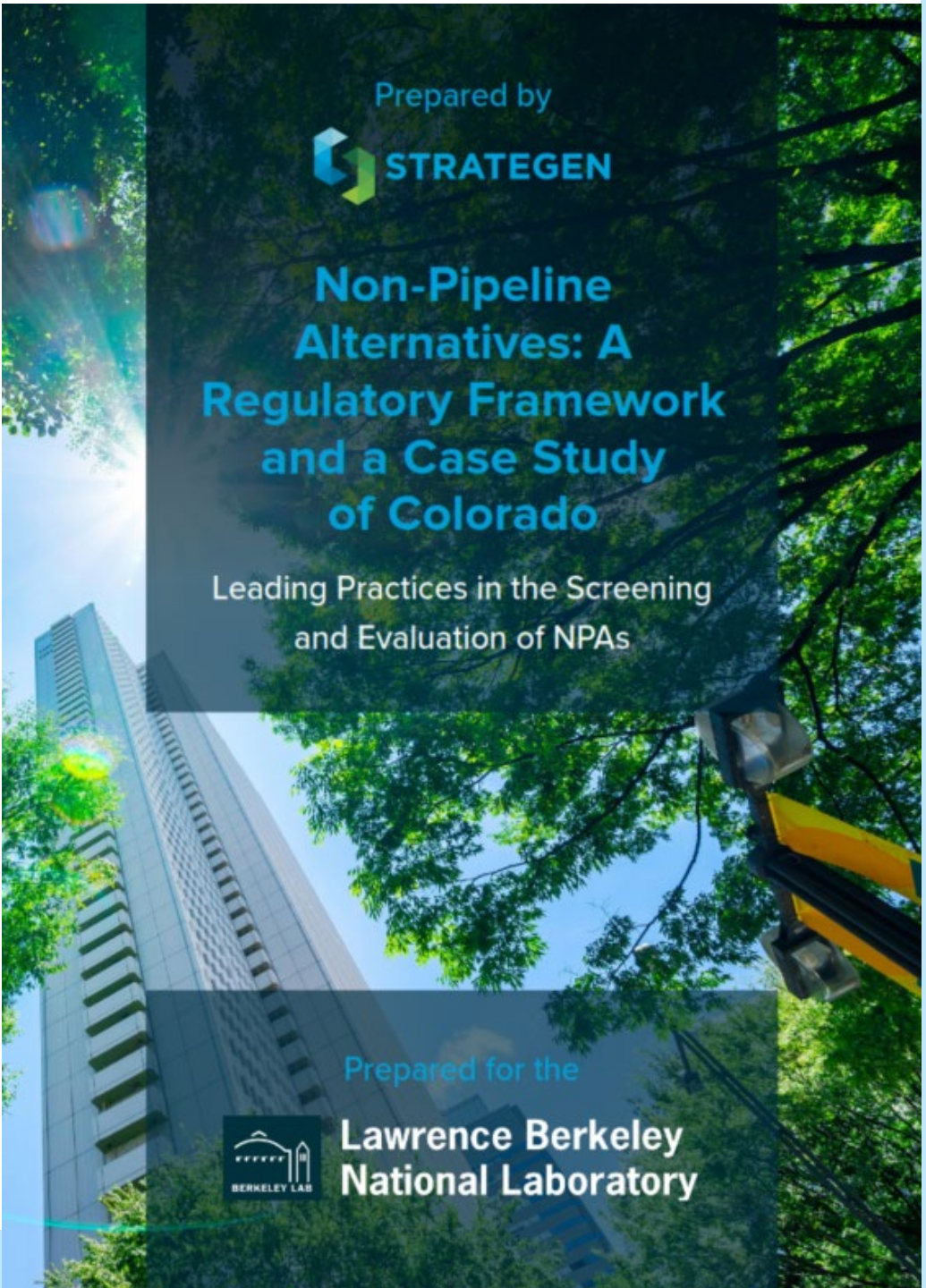
Reports Available at Strategen.com/reports

Paper 1: A Brief Examination of the Literature Review

- Review of Existing NPA Regulatory Approaches
- Focus was on New York, Rhode Island, Colorado, and California
- Content Review
  - NPA Definition
  - Public Policy and Filing Requirements
  - Project Eligibility Standards
  - NPA Eligible Resources
  - NPA Project Identification and Acquisition
  - Benefit Cost Analysis
  - Equity Requirements

