

BEFORE THE PUBLIC SERVICE COMMISSION  
OF THE STATE OF MISSOURI

In the Matter of the 2020 Integrated	)	File No. EO-2020-0280
Resource Plan Annual Update for	)	
Evergy Metro, Inc. d/b/a Evergy	)	
Missouri Metro	)	

In the Matter of the 2020 Integrated	)	File No. EO-2020-0281
Resource Plan Annual Update for	)	
Evergy Missouri West, Inc. d/b/a	)	
Evergy Missouri West	)	

**COMMENTS OF SIERRA CLUB  
PUBLIC VERSION**

Pursuant to 20 CSR 4240-22.080(3)(D), Sierra Club submits these comments on behalf of its 12,000 Missouri members, including thousands who are Evergy Missouri Metro, Inc. or Evergy Missouri West, Inc. (together, “Evergy” or the “Company”) electric customers, regarding Evergy’s 2020 Integrated Resource Plan (“IRP”) Annual Update Report.<sup>1</sup>

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<sup>1</sup> Comments prepared with assistance from Tyler Comings at the Applied Economics Clinic.

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## **I. Introduction**

Sierra Club agrees with Evergy's conclusions that low natural gas prices, climate risk, and declining renewables prices all "could result in a preferred plan that would require a larger magnitude and faster pace of coal generation retirements."<sup>2</sup> But we are disappointed that Evergy has constructed its IRP Update and its All-Source RFP in a manner that shields its existing resources from cost scrutiny. As explained below, we urge Evergy to revise its modeling and its RFP to allow for robust competition, including by allowing an assessment of the value of its existing resources to customers compared to other resource options. Customers are entitled to just and reasonable rates, and Evergy-owned generation stations should compete against the market for the business of the captive customers.

In addition, Evergy's alternative resource portfolios are poorly constructed. Despite Evergy's astute acknowledgment that coal generation faces significant economic pressure and risks, the preferred portfolios do not retire any coal generation through 2039 (the latest year modeled)—a result that borders on economic absurdity and which no merchant generator would tolerate. Related to this problem, Evergy's modeling arbitrarily restricts the deployment of new renewable resources perhaps under the antiquated assumption that a utility should only consider new resources when a "need" for capacity is imposed by some consideration other than economic competition. We also urge Evergy to assure that its gas and renewable price forecasts are reasonable and in line with industry expectations. We are further concerned that Evergy's carbon price assumptions are not sufficient to capture future carbon risk, and urge Evergy to consider adopting carbon forecasts that are more consistent with those of major U.S. utilities.

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<sup>2</sup> Evergy Mo. West IRP Annual Update at 13 (March 10, 2020); Evergy Mo. Metro IRP Annual Update at 7 (March 10, 2020).

Compounding all these problems, Evergy continues to project growth in electric demand that is not supported or appropriately explained.

Last, Evergy's IRP Updates do not appropriately address impacts on the local communities that the Company serves in two direct ways. First, Evergy's IRP updates fail to assess the pollution impacts of each alternative resource plan. Second, the IRP updates do not acknowledge or address the clean energy goals of Kansas City or the businesses in Evergy's service territory, as required by Missouri Public Service Commission ("Commission") orders in the Company's most recent special contemporary issues dockets EO-2020-0045 (KCPL-GMO/Evergy Mo. West) and EO-2020-0046 (KCPL/Evergy Metro).

Each of these issues is a deficiency under Missouri IRP rules.<sup>3</sup> Sierra Club respectfully requests that the Commission order Evergy to address these concerns in the Company's forthcoming 2021 triennial IRP filings. Unless Evergy acts starting now to avoid these deficiencies, the 2021 resource plan will fail to achieve Chapter 22's key metric, the lowest net present value of revenue requirement. If Evergy fails to correct these IRP deficiencies, it faces a real risk that it will choose imprudent preferred resource plans; as such, the Company invites disallowances in future rate cases based on the analyses and modeling it is making in the next several months.

## **II. All-Source Procurement Should Be Used By Evergy, Even Without An Identified Capacity Need.**

A prudent utility should consider replacement generation for the same reason that a person might consider buying a smart phone even if an existing rotary phone is not broken: because a new resource might be both beneficial and cost-effective. The last decade has been characterized by a revolution in the energy markets driven primarily by advances in gas drilling and steadily,

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<sup>3</sup> 20 CSR 4240-22.

relentlessly decreasing prices for renewable generation. Consequently, Evergy cannot ensure least-cost planning for the benefit of Missouri customers if it fails to assess whether the continued operations of existing units make economic sense when compared to other options for providing energy to customers. Because both gas and renewable generation are now likely cheaper than Evergy's existing coal fleet, the Company's failure to evaluate cheaper alternatives has enormous consequences to Missouri customers.

Studying a unit's retirement relative to new resource options is a primary way that a utility can test the value of an existing generation unit; conversely, arbitrary limitations on such retirement analyses show a lack of fundamental least-cost planning. As an example, the North Carolina Utilities Commission required Duke Energy in its IRPs to study retirements using a competitive framework without reference to remaining plant depreciation:

...the Commission determines that it should require Duke to provide an analysis showing whether continuing to operate each of its existing coal-fired units is the least cost alternative compared to other supply-side and demand-side resource options, or fulfills some other purpose that cannot be achieved in a different manner.

To address the issue of economic retirement of aging coal plants, in the 2020 IRPs DEC and DEP shall include an analysis that removes any assumption that their coal-fired generating units will remain in the resource portfolio until they are fully depreciated. Instead, the utilities shall model the continued operation of these plants under least cost principles, including by way of competition with alternative new resources.<sup>4</sup>

Studying the economics of existing generation in combination with an all-source RFP can greatly benefit customers. If Evergy stated in an RFP solicitation that it is (a) interested in lowest-cost power, (b) willing to consider accelerated retirement of its coal units, and (c) open to procurement replacement energy and capacity, the Company would very likely generate robust

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<sup>4</sup> N.C. Util. Comm'n, Docket No. E-100, Sub. 157, Order Accepting IRPs and Reps Compliance Plans, Scheduling Oral Argument, and Requiring Additional Analyses at 90 (Aug. 27, 2019).

interest from energy developers. Further, a well-executed all-source RFP, such as those discussed below, will produce the most-reliable cost data with which Evergy can assess the economics of its generation. For this reason, and as further explained below, we ask that Evergy re-issue its all-source RFP using more reasonable parameters.

### **III. Evergy's All-Source RFP Should Be Constructed to Allow Effective Competition.**

We commend Evergy for issuing an all-resource RFP on April 17, 2020 as a way of screening and identifying candidate supply-side resource options under 20 CSR 4240-22.040. However, we have two main concerns with the Company's design and treatment of the RFP. First, Evergy should maximize the opportunities afforded by its all-resource solicitation, including the opportunity to assess the economics of its existing generation resources (as discussed above). Second, as it stands, Evergy's RFP itself will discourage potential bidders and, therefore, is unlikely to lead to a competitive sample of bids on which to draw.

#### **A. Evergy should use its RFP results to assess the economics of its current fleet, letting new and existing resources compete on equal footing.**

The issuance of an all-resource RFP offers two critical opportunities for Evergy to: 1) assess the market for outside energy and capacity and, just as importantly, 2) assess the economics of Evergy's existing resources. Evergy's process appears to address the first opportunity but not the second. Evergy has stated that it will use the RFP's responses to refine assumptions and inputs for the upcoming triennial IRP.<sup>5</sup> But, as discussed in the previous section, Evergy has not committed to procure new resources as a result of the RFP. While we agree that an RFP can be useful to take the temperature of the market for energy and capacity, the bids should not be limited to data points in the upcoming triennial IRP.

