



# 2022 STRATEGIC ISSUES

## PSCo DSM Regulatory and Product Management

April 15, 2022

# Meeting Agenda

## Update on Strategic Issues

- Staffing updates and Introductions
- Strategic Issues Overview
- Goal Setting Strategy
- Avoided Cost Modeling
- Cost-benefit Analysis

# STRATEGIC ISSUES OVERVIEW

What is it and where does it fit?



# 2022 DSM/BE Strategic Issues

“Larger than usual” Strategic Issues filing

- Including new gas requirements and Beneficial Electrification
- More complicated issues

Goals and Rules for 2024-2027

- Will inform first Clean Heat Plan
- In future Clean Heat may lead Strategic Issues

# What is DSM Strategic Issues?

Strategic Issues is a Policy Proceeding

- Goals & Budgets – Energy and Demand
- Incentive Mechanisms
  - Disincentive Offset
  - Performance Incentives
- Assumptions Methodology:
  - Avoided Cost Methodology
  - Avoided T&D
  - Cost-Benefit Analysis
  - Non-Energy Benefits
- New types of programs/products

# What DSM Strategic Issues is not

## A Plan Proceeding

- Plan proceedings that follow effectuate the policies from Strategic Issues in the form of DSM Programs.
- Biennial Plans designed to ordered goals within approved budget
  - Individual product details
    - Offerings, rebates, forecasts, etc.

# 2022 Filing Timelines

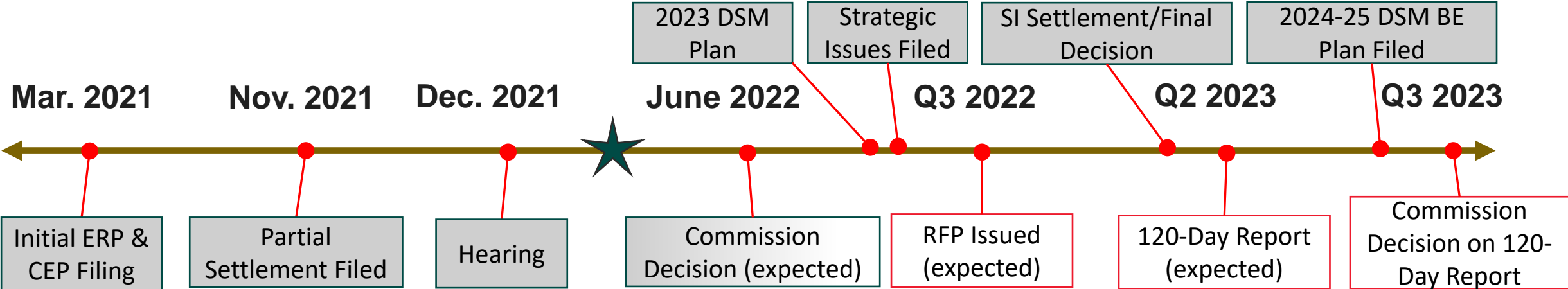
2023 DSM Plan targeting June 1, 2022 filing

Strategic Issues Filing Due July 1, 2022

Stakeholder Meetings:

- 4/15 – Scope, Strategy, and Key Topics
- 4/29 – Goals Update, TBD
- 5/11 – DSM Roundtable – Demand Response Study findings

