BEFORE THE NEW MEXICO PUBLIC REGULATION COMMISSION

IN THE MATTER OF PUBLIC SERVICE COMPANY OF NEW MEXICO'S APPLICATION FOR A CERTIFICATE OF PUBLIC CONVENIENCE AND NECESSITY TO CONSTRUCT, OWN, AND OPERATE 30 MEGAWATTS OF BATTERY ENERGY STORAGE FACILITIES	)	**Case No. 25-000__- UT**
PUBLIC SERVICE COMPANY OF NEW MEXICO,	)	
Applicant	)	

DIRECT TESTIMONY

OF

NICHOLAS POLLMAN

August 6, 2025

NMPRC CASE NO. 25-000__-UT
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WITNESS FOR
PUBLIC SERVICE COMPANY OF NEW MEXICO

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I. INTRODUCTION AND PURPOSE

Q. Please state your name, title, and business address.

A. My name is Nicholas Pollman. I am the Manager of Control Systems, Utility Operations and Technology for PNMR Services Company. My business address is 2401 Aztec Rd NE, Albuquerque, NM 87107. My testimony is on behalf of Public Service Company of New Mexico ("PNM" or "Company").

Q. Please summarize your educational and professional qualifications.

A. PNM Exhibit NP-1 describes my educational and professional qualifications.

Q. What is the purpose of your testimony?

A. The purpose of my testimony is to provide technical expertise and insight regarding the proposed utility-scale, distribution-sited Battery Energy Storage System (BESS) project ("BESS Project"). My focus is on the generation engineering aspects, including the technical specifications, integration, and operational methodology of BESS deployment on PNM's system. My testimony also addresses how the BESS Project meets certain statutory criteria for approval of a certificate of public convenience and necessity ("CCN") for an energy storage system under Section 62-9-1(E) of the Public Utility Act ("PUA").

II. GENERATION BENEFITS OF THE BESS

Q. How will PNM apply BESS solutions across its system?

A. PNM is currently working towards implementing a diverse portfolio of BESS across its system, both utility-owned and contracted under Energy Storage Agreements (ESAs), with approximately 633 MW currently in service. This includes 12 MW of distribution-sited BESS and 621 MW of transmission-sited BESS. An additional 360 MW of transmission-sited BESS projects are in progress, which will bring the total to 992 MW of 4-hour energy storage.

PNM intends to continue applying BESS solutions to address both distribution and transmission system needs. Distribution-sited BESS are used to relieve feeder congestion, increase hosting capacity for distributed generation, and improve voltage and thermal management at the local level. Importantly, while these BESS address specific distribution challenges, they also provide storage capacity that supports system wide objectives, such as reducing renewable curtailment and facilitating the broader transition to renewable generation. Transmission-sited BESS similarly provides essential storage capacity for the grid as a whole, supporting grid reliability, providing ancillary services, and enabling greater integration of renewable resources at a system wide scale. These assets are strategically located to address bulk system needs and enable the integration of large volumes of renewable resources across the entire service territory.

Connecting BESS near Variable Energy Resources (VER), whether on the distribution or transmission system, reduces losses by minimizing the distance energy must travel and the number of voltage conversions required. This approach also reduces the risk that congestion or equipment outages will prevent renewable energy from being stored, resulting in renewable curtailments. By applying BESS at both the transmission and distribution levels, PNM ensures energy is stored and used efficiently and reliably, supporting both local and system-wide grid needs. This comprehensive strategy allows PNM to maximize the efficiency and value of energy storage, defer traditional infrastructure upgrades at both the distribution and transmission levels, and enhance service quality for customers, while supporting a reliable and resilient transition to a renewable energy future.

Q. Does PNM have experience deploying, operating, and maintaining energy storage systems, particularly batteries?

A. Yes. PNM has experience deploying, operating, and maintaining battery energy storage systems. PNM has directly deployed and operates 12 MW of utility-owned, distribution-sited BESS,[1] currently performing maintenance in-house while working to implement a long-term service agreement (LTSA) for ongoing support. For transmission-sited BESS under ESAs, PNM has worked closely with

[1] Approved in Case No. 23-00162-UT.

developers during deployment to ensure the BESS meets operational requirements and is properly integrated with PNM's systems, allowing for effective operation by PNM. PNM is also in the process of deploying its first utility-owned, transmission-sited BESS, further expanding its operational experience with energy storage assets.

