PNM 2023-2042 IRP: Modeling Results Update, Statement of Need, and Action Plan

FACILITATED STAKEHOLDER MEETING

OCTOBER 19, 2023

AGENDA

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1. Stakeholder Capacity Expansion Results
2. Stakeholder Reliability Results
3. Phase 3 Resiliency Results
4. MCEP, Action Plan, and Statement of Need

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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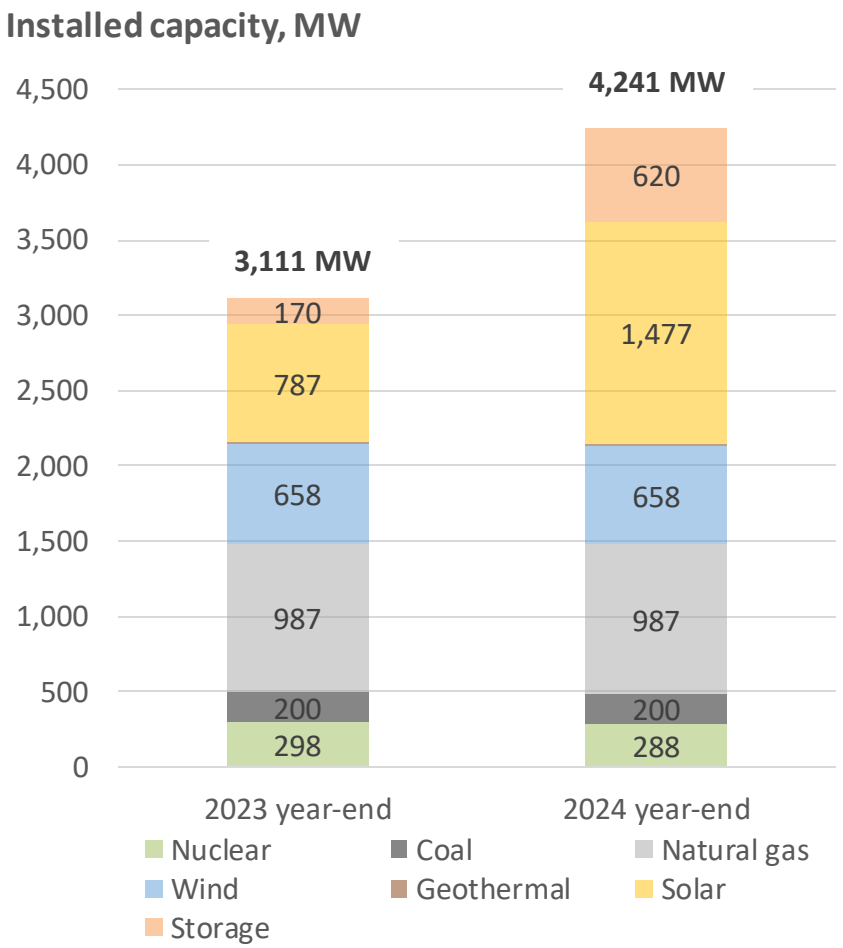
PNM'S EXISTING RESOURCE PORTFOLIO AND NEAR-TERM RESOURCE ADEQUACY

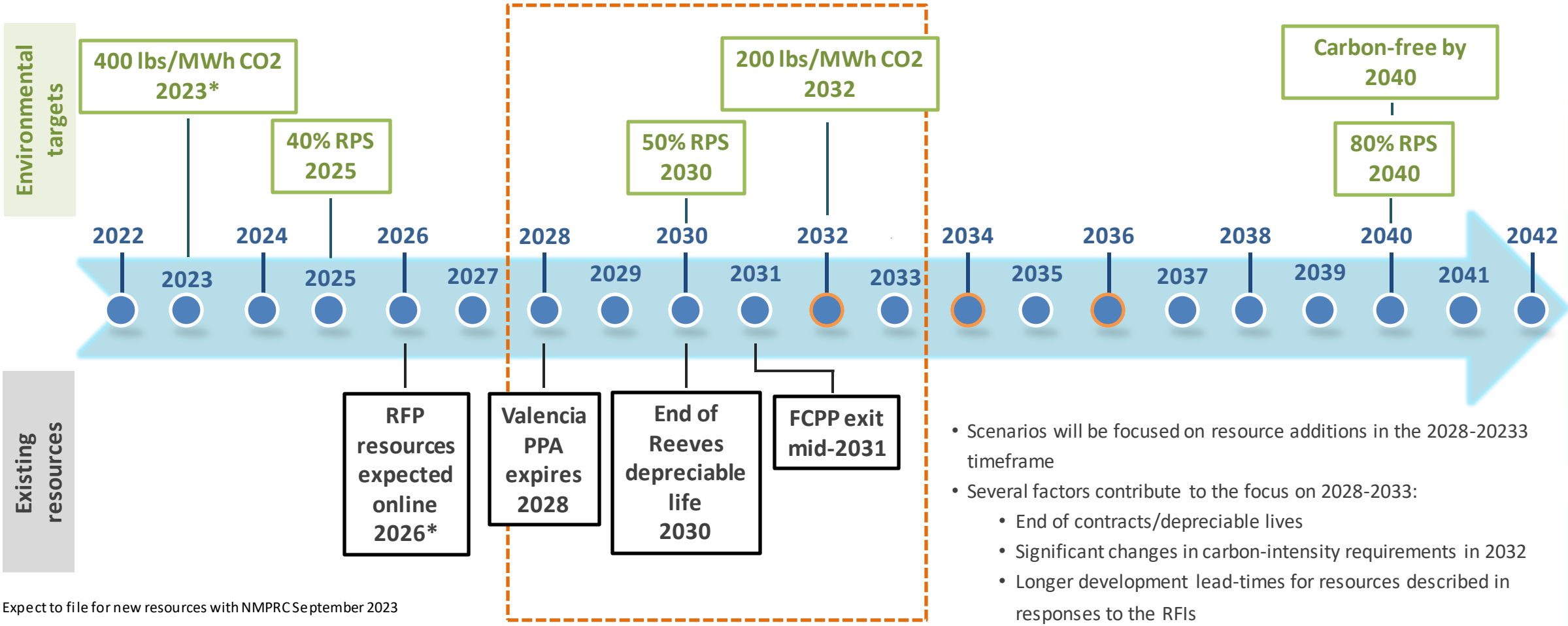


2024 capacity

- **Storage: 620**
- **Solar: 1,477**
- **Wind: 658**
- **Natural Gas: 987**
- **Coal:** 200 MW
- **Nuclear:** 288 MW share of Palo Verde

- Near term additions include 400 MW of solar and 170 MW of storage by the end of 2023
- By year-end 2024, PNM will have added an additional 690 MW of solar and 450 MW of storage
- RFPs for 2026-2028 are currently ongoing

KEY ELEMENTS WITHIN TIMELINE FOR 2023 IRP ANALYSIS POINT TO 2028-2033 AS A CRITICAL PERIOD



- Scenarios will be focused on resource additions in the 2028-20233 timeframe
- Several factors contribute to the focus on 2028-2033:
  - End of contracts/depreciable lives
  - Significant changes in carbon-intensity requirements in 2032
  - Longer development lead-times for resources described in responses to the RFIs