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<sup>5</sup> See Evergy Metro response to MPSC Data Request 45.

An all-resource RFP offers the opportunity to assess the economics of existing units compared to new resource options. Utilities such as Xcel Energy in Colorado, Public Service Company of New Mexico (PNM), and Northern Indiana Public Service Company (NIPSCO) have recently issued all-resource RFPs and found significant savings replacing existing coal units with clean energy resources such as solar, wind, battery storage, or solar/storage hybrid projects. After conducting an RFP, NIPSCO, for example, found that replacement of its *entire* coal fleet on an accelerated schedule was the lowest-cost option.<sup>6</sup>

Without an assessment of the economics of existing resources, it is impossible for Evergy to determine whether it is providing the lowest-cost option to its ratepayers. Indeed, if Evergy is not seriously considering letting new resources compete with existing resources on a cost-basis, then potential bidders will be discouraged from participating in the process. This is because preparing a serious bid in response to an RFP requires time and money. A potential bidder is unlikely to devote time and money to prepare a robust bid if it believes that a utility is issuing an RFP for some reason other than a genuine competitive procurement. In this event, the RFP process will be self-defeating by failing to draw sufficient competition, and therefore, foregoing potentially lower-cost resource options for ratepayers. In response to its all-resource RFP, NIPSCO, a utility that serves just 470,000 electric customers, received over 90 bids.<sup>7</sup> PNM, which serves approximately 525,000 customers, issued an all-source RFP and received 345 bids.<sup>8</sup> Xcel (Public Service Company of Colorado), which serves 1.4 million customers, received 430 bids on its all-

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<sup>6</sup> NIPSCO 2018 IRP at 155, available at: <https://www.nipsco.com/our-company/about-us/regulatory-information/irp>.

<sup>7</sup> NIPSCO's 2018 IRP, Executive Summary at 5, available at: <https://www.nipsco.com/docs/librariesprovider11/rates-and-tariffs/irp/irp-executive-summary.pdf>.

<sup>8</sup> N.M. Public Reg. Comm'n, Case No. 19-0195-UT, Testimony of Roger W. Nagel on Behalf of PNM at 10, lines 6-9 (July 1, 2019).

source RFP in 2017.<sup>9</sup> We worry that Evergy is likely to receive fewer bids given the flawed design of its RFP.

**B. Evergy's most-recent RFP will limit competition.**

Even if Evergy were to conduct the aforementioned assessment of its fleet, we are concerned that the all-resource RFP issued on April 17, 2020 would limit the pool of bids for the Company to consider. First, the RFP states that Evergy will give preference to projects that are 50 MW or higher in capacity.<sup>10</sup> Many solar PV or battery storage projects are below 50 MW. Such a limitation is not justified by 20 CSR 4240-22.040, which requires a wide range and diversity of options including renewable and distributed generation technologies. The RFP's arbitrary capacity limit provision thus discourages such resources from bidding, even though they could provide value to ratepayers, especially where smaller resources could be located closer to load. Second, the RFP's response timeline is quite short and will lead to fewer responses. Evergy required a notice of intent to bid within one week and full bid responses within five weeks. In contrast, PNM issued an all-source RFP that gave bidders one month to file a notice of intent and three months to respond to the solicitation,<sup>11</sup> which again led to 345 bids. If Evergy wants a truly competitive sample of bids, it should design the RFP to foster that level of competition.

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<sup>9</sup> Xcel (Public Service Company of Colorado), 2017 All-Source Solicitation 30-Day Summary Report, page 3, available at: <https://www.documentcloud.org/documents/4340162-Xcel-Solicitation-Report.html>; *see also* "Xcel solicitation returns 'incredible' renewable energy, storage bids," Utility Dive, Jan. 8, 2018, available at: <https://www.utilitydive.com/news/xcel-solicitation-returns-incredible-renewable-energy-storage-bids/514287/>

<sup>10</sup> Evergy All-Resource Request for Proposal at 4 (April 17, 2020).

<sup>11</sup> N.M. Public Reg. Comm'n, Case No. 19-0195-UT, Testimony of Roger W. Nagel on Behalf of PNM, Exhibit RWN-5 at 21 (July 1, 2019).



Finally, Evergy could easily improve its dissemination of the RFP to ensure that companies actually learn about it. For example, in contrast to PNM<sup>12</sup> and Xcel,<sup>13</sup> Evergy apparently did not issue a press release regarding its RFP. Moreover, NIPSCO generated a dedicated website to explain its process thoroughly.<sup>14</sup> We encourage Evergy to re-issue the RFP broadly to remove the minimum size threshold and allow for a longer timeline for bidders to respond, while also stating an explicit willingness to compare bids to its existing resources for the benefit of Missouri customers.

#### **IV. Evergy's 2020 IRP Update Portfolios (Alternative Resource Plans) Are Poorly Constructed.**

A guiding principle for the IRP should be the selection of generation resources that are in the best interest of electric customers, regardless of ownership.<sup>15</sup> As with other utilities across the United States, Evergy's coal fleet is facing increasing economic competition from decreasing costs of renewable energy, continued low gas prices, and environmental compliance costs. In the face of these current realities, Evergy must make a reasonable and rigorous assessment of the future of its fleet in order to ensure that its customers are provided with low-cost, low-risk power.

Evergy, like other utilities, has significant leeway in how it conducts modeling, including development and selection of scenarios and input assumptions. At the same time, it must act in the best interest of consumers and take care not to include biases in favor of certain resources. A

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<sup>12</sup> PNM, *News Release: PNM Seeks Proposals for Resources to Meet Generation Capacity Needs* (Oct. 27, 2017), available at: <https://www.pnm.com/10272017-generation-rfp>.

<sup>13</sup> <http://investors.xcelenergy.com/SearchResults?contentSet=Site&sortByDate=false&pageIndex=0&q=rfp>.

<sup>14</sup> NIPSCO, RFP Website, available at: <https://www.nipSCO-rfp.com/>.

<sup>15</sup> See 20 CSR 4240-22.040(1).

true economic assessment must include reasonable assumptions and methodology, discussed below, and allow for existing and new resources to compete with one another on equal footing, all with an eye to the consumer. Below, we recommend several steps that Evergy should take to achieve a more robust plan.

**A. Evergy must fully test the economics of existing units in order to determine a least-cost plan.**

Evergy has chosen to model pre-selected portfolios where unit retirements and replacement resources are fixed. Evergy models these hard-coded portfolios under three “critical uncertain factors”<sup>16</sup> including load growth (low, mid, and high), gas price (low, mid, and high), and carbon regulation (with and without). While we agree that these three factors are indeed critical and their associated risk should be evaluated in the resource plan,<sup>17</sup> Evergy’s modeling is limited because it fails to allow for economic retirements or replacements in response to any of the three factors. For instance, a low gas price and/or a positive carbon price future would make coal units less economic to continue operating. Evergy makes the following claims in its IRP Updates:

Natural gas prices have continued to remain relatively low over the last several years despite prior and current independent gas price forecasts that have indicated expected price increases. Further, we increasingly believe carbon restrictions are likely over the 20-year planning period and our current view is that such carbon restrictions are slightly more likely than not. The combination of these factors could result in a preferred plan that would require a larger magnitude and faster pace of coal generation retirements.<sup>18</sup>

We agree with Evergy’s assessment here, but not the way that it has chosen to conduct its modeling, where each coal unit is operated for a fixed time-period, regardless of market conditions. Indeed, both Evergy Missouri West’s and Evergy Missouri Metro’s preferred plans

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<sup>16</sup> 20 CSR 4240-22.060(5).

<sup>17</sup> As required by 20 CSR 4240-22.060(7).

