PNM 2023-2042 IRP: Commodity & Pricing Forecasts

STEERING MEETING #8

NOVEMBER 2, 2022

DISCLOSURE REGARDING FORWARD LOOKING STATEMENTS

The information provided in this presentation contains scenario planning assumptions to assist in the Integrated Resource Plan public process and should not be considered statements of the company's actual plans. Any assumptions and projections contained in the presentation are subject to a variety of risks, uncertainties and other factors, most of which are beyond the company's control, and many of which could have a significant impact on the company's ultimate conclusions and plans. For further discussion of these and other important factors, please refer to reports filed with the Securities and Exchange Commission. The reports are available online at www.pnmresources.com.

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MEETING GROUND RULES

THE FOCUS OF THE MEETING IS THE DEVELOPMENT OF THE 2023 IRP

01

- Questions and comments are welcome – One Person Speaks at a Time

02

- Reminder; today's presentation is not PNM's plan or a financial forecast, it is an illustration of the IRP process

03

- When asking a question, please speak clearly and slowly as all questions will be logged and labeled with the person and organization responsible for asking the question

04

- These meetings are about the 2023 IRP, questions and comments should relate to this IRP. Any questions or comments related to other regulator proceedings should be directed towards the specific filing.

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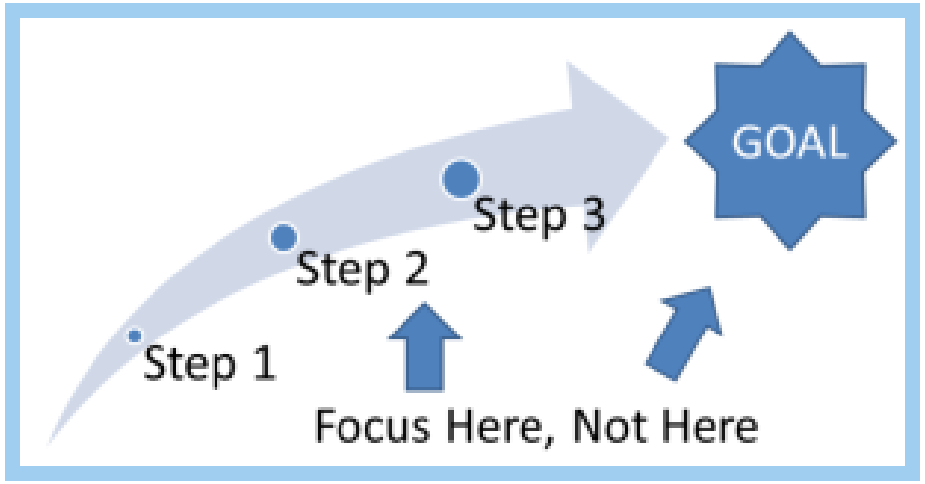
THE FOCUS OF THE MEETING IS THE DEVELOPMENT OF THE 2023 IRP



The technical sessions are about discussing the advantages and disadvantages regarding the application of different technical methodologies within the IRP modeling framework.

We are not here to focus on the results or drive towards a specific result. **We all know where we are going: 100% Carbon Free by 2040. The focus in the IRP development is how do we get there in the best way possible for PNM's customers and New Mexico.**

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MEETING AGENDA

- Welcome and Introductions
- Siemens forecasts
  - Natural Gas & CO_2
  - Capital Costs
- IRP application of Siemens forecast
- Scenario Process
- Next Steps

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Price Outlook: Natural Gas, CO_2, Capital Costs

Public Service New Mexico

November 2022

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Contents

- Introduction
- Tools and Methodology
- Base Case Scenario Assumptions and Forecasts
- High and Low Scenario Assumptions and Forecasts

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Introduction

- Siemens PTI developed market assumptions for PNM in July 2022
- Market forecast of natural gas, carbon emission price, and capital costs were developed to assist PNM with its 2023 Integrated Resource Plan
- The forecast for each of these commodities was developed based on input from subject matter experts, research, internal analysis, and propriety data over the 2022-2043 planning period

Scenario	Description
Baseline	Reference view based on market forwards early and longer term by fundamentals accounting for expected policy
High	High prices reflect increasing social costs for CO_2 and higher price of natural gas based on statistical analysis
Low	Low prices reflect no costs for CO_2 and lower price of natural gas based on lower band of statistical analysis

- This presentation summarizes the methodology utilized as well as assumptions used to derive the price forecast

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Tools and Methodology

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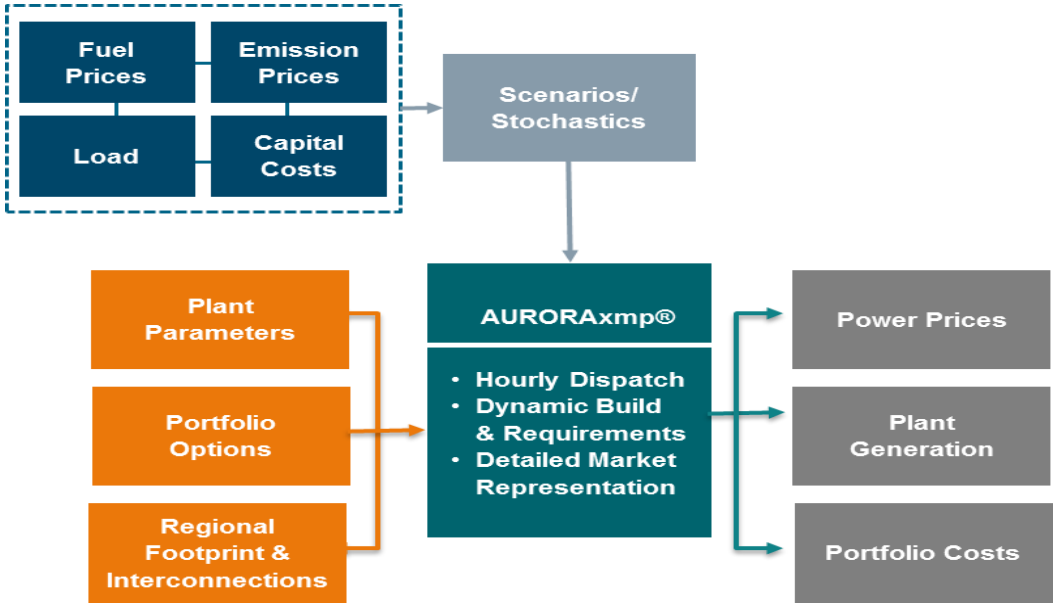
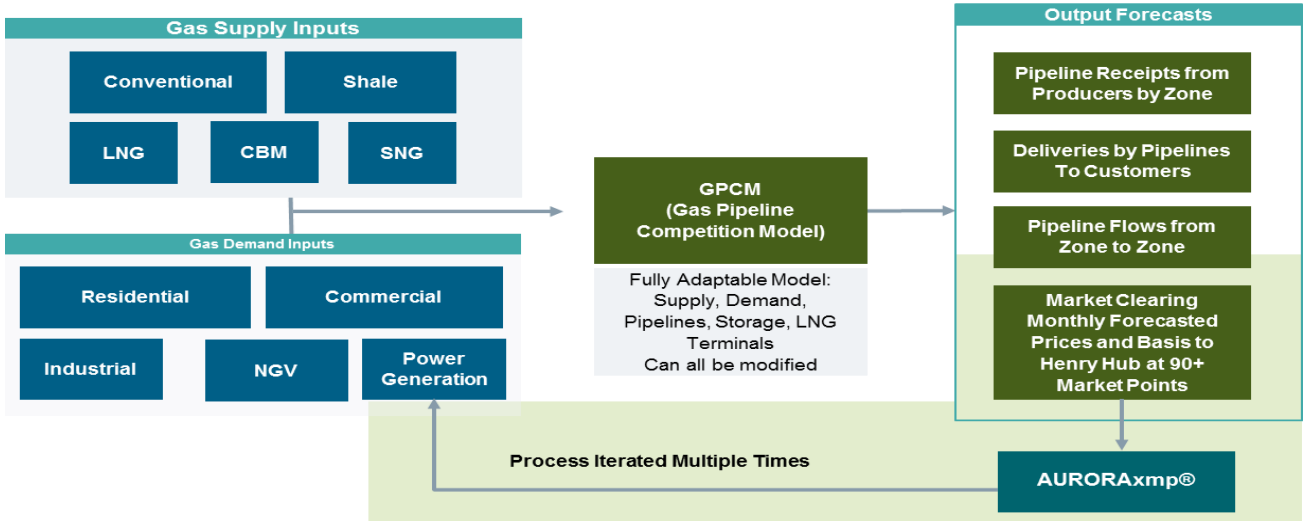
Gas and Power Integrated Modeling Approach

AURORAxmp® as a Modeling Framework



GPCM Modeling Framework



- Power modeling used AURORAxmp®, an hourly dispatch model, to simulate the economic dispatch of power plants within WECC power markets for the forecast horizon. AURORAxmp® assesses the economics of existing and future generation technologies for future builds and retirements in order to maintain minimum reserve margins and meet RPS and carbon free generation targets.
- Natural gas price inputs are produced using GPCM, a dynamic model that incorporates natural gas supply, demand, and infrastructure inputs to solve for expected prices and flows throughout North America.
- Iterations are performed between the two models to ensure gas prices and power sector natural gas demand is in balance.

