

BEFORE THE NEW MEXICO PUBLIC REGULATION COMMISSION

**IN THE MATTER OF PUBLIC SERVICE)
COMPANY OF NEW MEXICO’S APPLICATION)
FOR APPROVAL OF PURCHASED POWER)
AGREEMENTS, ENERGY STORAGE)
AGREEMENTS, AND CERTIFICATES OF PUBLIC)
CONVENIENCE AND NECESSITY FOR SYSTEM)
RESOURCES IN 2026,)
)
PUBLIC SERVICE COMPANY OF NEW MEXICO,)
)
Applicant)
_____)**

Case No. 23-00xxx-UT

**DIRECT TESTIMONY
OF
R. BRENT HEFFINGTON**

October 25, 2023

**NMPRC CASE NO. 23-_____-UT
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R. BRENT HEFFINGTON**

**WITNESS FOR
PUBLIC SERVICE COMPANY OF NEW MEXICO**

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PNM Exhibit RBH-1

Education and Professional Summary

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I. INTRODUCTION AND PURPOSE

Q. PLEASE STATE YOUR NAME, POSITION AND BUSINESS ADDRESS.

A. My name is R. Brent Heffington. I am the Managing Director of Generation for Public Service Company of New Mexico (“PNM” or “Company”). My business address is 2401 Aztec Road NE, Albuquerque, NM 87107.

Q. PLEASE DESCRIBE YOUR RESPONSIBILITIES AS MANAGING DIRECTOR OF GENERATION.

A. I am responsible for the strategic direction and operation of PNM' s generating resources to ensure that they continue to provide safe, reliable and cost-effective electricity generation to customers within PNM's service territory. The functions I oversee include generation operations, maintenance, engineering, construction, fuel and power procurement, wholesale power marketing and other services related to PNM' s generation fleet. I have oversight responsibility with respect to PNM's ownership interests in generation resources where PNM is not the operator, specifically, the Four Corners Power Plant and Palo Verde Nuclear Generating Station.

Q. PLEASE SUMMARIZE YOUR EDUCATIONAL BACKGROUND AND PROFESSIONAL QUALIFICATIONS.

A. My educational background and professional experience are outlined in PNM Exhibit RBH-1.

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1

2 **Q. HAVE YOU PREVIOUSLY TESTIFIED IN ANY ADMINISTRATIVE**
3 **PROCEEDINGS?**

4 **A.** Yes, I have provided Direct Testimony in support of PNM’s general rate case
5 application in NMPRC Case No. 22-00270-UT.

6

7 **Q. WHAT IS THE PURPOSE OF YOUR TESTIMONY?**

8 **A.** My testimony addresses: 1) the background and description of PNM’s proposed
9 utility-owned Sandia 60 MW 4-hour battery storage project (“Sandia Storage
10 Project” or “Project”); 2) the estimated capital costs and timing of the Project; and
11 3) Project design benefits. My testimony also addresses how the Sandia Storage
12 Project meets several statutory criteria for approval of a certificate of public
13 convenience and necessity (“CCN”) for an energy storage system pursuant to
14 NMSA 1978 Section 62-9-1(D) of the Public Utility Act (“PUA”).

15 **II. PROJECT BACKGROUND AND DESCRIPTION**

16 **Q. PLEASE DESCRIBE THE SANDIA STORAGE PROJECT.**

17 **A.** The Sandia Storage Project includes the acquisition, installation, and operation of
18 a 60 MW four-hour Lithium Iron Phosphate (“LFP”) battery energy storage system
19 (“BESS”) to be located near the existing PNM Sandia Substation in Bernalillo
20 County.

21

22 **Q. WHEN WILL THE SANDIA STORAGE PROJECT BE OPERATIONAL?**

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1 **A.** The Sandia Storage Project is scheduled to become commercially operational and
2 begin serving customers in April 2026, assuming regulatory approval by June 1,
3 2024.

4

5 **Q. WHY IS PNM PURSUING UTILITY-OWNED BATTERY STORAGE?**

6 **A.** As more fully described in the testimony of PNM witness Nicholas Phillips, the
7 proposed Project reduces costs to ratepayers by avoiding or deferring the need for
8 investment in new generation as the only generation resource included in this filing
9 is the 100 MW of solar. The Sandia Storage Project is part of the most cost effective
10 portfolio among feasible alternatives.