State	Demand Side	Supply Side
Colorado	Energy efficiency, demand response, and beneficial electrification	Recovered methane, green hydrogen, beneficial electrification, pyrolysis of tires, and other cost-effective technology that reduces emissions
New York	Energy efficiency, demand response, and electrification	Renewable natural gas, green hydrogen, and CNG injection (if aligned with state emission reduction goals)
Rhode Island	Cost-effective energy efficiency and conservation	Not defined but permitted
California	Not defined	Not defined but not prohibited

TABLE 6: Summary of Eligible NPA Demand and Supply Resources; by State



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An NPA Regulatory Framework

An Incomplete List of NPA Benefits and Limitations

A non-pipeline alternative (NPA) is an investment or activity that defers, reduces, or avoids the need to construct or replace a pipeline.

+ Benefits

- + Reduce emissions: improved air and health impacts, avoid gas combustion
- + Reduce gas system costs: avoid infrastructure spending, gas commodity costs
- + Reduces customer risk: avoids spending on assets that could be stranded, may reduce exposure to volatile fuel prices

+ Limitations

- + Utilities have little experience with geographically targeted demand-side NPAs solutions
- + Time and Cost
- + Misaligned regulatory incentives
- + Challenging to understand impacts to electric system, if using electrification

Framework: Three Distinct Steps to a Robust NPA Process

Step 1: Preliminary Screening for Eligible NPA Projects

- Capital Project Type
  - NPAs can avoid capacity expansion, asset replacement, new business, and public improvement projects
  - Not suitable for emergency projects
- Cost Threshold
  - For an NPA analysis to be cost-effective, capital projects should meet a minimum cost threshold
- Timing Threshold
  - Utilities need sufficient time to assess NPAs and implement a solution
  - Size of the project should be related to timing

Sample Utility NPA Threshold Requirements

	Small Project		Large Project	
	Cost	Date of Implementation	Cost	Date of Implementation
Large Gas Utility	$1 million to $2 million	24 months or longer	$2 million or greater	36 months or longer
Small Gas Utility	$500k to $1million	12 months or longer	$1 million or greater	24 months or longer

Step 2: NPA Portfolio Development

Eligible Resources

- Demand-side: EE, electrification, demand response
- Supply-side: Hydrogen, CNG trucking, LNG, etc.
- Alignment with state climate targets