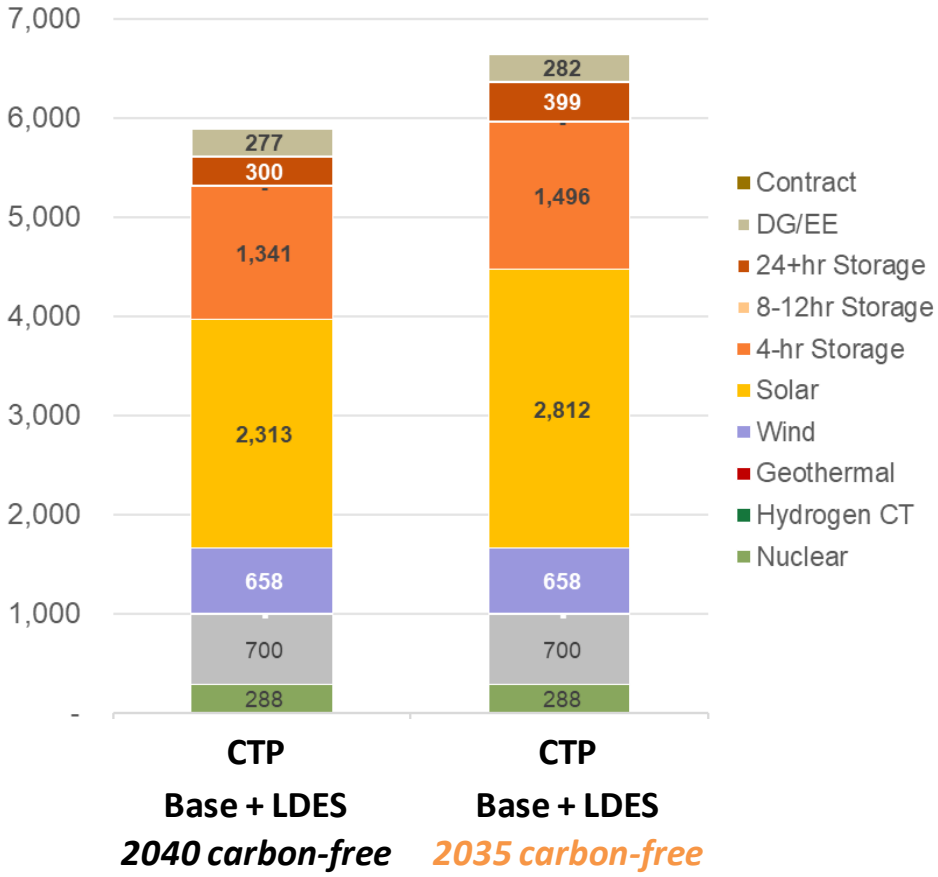
* Expect to file for new resources with NMPRC September 2023

