

**BEFORE THE
NEW MEXICO PUBLIC REGULATION COMMISSION**

**IN THE MATTER OF PUBLIC SERVICE COMPANY)
OF NEW MEXICO’S APPLICATION FOR)
AUTHORIZATION TO IMPLEMENT GRID)
MODERNIZATION COMPONENTS THAT INCLUDE)
ADVANCED METERING INFRASTRUCTURE)
AND APPLICATION TO RECOVER THE) **CASE NO. 22-00058-UT**
ASSOCIATED COSTS THROUGH A RIDER,)
ISSUANCE OF RELATED ACCOUNTING ORDERS,)
AND OTHER ASSOCIATED RELIEF,)
)
PUBLIC SERVICE COMPANY,)
)
APPLICANT.)**

SUPPLEMENTAL TESTIMONY

OF

COURTNEY LANE

**ON BEHALF OF
THE OFFICE OF ATTORNEY GENERAL**

March 1, 2024

Table of Contents

I. INTRODUCTION AND QUALIFICATIONS..... 1

II. SUMMARY OF CONCLUSIONS AND RECOMMENDATIONS 2

III. SUMMARY OF PNM’S COST-BENEFIT ANALYSIS 4

IV. PRINCIPLES OF COST-BENEFIT ANALYSIS AND STANDARD OF REVIEW 8

V. ASSESSMENT OF PNM’S COST-BENEFIT ANALYSIS 12

 Overall Cost-Benefit Analysis Methodology 15

 Distribution Planning Tools 17

 IVVM 21

 DERMS 24

 FLISR 27

Attachment A - Referenced PNM Responses to Interrogatories

1 **I. INTRODUCTION AND QUALIFICATIONS**

2 **Q. Please state your name, title, and employer.**

3 A. My name is Courtney Lane. I am a Principal Associate at Synapse Energy Economics
4 ("Synapse"), located at 485 Massachusetts Avenue, Suite 3, Cambridge, MA 02139.

5 **Q. Did you previously file testimony in this case?**

6 A. Yes, I filed direct testimony on January 27, 2023, and supplemental testimony on March
7 8, 2023, on behalf of the New Mexico Office of the Attorney General ("NMAG").

8 **Q. What is the purpose of your supplemental testimony?**

9 A. The purpose of my supplemental testimony is to review the Cost-Benefit Analysis
10 ("CBA") filed by Public Service Company of New Mexico ("PNM" or "Company") in
11 response to the New Mexico Public Regulation Commission's ("Commission" or
12 "NMPRC") May 31, 2023 *Order Regarding Cost Benefit Analysis* and the Hearing
13 Examiner's July 10, 2023 *Order Staying Proceeding*.

14 **Q. What materials did you rely on to develop your supplemental testimony?**

15 A. The sources for my supplemental testimony and exhibits are the Company's filing and
16 responses to discovery requests, public documents, and my personal knowledge and
17 experience.

18 **Q. Was your supplemental testimony prepared by you or under your direction?**

19 A. Yes. My testimony and the accompanying exhibits were prepared by me or under my
20 direct supervision and control.

1 **II. SUMMARY OF CONCLUSIONS AND RECOMMENDATIONS**

2 **Q. Please summarize your primary conclusions regarding the Company's Application.**

3 A. I conclude that PNM's CBA and supporting workpapers create increased visibility related
4 to the costs, benefits, and anticipated outcomes of its proposed grid modernization
5 programs. The information provided in a CBA is critically important to regulators and
6 stakeholders to properly evaluate proposed utility investments, determine investment
7 priorities, and create metrics for evaluations. While PNM's CBA advances its original
8 Application, there are several errors in the Company's methodology that distort the cost-
9 effectiveness results, and therefore prevent obtaining an accurate assessment of the
10 potential net-benefits to customers from the grid modernization investments. These errors
11 include:

- 12 • Failure to conduct a CBA for each core grid modernization program in isolation.
13 While the Company conducts a CBA for each core program, each analysis assumes
14 that all grid modernization programs are approved, and then allocates interdependent
15 benefits across those programs. It is important for the Commission and stakeholders
16 to understand how programs will work both in isolation and together in order to
17 prioritize the timing and level of investments. This is not possible based on the CBAs
18 filed by the Company.
- 19 • The Company understates the cost of capital grid modernization investments in the
20 analysis by including its projected expenditures instead of the full revenue
21 requirement that will be recovered from customers in each year. This is inconsistent
22 with standard practice of including the recovery of equity, debt, and taxes that are

1 factored into revenue requirements. In addition, failure to account for the timing
2 effects of amortization results in an exaggerated costs in the early years and reduced
3 costs in later years of the 20-year study period.

4 • Including the benefits of additional solar installations resulting from increasing
5 distributed energy resource (“DER”) hosting capacity but failing to account for the
6 costs of that solar in the Distribution Planning Tools, Integrated Volt-Var
7 Management (“IVVM”), and Distributed Energy Resource Management System
8 (“DERMS”) CBAs. The failure to treat benefits and costs symmetrically leads to
9 inaccurate cost-effectiveness results.

10 • Including benefits associated with changes in customer energy costs. This conflates
11 rate impacts with cost-effectiveness, which does not provide for a meaningful
12 understanding of either cost-effectiveness or rate impacts.

13 • Double-counting the benefits related to changes in customer energy usage in the
14 IVVM CBA and for changes in customer reliability in the Fault Location, Isolations
15 and Service Restoration (“FLISR”) CBA, which inflates cost-effectiveness.

16 **Q. Please summarize your primary recommendations.**

17 A. I recommend that PNM update its CBA to reflect the following changes:

18 1. In addition to the CBAs prepared by PNM in this filing, PNM should conduct a CBA
19 of each of its core grid modernization programs in isolation. While the Company
20 should still allocate the costs of the foundational investments across the core grid
21 modernization programs, it should only account for the benefits that result from the

1 core program on its own (e.g., benefits that FLISR provides without DERMS, IVVM,
2 AMI, or Distribution Planning Tools, etc.).

3 2. PNM should include the revenue requirement over the useful lives its capital grid
4 modernization costs in the CBA to more accurately reflect impacts on utility
5 customers.

6 3. PNM should account for the costs associated with the incremental solar installations
7 resulting from the portion of Increasing Hosting Capacity attributable to Distribution
8 Planning Tools, IVVM, and DERMS.

9 4. PNM should calculate and account for the value of the incremental solar installations
10 resulting from increased DER hosting capacity as a utility system benefit instead of a
11 reduction in customer energy costs for the Distribution Planning Tools, IVVM, and
12 DERMS CBAs.

13 5. PNM should remove the Reduced Customer Energy Cost benefit from the IVVM
14 CBA.

15 6. PNM should remove the Improved Customer Experience benefit from the FLISR
16 CBA.

