



County of Los Alamos

Council Meeting Staff Report

November 17, 2021

Agenda No.:	7.C.
Indexes (Council Goals):	DPU FY2020 - 1.0 Provide Safe and Reliable Utility Services, DPU FY2020 - 3.0 Be a Customer Service Oriented Organization that is Communicative, Efficient, and Transparent, DPU FY2020 - 5.0 Achieve Environmental Sustainability, DPU FY2020 - 6.0 Develop and Strengthen Partnerships with Stakeholders
Presenters:	Steve Cummins
Legislative File:	15055-21

Title

Discussion on San Juan Replacement Energy Plan for the Current ECA Term (led by Jordan Garcia, Power System Supervisor)

Body

As Los Alamos County's impending exit from the San Juan Generating Station (SJGS) approaches, Power Operations has investigating ways to meet the Power Pool's load obligations for the current ECA contract term. One of the Power Operations team's many roles is to secure generation on both short and long-term bases as needed. Short-term energy procurement is a vital piece of our business model as we have a negative reserve margin and are net buyers on the open market. The exit from SJGS will create a large energy shortfall for the Power Pool.

Most generating stations on the grid have their own pricing, and trade individually. Los Alamos has historically subscribed to Mid-Columbia (Mid-C), Palo Verde, and Four Corners. Mid-C is a major trading point in the Pacific Northwest, Palo Verde is a major trading point in the Southwest and Four Corners is one of the most active hubs that the Power Pool has access too. All these market hubs are very volatile depending on the conditions of the market itself. The past year has hosted some of the most intense market fluctuations Operations has witnessed in decades. For illustrative purposes, think about the energy market as three separate markets: long-term, short-term, and real-time. The long-term market sells large amounts of energy for periods greater than one year and incorporates risk and volatility with a market adder. Long-term purchasing really favors standard blocks of energy roughly 25MW increments. The market will offer shaping of energy (non-standard blocks) for additional costs and risks premium. Short-term energy is a one year or less offering (either annually, quarterly, monthly or day ahead). This pricing is more market-based with less risk priced in and less of an adder because conditions are somewhat more predictable. Lastly, the real-time market is now ruled by an optimization engine for the Energy Imbalance Markets.

Each energy market has its strengths and weaknesses, and it is a collective decision by the Power Pool on what approach to adopt. Below are the considerations that go into this decision:

PPA Size: The Pool currently has a reserve margin of -25% that has Power Operations buying energy on the open market throughout the year. The original intent of this PPA was to keep the Power Pool whole considering the retirement of SJGS, the addition of the Uniper 15MW Wind and Solar PPA, and LANL CT operations. While there is forecasted load growth from Super Computing and other Programs during this three-year period, the schedule is flexible. In addition to the increased load the addition of LANL's Combustion Turbine (CT) and its new run schedule can possibly create an oversupply issue in the shoulder months when power demand is lower. It is imperative that we do not ask the Laboratory to curtail CT operations. If the PPA capacity was any lower than the 25 MWs it would increase our reliance on the short-term market and that pricing has been unfavorable since this past June, with the outlook being more expensive for the next two years. With these considerations the Power Pool decided 25MWs is an optimal PPA size.

PPA Price: As mentioned above, the forward pricing outlook for our receipt points is very high for the next two years. There is particular emphasis on the summer months with pricing curves topping out at over \$213/MWh

currently. Locking in a price now will alleviate the reliance on variable pricing in the future. The unique attribute of this PPA is that combined with actual wind and solar generation, the offered price is lower than current and forecast future market rates. The not to exceed amount would be \$38,073,900.00 which is based on futures at the Palo Verde Index (PV), with no renewable energy. The addition of the wind and solar into this PPA decreases the expected amount to \$33,346,650.00, a reduction of \$4,727,250.00. The existing 15 MW PPA with Uniper, contractually gives LAC the first right of refusal on all the excess wind and solar generated from the two projects at the PV index plus \$0.75/MWh non-firm. Power Operations believes it would be difficult taking advantage of the excess capacity due to our Network Integrated Transmission Service Agreement (NITSA) requirements with PNM. This short term PPA will take advantage of this excess generation at a fixed price of \$34.50/MWh, reducing the average market price for the forward-looking high load and low load hours of approximately \$72.75/MWh, to an estimated \$51.00/MWh firm. This PPA is projected to deliver between 28% and 40% renewable energy over the term of this agreement. It is unlikely that the Power Pool would receive competitive bids on a similar PPA because it would require building new wind and solar only to serve a three-year contract. All the wind generation within PNM's balancing area has been sold along with the available transmission capacity. There are more opportunities for additional solar, but they would require a 15-year agreement for building the additional capacity.

PPA Point of Receipt: This PPA will be received on PNM's system which will not include any additional transmission charges. In addition, with lack of merchant generation in WECC, we can point to the generation source for this energy which will be well received with our Balancing Area

Alternatives

Not Replacing the energy Output of SJGS is not an option. We have a load demand that must be met with a known generation resource. In addition, we have impending load growth that will need to be met as well. Power Operations stresses that 25 MW is the optimal PPA size; however, 20 and 30 MW options were prepared for comparison.

For the 20MW option:

- Adds **+\$1/MWh**, for a non-standard block premium; this is roughly the risk premium associated with having to cover when 4C is not available and the wind and solar are not producing.
- The % of carbon free MWhs increases as a function of less MWhs but is also limits the upside of the wind generation in a good wind year.

For the 30MW option:

- Adds **+\$2.50/MWh**, for a +\$1/MWh non-standard block premium and a +\$1.50/MWh on the shape as there are more hours not covered by excess renewables
- The expected % of carbon free MWhs goes down, but it leaves room in a good wind year to gain that back (just hard to say with exactness). However, even in a good wind year because the wind is largely in the LL hours the price would not be mitigated all that much because of the renewable short fall in the HL hours compared to the 30MW volume.

Fiscal and Staff Impact

Cost of the energy already accounted for in budgeting process. Normal part of Operations for Staff Impact.