11

12 **Q. HOW WILL PNM ENSURE THAT THE SANDIA STORAGE PROJECT**
13 **WILL BE SAFE?**

14 **A.** The Project shall be designed and constructed to comply with Occupational Safety
15 & Health Administration regulations, American National Standard Institute (ANSI)
16 standards, and National Fire Protection Association (NFPA) standards. Today's
17 BESS technology is generally safe, but PNM acknowledges that battery storage
18 projects can present some risk of fire. These fires have typically originated due to
19 1) battery design or chemistry, 2) battery manufacturing, and 3) battery installation
20 and operation. The use of a purpose-built, engineered system designed and
21 assembled by a single equipment provider helps ensure safe installation, which also
22 helps mitigate potential fire exposures.

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III. SANDIA STORAGE PROJECT COSTS

2 **Q. PLEASE PROVIDE THE TOTAL COST OF CONSTRUCTION FOR THE**
3 **SANDIA STORAGE PROJECT.**

4 **A.** The total estimated cost for the Sandia Storage Project, including engineering,
5 materials, construction, loads, and tax, is \$131,368,219. The project costs do not
6 include any additional percentages for contingencies and, as a result, PNM requests
7 the Commission set the Certificated Estimated Cost¹ for the Sandia Storage Project
8 consistent with the project cost estimate. To the extent PNM experiences a Cost
9 Overrun (*i.e.*, the actual costs of the project exceed the Certificated Estimated Cost
10 by 10% or more), PNM would provide the information required by the Cost
11 Overrun Rule (17.3.580 NMAC) to request recovery of these costs in its next rate
12 case.

13

14 **Q. HOW DID PNM DEVELOP THE ENGINEERING, PROCUREMENT AND**
15 **CONSTRUCTION (“EPC”) COSTS FOR THE SANDIA STORAGE**
16 **PROJECT?**

¹ 17.3.580 NMAC applies whenever a utility has obtained or acquires a certificate of public convenience and necessity (“CCN”) from the Commission to construct or operate an electric generating plant and has sought, is seeking, or anticipates seeking at any time to include the costs of construction as defined in its New Mexico jurisdictional rates. 17.3.580.6(A)(1) NMAC provides that no cost overruns incurred in construction of new electric generating plant will be included in rates unless the Commission determines whether they were prudently incurred. 17.3.580.7(D) NMAC further provides that "Construction Cost Overrun" or "Cost Overrun" means that portion of the costs of construction which exceeds the certificated estimated cost by ten percent (10%) or more” in instances where no allowance for contingencies was included in the certificated estimated cost. Finally, 17.3.580.7(D) NMAC defines the "Certificated Estimated Cost" to mean the total cost of construction of electric generating plant for the utility, including Allowances for Funds Used During Construction ("AFUDC"), as estimated by the utility at the time of issuance by the Commission of the CCN for the plant and reflected in the order issuing the CCN

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1 **A.** The engineering, procurement, and construction costs for the Sandia Storage
2 Project are based on the EPC Project cost quoted by DEPCOM in its RFP proposal.
3 The applicable New Mexico Gross Receipts Tax for the Project was included within
4 the EPC Contract price quoted by DEPCOM. As the EPC Contract with DEPCOM
5 is a full wrap EPC agreement, the EPC Project cost represents approximately 86%
6 of the total project cost and includes all major equipment and systems associated
7 with the Project.

8

9 **Q.** **HOW DID PNM DETERMINE THE ESTIMATE FOR OWNER’S COSTS
10 AND AFUDC FOR THE SANDIA STORAGE PROJECT?**

11 **A.** PNM engaged HDR Inc. to develop a cost estimate accounting for PNM’s costs to
12 oversee and manage the overall project development (“Owner’s Costs”) and
13 AFUDC costs associated with the payment schedule for the EPC Agreement. The
14 AFUDC was estimated based upon a six percent interest rate as applied to the
15 DEPCOM EPC Agreement cash flow forecast, combined with the expected
16 Owner’s Cost cash flow over the project duration of 30 months (from Limited
17 Notice to Proceed for the high voltage equipment to commercial operation).
18 Administrative and General loads applied to this project are consistent with PNM’s
19 current forecasts for administrative expenses.

20

21 **Q.** **HOW DID PNM DETERMINE THE TRANSMISSION
22 INTERCONNECTION COSTS ASSOCIATED WITH THE SANDIA
23 STORAGE PROJECT?**

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1 **A.** As discussed in PNM Witness Duane’s testimony, PNM identified the network
2 upgrades required to interconnection the Sandia Storage Project through its large
3 generator interconnection process. The Definitive Interconnection Cluster 11
4 Facilities Study identified a total cost of approximately \$5,200,000 for transmission
5 upgrades and interconnection facilities to accommodate the Sandia Storage Project.