Q. How will PNM ensure that the BESS deployment will be safe?

A. PNM is deploying its BESS in alignment with the most current industry standards and best practices, including the requirement for UL 9540A testing, which demonstrates the ability of the BESS design to prevent fire propagation in the event of ignition. These standards and best practices, combined with ongoing advancements in BESS design, operational protocols, and manufacturing quality, have led to substantial improvements in overall system safety. According to analysis by EPRI in 2024, the global grid scale BESS failure rate dropped by 97% between 2018 and 2023, reflecting the effectiveness of these measures.[2]

For this project, PNM has selected the Tesla Megapack BESS solution, which meets or exceeds all the installation level codes and standards, such as the IFC and NFPA 855, required for outdoor, ground mounted BESS installations. This product utilizes cells with lithium iron phosphate (LFP) battery chemistry, which is widely

[2] Insights from EPRI's Battery Energy Storage Systems (BESS) Failure Incident Database: Analysis of Failure Root Cause (https://www.epri.com/research/products/000000003002030360).

recognized as the safest option for utility scale storage due to its minimal risk of thermal runaway compared to chemistries such as nickel manganese cobalt (NMC). The Megapack design has undergone UL 9540A testing, confirming its resistance to fire propagation, and includes an integrated explosion control system featuring deflagration vents to further reduce risk. By combining industry leading standards and Tesla's proven engineering safeguards, PNM is confident this BESS deployment will be both safe and reliable.

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III. UTILITY OWNED PROPOSED BESS PROJECT

Q. Does PNM intend to own and operate the BESS Project?

A. Yes.

Q. Why is utility ownership of distribution system BESS preferable to third-party ownership for PNM's customers?

A. Utility ownership of distribution system BESS is preferable for PNM's customers because it provides direct operational control and seamless coordination with existing generation assets, particularly when BESS is co-located with utility-owned PV. These sites are already zoned and permitted for generation use, which streamlines the permitting and zoning process and accelerates deployment. Siting the BESS on utility-owned property also helps reduce project costs.

Based upon experience from PNM's first two production distribution-sited BESS deployments, the operational strategy focused around creating headroom on the feeder does not result in a full battery charge/discharge cycle every day, in contrast to the common operation of transmission-sited resources. Since battery degradation is primarily driven by the number of equivalent cycles, the third-party ownership model would likely result in PNM paying for capacity that cannot be fully utilized within the contract period, leaving value unrealized. With utility ownership, PNM can continue to use the BESS beyond the original contract horizon, recouping the value of extended battery life and ensuring optimal asset utilization.

Utility ownership also enables PNM to maintain full control over safety protocols, installation requirements, and community engagement, ensuring that customer interests remain the top priority.

Q. Is utility ownership of the BESS Project consistent with the CCN standards under Section 62-9-1(E)(6) of the PUA for approval of energy storage systems?

A. Yes. Based upon my understanding, utility ownership of these BESS projects is consistent with the CCN standards under Section 62-9-1(E)(6) of the PUA. Utility ownership enables PNM to directly manage the BESS, allowing for real-time operational decisions, integration with existing assets, and the flexibility to adapt to evolving grid needs. This direct control supports system reliability, safety, and efficiency, fully aligning with the intent and requirements of Section 62-9-1(E)(6).

Q. Will distribution-sited BESS be applied solely to address solar saturation constraints?

A. No. While mitigating solar saturation on specific feeders is a primary driver for these installations, distributed BESS also delivers several immediate benefits. Currently, these systems provide peak shaving, which reduces peak loads on the feeder, substation, and the Bulk Electric System. They also offer voltage support by providing reactive power to help maintain voltage within acceptable limits on the distribution system and improve power quality and reliability by managing both active and reactive power locally to help stabilize feeder operations.

Looking ahead, as additional system improvements are implemented through initiatives such as Grid Mod[3] and Virtual Power Plant (VPP) projects, we expect to unlock further benefits. These include enhanced flexibility through remote dispatch capabilities, integration with Integrated Volt Var Management (IVVM), and the potential for distributed storage to provide ancillary services to the Bulk Electric System. These capabilities are not yet fully realized but are anticipated as our control and communications infrastructure evolves.