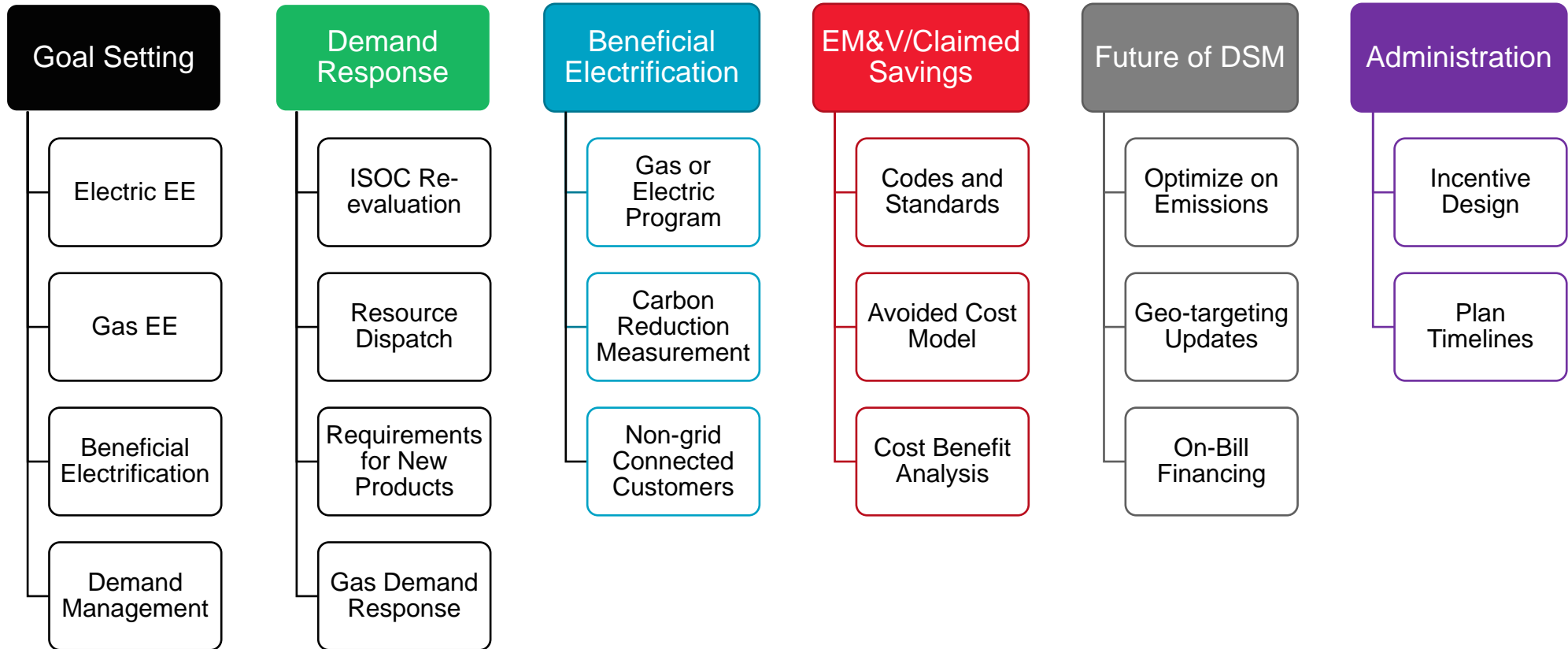
# Alignment with other Filings



	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
CHP 2023		Plan for 4 percent reduction (2025)	Long-Term Forecast (volumes, customer count, emissions, peak capacity)								
CHP 2026					Plan for 22 percent reduction (2030)	Long-Term Forecast					
CHP 2029								Long-Term Forecast			
Gas DSM/BE Strategic Issues											
Gas DSM/BE Plan	(1 year Plan due to historical SI/Plan cadence)	2024-25 DSM/BE Plan	2026-27 DSM/BE Plan		2028-29 DSM/BE Plan		2030-31 DSM/BE Plan		2032-33 DSM/BE Plan		



# 2022 Strategic Issues Topics



# GOAL SETTING STRATEGY

## Energy Savings Targeted on Emissions



# DSM/BE Goals across fuels

## Objective:

- Establish Electric, Natural Gas, and Beneficial Electrification goals that align with Company's strategic priorities, and Colorado Carbon roadmap
- Goal Approval for 2024-2030
- Not addressing goals beyond 2030

## Proposed Metric:

- Energy goals for EE, with efforts optimized across fuels on \$/ton GHG avoided
- Maximizes GHG savings per \$ spent across Electric & Gas (EE, BE, DR)

# Preliminary Goals and Impacts

## Electric Energy Efficiency

- GWh and Spend Decline
- Low and declining carbon intensity
- Lighting saturation reduces potential

## Natural Gas Energy Efficiency

- Dth and Spend Increase
- High and constant carbon intensity

## Beneficial Electrification

- Launches and Grows
- Carbon savings increase shifting from gas to electric

Demand Response/Demand Management still in development

# Beneficial Electrification

## Proposing Participation Goal Metrics

- Based on Potential Study and ERP projections of electrification and gas energy efficiency

## Residential and Commercial Participation

- Assumes Primarily Air-Source Heat Pumps for Space Heating
- Space Heating w/ gas backup, Water Heating and all-Electric cases included

# **AVOIDED COST MODELING**

## **Evolving with the Grid**



# Electric Avoided Cost

## Current Process

- Avoided Generation Capacity – Assumes build impact is avoided Peaking Plant  
Annual Hour of System Peak Impacts – CT Plant
- Avoided Marginal Energy/Emissions – Assumes impact is reduction in generation dispatch  
Hourly Energy Savings – PLEXOS Hourly Marginal Energy and Hourly System Carbon Emissions Intensity