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Natural Gas Forecast

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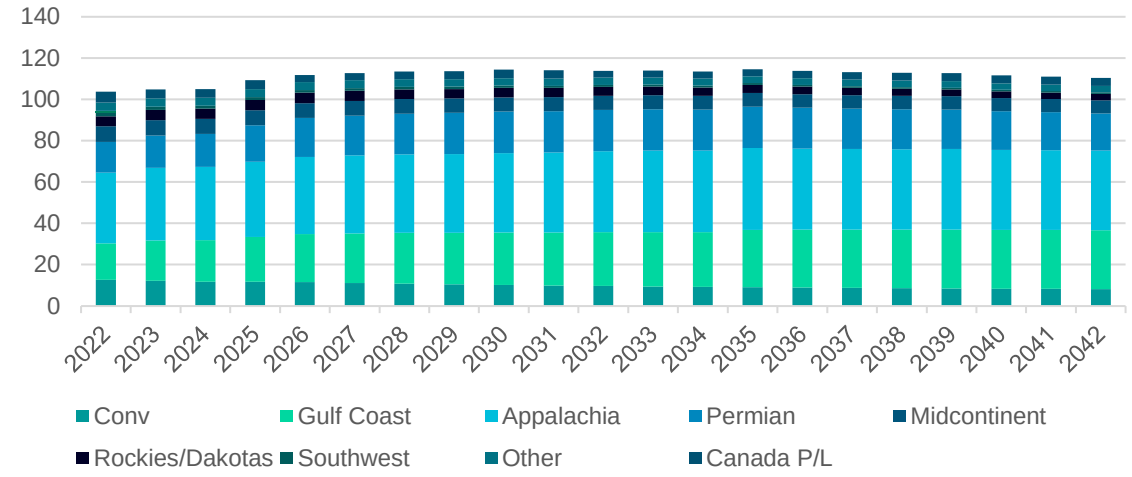
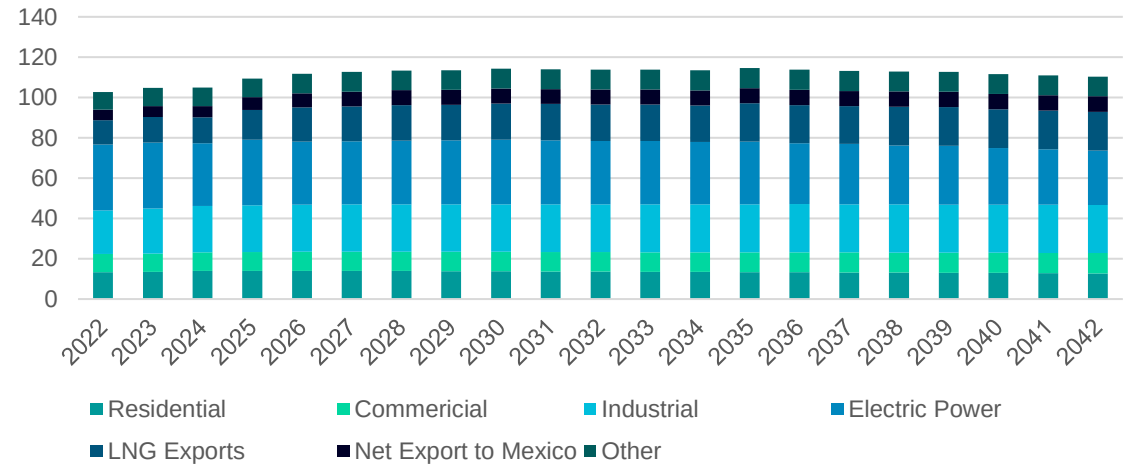
Key U.S. Gas Market Drivers

All units in BCF/D

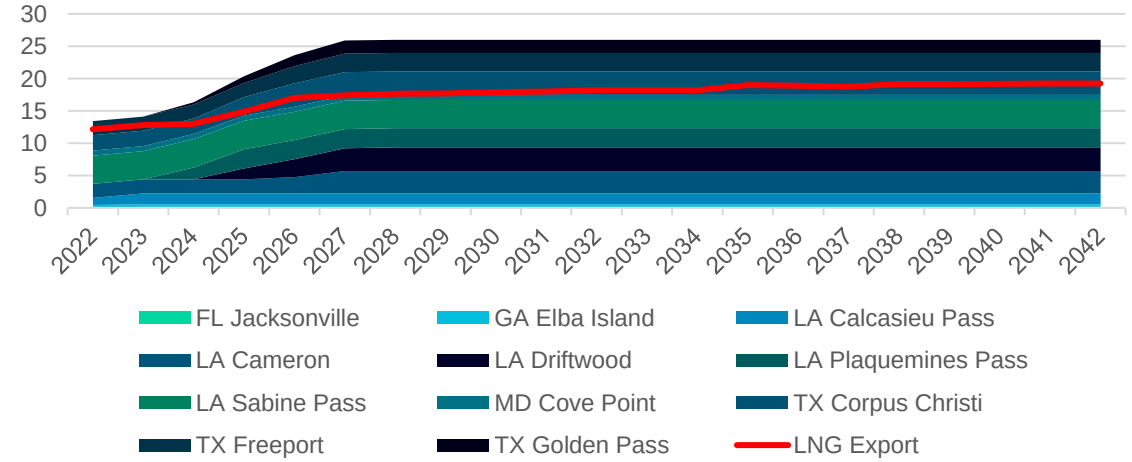
U.S. (L48) Gas Supply Outlook



U.S. Gas Demand Outlook



U.S. LNG Export Capacity and Export Outlook



Key Insights

- Gas supply increasing post-COVID era driven by higher prices and increasing demand
- Natural gas use in electric power generation, over the long term expected to decline due to increasing renewable portfolio standards
- LNG exports have increased dramatically to supply primarily European and Asian markets and are expected to grow with increasing investment in export capacity
- Mexico pipeline export also increasing due to greater demand and infrastructure buildout

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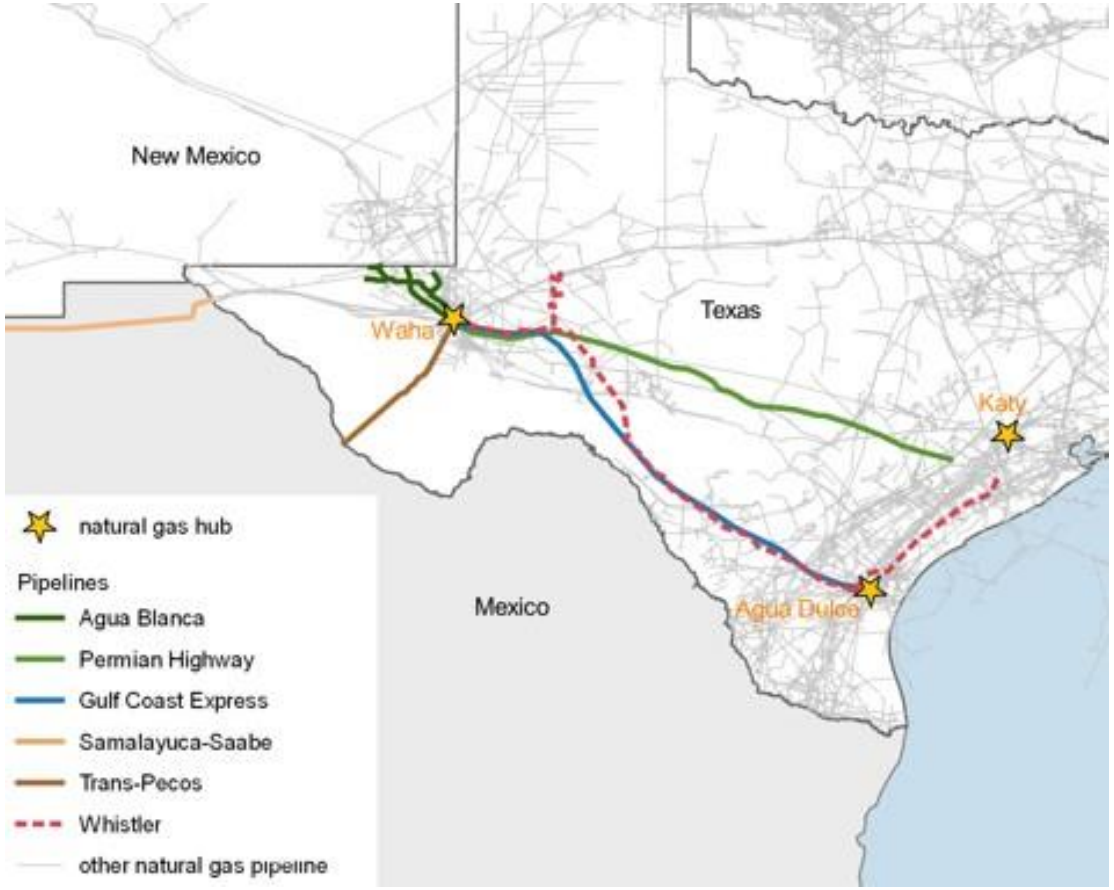
Several Pipelines have been built to delivery Permian Gas from Waha Hub to South Texas and Beyond