6
7

8 **Q.** **WHAT IS PNM’S LEVEL OF CONFIDENCE IN THE ACCURACY OF**
9 **THE OVERALL COST ESTIMATE FOR THE SANDIA STORAGE**
10 **PROJECT?**

11 **A.** PNM is reasonably confident in the accuracy of the total project cost estimate based
12 on the fact that the EPC project cost has been finalized in the DEPCOM Agreement.
13 The DEPCOM Agreement is predominantly a firm, fixed price EPC contract which
14 has locked in the pricing and delivery schedule of the Project. PNM is requesting
15 that the Commission approve a Certificated Estimated Cost consistent with its
16 \$131,368,219 projected cost estimate. Furthermore, HDR has provided a detailed
17 review of the quoted scope of services for compliance with the Project
18 specifications and has confirmed the Project specification, which are included in
19 Exhibit A to the Agreement between DEPCOM and PNM. The full DEPCOM
20 agreement, including Exhibit A, is included in the testimony of PNM witness
21 Heslop.

22

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1 **Q. WHY DO YOU REFER TO THE EPC CONTRACT AS A**
2 **“PREDOMINANTLY” FIXED PRICE CONTRACT?**

3 **A.** Exhibit V to the EPC agreement details a “Lithium Carbonate Contract Price
4 Adjustment” that allows a portion of the battery price to float with movement in the
5 Lithium Carbonate Index. This is necessary because the order for the battery
6 modules will not be placed until Full Notice To Proceed (“FNTTP”) and the cost of
7 the lithium necessary to produce the battery cells will not be locked in until the
8 order is placed. Tying a portion of the battery costs to the lithium carbonate index²
9 is currently common practice in the industry given demand for batteries and cost of
10 materials. Although PNM has included the Lithium Carbonate Contract Price
11 Adjustment as part of the contract, PNM is not asking for the NMPRC to approve
12 any potential cost increases associated with the Lithium Carbonate Contract Price
13 Adjustment. Instead, should an increase in the lithium carbonate index occur that
14 raises the total project price above the Certificated Estimated Cost, the cost increase
15 will be addressed under the CCN overage rule. Any decrease in the lithium
16 carbonate index that results in an actual project cost below the Certificated
17 Estimated Cost will reduce the amount of cost PNM will seek to recover from its
18 customers.

² <https://tradingeconomics.com/commodity/lithium>.

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1 **Q. ARE THERE ANY CLARIFICATIONS REGARDING THE ESTIMATES**
2 **OF COSTS PNM IS REQUESTING TO CERTIFICATE COMPARED TO**
3 **THE EPC CONTRACT?**

4 **A.** Yes. PNM is requesting approval to certificate estimated costs consistent with the
5 Sandia storage cost presented in PNM Table JWH-2. This estimate is consistent
6 with the RFP submitted bid and RFP evaluation. However, the actual cost of the
7 EPC contract is slightly higher than what was bid due to modifications requested
8 by PNM during contracting. These modifications were requested to improve safety
9 at the site and increase optionality for future use cases of the project. The safety
10 and security modifications include adding a ballistic wall with cameras, card reader
11 gated access with a backup battery in the ballistic wall, and perimeter lighting
12 around the battery facility. Additional modifications include up-sizing the
13 generator step-up transformer, increasing the substation size, and adding grid
14 forming inverters and control equipment, these modifications allow for future
15 expansion, easier ability to replace equipment as well as a future option to add black
16 start capability. PNM asserts these are prudent decisions that will benefit
17 customers, but rather than increasing the requested approvals to certificate costs
18 above what was used in the RFP evaluation, PNM is requesting approval for costs
19 consistent with the RFP bid.

20
21 **Q. WHAT IF THE ACTUAL CONSTRUCTION COSTS EXCEED THE**
22 **CERTIFICATED ESTIMATED COSTS?**

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1 **A.** As discussed above and by PNM witness Henry Monroy, PNM would follow the
2 Commission’s Cost Overrun Rule as it applies to any excess over the Certificated
3 Estimated Cost.

4
5 **Q.** **DOES THE COST ESTIMATE PRESENTED BY PNM TAKE INTO**
6 **ACCOUNT ANY AVAILABLE TAX CREDITS?**

7 **A.** No. The cost estimate reflects unsubsidized costs. Under the recently enacted
8 Inflation Reduction Act, the Sandia Storage Project could potentially qualify for an
9 investment tax credit of up to 30% (not including bonus credits) of the qualifying
10 costs associated with the project. PNM is structuring the Sandia Storage Project so
11 that it could qualify for the investment tax credit; this includes requirements for
12 paying the prevailing wage in the construction and maintenance of the project.
13 PNM has estimated a \$37.8 million investment tax credit (30% of the \$126 million
14 eligible construction costs) that would be amortized over a five-year period. As
15 discussed by PNM witness Henry Monroy, any benefits from the tax credit will be
16 provided to PNM’s customers and would be addressed by PNM in a general rate
17 case.

