

Transmission Office Hour and WORKSHOP #3

Follow up Questions

(Source: chats from the Transmission Office Hour and Workshop #3)

Transmission Modeling

- Do you have any headroom analysis that would help point you to particular buses that can accommodate more generation? (Anna Sommer)

PNM provides a link to a heat map on its main OASIS page ([OATI OASIS](#)). The link will be under the 4/24/2025 notes. The IRP analysis will work with nodes based on experience with generator interconnection studies. The candidate buses will be limited to one or two within a zone.

- Do you have to pick a single study year for this analysis, and if so, how will you choose the year? (Anna Sommer)

PNM is proposing to look at three years in the study timeframe: 2029, 2034, 2039.

- If your model picks thermal resources in the initial expansion plan, how will those be located in the nodal analysis? (Anna Sommer)

PNM proposes to locate natural gas technologies at nodes near the interstate gas pipelines in Valencia County or San Juan County. The existing stations in these areas include San Juan and Four Corners 345 kV (San Juan County) and Hidden Mountain 345 kV or Belen 115 kV (Valencia County).

- When you go back to EnCompass after running the nodal simulation, is deciding whether to pick multiple generators associated with a single line or Tx project or are you somehow allocating the transmission cost across multiple projects? If you're just modeling a transmission cost adder, how will you decide how many projects would take advantage of that line? (Anna Sommer)

Transmission upgrade costs will be defined for candidate portfolios determined in the capacity expansion runs. The studies will allocate the costs to resources in the portfolio that are driving the upgrades.

- How does the IRP analysis of potential upgrades account for potential synergies with non-IRP transmission needs? (e.g., will PNM consider allocating a portion of a new line to IRP and a portion to wholesale system uses?) (Remy Franklin)

Transmission network upgrades are paid for by all transmission customers, so a portion of the cost ends up being allocated to wholesale system uses.

- PNM has different sensitivities for four transmission line possibilities, is PNM attempting to select BETWEEN those lines, or can two or more lines be selected in the CTP? (AnnaLinden Weller)

PNM will evaluate each of the four transmission sensitivities individually to determine the costs and benefits initially but is open to discussing looking at certain combinations for potential costs and benefits.

- Mileages for projects on slide #61? SunZia and RioSo, is the assumption these are built and paid for by others? Or is PNM considering being a participant in those projects? (Doug Patterson)

For this IRP, PNM does not contemplate ownership in either project and expects these projects will be built and paid for by others. PNM would own facilities that interconnect these projects to PNM's system. Milage for the interconnections and other projects mentioned in the workshop is shown below:

| Transmission Project | Project Miles | Construction Schedule Years | Cost (\$M) in 2026 Dollars |
|---|---------------|-----------------------------|----------------------------|
| Rio Puerco – Pajarito 345 kV Line | 28 | 4–5 | \$ 92 |
| Pajarito – Prosperity 345 kV Line | .5 miles * | 3.5–4.5 | \$ 116 |
| Rio Sol 345 kV Connection to PNM | 40 | 4–6 | \$ 262 |
| Sun Zia 345 kV Connection to PNM | 22 | 4–6 | \$ 219 |
| 2nd Western Spirit – Hidden Mountain –Pajarito 345 kV | 150 | 5–7.5 | \$ 524 |
| 2nd Four Corners – Rio Puerco 345 kV | 142 | 8–10 | \$ 448 |
| AC/DC/AC tie to SPP | 173 | 7–10 | \$ 1,007 |

* Low milage due to an unused 345 kV circuit already built and not in-service

Loads and Resources

- What is the difference between flexible and variable load? (workshop #2)

PNM does not understand the basis for this question, and it is possible the terms were used interchangeably. In general,

1. Flexible load is what can be controlled or shifted (EV chargers, water heaters, HVAC, Smart thermostats etc.). This is a demand side flexibility.
2. Variable load is what refers to load that naturally fluctuates over time rather than remain constant (Industrial machinery, home appliances with varying cycles etc.)

Follow Up Questions from PNM IRP Transmission Office Hour and WORKSHOP #3

- Why are the first available years different in the different load cases? Is the later date just a product of lack of need for resources or is it PNM's position that most of these cannot be brought online until 2033 or later absent extraordinary efforts? (Anna Sommer)

For technologies that require time to reach commercial development, the first available year ties to its technological readiness as well as the expected timeframe to obtain regulatory approval and interconnection/transmission availability. For all other technologies, the first available years are dependent upon the future being evaluated. For CTP & LEG futures, the years where PNM is seeking potential resource procurements begin in 2033, since years 2026 through 2032 have already been defined. For the HEG future, some resource technology first year availability have been moved up in time to allow candidate resources to be added to meet the higher load requirements before 2033.

- Regarding the load forecast drivers, which category(ies) relates to the probabilistic model that was described earlier? Just the econ development? Are the other categories besides EV load driven by different econometric variables? (Anna Sommer)

PNM created different scenarios based on economics (High, Low), weather, statistical bounds with standard deviations, and combining and subtracting scenarios. This process provides ranges of assumptions. Essentially that is meant by probabilistic.

