

Pathway to New Mexico's Emissions-Free Energy Future

CITY OF ALBUQUERQUE CLIMATE ACTION TASK FORCE

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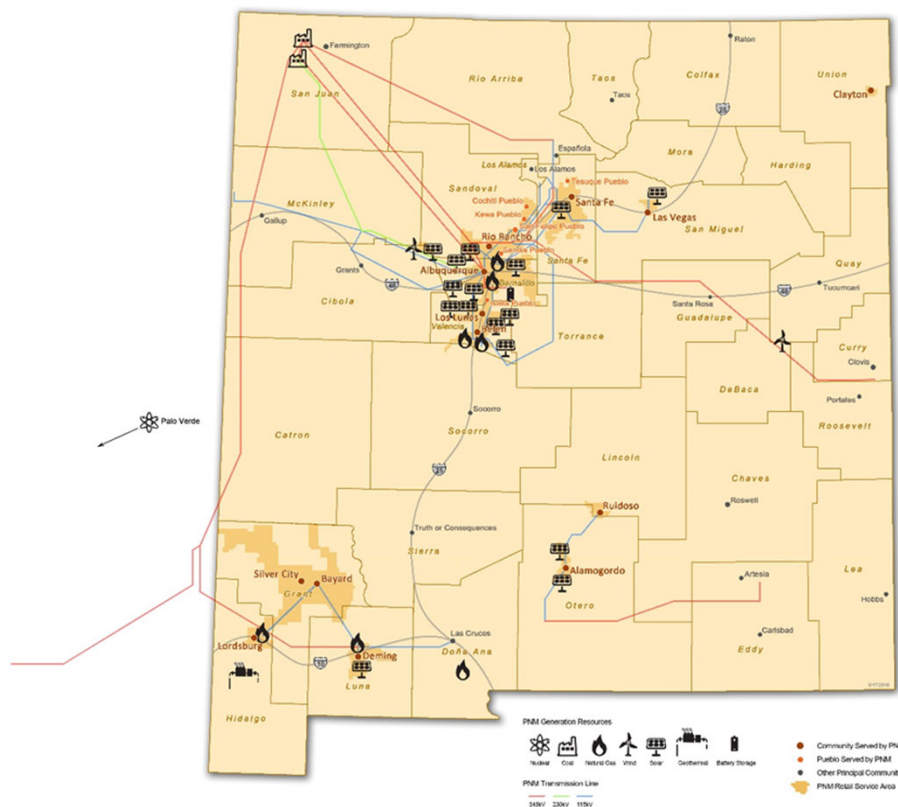


NOVEMBER 25, 2020

PUBLIC SERVICE COMPANY OF NEW MEXICO (PNM)

ABOUT US

- Founded in 1917
- New Mexico based energy company focused on clean energy transformation
- Serves communities across New Mexico, including 8 tribal communities
- Over 500K retail customers
- 2,811 MW resource portfolio
- Over 15K miles transmission and distribution lines



TERMINOLOGY AND DEFINITIONS

DECODING THE ENGINEERS

Electricity's Building Blocks

Electricity

- Found in nature or can be man-made

Voltage

- Electrical Pressure
- Measured in Volts [V]

Current

- Flow of electricity
- Measured in Amps [A]



Using Electricity

Power

- Work that electricity does
- Measured in Watts [W] or kilowatts [kW]
- Power = Volts X Amps

Energy

- Amount of power used over time
- Measured in kilowatt-hours [kWh]
- Energy = Power X Time