18
19 **Q.** **ARE THERE CONCERNS WITH THE PROJECT EXECUTION**
20 **SCHEDULE?**

21 **A.** There are always concerns with completing projects on schedule in today’s
22 environment. The timing of regulatory approval and lingering global supply chain
23 issues are the largest risks to the project execution schedule. To facilitate the

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1 project execution schedule, PNM intends to execute a Limited Notice to Proceed to
2 initiate procurement of the project generator step-up transformer and other long
3 lead, high voltage electrical equipment, to initiate site investigation and permitting
4 work, and to initiate preliminary design activities. However, because the EPC
5 Agreement includes a fixed delivery schedule, the risks for the Project execution
6 schedule are currently mitigated to the extent possible. Additionally, because the
7 Sandia Storage Project is utility-owned and will be located on a site currently
8 owned by PNM, the project does not have the risks seen by third-party developers
9 associated with site developments, including acquiring interconnection rights or
10 land easements.

11

12 **Q. PLEASE PROVIDE SOME ADDITIONAL BACKGROUND ON CATL AS**
13 **THE VENDOR FOR THE BESS EQUIPMENT.**

14 **A.** Headquartered in Ningde, Fujian Province, China, Contemporary Amperex
15 Technology Co., Limited (CATL) was founded in 2011 as a battery manufacturer
16 and technology company specializing in the manufacturing of lithium-ion batteries
17 for electric vehicles and energy storage systems. CATL produces over 100 GWh
18 of lithium-ion batteries each year and plans to grow to 500 GWh per year by 2025.
19 CATL has 13 production bases throughout China, Germany, and Hungary with a
20 subsidiary office in Detroit, Michigan. Since its establishment, CATL has delivered
21 over 200 large-scale energy storage projects worldwide.

22

23 **Q. WHAT IS CATL'S INVOLVEMENT IN THE STORAGE PROJECT.**

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1 **A.** PNM’s EPC Contract is with DEPCOM. CATL is the equipment provider under
2 contract with DEPCOM to manufacture, ship to site, commission, and provide
3 technical support for the battery energy storage system. DEPCOM is responsible
4 to receive the equipment from CATL, install on foundations, and connect to the
5 PNM transmission interface point.

6

7 **Q.** **PLEASE PROVIDE SOME ADDITIONAL BACKGROUND ON DEPCOM**
8 **AS THE EPC CONTRACTOR FOR THE PROJECT.**

9 **A.** Headquartered in Scottsdale, Arizona, DEPCOM was founded in 2013 as a
10 solutions partner for the utility solar and broader energy industries. In November
11 2021, DEPCOM was purchased and is now a wholly owned subsidiary of Koch
12 Engineered Solutions. DEPCOM indicates that it has built over 760 MWh of
13 energy storage systems and over 4 GW of utility solar projects with their staff
14 having collectively designed, installed, and operated more than 6 GW of utility-
15 scale energy storage projects across the USA.

16

17 **Q.** **PLEASE GENERALLY DESCRIBE THE TERMS OF THE DEPCOM**
18 **AGREEMENT.**

19 **A.** The DEPCOM EPC Agreement is a full wrap/turnkey, fixed price, engineer,
20 procure, and construct agreement with a defined payment and construction
21 schedule. As explained above, PNM is requesting the Commission approve a fixed
22 Certificated Estimated Cost for the project that is not subject to adjustment for
23 component pricing. Based on this arrangement, cost risk to PNM customers is

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1 minimized because the CCN will be subject to the Cost Overrun Rule for any
2 increase in costs, but PNM customers will benefit from any reduction in lithium
3 carbonate pricing costs.

4

5 **Q. PLEASE HIGHLIGHT THE CONTRACTUAL PROTECTIONS IN THE**
6 **DEPCOM AGREEMENT.**

7 **A.** The DEPCOM Agreement includes several provisions to help protect PNM
8 customers. The DEPCOM Agreement includes liquidated damages for delays in
9 the in-service date of the Project. The DEPCOM Agreement also includes
10 performance guarantees with associated liquidated damages for contracted energy
11 storage capacity in MWh, auxiliary power consumption, and roundtrip energy
12 storage efficiency. The DEPCOM Agreement also includes a 24-month warranty
13 period on materials and services with extended five-year warranties for inverters
14 and transformers and three-year warranty for the containerized BESS equipment.
15 In addition, the agreements include conditions of default along with associated
16 termination rights, including a termination for convenience right on behalf of PNM.

