TRANSFORMING THE ENERGY LANDSCAPE

The Electric Company®

El Paso Electric

El Paso Electric Company
2025 New Mexico Integrated Resource Plan

Stakeholder Office Hour
July 16, 2025

Summary of Modeling Results

New Mexico Capacity & Energy Need

1. EPE's New Mexico capacity need by load forecast
    i. Base Load Forecast: **254 MW** by 2030, **537 MW** by 2045
    ii. High Electrification: **257 MW** by 2030, **713 MW** by 2045
    iii. Additional Large-Load Customers: **594 MW** by 2030, **1,692 MW** by 2045

2. EPE's RPS need by load forecast
    i. Base Load Forecast: **412 GWh** by 2030, **2,300 GWh** by 2045
    ii. High Electrification: **423 GWh** by 2030, **3,048 GWh** by 2045
    iii. Additional Large-Load Customers: **1,663 GWh** by 2030, **10,919 GWh** by 2045

Resource Need

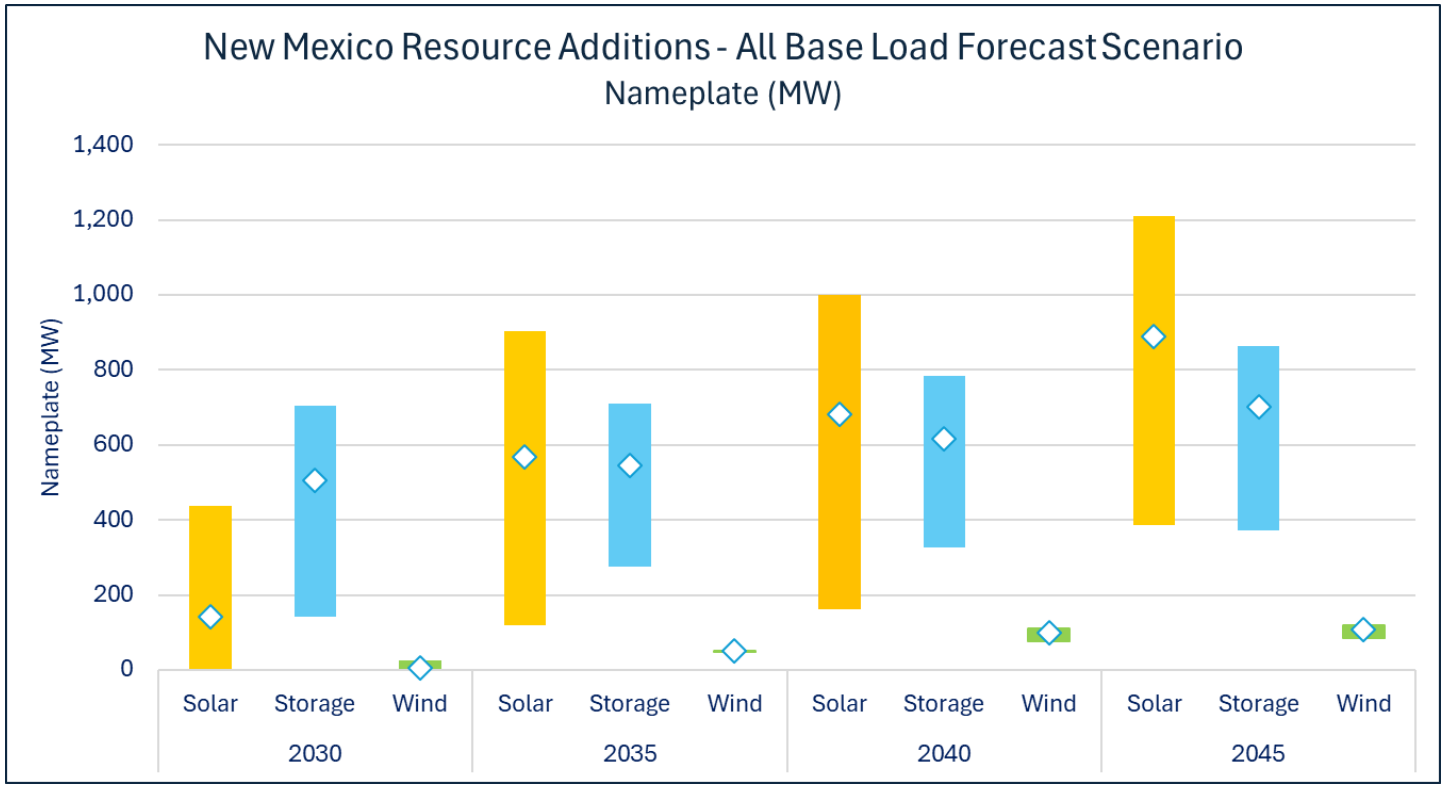
1. To meet the base load forecast EPE will need to procure between:
    1. **420 MW** and **902 MW** of new utility-scale renewables and storage by **2030,** increasing to,
    2. **1,202 MW** and **2,141 MW** of new utility-scale renewables and storage by **2045**

2. The total 2045 resource need increases by **653 MW** under the high electrification forecast

3. Under the large-load forecast EPE will need to procure up to:
    1. **1,967 MW** of new utility-scale renewables and storage by 2030, increasing to,
    2. **6,846 MW** on new utility-scale renewables and storage by 2045

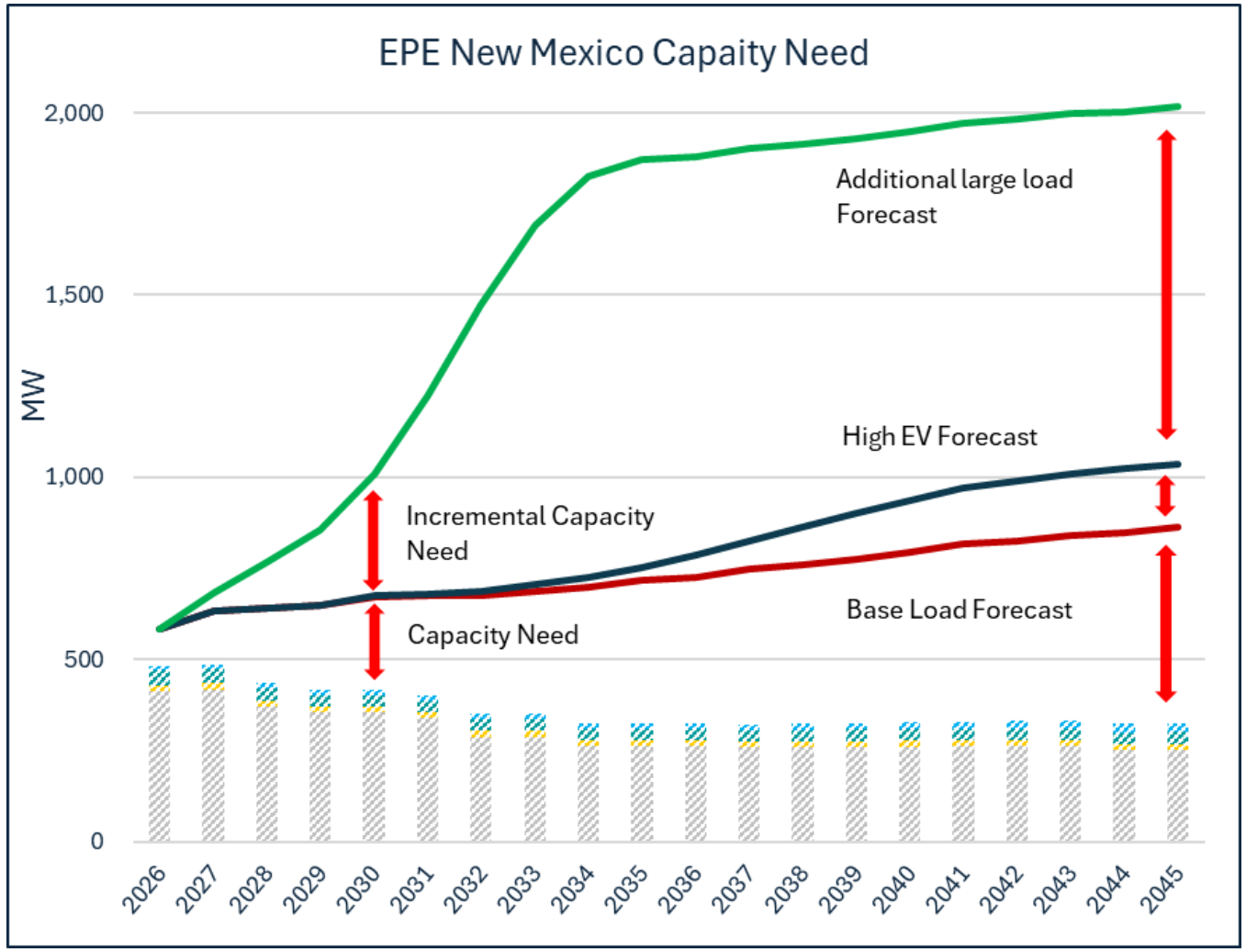
4. Overbuilding solar and 4-hour battery energy storage under all load forecasts can be costly - alternatives to existing commercially available supply-side resources studied as part of the IRP include:
    1. Demand-side alternatives (e.g., DER, DR, TOU) – Subject to customer participation and program cost
    2. Increased market capability with the Southwest Power Pool
    3. Emerging technology (e.g., long duration energy storage)

New Mexico Resource Additions
Base Load Forecast Scenarios - Nameplate (MW)



Group by PELXOS Categories				
Year	Technology	Min	Max	Avg
2030	Solar	0	437	143
	Storage	142	705	505
	Wind	0	25	7
2035	Solar	119	903	567
	Storage	276	710	547
	Wind	49	52	50
2040	Solar	162	1001	682
	Storage	328	784	617
	Wind	78	112	99
2045	Solar	387	1209	888
	Storage	372	863	701
	Wind	85	120	110

Load Forecast Slide



Capacity Need:

1. Under the base forecast, EPE has a New Mexico capacity need of **254 MW** in 2030 increasing to **537 MW** in 2045

2. Under the high electrification forecast, EPE has a New Mexico capacity need of **257 MW** in 2030 increasing to **713 MW** in 2045

3. Under the additional large load customer forecast, EPE has a New Mexico capacity need of **594 MW** in 2030, increasing to **1,692 MW** in 2045

