



April 20, 2018

Integrated Resource Plan
Public Advisory Group: Public Input and Requests
Meeting Date: February 23, 2018

Questions received in notecards during PAG meeting

PAG Q1:

If efficiency programs are lower cost than supply side options, and subjective evaluations are not allowed, is it correct in this instance to say that Strategist would pick only efficiency programs?

EPE Response:

EPE does not agree with the characterization of the question related to “subjective evaluations”. The IRP resource analysis and Strategist analysis will select the most cost effective resource portfolio that meets requirements. Only resource options that are determined to be viable will be modeled with reasonable costs and characteristics.

PAG Q2:

Please make a table for each run of all inputs EPE enters including:

- a. Price of all kWh 8760 hours
- b. Life cycle – years
- c. Maintenance cost
- d. Fuel cost
- e. Other

EPE Response:

- a. Strategist does not utilize an 8760 hour methodology.
- b. Asset lives will be provided.
- c. O&M inputs will be provided.
- d. Fuel Cost will be provided.

PAG Q3:

Slide 32 of EPE’s response to 1/11/18 presentation said that “the PAG [will] have access to the identification of all parameters and assumptions used in Strategist modeling runs.” When and how will that information be provided to the PAG?

EPE Response:

Inputs and assumptions will be provided in the IRP report.

PAG Q4:

Why would battery cost be a “must use” resource?

EPE Response:

It is assumed that the term “must use” refers to the fact that battery is modeled with a set discharge and charge cycle. The battery storage system being modeled is for the purpose of shifting load/energy. When modeling load shifting storage, this is the optimal utilization of a battery which is to charge during the lowest system cost and discharge during the higher system cost at peak hours.

PAG Q5:

Please provide all of the Strategist outputs. Please include the cost outputs and the sales outputs.

EPE Response:

EPE will provide Strategist output reports utilized in the IRP report.

PAG Q6:

Please provide all of the inputs that are utilized in Strategist.

EPE Response:

All inputs related to the resources modeled in Strategist will be provided in the IRP report.

PAG Q7:

Please conduct the base run utilizing all of the parameters available from Lazard’s including facility life that matches the capital and cost details.

EPE Response:

EPE will identify which numbers from Lazard’s were utilized. EPE intends to start with Lazard’s numbers for cost inputs. However, EPE may deviate from Lazard’s cost numbers where other reasonable, publicly available information is utilized to adjust costs. This is in line with requests from PAG participants requesting solar cost declines be considered in the base case. EPE will utilize the lifespans defined by EPE which are based on the useful lives of similar generation resources as actually experienced by EPE under conditions (operational, climate, etc) that would be expected to prevail with these resources if selected in the IRP. In addition, EPE’s lifespan assumptions are consistent with how these resources are depreciated for cost-recovery purposes as components of utility rate base and Commission-authorized depreciation schedules.

Questions received by email 2/28/18**PAG Q8:**

Please provide the calculation that determines the after tax weighted average cost of capital value that will be used by Strategist. I would expect that you would start with the Commission approved return on equity (ROE), the cost of debt, and the ratio used for weighting.

EPE Response:

Post-Federal Tax Rate Change (For use with 2018 and future years)											
		(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)
HISTORICAL:						(c) * (d)		(e)/(1-(f))-(e)	(e) + (g)	(-h) * (f)	(h) + (i)
LINE NO.	DESCRIPTION	BALANCE AS OF SEPTEMBER 30, 2016	PERCENT OF TOTAL	COST OF CAPITAL (1)	WEIGHTED AVERAGE COST OF CAPITAL	TAX RATE (3)	TAX EFFECT	PRE TAX WEIGHTED COST	TAX EFFECT	AFTER TAX WEIGHTED COST	
1	Common Stockholder's Equity	\$1,092,259,187	48.348%	9.650%	4.666%	22.87%	1.384%	6.050%	-1.384%	4.666%	
2	Preferred Stockholder's Equity	\$0	0.000%	0.000%	0.000%	22.87%	0.000%	0.000%	0.000%	0.000%	
3	Long-Term Debt	\$1,166,915,729	51.652%	5.922%	3.059%	22.87%	0.000%	3.059%	-0.700%	2.359%	
4	Total Capitalization	\$2,259,174,916	100.000%		7.725% (1)			9.109%		7.025%	

PAG Q9:

Please conduct the base case Strategist run using the purchased power resource as an option. If I understood Omar Gallegos correctly, he indicated that Strategist will be told to satisfy any capacity shortfall in the years prior 2022 with purchased power. Since the IRP must identify the least cost resource portfolio beginning in 2019, the Strategist run should make that determination as a resource option to satisfy any shortfall from the beginning of the planning period for the 20 year horizon. Please also provide the assumptions as to cost for the purchased power.