Source: EIA

- Permian gas production is expected to increase from ~15 Bcf/d in 2022 to ~20 Bcf/d by 2030
- Gas pipeline takeaway capacity is expected to reach ~17 Bcf/d by YE2023
- Expansion projects being developed to increase takeaway capacity

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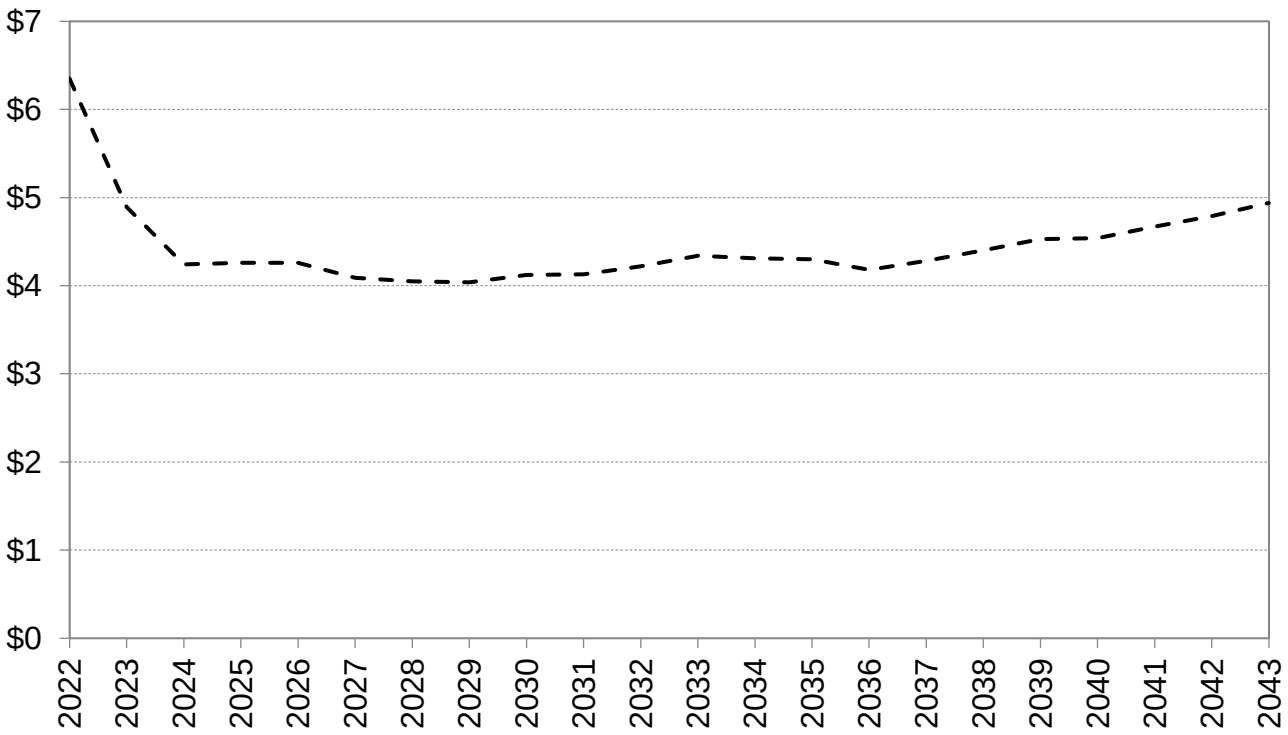
Baseline Natural Gas Prices – Henry Hub (HH)

Baseline HH Natural Gas Price Forecast (2021$/MMBtu)



*Base case prices were developed using NYMEX forwards for Henry Hub for the first 18 months starting July 2022, Mix of forward and fundamentals for next 18 months; fundamentals March 2025 onwards

Henry Hub

Near-Term – Reflects historical data and market forwards through September 2023. The next 18 months is a blend of forwards and fundamental through February 2025

- Oil and gas prices are high enough to boost economic production
- Rig deployment sluggish due to capital discipline and hedging programs that have kept producers from fully realizing high prices
- LNG export utilization all-time high due to European demand

Mid-Term – HH prices are expected to moderate as supply increases to meet increasing demand from LNG. Supply growth coming from Permian, Marcellus, Haynesville, Eagle Ford and Utica shales

Long-Term – Post 2035, natural gas prices projected to rise due to higher costs of production, despite lower levels of demand from power generation and relatively flat demand in CR&I sectors

- Power generation gas consumption will reduce due to rising renewable generation to meet RPS standards
- Decrease in residential demand is offset by an increase in commercial and industrial sectors

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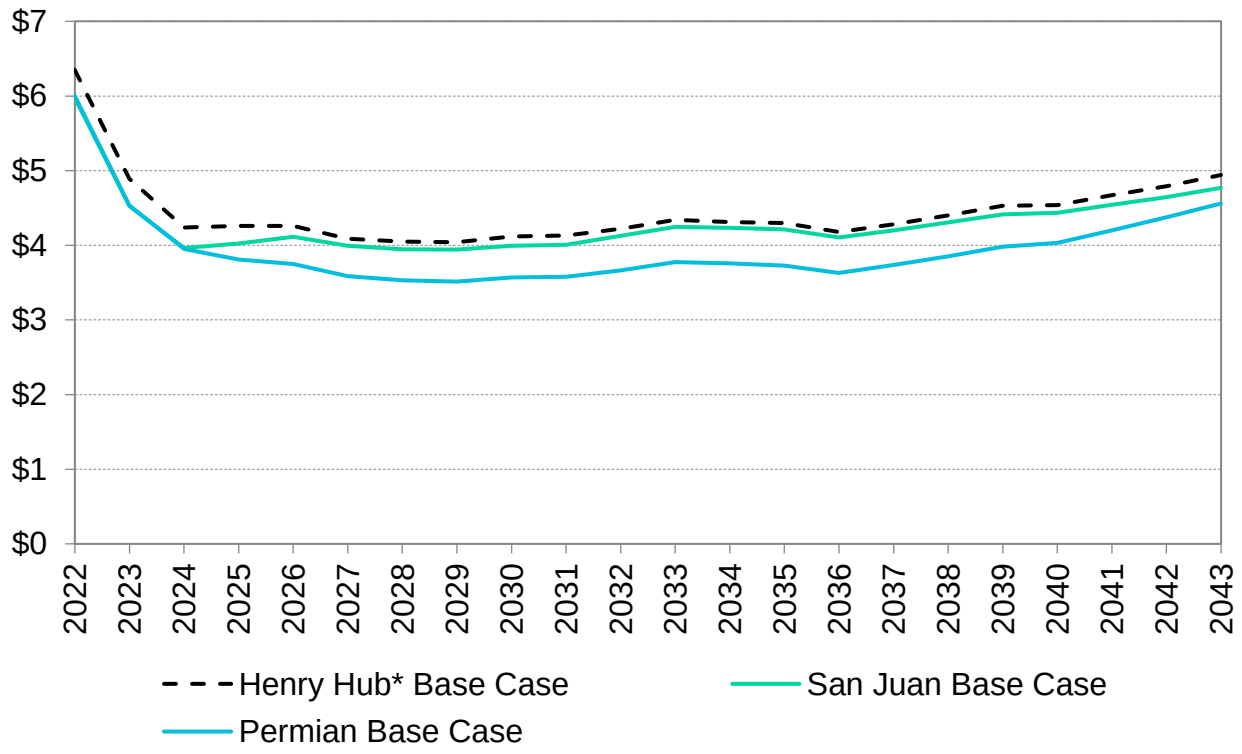
Baseline Natural Gas Prices – Permian and San Juan