17 **III. SUMMARY OF PNM'S COST-BENEFIT ANALYSIS**

18 **Q. Why has PNM filed a CBA in this proceeding?**

19 A. On May 31, 2023, the Commission directed the Hearing Examiner to issue an order
20 directing PNM to file a CBA as a supplement to its Application for Authorization to

1 Implement Grid Modernization Components that Include Advanced Metering
2 Infrastructure (“Application”).¹ The Commission concluded that a CBA is necessary to
3 assess the reasonableness of PNM’s Application, establish a baseline for performance
4 going forward, and prioritize any metrics that are established now or in a subsequent
5 proceeding.²

6 **Q. What grid modernization programs does PNM include in its CBA?**

7 A. The Company conducted a CBA for each of the five core technology types proposed in
8 its initial Application over a 20-year planning horizon. The five core programs include
9 AMI, Distribution Planning Tools, IVVM, DERMS, and FLISR.

10 In addition to the five core programs, PNM’s Application included the following
11 foundational investments: the Customer Energy Management Platform, Advanced
12 Distribution Management System (“ADMS”), Cybersecurity, Data & Network
13 Management, Distribution Automations, Telecommunications, Customer Information &
14 Analytics, and Project Management. The Company states these foundational investments
15 may not directly generate customer benefits on their own and therefore it did not assess
16 each one through a CBA. Instead, PNM allocated its costs across the five core programs
17 based on the level of support each of the foundational investments provided to each core
18 program.³ In this manner, the costs of the foundational investments are accounted for in
19 the CBA for each core program.

¹ NPMRC. May 31, 2023. Case No. 22-00058-UT. *Order Regarding Cost Benefit Analysis*, pg. 15.

² *Id.*, pgs. 10 and 14.

³ Supplemental Testimony of James W. Shields, pg. 4

1 **Q. Did the Company conduct a CBA of each core program in isolation?**

2 A. No. While a CBA is presented for each core program, the analysis assumes that all five
3 components are implemented together and prorates the benefits across programs with
4 interdependencies.⁴

5 **Q. Please describe the categories of costs and benefits PNM included in its CBA.**

6 A. The Company used the budgets proposed within the original Application as cost inputs to
7 the CBA and accounted for the following categories of benefits:

- 8 • Direct Customer: benefits that accrue directly to utility customers and do not pass
9 through the utility first. For example, PNM states that FLISR benefits customers
10 with DERs by enabling more DER generation from improved grid uptime.⁵
- 11 • Societal: benefits that accrue to the general population, such as reduced carbon
12 emissions.⁶
- 13 • Operation and Maintenance (“O&M”): benefits associated with PNM spending
14 less on O&M. For example, PNM states that AMI will reduce O&M related to
15 reduced customer calls.⁷
- 16 • Capital: benefit of PNM avoiding or deferring capital investments. For example,
17 PNM indicates that AMI avoids installation of non-AMI meters.⁸
- 18 • Utility Energy Savings: the benefit of reduced energy. For example, PNM states
19 that IVVM reduces the amount of energy production needed to serve customers.⁹

⁴ Warner Supplemental Testimony, pg. 31, lines 1-2.

⁵ PNM Exhibit OBW-1 (CBA, pg. 33

⁶ *Id.*, pg. 34.

⁷ *Id.*, pg. 8.

⁸ *Id.*, pg. 7.

⁹ *Id.*, pg. 25.

1 **Q. Did PNM conduct any scenario analysis related to the level of benefits achieved by**
2 **the grid modernization programs?**

3 A. Yes. The Company conducted two CBA scenarios for AMI related to variations in
4 TOU)/Time-of-Day (“TOD”) rate implementation benefits. Scenario 1 is more
5 conservative and is based on the lowest level of implementation of a TOU/TOD default
6 rate as included in PNM’s 2023 Integrated Resource Plan (“IRP”), while Scenario 2 uses
7 the highest level of TOU/TOD default rate implementation from the IRP.¹⁰

8 **Q. Please summarize the results of PNM’s CBA.**

9 A. The net-present value (“NPV”) of the benefits and costs associated with PNM’s five core
10 grid modernization programs for Scenario 1 are presented in Table 1 below. Scenario 1
11 reflects a more conservative estimate of benefits from time-varying rates resulting from
12 the Company’s 2023 IRP portfolio.¹¹ A benefit-cost ratio (“BCR”) above 1.0 represents a
13 cost-effective outcome with the benefits outweighing the costs over the 20-year study
14 period.

¹⁰ Shields Supplemental Testimony, pg. 13.

¹¹ Warner Supplemental Testimony, pg. 29, lines 8-10.

1 **Table 1. PNM CBA Results – Scenario 1¹²**

Core Program	NPV Benefit (\$M)	NPV Cost (\$M)	BCR
AMI	\$219.0	\$231.8	0.94
DERMS	\$42.2	\$32.0	1.32
Distribution Planning Tools	\$30.4	\$18.6	1.64
FLISR	\$88.4	\$86.4	1.02
IVVM	\$118.7	\$52.8	2.25
Total	\$498.7	\$421.6	1.18

2 As summarized in the table above, PNM’s CBA indicates that each core program is cost-
3 effective with a BCR above 1.0 except for AMI, which has a BCR of 0.94. However,
4 when a less conservative assumption of the benefits from time varying rates are applied
5 through Scenario 2, AMI becomes cost-effective with a BCR of 1.13.¹³

6 **IV. PRINCIPLES OF COST-BENEFIT ANALYSIS AND STANDARD OF REVIEW**

7 **Q. What criteria did you rely upon in your review of PNM’s CBA?**

8 A. I primarily relied upon the guidance contained within the *National Standard Practice*
9 *Manual for Distributed Energy Resources* (NSPM).¹⁴

10 **Q. What are the NSPM fundamental cost-effectiveness principles?**

11 A. The NSPM provides a list of eight principles to assist in the review of an existing cost-
12 effectiveness test and to guide the development of a new primary cost-effectiveness test
13 from the ground up. The eight principles are summarized below:¹⁵

¹² Second Supplemental Testimony of Omni B. Warner, pg. 3, line 10.

¹³ Warner Supplemental Testimony, pg. 4, line 1.

¹⁴ National Energy Screening Project (NESP), *National Standard Practice Manual for Benefit-Cost Analysis of Distributed Energy Resources* (NSPM), August 2020. Available at: https://www.nationalenergyscreeningproject.org/wp-content/uploads/2020/08/NSPM-DERs_08-04-2020_Final.pdf.

¹⁵ *Id.*, pgs. 2-3.

