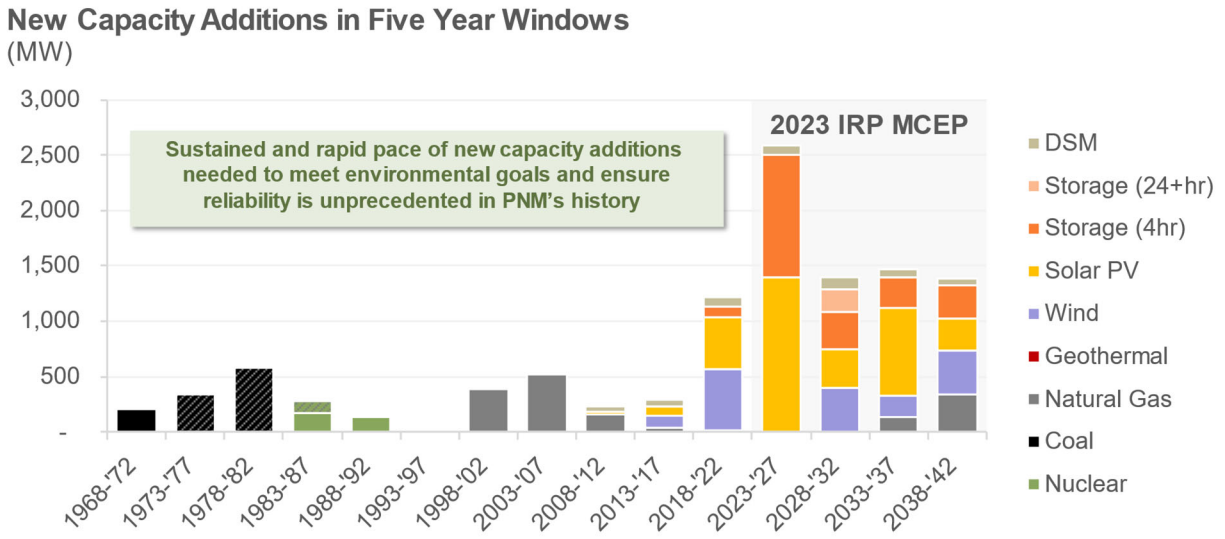
Executive Summary

Public Service Company of New Mexico's (PNM) 2023 IRP lays out an aggressive plan to achieve a carbon-free portfolio by 2040. PNM's last IRP was published in early 2021, shortly after PNM established a goal to transition to a carbon-free energy system by 2040. Three years later, PNM remains firmly committed to its long-term goal to transition to a carbon-free system. In the intervening years, PNM has built confidence in this vision, gaining experience operating new technologies and retiring the last two units of the San Juan Generating Station (SJGS), the largest, most carbon-intensive power plant in the portfolio. The Inflation Reduction Act was also passed in this period, providing billions of dollars of federal tax benefits and loan guarantees to support development of clean energy infrastructure.

Each passing year brings PNM closer to decarbonization, and each IRP provides an opportunity to refine plans to capture opportunities, and meet the challenges ahead, as the future comes into sharper focus. Over the next eight years, PNM's portfolio is poised to undergo a significant transformation. Between the expiration of the power purchase agreement with Valencia, exit from Four Corners, and retirement of Reeves Generating Station, the resource portfolio will lose over 500 MW of firm generating capability, representing one quarter of present peak demand.

Replacing retiring capacity, meeting concurrent load growth, and reducing the carbon intensity of PNM's portfolio will require significant sustained addition of resources over the next two decades. The scale of this transformation is unprecedented in PNM's history and will challenge the company's ability to plan, coordinate, and execute. For this IRP, PNM developed a robust plan to meet resource needs and decarbonize the portfolio by 2040. **Figure 1** shows the new capacity resources included in the **Most Cost-Effective Portfolio (MCEP)**, contextualized against the historical additions to the portfolio over the past six decades.

Figure 1. Historical and projected capacity additions in our Most Cost-Effective Portfolio



DSM data included beginning in 2008. Bars with hashed lines represent resources no longer in PNM's portfolio. Timing of resource additions based on date each plant achieved commercial operations

The technologies needed to meet customers' demand while moving towards a carbon-free portfolio include three general categories of resources:

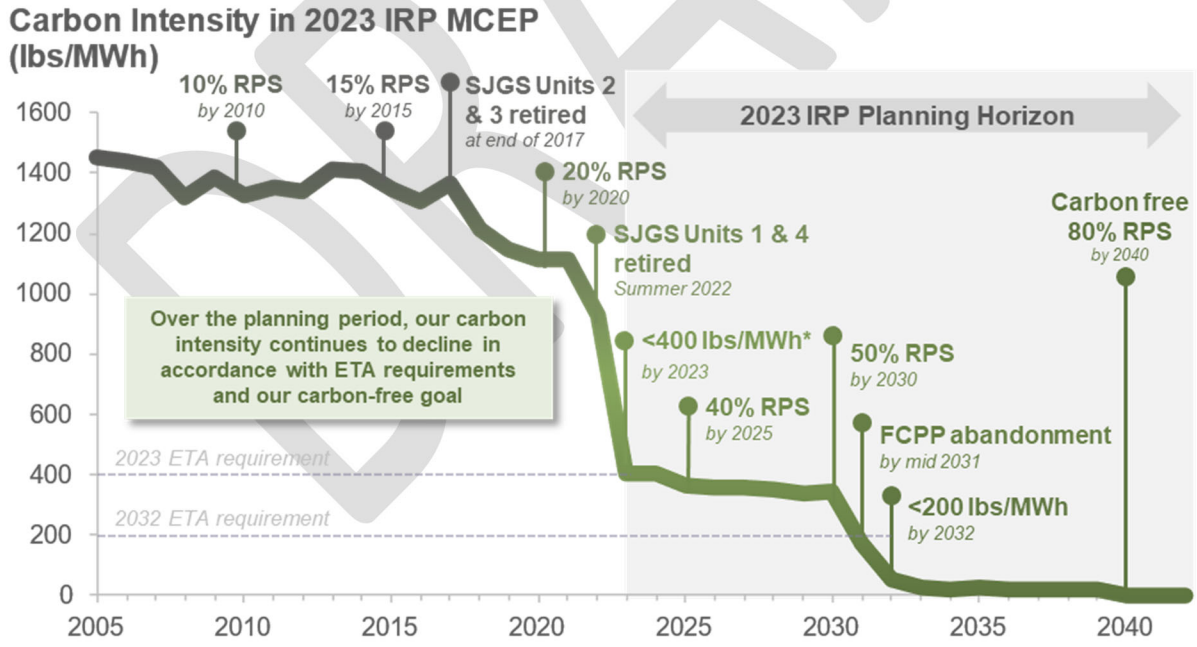
Low-cost carbon-free energy resources produce clean energy to meet a majority of customers' energy needs throughout the year. In 2019, PNM's energy mix was roughly 44% carbon free. With the replacement of SJGS, this figure will increase to approximately 65% by the end of 2023. Meeting the 100% carbon-free goal by 2040 requires investment in resources able to generate carbon-free energy like solar PV, wind, and energy efficiency.