Baseline Regional Natural Gas Price Forecasts, $2021/MMBtu



*Base case prices were developed using NYMEX forwards for Henry Hub for the first 18 months starting July 2022, mix of forward and fundamentals for next 18 months; fundamentals March 2025 onwards

Permian

- Permian production is robust and continues to grow even with very low HH prices
- Near term, Permian prices are expected to have a negative basis of ~0.35 $/MMBtu to HH
- Longer term, basis to HH is expected to widen to an average of ~-0.50$/MMBtu. To keep up with increasing demand, particularly from LNG, production is expected to increase
- Pipelines/expansion in the future may put some upward pressure on prices and could reduce the basis differential to HH over the planning horizon

San Juan

- Production region in northwest NM into southern CO
- CBM and Conventional production of gas continues to decline and is expected decline and remain a secondary source of gas for the Southwest

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High and Low Cases

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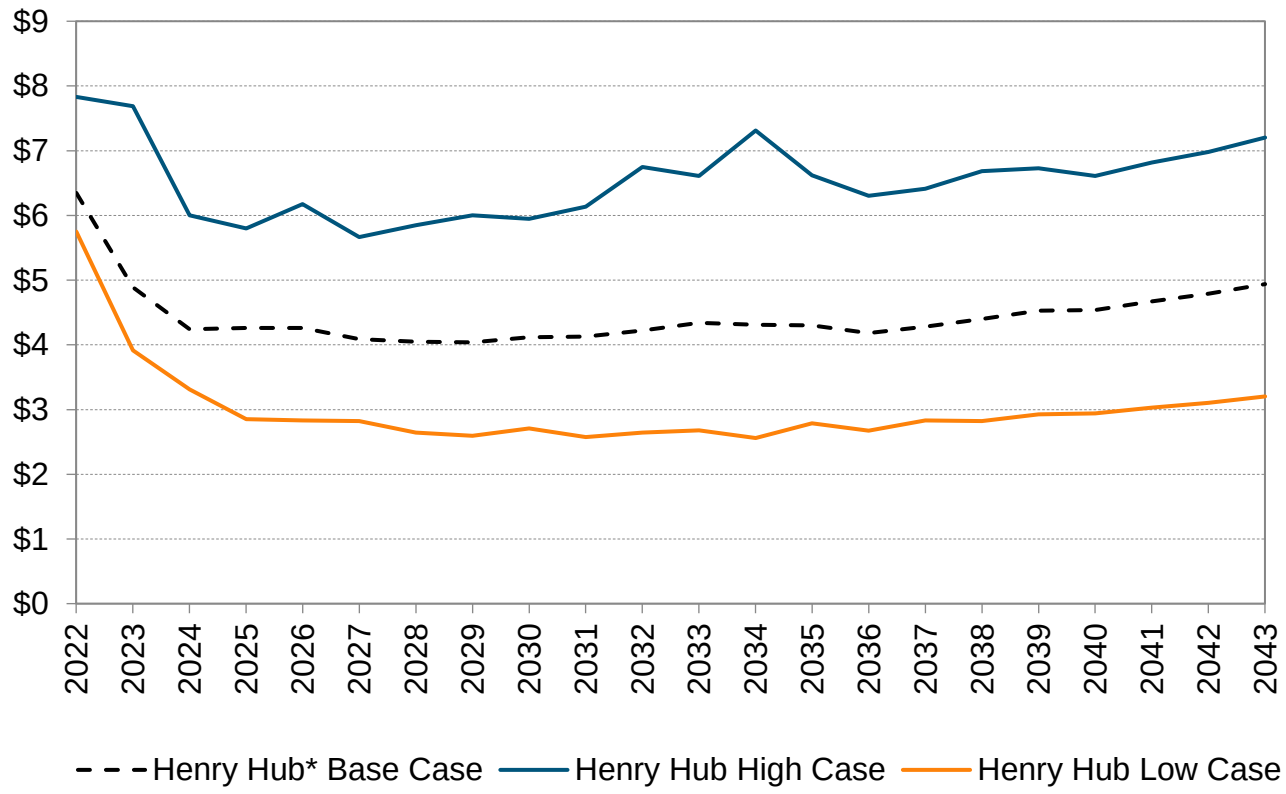
Natural Gas Price Scenarios – Henry Hub

HH Natural Gas Price Scenarios, $2021/MMBtu



*Base case prices were developed using NYMEX forwards for Henry Hub for the first 18 months starting July 2022, mix of forward and fundamentals for next 18 months; fundamentals March 2025 onwards

Henry Hub Low and High Cases

Low Case –Reflects an outlook based on a statistical analysis of historical at the 10% confidence internal. Prices settle around $3/MMBtu longer term

High Case – Reflects an outlook based on Statistical analysis of historical at 90% confidence interval. Prices increase above ~$6/MMBtu longer term

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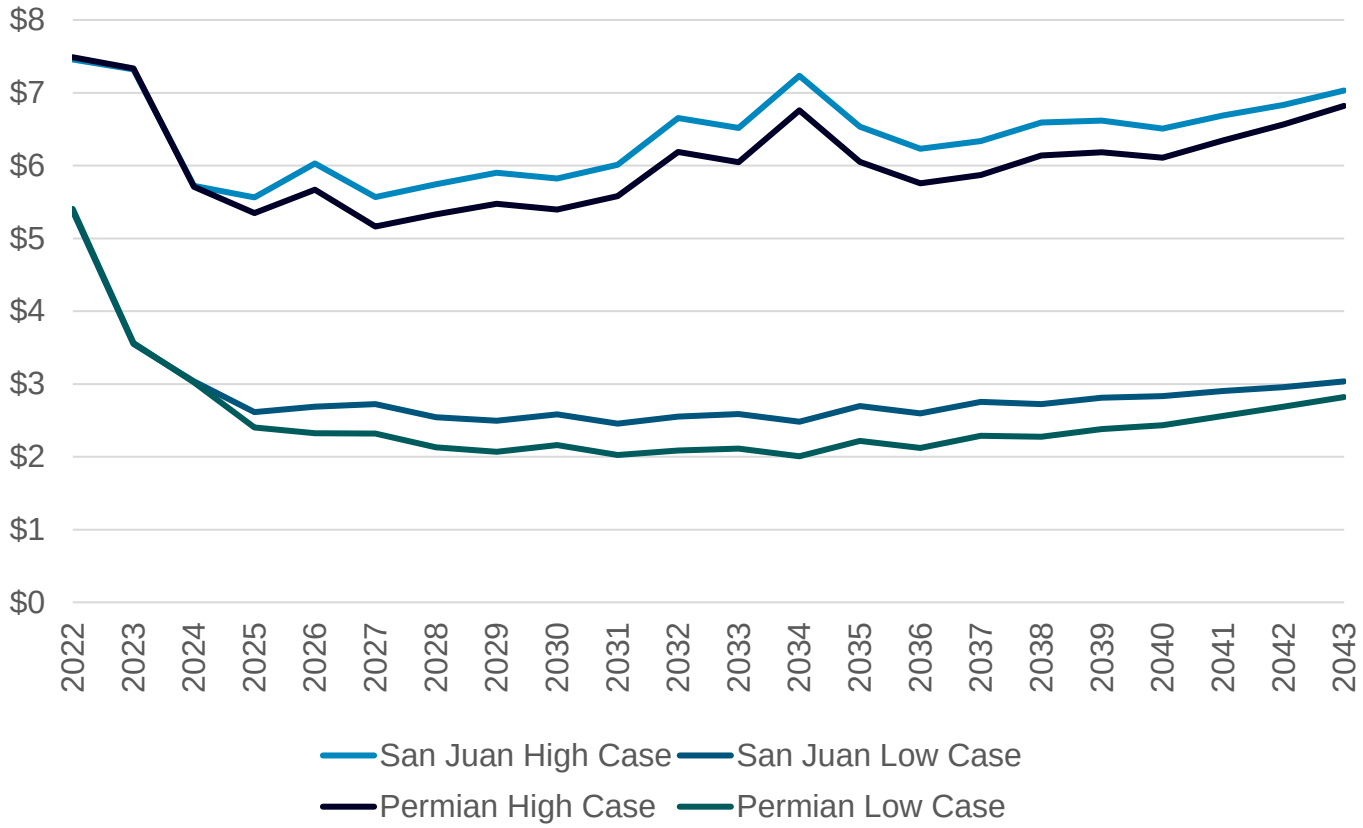
Natural Gas Price Scenarios – Permian and San Juan

