

REIA  NM

Innovations for Future Energy Reliability: Grid Modernization Plans, Utility Scale Storage & Distributed Energy Resources

Jim DesJardins

Executive Director, Renewable Energy Industries Association of New Mexico (REIA)

Renewable Energy Industries Association-NM

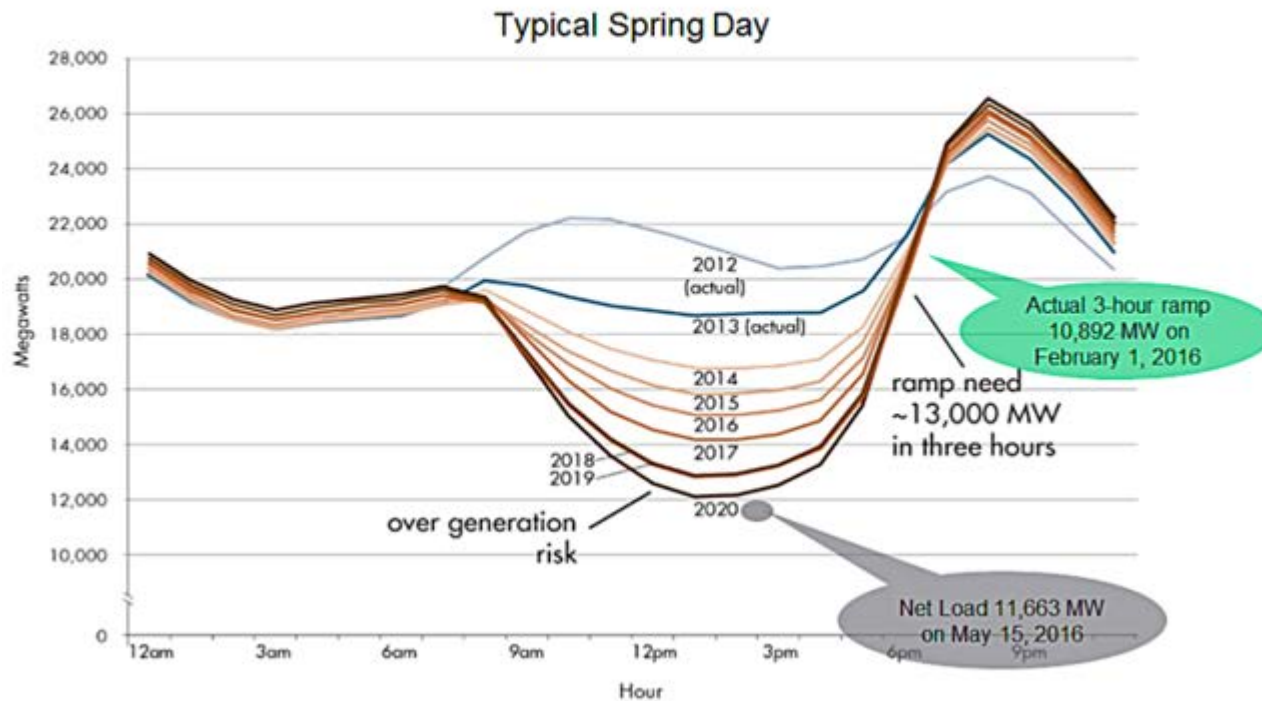
- New Mexico based trade organization representing 60+ diverse companies engaged in the renewable energy business with a focus on Distributed Energy Resources (DER). Founded in 2004.
- Mission is to support, promote and advance the transition to renewable energy in New Mexico helping to create more jobs, and a strong, healthy economic future for our state.
- Members and customers located throughout urban and rural New Mexico.
- Active in New Mexico regulatory and legislative environments.
- REIA is an affiliate of the Solar Energy Industries Association (SEIA).

What is the Current Situation?

- The transition to renewables is happening during a transition to electric vehicles (EV) and building electrification. Extreme weather is creating a need for more resiliency.
- Homes and businesses are now able to generate their own energy with solar.
- There is a statute requirement from the Energy Transition Act to replace fossil fuel electrical generation with renewables that have variable generation, creating a need for significant amount of energy storage.
- Large scale renewables and storage take up significantly more land than the equivalent amount of fossil fuel generation. Not in My Backyard (NIMBY) issue.
- Inflation Reduction Act will pump \$369 Billion into economy. Unprecedented opportunity for state to take advantage of federal funds to invest in NM.
- Announcement by Governor that 43% of new vehicle sales to be EV by 2027.

