



# The Story of San Juan Solar 1

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# Overview

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# DESRI: owner, operator, and developer of renewable energy generation facilities in the U.S.

- Since its founding in 2010, DESRI has worked with communities and partners to bring new renewable energy to the U.S. market at attractive fixed prices
- More than \$12 billion invested in renewable energy projects in the past 13 years
- Long-term owner focused on value creation throughout all stages of a project's life cycle, including development, construction, financing, and operations
- Primary focus on utility-scale solar, which is the largest and fastest growing segment within the US renewable energy generation market
- Diversified portfolio grounded in long-term power purchase agreements (>20 years weighted average remaining PPA term)
- Nimble approach, extensive experience and capabilities, strong network of relationships, and meaningful scale enable DESRI to navigate a rapidly evolving landscape
- From 2011 to 2022, DESRI's gross MW operating capacity grew at a compound annual growth rate of over 60%

Top 5

pure-play renewable energy IPP in the U.S.

>8 GW

contracted solar and wind power generation and battery storage

>75

contracted projects

24

states

Source: Selected DESRI metrics and statistics as of December 31, 2022. Includes operational, construction, and contracted (pre-construction) projects. Top 5 ranking based upon Wood Mackenzie.



# DESRI renewable generation projects

Geographically diversified  
across more than 35 states

4.3 GW

(gross)  
operational and  
construction

4.2 GW

(gross)  
contracted  
(pre-construction)