Dynamic balancing resources provide PNM with tools to balance the supply and demand for electricity on an instantaneous basis, recognizing that the generation profiles of many of the carbon-free resources will not coincide naturally with electricity demand. Examples include shorter-duration energy storage and demand response.

Firm generating resources operate at or near full capacity for extended periods of time that will allow PNM 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 renewable resources. Today, these needs are met with nuclear and fossil resources; in the future, various emerging technologies including hydrogen and long-duration storage may also be options.

Together, the portfolio of resources in the MCEP enables continued carbon reductions and increasing renewable energy supplies in accordance with the Energy Transition Act and PNM's own goals. **Figure 2** shows the carbon intensity of the portfolio over the IRP horizon in the MCEP.

Figure 2. Carbon intensity over time under PNM's proposed MCEP



**Achieving the 2023 ETA requirement relies on planned clean energy resources to be online before 2023. Due to recent supply chain issues, delays in project timeline could make meeting this requirement difficult.*

An Industry in Transition

As in 2020, this IRP has been developed against an industry landscape which continues to rapidly evolve. The most important development in the industry in recent years has been the passage of the **Inflation Reduction Act (IRA)** is transformative federal legislation authorizing billions of dollars of support to encourage development of new clean energy resources. With broadly defined tax credits and loan guarantees for clean energy assured through the next decade, the industry can move forward with more confidence; by expanding and bolstering available clean energy incentive programs, proven resources, like wind and solar, will continue to be developed, while emerging technologies, like long-duration storage and hydrogen fuel, will mature. This progress allows for clean resources to be available when PNM needs them in the future. The clarity, opportunity, and confidence that this legislation brings to the energy industry is critical to maintaining momentum toward ambitious clean energy goals.

The optimism that accompanied the passage of the IRA has been somewhat moderated by real-world challenges encountered by utilities and project developers over the past several years. Costs for new infrastructure projects are rising – driven by a combination of global supply chain disruptions, general inflation, and rising interest rates – resulting in a reversal of previously steady downward trends in the costs of wind, solar, and energy storage. These changes have also impacted development timelines for projects already under development – and in some cases, threatened their viability altogether. PNM has experienced the effects of these disruptive forces firsthand with the delays and cancellation of replacement resources for SJGS, resulting in a short extension to the operating lifetime of Unit 4 through the summer of 2022.

In the face of these challenges, PNM remains resolute in its commitment to progress toward the vision for a reliable, affordable, and carbon-free power supply by 2040. Therefore, this IRP is not defined by the obstacles or the uncertainty that the industry is facing, but rather focused on the opportunities ahead. Urgent action is required, as many of the viable options require years of lead time and preparation to successfully integrate into PNM's portfolio. Permitting and development timelines require years of effort, and in recent years, have stretched beyond historical norms. This means that the 2030 system must be planned and developed today. Achieving the goals of a reliable, sustainable, and affordable portfolio requires proactive planning and sustained action.

In an environment that can change suddenly and unexpectedly, PNM seeks to create a plan that is flexible and adaptive; the value of a comprehensive planning framework lies not only in the shape of that plan itself but the playbook it provides for how to adjust our plan and when to deviate from it.

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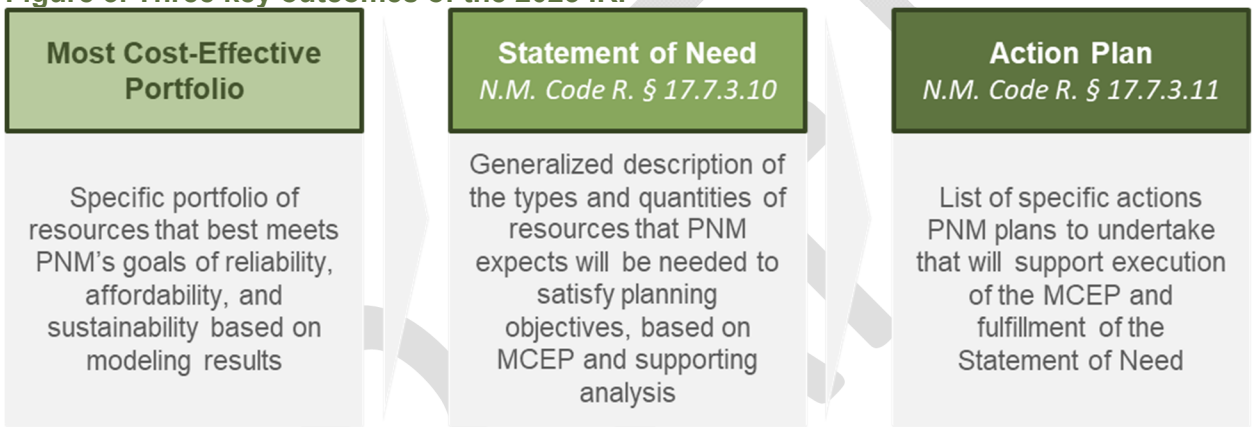
Updates to the IRP Rule

The IRP Rule, set forth by the New Mexico Public Regulation Commission (NMPRC), establishes requirements pertaining to the resource planning process of investor-owned utilities in New Mexico. An amendment to this rule in 2022 resulted in several material changes to the planning process.