STAKEHOLDER SCENARIO RESULTS

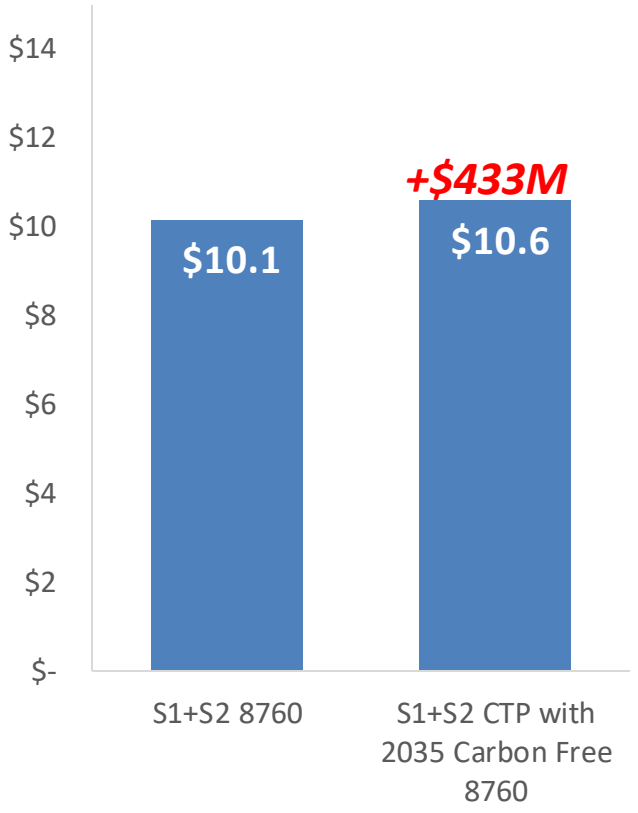
*Carbon-free by 2035**

2040 VS 2035 CARBON-FREE PORTFOLIO RESULTS UNDER CTP

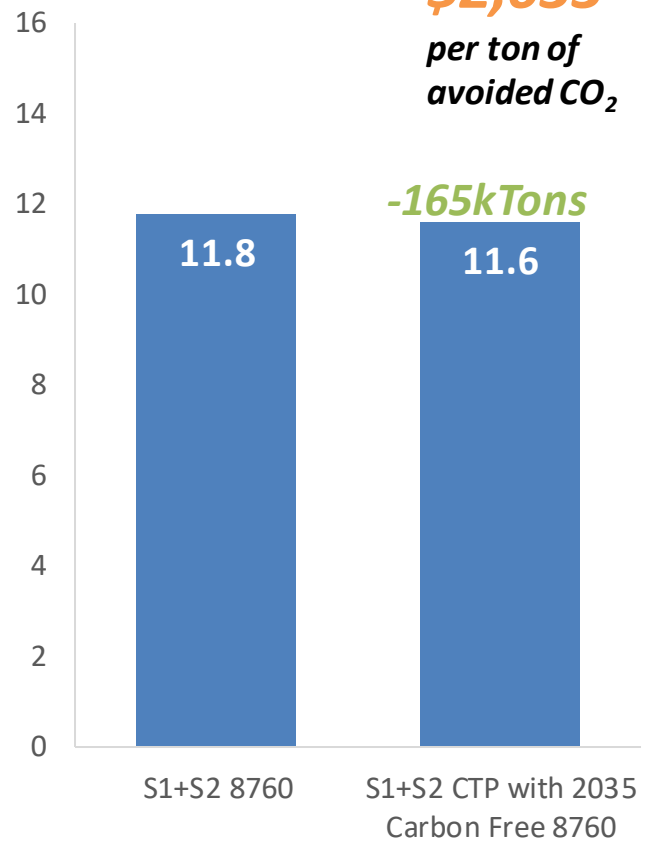
2032 Total Installed Capacity,
MW



Present Value Revenue Requirement,
$B



NPV Carbon Emissions,
MMT CO2



$2,633
per ton of avoided CO_2

-165kTons

KEY TAKEAWAYS

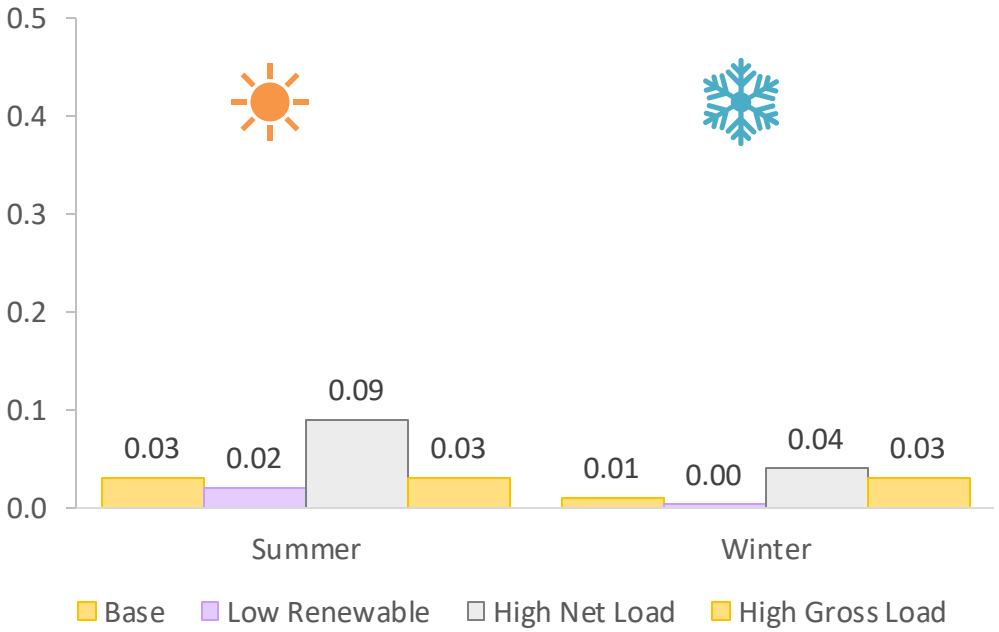
- To evaluate the benefits of achieving 2035 carbon-free vs 2040, we studied the effects under the **Current Trends & Policy (CTP)** case
- ***Achieving carbon-free by 2035 instead of 2040*** would increase costs by $433MM and decreases carbon emissions by 165kTons of CO_2
- ***This means avoiding CO2 at $2,633/ton,*** more than any estimate of the social cost of carbon.

STAKEHOLDER RELIABILTY STUDY RESULTS

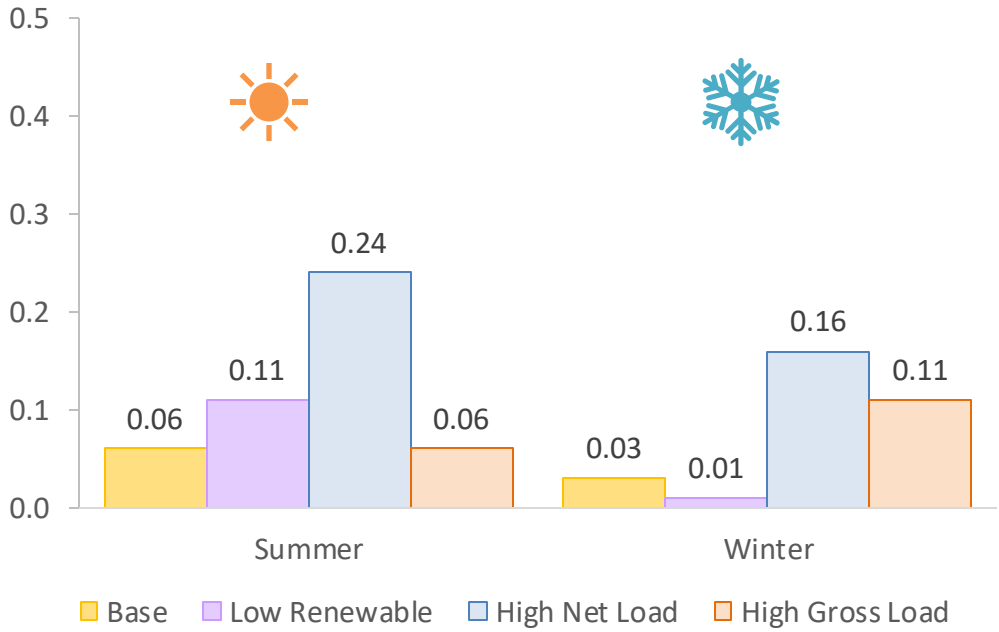
STAKEHOLDERS RELIABILITY SENSITIVITIES: EXTREME WEATHER IN RA (S1 CTP)

This sensitivity aims to quantify the risk associated with PNM's system under different weather scenarios

2032 loss of load expectation,
days per year



2040 loss of load expectation,
days per year



Base
Equal Weighting across all years

Low Renewables
weight 5 years with lowest seasonal renewable energy

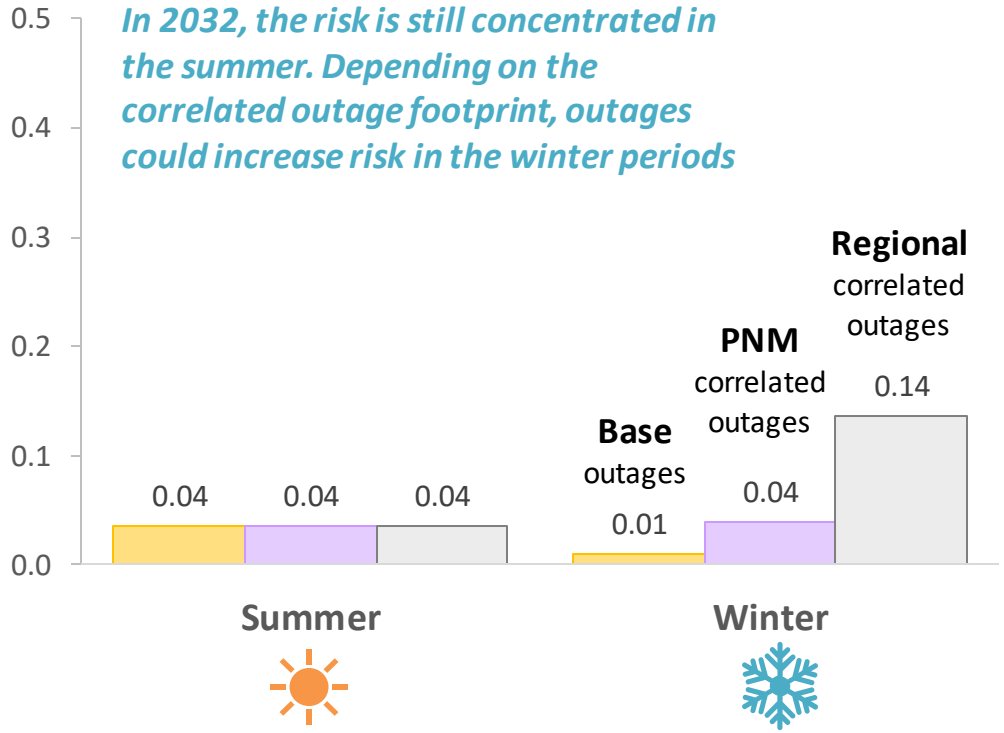
High Net Load
weight 5 years with highest seasonal net load