Permian and San Juan Natural Gas Price Scenarios, $2021/MMBtu



- Permian and San Juan price outlook consistent with HH High and Low scenario and basis differential consistent with baseline scenario
- Low case prices above $2/MMBtu longer term
- High case prices ~$6-$7/MMBtu longer term

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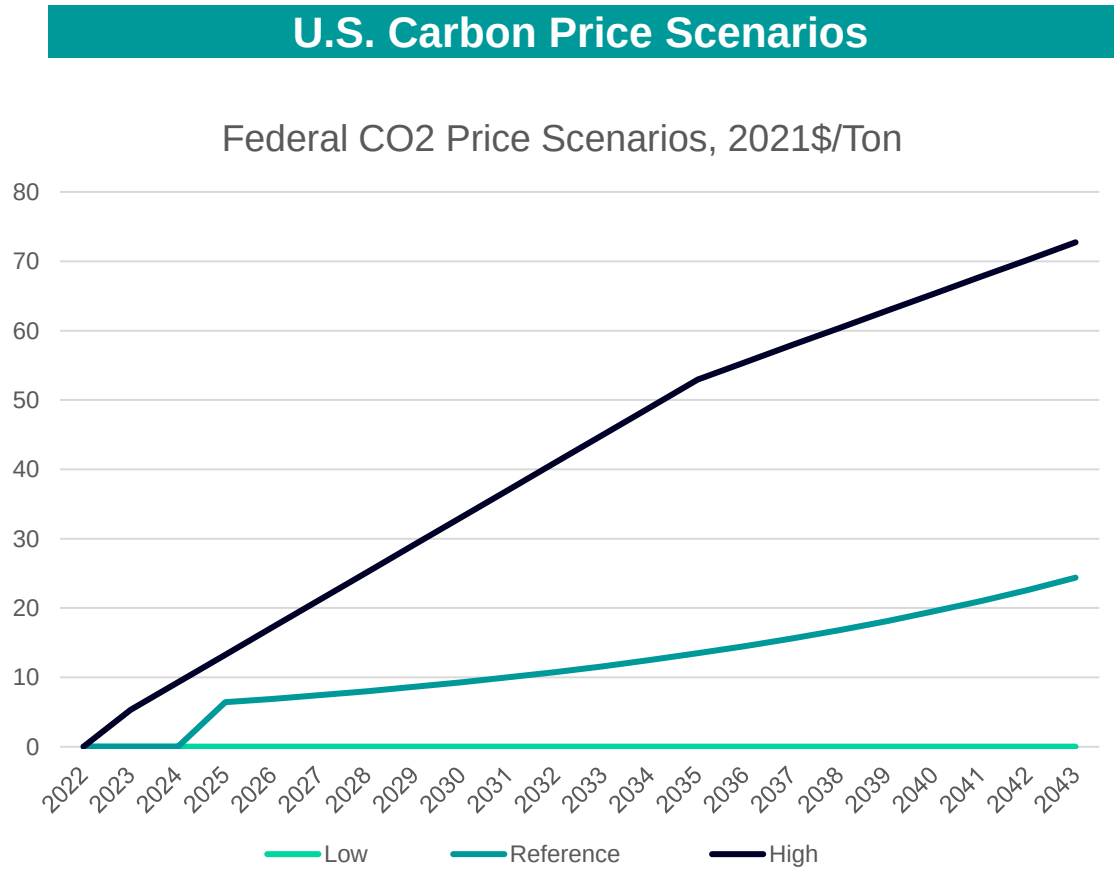
Carbon Price Scenarios – Federal

- Range of federal carbon prices reflects uncertain outlook for carbon policy and resulting pricing in western states
- Baseline scenario assumes a carbon policy starting in 2025 to achieve 80% reduction in carbon emission in the power sector relative to 2005 levels
- High scenario nears $70/ton by the end of the forecast horizon and incorporates social cost of carbon emission
- Low case represents no cost for carbon emission



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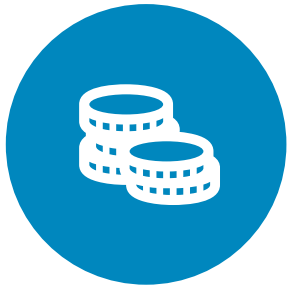
Capital Cost Forecast

Overnight capital cost forecast for various technologies developed based on numerous sources

Regional factors developed for each technology to account for difference in locality and ambient conditions. Regional factors are based on EIA Annual Energy Outlook



Near term capital cost reflect increasing cost of commodities, supply chain challenges and other economic factors

Incorporates tax credits from Inflation Reduction Act 2022

Longer term capital costs expected to decline in real terms due improvement in technology

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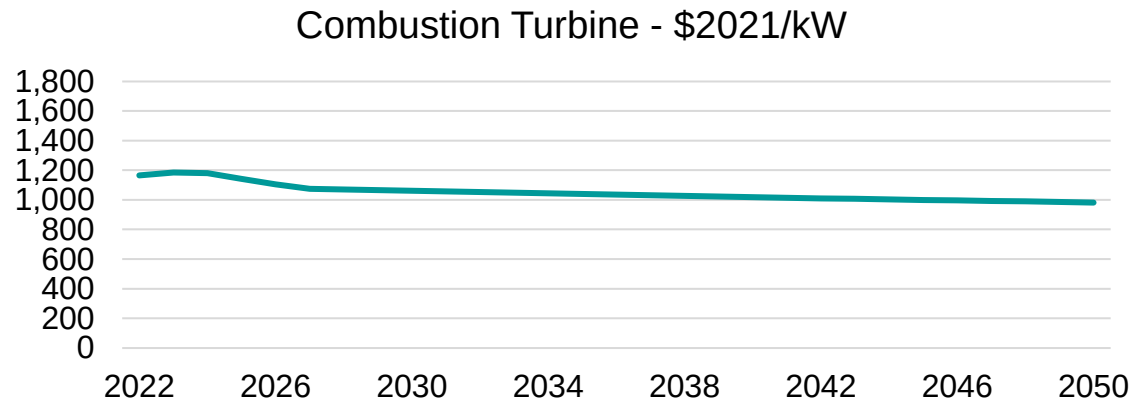
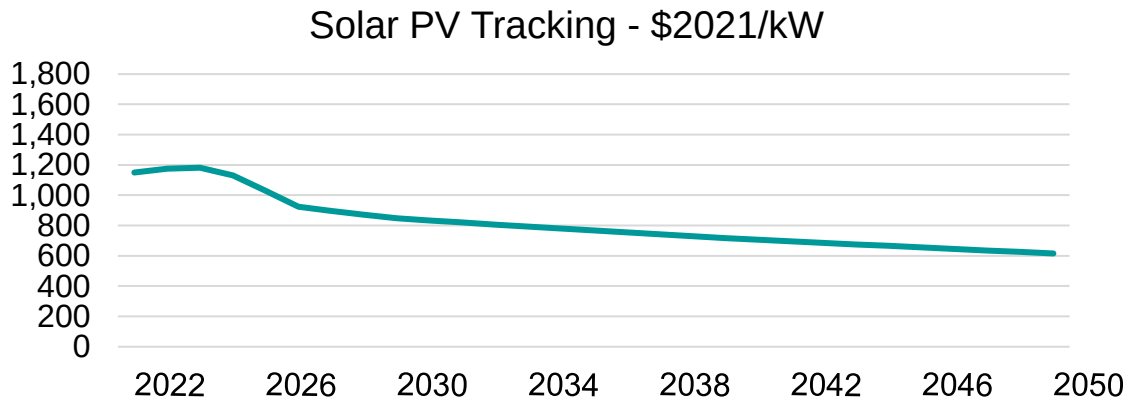
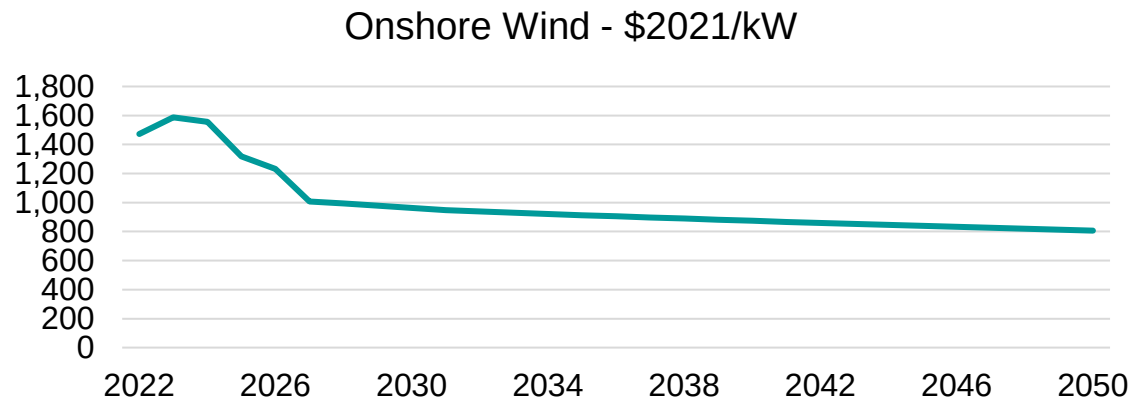
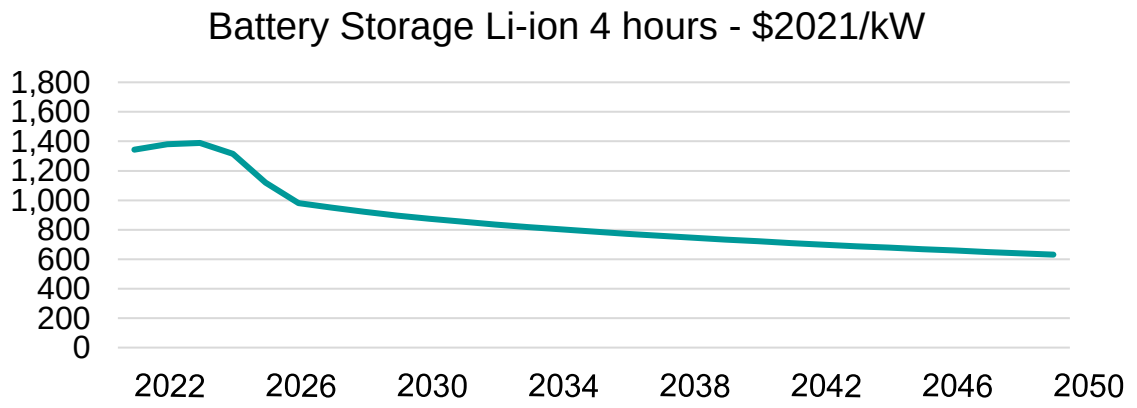
Capital cost forecast for select technologies incorporates regional factors to build in New Mexico