EPE Response:

The recommended approach is not consistent with the IRP Rule because it will not result in the most cost effective portfolio. Instead it would force selection of small nameplate options for relatively small shortfalls. It is well understood that typically resource costs drop with economies of scale. Given this, the resulting cumulative costs of adding multiple smaller resources will not yield a lower cost portfolio option.

Received questions by email on 2/28/18**PAG Q10:**

When will EPE tell us which of the templates submitted by the PAG will be modeled?

EPE Response:

EPE will provide responses to the most recently submitted resource templates on April 25, 2018.

PAG Q11:

For those templates which EPE has agreed to model, usually "with modifications", when will we learn what those modifications are?

EPE Response:

EPE will provide resource templates modeled in Strategist with the preliminary final report on April 30, 2018.

PAG Q12:

In the EPE response to Slide 5 of the 1/11/2018 PAG presentation, EPE stated its independent evaluator will review the RFP bids for consistency with IRP model prices. The EPE response to Slide 32 indicated the PAG will "have access to the identification of all parameters and assumptions used in Strategist modeling runs". When will the PAG see the results of the independent evaluator review of the RFP bids for consistency with IRP model prices?

EPE Response:

This assessment will be provided in the final IRP report.

PAG Q13:

How much energy storage will be modeled for Storage, Wind with Storage, and Solar with Storage resource options (1/11/2018 presentation, slides 15, 16, 17)? If Strategist chooses the levels of storage, what options will be given to Strategist to choose from?

EPE Response:

EPE is planning to model:

- Solar with 30 MW (120 MWh) Storage
- Wind with 15 MW (60 MWh) Storage
- Storage at 50 MW (200 MWh)

A total nameplate maximum between the range of 100 MW to 150 MW of storage will be allowed through 2024.

PAG Q14:

The EPE response to 1/11/2018 Slide 18 did not address how Energy Efficiency will be modeled, for example whether EE programs will modeled as resources that can be purchased to reduce demand. EPE did state it will model EE, and that EPE works with consultants on EE. What EE resources will be modeled, and will Strategist be given multiple, priced, demand-reducing EE programs to choose when they are cost effective in relation to supply-side resources?

EPE Response:

EPE will be modeling an EE resource option that will have one cost factor for a portfolio of EE programs and measures. The programs selected are designed to reduce peak load demand. This approach will reduce demand while considering expected adoption and growth rates.

PAG Q15:

Since the EPE response to Slide 32 indicated the PAG will "have access to the identification of all parameters and assumptions used in Strategist modeling runs", can EPE supply a spreadsheet defining those parameters and assumptions that drive and constrain the Strategist modeling runs? Can that spreadsheet be supplied well before the April 30th presentation of the initial draft IRP? (Note that this spreadsheet could answer many of the PAG questions, including the five above.)

EPE Response:

EPE has provided inputs throughout the IRP public advisory process and explained their sources. Additionally, EPE has provided throughout the public advisory process various resource characteristics as they relate to operations and load serving capabilities. As has been discussed, many times at the suggestion of PAG participants via discussion and/or templates, inputs identified to date may be adjusted. The November 16 meeting contained a detailed discussion on resource option assumptions. EPE's IRP Webpage contains details on that meeting and other meetings which discussed similar topics. Final adjusted inputs will be provided in the IRP report.

PAG Q16:

The answers to my question on Slide 21 of the 1/11/2018 were incomplete. The response given to why the lowest cost resource (Enhanced eSmart at \$369/kW) wasn't chosen, was "based on system requirements", which is less than illuminating. When I re-asked the question on Feb 23rd, Mr. Gallegos speculated it might have been due to this Demand Response program being available only 12 times per year, but he did not seem sure. Since this Demand Response program can lower the peak coincident load multiple times each summer at very low cost, please explain in detail why it was not chosen as a resource by Strategist?

EPE Response:

The demand response resource was not selected as part of the most cost effective portfolio.

PAG Q17:

A very significant question was surfaced but not answered during the discussion of Strategist modeling. It seems that smaller resources are not chosen by Strategist if they are not needed once

larger ones are included. This would be a big disadvantage to Energy Efficiency and Demand Response programs, since they are made of multiple commercial and residential programs which are individually relatively small, but when aggregated have a large capacity and impact. Are smaller resources not chosen by Strategist? Are there any Strategist runs which show small, low cost resources being chosen?

EPE Response:

Please see response to PAG Q9.