High Gross Load
weight 5 years with highest gross net load

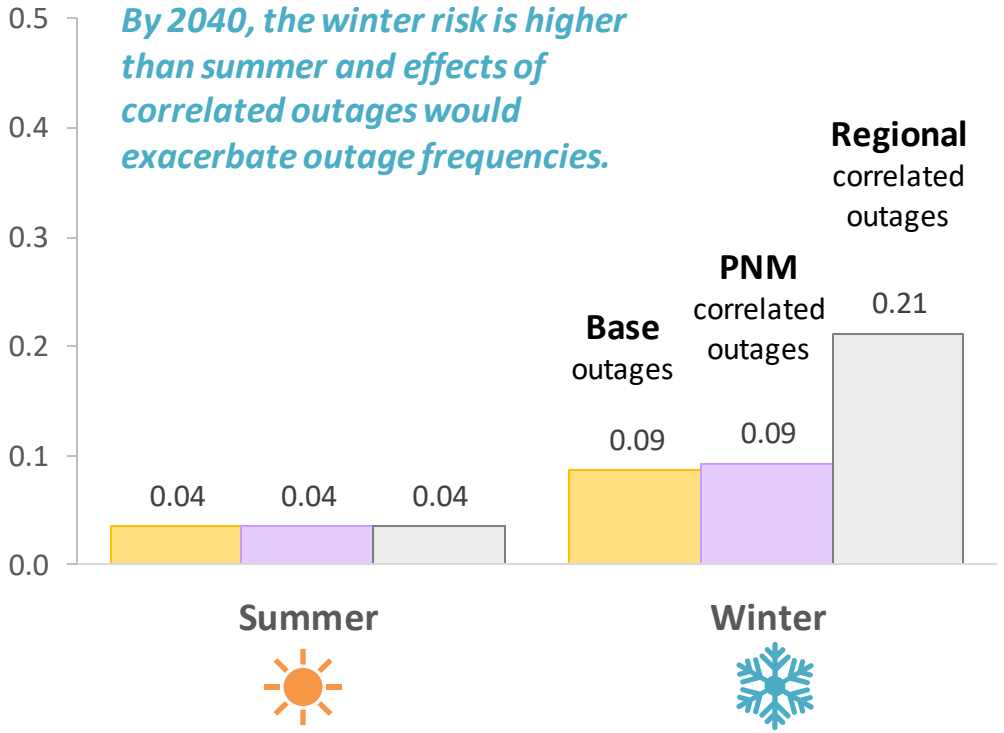
STAKEHOLDERS RELIABILITY SENSITIVITIES: CORRELATED OUTAGES (S3 CTP)

This sensitivity aims to quantify the risk associated with PNM's system under different correlated gas supply outage scenarios

2032 Summer vs Winter Loss of Load Expectation, *days per year*



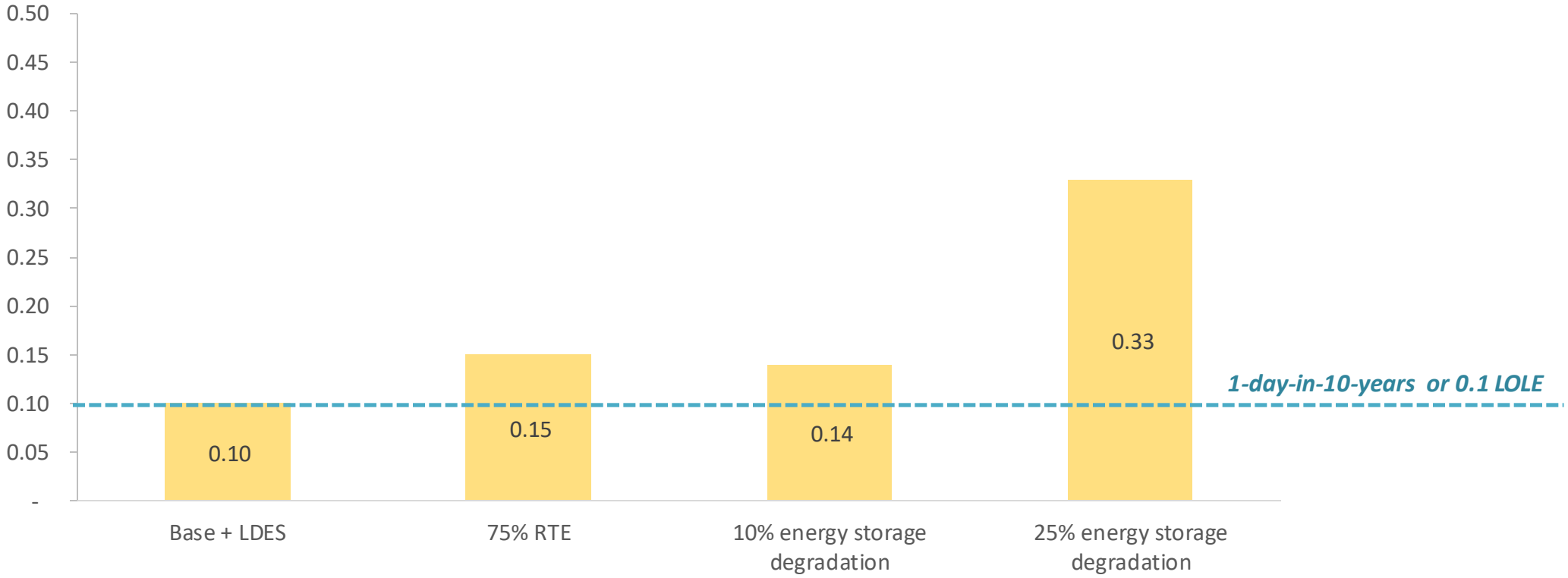
2040 Summer vs Winter Loss of Load Expectation, *days per year*



STAKEHOLDERS RELIABILITY SENSITIVITIES: BATTERY DEGRADATION SENSITIVITIES (S1)

By 2040, storage will make up a significant portion of our portfolio. This sensitivity aims to quantify the risks associated with battery degradation if PNM were not to augment storage capacity.

