

**BEFORE THE NEW MEXICO PUBLIC REGULATION COMMISSION**

**IN THE MATTER OF PUBLIC SERVICE )  
COMPANY OF NEW MEXICO'S )  
CONSOLIDATED APPLICATION FOR )  
APPROVALS FOR THE ABANDONMENT, ) 19-\_\_\_\_-UT  
FINANCING, AND RESOURCE REPLACEMENT )  
FOR SAN JUAN GENERATING STATION )  
PURSUANT TO THE ENERGY TRANSITION ACT )**

**DIRECT TESTIMONY  
OF  
JEFF R. MECHENBIER**

**July 1, 2019**

**NMPRC CASE NO. 19-\_\_\_\_-UT  
INDEX TO THE DIRECT TESTIMONY OF  
JEFF R. MECHENBIER**

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

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PNM EXHIBIT JRM-1

Résumé of Jeff R. Mechenbier

PNM EXHIBIT JRM-2

Map of New Mexico Transmission System

AFFIDAVIT

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1

**I. INTRODUCTION**

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

3 **A.** My name is Jeff R. Mechenbier. I am Director of the Transmission/Distribution  
4 Planning and Contracts Department at Public Service Company of New Mexico  
5 (“PNM” or “Company”). My business address is Public Service Company of New  
6 Mexico, 2401 Aztec Road NE, Albuquerque, NM 87107.

7

8 **Q. WHAT DOES YOUR TESTIMONY COVER?**

9 **A.** My testimony covers the costs associated with interconnection and delivery of energy to  
10 PNM’s load centers. The appropriate costs for transmission interconnection and  
11 delivery have been included in the evaluation establishing Scenario 1. My testimony  
12 also covers transmission constraints on the PNM system with respect to existing  
13 generation facilities and planned generation facilities that will be located in different  
14 regions of the state.

15

16 **Q. PLEASE SUMMARIZE YOUR EDUCATION AND PROFESSIONAL  
17 QUALIFICATIONS AND DESCRIBE YOUR JOB DUTIES.**

18 **A.** My education and professional qualifications are provided in PNM Exhibit JRM-1.  
19 As Director of the Transmission/Distribution Planning and Contracts Department, I  
20 am responsible for overseeing the evaluation of the existing transmission and  
21 distribution system planning functions, analyzing system deficiencies, and creating  
22 plans for the capital expansion of these systems. I am also responsible for overseeing

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1 the administration of the Federal Energy Regulatory Commission (“FERC”)  
2 jurisdictional open-access transmission tariff commonly referred to as the OATT.  
3 This responsibility involves providing transmission delivery services, processing  
4 generator interconnection applications, and executing transmission agreements.

5  
6 **Q. HAVE YOU PREVIOUSLY TESTIFIED IN REGULATORY  
7 PROCEEDINGS?**

8 **A.** Yes. Cases in which I have testified before the New Mexico Public Regulation  
9 Commission (“Commission”) are listed in PNM Exhibit JRM-1.

10  
11 **Q. WHAT IS THE PURPOSE OF YOUR TESTIMONY?**

12 **A.** My testimony is submitted in support of PNM’s evaluation of proposals received in  
13 response to its requests for proposals (“RFP”) for potential San Juan coal plant  
14 replacement resources. Specifically, I describe the system in general to provide an  
15 understanding of where there are constraints that require transmission upgrades or  
16 additions that impact the ability to interconnect and deliver power from new  
17 generators. I support the transmission interconnection and delivery costs included in  
18 the overall cost determinations used in the bid analysis process. The costs associated  
19 with a resource’s interconnection and delivery of energy to PNM’s transmission  
20 system must be properly taken into account when assessing the overall cost of a  
21 resource. Finally, I discuss the interconnection and transmission costs associated  
22 with Scenario 1 resources and conclude that all of the bids as evaluated reasonably  
23 account for such costs.

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**II. DESCRIPTION OF PNM'S TRANSMISSION SYSTEM**

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**Q. PLEASE DESCRIBE THE EXISTING NEW MEXICO TRANSMISSION SYSTEM AND THE FUNCTIONS IT SERVES.**

**A.** The New Mexico transmission system is shown in PNM Exhibit JRM-2. The “backbone” of the system, which delivers generation resources to load centers in New Mexico and El Paso, Texas, consists of several 345 kV lines and one 230 kV line that emanate from the Four Corners area in the Northwest corner of New Mexico and run southeast into the central New Mexico load center in Albuquerque, Santa Fe and surrounding areas. The Four Corners area is also connected to far western New Mexico and Southern New Mexico by two 345 kV lines that run along the western border of New Mexico and the eastern border of Arizona, with interconnecting transmission lines that carry power towards southern New Mexico and El Paso.

