12/12/23 Resource Planning Advisory Group - Ideas

Goal: Identify imporant issues to be addressed in the IRP

Question: What are the components associated with each major topic that PSE should focus on during its analyses?

Agenda
- **Gas - 15 min**
- **Electric - 15 min**
- **Both - 10 min**

***Multiple check-ins to make sure we are covering topics**

No Decisions

Brainstorming Space

Pink bubbles = Webinar participant comments (not comprehensive)

Free allowance line*

Gas Utility

Climate Commitment Act

- Resource Portfolio and Action Plan
  - CCA as first input, PSE meeting its proportional share of statewide GHG reduction targets
- Price
  - Free allowance line*
  - Low
  - Medium
  - High
- Investing the proceeds of the sale of allowances
  - Affect system planning?

Best practices for electrification scenarios

Geotargetting

Renewable Fuels: Biomethane/Hydrogen

Making Hydrogen requires energy

What are the actual emission savings?

CCA and Renewable Fuels

What is the highest and best use?

- What is the dependence/reliance on alternative fuels in the IRP?
- Renewable natural gas
- Hydrogen blending
  - What are the benefits?
- What are the risks?
  - Health?
  - Environmental?
  - High costs?
  - Source/sink for greenhouse gases

Other applications - storage, aviation, industry

Premium resource - look at tradeoffs

Limited supply

Freyjan Sifuentes, WNN1 to Hosts and panelists

In a future where everything is electrified, any other fuels (hopefully renewable, like H or biogas etc) would serve as a storage option, rather than 'fuel source'

Demand

- Topic
  - Add text
- Connections to Load Forecast

NW Regional Forecast - Rapidly Increasing Load

Industrial loads - high temp electrification process is in its infancy - bigger challenge

Transmission

Gas Prices

- Topic
  - Add text
- Topic

Distribution System Planning Analysis

- Topic
  - Add text
- Capital Expenditure Plans

Distribution system planning analysis

Avoided infrastructure investments

Are there circumstances where gas IS the least cost investment? Wise managing with CCA

Where is the least cost investment?

Jim Dennison, Sierra Cl... to Hosts and panelists

JD

One other area I neglected to mention earlier: An understanding of how much gas infrastructure could become a stranded asset (or significantly under-utilized) in decarbonization scenarios

Both (Gas & Electric)

Connection between gas and electric planning

Policy Driven Electrification of Buildings

- Electrification
  - Adoption potential after equipment failure
  - 100% by 2050?
- Equity concerns about who foots the bill for remaining gas infrastructure
  - Risks to people stranded on the system
  - Increasing costs to remaining gas customers
  - Appliance costs

FY1 residential electrification easier than industrial

How does the policy transition happen (individual, government, utility?)

Targeted Electrification Strategy

- Best Practices from other States and Utilities
  - Add text
- Challenges and Barriers?

LS

Megan Larkin, Climate Solutions to Hosts and panelists

No matter the policy that drives electrification, PSE has the opportunity to "plan" for said electrification in a responsible and managed way -- through methods such as geographically targeted electrification, evaluating non-pipeline alternatives in capital expenditure plans to avoid stranded gas assets, and implementing electrification programs for customers that will maximize customer benefit by reducing the health and cost impacts that would come with staying on the gas system.

JD

I agree with Megan's last comment, and while Phillip's point that some aspects of the transition will involve questions for policymakers (that IRP findings can help inform) is well taken, effectively designing resource scenarios (based on best practices, learnings from electrification strategy, etc.) can address many of the issues or barriers that the process identifies. For example, PSE-funded heat pump incentives can be effective as NPAs or a least-cost CCA compliance strategy (answering the "who pays" question). Geographically targeting these incentives to stop growing and start shrinking the gas system can help reduce stranded asset risks and address equity issues around who will be paying for gas infrastructure when there are fewer gas customers.

?????

- Topic
  - Add text
- Topic

?????

- Topic
  - Add text
- Topic

Electric

Tip

Rapidly create your mind map using keyboard shortcuts. Press **Enter** to add a new topic, press **Tab** to create a child node. To add new lines of text, try **Shift + Enter**.

CETA and SCGHG

- Topic
  - RNW: Portfolio outcomes will likely be dependent on the outcome of the "Clean Energy Transformation Act" RCW 19.405.040 and RCW 19.405.050. UTC rule-making rule on this is Spring 2024.
- Topic

Planning Standards

- Topic
  - Add text
- Topic

Transmission

- Topic
  - Add text
- Obstacles
  - Alternatives?
    - RNW: Grid enhancing technologies
    - RNW: Virtual power plants / DERs
  - How is PSE modeling?
  - Complex, coordinated

What is the resource value of all these benefits (outside of traditional IRP least cost evaluation)

Climate Change - Incorporated into Reference Case

- Topic
  - Add text
- Topic

Demand

- Topic
  - Add text
- Topic

Increase load forecasts

NW Regional Forecast - Rapidly Increasing Load

RNW: Accounting for electrolyzer load associated with hydrogen? (PNW Hydrogen Hub)

Connection to electrification conversion?

Other

- RNW: Western Market Development
  - RNW: How will PSE's resource needs be impacted by different Western market development scenarios? (EGAM, SPP M+, Status Quo) We encourage PSE to model a day-ahead markets scenario.
  - Add text
- Topic

Maximum Customer Benefit

- Increase benefits
- Capture all the values in the resource plan
  - Add text
- Equitable reduction of burdens in targeted communities
  - Emissions

RNW: Are there specific rules/ guidance around 'maximum customer benefit'? How is the company defining maximum customer benefit? Any weighting among the benefits (environmental, public health, cost, etc.)? Any weighting to ensure the equitable distribution of benefits?

Resource Alternatives

- Fuels
  - Hydrogen peaking capacity*
  - RNW: Biomass and renewable natural gas (biofuels)
- RNW: Long-duration battery storage
- RNW: Offshore wind