Email Received on 3/21/18

During the February 23, 2018 Public Advisory Group meeting, Mr. Omar Gallegos indicated that if, as the peak season approaches, it sees load growing approximately a month out, it will make purchases to maintain the Company's chosen reserve margin of 15% of projected peak load. Please elaborate on EPE's practices and plans in that regard as follows:

PAG Q18:

Mr. Gallegos acknowledged that the laws and regulations applicable to EPE do not require the Company to maintain a 15% reserve margin exactly. Please describe as precisely and quantitatively as possible, which factors EPE takes into consideration in deciding whether to acquire additional capacity not just to meet projected load but to maintain an additional reserve margin. Please address, among other things, the weather and other load projection data upon which EPE relies (including the possibility of load decreases as well as load increases), the types of data that EPE would consider that might reduce its confidence that EPE-owned generation resources are capable of providing full capacity during the peak day, the types of data that EPE would consider that might reduce its confidence in the ability of contracted renewable resources to provide EPE's projected capacity (presumably 70% of nameplate for solar facilities as discussed throughout the IRP PAG process), the types of data that EPE would consider that might raise specific concerns about the availability of EPE's transmission resources at their full capacity, and the types of data that EPE would consider before reducing its expectations (as reflected in its Loads & Resources Table) regarding the contribution of energy efficiency programs and demand response (i.e., the Esmart Thermostat Program in New Mexico and similar initiatives in Texas) toward reducing peak load.

EPE Response:

EPE's planning reserve margin criterion is 15 percent of EPE's projected firm load responsibilities. The North American Electric Reliability Corporation generally uses 15 percent as a reference reserve margin in the absence of a specific methodology. In 2015, EPE commissioned a planning reserve margin study in which the results identified the economically optimal target of planning reserve margin for EPE's system. The results of the study confirmed the reasonableness of EPE's use of 15 percent planning reserve margin.

The context of the discussion in February may have revolved around the purchases listed in the L&R. Those purchases are identified as potential purchases that do not necessarily need to be contracted in advance.

PAG Q19:

Is the process that Mr. Gallegos referred to done on a month-by-month or week-by-week, or day-by-day basis going into the peak summer season, or is it done once at the start of the peak season?

EPE Response:

In relation to purchases made during and/or approaching the peak summer season, in order to supplement its generation resources to meet EPE's load requirements when a purchase is denoted in the L&R, EPE may purchase firm capacity and energy. These purchases can be long term purchases (3 to 4 months in duration) made before the summer season begins or shorter day ahead purchases to meet loads.

PAG Q20:

What types of purchases has EPE made in the past in circumstances in which it determined that the 15% reserve margin target needed to be supported by additional purchases? Please be specific as to duration of contracts, firm or not, capacity and/or energy, and location and type of generation source.

EPE Response:

The last year EPE purchased capacity for peak season was in 2014 from generation in southern New Mexico. Typically EPE addresses the purchases referenced in the L&R during normal operations. During normal operations, purchases are not made to meet planning reserve margins. Purchases may be made to reliably and economically serve load and operating reserve requirements.

PAG Q21:

What is EPE's rationale for selecting each of the types of purchases described in your response to [PAG Q20] above?

EPE Response:

Please see response to PAG Q20 above.

PAG Q22:

How does EPE evaluate cost when making the purchases described in response to [PAG Q20] above? Please address the Company's approach to the cost-effectiveness of different contract options, as well as the Company's risk assessment of the need to make such purchases at all.

EPE Response:

There are opportunities for EPE to purchase power in the forward market, day-ahead market, and real-time market. EPE evaluates each of these market opportunities versus delivered production costs on an on-going basis and determines if power can be sold for a profit or if power can be purchased to displace costlier generation on EPE's system.

PAG Q23:

After EPE has made such purchases to assure that it will maintain a 15% reserve margin, what kind of analysis has the Company conducted, if any, after the peak season to evaluate whether those purchases were necessary and prudent?

EPE Response:

EPE's fuel and purchased power practices were audited by the Commission in Docket No. 10-00065-UT. The audit report concluded that EPE has implemented its fuel and purchased power cost adjustment clause (FPPCAC) in compliance with Commission rules and orders and has acted prudently in incurring the fuel and purchased power cost it passed through to its customers. EPE has not materially changed its fuel and purchased power practices since the audit took place.

PAG Q24:

Please explain where in EPE's monthly Fuel and Purchased Power Cost Adjustment Clause Cost Factor reports to the NMPRC such purchases are reflected, and provide examples.

EPE Response:

Such purchases are reflected in EPE's FPPCAC, under Section II.2.A, CURRENT MONTH JURISDICTIONAL FUEL AND PURCHASED POWER EXPENSES.