**Q. IS THERE SUFFICIENT CAPACITY ON THE PNM TRANSMISSION SYSTEM TO SUPPORT THE INTERCONNECTION AND DELIVERY OF ENERGY FROM PROPOSED GENERATION FACILITIES TO PNM'S TRANSMISSION SYSTEM REGARDLESS OF LOCATION?**

**A.** The availability of capacity depends in part on where proposed new generators would be interconnected. Historically, power flow on the lines from the Four Corners area carried power towards the major load centers of Albuquerque and El Paso. In northern New Mexico, the power flows have established limits along what is referred to as WECC Path 48, from the Four Corners/San Juan area (where the San Juan coal

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1 plant and the Four Corners Power Plant are located) into the central New Mexico load  
2 centers of Albuquerque, Santa Fe and surrounding areas. During periods of  
3 transmission system maintenance and high loads, such as on hot summer days or cold  
4 winter mornings and nights, power flows in northern New Mexico can exceed the  
5 limits of WECC Path 48. When this situation occurs, load-side generation in the  
6 Albuquerque area must be dispatched. Currently, PNM uses the Reeves and Rio  
7 Bravo facilities to provide load-side generation in the Albuquerque area, along with  
8 the La Luz and Valencia Energy Facility, near Belen, to maintain system reliability.

9  
10 With the addition of new wind generation resources in eastern New Mexico over the  
11 last couple of years that deliver power into Arizona and California, flow patterns have  
12 changed. During off-peak load periods, power flows on the lines can be very light  
13 from the Four Corners area towards Albuquerque. During periods of high wind  
14 output, flow on these lines can be from south to north, contrary to what has been the  
15 historical norm.

16  
17 **Q. ARE THERE OTHER CONSTRAINTS ACROSS THE TRANSMISSION**  
18 **SYSTEM?**

19 **A.** Yes. The capacity of the PNM transmission system in Eastern and Western New  
20 Mexico are fully subscribed to generation resources that currently exist or will be  
21 placed in-service before the end of 2021, and there are constraints on the Southern  
22 portions of the system as well.

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1 In Western New Mexico, a single 230 kV line and two 115 kV lines flow power  
2 towards the Albuquerque area. The full capacity of the lines is taken by existing  
3 resource commitments.

4  
5 In Eastern New Mexico, PNM's existing 216-mile, 345 kV transmission line from the  
6 BA 345 kV switching station (“BA station”) to the Blackwater 345 kV Switching  
7 Station (“BB line”) currently facilitates the interconnection of 1,000 MW of wind  
8 generation and is fully subscribed. PNM’s transmission system will be expanded in  
9 late 2020 to include an additional approximately 42 mile 345 kV transmission line  
10 and related facilities (collectively “BB2 Project”) that parallels a portion of the  
11 existing BB line between BA station and Clines Corners station.<sup>1</sup> In addition, PNM  
12 has submitted a request to the NMPRC to purchase a new 345 kV transmission line  
13 and associated facilities that is being jointly developed by Western Spirit  
14 Transmission, LLC and the New Mexico Renewable Energy Transmission Authority.  
15 Beginning Q3 of 2021, the project is expected to deliver of 800 MW of wind energy  
16 from eastern New Mexico to the western grid and potentially other locations through  
17 its interconnection with PNM's transmission system. However, these anticipated  
18 system expansions are already subscribed by existing or planned renewable  
19 generation projects.

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<sup>1</sup> NMPRC Case No. 18-00243-UT

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1 PNM also fully utilizes its existing transmission rights for existing generating  
2 resources in Southern New Mexico. PNM's jurisdictional generating resources in  
3 Southern New Mexico consist of the Afton Generating Station (235 MW), the  
4 Lordsburg Generating Station (80 MW), and the Luna Energy Facility (190 MW),  
5 which together total 505 MW of Southern New Mexico jurisdictional generating  
6 resources. PNM's loads in Southern New Mexico absorb, or provide a "sink," during  
7 peak load periods, for approximately 160 MW of the 505 MW of resources. Thus, to  
8 assure that the 505 MW of generation can be made available to serve PNM loads  
9 throughout its service territory, PNM has transmission rights in place to transmit  
10 power from Southern New Mexico to its load centers in Central and Northern New  
11 Mexico. These transmission rights of approximately 345 MW, are equal to the  
12 amount of PNM's Southern New Mexico generation of 505 MW minus the peak  
13 PNM Southern New Mexico load of 160 MW.