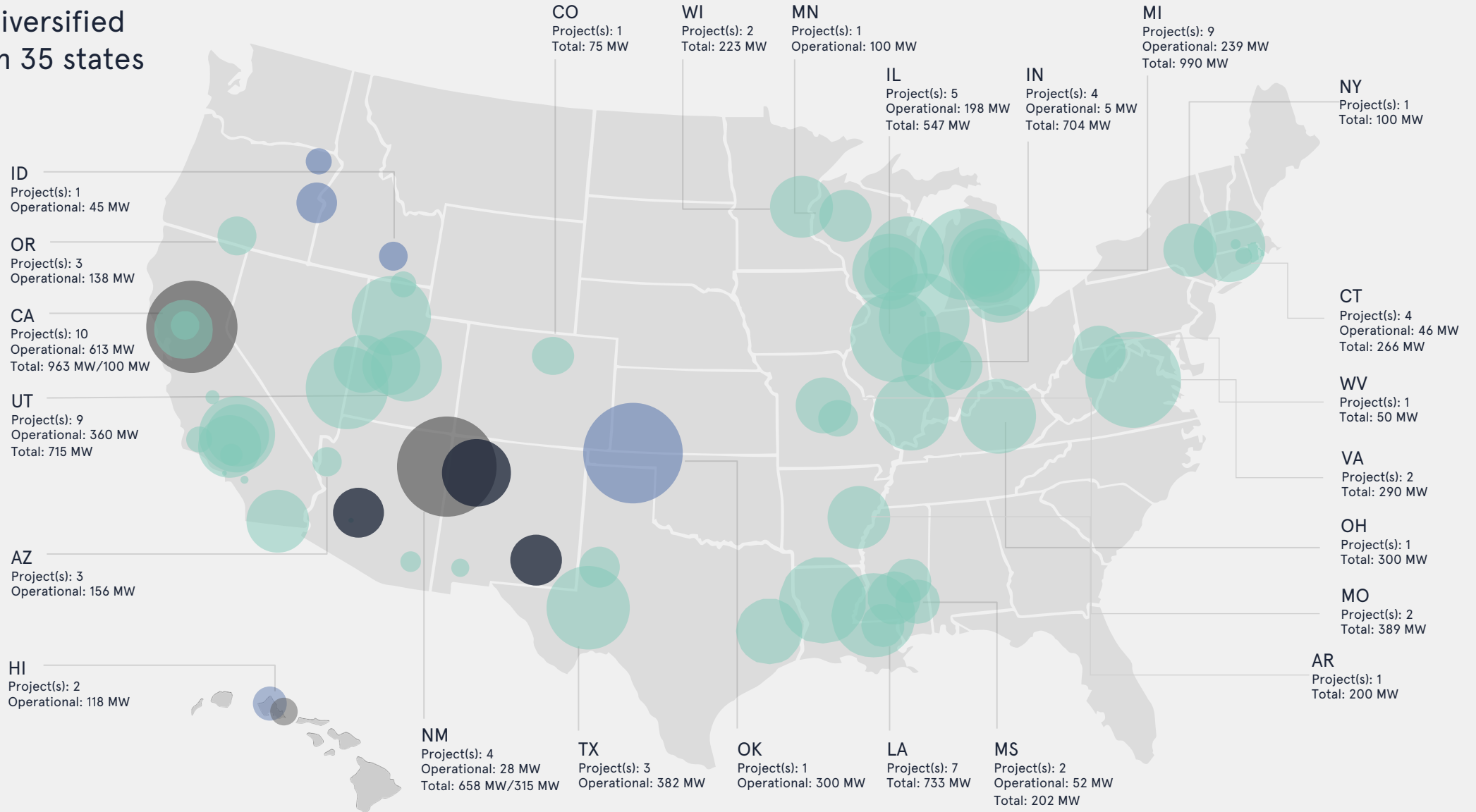
18.0 GW

(gross)  
In development  
(pre-contracted)

- Solar
  - Wind
  - Solar and wind
  - Solar and storage<sup>1</sup>
- Installed and planned  
capacity (MW)

300 MW

2 MW



Source: Selected DESRI metrics and statistics. All data as of December 31, 2022. 1) Solar and storage projects reflect their solar MW capacity, followed by the MW nameplate capacity of the battery(s).



# San Juan Generating Station

- Coal plant majority-owned by PNM, commissioned four units starting in 1973 with a total of 1,683 MW of generating capacity
- Units 2 and 3 retired in 2017
- PNM's 2017 IRP found that replacing the remaining units with alternative resources would benefit customers
- PNM issues replacement generation RFP in 2020
- PNM retired Unit 1 and 4 in 2022