17

18 **Q. ARE THE DEPCOM AGREEMENTS THE RESULT OF A COMPETITIVE**
19 **BIDDING PROCESS AND IS THE COST OF THE SANDIA STORAGE**
20 **PROJECT REASONABLE?**

21 **A.** Yes. The DEPCOM Agreement is the result of a competitive bidding process via a
22 request for proposals (RFP) for resources to be made available by May 1, 2026.
23 This RFP resulted in 58 different proposals from 31 different projects. The RFP

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1 process and associated bid evaluation is further detailed in the testimony of PNM
2 Witness Roger Nagel. PNM has determined that the cost of the Sandia Storage
3 Project, in comparison to other bids received in response to this competitive bidding
4 process, as well as costs and cost escalations experienced and resulting from other
5 PNM-contracted energy storage agreements, is reasonable and competitive.

6
7 **Q. ARE THE NON-PRICING TERMS OF THE DEPCOM AGREEMENT**
8 **REASONABLE AND IN ACCORD WITH INDUSTRY STANDARDS FOR**
9 **SUCH CONTRACTS?**

10 **A.** Yes. In addition to what is described above, the non-pricing terms are typical of
11 similar EPC contracts with a suitable scope of work and division of responsibilities
12 defined. These include DEPCOM's responsibilities for complying with the
13 requirements to qualify for the Federal Investment Tax Credit for stand-alone
14 energy storage projects as well as for complying with the New Mexico
15 apprenticeship requirements under NMSA 1978, § 62-13-16. Furthermore, the
16 conditions addressing critical path tracking, delivery of equipment and transfer of
17 title, and transfer of risk of loss upon substantial completion are reasonable and
18 typical for similar contracts. The contract defines DEPCOM's responsibilities
19 through final completion and the warranty period. The conditions surrounding
20 project team notifications, change orders, dispute resolution, payment terms and
21 late payments, *force majeure*, and confidentiality are also reasonable and typical
22 for similar contracts.

23

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1 **Q. WHEN IS THE ANTICIPATED DELIVERY DATE OF THE MAJOR**
2 **EQUIPMENT TO BE DELIVERED UNDER THE DEPCOM EPC**
3 **AGREEMENT?**

4 **A.** Deliveries of the various BESS system components are scheduled to be completed
5 by October 2025 to facilitate the sequence of project construction activities.
6 Similarly, delivery of the long lead generator step-up transformer and other high
7 voltage equipment is also scheduled to be completed by October 2025.

8
9 **Q. ONCE THE BESS EQUIPMENT IS DELIVERED, HOW WILL IT BE**
10 **INTERCONNECTED TO PNM'S SYSTEM?**

11 **A.** The interconnection to PNM's system is more fully described in the testimony of
12 PNM Witness Duane. The output of the BESS system will pass through bi-
13 directional inverters to convert the DC power to AC power. It will subsequently
14 pass-through medium voltage transformers to step the output voltage up to 34.5 kV
15 and then through the generator step up transformer to step the output voltage up to
16 115 kV. At this voltage, the Sandia Project will deliver the output to an on-site
17 dead-end structure at which point PNM's transmission function will accept the
18 energy and deliver it to the existing Sandia Substation. Charging energy delivered
19 to the BESS system for storage will follow the same path described above, in the
20 reverse direction. A separate, bi-directional electrical meter will be provided to
21 monitor and measure the output and charging energy associated with the BESS
22 installation.

23

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1 **Q. ARE THERE ANY ADDITIONAL APPROVALS OR PERMITS**
2 **REQUIRED TO CONSTRUCT AND OPERATE THE SANDIA STORAGE**
3 **PROJECT?**

4 **A.** The specific permits needed for the Sandia Storage Project are identified in Exhibit
5 C of PNM Exhibit JWH-6. To the extent applicable, PNM and DEPCOM will work
6 closely with the local municipal authorities with respect to the building permit
7 processes during the design, construction, and operational phases of the Project. In
8 addition, PNM will meet with the local fire marshals to discuss and establish
9 required safety protocols and procedures associated with potential emergency
10 conditions.

11

12 **Q. WHAT IS PNM'S ESTIMATE FOR THE ANNUAL OPERATING AND**
13 **MAINTENANCE EXPENSE FOR THE SANDIA STORAGE PROJECT?**

14 **A.** Accounting for some degree of self-performance of operations and maintenance
15 activities by PNM to provide cost savings to PNM's customers, levelized annual
16 costs for long-term operations and maintenance services associated with the Project
17 are valued at \$1,147,000, which includes preventative maintenance, remote
18 operation center support, insurance, and spare parts management.