14  
15 **Q. ARE THERE ANY TRANSMISSION SYSTEM ISSUES THAT IMPACT**  
16 **WHERE GENERATION RESOURCES FACILITIES SHOULD BE**  
17 **LOCATED IN CENTRAL NEW MEXICO, NEAR THE ALBUQUERQUE**  
18 **LOAD CENTER?**

19 **A.** Yes. The existing transmission system from the Belen area to Albuquerque is at or  
20 near its maximum transfer capability due to existing and planned resources in this  
21 area. These system limitations were detailed in PNM's Definitive Interconnection



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1 System Impact Study (“DISIS”) Cluster 5 report, dated February 2016.<sup>2</sup> In addition,  
2 PNM’s 2017 Integrated Resource Plan noted that additional resources beyond those  
3 already planned will create transmission congestion and be at risk of being curtailed,  
4 unless additional transmission system upgrades are made to increase transmission  
5 capacity between Valencia County and Albuquerque.

6  
7 **III. TRANSMISSION COST EVALUATION FOR RFP PROCESS**

8 **Q. WHY IS IT IMPORTANT TO UNDERSTAND THE CONSTRAINTS ON THE**  
9 **PNM TRANSMISSION SYSTEM WHEN EVALUATING PROPOSED NEW**  
10 **GENERATION FACILITIES?**

11 **A.** Constraints on the PNM transmission system are key cost drivers when evaluating the  
12 costs associated with a resource’s interconnection and delivery of energy to PNM’s  
13 transmission system and must be factored in when assessing the overall cost of a  
14 resource. The ability to provide firm transmission service for any new resources  
15 connecting to PNM’s transmission system often requires that new or substantially  
16 upgraded transmission facilities be pursued.

17  
18 **Q. WHAT TRANSMISSION INFORMATION DID PNM REQUEST IN THE**  
19 **ALL SOURCE RFP PROCESS?**

20 **A.** For each proposal the bidders were asked to include the costs associated with the  
21 electrical transmission interconnection, system network upgrades required to support

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<sup>2</sup> [https://www.oasis.oati.com/woa/docs/PNM/PNMdocs/DISIS-5\\_Cluster\\_Study\\_Rpt.\\_posted\\_2-10-17.pdf](https://www.oasis.oati.com/woa/docs/PNM/PNMdocs/DISIS-5_Cluster_Study_Rpt._posted_2-10-17.pdf).

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1 the delivery of generated electricity from each site, and any required third-party  
2 transmission service cost.

3

4 **Q. DESCRIBE THE RELEVANT FACTORS CONSIDERED IN EVALUATING**  
5 **THE BIDS FOR INTERCONNECTION AND TRANSMISSION OF**  
6 **GENERATION RESOURCES.**

7 **A.** An important element in the RFP evaluation process was to consider the total cost  
8 associated with each resource, which includes the cost of the transmission  
9 interconnection and the cost of transmission delivery in the overall cost  
10 determination. Therefore, the RFP review involved a process for evaluating both the  
11 transmission delivery and transmission interconnection costs for each bid.

12

13 **Q. HOW WERE INTERCONNECTION AND TRANSMISSION COSTS**  
14 **EVALUATED?**

15 **A.** This information was reviewed by PNM and its consultant HDR Engineering Inc. for  
16 completeness. Detailed interconnection and transmission cost estimates were  
17 generally not available from most bidders. Additionally, some of the generation  
18 projects had accounted for the appropriate third-party transmission service while  
19 others had not.

20

21 **Q. WHAT ACTION DID PNM TAKE WITH RESPECT TO BIDS THAT**  
22 **LACKED SUFFICIENT INFORMATION ABOUT INTERCONNECTION**  
23 **AND TRANSMISSION DELIVERY COSTS?**

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1    **A.**    PNM solicited follow-up information and supporting data through the Power  
2            Advocate question and answer process to gain the necessary additional information  
3            from the bidders and to validate the interconnection and transmission delivery cost  
4            information provided by the bidders.