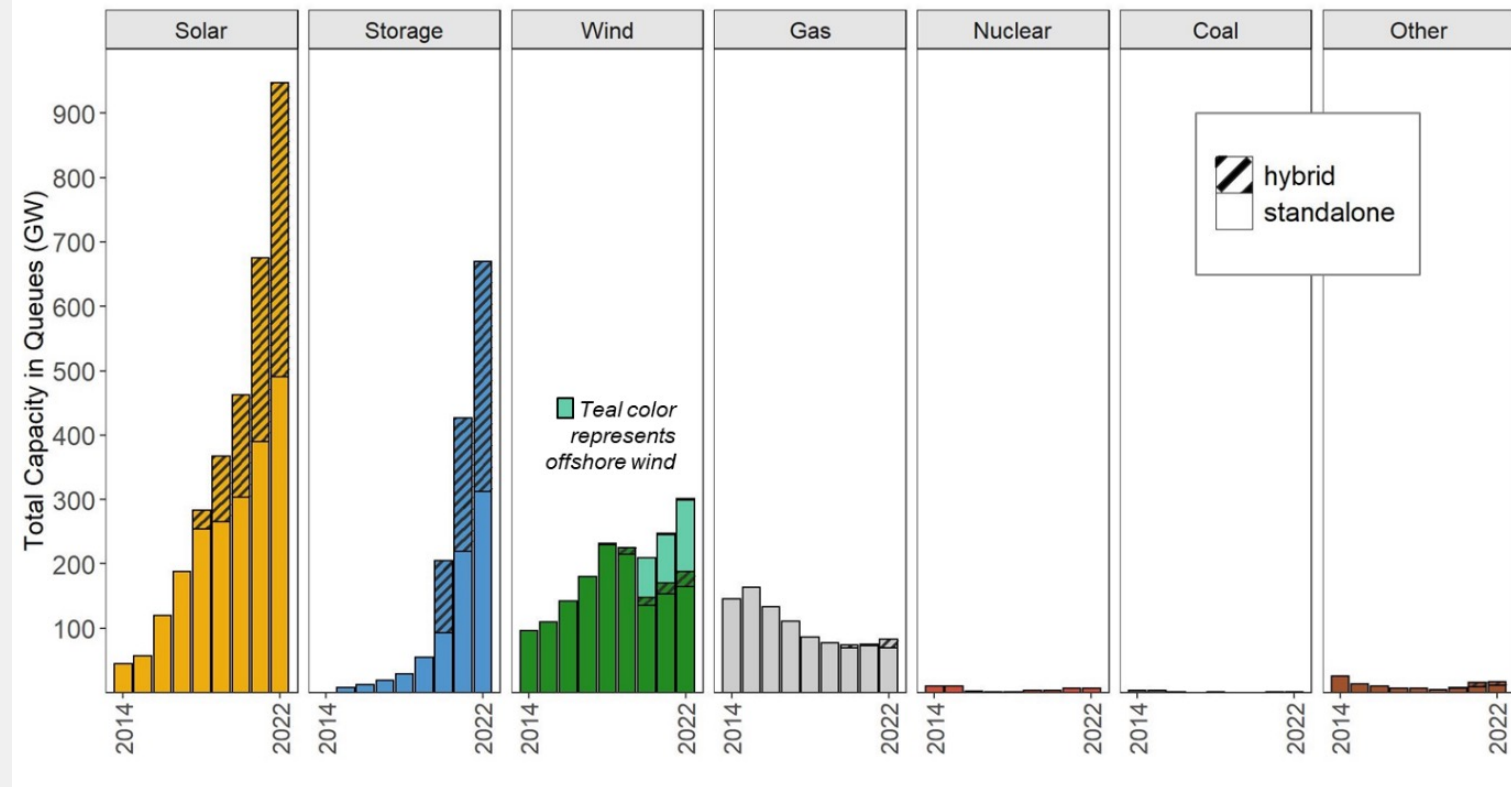
# Energy Policy Environment

- SB 489 - Energy Transition Act of 2019
  - Set renewable energy standard of 50% by 2030 for investor-owned utilities and required a zero-carbon resource portfolio by 2045
  - Set new coal emission standards starting 2023
- Federal Inflation Reduction Act of 2022
  - Among other incentives, new bonus tax credits for renewables located in “Energy Communities”
    - One path for qualification for Energy Community status is to locate in a census tract in which a coal-fired electric generating unit has retired after 2009

# Interconnection Process

- San Juan Solar 1 Process:
  - Interconnection application submitted in 2017
  - LGIA first executed February 2021
  - Amended and Restated LGIA executed November 2022