First, the updated IRP Rule specifies a new requirement for IRPs to include a **"statement of need,"** which defines the necessary resources, as determined by the utility. The statement of need is a general description of the resources that PNM anticipates needing to satisfy its planning goals; it builds upon the most cost-effective portfolio, which prescribes resource needs more objectively. The statement of need can serve as a bridge between the IRP and procurement via RFPs or other solicitations. It also clearly communicates to stakeholders the types of resources needed by PNM to achieve the planning objectives.

Figure 3. Three key outcomes of the 2023 IRP



The second significant change to the IRP rule involves a new process for stakeholder engagement. As part of this provision, the PRC appointed Gridworks to serve as an independent facilitator. With Gridwork's assistance, broad access and organized dialog was shared with those who are invested in and impacted by PNM's resource plans. Over the course of ten meetings spanning nine months, dozens of stakeholders provided questions and comments.

Figure 4. Highlights of the 2023 IRP facilitated stakeholder process

Developing the Most Cost-Effective Portfolio

PNM's planning process seeks to balance three primary objectives: maintaining affordability, ensuring reliability, and mitigating its impact upon the environment. **Table 1** describes each of these objectives in further detail.

Table 1. Key objectives of the IRP process

Objective	Description
Reliability	PNM customers expect steady, reliable electric service. To meet this expectation, PNM plans its 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 the generation portfolio to meet customer demands all hours of the year, including under increasingly severe extreme weather conditions. As PNM's plan to retire significant portions of the existing fossil generation portfolio over the planning horizon, the company will need to add new resources that, together, can reliably supply customers across all weather conditions.
Affordability	PNM considers comprehensive, lifecycle costs when determining the affordability of resources in its portfolio. Avoiding unnecessary expenses and minimizing costs to consumers is a central concept of affordability; however, it is also important to maintain a more nuanced perspective to manage costs over the long term. Therefore, PNM's view of affordability also includes mitigating potential risks and volatility in the future. Therefore, while all of the resource options leverage a competitive procurement process in an effort to minimize costs, PNM considers many other costs in making resource selections. By focusing on the big picture and accounting for elements like compliance, climate change, fuel availability, or social impact, PNM can maximize value to customers.
Environmental Impact	PNM has established an ambitious goal to achieve a 100% carbon-free generation portfolio by 2040. As of 2022, the generation portfolio met 53% of customers' total annual energy needs (10,000 GWh) with carbon-free electricity. PNM's plan must therefore include sufficient new carbon-free resources to displace the remaining fossil generation in the current portfolio and meet future load growth – a total incremental need of 10,000 GWh of carbon-free energy by 2042.

The process used to create a portfolio that balances these objectives and serves as the MCEP was technically robust and collaborative:

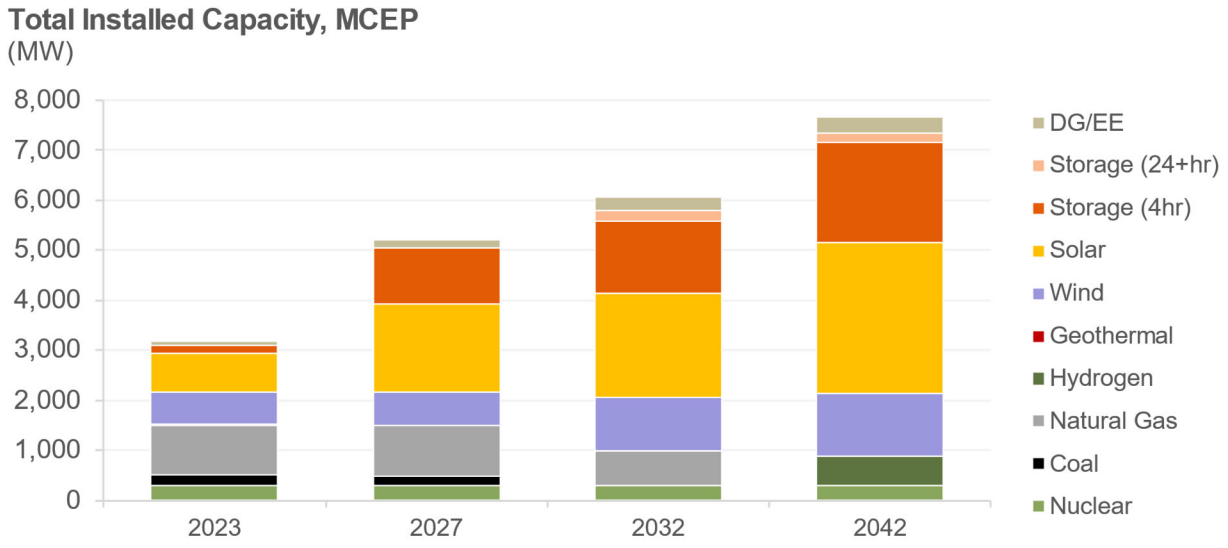
- PNM evaluated **hundreds of scenarios and sensitivities** over the course of the IRP process to explore impacts of different decisions and the implications of future risk factors and uncertainties upon future plans. These scenarios were analyzed in multiple phases during the IRP process, which allowed us to learn and refine plans through an iterative modeling process.
- PNM utilized **industry-leading portfolio analysis tools** to develop and evaluate optimized portfolios. These include EnCompass, a capacity expansion and production simulation model that optimizes and simulates portfolios least-cost resources to meet future needs; and Strategic Energy & Risk Valuation Model (SERVM), a loss-of-load probability model that provides detailed reliability analysis of portfolios. Both models are widely used and highly regarded throughout the industry for their sophistication and

suitability for analysis of portfolios with high penetrations or renewables and energy storage.