5

6            Additionally, PNM's Transmission Planning Department performed a review of the  
7            cost estimates provided by the bidders by referencing previously completed, relevant  
8            transmission studies or by producing engineering estimates based on Transmission  
9            Planning Department experience. These evaluations consisted of evaluating the bids  
10           for feasibility at a high level. The evaluations considered the ability to permit the  
11           project, the ability to acquire the necessary right-of-ways or easements, the technical  
12           performance of the project and the ability to meet PNM's desired schedule. For some  
13           projects, PNM had information available from recent generation or transmission  
14           service requests. Permitting timelines associated with obtaining right-of-ways or  
15           easements were also considered.

16

17    **Q.    WERE ANY BIDDERS EXCLUDED FOR NOT PROVIDING**  
18            **INFORMATION ABOUT INTERCONNECTION AND TRANSMISSION**  
19            **DELIVERY AND COSTS?**

20    **A.**    No. PNM's Transmission Planning Department was able to determine a cost estimate  
21            for interconnection and transmission delivery for each bid, based on bidder  
22            information provided and by obtaining additional information from bidders where  
23            possible and by referencing previously completed, relevant,

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1 interconnection/transmission studies or by producing engineering estimates. As a  
2 result, HDR was able to create “best in class” rankings of bidders that reflected a  
3 complete assessment of interconnection and transmission delivery costs for each bid.  
4

**IV. TRANSMISSION COSTS FOR SCENARIO 1**

6 **Q. HAS PNM SELECTED PROPOSED RESOURCES FOR ITS SCENARIO 1?**

7 **A.** Yes. As reflected in the testimony of PNM Witnesses Fallgren, Scenario 1 resources  
8 include: the 280 MW gas turbine facility; 50 MW Jicarilla Solar 1 combined with 20  
9 MW (4hr) battery energy storage facility; 300 MW Arroyo Solar combined with 40  
10 MW (4hr) battery energy storage facility, 40 MW (2hr) Sandia battery energy storage  
11 facility; and 30 MW (2hr) Zamora battery energy storage facility.  
12

13 **Q. HAS PNM CONSIDERED A POTENTIAL RENEWABLE ENERGY**  
14 **ADDITION IN THIS FILING?**

15 **A.** Yes. PNM has also looked at an additional 20 MW commercial scale solar facility at  
16 the San Juan coal plant site, as discussed by PNM Witness Fallgren.  
17

18 **Q. PLEASE IDENTIFY THE FACILITIES REQUIRED TO INTERCONNECT**  
19 **THE 280 MW GAS TURBINE AT THE SAN JUAN COAL PLANT.**

20 **A.** The gas turbine facility will interconnect to the existing San Juan 345 kV switching  
21 station. No transmission interconnection facilities are required at the San Juan  
22 switching station to interconnect the gas turbines since the existing interconnection

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1 points for the retired San Juan generation units can be used. Also, gas generation  
2 interconnected to the San Juan switching station will give PNM the ability to better  
3 manage voltages on the transmission system in the San Juan area if required.

4

5 **Q. PLEASE DISCUSS THE OPERATIONAL VOLTAGE SUPPORT NEEDS IN**  
6 **THE SAN JUAN AREA.**

7 **A.** On occasion, conditions in the San Juan area would benefit from the operation of  
8 generation in that area to provide voltage control. This condition is most likely to  
9 occur during off peak conditions when lightly loaded transmission lines result in high  
10 voltages or when one or more primary transmission lines connecting to the San Juan  
11 switching station is out of service resulting in low voltages. This creates the  
12 possibility that the area voltages will fall above or below required reliability levels.  
13 Having ramping generation resources at San Juan will enable PNM to provide voltage  
14 control in the San Juan area if operations require it.

15

16 **Q. HAVE LARGE GENERATION INTERCONNECTION AGREEMENTS**  
17 **(“LGIA”) FOR THE GAS TURBINE GENERATION RESOURCES BEEN**  
18 **FINALIZED?**

19 **A.** No. As is the case for all of the proposed resources, PNM is in the process of  
20 completing the technical studies and agreements (Q2 2021) which will incorporate all  
21 of the requirements for the interconnection of 280 MW gas turbine generation  
22 resource to the PNM transmission system. However, other than metering additions  
23 no transmission interconnection facilities will be required for these new resources

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1           since the existing interconnection points for the retired San Juan generation units can  
2           be used.

