BEFORE THE PUBLIC SERVICE COMMISSION
OF THE STATE OF MISSOURI

In The Matter of The Empire District Electric Company's 2016 Triennial Compliance Filing Pursuant to 4 CSR 240-22	**File No. EO-2016-0223**

COMMENTS OF RENEW MISSOURI

Pursuant to 4 CSR 240-22.080(8), Renew Missouri offers these comments respecting deficiencies in the triennial filing.

Empire's preferred resource plan (PRP) includes no demand-side resources at all, despite the fact that demand-side management (DSM) is widely known to be the least-cost energy resource. How such a plan came to be chosen on a lowest-NPVRR basis is explained by the way Empire designed and discriminated among its alternative resource plans (ARPs).

Empire assembled 19 ARPs. The first five (including Plan 5, the PRP) are called "base plans" (IRP vol. 6, p. 6-11). "Plans 6–16 are considered contingency plans" (IRP p. 6-12). The last three are plans required by rule, 4 CSR 240-22.060(3)(A)2–4; Empire describes these as "for planning purposes only" (Executive Summary p. 5; p. 6-10).

Deficiency 1: 4 CSR 240-22.010(2)(A), demand-side resources are not treated on an equivalent basis with supply-side resources. Because of the policy objective of low utility cost, "Empire focused on" the base plans 2–5 (ES p. 39), ignoring Plan 1 because it was the same as Plan 2 (p. 6-9). All of these plans are identical in their supply-side components: replacement of the existing wind PPAs when they expire, the addition

of 200 MW of combined-cycle gas in 2035, and 100 MW more of CCGTs. Plans 2–5 differ only in the timing of this last 100 MW addition (Table 6-9, p. 6-24).

It is not surprising that when DSM is added to identical supply-side plans, a plan with no DSM will be cheaper. When DSM is added to, rather than substituted for, supply-side resources, the IRP is deficient for failing to meet the fundamental objective of considering supply- and demand-side resources "on an equivalent basis," 4 CSR 240-22.010(2)(A). Empire should have considered DSM as an alternative to some or all of the 300 MW of CCGTs in the base plans. This is the primary deficiency in the IRP, but there are others as well.

Deficiency 2: 4 CSR 240-22.060(3), development of alternative resource plans. The rule instructs the utility to "use appropriate combinations of demand-side resources and supply-side resources…The goal is to develop a set of alternative plans based on *substantively different mixes* of supply-side resources and demand-side resources…" (emphasis added).

Eleven of Empire's ARPs (Plans 6–16) were considered contingency plans (p. 6-12). By definition, a contingency resource plan cannot be a preferred plan because it is intended to respond to circumstances that would make the PRP obsolete. 4 CSR 240-22.020(7); 22.070(4); 22.070(7)(C).

Plans 18 (all demand-side) and 19 (all renewable) are dismissed as "for planning purposes only." Plan 17 (aggressive DSM) is also treated as merely "required by rule" (p. 6-10).

When Empire says that it "focused on" base plans 2–5 (ES 39; vol. 7, pp. 7-6–7-

7), it is evident that the decision makers never considered anything else. These four plans with their identical supply-side elements are not substantively different mixes of demand- and supply-side resources. Plan 5, the PRP, does not even have the lowest NPVRR. It was selected as "the lowest cost *base* plan" (p. 7-7, emphasis added); Plan 10, with a lower NPVRR in at least some cases, was ineligible because it is a contingency plan (pp. 7-22–7-24).

Base plans 2–5 provide too narrow a range of alternatives to test the possibilities of low-cost energy plans.

Deficiency 3: renewable energy. Renewable energy is singled out from other supply-side resources for consideration as a policy objective. 4 CSR 240-22.010(2)(A). In assembling ARPs, "The utility shall examine cases that—" minimally comply with legal mandates, 22.060(3)(A)1; use only renewable energy resources, 22.060(3)(A)2; and optimally comply with renewable energy mandates, 22.060(3)(A)5.

Empire effectively collapses all these requirements into one—all its plans except the all-renewable one comply with the Renewable Energy Standard and no more (p. Table 6-2, p. 6-8)(Plan 1 being considered the same as Plan 2; p. 6-9). The IRP, vol. 4, § 5.1.4, mentions a "Renewables Forecast" which is absent from the IRP but, to the extent it is described, is based solely on RES compliance (p. 4-101).

As with DSM, Empire failed to consider renewable energy as a substitute for its designated CCGT supply-side additions in the base plans. Many utilities (including Kansas City Power & Light) consider some renewables, particularly wind, to have the lowest levelized costs for new generation technologies, and this is supported by the

literature.[1] The rule, 22.060(4)(E), requires: "A discussion of the incremental costs of implementing more renewable energy resources than required to comply with renewable energy legal mandates." Empire's "discussion" consists of the statement: "In general, increasing the amount of renewable energy resources beyond the level required by MO-RES increased the PVRR" (p. 6-133). This is deficient—increases the PVRR compared to what? If more renewables are merely added to the base plan, with its CCGT additions and wind PPAs for RES compliance, then of course it will increase PVRR.

Empire has not analyzed renewable energy and other supply-side resources on an equivalent basis as required by 4 CSR 240-22.010(2)(A).

Deficiency 4: probable environmental costs. The rule, 4 CSR 240-22.020(4&0, defines probable environmental cost as:

> the expected cost to the utility of complying with new or additional environmental legal mandates, taxes, or other requirements that, in the judgment of the utility decision-makers, may be imposed at some point within the planning horizon which would result in compliance costs that could have a significant impact on utility rates.