In addition to resolving local constraints, distribution-sited BESS adds valuable storage capacity that benefits the entire system and supports broader renewable

[3] "Grid Mod" refers to PNM's six-year grid modernization plan approved in Case No. 22-00058-UT.

integration objectives. By providing flexible storage at the distribution level, these systems help balance supply and demand, facilitate the integration of additional renewables, and strengthen overall grid resilience.

Q. Please explain how the BESS Project aligns with PNM's longer term grid modernization plan related to generation.

A. The BESS Project directly supports PNM's long-term grid modernization plan by enabling a more resilient, flexible, and decarbonized electric system that can reliably integrate increasing levels of renewable generation. Battery storage is a foundational technology for transitioning from a traditional, one-way power system to a dynamic, multi-directional grid capable of balancing supply and demand in real time. By absorbing excess solar generation and shifting energy to periods of peak demand, the BESS Project helps manage distributed generation variability, increases hosting capacity, reduces the need for new generation or costly infrastructure upgrades, and reduces curtailment of renewable resources. This aligns with PNM's goal of maximizing the use of carbon-free resources and supporting state targets for a carbon-free grid by 2045.

The BESS Project is not only aligned with PNM's broader grid modernization initiatives, such as Grid Mod, but is also expected to enhance the effectiveness of these efforts. For example, as Grid Mod projects like Advanced Distribution Management System (ADMS) upgrades are implemented, they are anticipated to

enable remote dispatch and more advanced coordination of BESS sites with the distribution system. This will make it possible to integrate BESS into programs like Integrated Volt Var Management (IVVM), further optimizing voltage profiles, improving power quality, and enhancing overall system efficiency.

Additionally, the flexibility provided by distribution-sited BESS supports the evolution toward a more automated and data-driven grid, enabling real-time operational adjustments and more effective utilization of distributed energy resources. As PNM continues to modernize its grid, these BESS assets will serve as critical building blocks, supporting both current operational needs and future capabilities such as participation in virtual power plants and the provision of ancillary services to the Bulk Electric System as technology and regulatory frameworks evolve.

Q. How will the BESS Project address more than solar saturation constraints through the application to other grid management objectives?

A. Beyond mitigating solar saturation, the proposed BESS Project provides PNM with significant flexibility in planning for future load and generation scenarios, supporting a more adaptive and resilient distribution system. By enabling energy shifting and peak shaving, distribution-sited BESS enhances the system's capacity value and helps manage periods of both high demand and high Variable Energy Resource (VER) generation without the need for immediate investment in new

generation or traditional infrastructure upgrades. The distribution-sited BESS supports grid reliability primarily through local voltage support and peak shaving. Additional capabilities, such as providing ancillary services to the Bulk Electric System (including Area Control Error response and system-level energy shifting), are being actively explored through PNM's participation in the DOE ARROWS project.[4] These capabilities are not yet implemented but are being demonstrated and evaluated for potential future use. Importantly, each distribution-sited BESS installation represents capacity that does not need to be added at the transmission level, helping to optimize system-wide investment and planning. Additionally, because many of these feeders are in underserved areas, these projects inherently support energy equity by enhancing grid reliability and service quality in communities that have historically faced greater challenges in accessing reliable power. Overall, the distribution-sited BESS Project is an important part of PNM's strategy to build a more flexible, reliable, and equitable grid for all customers.

IV. PUBLIC INTEREST

Q. Please explain how the BESS Project serves the public interest?

[4] See https://gridbeyond.com/gridbeyond-is-awarded-7-8m-arrows-funds-to-provide-advanced-grid-services/ for more information on this project and PNM's participation in it.

A. The proposed BESS Project serves the public interest by providing immediate and tangible benefits to both the system and PNM's customers. By addressing solar saturation on these distribution feeders, the BESS enables additional rooftop and distributed PV systems to interconnect, supporting customer choice and accelerating the adoption of renewable energy. Distribution-sited BESS also serves to reduce renewable curtailment at a system level, maximizing the utilization of existing carbon-free resources. These benefits ensure that the BESS Project advances the public interest by enabling greater renewable integration at both the system and feeder level, supporting grid reliability, and helping PNM achieve its long-term decarbonization objectives while delivering enhanced service quality to customers.