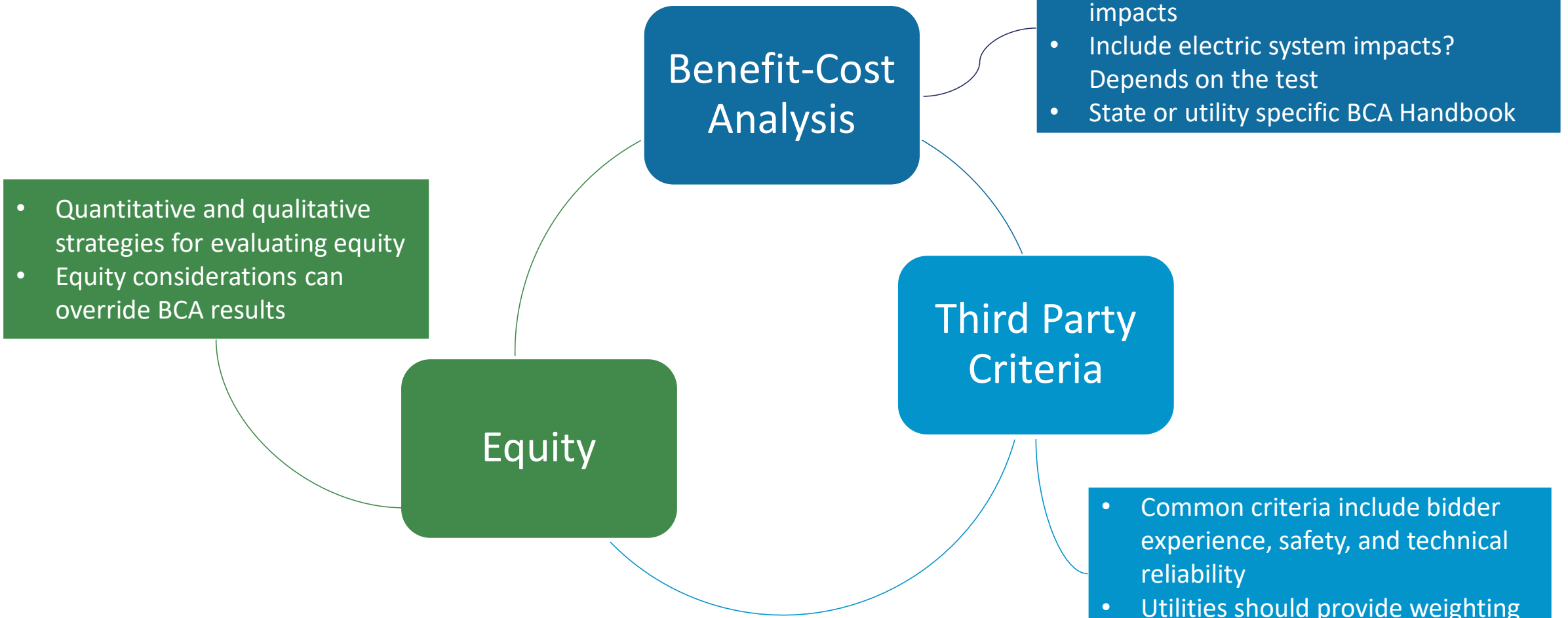
Project Solicitation

- Competitive solicitation: Request for Proposals (RFPs)
- Internal utility estimates
- Competitive solicitation are best for large projects

Portfolio Requirements

- Assembly of resources into portfolios
- Verification that portfolios meet project requirements