- PNM sought **feedback from stakeholders** regularly throughout the process. At various points throughout the facilitated stakeholder process, stakeholders had opportunities to ask questions, challenge assumptions, review draft modeling results, and provide recommended language to frame the statement of need and action plan.

The resulting **Most Cost-Effective Portfolio**, illustrated in **Figure 5**, represents the culmination of this extensive analytical process. The scale of the transformation of the portfolio over this twenty-year horizon is dramatic: in order to eliminate carbon-emitting resources from PNM's portfolio, the total amount of installed capacity of in the resource portfolio more than doubles over this period. The new generation additions over this period reflect a diverse mix of renewable and storage resources that include both mature and emerging technologies. These new investments allow us to rely less and less over time on today's existing carbon-emitting resources; some of these plants will exit the portfolio while others will remain throughout most of the planning horizon, rarely used but serving in a critical role as a backstop to reliability. In the MCEP, these resources eventually transition to carbon-free fuels themselves, consuming green hydrogen by 2040 and beyond as part of the final transition to a carbon-free system.

Figure 5. Composition of the Most Cost-Effective Portfolio at four key milestones: (1) present day; (2) at the end of PNM's Action Plan window; (3) upon exit from Four Corners; and (4) at the end of the planning horizon.



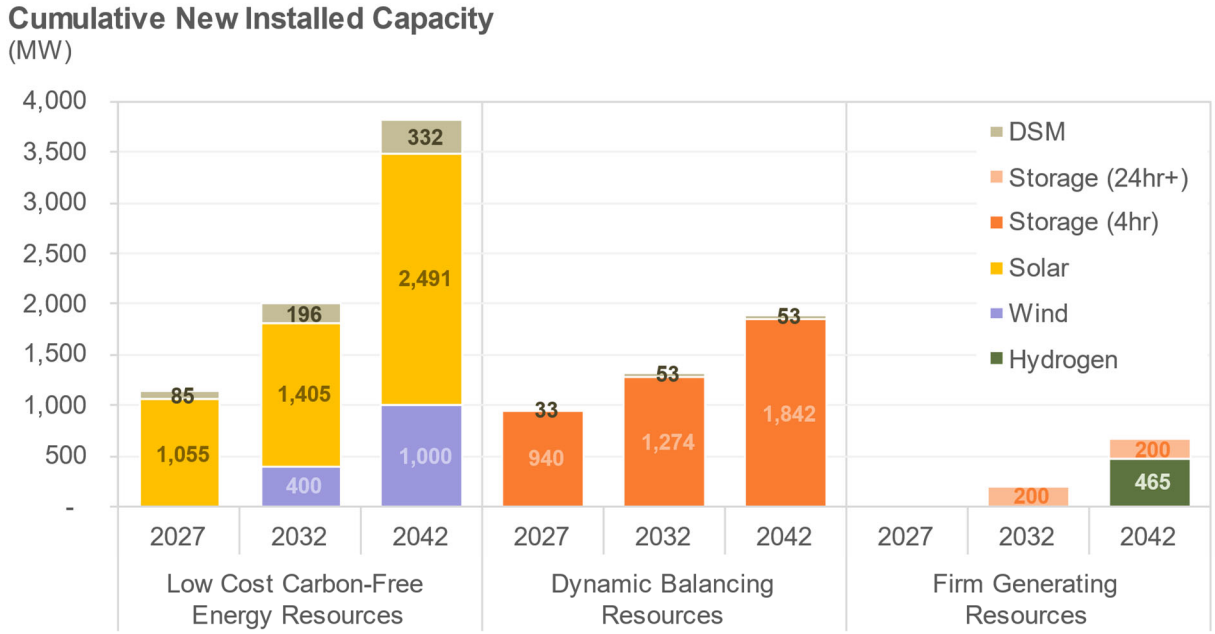
Statement of Need

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

- Between now and 2027, PNM plans to meet most of its needs with 1,100 MW of low-cost carbon-free resources and 1,000 MW dynamic balancing resources, most of which are already under development (in some cases, pending approval by the Commission) or will be procured through active solicitations.
- Between 2027 and 2032, our resource needs grow due to load growth and plant retirements, and during this period, our MCEP identifies an additional 800 MW of low-cost, carbon-free energy resources, 400 MW of dynamic balancing resources, and 200 MW of firm generation resources.
- Between 2032 and 2042, our MCEP identifies an additional 1,700 MW of low-cost carbon-free resources, 600 MW of dynamic balancing resources, and 500 MW of new firm generating resources in this last decade in the planning horizon.

Additional details on the MCEP can be found in the Appendix.

Figure 6. Summary of future resource needs in the Most Cost-Effective Portfolio



Cumulative figures reflect all new resource additions beginning in 2024, inclusive of projects under development:

Solar PV: Atrisco (300 MW), Quail Ranch (100 MW), San Juan (200 MW), Sky Ranch (190 MW), TAG I (140 MW), Community Solar (125 MW)

Storage: Atrisco (300 MW), Quail Ranch (100 MW), Route 66 (50 MW), San Juan (100 MW), Sandia (60 MW), Sky Ranch I (50 MW), Sky Ranch II (100 MW), TAG I (50 MW), distribution-level storage (12 MW)

DSM: 2024 & 2025 approved DSM programs

While the MCEP reflects the current view of the most viable pathway to PNM's 2040 carbon-free goal, there are multiple uncertainties that may change the composition of the portfolio. By studying a diverse range of scenarios in this IRP, planners and stakeholders will have information to understand and assess the options and influencing factors that may lead us to change course from the current MCEP. In this regard, the IRP explores all viable pathways to decarbonization by 2040, while recognizing that the numerous future alternatives and sensitivities studied broaden the range of plausible resource needs going forward:

Table 2. Ranges of new capacity additions across the planning period

	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	1,400 – 2,200	3,300 – 4,700
Dynamic balancing resources	900 – 1,000	1,000 – 1,700	1,500 – 2,500
Firm generating resources	0	0 – 500	500 – 900
All resources	**2,000 – 2,100**	**2,900 – 4,300**	**5,800 – 7,800**

Ranges shown based on results across four scenarios (All Technologies, Base Technologies + CT, Base Technologies + LDS, and Base Technologies + CT + LDS) across all sensitivities excluding Stable ED (high load growth). Resource needs under a high load growth future could be considerably higher.