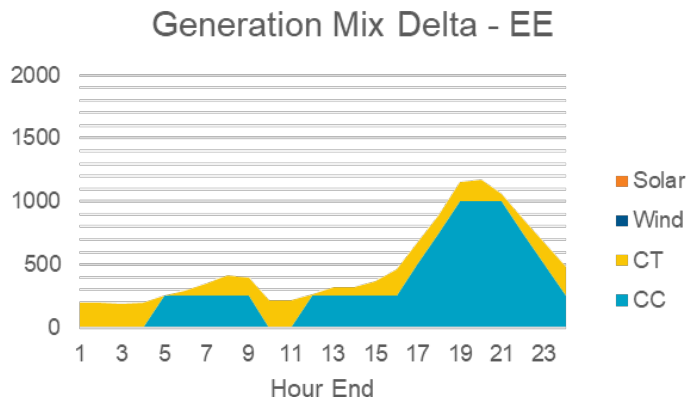
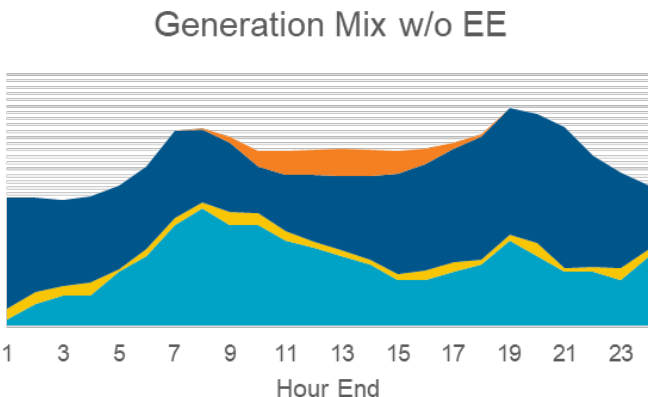
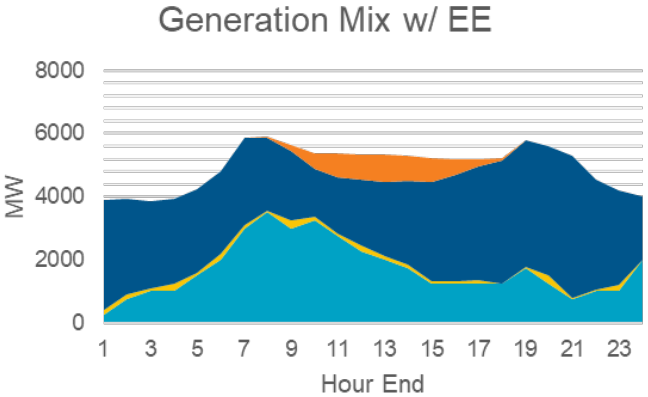
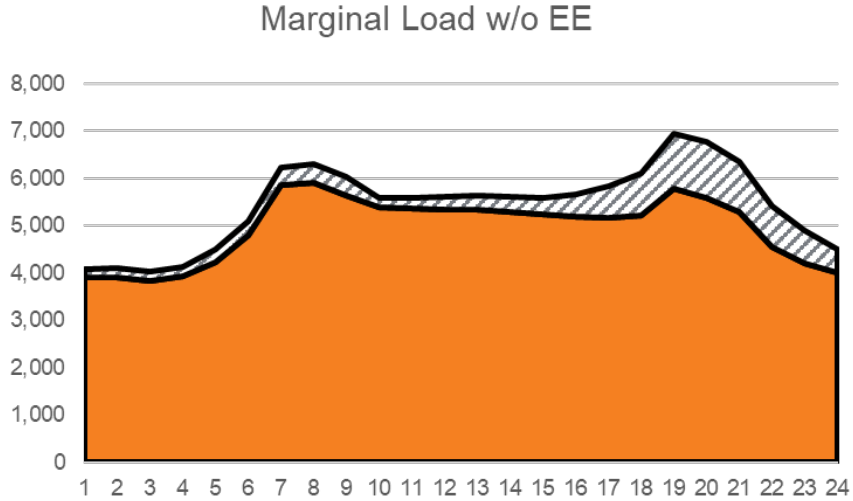
## Non-Dispatchable Renewable Generation Changes Impacts