Step 3: NPA Portfolio Evaluation

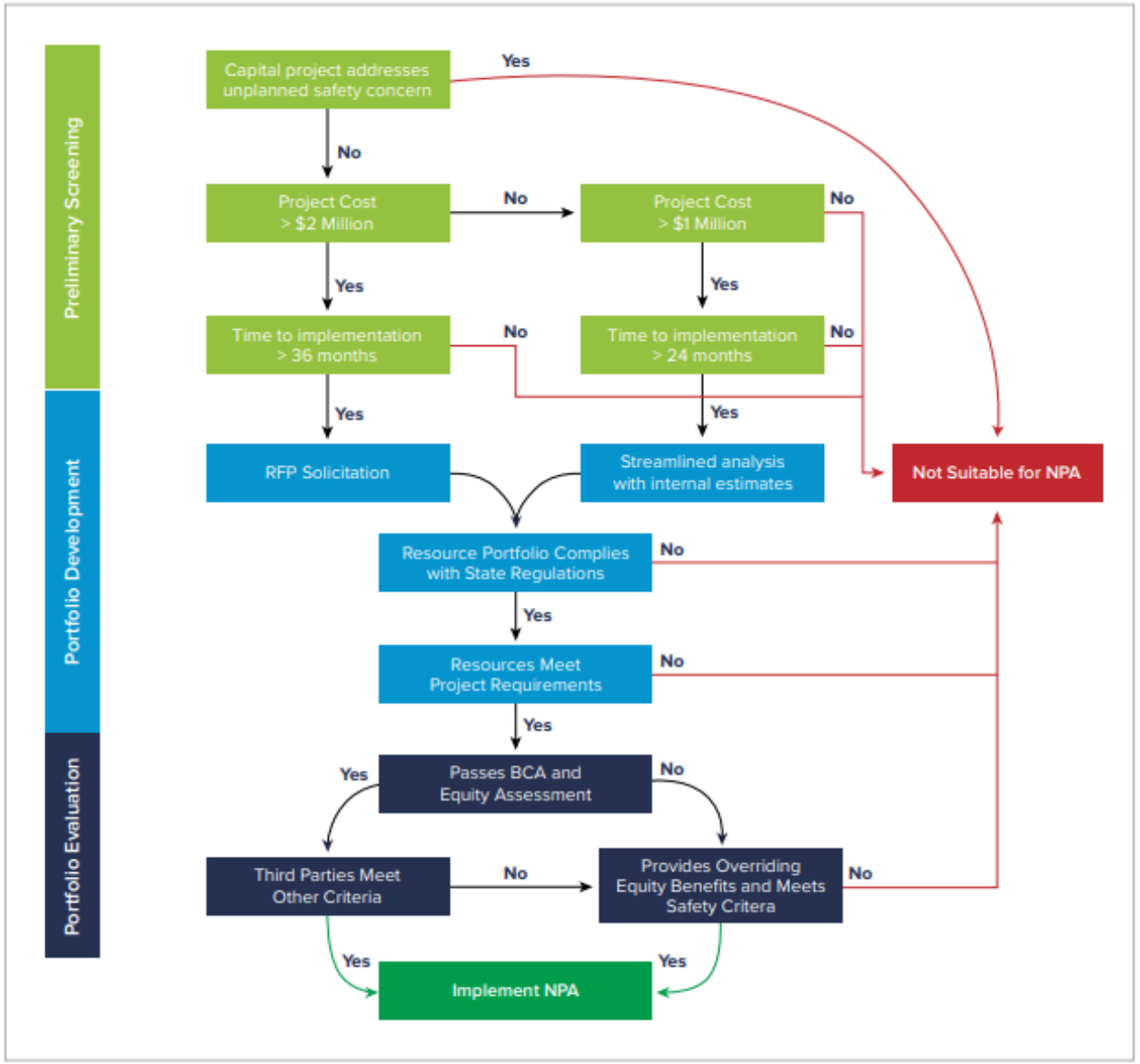


- E.g., Societal Cost Test that non-energy impacts including emissions and health impacts
- Include electric system impacts? Depends on the test
- State or utility specific BCA Handbook

- Common criteria include bidder experience, safety, and technical reliability
- Utilities should provide weighting or narrative

- Quantitative and qualitative strategies for evaluating equity
- Equity considerations can override BCA results

NPA Project Decision Tree for Sample Utility



- Each state's decision tree will have different inputs
- Unique thresholds, timelines, development and acquisition requirements, state policies, third-party criteria
- Stakeholder participation and input can occur during any of the three stages

NPA Process Considerations

Reporting Requirements	• Evaluation, measurement, and verification informs future NPA projects
Stakeholder Involvement	• Critical for NPAs evaluations, especially when utilities develop internal estimates rather than soliciting competitive RFPs
NPA Policy Design	• NPAs filings have a natural home in recurring gas planning filings
Policy Changes to Support NPAs	• Shared saving mechanisms can help reduce utility opposition to NPAs