The specific resources that procured to meet those needs will include a diverse mix of technologies. Many of these resources are commercially available today, but the pursuit of aspirational goals often requires a transformative approach. Therefore, PNM will continue to explore innovative solutions like long-duration storage and hydrogen fuels as they approach commercial viability. PNM recognizes the importance of early action in the lifecycle of technology maturation, and to the extent practical opportunities arise, PNM will partner with others in the industry to engage in pilot programs and small-scale demonstrations of emerging technologies.

The development of new generation resources at the scale needed to meet the challenges ahead has implications for other parts of the system. In particular, the new resources added to decarbonize the generation mix and meet growing loads will require an expansion of the transmission system to allow for the delivery of electricity. The existing transmission system is already encountering constraints today, and many of the resources that may help to satisfy future needs are located in parts of the state that would require new transmission investments.

Ultimately, the specific portfolio of resources that best meets the needs of PNM's customers and achieves its goals will be determined by a combination of market forces, technological advances, and industry trends that cannot be perfectly predicted today; further, specific decisions around procurement of new resources will occur through competitive solicitations to ensure our customers benefit from the lowest cost options. PNM's planning and procurement processes are adaptive and iterative by design, and neither the presence nor the absence of any specific type of resource in the 2023 IRP MCEP is a prescriptive determination of what will or will not be procured to meet customer needs. This MCEP, coupled with the diverse outcomes in alternative

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plausible portfolios, informs an Action Plan that is intended to further our progress towards our goals while preserving optionality to adjust to changing market circumstances.

Creating a Plan for Action

The final result of the 2023 IRP, the Action Plan translates what PNM has learned through the IRP process into concrete, actionable steps that will support progress towards long-term goals. It reflects the fact that procurement processes to meet the 2026-2028 resource needs are already underway and focuses on actions that will lay the foundation for continued transition towards PNM's goals. Many of the elements of the Action Plan have been heavily influenced by the feedback from stakeholders throughout the facilitated process; additional detail on how this feedback influenced the development is provided in the body of the report.

1. **Issue an all-source RFP for resources coming online between 2029 and 2032**
   - Consider environmental justice factors in the bid evaluation process;
   - Include system reliability and resiliency assessments, fuel security, and resource diversity in the bid evaluation process;
   - Utilize an independent evaluator as part of the RFP process;
   - File for resource approvals with the PRC (PPA/CCN), balancing resource selections between utility-owned and third-party contracts; and
   - Leverage federal sources of funding, including the IRA, to the extent practical in alignment with system resource timing needs.

2. **Issue an RFI/RFP for long-lead time resources or newer technologies that could deliver between 2029 and 2035**
   - Consider environmental justice factors in the bid evaluation process;
   - Continue to assess longer term needs of the system, including potential transmission expansions, to help facilitate long lead or newer technology additions;
   - Continue to monitor the state of maturation of emerging technologies that are not yet commercially viable or cost-effective;
   - Participate in coordinated studies and propose pilot programs for emerging technologies as appropriate; and,
   - Leverage programs available under the IRA to access affordable, carbon-free resources.

3. **Evaluate opportunities to abandon FCPP earlier than 2031 as available and in the interest of customers.**
   - Address the energy and capacity implications of removing this resource from the portfolio;
   - To the extent that abandonment of FCPP and replacement resources are available and provide benefit to PNM customers, file for abandonment of FCPP interest; and,
   - Leverage IRA funding, including the "energy community" bonus, to maximize benefits, mitigate financial costs, and promote environmental justice.

4. **Evaluate the ability to create new demand response and other customer programs, including customer sited storage, interruptible rates, etc. and request regulatory approvals, as necessary.**

- Continue to develop and implement cost effective energy efficiency and demand management programs and file plans with the Commission, as applicable;
- Explore cost-effective options to maintain system supply and reliability;
- Continue to explore, develop, seek approval of, and promote, dynamic pricing structures (e.g., TOU) to empower customers and encourage energy usage that minimizes peak system risk periods;
- Continue advancing grid modernization efforts, including AMI conversion, to support new customer programs in the future; and,
- Consider new DR programs, including flexible requirements, with the goal of improving performance during peak risk periods.

5. Assess the ability to add capacity at PNM's existing plant sites within Open Access Transmission Tariff (OATT) processes.

- Conduct site assessments for resources approaching the end of contract or end of depreciable life to study transmission impacts for resource alternatives; and
- Continue to explore options to expand the capability of existing plant resources when evaluating alternatives to meeting future customer needs; and
- Examine potential non-wires solutions where feasible to increase existing plant capacity or operational flexibility.

6. Continue to explore the expanded participation in regional markets

- Explore PNM's ability to make a binding commitment to Western Resource Adequacy Program (WRAP) sooner than 2028;
- Participate in joint regional market exploration opportunities, formal or informal, to assess the potential customer benefits associated with market participation. Provide input, when possible, to explore benefits associates with extreme weather both from a cost and performance perspective.