<sup>18</sup> Evergy Mo. West IRP Annual Update at 13; Evergy Metro IRP Annual Update Evergy West IRP at 7.

involve no coal units retiring for the next 20 years, i.e., through the end of the analysis period, despite the market signals discussed above. Evergy’s methodology is highly problematic because it leaves potentially lower-cost portfolios unexplored—unless by utter and unlikely coincidence Evergy happened to have pre-selected the lowest-cost portfolio. Instead, Evergy should conduct capacity expansion modeling that allows for economic retirement and replacement of resources due to the key factors it has identified; this would produce an objective, optimized portfolio comprised of resources that have been economically justified.

**B. The portfolios arbitrarily limit consideration of renewable resources.**

Astonishingly, given Evergy’s correct understanding of the economic pressure on coal units, both Evergy Metro’s and Evergy Missouri West’s preferred plans include no coal retirements through 2039—the end of the planning period. One aspect of having pre-selected, fixed portfolios is that new renewable resources are also pre-determined. Not allowing for economic unit retirements prevents the potential for lower-cost portfolios that include more replacement resources. Evergy Metro models 16 portfolios, 15 of which have the same level of replacement renewable resources: 13 MW of solar and 407 MW of wind installed by 2022.<sup>19</sup> One of the 16 portfolios includes 100 MW of additional wind when La Cygne 1 is assumed to retire in 2033 (“MCCBW”). Other than that portfolio, no renewables are built after 2022. This is not the mix of resources required by 20 CSR 4240-22.060(3) for an appropriate suite of alternative resource plans. It is unreasonable to fail to consider all resource replacement options to explore the lowest-cost option.

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<sup>19</sup> Evergy Metro IRP Annual Update, Table 17.

### **C. The Company should not overestimate gas prices.**

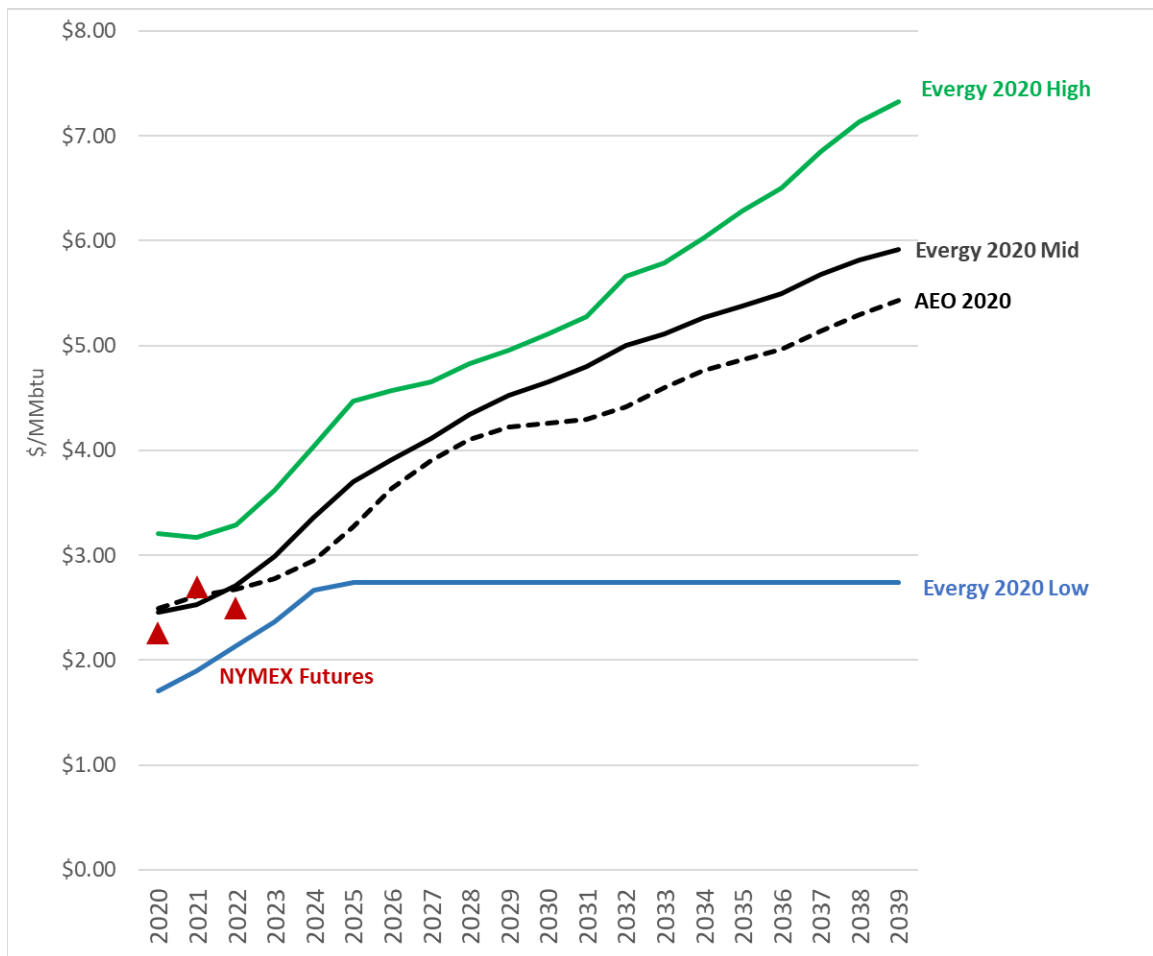
Gas prices are a key input into electric system modeling. Coal units' economics rely on gas prices because those prices heavily influence electricity prices, and gas generators compete with coal generators in the wholesale marketplace (i.e., SPP). A higher gas price would favor increased coal operation because coal generators would: 1) collect more revenues with higher electricity prices, and 2) operate more frequently because gas generation would become relatively more expensive than coal. Thus, an overestimate of gas prices would introduce a bias towards continued coal operation.

Shown in Figure 1, Evergy's mid-gas price is slightly higher than the most recent forecast from the Annual Energy Outlook (AEO) from the Energy Information Administration (EIA).<sup>20</sup> This figure also shows recent market futures for gas that fall between Evergy's mid and low forecasts. This data suggest that Evergy's mid-case forecast is too high and that it should consider a new mid case that is in between the current mid and low cases.

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<sup>20</sup> EIA AEO 2020, available at: <https://www.eia.gov/outlooks/aeo/>.

**Figure 1: Evergy 2017 IRP, EIA 2019 and 2020 Natural Gas Price Forecasts (\$2016/MMBtu)**



Source: Evergy Annual IRP Update Stakeholder Meeting, slide 24; EIA Annual Energy Outlook (2020 reference case), NYMEX futures (May 2020 through December 2022, annual average).

The effect of gas prices on coal generation is seen in Evergy’s modeling of its “mid” and “low” gas prices. The preferred plan for Evergy Missouri West (“WAACA”) does not retire any coal units though 2039 (the latest year in the planning period), but the “WCDCA” plan where a share of Jeffrey Energy Center retires is lower-cost than the preferred plan when assuming Evergy’s low gas price.<sup>21</sup> The plan that retires Jeffrey Energy Center is also the least-cost under

<sup>21</sup> Evergy Mo. West IRP Annual Update at 73.

Evergy's mid-gas price when assuming low load growth and a carbon price. (We discuss load growth and carbon prices below.) As with Evergy Missouri West, Evergy Metro's preferred plan ("MAACA") also does not retire any coal units through 2039. However, the "MEGCA" plan, which retires Hawthorn unit 5 in 2024, is the lowest-cost plan in every scenario that includes Evergy's low gas price.<sup>22</sup> It is possible that further combinations of retirements, such as Hawthorn 5 and La Cygne 1, would be lower-cost, but such portfolios were not modeled. Again, Evergy's pre-selected portfolios artificially limit Evergy's results. Moreover, given recent market data on gas prices (shown above), it is clear that there is more downward than upward risk and, by extension, more competition for coal generation than less. Even under its limited framework, if Evergy were to adjust its mid-case gas prices downward given more up-to-date data, then it is possible that a portfolio that included more coal retirements would be lowest-cost using this updated mid-gas price.