The national interconnection landscape

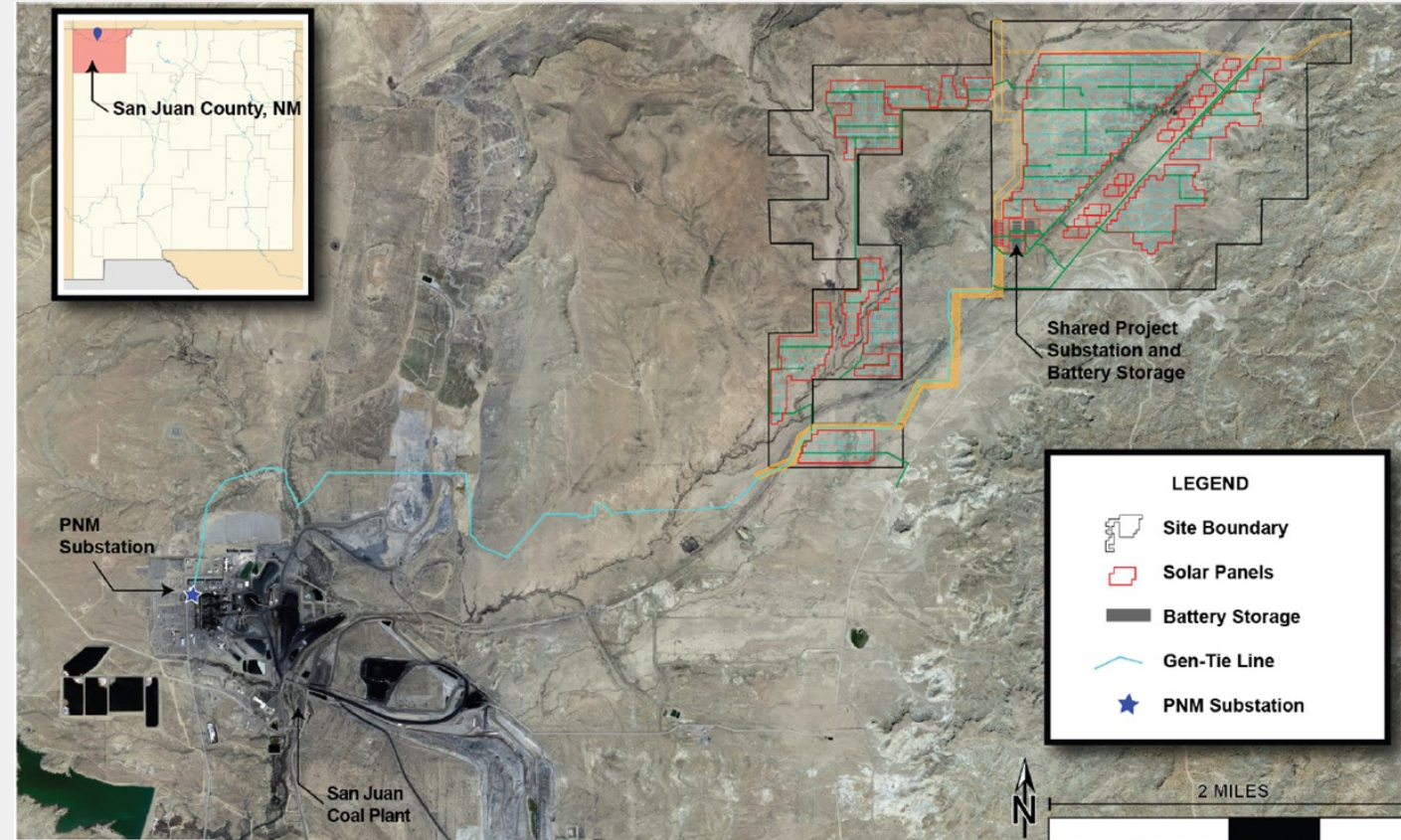


Source: Lawrence Berkley Lab



# San Juan Solar

- 200 MWac solar and 100 MWh battery storage facility partially developed by Photosol
- 20-year Power Purchase and Energy Storage Agreements with PNM
- Interconnection at PNM's 345kV switchyard expansion, utilizing existing infrastructure of the retired San Juan Generating Station
- Site and Gen-Tie utilize Federal (BLM), State (NMSLO) and private parcels, including mine reclamation areas





# Market Challenges

- Selected in Public Service Company of New Mexico (PNM) RFP in September 2020 to deliver power to PNM under a 20-year Power Purchase Agreement and Energy Storage Agreement
- Supply chain constraints (UFLPA, WRO, tariffs, etc) and broader market challenges led Photosol to project sale in Q1 2022
- PPA and LGIA amended to partially accommodate revised schedule and cost updates

## Uyghur Forced Labor Prevention Act

The Uyghur Forced Labor Prevention Act is a United States federal law that would change U.S. policy on China's Xinjiang Uyghur Autonomous Region with the goal of ensuring that American entities are not funding forced labor among ethnic minorities in the region. [Wikipedia](#)