7. Assess the need to utilize other reliability metrics in planning

- Transition resource adequacy modeling approach to reflect WRAP planning requirements and resource attributes no later than PNM's 2026 IRP;
- To the extent these resource attributes and planning requirements are known, and PNM makes a binding commitment to fully participate in WRAP earlier then 2028, update resource adequacy modeling for PPA and/or CCN filings prior to filing the 2026 IRP as best possible;
- Continue to monitor whether the loss of load expectation (LOLE) standard of 0.1 days per year is appropriate for planning;
- Assess whether additional metrics should be utilized in resource adequacy planning and/or whether standards for resilience should be established and considered in planning; and,
- Continue grid modernization activities, including AMI deployment, to improve visibility into system outages at the distribution level.

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8. Initiate stakeholder workshops and meetings for the 2026 IRP in advance of the required six-months stakeholder process as required under the IRP rule.

- Investigate improvements to IRP process to incorporate integrated transmission, and distribution and grid modernization system planning;
- Discuss concepts (new or raised in the 2023 IRP process) and prioritize 2026 IRP modeling framework and objectives;
- Assess internal constraints and other considerations against which improvements must be weighed and balanced;
- Share significant findings to help the public stay informed about relevant insights;
- Investigate ways to provide meaningful education and outreach for stakeholders to better engage before 2026 IRP cycle.

9. Complete the 2026 IRP

- Address the implications of the expiration of supply contracts and any retiring resources;
- Investigate potential optimization of generation, storage, and transmission to enhance planning efforts; and,
- Work with stakeholders in an ongoing collaborative public advisory process, including communication of electricity sector changes and the IRP process.

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8. Conclusion

Statement of Need

The PNM Integrated Resource Plan 2023 outlines an innovative 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, identifying between 5,800 and 7,800 MW of new generation capacity through 2042. This total amount of future capacity is almost twice as much as exists in our system today and must be constructed and integrated at an unprecedented pace to achieve the carbon-free electric system New Mexico requires and deserves. Simultaneously, changes are occurring and must occur in every sector of the environment in which PNM operates. These portfolio changes will also impact and be influenced by transmission and distribution grid planning activities. As a result of all these dynamic factors, ongoing re-evaluation and modifications to the 2023 IRP plan that will be incorporated in future triennial PNM IRPs.

The IRP planning framework balances three overarching objectives: maintaining reliability, minimizing cost, and mitigating impact to the environment. The IRP seeks to create a long-term plan that achieves favorable results for PNM customers in all three areas:

- **Reliability:** PNM customers expect steady, reliable electric service. To meet this expectation, PNM plans the system to maintain a loss of load expectation of "one day in ten years," aligned with common industry standards; doing so requires planning a generation portfolio to meet customer demands all hours of the year, including under increasingly severe extreme weather conditions. As significant portions of the existing fossil generation portfolio will retire over the planning horizon, PNM will need to add new resources that, together, can reliably supply customers across all weather conditions.
- **Affordability:** PNM considers comprehensive, lifecycle costs when determining the affordability of resources in its portfolio. Avoiding unnecessary expenses and minimizing costs to consumers is a central concept of affordability; however, it is also important to maintain a more nuanced perspective to manage costs over the long term. Therefore, affordability also includes a consideration of mitigating potential risks and volatility in the future.
- **Environmental Impact:** PNM has established an ambitious goal to achieve a 100% carbon-free generation portfolio by 2040. As of 2022, PNM's generation portfolio met 53% of customers' total annual energy needs (10,000 GWh) with carbon-free electricity. The IRP 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.

Achieving PNM's goals will require a sustained, concerted effort to transform its portfolio, a transformation that also requires constant evaluation and coordination with the commission and PNM's customers.

The types of resources procured to serve PNM customers will include a diverse mix of technologies and capabilities that generally fall into three categories:

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- **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 provide 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 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 are planned to be used to satisfy these needs.

Based on what PNM knows today and its expectations for the future, the Most Cost-Effective Portfolio reflects the current vision of the resources that would best fulfill future resource needs. **Figure 7** summarizes the new resource needs in the MCEP at three key milestones: 2027, at the end of the Action Plan; 2032, after exit from Four Corners and the retirement of Reeves; and 2042, at the end of the planning horizon.

- Between now and 2027, PNM plans to meet most of its needs with 1,100 MW of low-cost carbon-free resources and 1,000 MW dynamic balancing resources, most of which are already under development (in some cases, pending approval by the Commission) or will be procured through active solicitations.
- Between 2027 and 2032, our resource needs grow due to load growth and plant retirements, and during this period, our MCEP identifies an additional 800 MW of low-cost, carbon-free energy resources, 400 MW of dynamic balancing resources, and 200 MW of firm generation resources.
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Additional details on the MCEP can be found in the Appendix.

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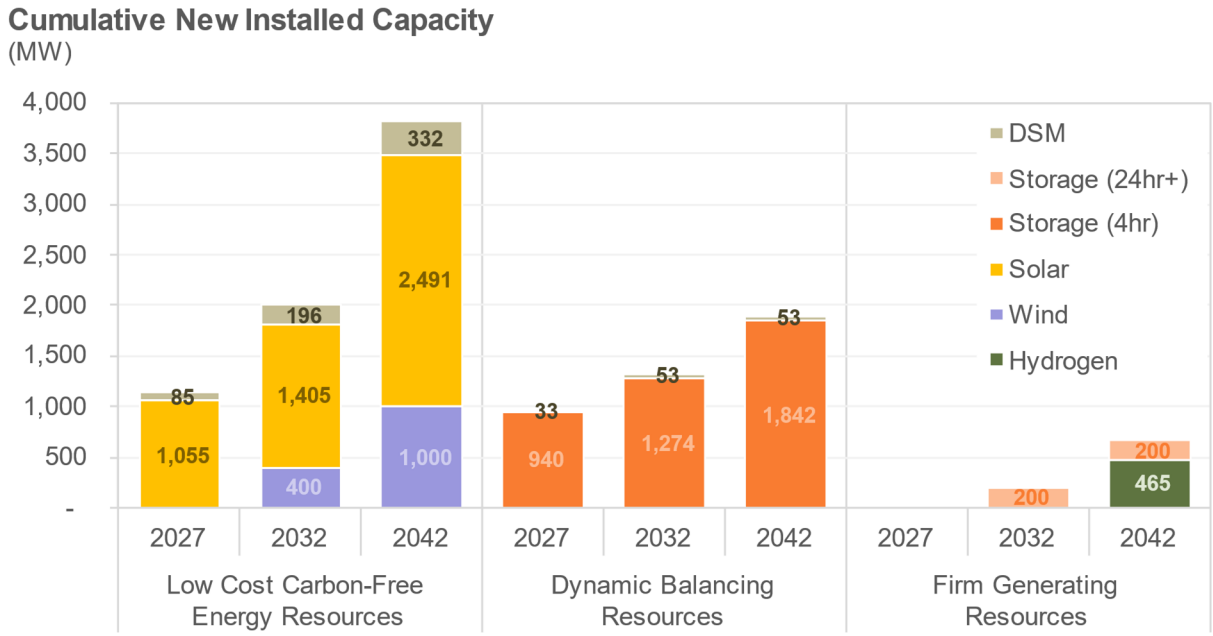
Figure 7. Summary of future resource needs in our Most Cost-Effective Portfolio