PAG Q25:

Please identify each purchase made for the purpose of maintaining a 15% reserve margin for each of the peak seasons of 2012, 2013, 2014, 2015, 2016, and 2017. If EPE did not make such purchases during any of those peak seasons, please provide detailed information about such sales made in earlier period. Include the type of purchase, the amount of capacity and or energy contracted for, the dates and duration of each purchase agreement, the price terms of the agreement; the amount of capacity or energy actually needed by EPE, the dates and hours on which that capacity and energy actually was needed by EPE to meet its actual load requirements; the dates and hours on which that capacity was needed by EPE to meet its actual load requirements plus its chosen 15% planning reserve margin; and the costs EPE paid under each agreement.

EPE Response:

Please see response to PAG Q20 above.

PAG Q26:

Please describe EPE's disposition of the capacity and energy obtained under each such contract that was not needed by the Company to serve its jurisdictional load, including detailed information about the duration, nature, and price received for any off-system sales of that capacity and/or energy.

EPE Response:

Please see response to PAG Q20 above.

PAG Q27:

Please describe EPE's disposition of the capacity and energy obtained under each such contract that was not needed by the Company to serve its jurisdictional load plus a 15% planning reserve margin, including detailed information about the duration, nature, and price received for any off-system sales of that capacity and/or energy.

EPE Response:

Please see response to PAG Q20 above.

PAG Q28:

Please describe in detail EPE's operating reserve requirements, i.e., spinning reserves, non-spinning reserves, etc. Include references to the specific authorities, agencies, or contracts that make these criteria "requirements."

EPE Response:

EPE presented information related to reserves in the July 26, 2017 meeting. EPE is a member of the Southwest Reserve Sharing Group which requires that EPE maintain a contingency reserve. Additionally, EPE adheres to NERC requirements for balancing and regulating reserves.

PAG Q29:

To what extent, if any, have purchases of the sort described by Mr. Gallegos been used to fulfill the operating requirements described in EPE's response to [PAG Q28] above?

EPE Response:

Please see response to PAG Q22 above.

PAG Q30:

Please refer to Steven T. Buraczyk's direct testimony in NMPRC Case No. 09-00171-UT, filed on May 29, 2009. Mr. Buraczyk testified that "EPE uses one of [the WECC's] recommendations [for reserve margin], which is the largest single hazard plus 5 percent of peak load. EPE's largest hazard consists of Rio Grande Unit 8. EPE also includes as part of its largest hazard an additional 50 MW due to a reduction in the level of transmission import capacity into southern New Mexico when Rio Grande Unit 8 is out." Please state when EPE stopped using that largest-single-hazard based reserve margin criteria, and when it switched to the current 15% of peak load criterion. If EPE utilized a different standard at some point between these two, please provide applicable dates and a description of that standard.

EPE Response:

Please see response to PAG Q18 above.

PAG Q31:

Please explain why EPE switched from one reserve margin criterion to another, as addressed in [PAG Q30] above and in the Company's response to that question.

EPE Response:

EPE changed to the 15 percent planning reserve margin for the 2011 planning year based on an analysis of comparable/regional utilities and EPE's specific requirements. EPE later commissioned a study in 2015 to reassess the planning reserve margin and it reaffirmed the 15 percent planning reserve margin (reference response to PAG Q18).

PAG Q32:

To what extent, if any, are peak period capacity and/or energy purchases intended to maintain a 15% reserve margin incorporated into the Strategist modeling for purposes of EPE's Integrated Resources Plan. Please explain your answer in detail.

EPE Response:

The purchases denoted in EPE's L&R are placeholders for purchases to meet the reserve margin that are within EPE's import capability. The purchase amounts are input into the Strategist model.

PAG Q33:

During the February 23, 2018 IRP PAG meeting, Ms. Merrie Lee Soules questioned EPE's representatives about the possibility that the Company's Strategist modeling may favor selection

of a single large resource rather than an assortment of smaller resource units (and types). Please elaborate on the Strategist programming as follows:

Does EPE limit the number of units of any particular resource that the Strategist program is able to select to fulfill each identified need for additional resources? If so, please identify all such conditions or caveats that EPE imposes, such as limits on the types, the size, and the timing of individual asset additions.

EPE Response:

Please see EPE's November 16, 2018 presentation regarding resource capacity assumptions.

PAG Q34:

Does the Strategist model, prior to any modifications or criteria requested by EPE, incorporate any limits of the sort described in [PAQ Q33] above? If so, please describe them in detail.

EPE Response:

No.

PAG Q35:

Does the Strategist model incorporate any sort of weighting of alternatives so that, although it might not absolutely limit the number or size of particular resource options, it might give a collection of smaller units less priority than a larger single unit or two or three larger units? If so, please describe this weighting in detail.

EPE Response:

No.