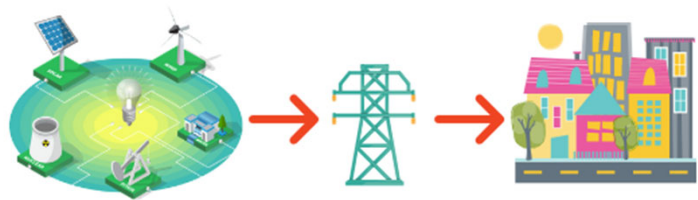
ELECTRICITY'S JOURNEY TO YOU

One-Way Flow



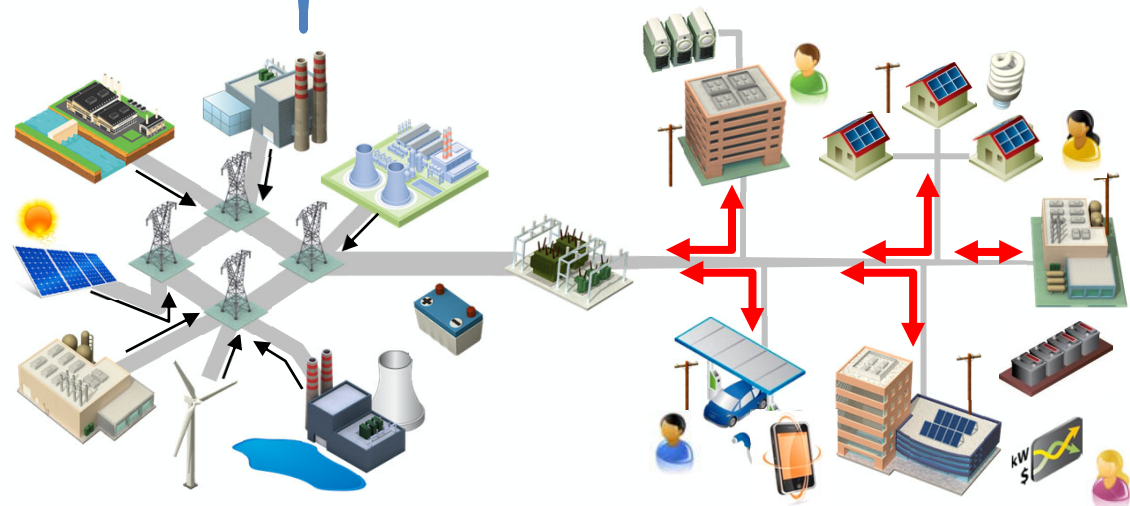
- 1) Generation resources
- 2) Step up voltage (pressure) to transmit over long distances
- 3) Transmission system
- 4) Substation (step down voltage for delivery)
- 5) Distribution system
- 6) Customer meter
- 7) Service panel
- 8) Home