## **V. Evergy Should Not Overestimate the Cost of Solar and Wind.**

Evergy assumes capital costs for renewable resources, including \$1,487 per kW for wind and \$1,200 per kW for solar PV, but it is unclear if these costs are held fixed throughout the planning period.<sup>23</sup> These costs should be updated and checked against other sources, such as Lazard's Cost of Energy and NREL's Annual Technology Baseline (ATB).<sup>24</sup> (Note: it is currently unclear whether Evergy's costs of solar are in DC or AC). More importantly, these capital costs should decline over time in keeping with industry-standard forecasts such as NREL's ATB. Moreover,

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<sup>22</sup> Evergy Metro IRP Annual Update at 69.

<sup>23</sup> Evergy Mo. West and Metro IRP Annual Updates, Table 11.

<sup>24</sup> Lazard Cost of Energy ("LCOE"), available at: <https://www.lazard.com/perspective/lcoe2019>; NREL ATB 2019, available at: <https://atb.nrel.gov/>.

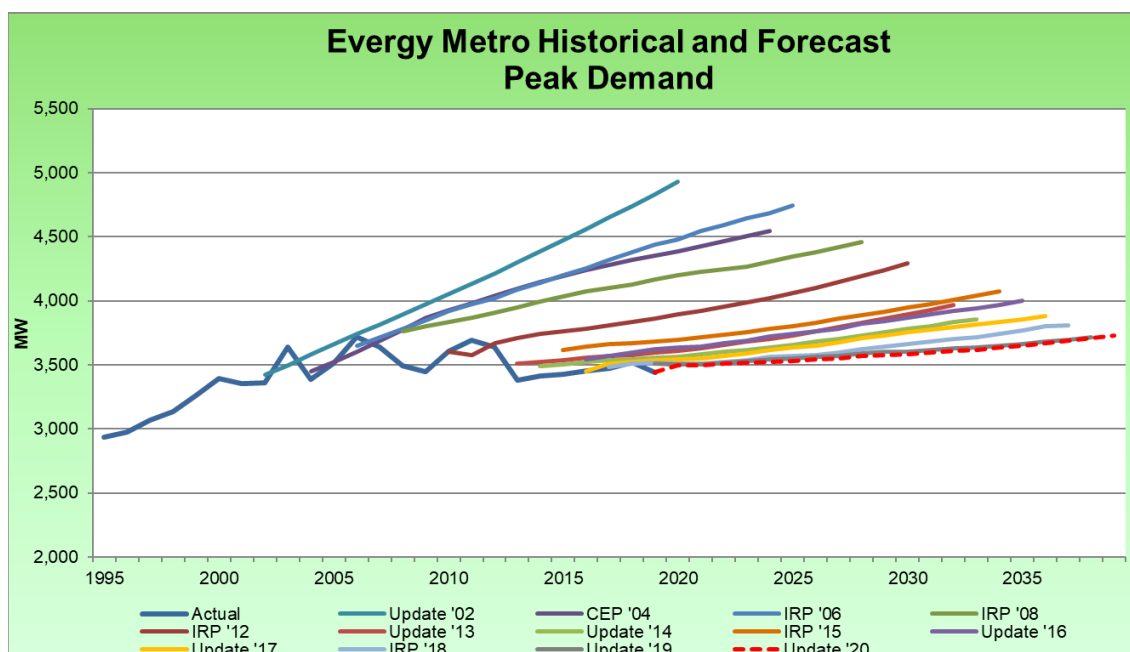
the Company should consider using the “safe harbor” option for acquiring tax credits if a small amount is spent in the year corresponding to the available tax credit.

## VI. Evergy’s Load and Energy Projections Are Unreasonably High.

### A. Evergy’s load has been flat for the last decade or so, and Evergy’s forecasts have, while becoming more realistic over time, consistently overestimated load growth.

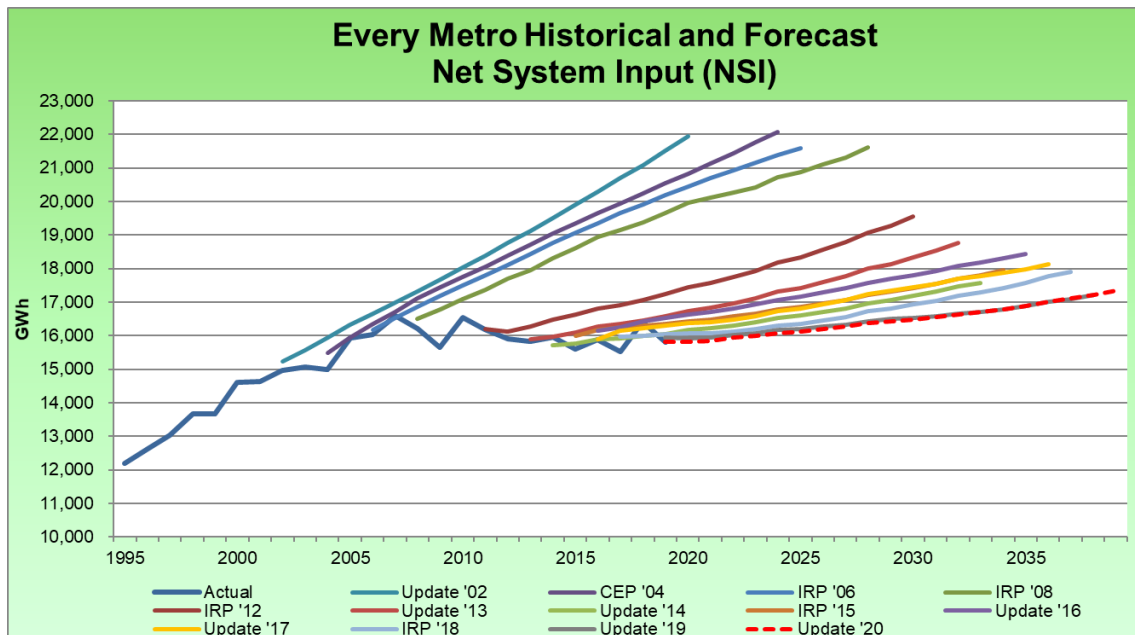
As shown for Evergy Metro (Figure 2 and Figure 3) and for Evergy Missouri West (Figure 4 and Figure 5) below, Evergy’s base-case load forecasts have mostly over-estimated load and energy growth in the medium- to long-term. While the current forecast is more realistic than some of the historic ones, we are concerned that Evergy may be once again over-estimating load growth.