- 1 • *Principle 1 – Treat DERs as a Utility System Resource:* DER should be compared
2 with other energy resources, including other DERs, using consistent methods and
3 assumptions to avoid bias across resource investment decisions.
- 4 • *Principle 2 – Align with Policy Goals:* Jurisdictions invest in or support energy
5 resources to meet a variety of goals and objectives. The primary cost-
6 effectiveness test should therefore reflect this intent by accounting for the
7 jurisdiction’s applicable policy goals and objectives.
- 8 • *Principle 3 – Ensure Symmetry:* Asymmetrical treatment of benefits and costs
9 associated with a resource can lead to a biased assessment of the resource. To
10 avoid such bias, benefits and costs should be treated symmetrically for any given
11 type of impact.
- 12 • *Principle 4 – Account for Relevant, Material Impacts:* Cost-effectiveness tests
13 should include all relevant (according to applicable policy goals), material
14 impacts including those that are difficult to quantify or monetize.
- 15 • *Principle 5 – Conduct Forward-Looking, Long-term, Incremental Analyses:* Cost-
16 effectiveness analyses should be forward-looking, long-term, and incremental to
17 what would have occurred absent the DER. This helps ensure that the resource in
18 question is properly compared with alternatives.
- 19 • *Principle 6 – Avoid Double-Counting Impacts:* Cost-effectiveness analyses
20 present a risk of double-counting benefits and/or costs. All impacts should
21 therefore be clearly defined and valued to avoid double-counting.

- 1 • *Principle 7 – Ensure Transparency:* CBA¹⁶ practices should be transparent, where
2 all relevant assumptions, methodologies, and results are clearly documented and
3 available for stakeholder review and input.
- 4 • *Principle 8 – Conduct CBAs Separately from Rate Impact Analyses:* Cost-
5 effectiveness analyses answer fundamentally different questions than rate impact
6 analyses. Cost-effectiveness analyses should therefore be conducted separately
7 from rate impact analyses.

8 **Q. Please explain why the NSPM principles are relevant to a CBA of grid**
9 **modernization investments?**

10 A. I use the NSPM as a guidepost for my review of PNM’s CBA as it provides an
11 “objective, policy- and technology-neutral, and economically sound guidance” for
12 developing a cost-effectiveness test and has been vetted by a cross-cutting advisory group
13 consisting of regulators, state agencies, utilities, expert consultants, and representatives
14 from the DER industry.¹⁷ The principles for sound cost-effectiveness analysis are
15 ubiquitous and directly relevant for grid modernization.

16 **Q. Is there one standard cost-effectiveness test for all utility programs and**
17 **investments?**

18 A. No. There are five traditional cost-effectiveness tests that are commonly used to evaluate
19 utility investments and DER programs. These tests are the Utility Cost Test, the
20 Participant Cost Test, the Total Resource Cost Test, the Ratepayer Impact Measure test,
21 and the Societal Cost Test.

¹⁶ The NSPM uses the term benefit-cost analysis (“BCA”) instead of CBA. For consistency in my supplemental testimony to align with PNM’s terminology I use the term CBA for all references to the term BCA.

¹⁷ NSPM, pg. i.

1 **Q. Why does the type of cost-effectiveness test matter in reviewing PNM's grid**
2 **modernization CBA?**

3 A. Each type of cost-effectiveness test has a unique perspective that dictates which impacts
4 (i.e., costs and benefits) to include in the CBA. Understanding these perspectives helps to
5 determine the scope of the costs and benefits to include in the CBA. The perspectives and
6 associated impacts for three of the traditional tests are as follows:

- 7 • Utility Cost Test: Utility perspective that only includes the costs and benefits to
8 the utility that affect the utility's system operations and delivery of services to
9 customers.
- 10 • Total Resource Cost Test: Combined perspective of the utility system and the
11 program participant, which includes costs and benefits to the utility system and on
12 customers participating in a program.
- 13 • Societal Cost Test: Societal perspective that includes all impacts in the Total
14 Resource Cost test, plus impact on society.

15 I do not include the Participant Cost Test or the Ratepayer Impact Measure Test here as
16 they are not appropriate tests to use in assessing the cost-effectiveness of utility
17 investments.¹⁸

18 At a high level, Table 2 below summarizes how different impacts (i.e., costs and benefits)
19 are included in each of the three cost-effectiveness tests.

¹⁸ The Participant Cost Test assesses cost and benefits to only utility program participants (NSPM E.5) and the Ratepayer Impact Measure Test can be useful to determine whether a DER is likely to increase or decrease rates but not to determine cost-effectiveness (NSPM A-3).

1 **Table 2. Impacts Included in Cost-Effectiveness Tests**

Impacts	Utility	Total Resource	Societal
Avoided utility costs (includes energy generation, capacity savings, distribution, O&M, credit and collections, etc.)	Benefit	Benefit	Benefit
Utility equipment investment	Cost	Cost	Cost
Utility operation & maintenance costs	Cost	Cost	Cost
Financial incentive to host customers (i.e., utility rebates)	Cost		
Host customer equipment costs – net of utility rebates or tax credits (i.e., solar, smart thermostat)		Cost	Cost
Host customer bill savings (i.e., customer energy savings) ¹⁹			
Host customer non-energy benefits (i.e., increased security, comfort)		Benefit	Benefit
Greenhouse gas emissions reduction			Benefit
Public health benefits			Benefit

2 **Q. Which cost-effectiveness test did PNM use in its CBA?**

3 A. Though not explicitly stated in the CBA filing, PNM appears to conduct a Societal Cost
 4 Test based on the fact the Company includes utility system impacts, societal impacts of
 5 greenhouse gas savings, and direct customer impacts (i.e., host customers). The
 6 Company’s CBA should therefore assess the grid modernization programs using the
 7 impacts according to the Societal Cost Test.

8 **V. ASSESSMENT OF PNM’S COST-BENEFIT ANALYSIS**

9 **Q. Did PNM consult with stakeholders in the development of its CBA?**

10 A. Yes. The Company held two meetings with stakeholders to solicit feedback on the
 11 development of the CBA and also met individually with the NMAG. As part of these

¹⁹ Customer bill savings are only included within the Ratepayer Impact Measure Test.

1 meetings, PNM provided an overview of its proposed CBA methodology, including the
2 list of potential benefit categories and how they mapped to specific grid mod investments.
3 PNM also gave examples of proposed calculations for three AMI benefits and three
4 FLISR benefits.

5 **Q. Did you participate in these meetings?**

6 A. Yes. I attended the meetings and submitted written comments on behalf of the NMAG.

7 **Q. What recommendations did you make as part of these meetings?**

8 A. My comments primarily related to the overall methodology for the CBA and the need for
9 proper transparency and documentation. I recommended that PNM clearly identify how it
10 plans to utilize each grid modernization component and describe the anticipated
11 outcomes from that technology and use-case. This is necessary to allow for stakeholders
12 and the Commission to understand how each benefit and cost maps to a specific grid
13 modernization program and use case. I also indicated that a CBA should include a
14 baseline, quantify all benefits and costs to the extent possible, and assess the costs and
15 benefits over the life of the grid modernization investments. Lastly, I recommended that
16 PNM identify when there are interdependencies between grid modernization components.
17 This occurs when the benefits of one grid modernization component are dependent on a
18 second grid modernization component. For example, DERMS can only increase hosting
19 capacity if it is combined with distribution system battery storage.²⁰ In this case, I

²⁰ Warner Supplemental Testimony, pg. 15, lines 3-5 and PNM Response to NMAG 4-15 and 4-21(A).