TECHNOLOGY IS CHANGING THE GRID



**The Grid of Yesterday:
One-Way Flow**

**The Grid of Tomorrow:
Multi-Directional Flow**



ENERGY TRANSITION ACT

New Mexico's Historic Energy Policy

Renewable Portfolio Standards

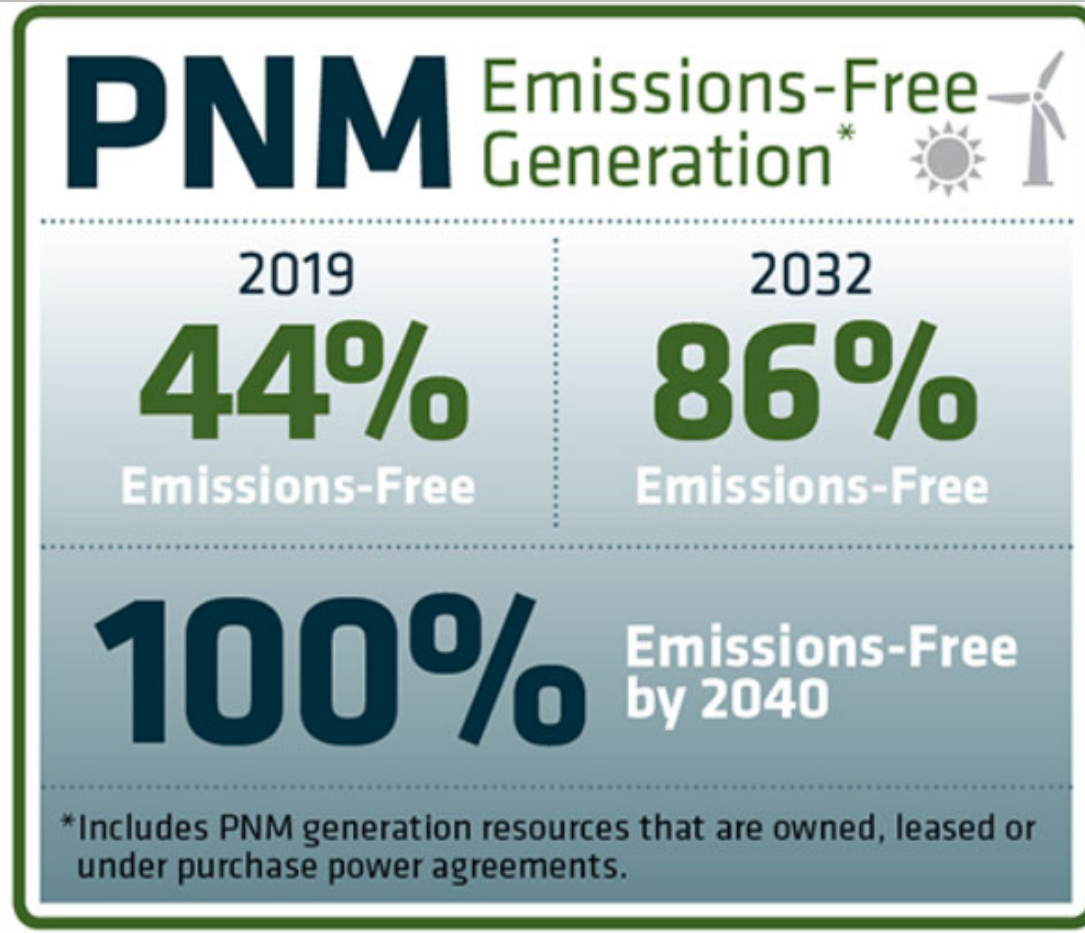
- 2025 – 40% renewable energy
- 2030 – 50% renewable energy
- 2040 – 80 % renewable energy
- 2045 – 100% carbon-free energy