2040 loss of load expectation,
days per year



PHASE 3 RESILIENCY STUDY RESULTS

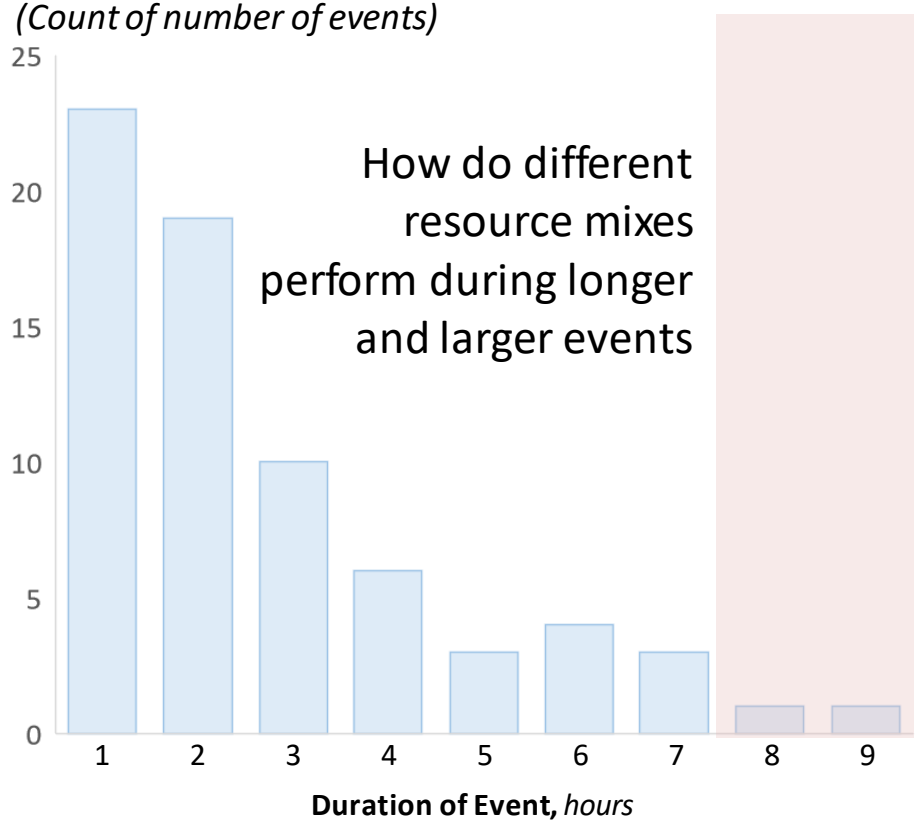
RESILIENCE STUDY BACKGROUND

- Like our reliability study, this study examines each portfolio's reliability performance

- The difference here is the **focus on the portfolio performance during the extreme weather events**

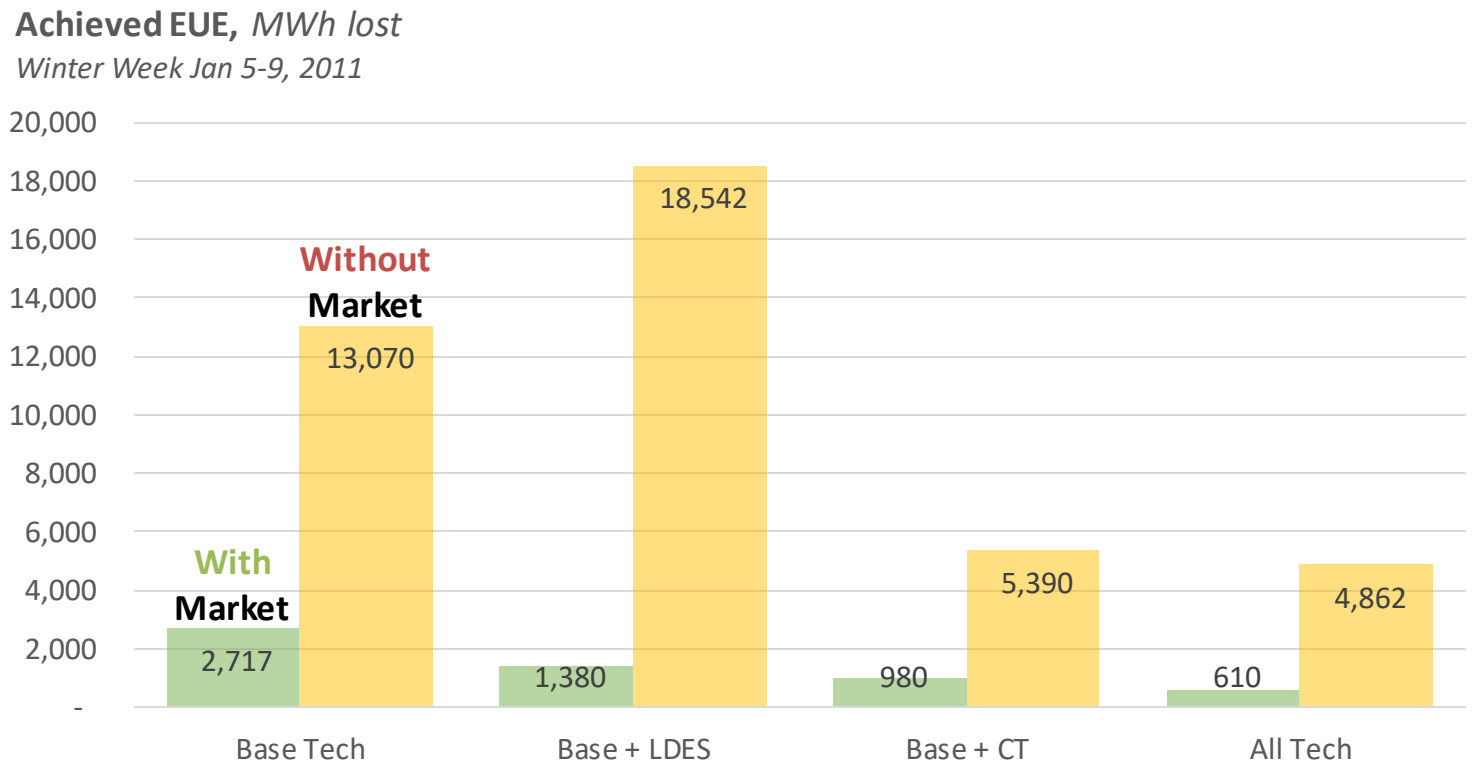
- **General Steps to Analysis:**
  - Start with 0.1 LOLE
  - Tested summer and winter stress week
  - Calculated EUE across week
  - For scenarios that performed the worst, test incremental resources to meet the best performer
  - Calculate the incremental resource need and cost

Frequency of Loss of Load Events at Different Durations
2032 Base Technologies Scenario
(Count of number of events)



WINTER RESILIENCE STUDY RESULTS AND KEY TAKEAWAYS

- **Winter events are longer and larger than summer events**
  - Typically coincides during extended periods of high load and low renewable
- **Portfolio with firm generation are more resilient**
- **Future IRPs should further investigate LDES's resilience value**
- **Having access to the regional markets mitigates loss load events dramatically**
- **To normalize EUE between S1 & S3, S1 would need ~1,150 NMW of 4-Hr BESS additions**



Statement of Need + Action Plan

STATEMENT OF NEED

- Established by rule of the New Mexico Public Regulation Commission (NMPRC), and in accordance with New Mexico Administrative Code (NMAC) 17.7.3.10
- *The statement of need is a description and **explanation of the amount and the types of new resources**, including the technical characteristics of any proposed new resources, to be procured, expressed in terms of **energy or capacity**, necessary to reliably meet an identified level of **electricity demand** in the planning horizon and to effect state policies.*
- *The statement of need shall not solely be based on projections of peak load. The need may be attributed to, but not limited by,*
  - *incremental load growth,*
  - *renewable energy customer programs,*
  - *or replacement of existing resources,*
- *[The Statement of Need] may be defined in terms of:*
  - *meeting net capacity;*
  - *providing reliability reserves;*
  - *securing flexible resources;*
  - *securing demand-side resources;*
  - *securing renewable energy;*
  - *expanding or modifying transmission or distribution grids; or,*
  - *securing energy storage as required to comply with resource requirements established by statute or commission decisions.*

STATEMENT OF NEED

We'll now review the full Statement of Need document

ACTION PLAN

Governed by rule of the NMPRC, and in accordance with NMAC 17.7.3.11

The utility's action plan shall:

- *detail the specific actions the utility shall take to implement the IRP spanning a **three-year period** following the filing of the utility's IRP;*
- *detail the **specific actions** the utility shall take to develop any resource solicitations or contracting activities to **fulfill the statement of need** as accepted by the commission; and*
- *include a **status report** of the specific actions contained in the previous action plan.*

The utility shall update the commission by filing two reports describing the utility's implementation of the action plan. These reports shall be filed in the existing IRP docket one year after the filing of the IRP, and two years after the filing of the IRP, respectively.