**Figure 2: Evergy Metro Load Forecasts Compared to Actual<sup>25</sup>**

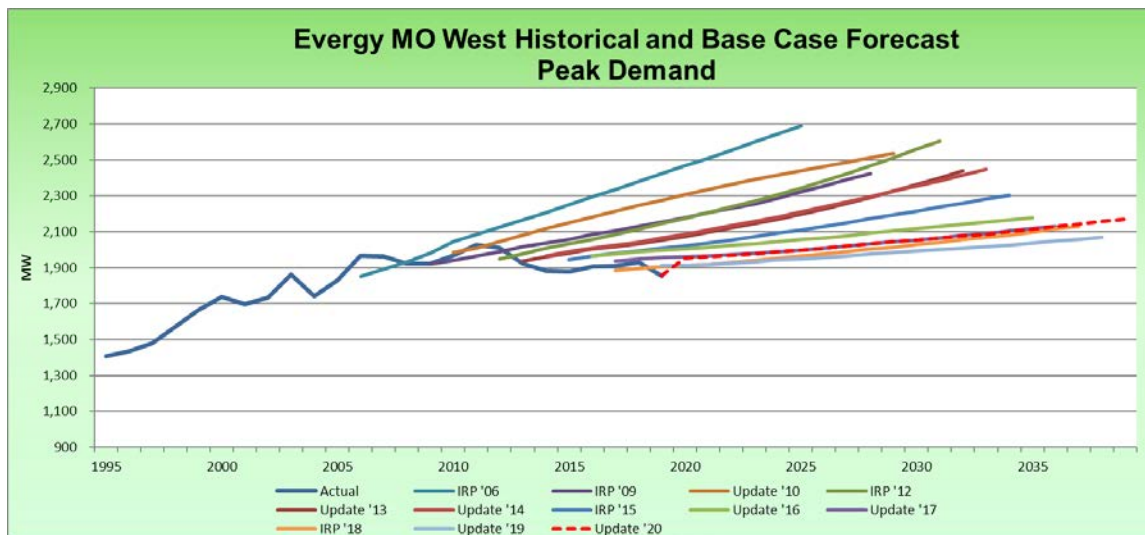


<sup>25</sup> Evergy Metro, Load Forecasting Metro WorkPapers 2020, “PeakNSI Historical Forecast.xlsx.”

**Figure 3: Every Metro Energy Forecasts Compared to Actual<sup>26</sup>**



**Figure 4: Every MO West Load Forecasts Compared to Actual<sup>27</sup>**

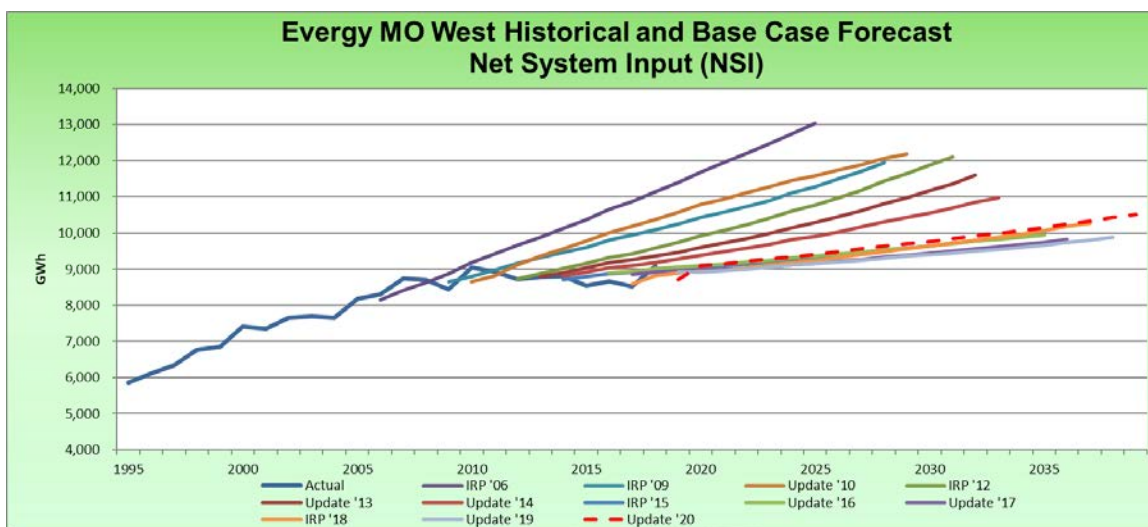


<sup>26</sup> *Id.*

<sup>27</sup> Every Mo. West, Load Forecasting Metro WorkPapers 2020, “PeakNSI Historical Forecast.xlsx.”



**Figure 5: Evergy MO West Energy Forecasts Compared to Actual<sup>28</sup>**



**B. Evergy’s current base case forecast should be its current low load forecast.**

Evergy’s forecasting has become more realistic over time as its more-recent forecasts have mostly projected lower load growth. But there is room for improvement. For Evergy Metro, the current baseline forecast is increasing from 15.8 million MWh of sales in 2020 to just over 17.3 million MWh of sales in 2039.<sup>29</sup> The forecast for the maximum achievable potential (MAP) savings for Evergy Metro’s energy efficiency programs in 2039 is 967,851 MWh or nearly 1 million MWh,<sup>30</sup> which would keep Evergy Metro’s overall sales flat from today’s level of 16 million MWh. The combination of Evergy’s current level of energy efficiency programs plus other economic and demographic factors influencing energy use are what have kept sales flat at 16 million MWh for the eight past years. Moreover, average residential customer energy use has been decreasing because lower energy use per customer has outpaced customer growth. In 2010, Evergy Metro’s residential customers used 12.6 MWh per year on average. In 2019, they used

<sup>28</sup> *Id.*

<sup>29</sup> Evergy Metro, Load Forecasting Metro WorkPapers 2020, “PeakNSI Historical Forecast.xlsx.”

<sup>30</sup> Evergy Metro IRP Annual Update, Table 15.

11.0 MWh per year, an average decrease of 1.5% annually.<sup>31</sup> Meanwhile, the number of customers only grew by 0.9% annually over the same period.<sup>32</sup>

A similar situation exists for Evergy Missouri West. The baseline sales growth goes from 8.7 million MWh to 10.5 million MWh in 2039,<sup>33</sup> with their MAP<sup>34</sup> maxing out at 967 thousand MWh. If pursuing MAP, this would lead to some level of net increase in sales according to Evergy's projection. As we see from the figures above, net load growth has not existed for nearly a decade. These two facts are at odds with each other, and it is because Evergy is overestimating its base scenario load growth.

We recommend that Evergy adjust its current load forecasts such that it replaces current base forecasts with its low forecasts. In turn, Evergy's base-scenario load growth should be its high-scenario load growth.

**C. Evergy should study whether it could achieve even lower load growth with cost-effective energy efficiency.**

Evergy has achieved flat net sales, in part, through energy efficiency programs, and the Company can likely achieve additional customer savings by pursuing additional energy efficiency measures. Simply put, achieving lower load benefits customers by avoiding the need to maintain or build expensive generation resources. In that light, the 2020 IRP Updates would benefit from improved public data disclosure around how Evergy determined its realistic achievable potential (RAP) and MAP energy efficiency projections, including an analysis of the relative costs and benefits of RAP vs. MAP, and estimated costs and benefits based on different energy efficiency cost-effectiveness tests, particularly the Total Resource Cost test, Utility Cost

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<sup>31</sup> EIA Form 861, available at: <https://www.eia.gov/electricity/data/eia861/>.

<sup>32</sup> *Id.*

<sup>33</sup> Evergy Mo. West, Load Forecasting Metro WorkPapers 2020, "PeakNSI Historical Forecast.xlsx."

<sup>34</sup> Evergy Mo. West Report, Table 15.

Test and other tests prescribed by MEEIA. Further, Evergy should explain how RAP and MAP compare to the levels of energy efficiency programs that the Evergy operating companies have been pursuing over the past decade.

In section 7.3.3, Evergy notes its intent to prepare an EM&V study of all demand-side programs and demand-side rates. We recommend that Evergy also pursue an improved public energy efficiency potential study.

## **VII. Evergy Should Adequately Address Carbon Price Risk.**

We are pleased that Evergy modeled some scenarios with a carbon price in order to address carbon regulatory risk. Indeed, Evergy claims that “we increasingly believe carbon restrictions are likely over the 20-year planning period and our current view is that such carbon restrictions are slightly more likely than not.”<sup>35</sup> However, we are concerned that Evergy’s preferred plans show a sharp increase in short-term carbon (and other) emissions and result in higher emissions over the next 20 years. We are also concerned that Evergy’s carbon price is not sufficient to capture future carbon risk, which it contends is likely to occur.

