

**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) File No. EO-2016-0223
4 CSR 240-22.)

JOINT FILING

Pursuant to Missouri Public Service Commission (Commission) Rule 4 CSR 240-22.080(9), The Empire District Electric Company (Empire), the Staff of the Commission (Staff), the Office of the Public Counsel (Public Counsel), the Department of Economic Development – Division of Energy (DE), Earth Island Institute d/b/a Renew Missouri (Renew Missouri), Dogwood Energy, LLC (Dogwood), and Missouri Joint Municipal Electric Utility Commission (MJMEUC) (collectively, the Signatories), hereby submit this Joint Filing. This document contains an agreed-to remedy to various alleged deficiencies and concerns expressed by the Signatories regarding Empire's triennial filing, submitted on April 1, 2016. This document also identifies those alleged deficiencies that could not be resolved by the Signatories.

BACKGROUND

1. Pursuant to Chapter 22 of the Missouri Public Service Commission's (Commission) Rules (4 CSR 240-22.010 through 4 CSR 240-22.080) and the Commission's Order Granting Application for Variance in File No. EE-2015-0249, Empire submitted its integrated resource plan triennial compliance filing (IRP) on April 1, 2016.

2. On August 26, 2016, Dogwood filed its report containing alleged deficiencies. On August 29, 2016, Renew Missouri, Staff, and DE filed reports containing their alleged deficiencies and concerns. No other reports were submitted.

3. The Commission's Electric Utility Resource Planning regulations provide that if the Staff, Public Counsel or any intervenor finds deficiencies in, or concerns with, a triennial compliance filing, they shall work with the electric utility and the other parties in an attempt to reach a joint agreement on a plan to remedy the identified deficiencies and concerns. This Joint Filing represents the result of those efforts and contains both agreed upon remedies and identification of those alleged deficiencies and concerns that are unresolved.

AGREED UPON REMEDIES TO ALLEGED DEFICIENCIES AND CONCERNS

4 CSR 240-22.040 - Supply Side Resource Analysis

4. **Staff- Alleged Deficiency 1:** Empire did not estimate probable environmental costs of potential supply-side resource options as required by 4 CSR 240-22.040(2)(B).

Resolution: Following post-filing discussions, this is no longer considered to be a deficiency.

4 CSR 240-22.045 – Transmission and Distribution Analysis

5. **Staff-Alleged Deficiency 2:** Empire did not provide cost benefit analyses of advanced grid technologies as required by 4 CSR-240-22.045(4)(E)1 and 2.

Resolution: To resolve this alleged deficiency, Empire will develop, describe and document within its 2019 triennial compliance filing the utility's cost benefit analysis and implementation of advanced grid technologies.

6. **Staff-Alleged Concern A:** Empire did not provide the costs of all identified advanced grid technologies as required by 4 CSR-240-22.045(4)(C)1.A.

Resolution: To remedy this alleged concern, Empire will describe and document the costs of all advanced grid technologies within its 2019 triennial compliance filing.

4 CSR 240-22.050 – Demand-Side Resource Analysis

7. **Staff-Alleged Deficiency 3:** Empire did not provide any costs for operating licenses and for administration related to a 1) DSM data management and tracking software system, and 2) DSM benefit/cost analysis software system for its alternative resource plans with demand-side resources as required by 4 CSR 240-22.050(3)(G)5.D.

Resolution: Since Empire's preferred resource plan did not include a demand-side portfolio, this alleged deficiency would not have changed the resource components of the preferred resource plan. However, to resolve this alleged deficiency, Empire will evaluate and document the cost to the customer and to the utility of technology to implement potential demand-side programs – including the cost of software systems to 1) track all costs and energy and demand savings and 2) calculate the cost effectiveness of the programs - in its 2019 triennial compliance filing.

8. **Staff-Alleged Deficiency 4:** The IRP did not describe and document whether demand-side rates of other utilities would be applicable for Empire taking into account factors such as similarity in electric prices and customer makeup as required by 4 CSR 240-22.050(4)(A). Empire did not review demand-side rates that have been implemented by other utilities within the state.

Resolution: Empire *did* review the literature for electric demand-side rates that have been implemented by other utilities in Missouri but did not find that there were significant examples that could be applied directly to Empire. However, a comprehensive description of this process was lacking in the IRP report. To resolve this alleged deficiency, Empire will review demand-side rates that have been implemented by other utilities and describe and document whether similar demand-side rates would be applicable for the utility taking into account factors

such as similarity in electric prices and customer makeup as part of its 2019 triennial compliance filing.