### Proposed Process

- Avoided Generation Capacity – Determine build impact from Capacity Expansion Modelling  
Load Forecasts w/ and w/o EE, BE – Deltas in Expansion Plans – ELCC Factors for DR
- Avoided Marginal Energy – Blend generation dispatch and energy generation from build impact  
Hybrid Dispatch Model / Proxy Plant  
Expected Proxy Plants – EE: Combined-Cycle (CC) Plant – BE: Wind Generation – DR: Supply-Side Storage

# Marginal Energy Cost

- Currently use “Dispatch Model”
  - Identifies what generator we avoid **operating** due to programs
  - Assumes static grid mix, so doesn’t reflect change over time
- Alternative: “Proxy Plant Model”
  - Identifies what generator we avoid **building** due to programs
  - Reflects shifting grid over time, but may over-simplify operational impact of programs





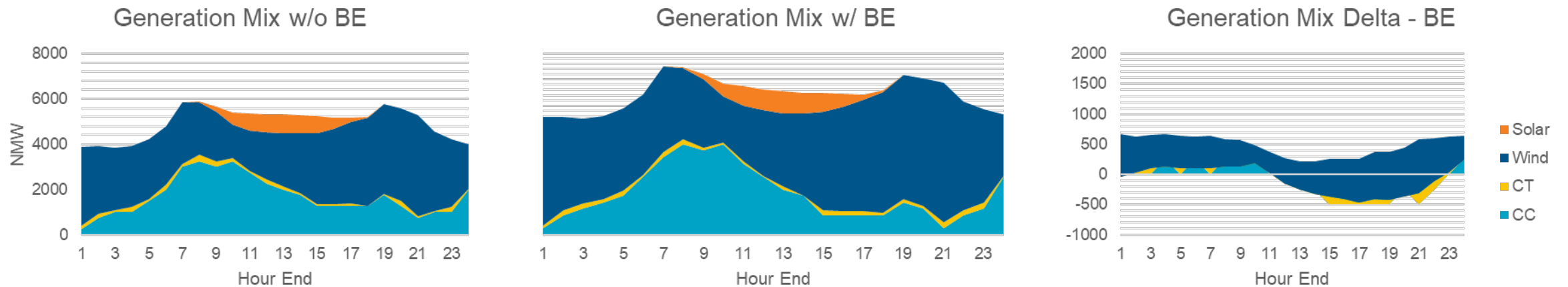
# Marginal Energy – Hybrid Model

## Recommended Method

- Hybrid Approach – Proxy Plant and Dispatch Model (EnCompass Model)
- Weight the results of the two modeling outputs (proxy plant and dispatch) based on energy
- Pros
  - Allows for separate sets of avoided costs by resource (EE, BE, and DM)
  - Approximate Proxy Plants: EE = CC, BE = Wind, DM = Battery
  - Captures the impacts of the change in system build while getting hourly data
  - Including dispatch results would add diversity to assumed generation source as opposed to the single source that would be assumed in the Proxy Plant method
  - This avoided costs treatment aligns better from a policy perspective than using just a dispatch model approach only

# Marginal Energy - Hybrid Model

- Value programs based on combination of the two models (weighted average)
- Incorporates both time-of-day impacts as well as changes to generation mix over time
- Allows modeling of electrification – “proxy plant” is likely wind based on resource plan
- Gives reasonable and useful results reflecting impacts of system changes



# Gas Avoided Cost

## Gas Capacity

- Currently limited to Reservation Costs
- Still in development, but working towards localized capacity benefits
  - Adder applied to regions approaching capacity limits
  - Dynamic geographic designations
- Analogous to electric geo-targeting T&D benefits

# **COST BENEFIT ANALYSIS**

## **Bundled Analysis**



# Proposed DSM Cost-Benefit Analysis (CBA) Framework

Current CBA framework evaluates Electric and Gas programs independently

Proposing comprehensive CBA framework across both fuels

- Evaluates combined impacts of EE, BE, DR, and DM
  - Cost shares between Electric and Gas Populations
  - Includes Rebates, Bill Credits, Rate Treatments
  - Report Goal and Actual Impacts for Each Element

# Proposed Additional Reporting

- Report Consolidated (Electric & Gas) CO2 Emissions Reductions
  - Annual
  - Lifetime
- Report Goal and Actual Impacts for Each Element
  - Energy Efficiency (EE)
  - Beneficial Electrification (BE)
  - Demand Management (DM)
  - Demand Response (DR)
  - Impacts can be compared to Goals and Potential for each element

**FEEDBACK**

# Feedback and Next Steps

Right level of detail today?

Anything we're missing?

Topic priorities for next meeting?