### **A. Evergy’s plans mostly result in higher emissions throughout the analysis period.**

Both Evergy West’s and Evergy Metro’s preferred plans show a substantial increase in the three types of air emissions—CO<sub>2</sub>, NO<sub>x</sub>, and SO<sub>2</sub>—from 2020 to 2039 (the latest year modeled).<sup>36</sup> To our knowledge, Evergy has not reported the emissions for each scenario, only the weighted average emissions that includes all scenarios. Thus, there will be some scenarios where emissions are even higher than what is shown in the IRP documents. From the standpoints of

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<sup>35</sup> Evergy Mo. West IRP Annual Update at 13; Evergy Metro IRP Annual Update at 7.

<sup>36</sup> Evergy Mo. West and Metro IRP Annual Updates, Table 39.

public health and ratepayer risk, it is problematic that Evergy plans to increase air pollution in the next two decades given the already high level of carbon-intensity of its fleet.

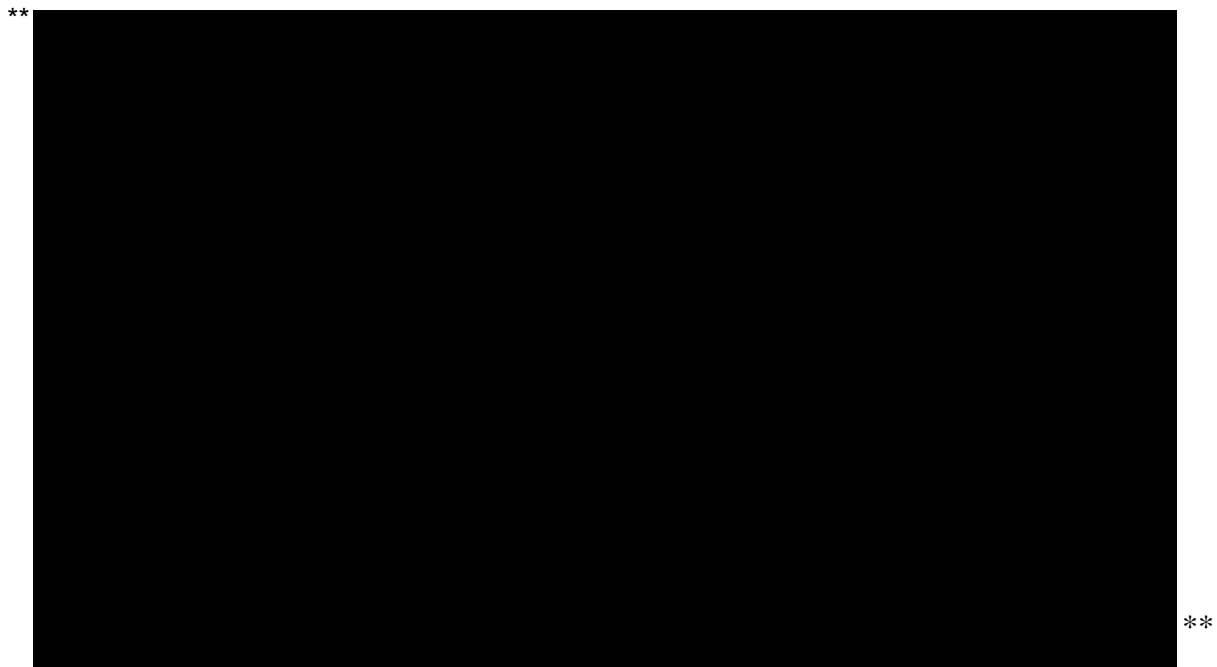
Evergy's projected increase in carbon emissions is in part due to our previously mentioned concerns that Evergy fixed coal retirements in its pre-selected portfolios. In both Evergy Metro's and West's preferred plans, there are no coal units retired through 2039—with or without a carbon price. Figure 6 and Figure 7 below show that, even when there is a carbon price, the generation from Evergy's coal units is \*\* [REDACTED]

[REDACTED]\*\*.<sup>37</sup> This is a nonsensical result for utility planning in the year 2020, and we are aware of no other utility in the United States planning to \*\* [REDACTED]\*\* and, as a result, increase air emissions in 20 years.

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<sup>37</sup> Evergy Mo. West workpapers CONFIDENTIAL, "Evergy Missouri West - Annual Generation & Emissions HC"; Evergy Metro workpapers CONFIDENTIAL, "Evergy Metro - 2020 IRP - Annual Generation & Emissions HC."

**Figure 6: Evergy West Coal Generation in Preferred Plan (“WAACA”) with and without CO<sub>2</sub> – HIGHLY CONFIDENTIAL<sup>38</sup>**

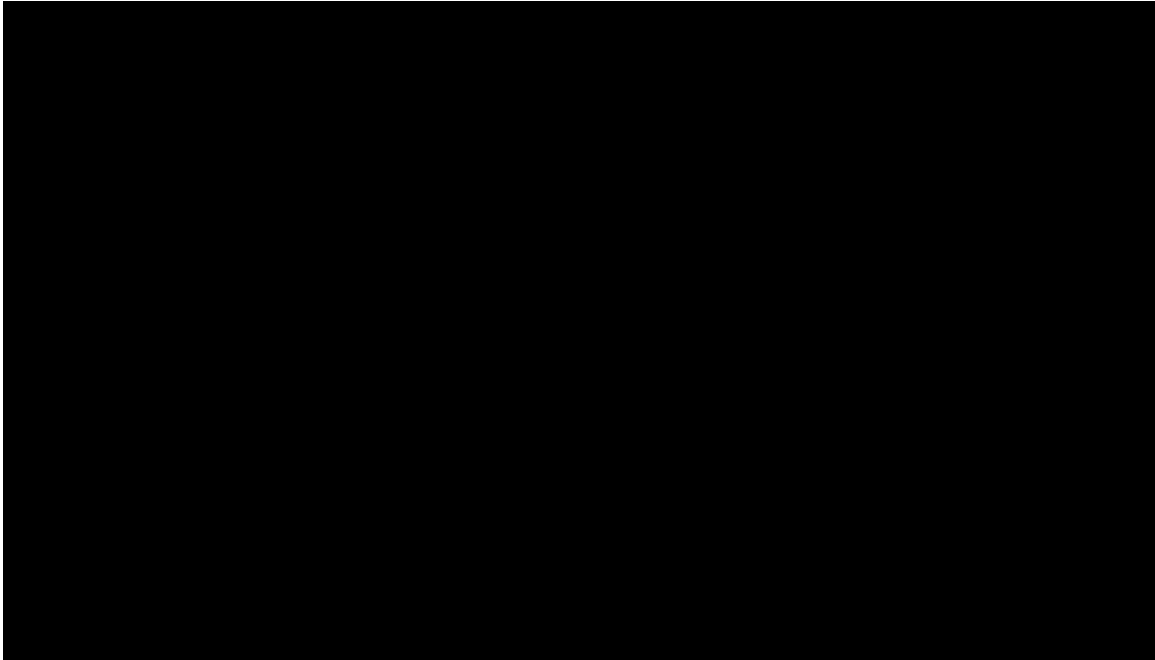


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<sup>38</sup> Evergy Mo. West workpapers CONFIDENTIAL, “Evergy Missouri West - Annual Generation & Emissions HC.” Coal generation is from scenario endpoint 9 (mid load, mid gas, with CO<sub>2</sub>) and endpoint 10 (mid load, mid gas, without CO<sub>2</sub>).

