

# Biggest Utility in New Mexico Moves Forcefully Toward Solar

*Four Deals Totalling Almost 1GW Will Replace Outdated Coal Plant by June 2022; PNM Plan Deals Another Blow to Proposed San Juan Carbon-Capture Retrofit*

## Summary

**Public Service Company of New Mexico (PNM)** will begin construction work as soon as January on a massive buildout of utility-scale solar generation and power storage projects in the shadow of the coal-fired **San Juan Generating Station (SJGS)** near Farmington.

PNM executives anticipate the projects, which will total 950 megawatts (MW) of generation and companion storage, will come online in stages around the time SJGS is retired in late June of 2022.

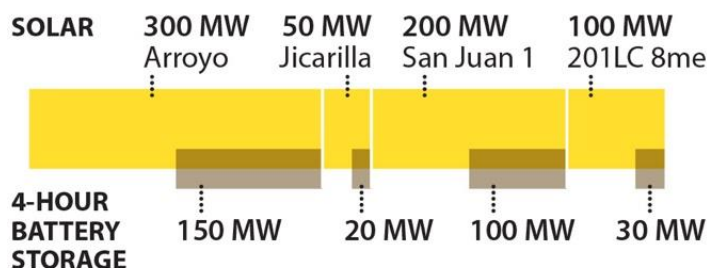
The initiative seriously undercuts a plan to keep the 847-MW SJGS alive under a long-shot carbon-capture retrofit being promoted by elected officials in the **City of Farmington** and Enchant Energy. It comes also as electricity-generation nationally is moving directly from coal to less expensive renewables, skipping what was long seen as the “bridge fuel” step around gas-fired generation.<sup>1</sup>

PNM’s plan, contained in a regulatory filing published last week, details its intentions for complying with the state’s **Energy Transition Act**, which calls for 50% of the state’s electricity—from investor-owned utilities and rural co-ops alike—to come from renewables by 2030 and 80% by 2040.<sup>2</sup>

It will be seen industrywide as a fresh indication—on top of many others—of where

### Solar + Storage to Replace San Juan Coal Plant

PNM, the New Mexico utility, plans to build 650 MW of solar and 300 MW of batteries by the 2022 closure date.



Source: PNM Resources

<sup>1</sup> S&P Global Market Intelligence. [Natural gas bridge now looks 'shorter and narrower.'](#) Oct. 6, 2020.

<sup>2</sup> State of New Mexico. [Energy Transition Act of 2019, Final Version.](#) March 22, 2020.

regional and national energy markets are quickly moving.<sup>3 4 5 6 7 8</sup>

## Deal Details and Economic Effects

A Sept. 28 filing<sup>9</sup> by PNM with the New Mexico **Public Regulation Commission** (PRC) details power purchase agreements the utility has in place on four utility-scale solar generation and storage projects to replace SJGS generation. The deals, which total almost 1 gigawatt, collectively rival the biggest renewable energy projects in the U.S. They are with **San Juan Solar 1 LLC** (200 MW of generation and 100MW of battery storage), **201LC 8m LLC** (100MW and 30MW, respectively), **Arroyo Solar LLC** (300MW and 150MW) and **Jicarilla Solar I LLC** (50MW and 20MW).

**The table below, from the PNM filing, details each project and includes PNM projections on the economic impact of the solar buildout.**

PNM Table TGF-2

Project	Technology	Size	Total Initial Capital Investment	First Year Property Taxes	Full-term Property Taxes	Construction Manhours	Permanent New Mexico Jobs
Arroyo Solar LLC	Solar	300MW	\$450M	\$1.55M	\$34M	720,000	2-4
Arroyo Storage LLC	Battery	150MW, 4hr					
Jicarilla Solar 1 LLC	Solar	50MW	\$92M	\$0.7M**	\$0.7M**	77,300	2-10
Jicarilla Storage 1 LLC	Battery	20MW, 4hr					
San Juan Solar 1 LLC Solar Project	Solar	200MW	\$400M - \$430M	\$1.9M	\$24M	660,000	8-10
SJS 1 Storage LLC Battery Storage Project	Battery	100MW, 4hr					
201LC 8me LLC Solar Project	Solar	100MW	\$188	\$1.2M	\$16M	299,000	4
309SJ 8me LLC Battery Storage Project	Battery	30 MW, 4hr					
Totals	Solar	650 MW	\$1,130M - \$1,160M	\$5.35M	\$74.7M	1,756,300	16-28
	Battery	300 MW, 4hr					