19

20 **Q. WHAT IS PNM'S ESTIMATE FOR THE ANNUAL CAPITAL ADDITIONS**
21 **FOR THE SANDIA STORAGE PROJECT?**

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1 **Q. WHAT ARE THE SPECIFIC REQUIREMENTS PURSUANT TO SECTION**
2 **62-9-1(D) FOR APPROVAL OF AN ENERGY STORAGE SYSTEM SUCH**
3 **AS THE SANDIA BESS PROJECT?**

4 **A.** Section 62-9-1(D) states that the Commission shall approve an application for a
5 CCN for an energy storage system that meets the following criteria:

6 (1) reduces costs to ratepayers by avoiding or deferring the need for investment in
7 new generation and for upgrades to systems for the transmission and distribution of
8 energy;

9 (2) reduces the use of fossil fuels for meeting demand during peak load periods and
10 for providing ancillary services;

11 (3) assists with ensuring grid reliability, including transmission and distribution
12 system stability, while integrating sources of renewable energy into the grid;

13 (4) supports diversification of energy resources and enhance grid security;

14 (5) reduces greenhouse gases and other air pollutants resulting from power
15 generation;

16 (6) provides the public utility with the discretion, subject to applicable laws and
17 rules, to operate, maintain and control energy storage systems so as to ensure
18 reliable and efficient service to customers; and

19 (7) is the most cost effective among feasible alternatives.

20

21 **Q. BASED ON YOUR READING, DOES SECTION 62-9-1(D) MODIFY THE**
22 **GENERAL REQUIREMENTS FOR ISSUANCE OF A CCN FOR AN**
23 **ENERGY STORAGE SYSTEM SUCH AS THE SANDIA BESS PROJECT?**

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1 **A.** Yes. Section 62-9-1(D) requires that the Commission, “...shall approve an
2 application for a CCN” for an energy storage system if the project satisfies the
3 seven criteria that are listed. Although I am not an attorney, I believe that the use
4 of the word “shall” indicates that approval of an energy storage project is non-
5 discretionary under those circumstances. However, PNM’s Application for the
6 Sandia BESS project also satisfies the more general CCN requirements.

7

8 **Q.** **HAS PNM PROVIDED EVIDENCE THAT THE SANDIA BESS PROJECT**
9 **MEETS ALL SEVEN OF THE CRITERIA FOR APPROVAL PURSUANT**
10 **TO 62-9-1(D)?**

11 **A.** Yes, PNM’s Application meets the statutory criteria for approval of the Sandia
12 BESS project. In the sections below, I explain how the seven criteria listed in
13 Section 62-9-1(D) have been fully satisfied.

14

15 **Q.** **WILL THE SANDIA STORAGE PROJECT HELP TO REDUCE COSTS**
16 **TO PNM’S CUSTOMERS BY AVOIDING OR DEFERRING THE NEED**
17 **FOR INVESTMENT IN NEW GENERATION OR FOR UPGRADES TO**
18 **SYSTEMS FOR THE TRANSMISSION AND DISTRIBUTION OF**
19 **ENERGY AS REQUIRED UNDER SECTION 62-9-1(D)(1) OF THE PUA?**

20 **A.** Yes. The Sandia Storage Project installation will be located near an existing PNM
21 substation and can be installed in a relatively short time frame. The existing
22 substation site is established, the project site has been secured by PNM, there is a
23 draft large generator interconnection agreement in place, limited gen-tie line and

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1 substation expansion work will be required, and the project will increase reliability
2 and resiliency for customers. As PNM Witness Duane describes, the Sandia BESS
3 will add a new load-side resource at an optimal location for management of
4 transmission loadings under forced or planned outages of numerous transmission
5 lines and transformers. This will reduce the reliance on load-side gas generation
6 and ultimately contribute to reducing transmission enhancements to retire the
7 existing gas fleet or accommodate load growth in the southeast area of
8 Albuquerque. The Sandia Storage Project will provide generation grid benefits
9 through shifting of energy from the high solar production hours to peak demand
10 times when solar production is minimal.

11
12 **Q. WILL THE SANDIA STORAGE PROJECT REDUCE THE USE OF**
13 **FOSSIL FUELS FOR MEETING DEMAND DURING PEAK LOAD**
14 **PERIODS AS REQUIRED UNDER SECTION 62-9-1(D)(2) OF THE**
15 **PUBLIC UTILITY ACT?**

16 **A.** Yes. The Sandia Storage Project, in conjunction with BESS charging energy
17 delivered from PNM’s renewable generation portfolio, will be able to reduce the
18 use of fossil fuels for meeting peak system demands. Energy produced by
19 renewable resources that is stored in the BESS system during off-peak load periods
20 will be able to be discharged flexibly and rapidly during the peak load periods and
21 after peak solar generation hours. The ability to store energy can reduce
22 curtailments of solar production, thus reducing and offsetting the historical
23 dependency on, and dispatch of, fossil fueled generation.