**Figure 7: Evergy Metro Coal Generation in Preferred Plan (“MAACA”) with and without CO<sub>2</sub> – HIGHLY CONFIDENTIAL<sup>39</sup>**

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The fact that a carbon price would still lead to an \*\* [REDACTED] \*\*, and by extension air emissions, in Evergy’s preferred plans is due to two main issues: 1) Evergy’s preferred plans do not retire coal units, no matter how uneconomic they would become under a carbon price; and 2) Evergy is using a low carbon price compared to other utilities—as we discuss below. With or without carbon regulation, higher \*\* [REDACTED] \*\* and emission levels of the magnitude shown above are unrealistic and should not be aspirational given public health and economic concerns.

**B. Evergy should model higher carbon prices.**

Evergy models a carbon price in some of its scenarios that start \*\* [REDACTED]

[REDACTED] \*\*. <sup>40</sup> This forecast does not capture a reasonable amount of carbon

<sup>39</sup> Evergy Metro workpapers CONFIDENTIAL, “Evergy Metro - 2020 IRP - Annual Generation & Emissions HC, “Evergy Metro - 2020 IRP - Annual Generation & Emissions HC.” Coal generation is from scenario endpoint 9 (mid load, mid gas, with CO<sub>2</sub>) and endpoint 10 (mid load, mid gas, without CO<sub>2</sub>).

price risk. Some of the largest utilities in the U.S. are assuming higher carbon prices in their resource planning, including:

- Southwestern Electric Power Company (SWEPCO), a subsidiary of American Electric Power (AEP), in its base case is assuming a carbon price of \$15 per metric ton in 2028 escalating at 5 percent annually thereafter.<sup>41</sup>
- PacifiCorp, a subsidiary of Berkshire Hathaway, models three carbon price forecasts the lowest of which starts at \$10 per ton in 2025, escalating at 12 annually thereafter.<sup>42</sup>
- Duke Energy Indiana, a subsidiary of Duke Energy, models a base case price of \$5 per ton and a higher carbon price scenario that starts at \$10 per ton; both begin in 2025 and escalate by \$3 annually until 2037.<sup>43</sup>

The outcome of the Clean Power Plan and subsequent changes to that plan are still subject to litigation, and there is the potential for further carbon regulation in the medium- to long-term. Major utilities are planning for this significant risk, and Evergy should model a higher carbon price in its base case and include at least one other scenario with a higher price than in the base case.

#### **VIII. Evergy Should Include Public Health Impacts In Its Assessment of Preferred Portfolios in its 2021 IRP.**

An externality caused by generating electricity is negative health impacts. And while many forms of generating electricity can have negative impacts on the public, coal indisputably has the greatest magnitude of negative health impacts per unit of generation. Evergy's annual IRP

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<sup>40</sup> Evergy West and Metro IRP Updates, Table 8 – CONFIDENTIAL.

<sup>41</sup> SWEPCO, 2019 Draft Integrated Resource Plan at ES-2, available at: <http://lpscstar.louisiana.gov/Star/ViewFile.aspx?Id=6b4ee5b8-8afb-4672-808f-be00ccd5a90a>.

<sup>42</sup> PacifiCorp, 2019 Integrated Resource Plan, at 180, available at: [https://www.pacifiCorp.com/content/dam/pcorp/documents/en/pacifiCorp/energy/integrated-resource-plan/2019\\_IRP\\_Volume\\_I.pdf](https://www.pacifiCorp.com/content/dam/pcorp/documents/en/pacifiCorp/energy/integrated-resource-plan/2019_IRP_Volume_I.pdf).

<sup>43</sup> Duke Energy Indiana, 2018 Integrated Resource Plan at 5, available at: <https://www.duke-energy.com/media/pdfs/for-your-home/indiana-irp/duke-energy-indiana-public-2018-irp.pdf?la=en>.

updates fail to assess the pollution impacts of each alternative resource plan, and further fail to assess the various potential public health impacts. To comply with the Missouri IRP rules—which require consideration of pollutants, including air emissions<sup>44</sup>—we encourage Evergy to include quantified consideration of the health impacts of each portfolio in its forthcoming 2021 triennial IRP.

In the selection of a preferred portfolio, Evergy can and should incorporate a range of public health costs into its assessments. Evergy’s customers and other Missourians bear the consequences of the ongoing decision to remain reliant on its coal plants, which, beyond burdening customer bills, pollute air and waterways and negatively impact public health. In evaluating these harms, the first step is to quantify the actual public health impacts. Fortunately, there are numerous resources available to aid in this assessment.

Evergy should evaluate the cost that various air pollutants, including, but not limited to, sulfur dioxide (SO<sub>2</sub>), nitrous oxide (NO<sub>x</sub>), particulate matter (PM), and mercury, have on public health. Coal combustion is one of the main sources of these air pollutants, exposure to which contributes to increased instances of asthma attacks, respiratory infections, hospital admissions, missed school days and work days, and a variety of other health problems.<sup>45</sup> As noted, the preferred plan selected in Evergy’s current annual update includes no coal plant retirements. The table below illustrates the total annual 2018 emissions of SO<sub>2</sub> and NO<sub>x</sub> for each of Evergy’s coal plants:

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<sup>44</sup> 420 CSR 4240-22.060(4)(B)7.

<sup>45</sup> See, e.g., EPA, Sulfur Dioxide Basics, available at: <https://www.epa.gov/so2-pollution/sulfur-dioxide-basics> (summarizing public health harms from SO<sub>2</sub>); see also EPA, Ground-level Ozone Basics, available at: <https://www.epa.gov/ground-level-ozone-pollution/ground-level-ozone-basics#effects> (summarizing public health harms from ozone).



Facility Name	SO <sub>2</sub> (tons) <sup>46</sup>	NO <sub>x</sub> (tons) <sup>47</sup>
Iatan	294.3	2,202.1
Jeffrey Energy Center	1,474.7	4,586.4
Sibley	2,615.9	898.3
Hawthorn	1,089.4	887.2
La Cygne	566.2	2786.9

As discussed, air pollution contributes significantly to increased morbidity and mortality, and modeling can be used to translate air pollution into social cost estimates. One such modeling software is EPA's Environmental Benefits Mapping and Analysis Program - Community Edition (BenMAP-CE), which enables users to estimate health impacts and economic value of changes in air quality and helps analyze the benefits that discrete air pollution reductions can have on human health and the economy.<sup>48</sup> The BenMAP-CE program has been used to assess fossil fuel electricity health impacts and health-related benefits of attaining the reductions in a variety of air pollutants, including ozone and PM<sub>2.5</sub>.<sup>49</sup>

Another tool, the Estimating Air pollution Social Impact Using Regression (EASIUR) model created by the Civil and Environmental Engineering Lab at Carnegie Mellon University, was developed as an easy-to-use tool to estimate the public health cost of emissions in the United States.<sup>50</sup> EASIUR can calculate the location-based marginal-social costs (\$/metric ton) for PM<sub>2.5</sub>,

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<sup>46</sup> 2018 SO<sub>2</sub> emissions in tons according to EPA's Air Markets Program Data.

<sup>47</sup> 2018 NO<sub>x</sub> emissions in tons according to EPA's Air Markets Program Data.

<sup>48</sup> BenMAP-CE, available at: <https://www.epa.gov/benmap>.

<sup>49</sup> EPA, BenMAP-CE Applications: Articles and Presentations, available at: <https://www.epa.gov/benmap/benmap-ce-applications-articles-and-presentations#analyses>.

<sup>50</sup> Jinhyok Heo, Peter J. Adams, H. Gao, "Public Health Costs of Primary PM<sub>2.5</sub> and Inorganic PM<sub>2.5</sub> Precursor Emissions in the United States," *Environmental Science & Technology*, 50 (11), 6061–6070, 2016, available at: <https://www.sciencedirect.com/science/article/pii/S0160412017303586?via%3Dihub>; EASIUR Online Tool available at: <https://barney.ce.cmu.edu/~jinhyok/easiur/>.