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DSM: 2024 & 2025 approved DSM programs

While the MCEP reflects the current view of the most viable pathway to PNM's 2040 carbon-free goal, there are multiple uncertainties that may change the composition of the portfolio. By studying a diverse range of scenarios in this IRP, planners and stakeholders will have information to understand and assess the options and influencing factors that may lead us to change course from the current MCEP. In this regard, the IRP explores all viable pathways to decarbonization by 2040, while recognizing that the numerous future alternatives and sensitivities studied broaden the range of plausible resource needs going forward:

Table 3. Ranges of new capacity additions across the planning period

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Ranges shown based on results across four scenarios (All Technologies, Base Technologies + CT, Base Technologies + LDS, and Base Technologies + CT + LDS) across all sensitivities excluding Stable ED (high load growth). Resource needs under a high load growth future could be considerably higher.

The specific resources that are procured to meet those needs will include a diverse mix of technologies. Many of these resources are commercially available today, but the pursuit of aspirational goals often requires a transformative approach. Therefore, PNM will continue to explore innovative solutions like long-duration storage and hydrogen fuels as they approach commercial viability. PNM recognizes the importance of early action in the lifecycle of technology maturation, and to the extent practical opportunities arise, PNM will partner with others in the industry to engage in pilot programs and small-scale demonstrations of emerging technologies.

The development of new generation resources at the scale needed to meet the challenges ahead has implications for other parts of the system. In particular, the new resources added to decarbonize the generation mix and meet growing loads will require an expansion of the transmission system to allow for the delivery of electricity. The existing transmission system is already encountering constraints today, and many of the resources that may help to satisfy future needs are located in parts of the state that would require new transmission investments.

Ultimately, the specific portfolio of resources that best meets the needs of PNM's customers and achieves its goals will be determined by a combination of market forces, technological advances, and industry trends that cannot be perfectly predicted today; further, specific decisions around procurement of new resources will occur through competitive solicitations to ensure our customers benefit from the lowest cost options. PNM's planning and procurement processes are adaptive and iterative by design, and neither the presence nor the absence of any specific type of resource in the 2023 IRP MCEP is a prescriptive determination of what will or will not be procured to meet customer needs. This MCEP, coupled with the diverse outcomes in alternative plausible portfolios, informs an Action Plan that is intended to further our progress towards our goals while preserving optionality to adjust to changing market circumstances.

Action Plan

The final result of the 2023 IRP, the Action Plan translates learnings from the IRP process into concrete, actionable steps that will support progress towards PNM's long-term goals. It reflects the fact that procurement processes to meet our 2026-2028 resource needs are already underway and focuses on actions that will lay the foundation for the continued transition towards a carbon-free system. Many of the elements of the Action Plan have been heavily influenced by the feedback received from stakeholders throughout the facilitated process; where possible, the Action Plan highlights how stakeholder input helped to shape these actions.

1. Issue an all-source RFP for resources coming online between 2029 and 2032

- Consider environmental justice factors in the bid evaluation process;
- Include system reliability and resiliency assessments, fuel security, and resource diversity in the bid evaluation process;
- Utilize an independent evaluator as part of the RFP process;
- File for resource approvals with the PRC (PPA/CCN), balancing resource selections between utility-owned and third-party contracts; and
- Leverage federal sources of funding, including the IRA, to the extent practical in alignment with system resource timing needs.

Stakeholder input: *During the facilitated stakeholder meetings, many stakeholders expressed interest and enthusiasm for pursuing specific types of resources (e.g., geothermal, closed-loop*

pumped storage, etc.) or siting of new resources with specific criteria (e.g., environmental justice). In response, PNM reiterated its commitment to utilize all-source RFPs to maximize value for customers. Within the context of competitive procurement processes, PNM invited stakeholders to provide specific suggestions for RFP instructions and evaluation methodology in the IRP docket, as RFP instructions to bidders and form contracts will be filed with the PRC prior to issuance.[1] Certain accommodations were made to Action Plan Item 1, including updates to RFP documents and assurances of fair consideration of all responding resources.

2. Issue an RFI/RFP for long-lead time resources or newer technologies that could deliver between 2029 and 2035

- Consider environmental justice factors in the bid evaluation process;
- Continue to assess longer term needs of the system, including potential transmission expansions, to help facilitate long lead or newer technology additions;
- Continue to monitor the state of maturation of emerging technologies that are not yet commercially viable or cost-effective;
- Participate in coordinated studies and propose pilot programs for emerging technologies as appropriate; and,
- Leverage programs available under the IRA to access affordable, carbon-free resources.