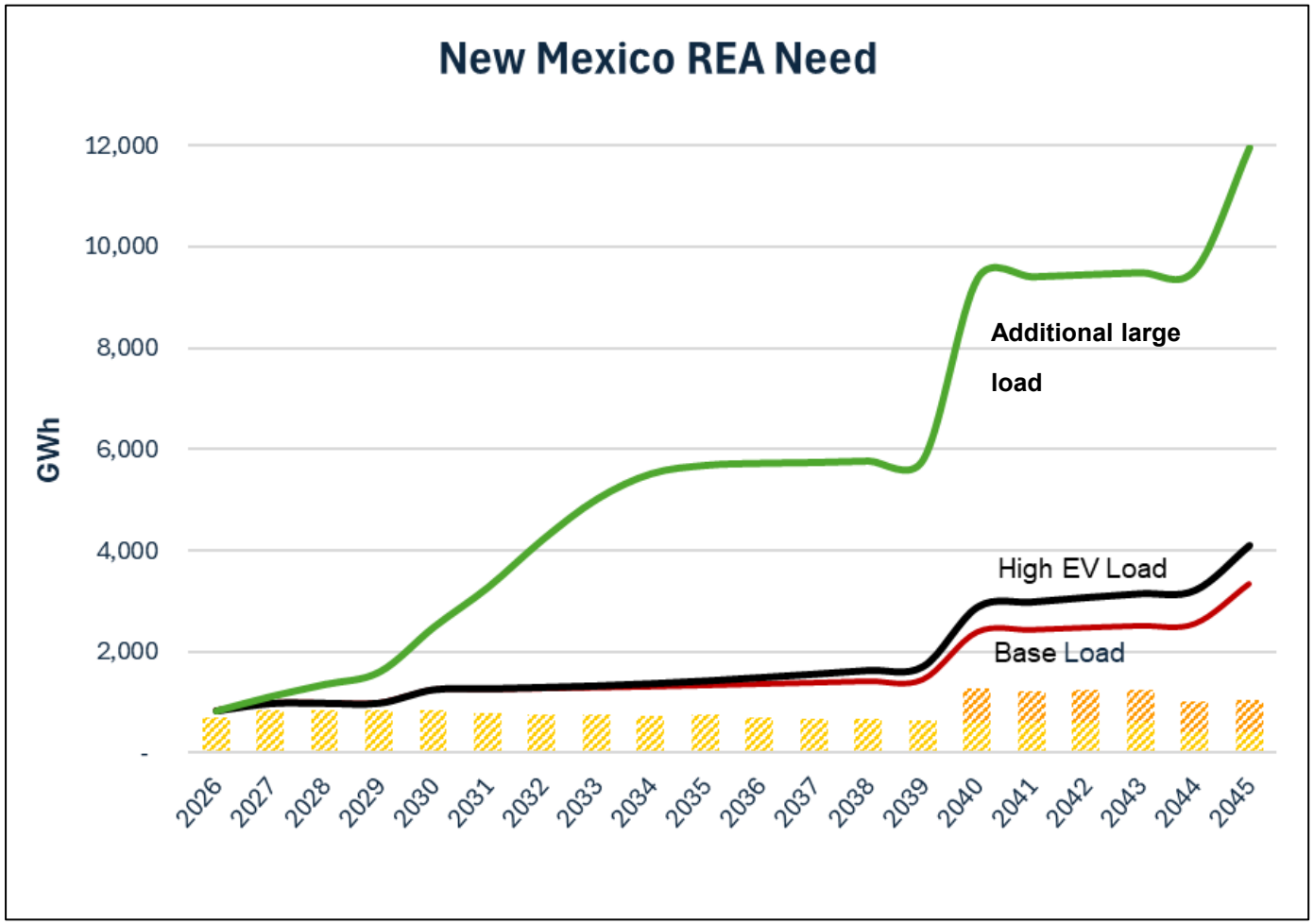
RPS NEED

Energy Need:

1. Under the base forecast, EPE has a RPS need of **412 GWh** in 2030 increasing to **2,301 GWh** in 2045

2. Under the high electrification forecast, EPE has a RPS need of **423 GWh** in 2030 increasing to **3,048 GWh** in 2045

3. Under the additional large load customer forecast, EPE has a New Mexico capacity need of **1,663 GWh** in 2030, increasing to **10,919 GWh** in 2045

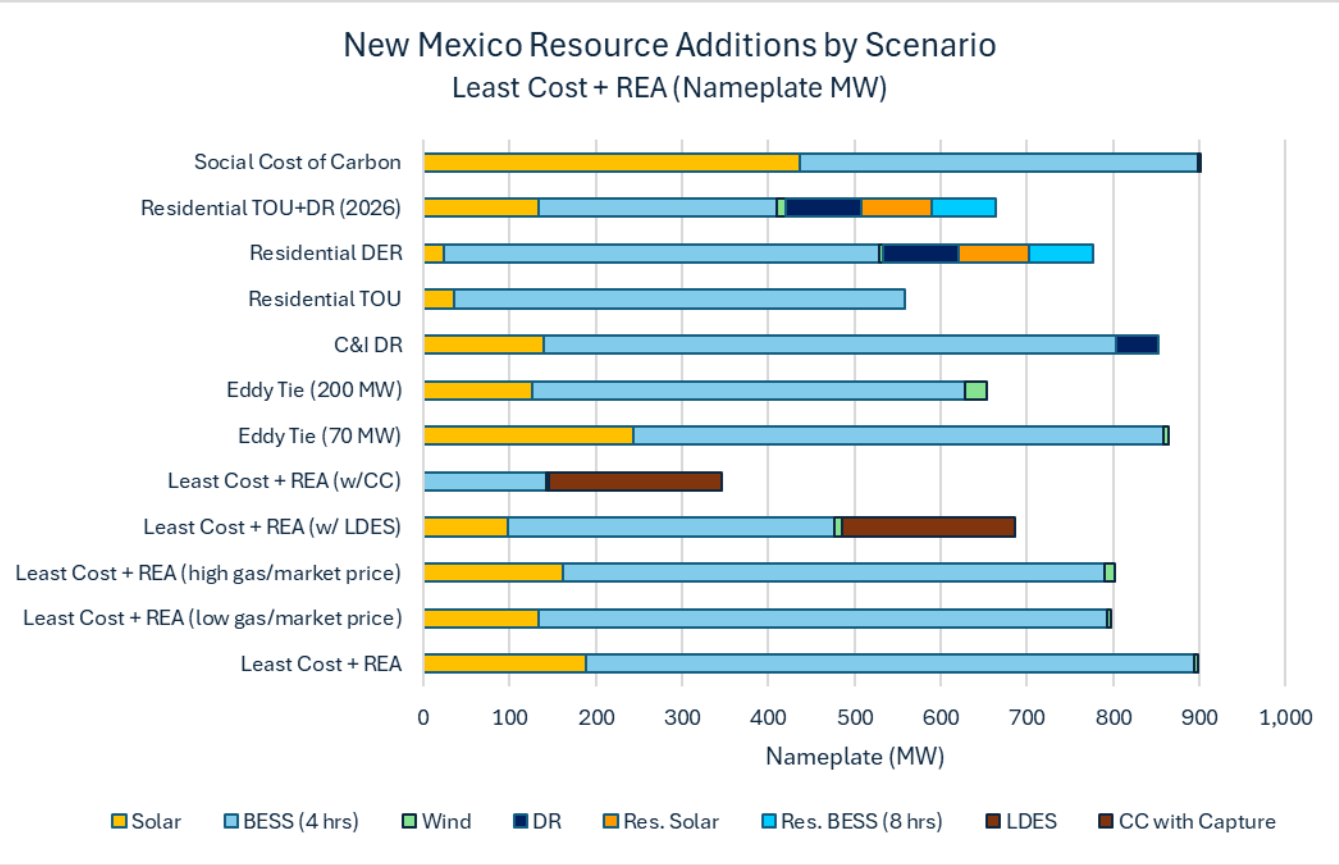


New Mexico Resource Build 2030 – By Scenario
Nameplate (MW)

		Supply-Side Utility Scale			Demand Side Solutions			Emerging Tech	
	Scenario	Solar	BESS (4 hrs)	Wind	DR	Res. Solar	Res. BESS (8 hrs)	LDES	CC with Capture
Base Load Forecast	Least Cost + REA	189	705	4	-	-	-	-	-
	Least Cost + REA (low gas/market price)	134	659	4	-	-	-	-	-
	Least Cost + REA (high gas/market price)	161	629	12	-	-	-	-	-
	Least Cost + REA (w/ LDES)	98	379	9	-	-	-	200	-
	Least Cost + REA (w/CC)	-	142	4	-	-	-	-	200
	Eddy Tie (70 MW)	244	614	7	-	-	-	-	-
	Eddy Tie (200 MW)	126	502	25	-	-	-	-	-
	C&I DR	139	664	-	50	-	-	-	-
	Residential TOU	35	523	-	-	-	-	-	-
	Residential DER	24	505	4	88	81	75	-	-
	Residential TOU+DR (2026)	134	276	10	88	81	75	-	-
	Social Cost of Carbon	437	461	4	-	-	-	-	-
Least Cost + REA	Base Load Forecast	189	705	4	-	-	-	-	-
	High Electrification	177	595	16	-	-	-	-	-
	Additional Large-Load Customers *	859	1,051	57	-	-	-	-	-

*Annual build limitations were removed to solve the Additional Large-Load Customers

New Mexico Resource Build 2030 – By Scenario
Base Load Forecast - Nameplate (MW)



Resource Build:

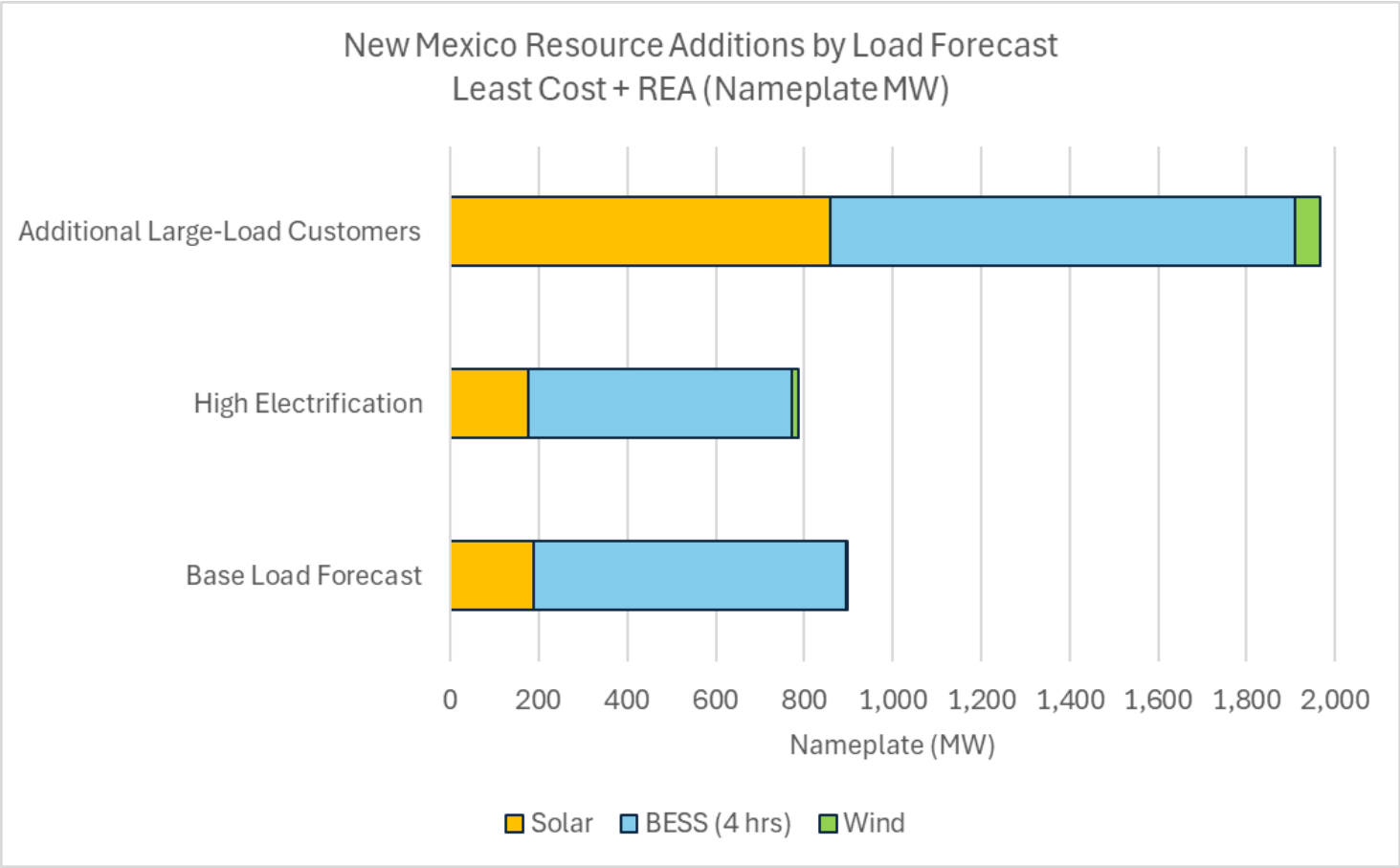
1. All scenario (exc. emerging tech) include between 420 MW and 902 MW of new solar, 4-hour BESS, and wind

2. A continued build-out of utility-scale solar generation:
   - ✓ 11 out of 12 scenarios include new solar
   - ✓ Ranging from 24 MW to 437 MW

3. A need for dispatchable resources (“BESS”) to maintain system reliability:
   - ✓ All scenarios include new 4-hour BESS
   - ✓ Ranging from 142 MW to 705 MW

4. Wind is only selected in minor quantities, if at all

New Mexico Resource Build 2030 – By Load Forecast
Nameplate (MW)



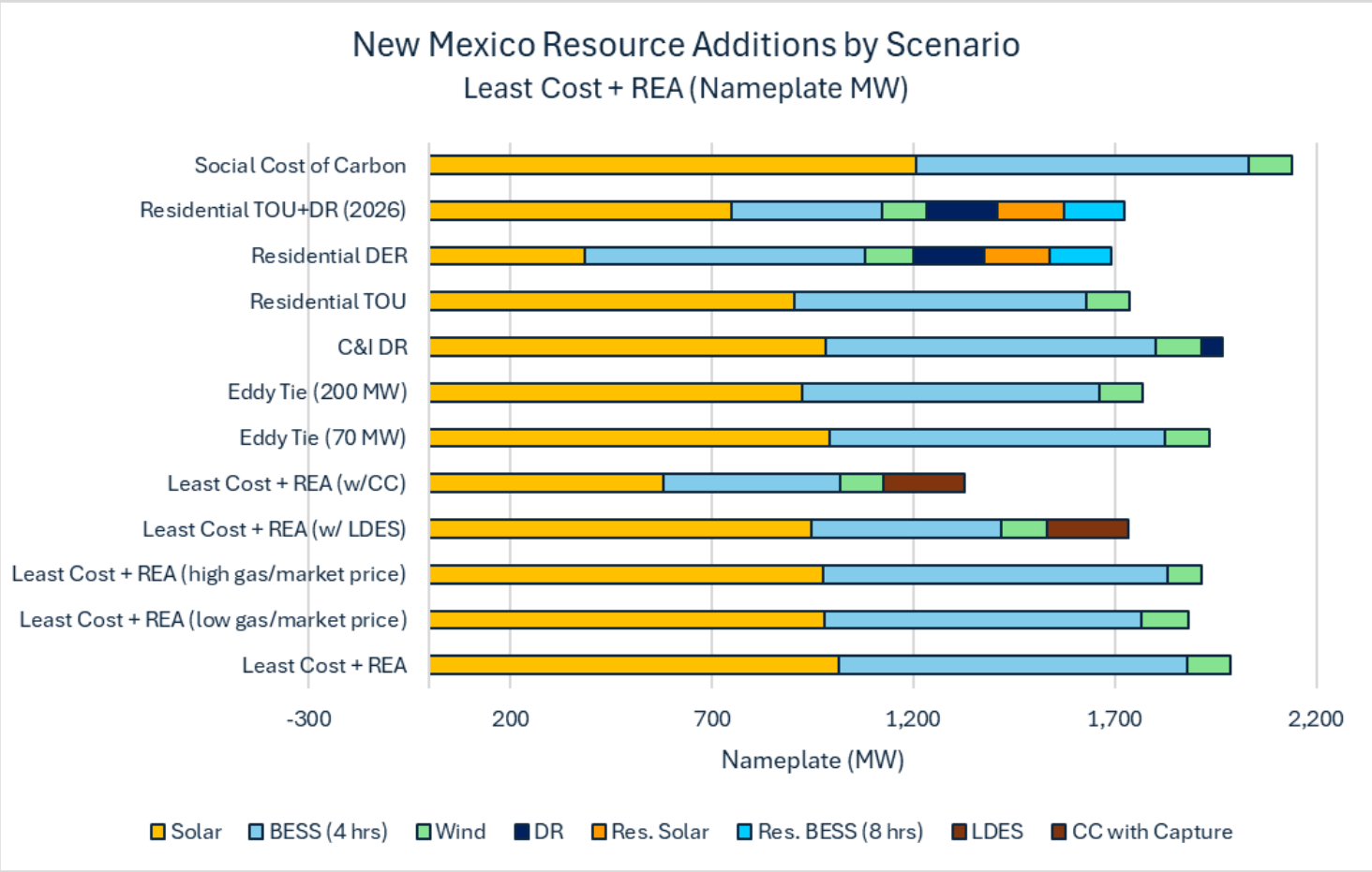
- In the near-term the resource build under the base load forecast and high electrification forecast is similar….
- Under the additional Large-Load Customer scenario there's a significant need for additional solar and storage

New Mexico Resource Build 2045 – By Scenario
Nameplate (MW)

		Supply-Side Utility Scale			Demand Side Solutions			Emerging Tech	
	Scenario	Solar	BESS (4 hrs)	Wind	DR	Res. Solar	Res. BESS (8 hrs)	LDES	CC with Capture
Base Load Forecast	Least Cost + REA	1,016	863	108	-	-	-	-	-
	Least Cost + REA (low gas/market price)	981	784	119	-	-	-	-	-
	Least Cost + REA (high gas/market price)	978	854	85	-	-	-	-	-
	Least Cost + REA (w/ LDES)	949	471	113	-	-	-	200	-
	Least Cost + REA (w/CC)	581	438	108	-	-	-	-	200
	Eddy Tie (70 MW)	993	831	110	-	-	-	-	-
	Eddy Tie (200 MW)	924	737	109	-	-	-	-	-
	C&I DR	984	819	113	50	-	-	-	-
	Residential TOU	904	726	108	-	-	-	-	-
	Residential DER	387	695	120	175	163	150	-	-
	Residential TOU+DR (2026)	750	372	113	175	163	150	-	-
	Social Cost of Carbon	1,209	824	108	-	-	-	-	-
Least Cost + REA	Base Load Forecast	1,016	863	108	-	-	-	-	-
	High Electrification	1,251	1,307	82	-	-	-	-	-
	Additional Large-Load Customers *	3,489	3,267	90	-	-	-	-	-

*Annual build limitations were removed to solve the Additional Large-Load Customers

New Mexico Resource Build 2045 – By Scenario
Nameplate (MW)



Resource Need:

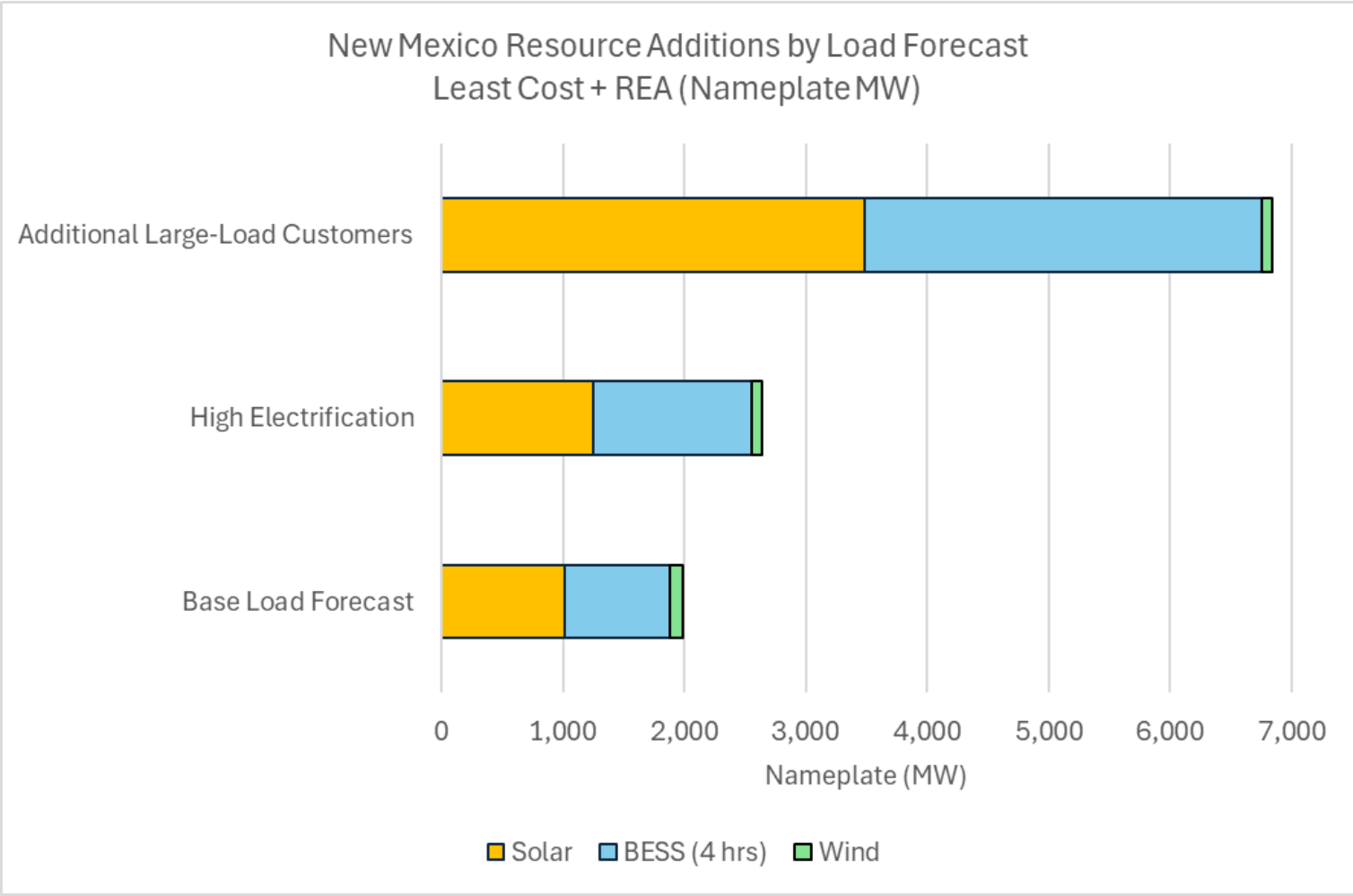
1. All scenarios (exc. emerging tech) include between 1,202 MW and 2,141 MW of new solar, 4-hour BESS, and wind

2. A continued build-out of utility-scale solar generation:
   - ✓ All scenarios include new solar
   - ✓ Ranging from 387 to 1,209 MW

3. A need for dispatchable resources ("BESS") to maintain system reliability:
   - ✓ All scenarios include new 4-hour BESS
   - ✓ Ranging from 372 to 863 MW

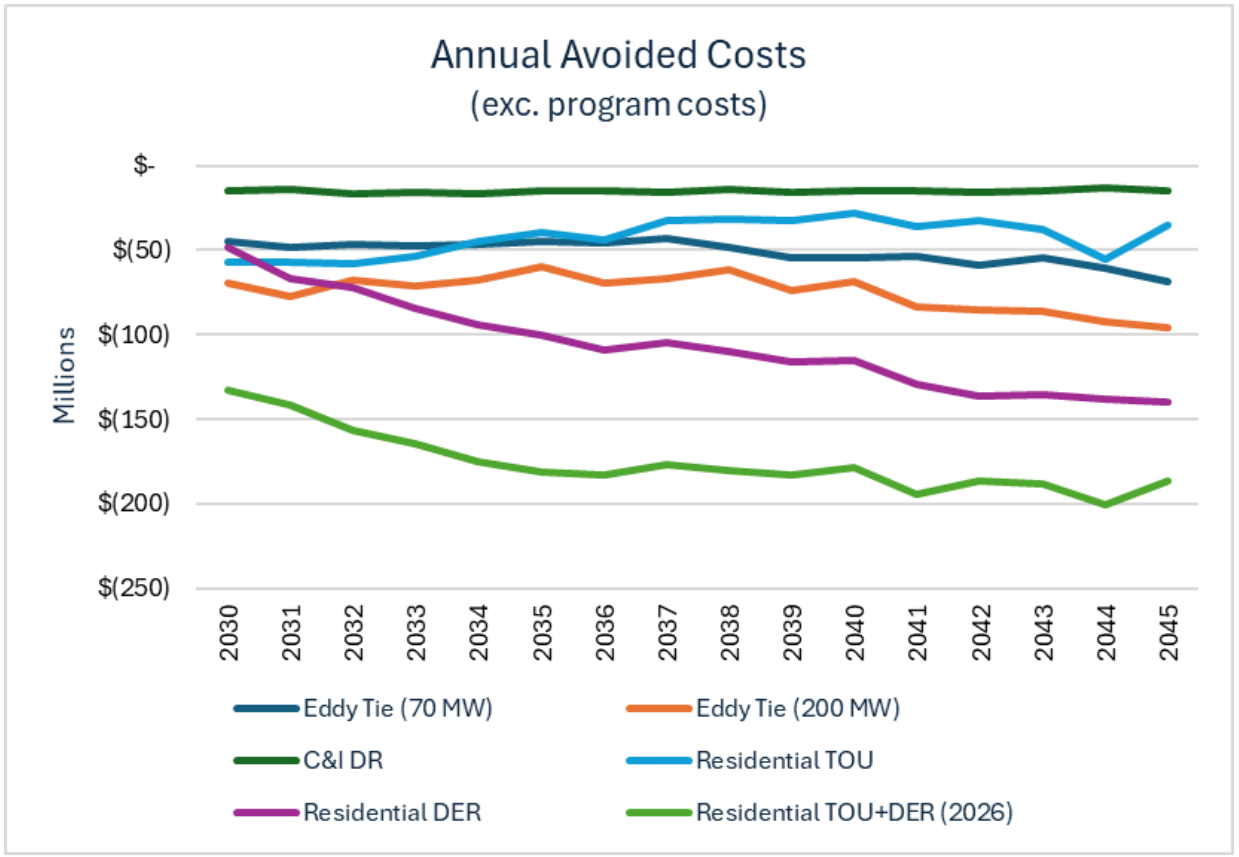
4. Between 85 MW and 120 MW of wind in all scenarios

New Mexico Resource Build 2045 – By Load Forecast
Nameplate (MW)



- Over the 20-year planning period the resource build under the high electrification forecast increases year-on-year over the base load forecast….
- Under the additional Large-Load Customer scenario there's a significant need for additional solar and storage