1 recommended that PNM conduct a CBA for each technology in isolation and then a
2 second CBA with the interdependent technologies combined.

3 **Q. Did PNM incorporate your recommendations into the CBA filed in this proceeding?**

4 A. In part. I appreciate PNM's efforts to solicit and incorporate stakeholder feedback. The
5 final CBA filed in this proceeding includes many of my recommendations. For example,
6 PNM Exhibit OBW-1 (CBA) identifies the anticipated outcomes of each grid
7 modernization program, the associated benefits, and methodologies used to monetize
8 those benefits. In addition, PNM clearly put forth significant effort in quantifying many
9 of the potential outcomes and assessing the costs and benefits over a 20-year period to
10 account for the lifetime of the grid modernization technology. In addition, PNM did
11 identify interdependencies between programs in many instances. However, PNM did not
12 conduct a CBA for each grid modernization program in isolation, which is problematic as
13 I will expand upon in the next section of my testimony.

14 **Q. Upon reviewing the completed CBA and workpapers do you have any additional**
15 **concerns with the analysis?**

16 A. Yes. I have concerns with the omission of certain costs and the double-counting of
17 benefits, which if corrected would impact the cost-effectiveness of the grid modernization
18 programs. I summarize these issues in more detail and provide recommended
19 modifications to the CBA for each grid modernization program below.

1 **Overall Cost-Benefit Analysis Methodology**

2 **Q. Do you identify any issues with PNM's overall CBA methodology?**

3 A. Yes. I identify two key issues. First, I observe that PNM did not conduct a CBA for each
4 core program in isolation. Second, the Company accounts for capital costs in the year in
5 which the expenditure is made, which does not reflect the revenue requirements.

6 **Q. The Company provided a CBA for each core grid modernization program. Can you**
7 **explain why this is insufficient?**

8 A. While PNM does provide a CBA for each core program, instead of accounting for the
9 benefits that each program can provide on its own, PNM assumes all core programs are
10 implemented together and prorates the benefits across programs with
11 interdependencies.²¹

12 While this methodology helps to avoid the double-counting of benefits between grid
13 modernization programs, it does not provide an accurate picture of the benefits that will
14 result from one core program should the other programs not be approved by the
15 Commission. The Company conducts its CBA with the assumption that all programs are
16 approved. However, the purpose of a CBA is to help the Commission and stakeholders
17 understand how programs will work in isolation and together in order to prioritize the
18 timing and level of investments.

²¹ Warner Supplemental Testimony, pg. 31, lines 1-2.

1 **Q. What is your recommended approach to conducting a CBA for each core grid**
2 **modernization program?**

3 A. I recommend that PNM conduct a CBA of each of its core grid modernization programs
4 in isolation in addition to the CBAs prepared by PNM in this filing. For the individual
5 program CBAs, the Company should allocate the costs of the foundational investments
6 across the core grid modernization programs, but only account for the benefits that result
7 from the core program on its own (e.g., what benefits can FLISR provide on its own,
8 without DERMS, IVVM, AMI, or Distribution Planning Tools).

9 **Q. Please explain your concerns related to PNM’s approach for inclusion of grid**
10 **modernization costs in the CBA.**

11 A. The Company includes capital grid modernization costs as an input into the CBA in the
12 years in which the expenditure is made. This suggests that all costs are recovered by
13 expensing them in the first six years. However, this approach does not accurately reflect
14 how PNM will recover costs from customers and therefore leads to an inaccurate CBA.

15 In the Company’s initial Application, PNM proposes to recover costs associated with the
16 grid modernization projects through a Grid Modernization Rider (“GMR”) over the
17 useful lives of the assets.²² The Company indicates that its proposed GMR will recover
18 capital costs, operating expenses, and taxes associated with the grid modernization
19 projects. The Company explains that the GMR annual revenue requirement will include
20 rate base, the return on rate base, operating expenses, income, and other taxes.²³

²² Direct Testimony of Kyle T. Sanders, pg. 16, lines 6-7.

²³ *Id.*, at 4:3-14 and 5:1-6.

1 Due to the fact that PNM's CBA does not account for the timing effects of amortization,
2 costs are exaggerated in the early years and reduced in later years of the 20-year study
3 period. The costs included in the CBA also fail to account for the additional costs
4 associated with including these investments in rate base.

5 **Q. How should PNM account for grid modernization program costs in the CBA?**

6 A. The Company should account for capital grid modernization costs within the CBA in
7 terms of revenue requirements over the life of the assets because it more accurately
8 reflects the impacts on utility customers.

9 **Distribution Planning Tools**

10 **Q. Did you identify any issues with the Distribution Planning Tools CBA?**

11 A. Yes. I find two key issues with PNM's methodology for accounting for the benefit of
12 Increasing DER Hosting Capacity. Specifically, the methodology violates Principle 3 of
13 the NSPM, which states that benefits and costs should be treated symmetrically, and
14 Principle 8, which states that changes in customer rates and bills should not be included
15 in cost-effectiveness.

16 **Q. Please describe how Distribution Planning Tools increase DER hosting capacity.**

17 A. The Company states that Distribution Planning Tools are able to identify specific
18 locations on distribution circuits where hosting capacity exists along with the amount of
19 hosting capacity that is available at the identified locations.²⁴ However, according to
20 PNM, IVVM is required to increase hosting capacity on feeders where DER penetration

²⁴ PNM Response to NMAG 4-9(A).

1 is at or above 35 percent.²⁵ Therefore, PNM indicates that Distribution Planning Tools
2 and IVVM both contribute to the benefit of increasing customer DERs on a distribution
3 feeders with DER penetration levels between 35 to 60 percent.²⁶

4 **Q. Please describe PNM's methodology for monetizing the Increasing DER Hosting**
5 **Capacity benefit in the CBA.**

6 A. The Company calculates the benefit of Increasing Hosting Capacity as a direct customer
7 benefit. The Company calculates this benefit by applying the annualized off-peak rate
8 from its proposed residential TOD pilot rate to the forecasted additional solar production
9 by customers that are enabled on feeders between 35 to 60 percent.²⁷ The result of this
10 calculation is lower electric utility energy costs for customers installing solar.²⁸ Due to
11 the fact that Distribution Planning Tools and IVVM contribute to this benefit, 20 percent
12 of the total benefit is allocated to the Distribution Planning Tools CBA and 20 percent to
13 IVVM.²⁹

14 **Q. Please explain how the CBA violates Principle 8 of the NSPM.**

15 A. This flaw pertains to the inclusion of customer energy costs (i.e., bill savings) in the
16 CBA. According to Principle 8 of the NSPM, examination of changes in customers rates
17 and bills should be conducted separately from a cost-effectiveness analysis through a rate
18 and bill impacts assessment. The reason for this is that a CBA seeks to answer the
19 question of which utility investments are expected to provide benefits that exceed costs

²⁵ Warner Supplemental Testimony, pg. 13, lines 16-17.