PNM Commitment

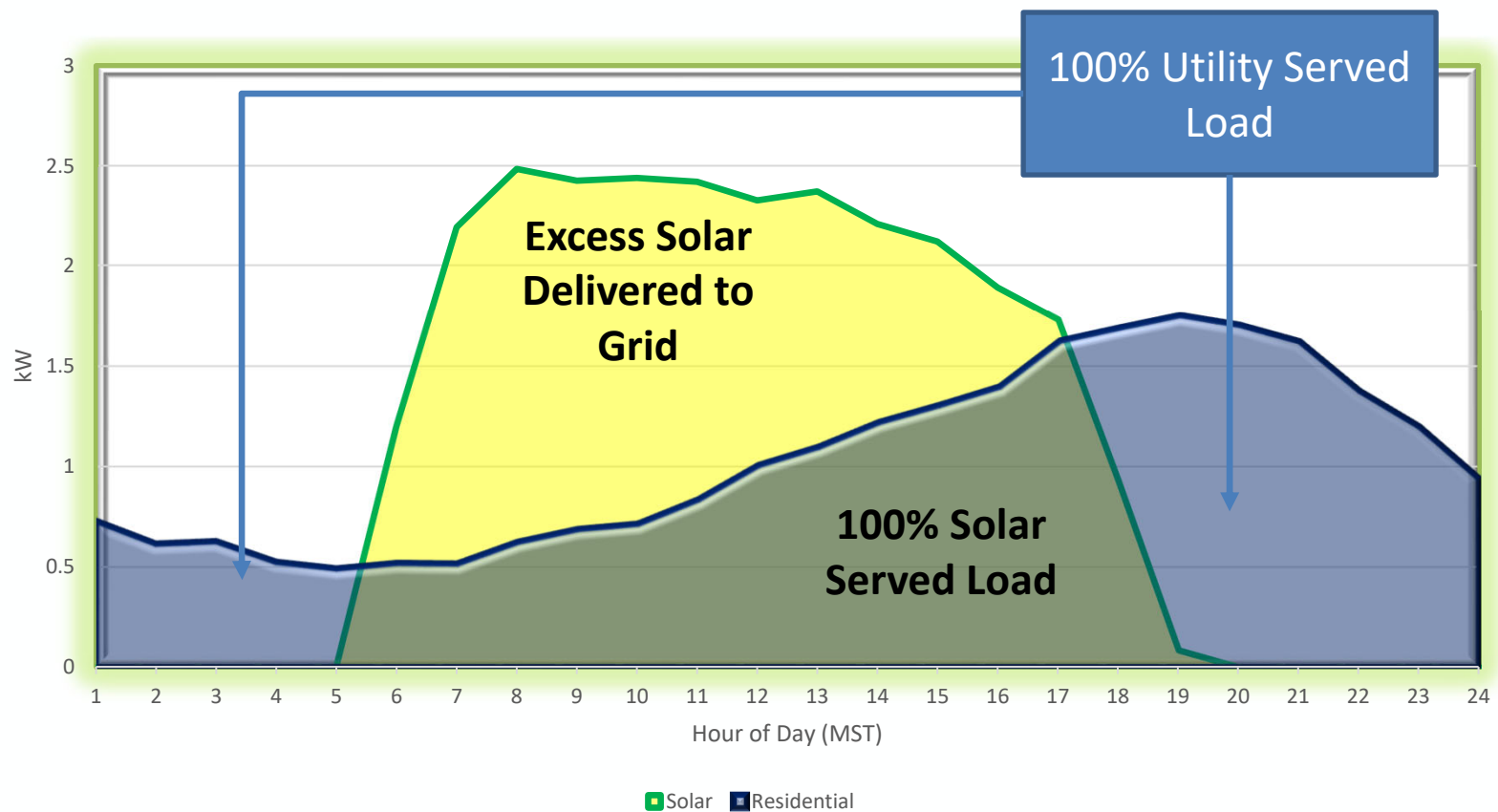
- 100% emission-free energy by 2040
- 5 years prior to requirement



CHANGING ENERGY RESOURCES




SOLAR POWER VS. ENERGY USE



MAINTAINING BALANCE



- Energy efficiency = Vegetables 
- Solar = Dessert 
- Managed energy storage is important to consider
- Properly investing in incorporating new technology
- Policy that compliments the success of the Energy Transition Act

CUSTOMER PROGRAM INNOVATION

PNM Sky Blue

- Since 2003, PNM Sky Blue has allowed customers to “upgrade” to renewable energy for ~\$0.01/kWh
- Current program is a blend of solar and wind energy located around New Mexico



PNM Solar Direct

- Developed as a partnership between PNM, large customers, and the Jicarilla Apache Nation
- Installation of a 50 MW solar facility on the Jicarilla Apache Nation that will serve 9 large energy users such as City of Albuquerque
 - 3rd largest solar PV system on tribal land in the country
- Approved in March 2020
- Project planned to be complete June 2021



Jicarilla Apache Nation leaders held Solar Direct groundbreaking ceremony in October

LOOKING AHEAD: CUSTOMER PROGRAM INNOVATION

Developing new solutions together



- The Integrated Resource Plan (IRP) process occurs every 3 years and brings together many customers and other stakeholders to discuss the generation mix over the next 20 years
- PNM is currently working on the design of a new customer program to allow the benefits of renewable energy to be more accessible to those who cannot install it themselves
- Program must balance many considerations, including:
 - Subsidization from other customers
 - Resource planning and integration
 - Interaction and balancing
 - Energy oversupply
 - Feeder capacity, flexibility
 - Grid security
 - Interconnection process
 - Additional resources such as energy storage

Thank you

