2025 Integrated Resource Plan – Statement of Need

The Commission's IRP Rule at 17.7.3.10 NMAC explains that a Statement of Need is "a "description and explanation of the amount and the types of new resources, including the technical characteristics of any proposed new resources, to be procured, expressed in terms of energy or capacity, necessary to reliably meet an identified level of electricity demand in the planning horizon and to effect state policies." The Rule further explains that:

> The statement of need shall not solely be based on projections of peak load. The need may be attributed to, but not limited by, incremental load growth, renewable energy customer programs, or replacement of existing resources, and may be defined in terms of meeting net capacity, providing reliability reserves, securing flexible resources, securing demand-side resources, securing renewable energy, expanding or modifying transmission or distribution grids, or securing energy storage as required to comply with resource requirements established by statute or commission decisions.

The current size of EPE's New Mexico system is approximately 485 MW. EPE is experiencing a significant and growing demand for electricity in New Mexico, necessitating a substantial increase in its generating capacity over the 20-year planning period. EPE's load forecast projections clearly support this escalating need, which is consistent with recent national demand trends.

Given that the lead time for new generating resources and energy storage can span several years, it is crucial to assess EPE's needs over both the full planning period and a shorter, more immediate period. Therefore, EPE's statement of need will cover both the entire planning horizon and the period through 2030. This 2030 timeframe is the earliest EPE anticipates being able to feasibly procure and integrate new resources at a significant scale to meet customer demands.

Understanding the Capacity Gap

Based on a conservative base load forecast, which is largely driven by expected commercial load growth, transportation electrification, and continued adoption of refrigerated air conditioning, EPE's accredited capacity need in New Mexico is projected to be:

- 254 MW by 2030, and
- 537 MW by 2045

However, under more aggressive growth scenarios, these needs escalate considerably:

- **Under the high electrification forecast:**
    - 257 MW by 2030
    - 713 MW by 2045
- **Under the additional large load customer forecast:**
    - 594 MW by 2030
    - 1,692 MW by 2045

Generation Retirements

A significant driver of EPE's resource need is the planned retirement of existing generation facilities. These retirements will create substantial capacity and energy deficits that must be filled by new resources to ensure continued reliability and compliance with state renewable and carbon-free energy policies.

EPE anticipates the following generation retirements within the planning horizon:

- **Through 2030:** EPE projects the retirement of 220 MW of nameplate generation capacity. This planned decommissioning, driven by aging generation, will directly contribute to EPE's immediate need for new firm capacity and energy.

- **Through 2045:** An additional 996 MW of nameplate generation capacity is expected to retire by 2045, necessitating replacement resources that meet evolving state requirements for carbon-free and reliable power.

The cumulative impact of these retirements on the available capacity of EPE's system underscores the urgency of procuring new, carbon-free, and reliable resources to maintain service to our customers.

Meeting New Mexico's Renewable and Carbon-Free Energy Goals

Beyond just meeting demand, EPE must meet New Mexico's Renewable Portfolio Standard ("RPS"). This means a significant portion of future energy must come from renewable sources. However, affordability and reliability considerations may act as a limitation to EPE's degree of compliance with the RPS over time.

Listed below is the additional renewable energy[1] (in GWh) EPE will need to procure:

- **Conservative Base Forecast:**
  - 412 GWh by 2030
  - 2,301 GWh by 2045
- **Under the high electrification forecast:**
  - 423 GWh by 2030
  - 3,048 GWh by 2045
- **Under the additional large-load customer forecast:**
  - 1,663 GWh by 2030