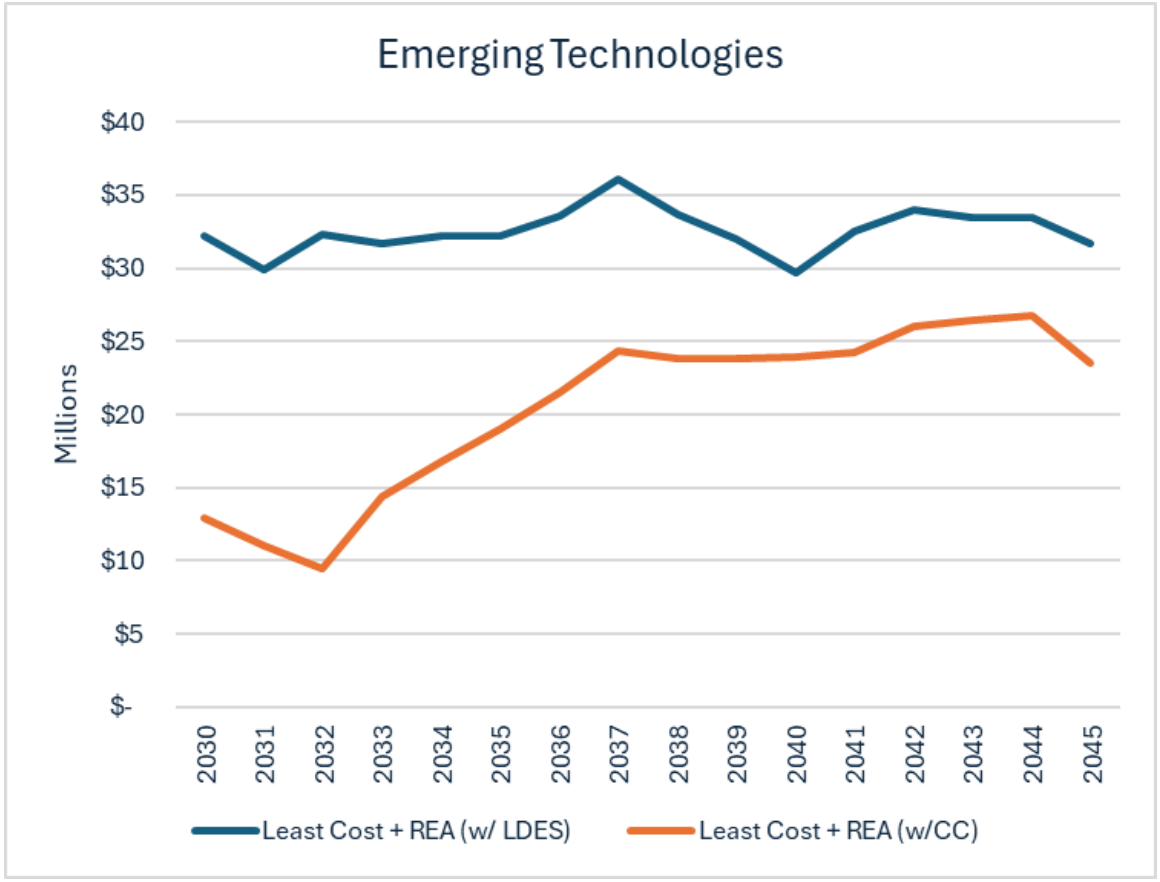
Avoided Costs – Stakeholder Requests



The avoided **system** costs after full implementation

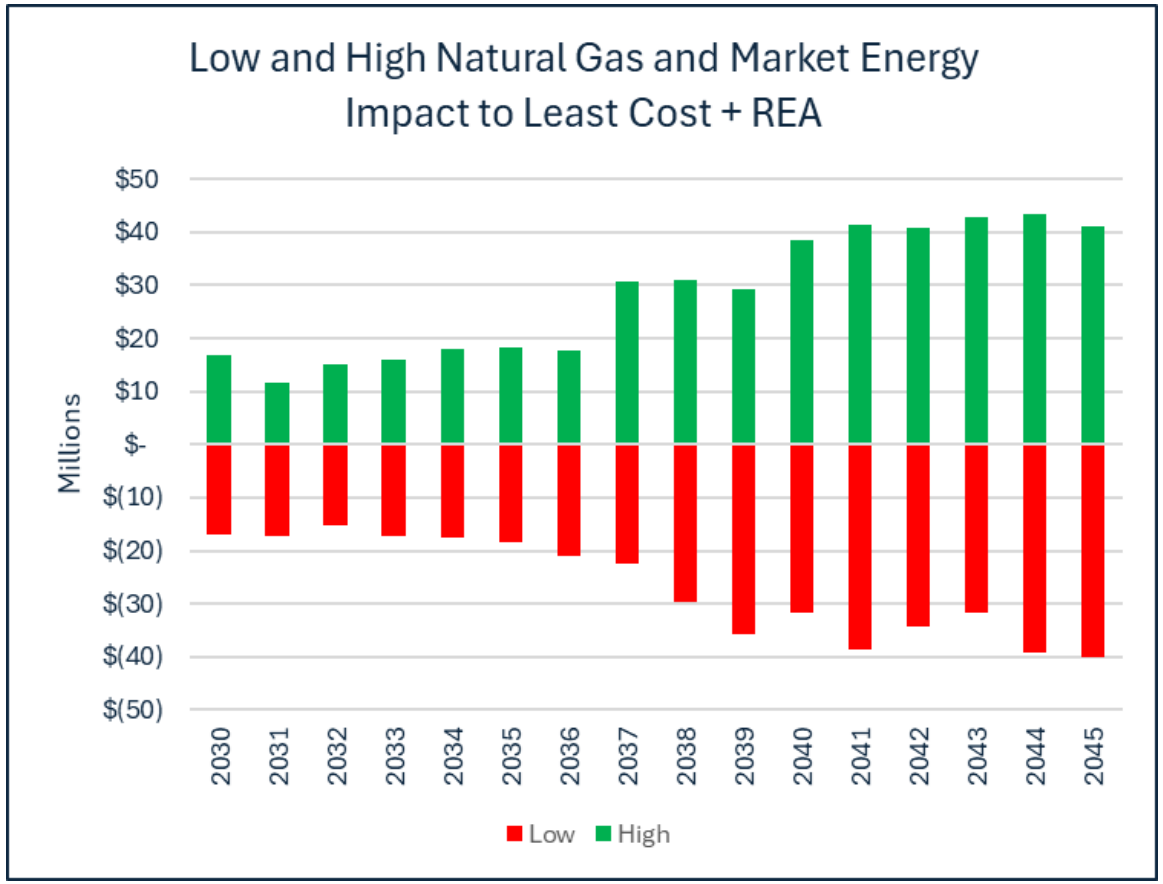
- **100 MW C&I DR:** ~$15.0 million per year, $150/kW-year
- **25,000 DER enabled homes:** $100 million per year, increasing to $140 million per year over the planning horizon, $200/kW-yr to $280/kW-yr (based on 20kW per home)
- **TOU Rates:** ~$50M per year initially, trending downs a net peak pushes into evening hours
- **DER Homes + TOU:** Combined provided on average 18.2% additional avoided costs
- **Eddy (70 MW):** ~$50 million per year, $260/kW-year
- **Eddy (200 MW):** ~$75 million per year, $375/kW-year

Emerging Technologies



- Of the two emerging technology scenarios evaluated neither provided projected cost savings
- However, the cost of this technology could be potentially lower in the future (near and far), which could ultimately change this conclusion
- The role of emerging technologies will ultimately be determined in future IRPs/ISPs (or potentially RFPs)

Low and High Natural Gas + Market Energy Price Forecasts



- No new natural gas-fired resources in New Mexico in any scenario
- There is minimal impact to the resource build – less than +/- 100 MW through 2045
- Changes to portfolio cost large driven by lower or higher commodity prices

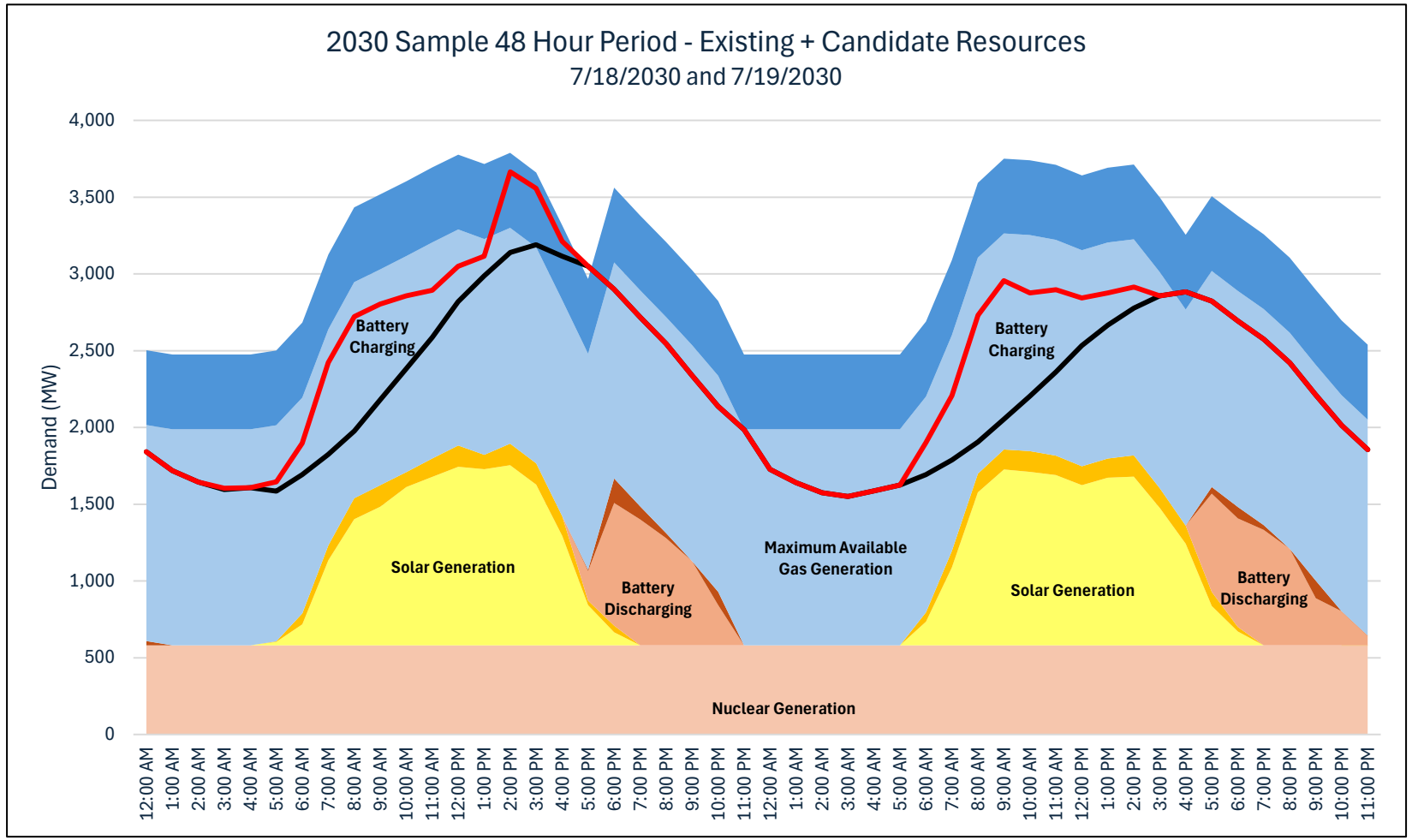
Flexible Load

Stakeholder Request

Add existence of flexible loads, able to opportunistically utilize cheap excess power. Rationale is that it might shift the most cost-effective portfolio to one with more renewable (probably solar) resources. Examples of flexible load might be hydrogen electrolyzers or bit coin mining or AI learning processing.

- EPE already has a significant amount of existing and planned solar + storage on its system
- With further additions likely to occur by 2030 (and beyond) to meet system needs
- Outside of peak demand times, EPE could have more carbon-free generation (solar + nuclear) than needed to meet demand in the mornings
- However, this ‘excess’ solar generation is being used to charge the batteries needed to meet the net peak – which is shifting to the early evening
- This trend is likely to continue over the planning horizon, as EPE continues to add solar generation to meet RPS requirements and dispatchable batteries