**Costs outlook does not reflect incentives provided by the Inflation Reduction Act 2022*









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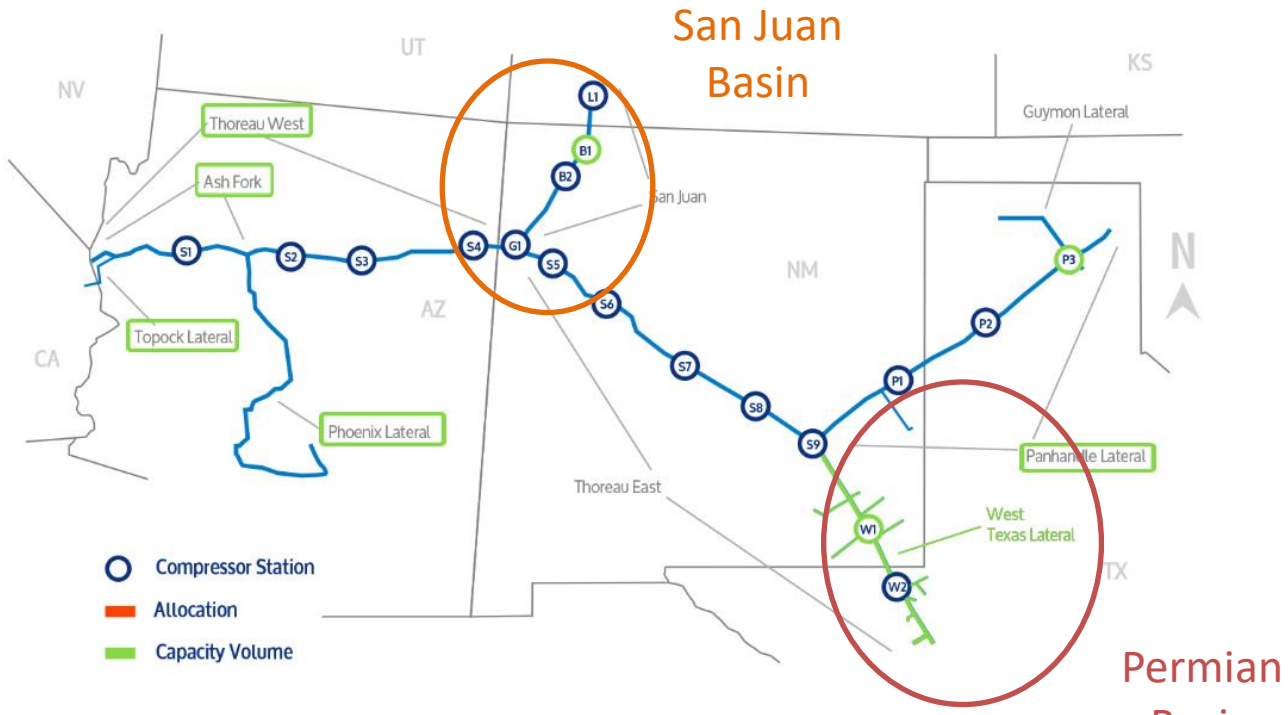
2023 IRP APPLICATION OF SIEMENS FORECASTS

DELIVERED NATURAL GAS PRICES USED IN THE 2023 IRP



Source: Transwestern Pipeline Company, twtransfer.energytransfer.com

Basin Pricing (Siemens Forecast)

2 Pricing Hubs

Transportation Charges, Usage Charges, Taxes

4 Pricing locations

Delivered Price

4 Delivered Price Curves

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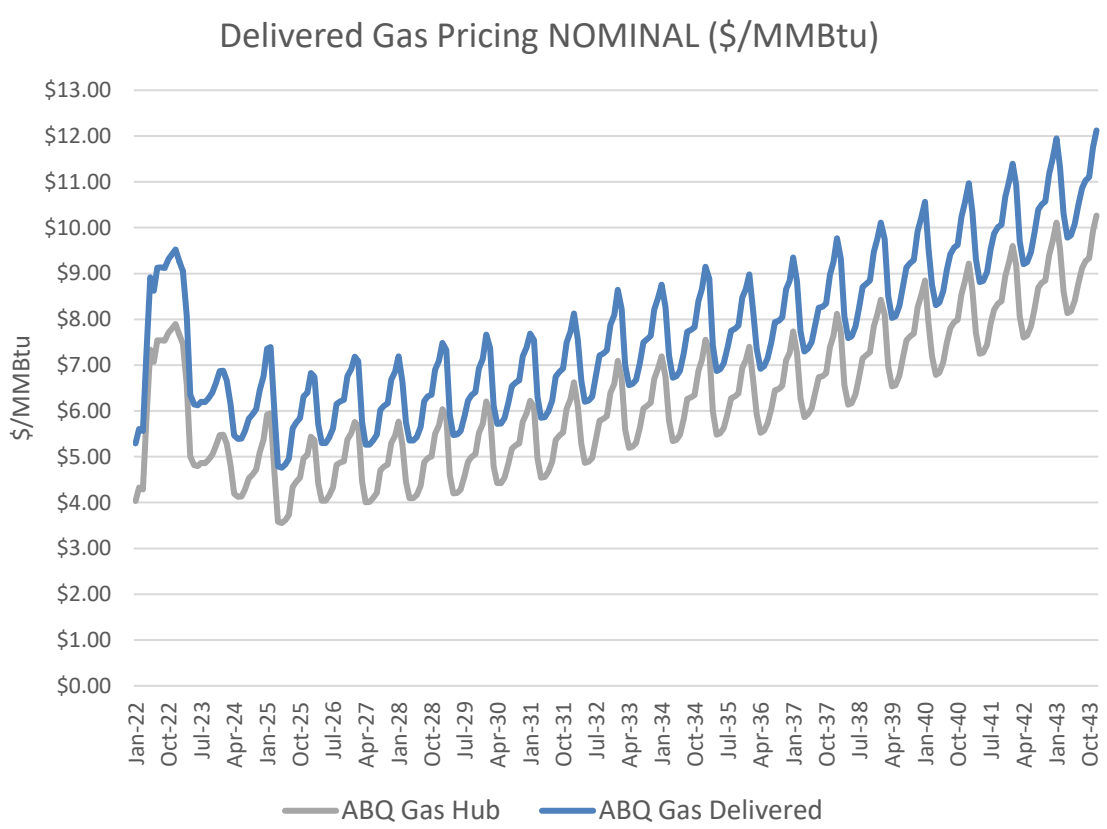
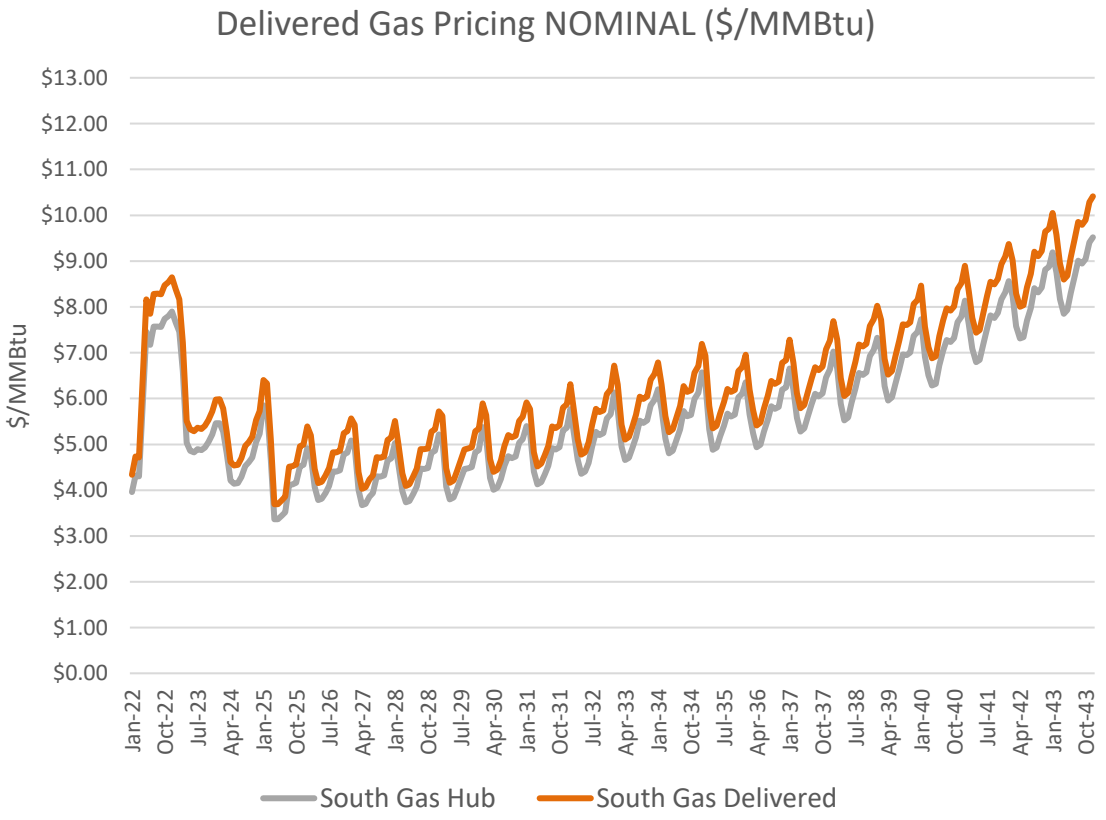
2023 IRP APPLICATION OF NATURAL GAS FORECAST