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2 **Q. WILL THE SANDIA STORAGE PROJECT ASSIST IN ENSURING GRID**
3 **RELIABILITY, INCLUDING TRANSMISSION SYSTEM STABILITY,**
4 **WHILE INTEGRATING SOURCES OF RENEWABLE ENERGY INTO**
5 **THE GRID AS REQUIRED UNDER SECTION 62-9-1(D)(3) OF THE PUA?**

6 **A.** Yes. The Sandia Storage Project offers extremely flexible and responsive capacity
7 to the transmission system. With the ability to start and reach full discharge
8 capacity (reflecting a system generator) or full charging capacity (reflecting a
9 system load) within seconds it provides very favorable ancillary service capabilities
10 to facilitate grid reliability and system stability. Ancillary service capabilities that
11 can be provided include contingency reserves, regulation (up and down), voltage
12 control, and frequency response, among others. All these services facilitate the
13 increased integration of variable, renewable energy resources.

14

15 **Q. WILL THE SANDIA STORAGE PROJECT SUPPORT**
16 **DIVERSIFICATION OF ENERGY RESOURCES AND ENHANCE GRID**
17 **SECURITY AS REQUIRED UNDER SECTION 62-9-1(D)(4) OF THE PUA?**

18 **A.** Yes. The Sandia Storage Project will facilitate the increased integration of
19 renewable and diverse energy sources within PNM's system. As noted in the prior
20 question, the extremely responsive and flexible characteristics of the proposed
21 Project, combined with its ability to support ancillary services facilitate the
22 increased integration of variable, renewable energy resources and increased system
23 reliability.

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1

2 **Q WILL THE SANDIA STORAGE PROJECT REDUCE GREENHOUSE**
3 **GASES AND OTHER AIR POLLUTANTS DURING POWER**
4 **GENERATION AS REQUIRED BY SECTION 62-9-1(D)(5) OF THE**
5 **PUBLIC UTILITY ACT?**

6 **A.** Yes. Because the Sandia Storage Project does not generate greenhouse gases or
7 other air pollutants and because it will offset fossil fueled generation as described
8 above by reducing curtailments of renewable resources, the Sandia Storage Project
9 will reduce greenhouse gas and other air pollutant production. As noted above,
10 historical support of peak loads after the daily peak solar generation hours has been
11 served by thermal resources. PNM’s modeling indicates that the Sandia Storage
12 Project will allow PNM to avoid 132,000 tons of carbon dioxide emissions between
13 2026 and 2039. The modeling is based on PNM’s system with and without the
14 Sandia Storage Project. Without the Sandia Storage Project, PNM’s portfolio
15 results in a higher loss of load expectation than PNM is seeking to meet with the
16 proposed resource portfolio in this Application as discussed in the testimony of
17 PNM Witnesses Phillips and Wintermantel.

18

19 **Q. WILL THE SANDIA STORAGE PROJECT PROVIDE PNM WITH THE**
20 **DISCRETION, SUBJECT TO APPLICABLE LAWS AND RULES, TO**
21 **OPERATE, MAINTAIN AND CONTROL ENERGY STORAGE SYSTEMS**
22 **SO AS TO ENSURE RELIABLE AND EFFICIENT SERVICE TO**
23 **CUSTOMERS AS REQUIRED BY SECTION 62-9-1(D)(6) OF THE PUA?**

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1 **A.** Yes. Given PNM’s procurement, ownership, and operations of the Sandia Storage
2 Project, PNM will have full control and management of the dispatch and
3 maintenance of the project within the operating requirements of the BESS and
4 battery cell manufacturer. PNM will be able to directly control the preventative,
5 predictive, and unplanned maintenance activities associated with the BESS
6 equipment to timely address any equipment issues and to ensure reliable and
7 efficient service to customers.

8

9 **Q. IS THE SANDIA STORAGE PROJECT THE MOST COST EFFECTIVE**
10 **AMONG FEASIBLE ALTERNATIVES AS REQUIRED UNDER SECTION**
11 **62-9-1(D)(7)?**

12 **A.** Yes. Considering the value identified in this testimony as well as the modeling
13 analysis outlined in PNM witness Phillip’s testimony, it is the most cost-effective
14 for the functions that it is performing and the benefits that it is providing. In
15 addition, the Sandia Storage Project is the product of competitive bid processes and
16 will utilize existing PNM infrastructure to minimize costs. The potential to receive
17 investment tax credits increases the cost-effectiveness of the Sandia Storage
18 Project. PNM’s direct management of the EPC agreement to control procurement
19 risk markups and return expectations also provide cost benefit. Together, these
20 factors make the Sandia Storage Project the most cost-effective alternative.