Non-Pipeline Alternatives

Matthew Doyle

December 4, 2023

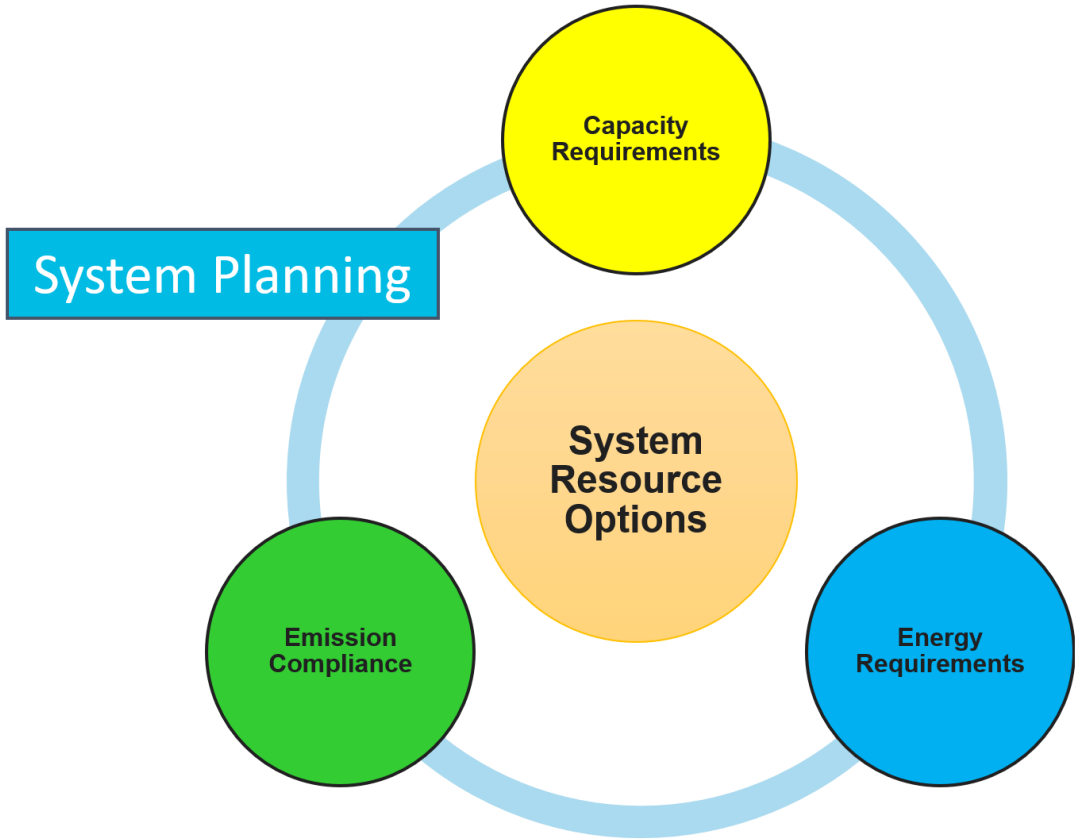
NW Natural®

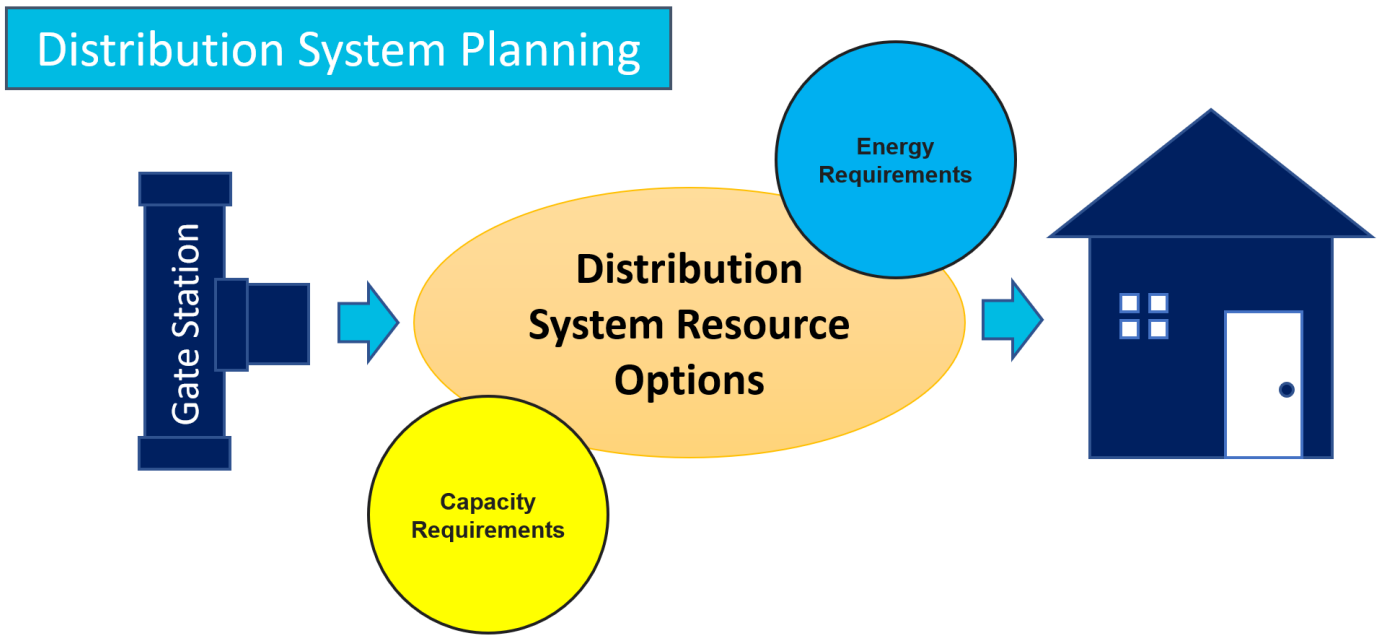
Who is NW Natural?

Quick Stats

- 163-year-old Oregon company
- Over 780,000 customers (meters)
  - 88% Oregon
  - 12% Washington
- Across 2 states, 18 counties, 140 different communities
- Serving over 2.5 million people
- More than 1200 employees