<sup>3</sup> IEEFA. [IEEFA U.S.: Renewables get an early start on beating coal generation.](#) Oct. 6, 2020.

<sup>4</sup> Renew Economy. [World's biggest wind and solar producer now worth more than ExxonMobil.](#) Oct. 5, 2020.

<sup>5</sup> Wall Street Journal. [Oil Giant Total Pledges Renewable Power Push.](#) Oct. 7, 2020.

<sup>6</sup> S&P Global Market Intelligence. [Vistra net-zero pledge includes coal plant retirements, solar additions.](#) Sept. 29, 2020.

<sup>7</sup> S&P Global Market Intelligence. [Global corporate renewable energy deals on record pace – report.](#) Aug. 12, 2020.

<sup>8</sup> IEEFA. [As Oil and Gas Wane, Texas Wind Industry Ascends.](#) Aug. 10, 2020.

<sup>9</sup> Public Regulation Commission of New Mexico. [Testimony of Thomas G. Fallgren, PNM vice president of generation \(20-00182-UT\).](#) Sept. 28, 2020.

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**Of note from the above are the following:**

- Creation of roughly 500 jobs per month during the buildout of the projects;
- \$74.7 million in property-tax revenues over the 20-year terms of the deals;
- more than \$1 billion in total capital expenditures.

The PRC already has approved the Arroyo and Jicarilla projects. It has not yet acted on the San Juan Solar and 201LC 8M deals but is likely to approve them, as well, given the order it issued this summer directing PNM to procure San Juan replacement power from utility-scale renewables. PNM is pressing for a decision on the latter two deals by Dec. 4 so that it can begin construction in January in time for a June 2022 commissioning.<sup>10</sup> All of the projects are located within the boundaries of the Central Consolidated School District, a decision that will replace local public tax revenues that would otherwise be lost to the closure of SJGS.

The PNM initiative puts the utility in step with the ongoing transition in U.S. electricity-generation markets while also meeting state expectations around reinvestment in the communities most directly affected by the transition away from coal-fired power.

Because PNM is one of the largest electricity market players in the region, its shift will influence other electricity providers in the West and the Southwest, many of whom are facing the same market and policy pressures as PNM.

## **Market and Policy Forces**

One detail of additional special note in the PPAs are the wholesale prices. The Arroyo project comes in at \$18.65 per megawatt-hour (MWh), the Jicarilla project at \$19.73, the San Juan Solar I and Jicarilla Solar I, respectively, at \$26.65 and \$27.35.

By comparison, coal-fired generation runs \$66 to \$112 per MWh,<sup>11</sup> based on **Lazard's** most recent annual assessment of energy costs, and combined-cycle gas-fired generation is \$44 to 64 MWh, the latter range being a clear consideration in a PRC directive to PNM in July<sup>12</sup> to develop renewables over gas in its replacement-power configuration for San Juan.

**Moody's Investors Service** on Sept. 22 concluded that state renewable-energy mandates like New Mexico's will drive the uptake of renewables (wind and solar mainly) by 65% over the next 10 years to "at least" 28% of total U.S. electricity generation from 17% today. This will likely prove a conservative figure, as the buildout of more big solar arrays and wind farms will include technical innovations

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<sup>10</sup> Interview with Nick Phillips, PNM director of resource planning analysis. Oct. 6, 2020.

<sup>11</sup> Lazard. [Lazard's Levelized Cost of Energy Analysis—Version 13.0](#). November 2019.