21

22 **Q. DOES THE SANDIA BESS PROJECT ALSO MEET THE MORE**
23 **GENERAL CCN STANDARDS LISTED IN SECTION 62-9-1?**

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1 **A.** Yes. The Commission equates “public convenience and necessity” with the public
2 interest and found that the CCN statute implies there must be a net public benefit
3 in order to grant a CCN.³ PNM must demonstrate that the resource it proposes is
4 the most effective resource among feasible alternatives.⁴

5

6 The Sandia Storage Project serves the public interest in several respects. The system
7 benefits include the following:

8

9 1) The Sandia Storage Project mitigates operational issues caused by high solar
10 generation by adding energy storage capacity to PNM’s system. This energy
11 storage capacity enables the ability to balance the system in times of high solar
12 output and provide energy to the system during times of high demand but lower
13 solar production, such as in the late afternoon. This Project’s ability to provide firm
14 energy during peak load helps PNM meet loss of load expectation requirements.
15 By increasing system capacity, the Sandia Storage Project helps to meet some
16 forecasted system needs for additional bulk transmission-level capacity resources.

17

18 2) The Sandia Storage Project mitigates operational issues caused by high solar
19 generation by shifting energy availability from solar peak to net demand peak
20 (arbitrage). PNM customers will benefit from wholesale pricing differences that

³ See, e.g., Case No. 19-00349-UT, Recommended Decision at 16 (Nov. 16, 2020).

⁴ Id. At 16-17 (citing Case No. 15-00261-UT, Corrected Recommended Decision (Aug. 15, 2016), Case No. 13-00390-UT, Final Order (Dec. 16, 2015), Case No. 15-00205-UT, Order Partially Granting PNM Motion to Vacate and Addressing Joint Motion to Dismiss (Dec. 22, 2015), and Case No. 2382, Final Order Approving Recommended Decision (Nov. 20, 1995)).

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1 process in choosing to purchase the BESS equipment from DEPCOM. The review
2 process was supported by PNM's consultants, who are industry experts with
3 experience in resource acquisition and engineering, design, and procurement
4 processes, including energy storage systems. Installation of the Sandia Storage
5 Project improves system performance and will help reduce greenhouse gases and
6 help mitigate potential system curtailments. The Commission should approve
7 PNM's request to construct, own and operate the Sandia Storage Project.

8

9 **Q. DOES THIS CONCLUDE YOUR TESTIMONY?**

10 **A.** Yes.

GCG#531706

Résumé of Brent Heffington

PNM Exhibit RBH-1

Is contained in the following 1 page.

BRENT HEFFINGTON

EDUCATIONAL AND PROFESSIONAL SUMMARY

Address: Public Service Company of New Mexico
Aztec Facility
2401 Aztec Road NE, Building A
Albuquerque, New Mexico 87107

Position: Managing Director of Generation – December 2020 to present

Previous Positions:

Xcel Energy, Public Service Company of Colorado
Director – Plant Manager Comanche Station – January 2018 to January 2021

Xcel Energy, Southwestern Public Services (SPS)
Senior Operations Manager – July 2015 to January 2018

Xcel Energy
Manager of Technical Resources and Compliance – April 2014 to June 2015

Xcel Energy, Southwestern Public Services (SPS) – April 1994 to April 2014
Maintenance Manager
Plant Supervisor of Technical Services/Engineer
Technical Specialist II
Journeyman Maintenance Mechanic

Education:

Texas Tech University, Bachelor of Mechanical Engineering
Lubbock Christian University, Bachelor of Business Administration
Washington State University, Executive MBA

BEFORE THE NEW MEXICO PUBLIC REGULATION COMMISSION

IN THE MATTER OF PUBLIC SERVICE)
COMPANY OF NEW MEXICO’S APPLICATION)
FOR APPROVAL OF PURCHASED POWER)
AGREEMENTS, ENERGY STORAGE)
AGREEMENTS, AND CERTIFICATES OF PUBLIC)
CONVENIENCE AND NECESSITY FOR SYSTEM) Case No. 23-00xxx-UT
RESOURCES IN 2026,)
)
PUBLIC SERVICE COMPANY OF NEW MEXICO,)
)
Applicant)

SELF AFFIRMATION

R. BRENT HEFFINGTON, Managing Director of Generation, PNM upon penalty of perjury under the laws of the State of New Mexico, affirm and state: I have read the foregoing **Direct Testimony of R. Brent Heffington** and it is true and accurate based on my own personal knowledge and belief.

Dated this 25th day of October, 2023.

/s/ R. Brent Heffington
R. BRENT HEFFINGTON