

PNM IRP Statement of Need

2023-10-11

The PNM Integrated Resource Plan 2023 [IRP-2023] [provides/brings] the [best/furthest] long range path for building out a reliable generation portfolio for our customers over the next 20 years based on current planning assumptions and technologies. The IRP report begins with the current status of PNM's system and shows how available resources and technologies can provide for reliability and meet future needs. Simultaneously, we recognize that changes are occurring in every sector of the environment in which we operate. These will require ongoing re-evaluation and modifications to the 2023 IRP plan that will be incorporated in future triennial PNM IRPs.

Our planning framework balances three overarching objectives: maintaining reliability, minimizing cost, and mitigating our impact on the environment around us. We seek to create a long-term plan that achieves favorable results for our customers in all three areas:

- **Reliability:** our customers expect steady, reliable electric service. To meet this expectation, we plan our system to maintain a loss of load expectation of “one day in ten years,” aligned with common industry standards; doing so requires us to plan our generation portfolio to meet customer demands all hours of the year, including under increasingly severe extreme weather conditions. As we plan to retire significant portions of our existing fossil generation portfolio over the planning horizon, we will need to add new resources that, together, can reliably supply our customers across all weather conditions.
- **Affordability:**
- **Environmental Impact:** PNM has established an ambitious goal to achieve a 100% carbon-free generation portfolio by 2040. As of 2022, our generation portfolio met 53% of our customers' total annual energy needs (10,000 GWh) with carbon-free electricity. Our plan must therefore include sufficient new carbon-free resources to displace the remaining fossil generation in our current portfolio and meet our future load growth – a total incremental need of 10,000 GWh of carbon-free energy by 2042.

Meeting the state and PNM's clean energy goals and preserving reliability while providing for the growing needs of our customers in an affordable manner will require significant amounts of new generation capacity over the next twenty years. We anticipate that over the seventeen years between today and 2042, the amount of new generation capacity installed is likely to exceed 6,000 MW. This amount of *new* capacity is almost twice as much as exists in our system today, implying that the achievement of our goals will require a sustained, concerted effort to transform our portfolio.

The types of resources that we expect procure to meet those needs will include a diverse mix of technologies and capabilities that generally fall into three categories:

- **Low-cost carbon-free energy resources** with the capability to produce clean energy to meet a majority of our customers' energy needs throughout the year. Examples available today include solar PV, wind, and energy efficiency.

- **Dynamic balancing resources** that enable our operators the tools to balance the supply and demand for electricity on an instantaneous basis, recognizing that the generation profiles of many of our carbon-free resources will not coincide naturally with electricity demand. Examples include shorter-duration energy storage and demand response.
- **Firm generating resources** with the capability to operate at or near full capacity for extended periods of time that will allow our operators to maintain reliability even under the most constrained conditions in the system, which may include both periods of high demand as well as periods of low output from variable resources. Today, these needs are met with our nuclear and fossil resources; in the future various emerging technologies including hydrogen and long-duration storage may help to satisfy these needs.