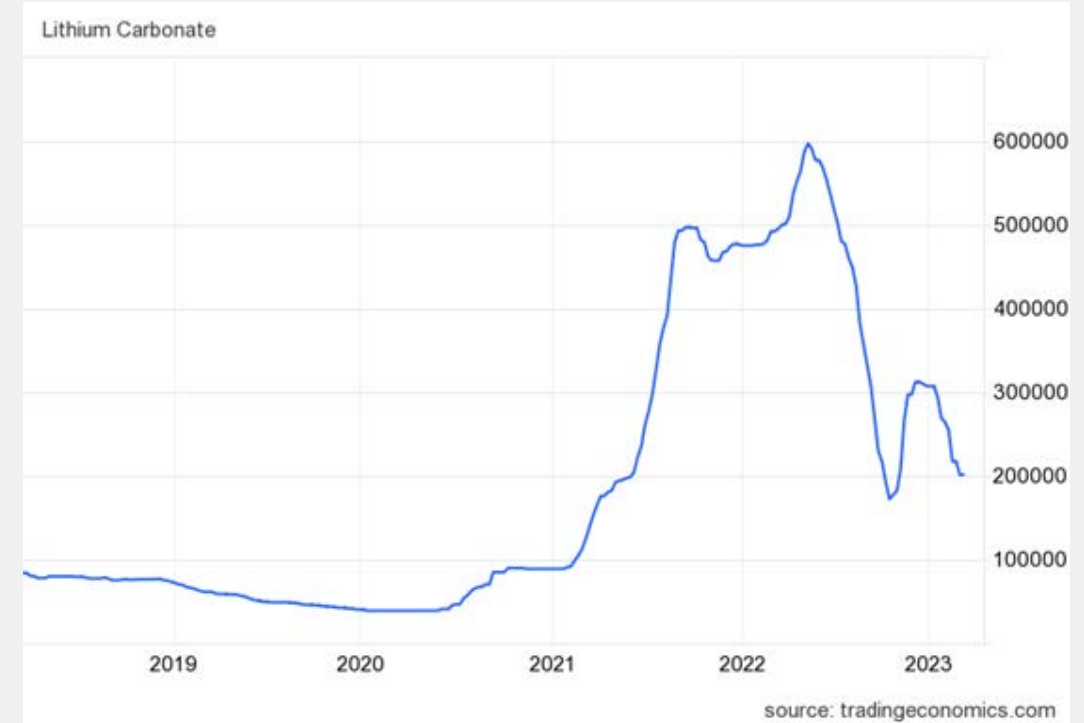
**Originally published:** December 23, 2021

**Enacted by:** the [117th United States Congress](#)

**Public law:** Pub. L. 117–78 (text) (PDF)

# Financing Challenges

- ITC on the BESS, PTC on the Solar (new structure)
- Rapidly rising rate environment
- Real Estate Hurdles
  - NEPA for portions of gen-tie
  - Significant unforeseen geologic hurdles (soils requiring pre-drilling)
  - Coordinating with Westmoreland Mine reclamation process
  - Disconnected or islanded parcels
- Equipment Procurement
  - How to deal with the Uyghur Forced Labor Protection Act (UFLPA)?
  - How to account for lithium price increases?
- Managing inflationary pressures across materials, labor, and capital markets



# San Juan Solar

- DESRI participated in PNM's 2022 RFP process resulting in a pricing adjustment for both the PPA and ESA
- Amended offtake agreements (PPA/ESA) signed & PRC approved October 2022
- LGIA revised and executed 2022
- Financing closed on Q2 2023
- Construction started June 2023 with COD targeted for spring 2024