EV assumptions are based on EIA (Energy Information Agency) adoption in the region and NM data for car registration.

- Can you provide the probabilistic model for new loads?

No – as this contains confidential customer information. The assigned probability to a project aligns with the project's assigned phase. The loads for projects are combined into three load futures: Low, Mid, and High. Only the loads under contract with PNM that include a non-refundable deposit, are included in the load forecast as part of the IRP for economic development. A project only attains 100% probability once the customer has been energized.

- Is EV load the reason that load is increasing by about 250 MW per year through 2030 in the Current Trends case?

EV is a portion of the additional load. EV is adding 44 MW through 2030 to the peak. We are not sure how the 250 MW is being determined.

- Under what class of service would new, non-residential loads take service?

This will depend on how large the load is and how it is contracted with PNM.

- What line extension policy, if any, applies?

PNM does not understand this question, please clarify.

- Abandonment of Four Corners, is this prudent given prevailing federal policies? (David Gilmer)

New Mexico's ETA policy must also be considered in a decision to exit Four Corners. PNM has factored this into expectations that abandonment of Four Corners is needed to comply.

- Modeling assumptions for Afton Gen Station? (Doug Patterson)

Please see the modeling data input files posted on the public venue site for stakeholders. Please see slides 67-72 of PNM's slide deck for Modeling Workshop #3 for details on how to access this information

- Why are all the long duration storage options kicked to 2034 or later? Ability to bring online or a perceived tech barrier? Which is the better metric to compare short vs long life storage: NPV or estimated cost of service? (Daren Zigich)

For technologies that require time to reach commercial development, their first available year ties to the technological readiness as well as the expected timeframe to obtain regulatory approval and interconnection/transmission availability.

PNM does not determine system value of individual resources by comparing annual costs between two resources. Instead, PNM utilizes industry standard tools like EnCompass to account for all resource characteristics to determine the best portfolio of resources to meet the demand & energy needs of the system.

- Is there a NERC or federal standard for calculating the ELCC or accredited capacity for energy storage resources? (Daren Zigich, workshop #2)

There are no federal reliability standards or guidelines for calculating ELCC's or accredited capacity for energy storage resources. Accredited capacity is dependent upon factors such as (but not limited to) system size, portfolio

composition, existing energy storage penetration, regional connectivity, market connectivity and regional utility resource composition. Due to the unique combination of these attributes for each electric utility, accredited capacities for utility resources are typically determined via specific system studies.

- What about a scenario to expand Lightning Dock (Glenn Wikle)

PNM has not planned to run this sensitivity in this IRP. Keep in mind that the IRP looks at the resource technologies that should be used to served planned load and meet regulation and not specific projects. However, we are open to discussing the technology being part of a stakeholder scenario for PNM to model.

Demand and Energy Landscape

- Workshop #3, Slide 17, demand or supply? What are the acronyms? (Luke Frash)

Slide 17 depicts a demand load shape for a typical day by stacking the different load class demand requirements atop each other. The yellow shaded stack represents behind the meter customer solar PV's impact on the demand shape for a typical day in July.

- Regarding the load forecast drivers, which category(ies) relates to the probabilistic model that was described earlier? (Anna Sommer)

Weather, economics, probability of Economic Development, and combinations of different scenarios which provide PNM with different projections.

- Is EV load the reason that load is increasing by about 250 MW per year through 2030 in the Current Trends case? (Anna Sommer). PNM: can provide hourly data that might answer this question.

Please see response above. PNM can provide EV hourly data for the forecasted period requested.

Modeling Framework

- Is iterative capacity expansion and production cost modeling manual? (I know PLEXOS iterates "on its own" until the CEM resource portfolio stabilizes). (Remy Franklin)

No – the capacity expansion algorithms explore many potential combinations of candidate projects to identify the least cost portfolio that achieves the minimum reserve margin requirement for a given future and sensitivity.

Energy Efficiency and Demand Response Programs

- Why the same DR assumptions for the CTP and HEG scenarios? If highest load growth is from EVs and commercial (data centers), shouldn't the HEG scenario have higher DR values? (Brian Turner)

PNM will investigate whether there will be more potential for some DR programs under the HEG future.

- Why are whole-home EV rates not factored into later years of the forecast? (AnnaLinden Weller)

PNM does not understand this question.

Information added on Venue:

- EE and DR Workpapers can be found in the Energy Efficiency and Demand Response Folder
- Requested transmission project milage has been added to the Transmission tab in the Resource information tables 2026 IRP workbook
- ELCC's for model runs have been added to the Modeling Framework and Assumptions 2026 IRP Workbook
- Load forecast demand and energy graphs and EV hourly profile data is included in the Load_Forecast__Feb11_Workshop_Request workbook

Information added to Gridworks website:

- PNM White Paper on Grid-Enhancing Technologies (GETs)