Q. What overall net public benefits does the BESS Project provide?

A. The BESS Project delivers substantial net public benefits by enabling the deferral of distribution infrastructure upgrades, while at the same time providing much-needed energy storage capacity at the system level. By absorbing excess renewable generation and shifting energy to periods of higher demand, the BESS reduces curtailment of renewable VERs, thereby maximizing the use of carbon-free energy. At the feeder level, the BESS supports peak shaving and energy shifting, improves voltage stability, and enhances overall power quality for customers. These capabilities help PNM accommodate additional distributed generation, increase

hosting capacity, and deliver more reliable and efficient service, all while advancing the transition to a resilient, modern, and decarbonized grid.

Q. Will the BESS Project reduce the use of fossil fuels for meeting demand during peak load periods as required under Section 62-9-1(E)(2) of the PUA?

A. Yes. As explained in the Direct Testimony of PNM witness Hakimian, the BESS Project will reduce the use of fossil fuels for meeting peak system demand. Energy stored in the BESS from co-located solar resources is discharged after solar production declines, which typically aligns with the onset of peak load periods that remain elevated for several hours. By storing excess solar energy for use during peak demand, the BESS reduces curtailment of renewable generation and offsets the historical reliance on fossil-fueled resources during high-demand periods, supporting a cleaner and more efficient energy mix. The four-hour duration of these storage systems is particularly well suited for this application.

Q. Will the BESS Project assist in ensuring grid reliability, including generation system stability, while integrating sources of renewable energy into the grid as required under Section 62-9-1(E)(3) of the PUA?

A. Yes. The proposed BESS Project will assist with ensuring grid reliability and generation system stability as increasing amounts of renewable energy are integrated into the distribution system, including rooftop and community solar

projects. By adding distributed energy storage capacity at key locations, these BESS installations provide essential flexibility to manage the variability and intermittency of distributed solar generation.

The BESS absorbs excess solar energy during peak production and discharges during high demand, helping maintain voltage and thermal limits on feeders. This enables reliable integration of additional distributed resources, including community solar, ensuring safe and efficient service consistent with Section 62-9-1(E)(3) of the PUA.

Q. Will the BESS Project support diversification of energy resources and enhance grid security as required under Section 62-9-1(E)(4) of the PUA?

A. Yes. By enabling the integration of additional distributed and renewable energy resources, such as rooftop and community solar projects, the BESS Project expands PNM's energy portfolio beyond traditional generation sources. This diversification reduces reliance on single fuel types and enhances the resilience of the grid. Battery energy storage systems provide operational flexibility by storing excess renewable energy for use during periods of high demand or low generation, helping to balance supply and demand in real time. This capability strengthens grid security by ensuring reliable service during system disturbances and reducing vulnerability to outages or fluctuations in renewable output. By localizing storage at the distribution level, the BESS Project also helps manage local contingencies and reduces stress

on the broader transmission network, further supporting a robust and secure electric system.

Q. Will the BESS Project reduce greenhouse gases and other air pollutants during power generation as required by Section 62-9-1(E)(5) of the PUA?

A. Yes. The proposed 30 MW of distribution-sited BESS is designed to store up to 120 MWh of energy generated from co-located solar resources each day. By capturing excess solar generation that would otherwise be curtailed, the BESS enables more renewable energy to be utilized on the system. When this stored energy is discharged during periods of lower solar output, it can help offset the need for fossil-fueled generation, which results in more efficient use of carbon-free resources and contributes to the reduction of greenhouse gas emissions and other air pollutants associated with conventional power generation. This 120 MWh of distribution-sited BESS has the potential to eliminate more than 18,000 tons of CO2 emissions per year, however with the current control mode focused around creating headroom on the feeder, the reduction is expected to be around 9,000 tons of CO2 emissions per year.

Q. Will the BESS Project provide PNM with the discretion, subject to applicable laws and rules, to operate, maintain and control energy storage systems so as

to ensure reliable and efficient service to customers as required by Section 62-9-1(E)(6) of the PUA?

A. Yes. Direct ownership enables PNM to make real-time operational decisions, coordinate the BESS with existing assets, and adapt operations as grid needs evolve, all of which are essential for maintaining system reliability and efficiency. In addition, utility ownership provides PNM with the flexibility to perform maintenance either in-house or through a long-term service agreement (LTSA), depending on which approach delivers the best value to customers. As PNM gains more experience with battery energy storage technology, the Company can adjust its maintenance strategy over time to ensure optimal performance, reliability, and cost-effectiveness.