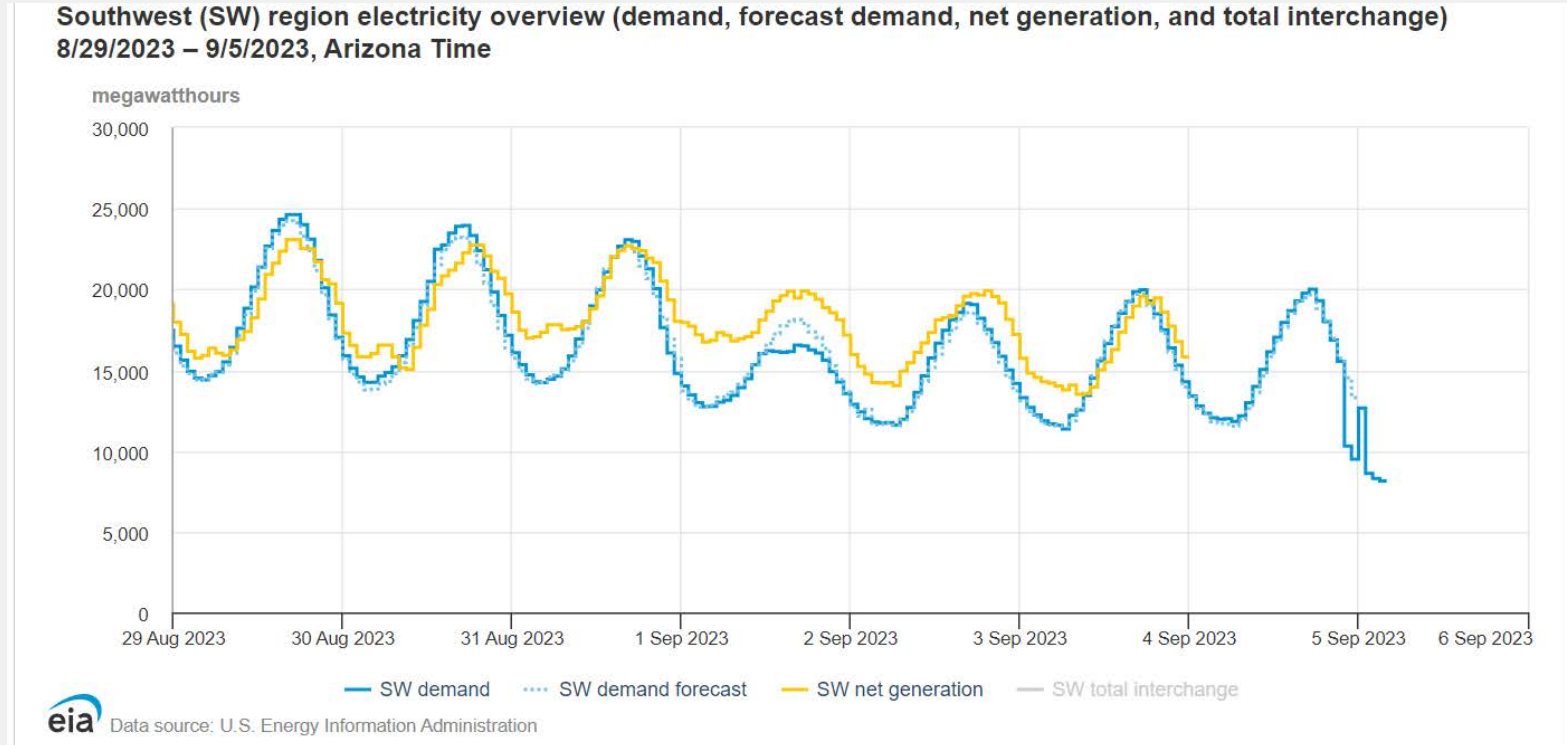
Secretary of the Interior Deb Haaland attends a press conference at the future San Juan Solar site.

## Dive Brief:

- New Mexico regulators on Wednesday unanimously approved a plan to add renewable energy and storage to replace a portion of the San Juan Generating Station's capacity owned by Public Service Company of New Mexico (PNM).
- The portfolio includes 650 MW of new solar resources and 300 MW of battery storage, totaling over \$1 billion in investments within the districts impacted by the San Juan plant closure. PNM, the state's largest utility and majority owner of the San Juan plant, had recommended a "hybrid" replacement scenario that would have allowed the utility to add 280 MW of gas-fired power alongside wind, solar and battery storage to replace its 497 MW retail share of the plant.

# Benefits of Storage

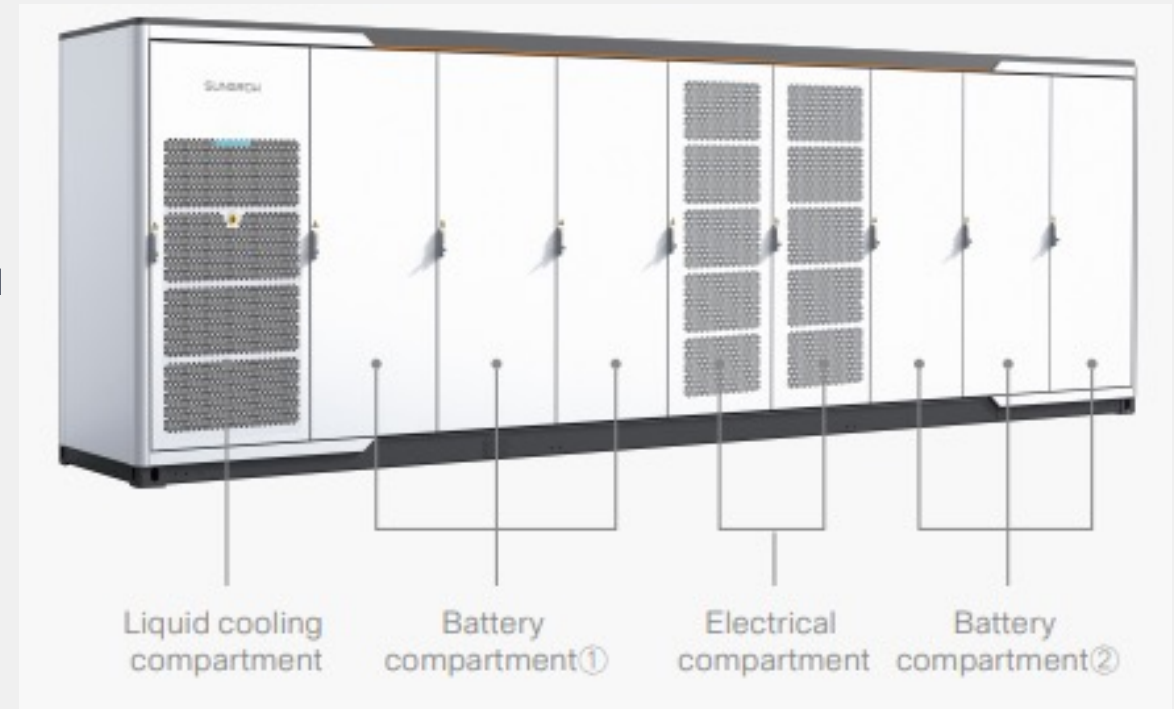
- Fossil fuel retirements + increased variable renewable energy = less predictable and flexible electricity generation
- Energy storage can smooth out demand by charging when demand is low
- Energy storage can time shift supply to meet peak demand





