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Second look confirms carbon sequestration alternative for the San Juan Generating Station not in the best interest of customers

(ALBUQUERQUE, N.M.)—Last week PNM filed its rebuttal testimony in the case related to the San Juan abandonment and financing before the New Mexico Public Regulation Commission.

To respond to the PRC Staff’s concern that PNM had not presented an alternative case for carbon capture, PNM modeled a carbon capture scenario for the coal plant. PNM used recent sequestration data developed in July 2019 and shared those model results with the stakeholders as part of PNM’s rebuttal testimony.

PNM IS CLOSING THE SAN JUAN COAL PLANT. SO WHAT'S NEXT? REVISED NOVEMBER 2019

The Utility Balancing Act: PNM is transitioning away from coal and moving to a more sustainable energy future. As we prepare to close the coal-fired San Juan Generating Station, we must determine how to replace the power from this plant. We have looked at four scenarios to help shape New Mexico's energy future. Each of the scenarios has benefits and challenges and we are recommending a plan that saves customers money, has one of the highest utility integration of battery storage in the U.S., with one of the largest solar facilities in the U.S., and minimizes new technology risks. [Learn about all of the scenarios at PNM.com/PoweringTheFuture.](http://PNM.com/PoweringTheFuture)

CARBON SEQUESTRATION ALTERNATIVE (UPDATED)	1- RECOMMENDED SCENARIO HYBRID	2- SCENARIO SAN JUAN COAL PLANT	3- SCENARIO NEUTRON FUSION	4- SCENARIO ALL RENEWABLES
<p>437 MW (559 MW)***</p> <p>7 MW</p> <p>7 MW</p> <p>7 MW</p> <p>140 MW</p> <p>Technology challenges: reliability</p> <p>437 MW IN SAN JUAN AREA SCHOOL DISTRICT</p> <p>\$0 M SEVERANCE FOR AFFECTED WORKERS \$20 M NEW TRAINING \$20 M SAN JUAN COMMUNITY</p> <p>Range from \$0.46 Monthly Savings*** to Monthly Income of \$10.37 \$5.016M/(-\$243M) to \$6.007M/(-\$1.3 Billion) COST vs. RECOMMENDED PLAN</p>	<p>CLOSE SAN JUAN COAL PLANT</p> <p>280 MW</p> <p>350 MW</p> <p>130 MW</p> <p>140 MW</p> <p>Reliability within standards (Few to no black outs)</p> <p>280 MW IN SAN JUAN AREA SCHOOL DISTRICT</p> <p>\$6.87 \$285 Monthly Savings*** \$4.673M \$4.678-M TOTAL PLAN COST</p>	<p>CLOSE SAN JUAN COAL PLANT</p> <p>440 MW</p> <p>476 MW</p> <p>100 MW</p> <p>30 MW</p> <p>140 MW</p> <p>Reliability within standards (Few to no black outs)</p> <p>570 MW IN SAN JUAN AREA SCHOOL DISTRICT</p> <p>\$6.55 \$6.68 Monthly Savings*** \$4.717M/(-\$44M) \$4.722M/(-\$54M) COST vs. RECOMMENDED PLAN</p>	<p>CLOSE SAN JUAN COAL PLANT</p> <p>0 MW</p> <p>500 MW</p> <p>410 MW</p> <p>140 MW</p> <p>Technology challenges: reliability (Possible black outs)</p> <p>40 MW IN SAN JUAN AREA SCHOOL DISTRICT</p> <p>\$7.42 \$442 Monthly Savings*** \$4.837M/(-\$164M) \$4.824M/(-\$164M) COST vs. RECOMMENDED PLAN</p>	<p>CLOSE SAN JUAN COAL PLANT</p> <p>0 MW</p> <p>975 MW</p> <p>0 MW</p> <p>1150 MW</p> <p>Reliability NOT within standards (Black outs probable)</p> <p>0 MW IN SAN JUAN AREA SCHOOL DISTRICT</p> <p>\$0.29 \$146 Monthly Savings*** \$5.454M/(-\$781M) \$5.452M/(-\$774M) COST vs. RECOMMENDED PLAN</p>

Replacement generation resources shown above are proposed resources to replace Megawatts (MW) from the closure of the coal-fired San Juan Generating Station on the rest of PNM generation portfolio.