V. CONCLUSION

Q. Please summarize your testimony.

A. PNM is seeking approval to expand its deployment of utility-scale, distribution-sited BESS co-located with existing utility-owned PV sites. The Company has already successfully installed two 6 MW / 4 hr BESS units in areas experiencing solar saturation, where the output from distributed generation exceeds the feeders' capacity to safely absorb reverse power flows. These BESS units are currently locally controlled to absorb excess solar generation and reduce backfeed, thereby

creating additional headroom on constrained feeders and directly increasing the hosting capacity for new distributed generation.

The proposed BESS expansion will continue to address feeder congestion and enable more customers to install rooftop and distributed solar, supporting customer choice and accelerating the adoption of carbon-free energy. By mitigating voltage and thermal violations, BESS defers the need for costly and time-consuming distribution upgrades, providing a faster and more flexible "non-wires" alternative, while also providing energy storage capacity that benefits the Bulk Electric System as a whole.

This project is closely aligned with PNM's broader Grid Mod and Virtual Power Plant (VPP) initiatives, which are designed to enhance the flexibility, control, and value of distributed energy resources. As these initiatives progress, the integration of advanced communications, remote dispatch, and grid management technologies will enable even greater coordination and optimization of BESS assets across the distribution system. By participating in demonstration projects such as the DOE ARROWS project, PNM is actively exploring new operational strategies and use cases for distribution-sited BESS, including the potential to provide ancillary services and support the Bulk Electric System. These efforts are focused on unlocking additional system and customer benefits as technology and regulatory frameworks continue to evolve, ensuring that the value of these assets grows in step with the needs of a modern, resilient, and decarbonized grid.

Utility ownership of these BESS assets ensures direct operational control, optimal coordination with existing infrastructure, and long-term value for customers by maximizing asset utilization and maintaining high standards for safety and reliability. The BESS Project aligns with PNM's long-term grid modernization strategy and supports statutory requirements for a carbon-free grid by 2045.

PNM requests that the Commission approve this application, recognizing that distribution-sited BESS are a critical tool for increasing renewable hosting capacity, improving grid reliability and resilience, and advancing the transition to a modern, decarbonized electric system for all customers.

Q. Does this conclude your testimony?

A. Yes.

GCG#534018

Resume of Nicholas Pollman

PNM Exhibit NP-1

Is contained in the following 1 page.

Nicholas Pollman

Educational and Professional Summary

Name: Nicholas Pollman

Address: PNM
MSZ120
2401 Aztec Rd NE
Albuquerque, NM 87107

Position: Manager, Control Systems | Utility Operations & Technology

Education: Bachelor of Science in Electrical Engineering, Montana Tech, 2014

Employment: Employed by PNM since 2016.
Positions held with the Company include:

Engineer, Power Production 2-3 – SJGS Engineering
Team Manager – SJGS Engineering
Engineer, Power Production 4 – PNM Generation Engineering
Manager, Controls System – Utility Operations & Technology

Technical Experience – Battery Energy Storage Systems (BESS)

- Served as PNM's technical expert for the first two utility-owned, distribution-sited BESS projects, co-located at South Valley and Rio Del Oro PV sites, providing oversight and technical support during engineering, construction, and commissioning.
- Supported the integration of third-party BESS sites connected to the transmission system, primarily by ensuring that PNM received all necessary data points to evaluate performance and contractual guarantees.
- Perform ongoing monitoring and evaluation of operational data from both utility-owned and third-party BESS sites to ensure system reliability and performance, and to confirm that all contractual guarantees and technical constraints were met.

Synergistic activities

- Actively engaged in GridMod, VPP Grant Project, ARROWS Grant Project, and other projects expected to maximize the benefits of distributed BESS.

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AFFIDAVIT

STATE OF NEW MEXICO)
) ss
COUNTY OF BERNALILLO)

NICHOLAS POLLMAN, Manager of Control Systems, Utility Operations & Technology for PNMR Services Company, upon being duly sworn according to law, under oath, deposes and states: I have read the foregoing **Direct Testimony of Nicholas Pollman,** and it is true and accurate based on my own personal knowledge and belief.

DATED this 6th day of August, 2025.

/s/ *Nicholas Pollman*
NICHOLAS POLLMAN

GCG #533974