# BESS Technical Details

- 100MWac 4-Hour Sungrow Powertitan lithium-ion battery
- Designed to cycle every day
- Capable of charging from both grid and solar facility
- 20-year Energy Storage Agreement (ESA) with PNM comprised of fixed capacity payments
- Software controls coordinate Solar and Storage output for ideal grid performance
- Control of charging/discharging by PNM
- Primary use is shifting and firming Capacity in evening peak
- Designed to provide grid services to improve power quality
  - i.e. Frequency, voltage, spin/non-spin etc



# Economic Benefits

- Tax Revenue & County Fees: Providing significant income to the county through Industrial Revenue Bonds (a form of payment in lieu of property taxes) and building fees
- Limited downside burden as no new services (i.e., police, teachers, etc.) required
- Economic Development: Significant economic boost to local towns and cities (i.e., Kirtland, Farmington, Aztec) through local dining, lodging, and during construction period
- Jobs: Up to 250 construction jobs over 12-to-16-month construction period



# San Juan Solar – Under Construction!





Select stakeholders involved in the San Juan project, illustrating the many perspectives a developer must weigh over the course of a project





# Lessons Learned

## Managing Uncertainty

- Every plan and model is flawed
- Relationships matter
- Nothing is perfect but striving for it adds value
- Never give up, never surrender!  
(-Galaxy Quest)



# Implications for Energy Transition

- Siting clean energy sources at or nearby retiring generation provides numerous benefits:
  - Often reduced interconnection upgrade costs
  - Economic benefits and property taxes accrue to the same communities facing the negative impacts of retiring fossil generation
- Still a learning process, innovative projects like San Juan 1 help advance industry experience and abilities

## What comes Next?



# It Takes a Village

Thanks to the following (not exhaustive):

- Photosol, PNM, SOLV, Blymyer, ECI, BLM, BOR, Westmoreland, San Juan County, LVWUA, City of Kirtland, Ecosphere, UFS, SelectROW, Holland & Hart, Hanwha Qcells, Nextracker, Sungrow, Société Générale, Computershare, Commerzbank, Huntington Bank, Zions Bancorporation, Sumitomo Mitsui Trust Bank, Wells Fargo, KPMG, Foley & Lardner, Luminare, Stance, Gallagher Risk Management, Tuscon Electric Power, WEG Transformers, Winston & Strawn, DNV, Wildlands Network, CFV Labs, Radian Gen, San Juan Citizens Alliance, Four Corners Economic Development, Ute Mountain Ute Tribe, Navajo Nation, Atwell, Enerzinx, Cellular One, PI Berlin, Stantec, WAPA, Hillcorp, WGR, San Juan Water Commission, NMSLO, EMNRD, ALL project landowners and the entire DESRI team



# QUESTIONS?

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