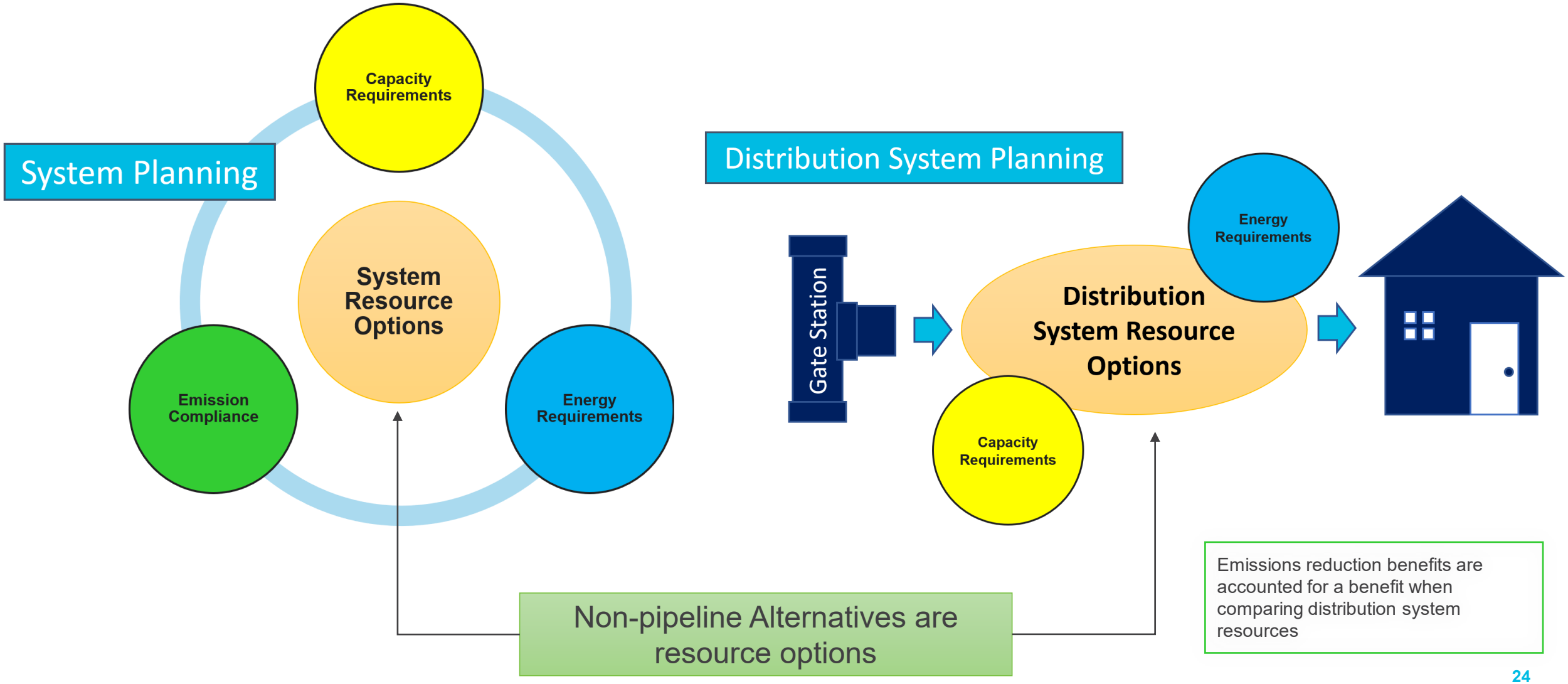
NW Natural Integrated Resource Planning





Emissions reduction benefits are accounted for a benefit when comparing distribution system resources