9. **Staff-Alleged Deficiency 5:** Empire did not provide an estimate of the incremental and cumulative demand reduction and energy savings due to potential demand-side rates as required by 4 CSR 240-22.050(4)(D)4.

Resolution: Empire and its demand-side consultant -- Applied Energy Group (AEG) -- focused quantitative analysis efforts on Critical Peak Pricing, the demand-side rate option with the lowest implementation cost. When Critical Peak Pricing was not found to be cost-effective at any time during the 20-year planning horizon, Empire and AEG deemed that it was unnecessary to spend additional resources to develop an explicit quantitative analysis for the remaining options since all demand-side rate options had similar estimated energy and demand savings. However, to resolve this alleged deficiency, Empire will describe and document its estimate of the incremental and cumulative demand reduction and energy savings due to potential demand-side rates within its 2019 triennial compliance filing.

10. **Staff-Alleged Deficiency 6:** Regarding potential demand-side rates, Empire did not assess 1) cost of incentives to customers, 2) cost of utility administration, 3) incremental and cumulative number of participants, load impacts, utility costs, and program participant costs as required by 4 CSR 240-22.050(4)(D)5.A., Rule 4 CSR 240-22.050(4)(D)5.C. and Rule 4 CSR 240-22.050(4)(E), respectively. Further, Empire did not describe and document how it performed the assessments - over the 20-year planning horizon - of the cost effectiveness of potential demand-side rates as required by 4 CSR 240-22.050 (4)(G).

Resolution: Empire and its demand-side consultant Applied Energy Group (AEG) focused quantitative analysis efforts on Critical Peak Pricing, the demand-side rate option with

the lowest implementation cost. When Critical Peak Pricing was not found to be cost-effective at any time during the 20-year planning horizon, Empire and AEG deemed that it was unnecessary to spend additional resources to develop an explicit quantitative analysis for the remaining options since all demand-side rate options had similar estimated energy and demand savings. However, to resolve this alleged deficiency, Empire will describe and document how it performed the assessments - over the 20-year planning horizon - of the cost effectiveness of potential demand-side rates including inclining block rates (IBR) in its 2019 triennial compliance filing.

11. **Staff-Alleged Deficiency 7:** Empire did not provide an estimate of the costs of each potential demand-side rate that includes the cost to the utility of technology to implement the potential demand-side rates as required by 4 CSR 240-22.050(4)(D)5.B

Resolution: Empire and its demand-side consultant Applied Energy Group (AEG) focused quantitative analysis efforts on Critical Peak Pricing, the demand-side rate option with the lowest implementation cost. When Critical Peak Pricing was not found to be cost-effective at any time during the 20-year planning horizon, Empire and AEG deemed that it was unnecessary to spend additional resources to develop an explicit quantitative analysis for the remaining options since all demand-side rate options had similar estimated energy and demand savings. However, to resolve this alleged deficiency, Empire will provide an estimate of the costs of each potential demand side rate that includes the cost to the utility of technology to implement the potential demand-side rates within its 2019 triennial compliance filing.

12. **Staff-Alleged Deficiency 8:** Empire did not provide the costs of each potential demand-side rate which should be calculated as the sum of all incremental costs that are due to

the rate (including both utility and participant contributions) plus utility costs to administer, deliver, and evaluate each potential demand-side rate as required by 4 CSR-240-22.050(5)(B)2.

Resolution: Empire and its demand-side consultant Applied Energy Group (AEG) focused quantitative analysis efforts on Critical Peak Pricing, the demand-side rate option with the lowest implementation cost. When Critical Peak Pricing was not found to be cost-effective at any time during the 20-year planning horizon, Empire and AEG deemed that it was unnecessary to spend additional resources to develop an explicit quantitative analysis for the remaining options since all demand-side rate options had similar estimated energy and demand savings. However, to resolve this alleged deficiency, Empire will provide the costs of each potential demand side rate which should be calculated as the sum of all incremental costs that are due to the rate (including both utility and participant contributions) plus utility costs to administer, deliver, and evaluate each potential demand-side rate within its 2019 triennial compliance filing.