Stakeholder input: *Stakeholders also expressed interest the exploration of emerging technologies through federal or state research programs, pilot projects, and/or other industry partnerships. Our commitment to pursue these opportunities when practical is reflected in Action Plan Item 2.*

3. Evaluate opportunities to abandon FCPP earlier than 2031 as available and in the interest of customers.

- Address the energy and capacity implications of removing this resource from the portfolio;
- To the extent that abandonment of FCPP and replacement resources are available and provide benefit to PNM customers, file for abandonment of FCPP interest; and,
- Leverage IRA funding, including the "energy community" bonus, to maximize benefits, mitigate financial costs, and promote environmental justice.

Stakeholder input: *During the facilitated stakeholder meetings, some stakeholders asked PNM to prioritize projects and resources located within federally designated "energy communities" (supported by the Inflation Reduction Act) to deliver low-cost clean energy to while providing economic development opportunities in communities that are transitioning away from a fossil fuel-based economy. In response, PNM has incorporated this concept as part of Action Plan Item 3. PNM also notes that such projects' ability to take advantage of the energy community bonus tax credits in the IRA may allow them to compete more favorably in competitive solicitation processes.*

[1] NMAC 17.7.3.12(C)

4. Evaluate the ability to create new demand response and other customer programs, including customer sited storage, interruptible rates, etc. and request regulatory approvals, as necessary.

- Continue to develop and implement cost effective energy efficiency and demand management programs and file plans with the Commission, as applicable;
- Explore cost-effective options to maintain system supply and reliability;
- Continue to explore, develop, seek approval of, and promote, dynamic pricing structures (e.g., TOU) to empower customers and encourage energy usage that minimizes peak system risk periods;
- Continue advancing grid modernization efforts, including AMI conversion, to support new customer programs in the future; and,
- Consider new DR programs, including flexible requirements, with the goal of improving performance during peak risk periods.

Stakeholder input: *During the facilitated stakeholder meetings, stakeholders requested that PNM further develop its demand response programs and define a specific goal for demand response. Establishing a specific target would be inconsistent with our philosophy of pursuing the lowest-cost resources to meet our customers' needs through the competitive resource procurement process; however, PNM embraces the spirit of this input and recognizes the importance of continuing to explore further opportunities to refine its customer programs. This is reflected in Action Plan Item 4.*

5. Assess the ability to add capacity at PNM's existing plant sites within Open Access Transmission Tariff (OATT) processes.

- Conduct site assessments for resources approaching the end of contract or end of depreciable life to study transmission impacts for resource alternatives; and
- Continue to explore options to expand the capability of existing plant resources when evaluating alternatives to meeting future customer needs; and
- Examine potential non-wires solutions where feasible to increase existing plant capacity or operational flexibility.

6. Continue to explore the expanded participation in regional markets

- Explore PNM's ability to make a binding commitment to Western Resource Adequacy Program (WRAP) sooner than 2028;
- Participate in joint regional market exploration opportunities, formal or informal, to assess the potential customer benefits associated with market participation. Provide input, when possible, to explore benefits associates with extreme weather both from a cost and performance perspective.

Stakeholder input: *During the facilitated stakeholder meetings, stakeholders recommended that PNM explore the benefits of participation in organized regional markets, noting specifically the importance of cost reductions benefits and reliability improvement during extreme weather conditions. Consistent with these recommendations, PNM intended to continue exploring*

opportunities to participate in organized markets and has included actions associated with market participation as part of Action Plan Item 6.

7. Assess the need to utilize other reliability metrics in planning

- Transition resource adequacy modeling approach to reflect WRAP planning requirements and resource attributes no later than PNM's 2026 IRP;
- To the extent these resource attributes and planning requirements are known, and PNM makes a binding commitment to fully participate in WRAP earlier then 2028, update resource adequacy modeling for PPA and/or CCN filings prior to filing the 2026 IRP as best possible;
- Continue to monitor whether the loss of load expectation (LOLE) standard of 0.1 days per year is appropriate for planning;
- Assess whether additional metrics should be utilized in resource adequacy planning and/or whether standards for resilience should be established and considered in planning; and,
- Continue grid modernization activities, including AMI deployment, to improve visibility into system outages at the distribution level.

Stakeholder input: *Throughout the facilitated stakeholder meetings, stakeholders provided multiple valuable comments related to resource adequacy and reliability. Some stakeholders noted that PNM's future plans to participate in WRAP should be reflected in its resource adequacy modeling; some called upon PNM to explore in greater detail the implications of extreme weather; and some voiced concerns over high penetration of distributed resources on distribution feeders potentially causing reliability and resource accessibility issues. All of these comments point to a general desire for continued refinement and understanding of PNM's approach to planning for reliability, and those recommendations are addressed in Action Plan Item 7.*

8. Commit to initiate stakeholder workshops and meetings for the 2026 IRP in advance of the required six-months stakeholder process as required under the IRP rule.

- Investigate improvements to IRP process to incorporate integrated transmission, and distribution and grid modernization system planning;
- Discuss concepts (new or raised in the 2023 IRP process) and prioritize 2026 IRP modeling framework and objectives;
- Assess internal constraints and other considerations against which improvements must be weighed and balanced;
- Share significant findings to help the public stay informed about relevant insights;
- Investigate ways to provide meaningful education and outreach for stakeholders to better engage before 2026 IRP cycle.

Stakeholder Input: *Many of the stakeholder comments and recommendations throughout the process were outside the defined scope of this IRP cycle or were explored in a limited fashion; however, PNM values this input and hope to incorporate improvements and refinements to future planning efforts. Examples included recommendations for consideration of additional scenarios and additional modeling detail on topics like correlated gas outages, extreme weather, and battery performance. Some stakeholders expressed a more general desire to see PNM initiate public*

information efforts regarding electricity sector changes and the IRP process. PNM values the input and feedback from informed stakeholders. In response, this activity was included as part of Action Plan Item 8.

9. Complete the 2026 IRP

- Address the implications of the expiration of supply contracts and any retiring resources;
- Investigate potential optimization of generation, storage, and transmission to enhance planning efforts; and,
- Work with stakeholders in an ongoing collaborative public advisory process, including communication of electricity sector changes and the IRP process.

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