An action plan does not replace or supplant any requirements for applications for approval of resource additions set forth in New Mexico law or commission regulations.

The utility shall promptly notify the commission and participants of material events that would have the effect of changing the results of the utility's action plan had those events been recognized when the action plan was developed.

In accepting the action plan, the commission shall take into consideration contractual obligations as between the utility and any regional transmission organizations or balancing authorities of which the utility is a member.

ACTION PLAN

We'll now review the complete Action Plan

Appendix

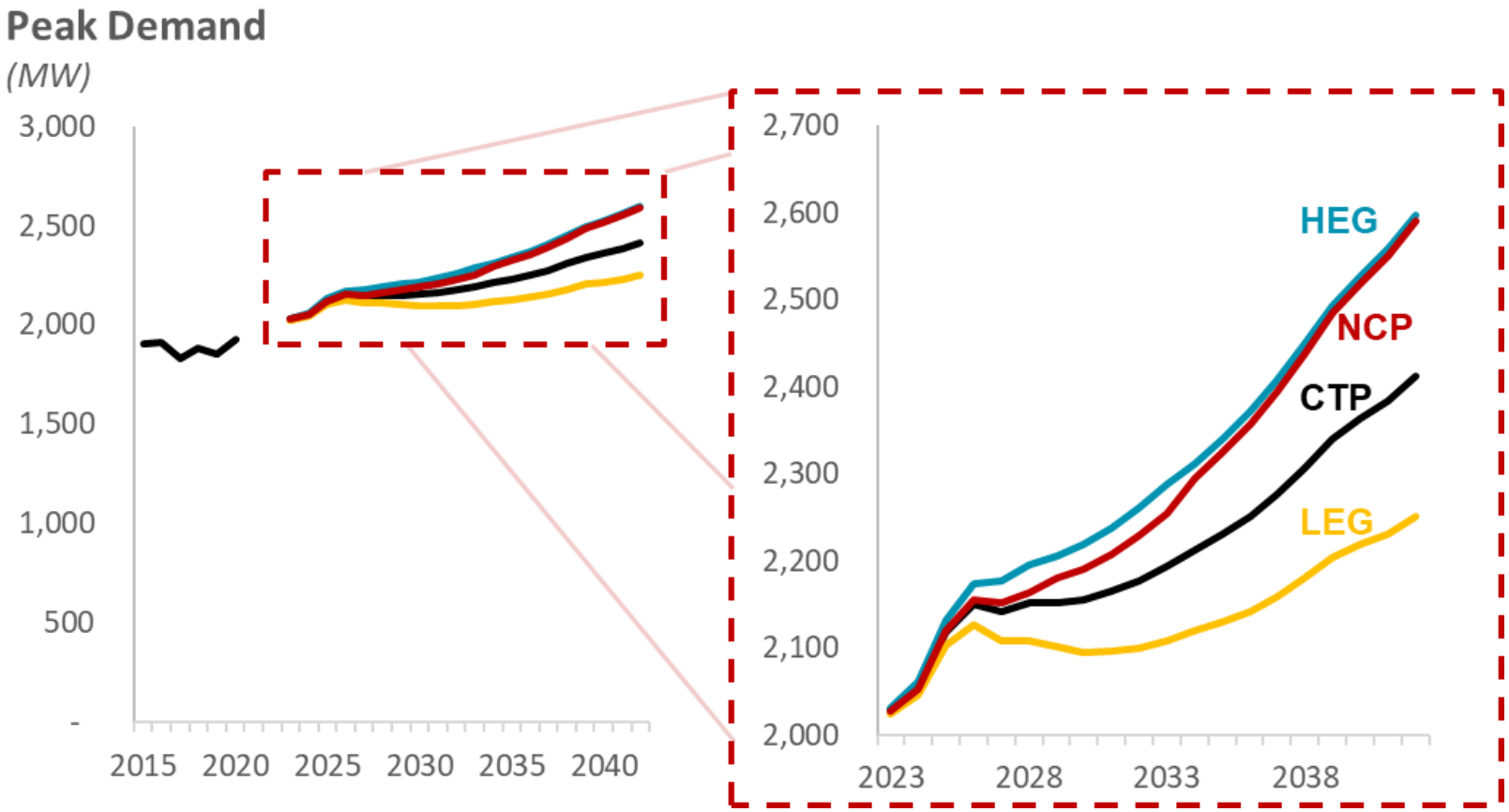
This table shows the inputs assumption differences between comparable Phase 3 scenarios to the carbon-free scenarios

ASSUMPTIONS SCENARIO COMPARISON: CARBON-FREE BY 2030 AND 2035

	Phase 3 Scenarios		Stakeholder Scenarios	
	S1+S2: Current Trends and Policy (CTP)	S1+S2: National Carbon Policy (NCP)	Carbon Free By 2035	Carbon Free By 2030
Scenario Comparison	Base Tech + LDES	Base Tech + LDES	Base Tech + LDES + Early Wind	Base Tech + LDES + Early Wind
Early Wind	No	No	Yes	Yes
By when does PNM achieve carbon-free?	2040	2035	2035	2030
Load Assumption	Mid + Limited Econ Growth	High + Stable Econ Forecast	High + Stable Econ Forecast	High + Stable Econ Forecast
Electrification	Mid	High BTM PV + EV + Building Elec	High BTM PV + EV + Building Elec	High BTM PV + EV + Building Elec
Carbon and Gas Price Forecast	Mid	High / High	High / High	High / High
Tech Cost Forecast	Mid	Low	Low	Low

COMMENT:
These 2 CO2 free stakeholder scenarios add up to 800 MW of wind prior to 2033 (which is the first year the CTP and S1+S2 NCP cases can begin adding)