3  
4   **Q.   PLEASE IDENTIFY THE FACILITIES REQUIRED TO INTERCONNECT 50**  
5   **MW JICARILLA SOLAR 1 COMBINED WITH 20 MW BATTERY ENERGY**  
6   **STORAGE GENERATION RESOURCES.**

7   **A.**   The Jicarilla Solar 1 and battery energy storage generation resources will interconnect  
8           to the Jicarilla Apache Nation Power Authority (JANPA) 115 kV substation on a 115  
9           kV generation tie line. Power will be delivered to PNM at PNM’s Jicarilla 345 kV  
10          Switching Station via JANPA’s 345/115 kV transformer that connects PNM’s station  
11          to the JANPA substation. JANPA is responsible for the expansion of the JANPA  
12          substation to accommodate the interconnection and metering of these generation  
13          resources.

14  
15   **Q.   PLEASE IDENTIFY THE FACILITIES REQUIRED TO INTERCONNECT**  
16   **300 MW ARROYO SOLAR COMBINED WITH 40 MW BATTERY ENERGY**  
17   **STORAGE GENERATION RESOURCES.**

18   **A.**   The Arroyo Solar and battery energy storage generation resource will interconnect to  
19           PNM’s Four Corners-Rio Puerco 345 kV line. The estimated cost to interconnect  
20           these generation resources to the 345 kV transmission system would be  
21           approximately \$12 million based on construction of a new three breaker 345 kV  
22           switching station plus disconnect switches, protection and controls equipment,  
23           metering and line terminal A-Frame structures. Replacement of series compensation

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1 on the Four Corners-Rio Puerco 345 kV line is also assumed in the evaluation at a  
2 cost of \$8 million. The existing series compensation is located at Rio Puerco. The  
3 distance between the Arroyo interconnection point and Rio Puerco is significantly  
4 shorter than the distance between Rio Puerco and Four Corners. This shorter length  
5 may create a situation where the existing series compensation results in an over-  
6 compensated line between the Arroyo interconnection point and Rio Puerco that  
7 cannot be adequately protected. Pending the outcome of a comprehensive protection  
8 study, it may be determined that the replacement is not necessary. PNM is in the  
9 process of completing the technical studies and agreements (Q3 2020) which will  
10 incorporate all requirements for interconnection of the Arroyo solar and battery  
11 storage generation resources to the PNM transmission system, including the cost and  
12 construction schedule estimates for the facilities needed to physically and electrically  
13 interconnect the proposed generator.

14  
15 **Q. PLEASE IDENTIFY THE FACILITIES REQUIRED TO INTERCONNECT**  
16 **THE SANDIA 40 MW BATTERY ENERGY STORAGE.**

17 **A.** The Sandia battery storage will interconnect to the existing PNM Sandia 115 kV  
18 switching station. The estimated cost to interconnect the Sandia battery energy  
19 storage would be approximately \$3.4 million based on expansion of the Sandia  
20 switching station by one additional breaker to create a bay position for the  
21 interconnection of the Sandia battery storage project plus disconnect switches,  
22 protection and controls equipment, metering, control house modifications and a line  
23 terminal A-Frame structure. PNM is in the process of completing the technical

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1 studies and agreements (Q3 2020) which will incorporate all requirements for  
2 interconnection of the Sandia battery energy storage to the PNM transmission system,  
3 including the cost and construction schedule estimates for the facilities needed to  
4 physically and electrically interconnect the proposed battery energy storage.

5  
6 **Q. PLEASE IDENTIFY THE FACILITIES REQUIRED TO INTERCONNECT**  
7 **ZAMORA 30 MW BATTERY ENERGY STORAGE.**

8 **A.** The Zamora battery storage will interconnect to PNM's Sandia-East Mountain 46 kV  
9 line. The estimated cost to interconnect the 46 kV system would be approximately \$2  
10 million based on construction of a new breaker 46 kV switching station plus  
11 disconnect switches, protection and controls equipment, metering, and line terminal  
12 A-Frame structure. PNM Generation Department will submit an application for this  
13 30 MW battery energy storage to PNM's DISIS that opens on October 21, 2019 and  
14 closes on January 18, 2020. PNM will complete the technical studies and agreements  
15 (Q2 2021) which will incorporate all requirements for interconnection of the Zamora  
16 battery energy storage to the PNM system, including the cost and construction  
17 schedule estimates for the facilities needed to physically and electrically interconnect  
18 the proposed generator.