²⁶ *Id.*, pg. 31

²⁷ PNM Exhibit OBW-1 (CBA), pg. 17.

²⁸ *Ibid.*

²⁹ Warner Supplemental Testimony, pg. 31.

1 for all customers on average, whereas a rate and bill impact analysis answers the question
2 of how much an investment will increase or decrease customer rates.³⁰ Inclusion of
3 changes in customer rates and bills in a CBA conflates cost-effectiveness with rate and
4 bill impacts, which does not provide for a meaningful understanding of either cost-
5 effectiveness or rate and bill impacts. As indicated in Table 2 earlier in my testimony,
6 changes in customer energy usage and costs should not be included in cost-effectiveness
7 tests.

8 The Company should instead account for the benefits from increased solar generation to
9 the utility and not as changes to customer energy costs. Such impacts are often referred to
10 as the “value of solar” to the utility system and include impacts such as avoided energy
11 generation and capacity benefits, ancillary services, and impacts to transmission and
12 distribution that result from the installed DERs.

13 **Q. Please explain issues related to symmetry in the CBA.**

14 A. The second flaw is that the Distribution Planning Tools CBA violates Principle 3 of the
15 NSPM, which states the need for costs and benefits to be treated symmetrically. In the
16 CBA, PNM includes customer benefits associated with incremental solar installations but
17 ignores the costs associated with the purchase and installation of that solar. In this way,
18 PNM is treating the impact of the incremental solar installations in an asymmetrical
19 manner and is inflating the benefits associated with Increasing Hosting Capacity. In order
20 to have a non-biased and symmetrical CBA, it is important that PNM include the costs

³⁰ NSPM, pgs. 2-8 to 2-9.

1 associated with the installation of the incremental solar, net of any rebates or tax credits.

2 These costs can be allocated across Distribution Planning Tools and IVVM to mirror the
3 way benefits are allocated between these programs.

4 It is important to note that the costs associated with the additional solar installations
5 should be included regardless of whether PNM includes the benefit of incremental solar
6 installations as a customer benefit or a utility system benefit. If the benefits are a result of
7 incremental solar installations, then the costs associated with those installations should be
8 included.

9 **Q. Please summarize your recommended changes to the Distribution Planning Tools**
10 **CBA.**

11 A. I recommend that PNM refile its CBA with the following changes:

- 12 • Calculate and account for the value of the incremental solar installations
13 resulting from increased DER hosting capacity as a utility system benefit
14 instead of a reduction in customer energy costs, and
- 15 • Account for the costs associated with the incremental solar installations
16 resulting from the portion of Increasing Hosting Capacity attributable to
17 Distribution Planning Tools.

18 **Q. How would your recommended modifications to the Distribution Planning Tools**
19 **CBA impact the cost-effectiveness of the program?**

20 A. This would depend on whether the utility system benefits from the incremental solar
21 installation outweigh the costs of the additional installed solar. However, I do not have
22 the required information related to the potential impacts of solar generation on PNM's
23 system to estimate the utility system benefits. The Company would need to revise its
24 CBA to account for the utility system benefits from the incremental solar installation in

1 addition to the other cited benefits of DER Carbon Offset and Maintaining Power Quality
2 and weigh that against the cost of the incremental solar installations and the cost of
3 Distribution Planning Tools. Given the fact that the Increasing DER Hosting Capacity
4 benefit represents 88.2 percent of the Distribution Planning Tools benefits, a modification
5 to the way in which this benefit is calculated has the potential to have a large impact on
6 overall cost-effectiveness.³¹

7 **IVVM**

8 **Q. Please summarize your concerns with the IVVM CBA.**

9 A. I find two issues with the IVVM CBA. The first mirrors my concerns with the
10 Distribution Planning Tools CBA as it relates to the calculation of Increasing DER
11 Hosting Capacity benefits. The second issue pertains to the double-counting of benefits
12 between Reduced Customer Energy Costs and Reduction in Utility Energy.

13 **Q. Are your concerns related to the benefit of Increasing DER Hosting Capacity the**
14 **same for IVVM as for Distribution Planning Tools?**

15 A. Yes. The methodology used to calculate this benefit violates Principle 3 of the NSPM
16 related to symmetry due to the fact that PNM includes the benefits from increased solar
17 installations resulting from increased DER hosting capacity but not the costs associated
18 with that solar. In addition, the methodology violates Principle 8 of the NSPM, which
19 states that changes in customer rates and bills should not be included in cost-
20 effectiveness.

³¹ PNM Exhibit OBW-1 (CBA), pg. 17.

1 **Q. Please describe your second concern related to the double-counting of benefits.**

2 A. I find that the Reduced Customer Energy Costs and Reduction in Utility Energy both
3 measure the same outcome, which is the change in energy resulting from reductions in
4 customer energy consumption from IVVM.

5 **Q. How does PNM describe the benefit of Reduction in Utility Energy?**

6 A. The Company states that IVVM reduces energy consumption and demand by lowering
7 the distribution line voltages to the optimal level. The result of this volt-var optimization
8 is a reduction in system energy production requirements to serve PNM's customers.³²

9 **Q. How does PNM describe the benefit of Reduced Customer Energy Costs?**

10 A. Similar to the description of Reduction in Utility Energy benefits, PNM states that IVVM
11 reduces energy consumption and demand by lowering the distribution line voltages to the
12 optimal level. The Company states that the result of this volt-var optimization reduces
13 customer energy costs.³³

14 **Q. Why is it problematic to account for both benefits in the CBA?**

15 A. Each benefit is monetizing the same reduction in energy consumption and demand that
16 results from IVVM lowering distribution line voltages to the optimal level.

17 **Q. What is your recommendation to address the double-counting of these benefits?**

18 A. I recommend that PNM revise its IVVM CBA to only include the benefit of Reduction in
19 Utility Energy. As indicated earlier in my testimony and summarized in Table 2, when
20 conducting a Societal Cost Test, changes in customer energy costs (i.e., bill savings)

³² *Id.*, pg. 25

³³ *Id.*, pg. 23.