California Duck Curve

Figure 2: The duck curve shows steep ramping needs and overgeneration risk



- As the amount of electricity generated from solar increases, the disparity from when electricity is generated and when it is needed increases. Over supply around noon time and under supply in early evening. Supply does not sync up with demand. The storage of energy is needed to address this issue.

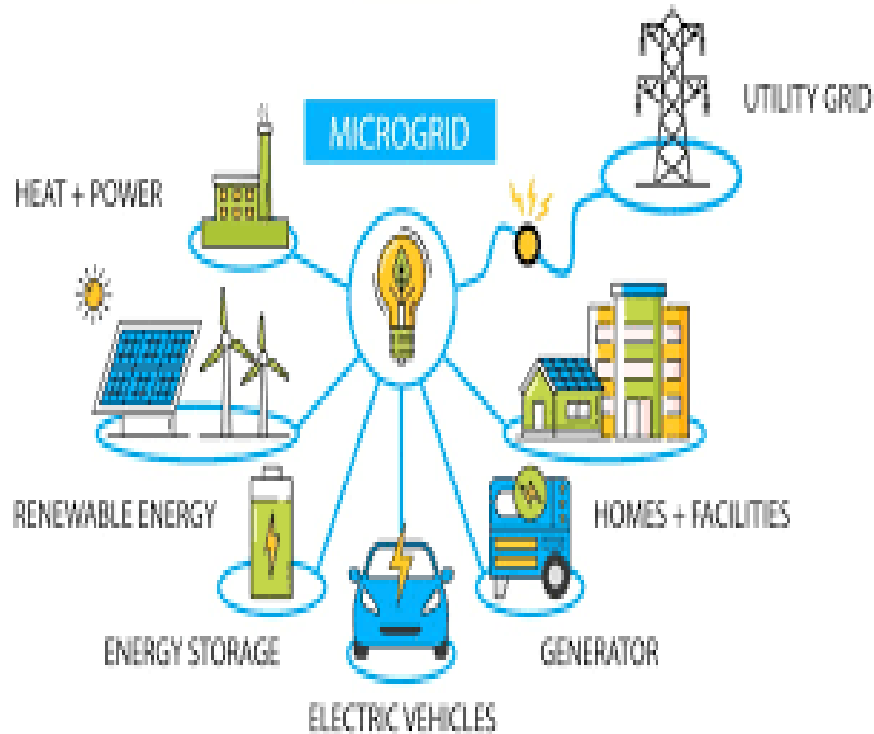
Existing Small Distributed Energy Resources

- Distributed Energy Resources – Small scale energy resources, such as rooftop solar, Community Solar and battery storage, usually situated near sites of electricity use.
- More than 40,000 solar systems installed at homes and businesses in New Mexico. Less than 1 % are paired with energy storage.
- Solar sales expected to triple in the U.S by 2030.
- Presently 2 GW of Behind the Meter (BTM) energy storage installed in the U.S. This is expected to increase to 27 GW by 2030.
- Electric Vehicles expected to increase in the U.S. from 3 million now to 26 million by 2030.
- Need to be open to new solutions: storage on the distribution system, microgrids, Virtual Power plants (VPP) & Vehicle to Grid (V2G) charging

PNM BESS Project

- Filing at PRC on May 3, 2023, Docket # 23-00162-UT, pending approval.
- Battery storage projects will be located at two existing PNM solar facility sites in Bernalillo and Valencia Counties.
- Designed to assist with voltage support and power quality on two overloaded distribution feeder lines, increase solar hosting capacity and assist in meeting load growth.
- PNM determined that the BESS project is the most cost effective among the feasible alternatives.
- Project is intended to be operational in June, 2024.
- PNM expects to request approvals for similar battery distribution storage in the future.