19  
20 **Q. WERE THE COSTS YOU HAVE OUTLINED FOR THE SELECTED**  
21 **RESOURCES INCORPORATED IN THE BID REVIEW PROCESS?**

22 **A.** Yes. These costs were included in the transmission cost estimates used by HDR in  
23 ranking the generation bids for consideration.



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1 **Q. WILL THERE BE OTHER ADDITIONAL TRANSMISSION FACILITIES**  
2 **NEEDED TO DELIVER SCENARIO 1 BEYOND THE**  
3 **INTERCONNECTIONS FACILITIES DESCRIBED ABOVE?**

4 **A.** No. The retirement of San Juan Units 1 and 4 in 2022 will reduce PNM's generation  
5 capacity at San Juan coal plant by 497 MW. In addition, when the San Juan Units 2  
6 and 3 were retired in December 2017 this left 152 MW of capacity available which  
7 combined with the 497 MW from the retirement of Units 1 and 4 results in 649 MW  
8 of transmission capacity being available for replacement generation.

9

10 The Generation resources proposed to be interconnected at the Jicarilla Station and  
11 resources proposed to be interconnected to PNM's Four Corners-Rio Puerco 345 kV  
12 transmission line create flows on the major lines that are similar to resources at Four  
13 Corners or San Juan to the Albuquerque load center using the capacity that was  
14 previously utilized to import the San Juan generation.

15

16 The transmission capacity that will be utilized for Scenario 1 resources at or near San  
17 Juan will utilize 680 MW transmission capacity as follows: 280 MW for the gas  
18 turbine facility; 50 MW associated with Jicarilla Solar 1 (which includes a 20 MW  
19 battery energy storage facility but will be limited to 50 MW export capability); 300  
20 MW associated with Arroyo Solar (which includes a 40 MW battery energy storage  
21 facility but will be limited to 300 MW export capability), and 50 MW associated with

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1 Jicarilla Solar 2 for PNM Solar Direct<sup>3</sup>. This allocation of transmission capacity will  
2 utilize 31 MWs more transmission capacity, 680 MW versus 649 MW, when  
3 compared to the retired San Juan generation that the preferred projects are replacing;  
4 assuming all generators operated at full capacity simultaneously, a limited curtailment  
5 would be necessary under that circumstance to not exceed the limits of WECC Path  
6 48 shown on PNM Exhibit JRM-2. However, due to the variability of the replacement  
7 resources (which is curtailable by PNM), the likelihood of simultaneous utilization of  
8 all 680 MW of resources for delivery to the Albuquerque load center has a very low  
9 probability, as reflected in the testimony of PNM Witness Wintermantel.

10  
11 The Sandia and Zamora battery energy storage will be located in PNM's Albuquerque  
12 load center and these battery energy storage facilities do not require additional  
13 transmission capacity to be delivered to PNM's loads.

14  
15 **Q. WITH REGARD TO THE ADDITIONAL RENEWABLE FACILITY**  
16 **PROPOSED TO BE LOCATED AT SAN JUAN COAL PLANT, ARE THERE**  
17 **TRANSMISSION FACILITIES REQUIRED TO INTERCONNECT THE 20**  
18 **MW SOLAR FACILITY?**

19 **A.** The solar facility will interconnect to the existing San Juan 345 kV switching station.  
20 No transmission interconnection facilities are required at the San Juan switching

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<sup>3</sup> NMPRC Case No. 19-00158-UT

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1 station to interconnect the solar facility since the existing interconnection points for  
2 the retired San Juan generation units can be used.

3  
4 As explained above due to the variability of the replacement resources (which is  
5 curtailable by PNM), the likelihood of simultaneous utilization of additional 20 MW  
6 of resources to 680 MW (total 700 MW) of resources for delivery to the Albuquerque  
7 load center has a very low probability, as reflected in the testimony of PNM Witness  
8 Wintermantel.

9

10 **Q. PLEASE SUMMARIZE YOUR TESTIMONY AND CONCLUSIONS.**

11 **A.** The purpose of my testimony is to show that the full cost of the resource bids  
12 reflected appropriate costs for transmission interconnection and transmission delivery  
13 in the overall cost determination. I describe some of the limitations on PNM's  
14 transmission system with respect to generation facilities located or planned to be  
15 located in different regions of the state, in order to explain why transmission upgrades  
16 or additions would be needed for new generation, dependent on its location. My  
17 review of the information used for each proposal determined that appropriate costs  
18 were included for transmission interconnection and delivery for each bid during the  
19 evaluation process. I also describe the anticipated costs for transmission  
20 interconnection and delivery for the Scenario 1 resources. These transmission costs  
21 included in the Scenario 1 are reasonable.