NW Natural Integrated Resource Planning



Interruptible Tariffs are Demand Response Programs

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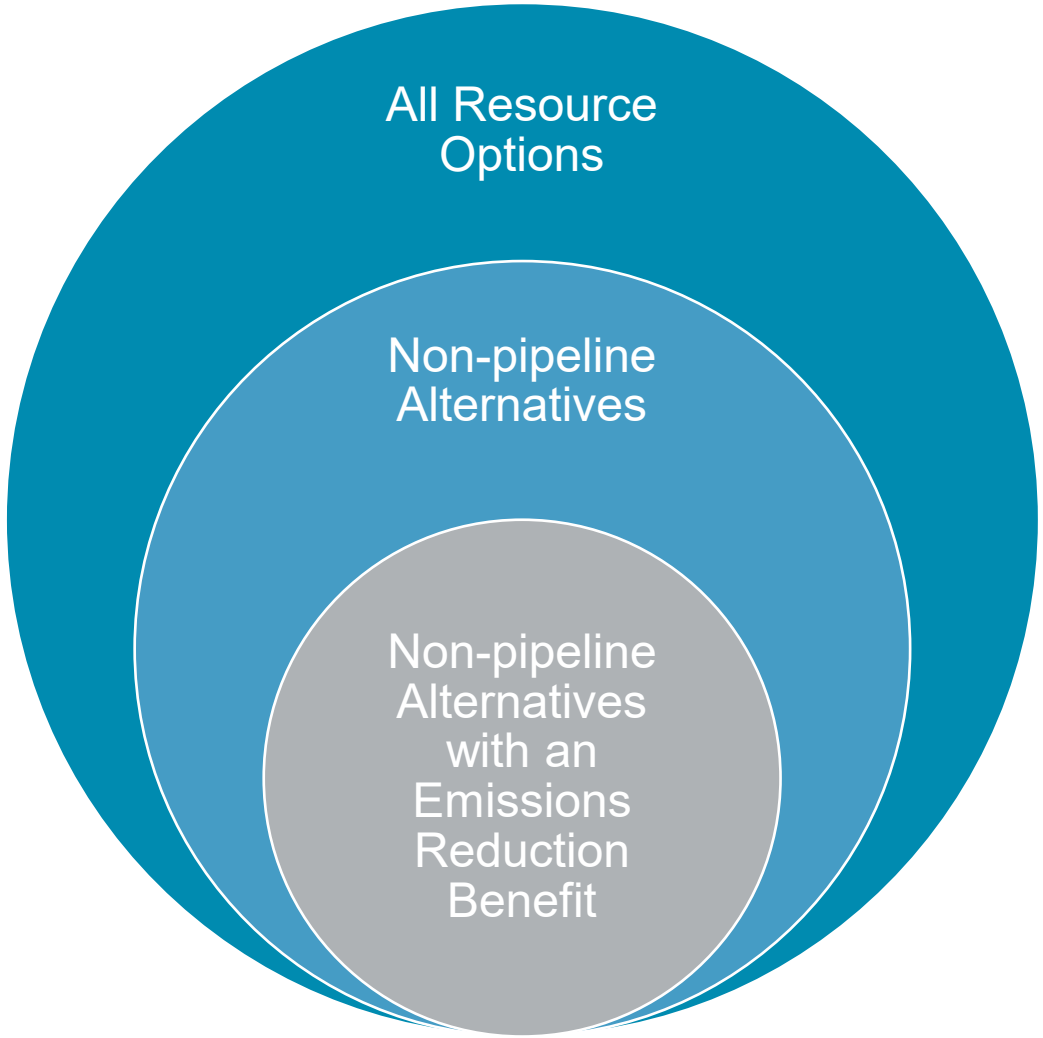
A non-pipeline alternative (NPA) is an investment or activity that defers, reduces, or avoids the need to construct or replace a pipeline.

Source: Strategen, Non-pipeline Alternatives to Natural Gas Utility Infrastructure: An Examination of Existing Regulatory Approaches

- Interruptible tariffs are contracts structures where gas customers pay a discounted rate, but can be called to be interrupt service during a demand response event
- Interstate pipelines companies and LDCs have a long history of offering interruptible tariffs for their customers
- Typically, a cost-effective option for large industrial customers who can risk being interrupted a couple days in the winter
- Interrupted customers face the decision to shutdown processes or switch to another fuel (e.g., back up diesel)
  - This decreases emissions from the gas system, but may not be true for overall emissions

Venn-Diagram of Non-pipeline Alternatives

- Must help serve or reduce load during a peak event
- Evaluate for cost-effectiveness (inclusive of all benefits and costs) against other options
- Each circle contains both supply-side and demand-side resources options (i.e., Non-pipeline alternative ≠ demand-side resource)
- Non-pipeline alternatives, may not reduce emissions, but shift emission away from the gas system