Empire has modelled only one future environmental cost, CO2 under the Clean Power Plan (pp. ES-25—ES-26) despite listing another seven regulations (p. 4-26). At least two of these are applicable.

The costs for supply-side options "shall be quantified by estimating the cost to the utility to comply with additional environmental legal mandates that may be imposed at some point within the planning horizon." 4 CSR 240-22.040(2)(B).

[1] Lazard's LCOE Analysis version 9.0, https://www.lazard.com/perspective/levelized-cost-of-energy-analysis-90/ ; U.S. EIA Annual Energy Outlook 2015, http://www.eia.gov/forecasts/archive/aeo15/electricity_generation_2015.cfm

Empire admits that it will be subject to recurring implementation deadlines at the Asbury and Iatan coal plants between 2018 and 2023 under the Effluent Limitation Guidelines, 80 Federal Register 67838 *et seq.* (Nov. 3, 2015). Nevertheless, Empire says, "Impacts to the facilities have not been quantified at this time," (pp. 4-40—4-41) despite the fact that quantification is precisely what the rule requires. Similarly, Empire says it is "too early" to assess the impact of the National Ambient Air Quality Standard for ozone (p.4-33) even though that rule was finalized Oct. 26, 2015 and went into effect Dec. 28, 2015.

U.S. EPA's Coal Combustion Residuals rule, 80 Fed.Reg. 21302 (April 17, 2015), will compel Empire to build a new coal ash landfill for Asbury at an initial estimated cost of $15 million (p. 4-41—4-42). Empire says this cost will have to be updated. This also fails the quantification test.

Despite these and the other environmental regulations discussed in the IRP (pp. 4-27—4-42), Empire says nothing about probable environmental costs in its discussion (p. 4-83) under 4 CSR 240-22.040(4)(C): "The utility shall include the cost of interconnection and any other transmission requirements, in addition to the utility cost and *probable environmental cost*, in the cost of supply-side candidate resource options advanced for purposes of developing the alternative resource plans…" (emphasis added).

Omitting environmental costs skews the IRP analysis in favor of the supply-side and against DSM and low-carbon renewable generation. In its demand-side analysis, the utility is required to calculate the effects of probable environmental costs on avoided demand and energy costs. 4 CSR 240-22.050(5)(A)3. Empire modeled only CO2 costs

(pp. 5-109—5-110). This is part of the cost-effectiveness evaluation of demand-side programs, and the results were thereby biased against DSM. See also the requirement of 22.050(5)(G) to discuss and document the assessment of cost-effectiveness, which is again limited to CO2 (pp. 5-126, 5-131, 5-133).

Deficiency 5: IBR as a demand-side rate. "The utility shall develop potential demand-side rates" and "describe and document its demand-side rate planning and design process" with the level of detail specified in the rule. 4 CSR 240-2.050(4). Empire has failed to do this with respect to inclining block rates (IBR) as a residential demand-side rate.

IBR charges a higher volumetric rate for higher usage. As a hypothetical example, a utility could charge $0.10/kWh for the first 500 kWh of use and $0.12 for each kWh above that. This motivates customers to use less energy to avoid the higher rate, and allows customers to save relatively more money for installing efficiency measures or distributed generation.

Empire admits that IBR is a cost-effective conservation measure but then proceeds to make some highly questionable and unsupported assumptions about IBR: "Unlike other DR and rate based options, this option has low to zero operation, maintenance and incentive costs. However, introducing this rate option requires a significant amount of rate making and regulatory changes that cannot be captured within the modeling." (IRP, vol. 5, pp. 5-20, 5-100.)

Empire repeatedly makes the following statement (pp. 5-104—5-105): "The Critical Peak Pricing was found not to be cost-effective for any customer class. While the

Inclining Block Rate was cost-effective, significant rate-making needs to take place to put the rate into effect. Additionally, the savings associated with Inclining Block Rates is subjective; an average savings value was utilized for the analysis but zero savings could be seen with the implementation of such a rate. Empire's current capacity balance and forecast do not necessitate or support taking potentially-costly measures to promote additional conservation at peak times." (The final sentence of this paragraph appears to refer back to critical peak pricing.)

Empire's arguments against IBR are completely unfounded. This rate structure has no implementation cost, requires no advanced metering, and does save energy as well as demand. (This is documented in Empire's current rate case, ER-2016-0023, Rebuttal testimony of Geoff Marke for OPC, pp. 46–7.) Renew Missouri cannot understand how energy savings are "subjective," nor does Empire substantiate how, despite this subjectivity, it arrived at an "average savings value." Empire also does not explain how that value resulted in "zero savings."

Empire offers no support for the assertion that extensive ratemaking and regulatory changes are required which, conveniently for Empire, it says cannot be modelled. Empire, like the other regulated utilities in Missouri, already administers declining block rates in winter, which differ only in that the higher usage block carries a lower rate instead of a higher. There is no additional impediment to implementing IBR. It requires no more than a meter reading.

Empire has not estimated the incremental and cumulative energy savings for each year of the planning horizon as required by 22.050(4)(D)4. It has not estimated the costs

of IBR for each year of the planning horizon as required by 22.050(4)(D)5. And it has not documented its sources and quality of information as required by 22.050(4)(G).

Conclusion

Renew Missouri respectfully requests that the Company agree to prepare, or the Commission order the Company to prepare, a revised triennial IRP filing that corrects the deficiencies identified above.

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CERTIFICATE OF SERVICE

I hereby certify that a true and correct PDF version of the foregoing was sent by email on this 29th day of August, 2016, to all counsel of record:

/s/ Henry B. Robertson
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