EXAMPLES FOR DELIVERED NATURAL GAS PRICING





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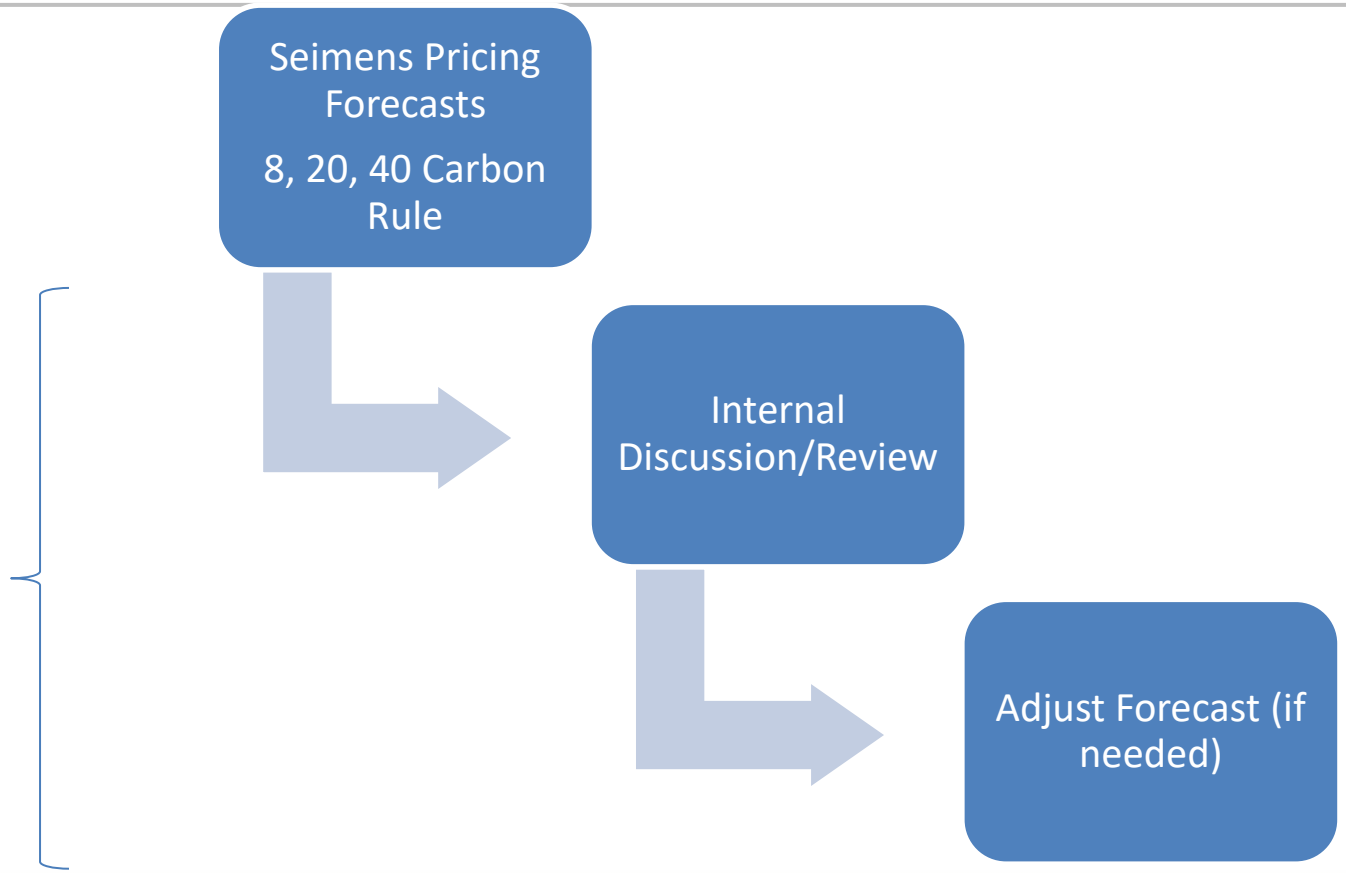
2023 IRP APPLICATION OF SIEMENS FORECASTS