22

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1 Q. DOES THIS CONCLUDE YOUR DIRECT TESTIMONY?

2 A. Yes.

GCG#525636

Résumé of Jeff R. Mechenbier

# PNM Exhibit JRM-1

Is contained in the following 2 pages.

**PNM EXHIBIT JRM-1**

**Name:** Jeff R. Mechenbier

**Address:** Public Service Company of New Mexico  
414 Silver Ave SW  
Albuquerque, New Mexico 8702

**Position:** Director, Transmission and Distribution Planning and Contracts

**Education:** Bachelor of Science in Electrical Engineering, Power Systems,  
New Mexico State University, Las Cruces, New Mexico 1984

Master of Science in Electrical Engineering,  
Electric Utility Management Program,  
New Mexico State University, Las Cruces, New Mexico 1985

Utility Executive Course,  
University of Idaho, Moscow, Idaho 2006

**Employment:** Bonneville Power Administration, Portland, Oregon  
Transmission Planning Engineer, 1985-1996

Public Service Company of New Mexico, Albuquerque, New Mexico:  
Senior Engineer, Transmission Planning, 1996-1997

General Electric, Albuquerque, New Mexico:  
Senior Engineer, 1997-2000

Public Service Company of New Mexico, Albuquerque, New Mexico:  
Manager, Transmission Analysis, 2000-2006  
Director, Transmission Analysis, 2006-2008  
Director, Transmission and Dist. Planning and Contracts, 2008-Present

**Licensure:** Licensed Professional Engineer in the state of New Mexico

**Professional Affiliations:** Senior member of Institute of Electrical and Electronic Engineers  
("IEEE") Power Engineering Society

Member Representative – WECC

**Testimony:**

New Mexico Public Regulation Commission

NMPRC Case No. 10-00264-UT	PNM's Abandonment of the Las Vegas Generating Station
NMPRC Case No. 15-00205-UT	PNM's Application for a CCN for the San Juan Gas Plant
NMPRC Case No. 16-00105-UT	PNM's Application for a CCN for an 80 MW Gas Plant

NMPRC Case No. 16-00276-UT  
NMPRC Case No. 18-00009-UT  
NMPRC Case No. 18-00243-UT

PNM's 2016 General Rate Case  
PNM's Approval of Three PPAs in Accordance With  
Special Service Contract with Facebook, Inc.  
PNM's Application for a CCN for BB2 Project