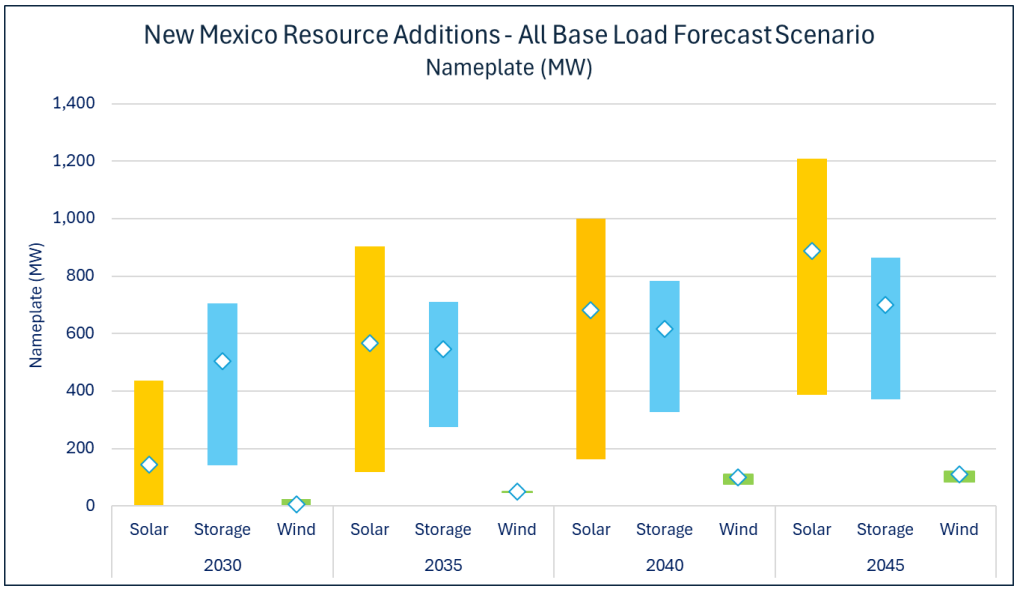
[1] Which we are discussing this in terms of renewable energy, note that the REA allows the additional compliant energy between 2040 and 2045 to be "carbon-free" and not specifically renewable.

- 10,919 GWh by 2045

Meeting the Need: A Blend of Renewables and Storage

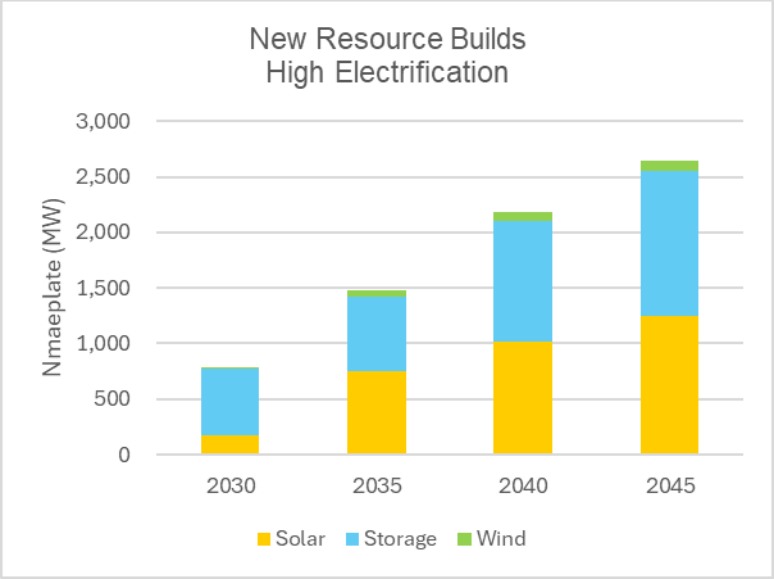
To bridge these capacity gaps and meet EPE's RPS obligations, EPE's robust modeling process points to strategically procuring a mix of solar, wind, and battery storage. The charts below (Figures 1 through 4) visually represent the planned resource additions for each modeled scenario, with the aggregated totals summarized in the subsequent table.

Figure 1: Resource Additions under Conservative Base Load Forecast



This graph illustrates the steady, consistent build-out of new resources required to meet demand and RPS targets under EPE's most conservative load projections. There is a significant initial ramp-up of solar and storage to address immediate needs.

Figure 2: Resource Additions under High Electrification Load Forecast



As depicted in Figure 2, the higher growth trajectory of the High Electrification Load Forecast necessitates an accelerated and larger scale of resource deployment. This scenario shows an increased rate of additions across all three resource types, particularly in the later years of the planning horizon, to keep pace with the more aggressive demand growth.