CO2 PRICING FORECAST

We are here

Steps to be completed



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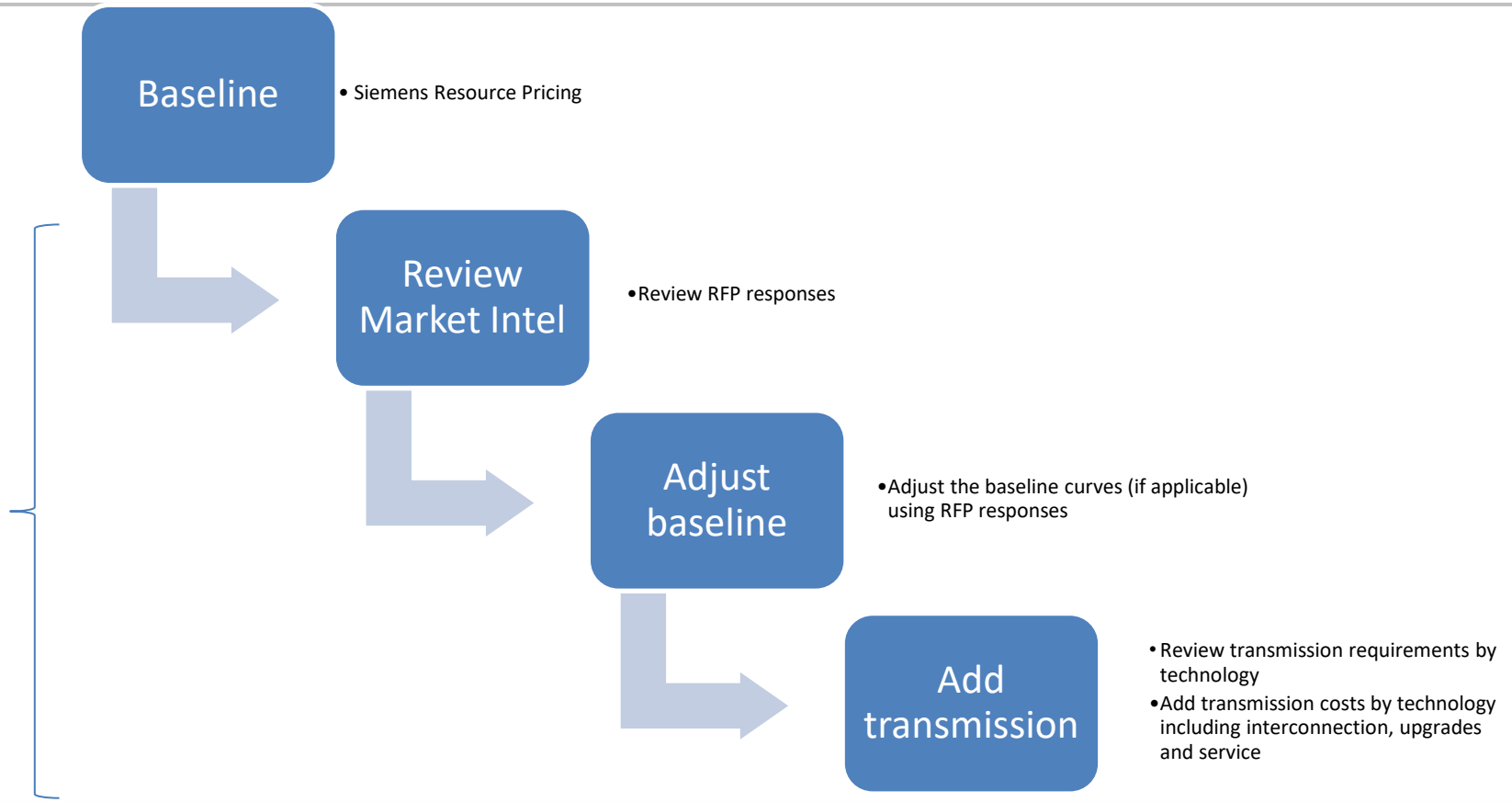
2023 IRP APPLICATION OF SIEMENS FORECASTS

CANDIDATE RESOURCE PRICING

We are here

Steps to be completed



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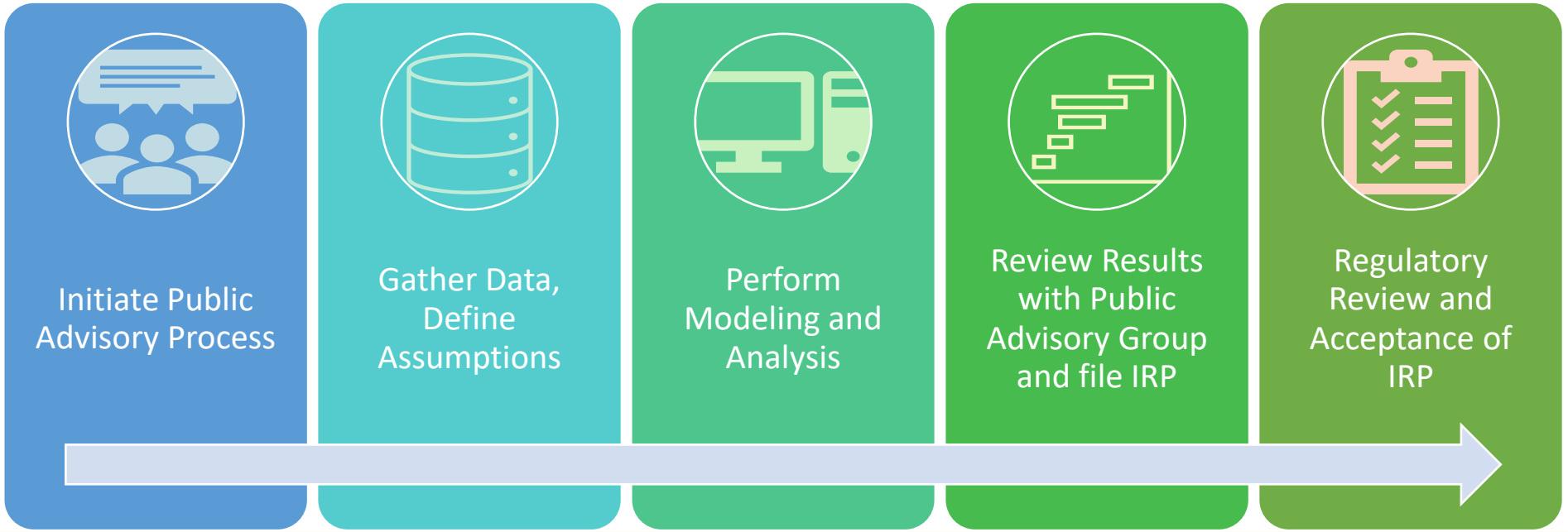
IRP DEVELOPMENT CYCLE

STATUS CHECK

Here is where we are now

Next Phase



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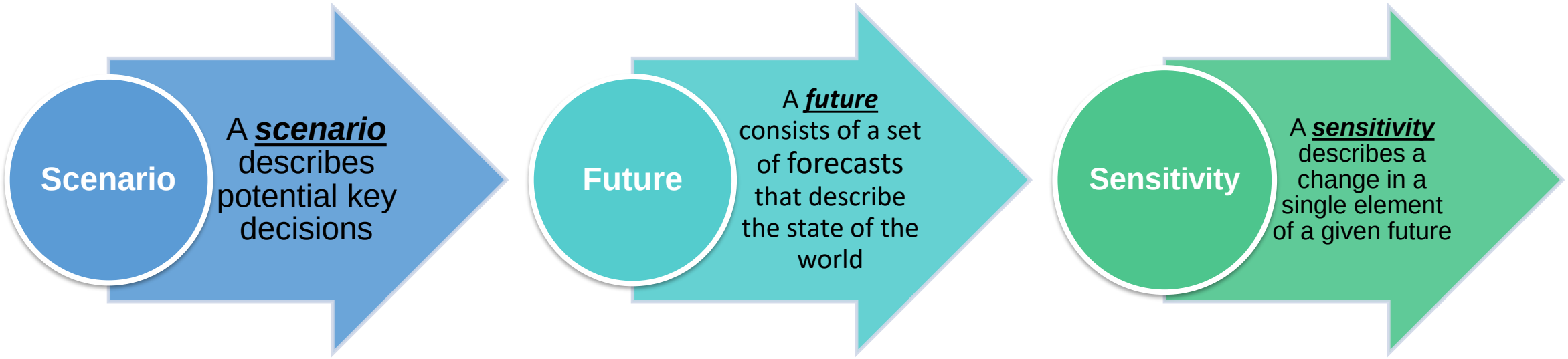
MODELING SCENARIOS

SCENARIO BUILDING – 2023 IRP



Scenarios will allow for IRP to analyze which type of resources or portfolios offer the highest value to customers; it is likely that not all scenarios will need to be evaluated across all futures and sensitivities

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SCENARIO FRAMEWORK

A set of core scenarios that describe key decisions	*Analysis of scenarios under a range of likely futures*	*Stress testing of scenarios under specified futures*	*Evaluation of all scenarios, sensitivities and trends*
Examples: • Addition of long-duration storage • Addition of new transmission line with access to eastern NM wind • Implementation of hydrogen gas	**Examples:** • Current trends & policy • High Economic Growth • Low Economic Grow • Aggressive Environmental Regulation	**Examples:** • Extreme weather (P90 load) • High natural gas prices • Low technology costs • High building electrification • Low carbon costs	**Outcome:** • Develop Statement of Need • Determination of the MCEP • Development of 4-year action plan that supports the MCEP

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NEAR TERM SCHEDULE

FUTURE MEETING TIME & LOCATION

When: November 16, 2022

Topic: Public Advisory Steering Meeting #9: Modeling Inputs #2: Load Forecast/EE Forecast, EE Bundles & Scenarios

Start Time: 9:00 AM

Location: Virtual

When: December 13, 2022

Topic: Public Advisory Steering Meeting #10: Modeling Input #3: Pricing – TOD, Existing System, RFI & Other regulations

Start Time: 9:00 AM

Location: Virtual

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NEXT MEETING

We encourage you to send in your thoughts ahead of time to IRP@pnm.com so that we can summarize them and distribute them for the next meeting. Please have your submissions in by November 11, 2022.

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Thank you