13. **Staff-Alleged Deficiency 9:** Empire is not compliant with Rule 4 CSR-240-22.050(5)(C)3 because its utility cost tests were not performed to include, but separately identify, the costs of any rate of return or utility incentive in its recovery of DSM program costs.

Resolution: To resolve this alleged deficiency, Empire will provide its utility cost test (UCT) results for demand-side programs and demand-side rates with and without the costs of any rate of return or utility incentive included in the utility's recovery of demand-side program costs within its 2019 triennial compliance filing.

4 CSR 240-22.060 – Integrated Resource Analysis

14. **Staff-Alleged Deficiency 10:** Empire did not include any cost of utility financial incentives or lost earning opportunity in its alternative resource plans which have DSM resources as required by 4 CSR 240-22.060(4)(C).

Resolution: Since Empire's preferred resource plan did not include a demand-side portfolio, this alleged deficiency would not have changed the resource components of the preferred resource plan. However, to resolve this alleged deficiency, Empire will analyze, describe and document the economic impact of alternative resource plans, calculated with and without utility financial incentives or lost earnings opportunities for demand-side resources, and comparative estimates for each year of the planning horizon within its 2019 triennial compliance filing.

15. **Staff-Alleged Concern B:** Empire did not include cost effective renewable supply-side resources when performing its analysis for its all renewable alternative resource plan required by 4 CSR-240-22.060(3)(A)2.

Resolution: Following post-filing discussions, this is no longer considered to be a concern. However, to provide additional clarity for reviewing parties, Empire agrees to provide a complete description of the methodology and assumptions used to develop the required all renewable resource plan (CSR-240-22.060(3)(A)2) within its 2019 triennial compliance filing.

4 CSR 240-22.070 – Risk Analysis and Strategy Selections

16. **Staff-Alleged Concern C:** Empire has never performed evaluation, measurement and verification (EM&V) for any of its DSM programs in compliance with 4 CSR 240-22.070(8) Evaluation of Demand-Side Programs and Demand-Side Rates.

Resolution: To remedy this concern, Empire reaffirms its commitment to comply with paragraph 13. c. of the Stipulation And Agreement which was filed in Case No. ER-2016-0023 on June 20, 2016 and was approved by the Commission on August 10, 2016.

Dogwood Comments

17. **Dogwood Comment:** The Commission should encourage Empire to examine the potential impacts of compliance with the Clean Power Plan (CPP) utilizing a reasonably broad range of assumptions.

Resolution: Empire will continue to monitor the status of the CPP and will provide updates in subsequent IRP filings using a reasonable broad range of assumptions.

Additional Items

18. **DE-Alleged Concern 1:** Plans considered have fairly similar supply-side additions and insufficient variation in DSM portfolios.

Resolution: Empire believes that the alternative plans are appropriate in this IRP, and the differences that do occur between the plans are appropriate for this particular IRP given the plan's set of assumptions. Upon receiving additional clarification from the Company, DE recognizes that Empire included sufficient variation in the DSM portfolios between its filed plans.

19. **DE-Alleged Concern 2:** Empire analyzed a range of potential DSM measures in deriving its DSM portfolio. However, the DSM portfolio presented by Empire results in very small cumulative net demand reductions between 2017 and 2018, never exceeding one MW.

Resolution: DE agrees that cumulative net demand savings do increase to above 1 MW beginning with the first full demand-side program year (2018). In this IRP, the 2017 demand-side program year represents only a 6-month program (to allow time for implementation and regulatory filings as identified in the remedy to Public Counsel alleged deficiency 3 from Empire's 2013 IRP in File No. EO-2013-0547). Demand savings increase to above 1 MW beginning in 2018 with the first full year of demand-side programs.

UNRESOLVED ALLEGED DEFICIENCIES AND CONCERNS

4 CSR 240-22.060 – Integrated Resource Analysis

20. **Renew Missouri-Alleged Deficiency 2:** Base plans 2–5 provide too narrow a range of alternatives to test the possibilities of low-cost energy plans.

Dispute: Empire believes that it used an appropriate combination of resources in the analysis. In the integration phase of the IRP, the capacity expansion model selected resources to perform best under the assumptions for the plan with the goal of minimizing the present value of revenue requirements, the primary selection criterion as described by the Commission’s IRP Rule, after considering all combinations of resource options.