Map of New Mexico Transmission System

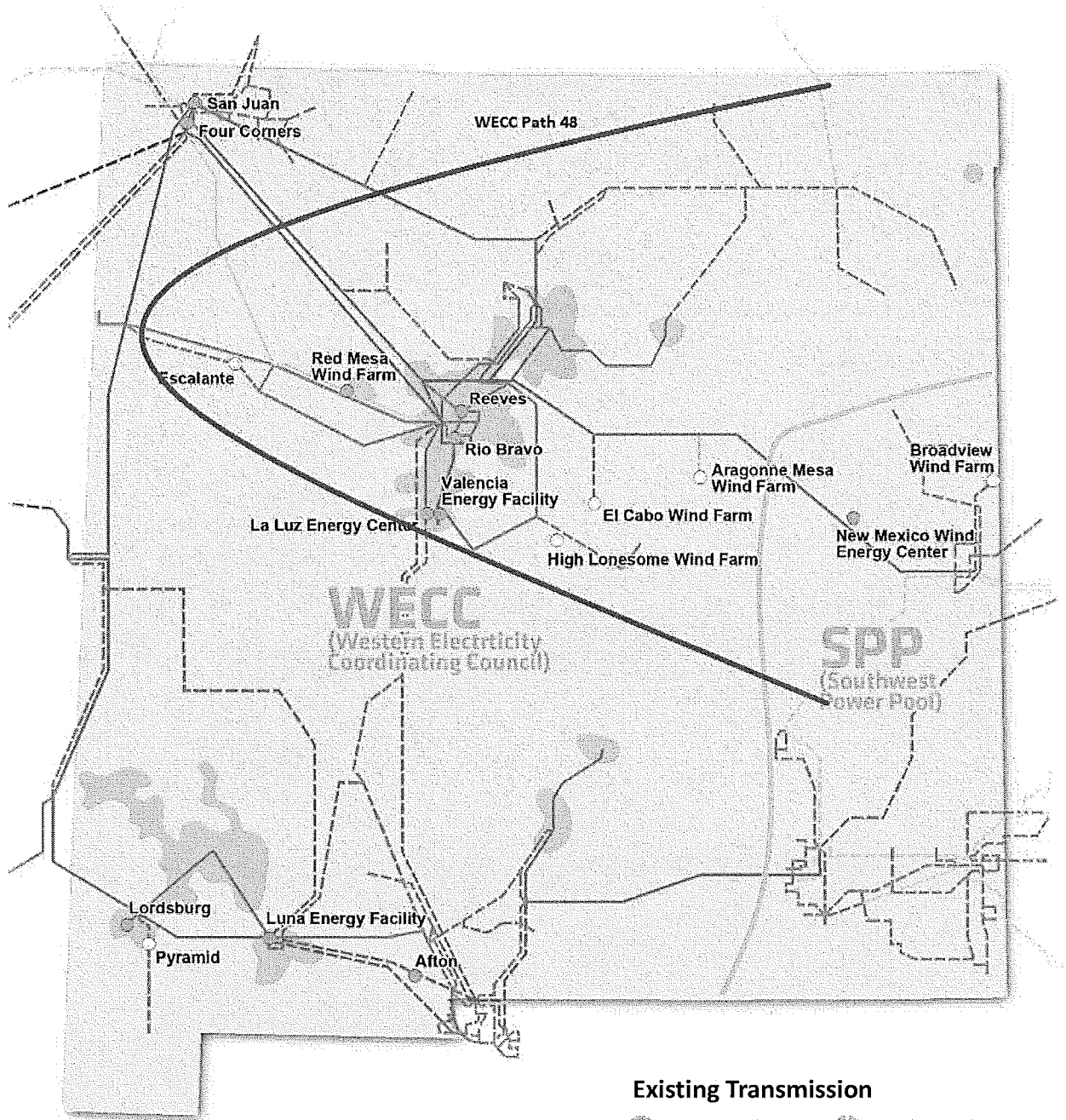
# PNM Exhibit JRM-2

Is contained in the following 1 page.



### EXHIBIT JRM-2

## Map of New Mexico Transmission System



#### Existing Transmission

- |           |             |
|-----------|-------------|
| PNM 115kV | Other 115kV |
| PNM 230kV | Other 230kV |
| PNM 345kV | Other 345kV |
|           | Other 500kV |

#### Existing Large Generation

- PNM
- Other

#### PNM Service Areas

-

BEFORE THE NEW MEXICO PUBLIC REGULATION COMMISSION

IN THE MATTER OF PUBLIC SERVICE )  
COMPANY OF NEW MEXICO'S )  
CONSOLIDATED APPLICATION FOR )  
APPROVALS FOR THE ABANDONMENT, ) 19-\_\_\_\_-UT  
FINANCING, AND RESOURCE REPLACEMENT )  
FOR SAN JUAN GENERATING STATION )  
PURSUANT TO THE ENERGY TRANSITION ACT )

AFFIDAVIT

STATE OF NEW MEXICO )  
 ) ss  
COUNTY OF BERNALILLO )

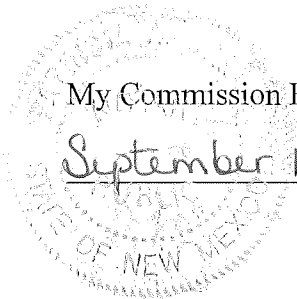
**JEFF R. MECHENBIER, Director of the Transmission/Distribution Planning and Contracts Department at Public Service Company of New Mexico,** upon being duly sworn according to law, under oath, deposes and states: I have read the foregoing **Direct Testimony of Jeff R. Mechenbier** and it is true and accurate based on my own personal knowledge and belief.

SIGNED this 20<sup>th</sup> day of June, 2019.

  
\_\_\_\_\_  
**JEFF R. MECHENBIER**

**SUBSCRIBED AND SWORN** to before me this 20<sup>th</sup> day of June, 2019.

  
\_\_\_\_\_  
NOTARY PUBLIC IN AND FOR  
THE STATE OF NEW MEXICO



My Commission Expires:

September 14, 2022