1 should not be included as an impact. Instead, any changes in energy consumption and
2 demand should be included as a utility system impact. This is similar to how energy and
3 demand savings resulting from the customer installation of energy efficiency measures
4 are accounted for in CBAs in New Mexico. Even though customers lower their energy
5 usage, that benefit is only counted as a utility system benefit as avoided energy
6 generation and capacity.³⁴

7 **Q. How would removal of the Reduced Customer Energy Costs impact the IVVM**
8 **CBA?**

9 A. The Company calculates the net-present value of the Reduced Customer Energy Cost
10 benefit to be \$1.9 million.³⁵ Not accounting for any other changes to the CBA, removal
11 of this benefit reduces the IVVM BCR from 2.25 to 2.21.

12 I was not able to calculate the impact of the additional changes related to the Increasing
13 DER Hosting Capacity benefit; however, this benefit represents 72.3 percent of the
14 IVVM benefits.³⁶ Therefore a modification to the way in which this benefit is calculated
15 has the potential to have a large impact on overall cost-effectiveness.

16 **Q. Please summarize your recommended changes to the IVVM CBA.**

17 A. I recommend that PNM refile its CBA with the following changes:

³⁴ See for example Southwestern Public Service Company's Application for a Triennial Energy Efficiency Plan in Case No. 22-00124-UT.

³⁵ CONFIDENTIAL PNM Exhibit NMAG 4-1(E) IVVM Benefit Nov23 (2-8-24 Supplemental), "System-Wide Benefit NPV" tab.

³⁶ PNM Exhibit OBW-1 (CBA), pg. 20.

- 1 • Calculate and account for the value of the incremental solar installations
2 resulting from increased DER hosting capacity as a utility system benefit
3 instead of a reduction in customer energy costs,

- 4 • Account for the costs associated with the incremental solar installations
5 resulting from the portion of Increasing Hosting Capacity attributable to
6 IVVM, and

- 7 • Remove the Reduced Customer Energy Cost benefit.

8 **DERMS**

9 **Q. Please summarize the issues you identified in the DERMS CBA.**

10 A. I found two key issues with the DERMS CBA. The first pertains to the calculation of the
11 Increasing DER Hosting Capacity benefit and mirrors the issues found in the Distribution
12 Planning Tools and IVVM CBAs. The second issue pertains to accounting for the
13 interdependencies between DERMS and battery storage.

14 **Q. Please describe how DERMS increases DER hosting capacity.**

15 A. The Company states that DERMS is required to enable distribution battery storage
16 optimization, which will then safely and reliably increase hosting capacity of DERs on
17 distribution feeders above 60 percent DER penetration.³⁷

18 **Q. Please describe PNM's methodology for monetizing the Increasing DER Hosting
19 Capacity benefit in the DERMS CBA.**

20 A. The method is similar to that used for Distribution Planning Tools and IVVM. The
21 Company calculates the benefit of Increasing Hosting Capacity as a direct customer

³⁷ Warner Supplemental Testimony, pg. 15, lines 3-5.

1 benefit. The Company calculates this benefit by applying the annualized off-peak rate
2 from its proposed residential TOD pilot rate to the forecasted additional solar production
3 by customers that are enabled on feeders with over 60 percent DER penetration but less
4 than 150 percent.³⁸ The result of this calculation is lower electric utility energy costs for
5 customers installing solar.³⁹ The Company states this benefit is allocated between
6 DERMS and distribution batteries, but those batteries are not included in the grid
7 modernization CBA filing.⁴⁰

8 **Q. Are your concerns and recommendations related to the benefit of Increasing DER**
9 **Hosting Capacity the same for DERMS as it is for IVVM and Distribution Planning**
10 **Tools?**

11 A. Yes. The methodology used to calculate this benefit violates Principle 3 of the NSPM
12 related to symmetry due to the fact that PNM includes the benefits from increased solar
13 installations resulting from increased DER hosting capacity but not the costs associated
14 with that solar. In addition, the methodology violates Principle 8 of the NSPM, which
15 states that changes in customer rates and bills should not be included in cost-
16 effectiveness. It is important that these errors are addressed because the benefit of
17 Increasing DER Hosting Capacity represents 78.2 percent of the total DERMS benefits
18 and therefore modifications to the way in which this benefit is calculated may have a
19 large impact on the overall cost-effectiveness of the program.⁴¹

³⁸ PNM Exhibit OBW-1 (CBA), pg. 26.

³⁹ *Ibid.*

⁴⁰ *Ibid.*

⁴¹ *Ibid.*

1 **Q. Please describe the second issue associated with the treatment of distribution**
2 **battery storage in the DERMS CBA.**

3 A. The Company indicates that several of the DERMS benefits would not occur without
4 energy storage. For example, the Company indicates that DERMS cannot provide the
5 benefit of Energy Arbitrage or Increasing DER Hosting Capacity without battery
6 storage.⁴² While PNM states that it accounts for this interdependency by only allocating
7 11 percent of the Energy Arbitrage and Increasing DER Hosting Capacity benefits to
8 DERMS, this does not provide an accurate representation of the technology.

9 For example, should the Commission approve DERMS but not approve battery storage,
10 or the number of batteries required to achieve the benefits described in the CBA, the cost-
11 effectiveness of the DERMS program will be worse than what PNM projects in its
12 analysis. It is important to provide the Commission and stakeholders with an accurate
13 assessment of the benefits DERMS can provide on its own and then in combination with
14 the required enabling technologies.

15 **Q. What is your recommendation to improve this approach?**

16 A. I recommend that PNM conduct a CBA for DERMS in isolation, meaning only the
17 benefits that DERMS can provide on its own are included. I recommend that PNM also
18 conduct a second CBA where the full costs and benefits of DERMS and distribution
19 system batteries are combined. This will provide the most accurate information on the
20 cost-effectiveness of these technologies.

⁴² PNM Response to NMAG 4-15 and 4-21(A).

1 **Q. Please summarize your overall recommendations for the DERMS CBA.**

2 A. I recommend that PNM refile its CBA with the following changes:

- 3 • Calculate and account for the value of the incremental solar installations
4 resulting from increased DER hosting capacity as a utility system benefit
5 instead of a reduction in customer energy costs,
- 6 • Account for the costs associated with the incremental solar installations
7 resulting from the portion of Increasing Hosting Capacity attributable to
8 DERMS, and
- 9 • Conduct a CBA for DERMS alone and for DERMS and distribution system
10 batteries.

11 **FLISR**

12 **Q. Did you identify any issues with the FLISR CBA?**

13 A. Yes. There is an issue related to the double-counting of benefits between Improved
14 Customer Reliability and Improved Customer Experience.