LOAD GROWTH: CURRENT TRENDS & POLICY VS NATIONAL CARBON POLICY



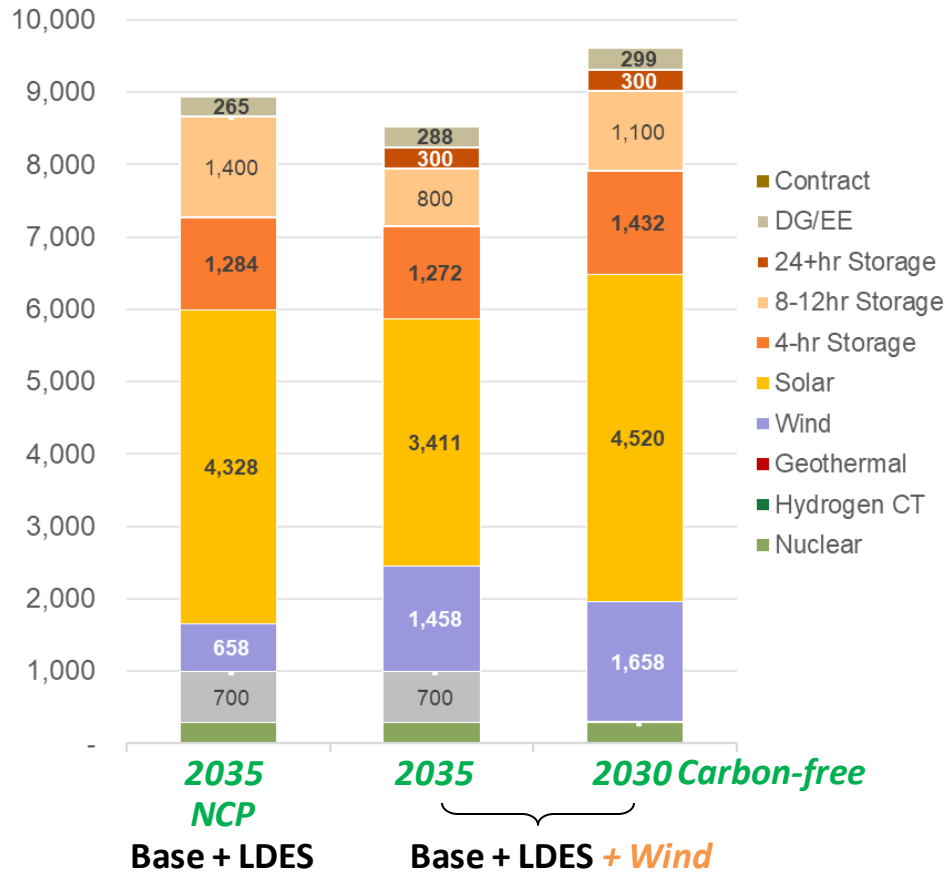
Between today and tomorrow, our peak demand is **expected** to grow from **~2,000MW to 2,400 MWs, or 20% growth**

If our system experiences **aggressive electrification and stable economic growth**, that peak demand could grow to **2,600MW, or 30% growth over 20 years**

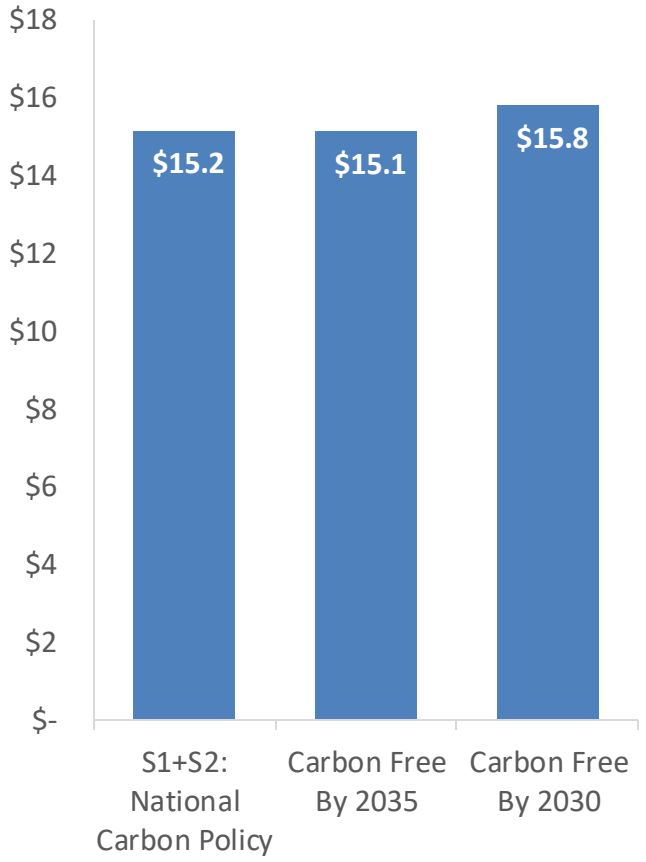
To meet this demand, we'll need to procure a mixture of low-cost carbon-free resources, dynamic balancing resources, and firm resources.