SO<sub>2</sub>, and NO<sub>x</sub>. The social costs of pollution for Kansas City, MO, surrounded by four of Evergy's coal-burning plants, are displayed in the table below (\$/metric ton) for the summer season, which show generally that health impacts related to particulates are especially concerning and therefore worthy of serious consideration in Evergy's IRP.

	PM <sub>2.5</sub>	SO <sub>2</sub>	NO <sub>x</sub>
Ground Level	\$236,000/ton	\$24,600/ton	\$3,900/ton

In addition to considering the public health costs from continuing to burn coal, Evergy should consider in its IRP the air quality and public health benefits of investments in replacement resources, including energy efficiency and renewable energy. EPA has developed a set of values for stakeholders to use to monetize the benefits from these investments and models are consistently updated to reflect the public health impacts caused by energy efficiency and renewable energy.<sup>51</sup> For example, Evergy can learn from experience in PJM about the avoided negative health impacts from new offshore wind in the MidAtlantic.<sup>52</sup> Here, models were used to distill the health and climate impacts from specific wind project sites, and the study gave insight into how to assess the positive public health impacts of various renewable resources.

To aid stakeholders in the process, EPA has developed two main quantification tools: the AVOIDed Emissions and geneRation Tool (AVERT) and the CO-Benefits Risk Assessment

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<sup>51</sup> EPA, State and Local Energy and Environmental Program, "Public Health Benefits per kWh of Energy Efficiency and Renewable Energy in the United States: A Technical Report" (July 2019), available at: <https://www.epa.gov/sites/production/files/2019-07/documents/bpk-report-final-508.pdf>.

<sup>52</sup> Buonocore, Jonathan, *et al.*, "Health and climate benefits of offshore wind facilities in the Mid-Atlantic United States," 2016 Environ. Res. Lett. 11 (July 14, 2016), available at: <https://iopscience.iop.org/article/10.1088/1748-9326/11/7/074019/pdf>.

(COBRA) Health Impacts Screening and Mapping Tool.<sup>53</sup> AVERT can be used to model the displacement of emissions at power plants by energy efficiency and renewable energy, while COBRA can be used to quantify and monetize resulting air quality and health impacts. For example, building 1,000 MW of utility-scale solar and 1,000 MW of wind generation in Evergy's service territory results in a regional reduction of 3,682 tons of SO<sub>2</sub>, 3,159 tons of NO<sub>x</sub>, and 242 tons of PM<sub>2.5</sub>.<sup>54</sup> COBRA includes a simplified air quality model to convert air pollution changes to air quality impacts. It translates the estimated air quality changes to health impacts based on the methods, health benefit assumptions, and economic values EPA uses for its own health impact analyses.<sup>55</sup> When Evergy considers building renewable energy to replace its coal burning plants, it should assess the public health benefits through uses of models like AVERT and COBRA.

Lastly, the Company should consider the environmental justice implications associated with its ultimate selection of its preferred portfolio because the communities that are harmed most by persisting reliance on coal-burning power plants are the communities who should benefit the greatest from reduced emissions, coal retirements, and investments in renewable energy. EJSCREEN<sup>56</sup> is EPA's environmental justice screening and mapping tool that combines environmental and demographic indicators based on nationally consistent data and allows utilities to do just that. When run for a particular power plant, EJScreen demonstrates the relative

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<sup>53</sup> EPA, AVERT, available at: <https://www.epa.gov/statelocalenergy/avoided-emissions-and-generation-tool-avert>; EPA, COBRA, available at: <https://www.epa.gov/statelocalenergy/co-benefits-risk-assessment-cobra-health-impacts-screening-and-mapping-tool>.

<sup>54</sup> Calculated on May 15, 2020 using AVERT Web Addition for the Lower Midwest Region, which includes western Missouri, available at: <https://www.epa.gov/statelocalenergy/avert-web-edition>.

<sup>55</sup> See [www.epa.gov/statelocalenergy/co-benefits-risk-assessment-cobra-health-impacts-screening-and-mapping-tool](https://www.epa.gov/statelocalenergy/co-benefits-risk-assessment-cobra-health-impacts-screening-and-mapping-tool).

<sup>56</sup> Available at: <https://www.epa.gov/ejscreen>.

environmental justice concerns for designated areas by “EJ Indexes,” making significant data explicit, especially when reviewing communities that surround facilities and their racial composition, per capita income, and other demographic indicators in relation to various air, water, and waste environmental indicators. Evergy should take care to consider the distinct communities whose health is impacted by the continued operation of Evergy’s coal-burning units.

In sum, we encourage the use of concrete methods to include the analyses of public health impacts in Evergy’s 2021 triennial filing development and portfolio selection process.

#### **IX. Evergy Must Consider Municipal and Corporate Clean Energy Goals in Its Triennial IRP.**

The Commission has required Evergy to “analyze and develop as candidate resource options the satisfaction of municipal and corporate renewable energy goals, particularly the plan of Kansas City which, when enacted into law by ordinance, may become a legal mandate within the meaning of 20 CSR 4240-22.060(3)(A).”<sup>57</sup>

Kansas City has strong history in the areas of climate and clean energy policy. Resolution 180475 was adopted by the City Council of Kansas City in July 2018, stating that “the City has a responsibility to its residents, the country, and the world, to accelerate the transition to 100% clean, renewable energy” and committing the Mayor and Council to “supporting a community-wide goal of 100% clean renewable energy as soon as possible.”

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<sup>57</sup> PSC Order Establishing Special Contemporary Resource Planning Issues, File No. EO-2020-0046, paragraph J (Oct. 30, 2019).

On May 14, 2020, the City Council of Kansas City adopted a new resolution by a 10–1 vote, including support from Mayor Quinton Lucas, strengthening the City’s climate and clean energy commitments. Resolution 200005<sup>58</sup> establishes, among other things:

- That the City “reaffirms that climate protection and greenhouse gas reduction should be key factors in all decisions and actions by the City.”
- A goal of reducing greenhouse gas emissions from municipal operations from 2005 levels by 100% by 2022 for emissions related to electricity consumption.
- A goal of reducing citywide greenhouse gas emissions from 2005 levels by 100% by 2030 for emissions related to electricity consumption.

Many corporations that do business in Evergy’s service territory have corporate renewable energy goals as well. If Evergy has not already, we urge the Company to conduct thorough research among its commercial and industrial customer base to determine those corporate clean energy goals and consider them as required by the Commission’s orders mentioned above. An organization called RE 100,<sup>59</sup> which is a coalition of “[t]he world’s most influential companies, committed to 100% renewable power” is an excellent resource that Evergy could utilize in this research.

Evergy is well-positioned to rapidly increase investments in wind and solar and could easily meet municipal and corporate clean energy goals many times over. Consequently, we view the Commission’s requirement to consider these goals as a bare minimum for renewables deployment but one that Evergy should address in its upcoming triennial IRP.

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<sup>58</sup> Available at: <http://cityclerk.kcmo.org/LiveWeb/Documents/Document.aspx?q=Ehj5P3N4QcbDoSJ5SnSPFiURkr4DxOnEeHx2117h75E%2fAxPuZg%2bAYrjqSqtdVhZuV%2bCfjajl7qVa3%2bwNCEHSA%3d%3d>.

<sup>59</sup> See <http://there100.org/companies>.

Date: May 18, 2020

Respectfully submitted,

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**CERTIFICATE OF SERVICE**

I hereby certify that the above and foregoing document was filed in EFIS on this 18th day of May, 2020, with notice of the same being sent to all counsel of record.

/s/ Henry B. Robertson  
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