<sup>12</sup> New Mexico Political Report. [Renewables set to replace coal-fired San Juan Generating Station](#). July 2020.

and new efficiencies that will make these resources even cheaper and more competitive than they are now.

Investor preferences are also driving change, as noted by **Standard & Poor's** global ratings managing director, who said publicly on Oct. 6 that investors are “sick of” traditional energy strategies and “are looking for more stability, and they want to see a greater percentage of capex budgets being spent on renewables.”<sup>13</sup> Market signals support this assessment. The **Invesco Solar ETF**, which holds 23 solar or solar-related companies and is one strong indicator of investor sentiment, is up 120%<sup>14</sup> this year.

## Another Blow to Proposed Carbon-Capture Retrofit

The PNM power-replacement plan, in combination with an array of industrywide changes, all but dooms any chance of success for the San Juan carbon-capture proposal. The retrofit was riddled already with numerous holes in its business plan, which overlooked such fundamental questions as to who would buy the power from such a complicated and high-priced project, how it would be transmitted, and who would finance it.

Enchant is essentially being beaten to the punch by PNM, which aims to have its replacement solar farms in place at least a year<sup>15</sup> before Enchant executives say its retrofit—under a very optimistic and unlikely timetable—would begin to operate.

The transmission issue is as crucial as any. PNM owns 66.3%<sup>16</sup> of the operating capacity of the two units at San Juan, and it keeps the 560MW of transmission rights that come with that ownership,<sup>17</sup> just as it retained ownership of transmission rights that went with the two units of the plant that were retired in 2017.

“New Mexico is known for being transmission constrained,” PNM notes.<sup>18</sup> All of the access attached to San Juan is spoken for, owned, in addition to PNM, by Tucson Electric Power Company (20%), Los Alamos County (4.3%), and Utah Associated Municipal Power System (4.2%). Only the City of Farmington, which owns 5% of San Juan, has indicated any interest in the retrofit proposal, mainly as a way to save coal plant jobs. None of the other current user/owners of the plant's electricity is motivated to support the carbon-capture plan, which has been shown to be economically unviable and which lies outside the changing advanced resource planning of all of the utilities.

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<sup>13</sup> S&P Global Market Intelligence. [Oil, gas companies must transform to succeed in post-pandemic market – S&P panel](#). Oct. 6, 2020.

<sup>14</sup> MarketWatch. [Invesco Solar ETF \(FAN\)](#). Oct. 7, 2020.

<sup>15</sup> Enchant Energy. [New Mexico Senate Finance Presentation](#). Accessed Oct. 9, 2020.

<sup>16</sup> S&P Global Market Intelligence. [San Juan Power Plant Profile](#). Accessed Oct. 9, 2020.

<sup>17</sup> PNM. Email detail to IEEFA (“It’s worth noting that the plan that the New Mexico Public Regulation Commission approved for replacement of San Juan in 2022 utilizes all available PNM transmission rights.” Oct. 8, 2020.

<sup>18</sup> Ibid

Further, no investors in the San Juan carbon-capture retrofit have stepped forward.<sup>19 20</sup>

Clearly, without financing, without transmission access, without a business model that works—and without customers for its electricity—a carbon-capture retrofit of San Juan Generating Station is highly unlikely to proceed. PNM’s investments over the next year and a half in utility-scale solar only make the proposed retrofit more unlikely than ever to proceed and greatly increase the chances that SJGS will be decommissioned as scheduled.

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<sup>19</sup> Op. cit., Footnote No. 10

<sup>20</sup> IEEFA. [Dwindling odds of success for retrofit of New Mexico coal plant with carbon capture](#). Sept. 16, 2020.

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## About IEEFA

The Institute for Energy Economics and Financial Analysis (IEEFA) examines issues related to energy markets, trends and policies. The Institute's mission is to accelerate the transition to a diverse, sustainable and profitable energy economy. [www.ieefa.org](http://www.ieefa.org)

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