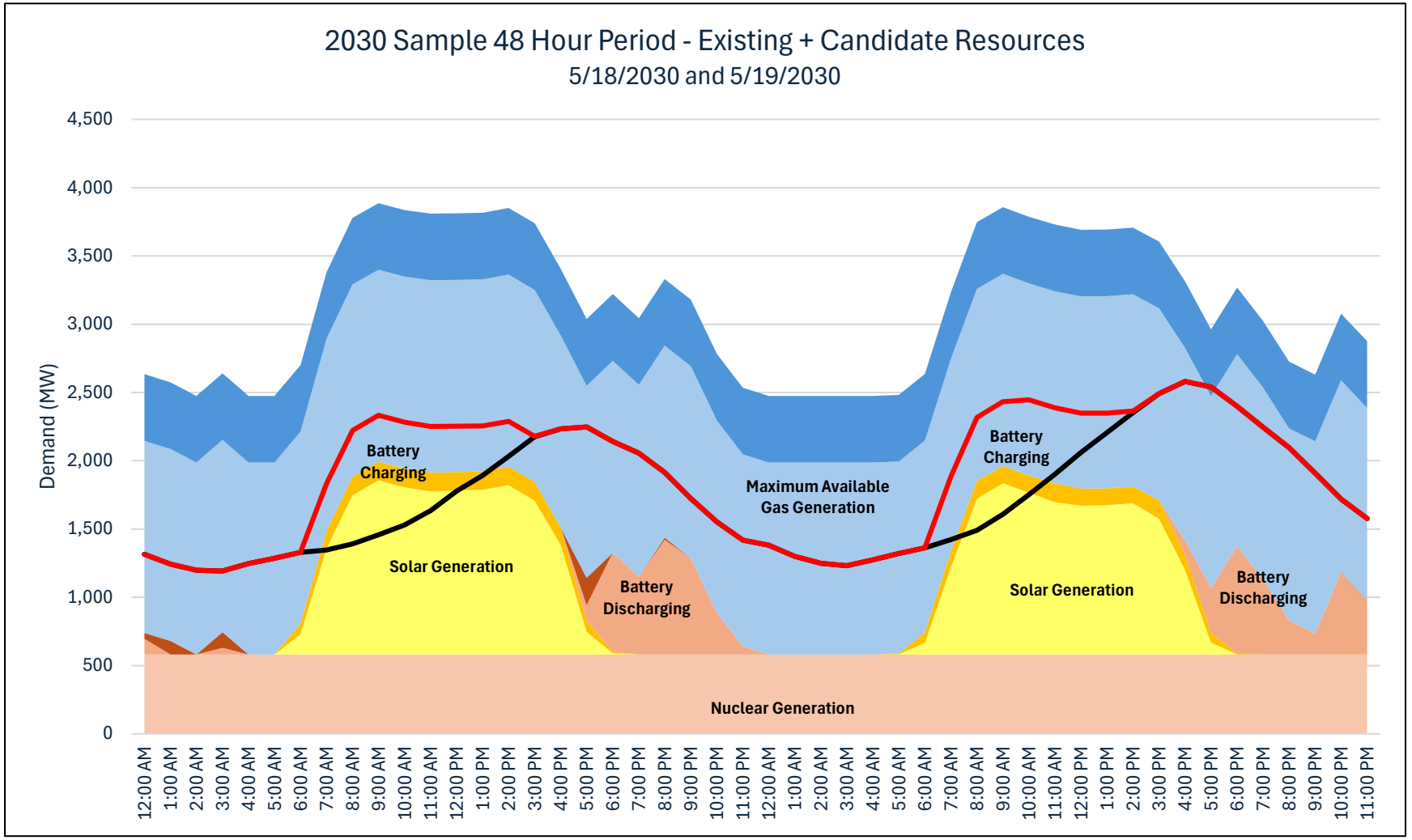
2030 Sample Summer Peak 48 Hours



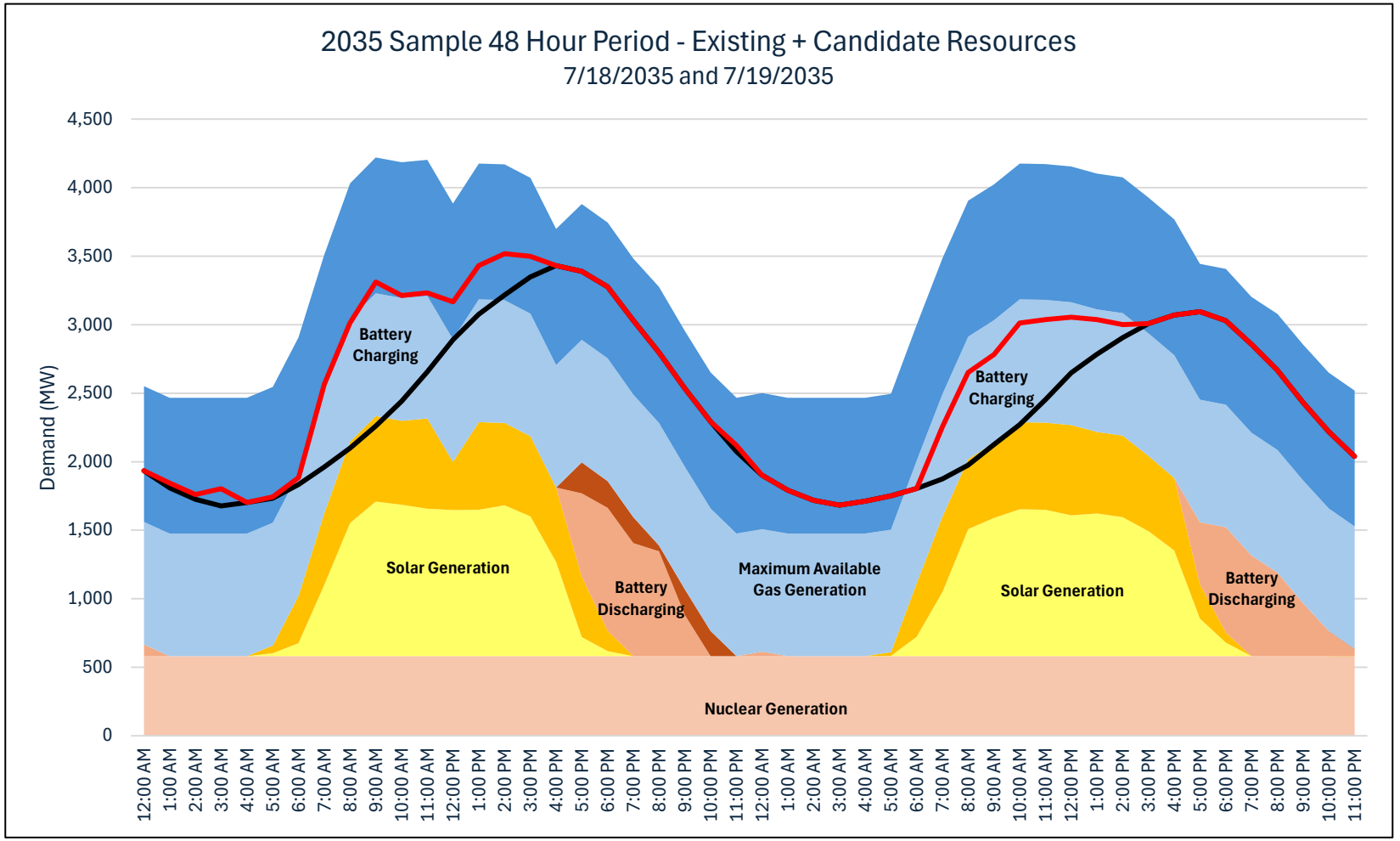
In 2030, natural-gas generation headroom in the late evening/early morning…