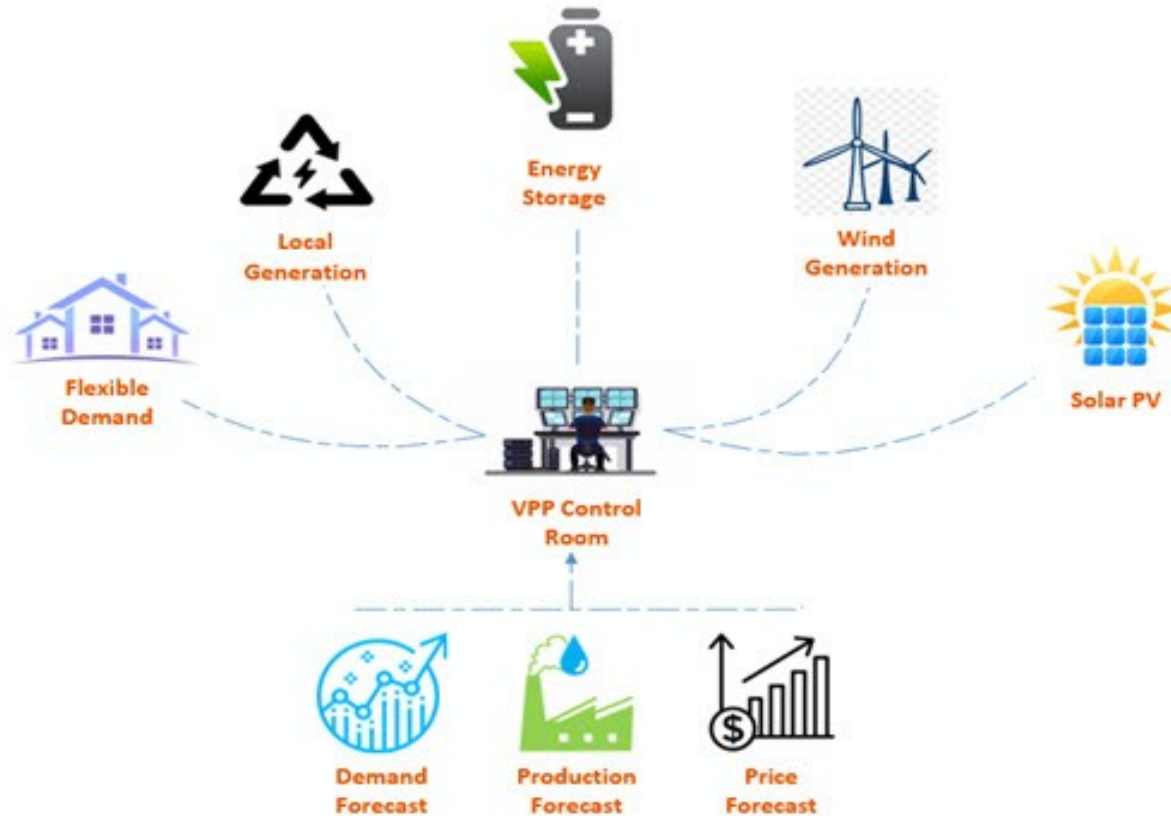
Micro Grids



- a small network of electricity users with a local source of supply that is usually attached to a centralized to a national grid but is able to function independently.

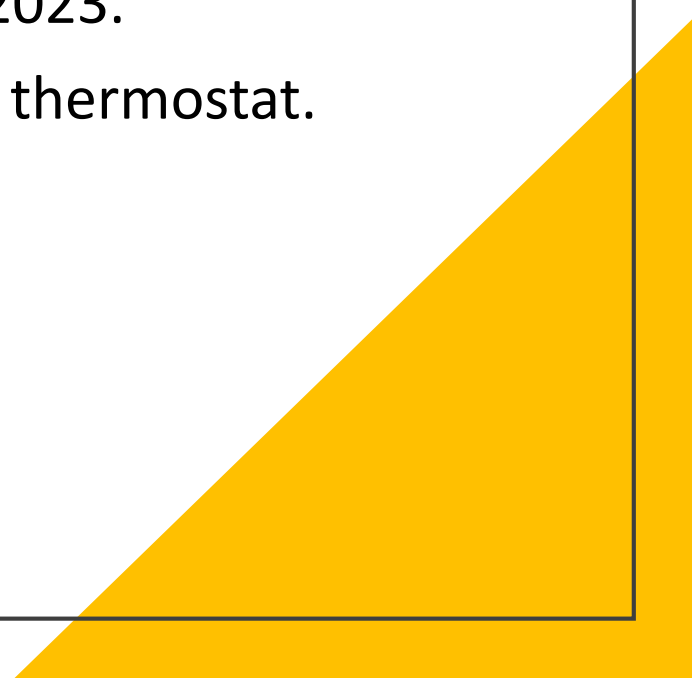
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Virtual Power Plants (VPP)