Figure 3: Resource Additions under Additional Large Load Customers Load Forecast

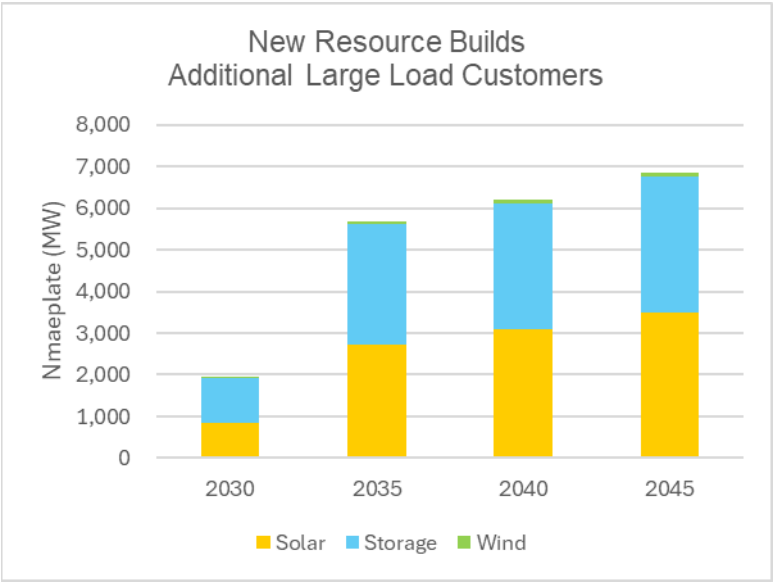


Figure 3 demonstrates the most aggressive resource build-out. Under the Additional Large Load Customers Load Forecast, the need for new capacity and energy is significantly higher, leading to the most substantial and rapid deployment of solar, wind, and battery storage across the planning period. This highlights the importance of timely procurement and development under high-growth conditions.

Figure 4: Aggregate Resource Additions for New Mexico

Resource Type	By 2030	By 2045
Solar	24 MW to 437 MW	387 MW to 1,209 MW
Wind	4 MW to 25 MW	85 MW to 120 MW
Storage	142 MW to 705 MW	372 MW to 863 MW

These new solar and wind resources are projected to deliver substantial renewable energy to our New Mexico retail customers:

- **By 2030: 412 GWh** of renewable energy.
- **By 2045:** Growing to **2,301 GWh** annually.

Because solar resources are exceptionally strong in the region, EPE's modeling consistently prioritizes adding more solar capacity over new wind generation. This trend is shifting EPE's critical reliability periods - the times when customer demands on the system are greatest - from the traditional system peak to later in the day. As a result, it is crucial to integrate dispatchable resources to maintain reliable service, and given New Mexico’s 2045 carbon-free requirement, these dispatchable resources must also be carbon-free.

Critical for Reliability: Battery Energy Storage (4-hour nameplate MW)

To ensure grid stability and reliability as EPE integrates more renewables, EPE also requires significant battery energy storage:

- **By 2030:** An additional **142 MW to 705 MW**
- **By 2045:** Increasing to between **372 MW and 863 MW**

It is worth noting that EPE's modeling consistently favored 4-hour battery energy storage resources, even as their Effective Load Carrying Capability ("ELCC") value declined. As EPE moves into the implementation phase of its IRP, it is possible that longer-duration energy storage solutions, such as 8-hour battery energy storage, could be selected. Opting for these longer-duration resources could, in turn, reduce the total nameplate capacity of storage required while providing equivalent or enhanced reliability.

Demand-Side Alternatives: A Potential Path Forward

Continuing to rely solely on adding more solar and relatively short-duration energy storage could become increasingly cost-prohibitive. Much of our extensive public stakeholder engagement process therefore focused on the potential for demand-side solutions. These include strategies like demand response programs, the integration of distributed energy resources, and rate- solutions such as time-of-use rates.

Detailed results of EPE's modeling regarding these approaches are described in EPE's IRP document. EPE's intended next steps for implementing demand-side solutions are outlined in the Action Plan. Ultimately, the successful adoption of additional demand-side solutions could significantly reduce the amount of solar and short-duration energy resources EPE needs to procure.

The Evolving Landscape of Emerging Technologies

It is also important to recognize that this statement of need will likely evolve in subsequent IRPs due to the ongoing development of new and exciting emerging technologies. EPE's modeling clearly indicates a need for carbon-free, affordable, and dispatchable resources to ensure reliability and complement its increasing renewable generation fleet. It is highly probable that a portion of this future need will be met by technologies that were not selected as part of the most cost-effective portfolio of resources in this particular modeling effort. On this point, note again that the REA allows the 2045 goal to be "carbon-free" energy. The energy landscape is dynamic, and future innovations will undoubtedly play a crucial role in shaping our resource plans.