15 **Q. How does FLISR improve reliability?**

16 A. According to the PNM, FLISR automatically isolates and restores the affected areas of
17 the feeder, minimizing the cost and duration of interruptions. The Company anticipates a
18 50 percent annual reduction in customer minutes interrupted (“CMI”) with the
19 implementation of FLISR⁴³ The Company indicates that the 50 percent improvement in
20 CMI is based on a 2014 U.S. Department of Energy (DOE) report entitled “Fault

⁴³ PNM Exhibit OBW-1 (CBA), pg. 30

1 Location, Isolation, and Service Restoration Technologies Reduce Outage Impact and
2 Duration.”⁴⁴

3 **Q. Please describe PNM’s methodology for calculating Improved Customer Reliability**
4 **benefit.**

5 A. The Company monetizes the benefit of the 50 percent annual reduction in CMI for each
6 feeder using the DOE Interruption Cost Estimate (“ICE”) tool and counts the result as a
7 direct benefit to customers.⁴⁵

8 **Q. Please describe PNM’s methodology for calculating the Improved Customer**
9 **Experience benefit.**

10 A. The Company mapped J.D. Power customer satisfaction scores for power quality and
11 reliability to feeders by area zip code. The Company then mapped feeders to J.D. Power
12 Net Promotor categories of Detractor, Neutral, or Promotor, which indicate how likely a
13 customer is to recommend a brand to a friend or colleague.⁴⁶ PNM then applies a
14 proprietary Customer Experience Risk Matrix that assigns a dollar value to the impact of
15 “a customer having a negative experience that would cause them to take a negative action
16 such as a media event, a complaint to the Commission, etc.” and multiplies that by the
17 likelihood of a an outage event occurring by feeder. The Customer Experience Risk
18 Matrix assigns a value of \$1 million to Detractor, \$300,000 to Neutral, and \$50,000 to
19 Promotor. The Company accounts for this value as a direct customer benefit.⁴⁷ The

⁴⁴ PNM Response to NMAG 4-38.

⁴⁵ PNM Exhibit OBW-1 (CBA), pg. 30.

⁴⁶ Ibid. and J.D. Power Electric Utility Business Customer Satisfaction Study website:
<https://www.jdpower.com/business/electric-utility-business-customer-satisfaction-study>.

⁴⁷ PNM Exhibit OBW-1 (CBA), pg. 31.

1 Company states that avoiding lower J.D. Power scores should be considered a benefit
2 because “PNM values customer satisfaction and would be faced with addressing poor
3 customer satisfaction survey results” if the investment in FLISR was not made.⁴⁸

4 **Q. Please explain why the benefits of Improved Customer Reliability and Improved**
5 **Customer Experience are double-counted.**

6 A. According to PNM, the benefit of Improved Customer Experience captures “the
7 improvement in customer satisfaction associated with *having shorter duration electrical*
8 *outages* [emphasis added]” and the benefit of Improved Customer Reliability captures
9 “The benefit of *reduced outage time* [emphasis added]”.⁴⁹ Based on PNM’s description
10 of these benefits, they are both seeking to monetize the outcome of increased customer
11 reliability. Therefore, by including both benefits in the FLISR CBA, PNM is accounting
12 for the benefit of increasing customer reliability twice, which inflates the cost-
13 effectiveness results.

14 **Q. What is your recommendation to address the double-counting of customer**
15 **reliability?**

16 A. I recommend that PNM only include the benefit of Improved Customer Reliability in the
17 CBA and remove the Improved Customer Experience benefit. This recommendation is
18 based on that fact that the benefit of Improved Customer Reliability is based on the U.S.
19 DOE’s ICE tool, which is a well-known industry tool that has been publicly vetted for
20 use in estimating the economic consequences of power interruptions to utility

⁴⁸ PNM Response to NMAG 4-10

⁴⁹ PNM Response to NMAP 4-11(B):

1 customers.⁵⁰ On the other hand, PNM has not sufficiently justified the dollar values
2 assigned to changes in J.D. Power scores from the proprietary Customer Experience Risk
3 Matrix used to calculate the benefit of Improved Customer Experience.

4 **Q. How would removal of the Improved Customer Experience benefit impact the cost-**
5 **effectiveness of the FLISR?**

6 A. I was not able to determine the net-present value of the Improved Customer Experience
7 benefit from PNM's workpapers. However, in PNM Exhibit OBW-1 (CBA), PNM
8 indicates that the Improved Customer Experience Benefits represents 28.5 percent of the
9 total FLISR benefits.⁵¹ I calculated that \$25.2 million is 28.5 percent of the total net-
10 present value of FLISR benefits (\$88.4 million).⁵² When that amount is removed from
11 the FLISR CBA, the BCR is reduced from 1.02 to 0.73.

12 **Q. Does this conclude your testimony?**

13 A. Yes, it does.

⁵⁰ See PNM Exhibit OBW-1 (CBA), pg. 30 and the U.S. Department of Energy ("DOE") Interruption Cost Estimate ("ICE") Website: <https://icecalculator.com/home>.

⁵¹ PNM Exhibit OBW-1 (CBA), pg. 31.

⁵² Warner Second Supplemental Testimony, pg. 3, line 10.

BEFORE THE NEW MEXICO PUBLIC REGULATION COMMISSION

IN THE MATTER OF PUBLIC SERVICE COMPANY)	
OF NEW MEXICO’S APPLICATION FOR)	
AUTHORIZATION TO IMPLEMENT GRID)	
MODERNIZATION COMPONENTS THAT INCLUDE)	CASE NO. 22-00058-UT
ADVANCED METERING INFRASTRUCTURE AND)	
APPLICATION TO RECOVER THE ASSOCIATED)	
COSTS THROUGH A RIDER, ISSUANCE OF)	
RELATED ACCOUNTING ORDERS, AND OTHER)	
ASSOCIATED RELIEF.)	
)	
PUBLIC SERVICE COMPANY OF NEW MEXICO)	
)	
APPLICANT.)	
_____)	

**AFFIRMATION (IN LIEU OF AFFIDAVIT)
OF COURTNEY LANE**

In compliance with the *Temporary NMPRC Electronic Filing Policy of March 20, 2020*, and under Rule 1-011(B) NMRA of the New Mexico Rules of Procedures for the District Courts, I, Courtney Lane, hereby file this testimony on behalf of the New Mexico Attorney General and state as follows:

I hereby affirm in writing under penalty of perjury under the laws of the State of New Mexico that the statements contained in the foregoing *Direct Testimony of Courtney Lane on Behalf of the Office of Attorney General* are true and correct to the best of my knowledge, information, and belief.

I further declare under penalty of perjury that the foregoing is true and correct.

Executed on March 1, 2034.

/s/ Courtney Lane
Courtney Lane (electronically signed)
Expert Witness on Behalf of the New Mexico Attorney General
485 Massachusetts Avenue #3
Cambridge, MA 02139

Attachment A -Referenced PNM Responses to Interrogatories

PNM Response to NMAG 4-15 and 4-21(A).

PNM Response to NMAG 4-9(A).

PNM Response to NMAG 4-38.