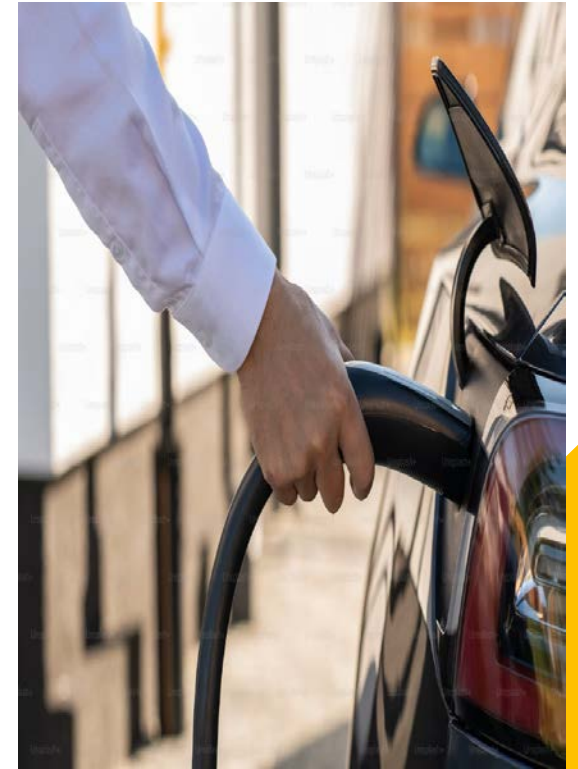
- DERs, including BTM solar systems and EVs, can be grouped and controlled by a utility to support the power system.
- Drivers include declining costs, technological advances, Inflation Reduction Act (IRA) and FERC Order 2222.
- Nationally, by 2030 BTM solar expected to grow from 27 GW to 83 GW. BTM storage from 2 GW to 27 GW and EVs from 3 million to 26 million by 2030.
- This model is considered a Lower Cost Resource Adequacy.
- Pilot Projects by PG&E/Sunrun and others.

California Programs-Sunrun & PGE Collaboration

- Peak Power Awards program exclusively for Sunrun customers.
 - Enrollment extended from 7,500 to 8,500 (34 megawatts) for SunRun solar plus storage customers.
 - Designed to provide grid support from 7-9 pm, August –Oct, 2023.
 - Enrollees are provided \$750 one time payment and free Next thermostat.
 - Three-month pilot program.
 - Cannot be enrolled in other demand response programs.
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Vehicle to Grid (V2G)

- Technology is in vehicles now.
- Maximize use of big battery in vehicle when it is not in use garage. No need for separate battery for solar.
- Example of use of the grid as 2 way.
- Can help to balance electrical generation with load. Use Rate structures as a means to match supply with demand. Charge EV when rates are low and discharge when rates are high.
- Resiliency for when the grid is down.
- New NM PRC Interconnection rule does not address V2G.
- V2G part of future NM PRC rulemaking on grid modernization?



NM Legislation on Small Scale Energy Storage

- HB32/HB547-Energy Storage System Income Tax Credit in 2023 legislative session was passed, but not chaptered.
- 40% tax credit for energy storage systems with limit of \$5,000 on residential and \$150,000 on commercial properties, \$4 million annual cap, 5-year sunset.
- New Mexico is behind most states in the attachment rate of solar with storage. This type of legislation would help to jumpstart this market.
- Many benefits include helping New Mexico become a leader in this fast growing industry, addresses resiliency concerns, economic growth, job creation.



- Pass legislation similar to HB32/HB547-Energy Storage System Income Tax Credit.
- Request that utilities recognize the value of BTM storage & V2G.
- Recognize the value of small-scale storage and V2G in future grid modernization proceedings at the PRC.
- Pilot programs at the three Investor-Owned Utilities to create VPP and V2G programs with incentives for ratepayers.

Questions?

Jim DesJardins, Executive Director

jimdesjardins1@gmail.com

reia-nm.org

(o) 505-503-1000

(c) 505-917-5074