Distribution System Planning Options

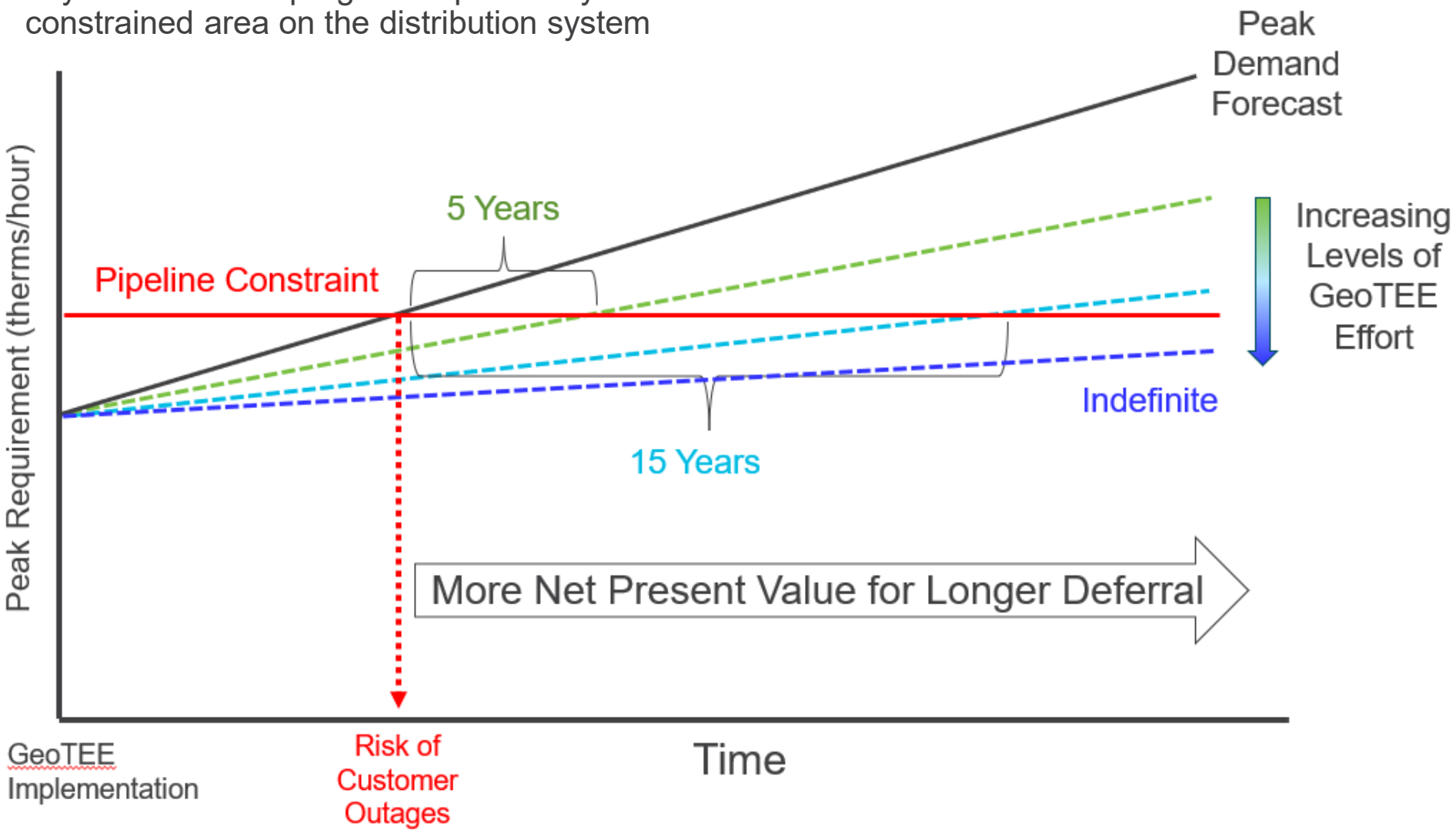
Distribution System Planning Alternatives (not all options are possible or applicable in all situations)				Option Currently Considered for Cost-Effectiveness Evaluation
Supply-Side Alternatives		Pipeline Related Capacity Options	Loop existing pipeline	✓
			Replace existing pipeline	✓
			Install pipeline from different source location into area	✓
			Uprate existing pipeline infrastructure	✓
			Add or upgrade regulator to serve area of weakness	✓
			Gate station upgrades	✓
			Add compression to increase capacity of existing pipelines	✓
	Non-Pipeline Solutions	Distributed Energy Resources (DER)	Mobile/fixed geographically targeted CNG storage	✓
			Mobile/fixed geographically targeted LNG storage	✓
			On-system gas supply (e.g. renewable natural gas, H2)	✓
			Geographically targeted underground storage	✓
Demand-Side Alternatives		Demand Response	Interruptible schedules (DR by rate design)	✓
			Geographically targeted interruptibility agreements	✓
			Geographically targeted Res & Com demand response (GeoDR)	
		Energy Efficiency	Peak hour savings from normal statewide EE programs	✓
			Geographically targeted peak-focused energy efficiency (GeoTEE)	

Challenges to evaluating building electrification as a non-pipeline alternative:

- Estimating total costs to both the electric and gas customers
- Forecasting the carbon intensity of two systems that are decarbonizing
- Equity impacts of customers on each system; all gas customers are electric customers, only a subset of electric customers are gas customers

Geographically Targeted Energy Efficiency (GeoTEE) for Distribution System Planning

GeoTEE = Increase EE incentives or marketing above and beyond statewide programs specifically for a customers in a constrained area on the distribution system



- Based on an NPV Cost-Benefit analysis, a GeoTEE effort can be cost-effective even if it just delays a pipeline investment
- Must have a forward-looking Distribution System Planning to implement this NPA in advance of need
- Only makes sense as an option in area with growing peak demand

Questions?

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