* 140 MW of wind resources pending approval in Renewable Portfolio Case and included in SJ modeling inputs.
 ** Carbon reductions based on 2005 levels in alignment with the Paris Agreement.
 *** Based on an average of 2019 PNM residential customer bill (\$60.340/month). First full year revenue requirement.
 **** 140 MW lower 1 million kWh per year to power Carbon Sequestration Machinery.
 ***** Net carbon emissions offset by calculated value for:
 1. Capture technology is presumed at a high capture rate
 2. The high capture rate is achieved at this scale
 3. Each captured CO₂ ton increases total fuel production
 Model inputs to minimize energy storage technology risks:
 - Up to 40 MW battery storage per location, largest single location currently operating a utility battery
 - 100 MW of battery storage is equivalent to 7% of PNM peak load
 - Battery energy storage combined with solar for low costs



The current modeling confirmed the conclusions of a technical study done for PNM in 2010 -that a carbon sequestration alternative for the San Juan Generation Station (SJGS) does not make sense for customers. The same independent engineering company performed the studies that PNM looked at in both 2010 and 2019.

We welcomed the opportunity to reconsider whether this carbon-capture based technology could result in the continued operation of the San Juan coal plant due to the far-ranging economic impacts to the Four Corners region.

Our current modeling shows that a carbon sequestration alternative comes with significantly greater technology and reliability risks along with a wide range of possible costs as compared to the PNM recommended hybrid scenario one. PNM continues to stand behind its recommended hybrid scenario, which is a balanced portfolio of renewable energy and storage backed up by flexible natural gas units at the lowest cost to customers.

We understand that as part of New Mexico’s energy transition, it is important to get the right energy resources in place while taking into account the economic impact of closing the San Juan coal plant on the Four Corners’ region. Unfortunately, Carbon capture technology is not the answer for our customers. Our plan is to transition away from coal

and support the Energy Transition Act’s requirement to provide significant funding for severance and job training as well as economic development support to the four corners region, all while cutting carbon emissions significantly.

We have updated the attached Infographic with our replacement scenarios with the carbon sequestration alternative. The alternative reflects the uncertainties surrounding the amount of energy that can be relied on by customers, carbon and other emissions reductions, and costs to install a technology that has faced significant cost overruns in the few much smaller facilities that have tried carbon capture technology.

We ran the model to give us a range of costs for the carbon capture alternative in two ways. First, taking the most favorable cost analysis, coal tax benefits, and sale price for captured carbon, customers could see a 46 cents savings on their monthly bill (as opposed to a \$6.87 savings from our recommended scenario). Second, we ran the model with what we thought were more realistic costs, expiration or change in coal tax benefits, and a more realistic price for captured carbon. Considering those numbers, the more likely outcome is that the carbon sequestration alternative could cost more than \$1.3 billion and could lead to an increase of at least \$10.37 monthly on the average residential bill.

In addition to burning more coal, carbon capture would greatly increase water usage by the coal plant and relies on the production of more carbon emissions downstream to offset the sequestration project costs.

We understand the City of Farmington wants to save the plant from the economic effects of its closure. PNM will continue to work with the other plant owners to give Farmington that opportunity.

However, to meet our obligations of affordable, reliable, and environmentally friendly energy to our customers, we believe the Energy Transition Act provides the means to transition away from coal-fired energy without leaving our workers and communities behind.

About PNM

With headquarters in Albuquerque, PNM is the largest electricity provider in New Mexico, serving 525,000 customers in dozens of communities across the state. PNM is a subsidiary of PNM Resources, an energy holding company also headquartered in Albuquerque. For more information, visit www.PNM.com.

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