4 CSR 240-22.010 – Policy Objectives

21. **Renew Missouri-Alleged Deficiency 1:** Renew Missouri agrees with DE’s Alleged Deficiency 2 that Empire’s preferred plan, which lacks a DSM portfolio, is inconsistent with state policies to equally value DSM and supply-side resources, per §393.1075.3, RSMo., and to reduce energy consumption in order to avoid or defer generation capacity additions, per §393.1040, RSMo.

Dispute: Empire believes demand-side resources were analyzed appropriately in this IRP.

22. **Renew Missouri-Alleged Deficiency 3:** Empire has not treated renewable resources on an equivalent basis with supply-side resources.

Dispute: Empire believes renewable resources were analyzed appropriately in this IRP. All supply-side candidates, including renewables, were considered in the capacity expansion modeling of this IRP. Renewables were analyzed on an equivalent basis as other supply-side

resources. In the 2016 IRP, Empire was *not* considering renewables only for renewable energy standard (RES) compliance.

23. **DE-Alleged Deficiency 1:** Empire considered only the criterion of cost in its preferred plan selection and did not fully consider additional factors per the requirements at 4 CSR 240-22.010(2)(B) and (C).

Dispute: Empire believes that it selected its preferred plan based on the IRP Rule process which uses the minimization of the present worth of long-run utility costs as the primary selection criterion in choosing the preferred resource plan while considering other factors such as risk and rate impacts.

24. **DE-Alleged Deficiency 2:** Empire's preferred plan, which lacks a DSM portfolio, is inconsistent with state policies to equally value DSM and supply-side resources, per §393.1075.3, RSMo., and to reduce energy consumption in order to avoid or defer generation capacity additions, per §393.1040, RSMo.

Dispute: Empire believes that in its 2016 IRP, lack of DSM in the preferred plan is not a deficiency.

Probable Environmental Costs

25. **Renew Missouri-Alleged Deficiency 4:** Empire has modeled only one future environmental cost, CO2 under the Clean Power Plan. Empire did not model other environmental costs, such as the coal combustion residuals rule and the effluent limitation guidelines, both of which have deadlines within the planning horizon of this IRP.

Dispute: Empire believes it modeled the probable costs of CO2, SO2, and NOx.

26. **DE-Alleged Deficiency 3:** Empire's analysis insufficiently addressed the specific point of the Commission's ordered Special Contemporary Issue, and Empire could have made

reasonable assumptions about Clean Power Plan (CPP) implementation for the purposes of the analysis.

Dispute: Empire believes that it modeled a reasonably broad range of environmental assumptions based on what is known about the CPP at this time.

IBR as a Demand-Side Rate

27. **Renew Missouri-Alleged Deficiency 5:** 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). Renew Missouri requests that Empire address these requirements in this case, rather than in its next triennial IRP in 2019. This analysis should be part of the analysis of block rates Empire has undertaken pursuant to ¶20 of the Stipulation and Agreement in File No. ER-2016-0023.

Dispute: Empire believes it appropriately considered and documented the inclining block rate analysis.

Analysis of Combined Heat and Power (CHP); Treatment of Distributed Generation

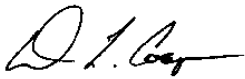
28. **DE-Alleged Concern 3:** Empire analyzed CHP as a supply-side resource (under its “distributed generation” resource option), but Empire should have also analyzed CHP as a DSM resource in light of recent agreements in cases EO-2015-0055, EO-2015-0240, and EO-2015-0241, which include CHP as an eligible resource under MEEIA. Additionally, Empire should have included resources beyond CHP in its supply-side analysis of distributed generation.

Dispute: Empire does not agree with this concern. Empire can continue to monitor CHP, but Empire believes that CHP cannot be a resource that Empire can reasonably be expected to use,

develop, implement or acquire for this IRP since costs and other project details are very project specific and requires a CHP partner. Additionally, if CHP is evaluated as a demand-side resource, CHP opportunities would likely be limited due to the fact that a significant portion of CHP candidates have opted-out of participating in demand-side programs.

WHEREFORE, the Signatories submit this Joint Filing for consideration by the Commission.

Respectfully submitted,

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CERTIFICATE OF SERVICE

The undersigned certifies that a true and correct copy of the foregoing document was sent by electronic mail, on October 25, 2016, to the following:

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