Solar generation serves existing load with minimal curtailments…

2030 Sample 48 hours (May)



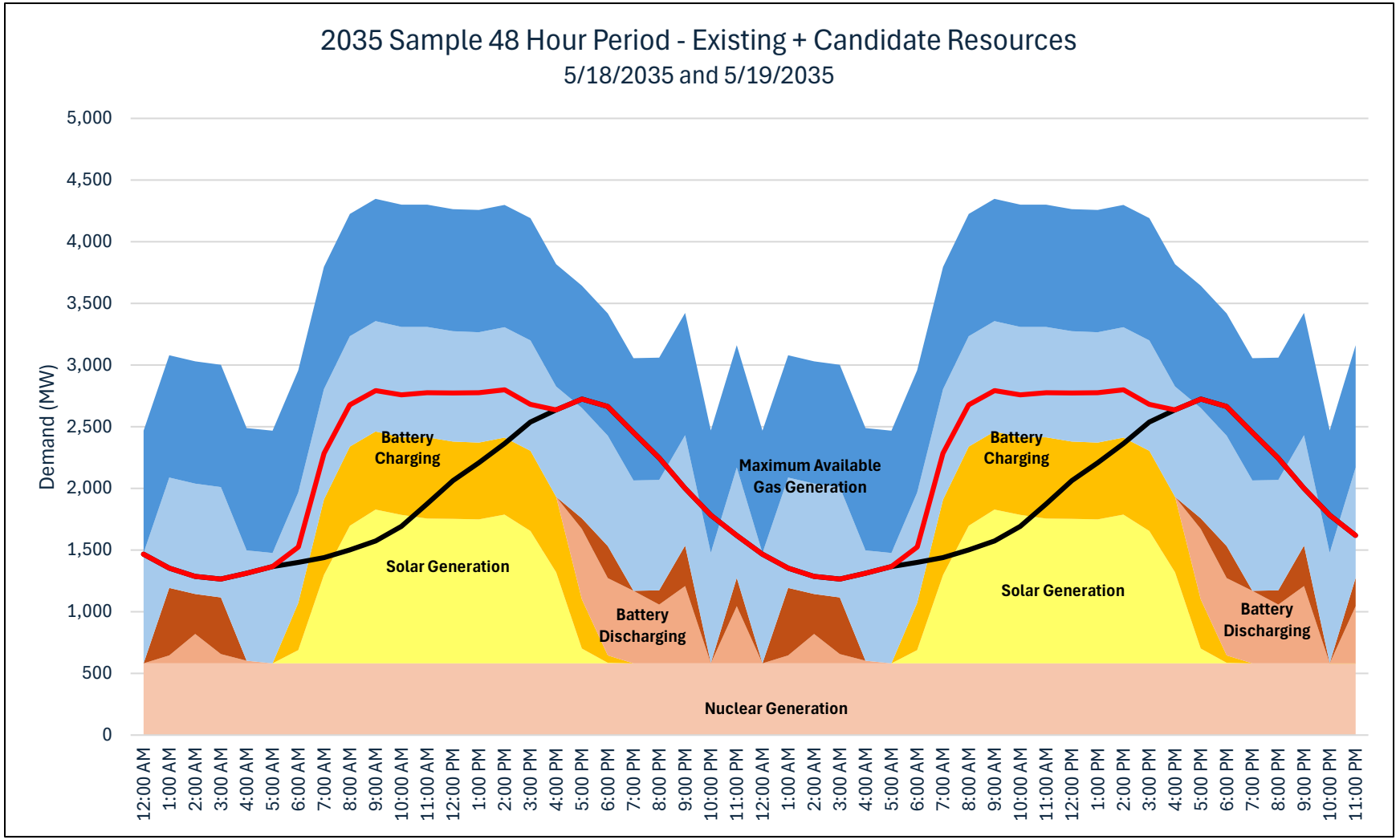
2035 Sample Summer Peak 48 Hours



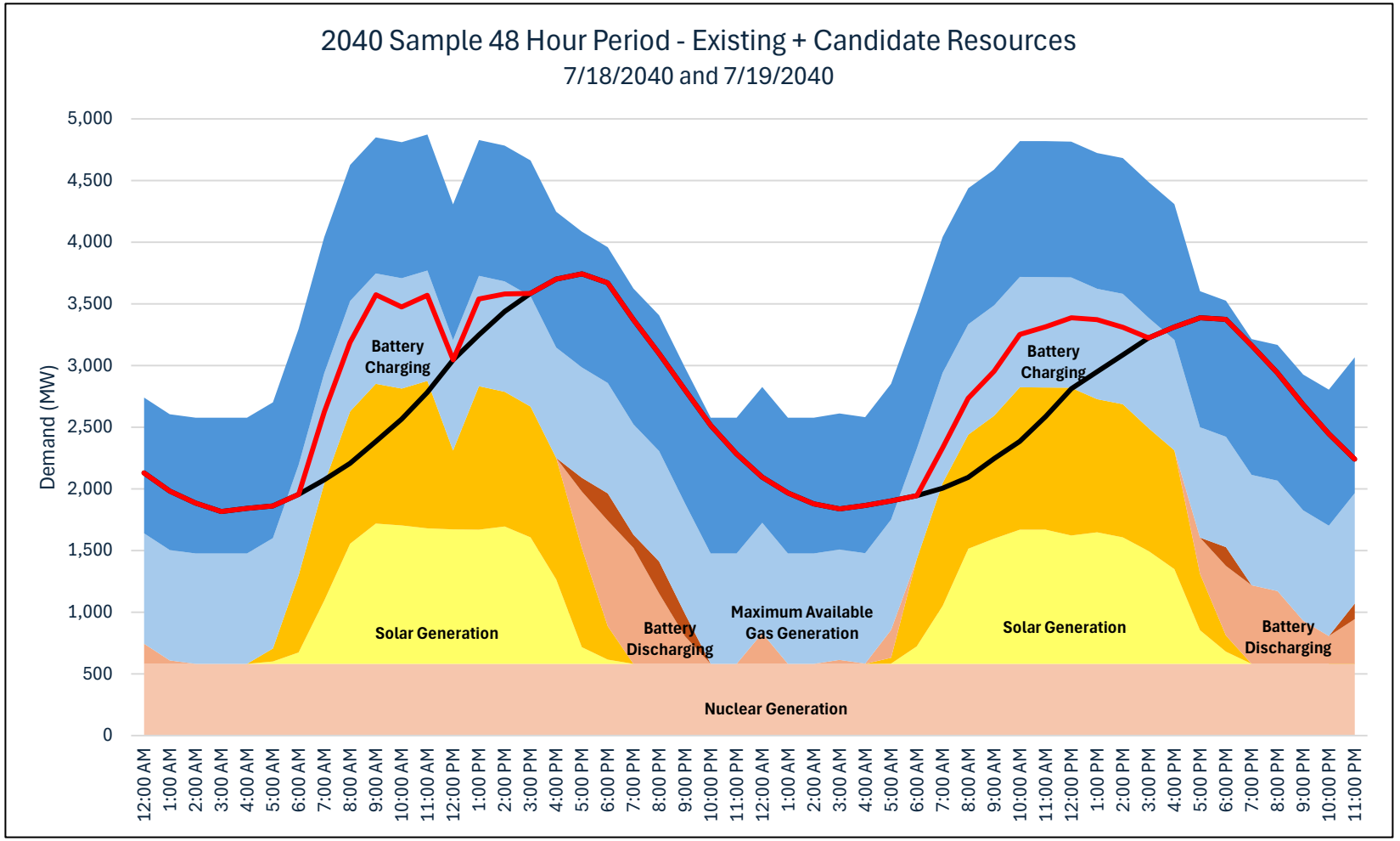
By 2035, carbon-free energy is meeting early morning gross demand…