2040 VS 2035 VS 2030: CARBON-FREE PORTFOLIO RESULTS

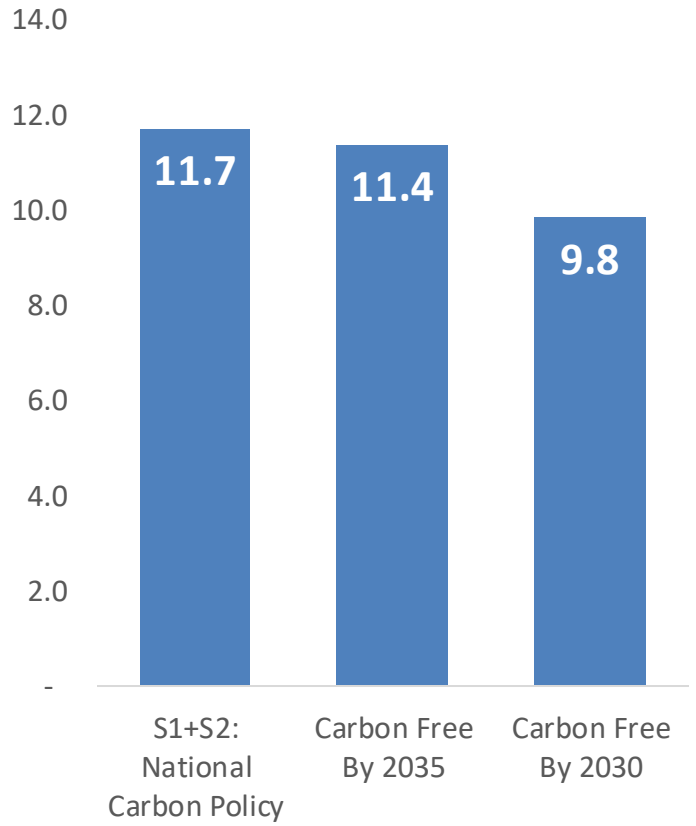
2032 Total Installed Capacity,
MW



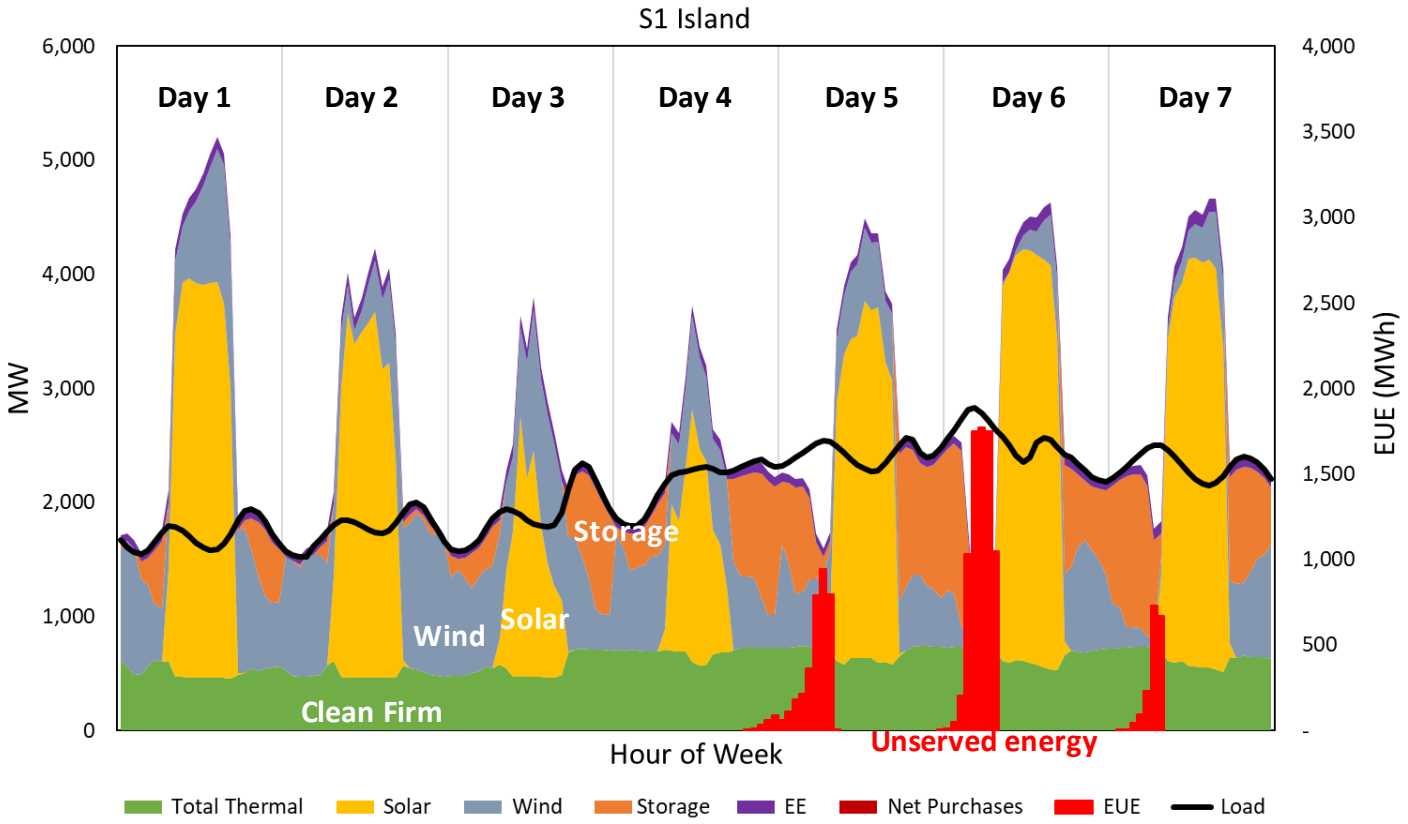
Present Value of Rev Requirement,
$B



Present Value of Total CO2 Emissions
MMTCO2



SCENARIO 1: BASE TECH ONLY - WHAT'S DRIVING THESE EVENTS?



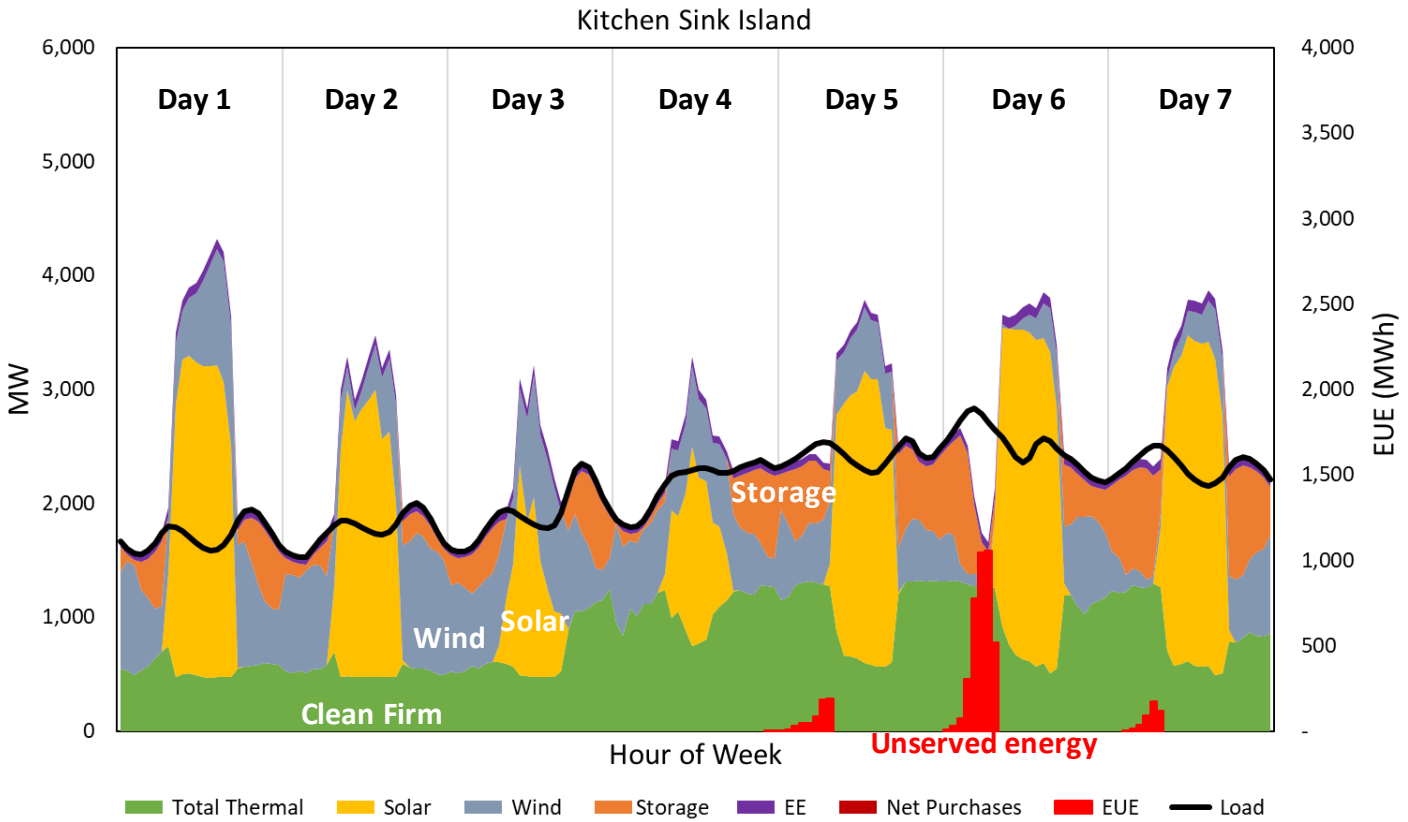
Day 1 & 2: renewables and storage are more than capable of meeting all load

Day 3 & 4: consecutive low renewable generation day leads to reduction of storage charge, but no loss of load.

Day 5-7: sustained high demand and lack of renewable energy and storage leads to consecutive loss of load events

This Winter event experiences ***13,070 MWh***
Lack of energy leads to large short fall events renewables

SCENARIO 3: ALL TECH - WHAT'S DRIVING THESE EVENTS?



Day 1-3: renewables and storage are more than capable of meeting all load

Day 4: Unlike Scenario 1, firm generation increases to meet morning and evening loads

Day 5-7: sustained high demand and lack of renewable energy and storage leads to consecutive loss of load events

This Winter event experiences ***4,860 MWh***

Lack of energy leads to large short fall events renewables