PNM Response to NMAG 4-10

PNM Response to NMAP 4-11(B):

INTERROGATORY NMAG 4-15:
OMNI B. WARNER

REFER TO THE SUPPLEMENTAL TESTIMONY OF OMNI B. WARNER AT PAGE 22, LINES 8-9. PLEASE LIST THE CASES WHERE SEVERAL INVESTMENTS CONTRIBUTE TO SIMILAR BENEFITS AND EXPLAIN HOW THEY ARE PRO-RATED.

RESPONSE:

Please see PNM Exhibit OBW-1 (CBA) for details on each investment program and benefit and workbooks for DERMS, FLISR, IVVM and Planning Tools.

In rows 28, 29 and 30 on the tab “Assumptions” in CONFIDENTIAL PNM Exhibit NMAG 4-1(F) Planning Tools Calculations_Final.xlsx_PNM and B&V used engineering judgement that 30% of the benefits should be assigned to IVVM, 20% of the benefits to Distribution Planning Tools, and the remaining 50% to existing distribution infrastructure like existing load tap changers, conductors, service transformers, etc. This represents a conservative approach, as only 50% of the benefits are assigned to required technology of IVVM and Distribution Planning tools to deliver advancements to the distribution system.

For the shared benefits of Energy Arbitrage, Increasing DER Hosting Capacity, and DER Carbon Offset, which are shared with investments of DERMS and battery storage, 11% of the benefits are assigned to DERMS, and 89% benefits are assigned to battery storage, none of which were included in this CBA. 11% is the ratio of capital investment on these feeders evaluated through this CBA with a projection of future battery installations on the feeders evaluated in this CBA.

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

INTERROGATORY NMAG 4-21:
OMNI WARNER

REFER TO THE SUPPLEMENTAL TESTIMONY OF OMNI B. WARNER AT PAGE 31, LINES 16-18, WHICH STATES THAT “THE BENEFITS SHARED BETWEEN DERMS AND DISTRIBUTION BATTERIES (NOT EVALUATED IN THIS CBA), THE BENEFITS ARE RATIOED BETWEEN THE TWO INVESTMENTS BASED ON THE RATIO OF PROGRAM COSTS.”

A. IS THE DERMS BENEFIT OF INCREASING CUSTOMER DER HOSTING CAPACITY AND DER CARBON OFFSET REALIZED WITHOUT DISTRIBUTION BATTERIES?

[REDACTED]

RESPONSE:

A. No. See PNM Exhibit OBW-1 (CBA) page 26 for a description of the benefits and interdependencies.

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

INTERROGATORY NMAG 4-9:
JAMES W. SHIELDS/OMNI B. WARNER

REFER TO THE SUPPLEMENTAL TESTIMONY OF JAMES W. SHIELDS AT PAGE 18 REGARDING THE BENEFITS OF DISTRIBUTION PLANNING TOOLS.

A. PLEASE EXPLAIN IF THE DISTRIBUTION PLANNING TOOLS INCREASE HOSTING CAPACITY OR ONLY IDENTIFY LOCATIONS WHERE HOSTING CAPACITY IS AVAILABLE?

[REDACTED]

RESPONSE:

A. Distribution planning tools do both. They have the functionality of being able to identify specific locations on distribution circuits where hosting capacity exists along with the amount of hosting capacity that is available at the identified locations. To increase hosting capacity on the distribution grid in a cost-effective way, two tasks must be performed. First, the distribution system must be studied, through a digital twin software model, to identify where hosting capacity is needed. Second, capital must be deployed to place the required infrastructure into service to provide the hosting capacity. The CBA acknowledges the benefit of a Distribution Planning Tool to add hosting capacity efficiently and effectively to the distribution system. The Distribution Planning Tool along with the four other investment programs are planned,

designed, and integrated to work together to achieve customer benefits and meet state policy goals.



INTERROGATORY NMAG 4-10:
MARIO CERVANTES/JAMES W. SHIELDS

REFER TO PNM EXHIBIT JWS-2 (CBA) AT TABLE 6, PAGE A-9.

- A. PLEASE PROVIDE THE SOURCE OF THE COSTS IN TABLE 6.**
- B. PLEASE EXPLAIN HOW THE COSTS IN TABLE 6 WERE CALCULATED.**
- C. PLEASE EXPLAIN WHY THE CHANGE IN THE COMPANY'S JD POWER SCORES SHOULD BE CONSIDERED A BENEFIT.**

[REDACTED]

INTERROGATORY NMAG 4-11:
JAMES W. SHIELDS/OMNI B. WARNER

REFER TO PNM EXHIBIT JWS-2 (CBA) AT TABLE 11, PAGE A-13, REGARDING THE FLISR PROGRAM.

[REDACTED]

B. PLEASE EXPLAIN HOW THE BENEFIT OF IMPROVED CUSTOMER EXPERIENCE IS DISTINCT FROM IMPROVED CUSTOMER RELIABILITY.

[REDACTED]

[REDACTED]

Emissions is “based on the reduction in CO2 emissions resulting from fewer [vehicle] miles being driven to locate faults.”

- B. See PNM Exhibit OBW-1 (CBA) page 31. Improved Customer Experience is described as follows: “This benefit captures the improvement in customer satisfaction associated with having shorter duration electrical outages and increased grid resiliency.” See PNM Exhibit OBW-1 (CBA) page 30 for Improved Customer Reliability, defined as follows: “FLISR automatically isolates and restores the affected areas of the feeder, minimizing the cost and duration of interruptions. The benefit of reduced outage time is calculated using the Interruption Cost Estimate (ICE) Calculator, via a [DOE] tool that considers each feeder’s characteristics and history.”

[REDACTED]

INTERROGATORY NMAG 4-12:

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

BEFORE THE NEW MEXICO PUBLIC REGULATION COMMISSION

**IN THE MATTER OF PUBLIC SERVICE COMPANY)
OF NEW MEXICO'S APPLICATION FOR)
AUTHORIZATION TO IMPLEMENT GRID)
MODERNIZATION COMPONENTS THAT INCLUDE)
ADVANCED METERING INFRASTRUCTURE AND) Case No. 22-00058-UT
APPLICATION TO RECOVER THE ASSOCIATED)
COSTS THROUGH A RIDER, ISSUANCE OF)
RELATED ACCOUNTING ORDERS, AND OTHER)
ASSOCIATED RELIEF)**

CERTIFICATE OF SERVICE

I **HEREBY CERTIFY** that on this date I sent a true and correct copy of the
SUPPLEMENTAL TESTIMONY OF COURTNEY LANE to the parties listed below.

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Before the New Mexico Public Regulation Commission

Sixth Amended Official Service List – updated 2/6/24

Case No. 22-00058-UT

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Before the New Mexico Public Regulation Commission

Sixth Amended Official Service List – updated 2/6/24

Case No. 22-00058-UT

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DATED this 1st day of **March, 2024**.

Respectfully submitted,
NEW MEXICO DEPARTMENT OF JUSTICE

RAÚL TORREZ
Attorney General

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Utilities Paralegal
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