However, batteries are also being charged during this time…

2035 Sample 48 hours (May)



2040 Sample Summer Peak 48 Hours

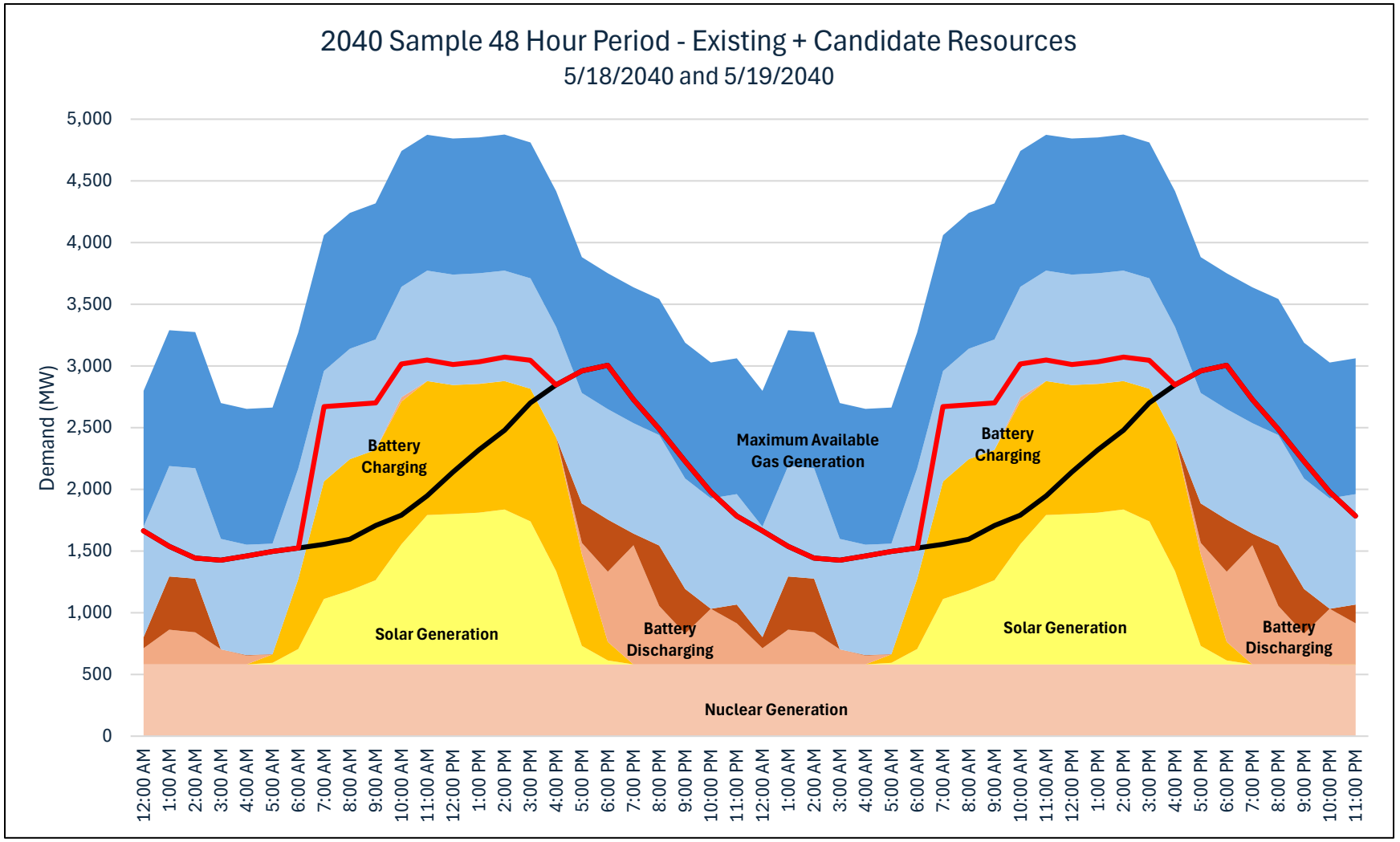


By 2040, carbon-free energy exceeds morning gross demand…

However, as gas generation retires…

More batteries are required to meet evening demand

2040 Sample 48 hours (May)



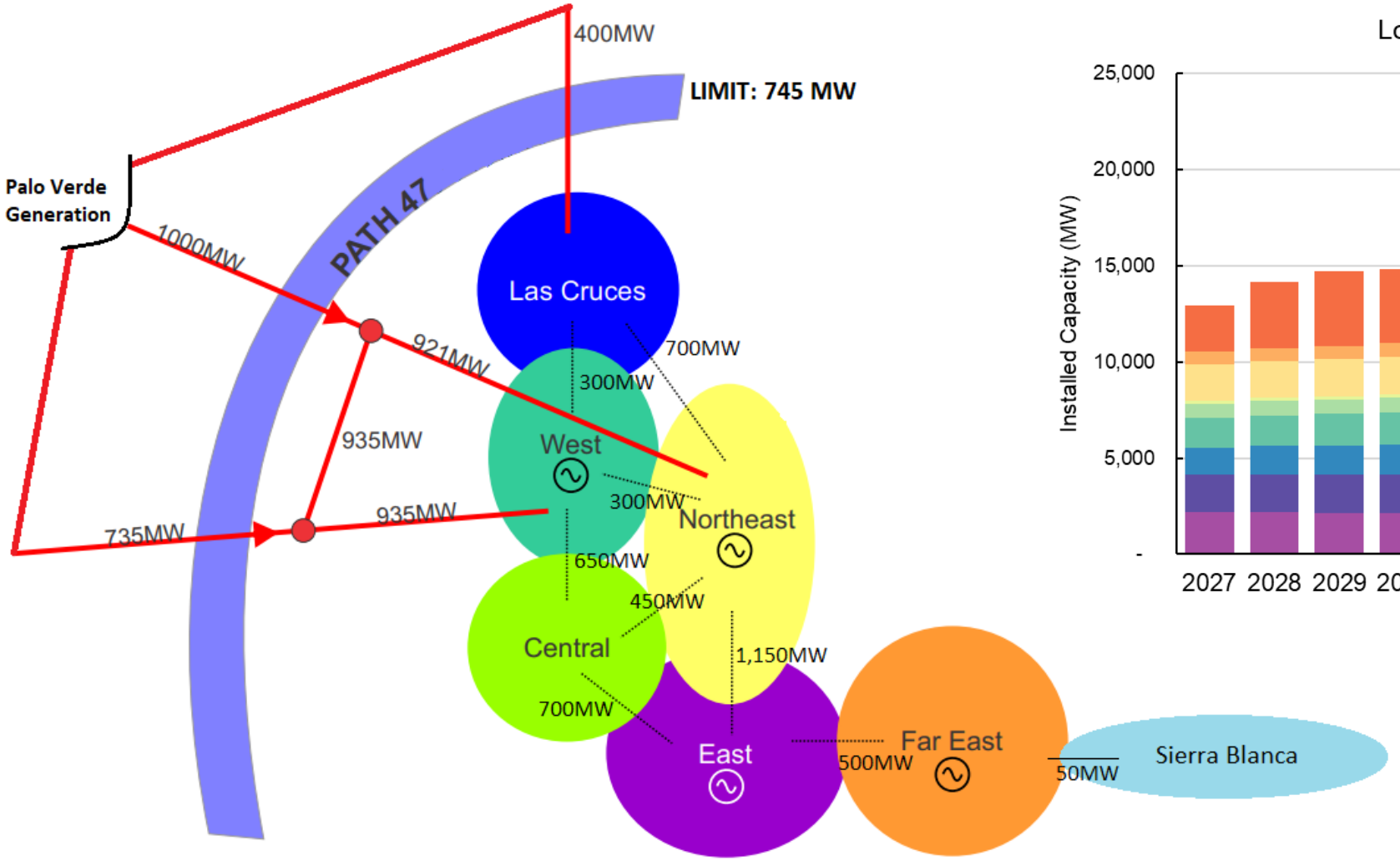
Grid Enhancing Technologies

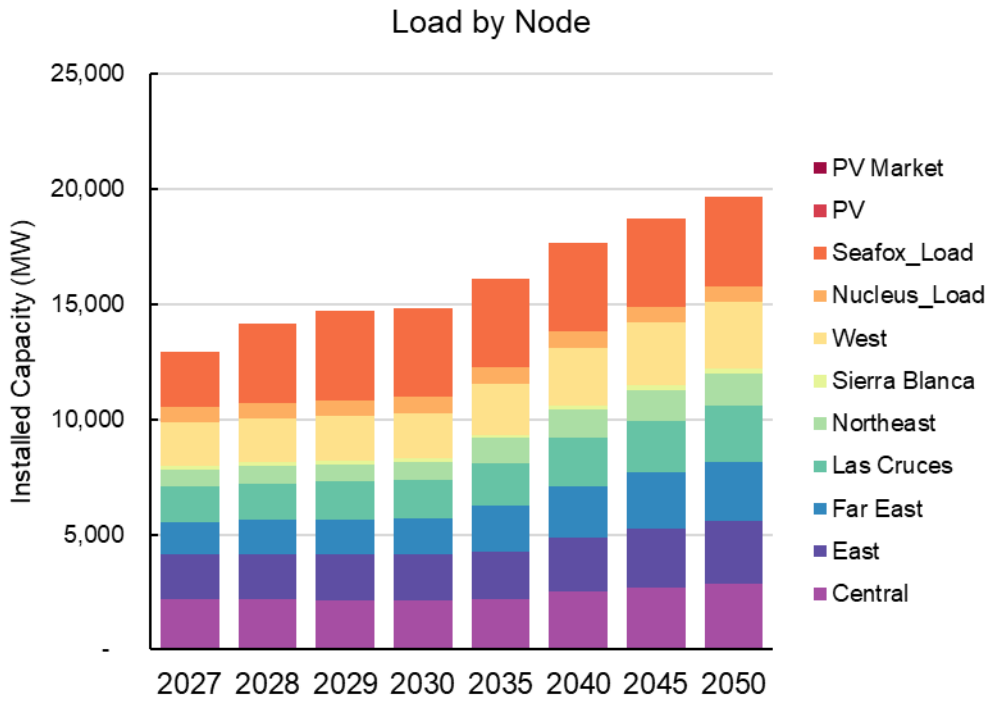
Stakeholder Request

I would like to model Grid-Enhancing Technologies for Transmission and Distribution Scenarios within the stakeholder process.
Specifically I would like to model:
1) Improved Line Carrying Capacity and
2) Power Flow Control

- EPE previously described the limitations in evaluating this request, but committed to the following: *If the model identifies new transmission expansion as optimal, E3 will collaborate with EPE to assess the feasibility and economics of implementing Grid Enhancing Technologies (GETs) as an alternative.*
- Through 2045, the model opted to 'site' resources within the zones without optimally building new transmission. Therefore, EPE has not evaluated GETs as an alternative in this analysis
- For clarity, the need for new transmission and potential alternatives to new transmission will be extremely important considerations as EPE begins to implement its action plan.

Resources by Location





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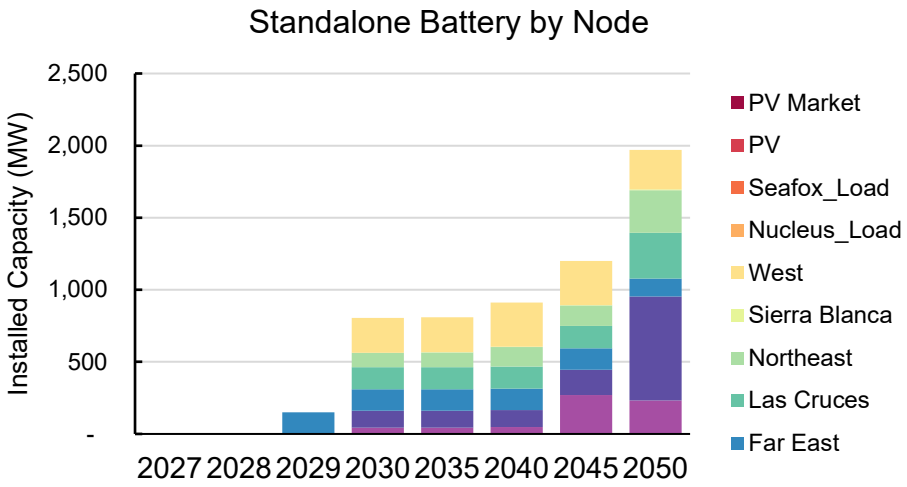

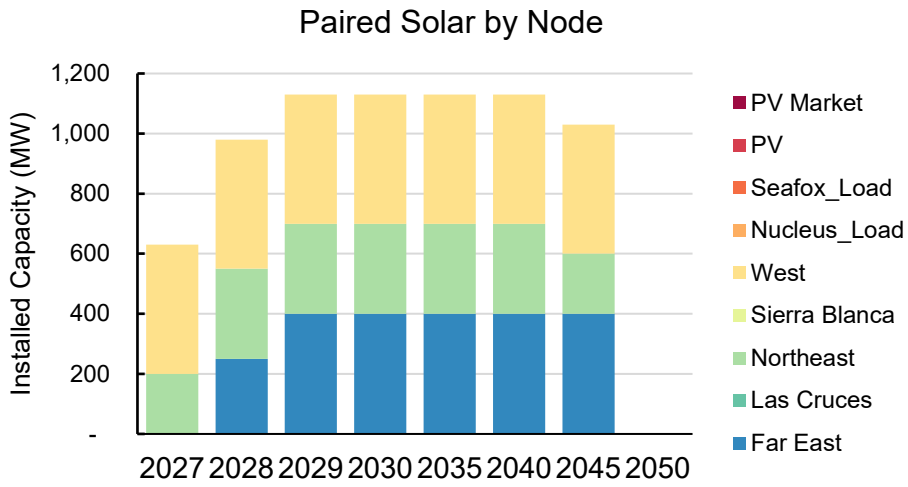

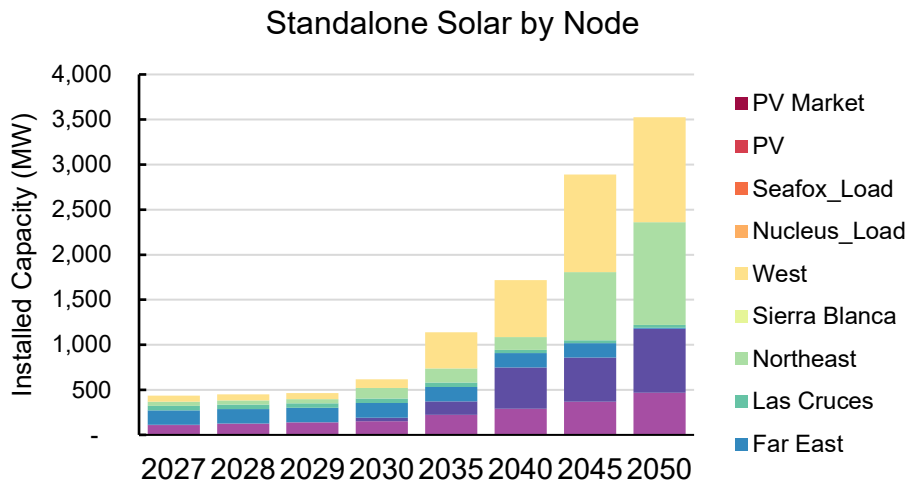

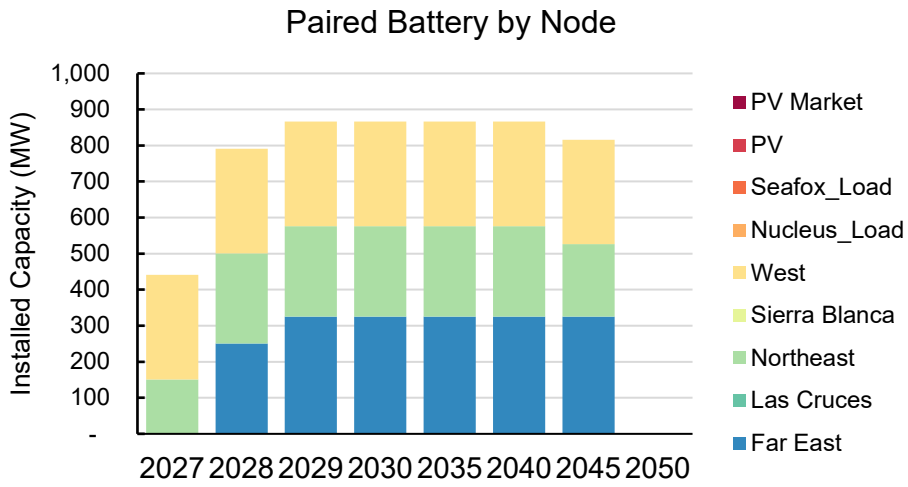

Resources by Location