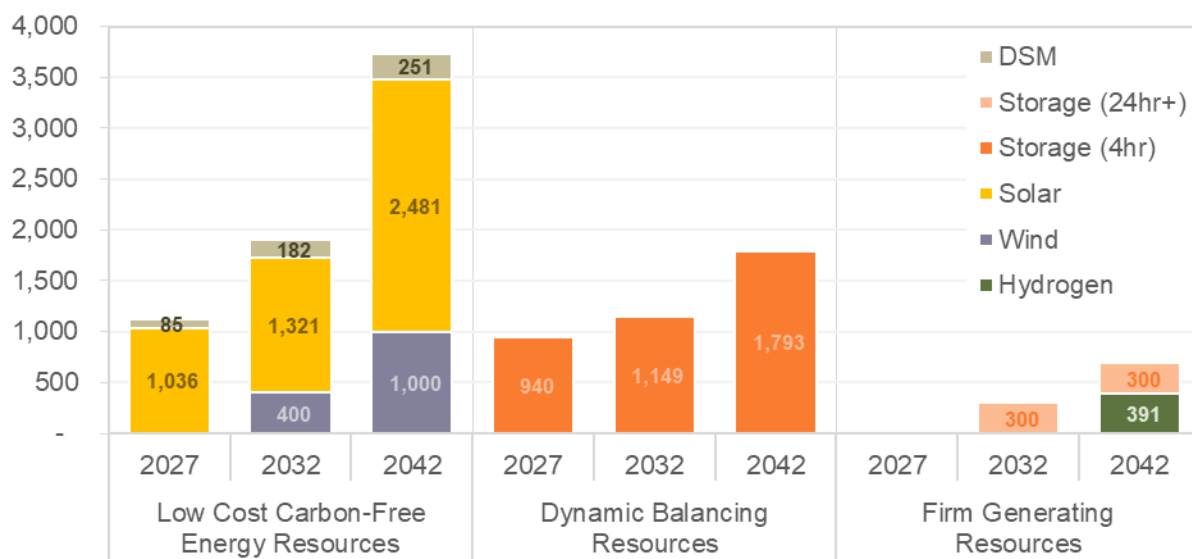
Based on what we know today and our expectations for the future, our Most Cost-Effective Portfolio reflects our current vision of the resources that would best fulfill these needs. Figure 1 summarizes the new resource needs in the MCEP at three key milestones: 2027, at the end of our Action Plan; 2032, after our exit from Four Corners and the retirement of Reeves; and 2042, at the end of our planning horizon.

- In the near term, we plan to meet most of our needs with a combination of solar and battery storage resources, most of which are already under development or will be procured through active solicitations.
- In the medium term, our resource needs grow due to load growth and plant retirements, and our MCEP includes a total of nearly 1,900 MW of low-cost, carbon-free energy resources, 1,200 MW of dynamic balancing resources, and 300 MW of firm generation resources.
- In the long term, our MCEP includes over 3,500 MW of low-cost carbon-free resources, 1,800 MW of balancing resources, and 700 MW of new firm generating resources.

Figure 1. Summary of future resource needs in our Most Cost-Effective Portfolio

Cumulative New Installed Capacity

(MW)



While our MCEP reflects our current view of the most cost-effective viable pathway to our carbon-free goal in 2040, there are a multitude of uncertainties that may change the composition of the portfolio that best meets the combined goals of our planning processes. By studying a diverse range of scenarios in this IRP, we intend to equip our planners and stakeholders with information needed to understand the full range of options and the factors that might lead us to change course from our current MCEP. Across all viable pathways to our 2040 goal and the numerous futures and sensitivities that we studied, the range of plausible resource needs is indeed broader:

Table 1. Ranges of new capacity additions across the planning period (OPTION 1: include Base Tech)

	Ranges of Cumulative New Installed Capacity (MW)		
	Through Action Plan Window (2027)	Through Medium Term (2032)	Through Planning Horizon (2042)
Low-cost carbon-free energy resources	1,100 - 1,200	1,600 - 1,900	3,600 - 4,200
Dynamic balancing resources	1,100 - 1,200	1,200 - 1,900	1,800 - 4,300
Firm generating resources	0 - 100	0 - 300	0 - 700
All resources	2,300	3,300 - 3,600	6,300 - 8,600

Table 1. Ranges of new capacity additions across the planning period (OPTION 2: exclude Base Tech)

	Ranges of Cumulative New Installed Capacity (MW)		
	Through Action Plan Window (2027)	Through Medium Term (2032)	Through Planning Horizon (2042)
Low-cost carbon-free energy resources	1,100 - 1,200	1,600 - 1,900	3,600 - 4,000
Dynamic balancing resources	1,100 - 1,200	1,200 - 1,500	1,800 - 2,300
Firm generating resources	0 - 100	100 - 300	500 - 700
All resources	2,300	3,300 - 3,400	6,300 - 6,900

Ultimately, the specific portfolio of resources that best meets the needs of our customers and achieves our goals will be determined by a combination of market forces, technological advances, and industry trends that cannot be perfectly predicted today. This taxonomy and the ranges associated with each category nonetheless provide a useful indication of the scale and nature of our future resource needs.