

**BEFORE THE PUBLIC SERVICE COMMISSION
OF THE STATE OF MISSOURI**

In the Matter of Evergy Metro, Inc. d/b/a)
Evergy Missouri Metro’s 2023 Integrated) File No. EO-2023-0212
Resource Plan Annual Update Filing)

In the Matter of Evergy Missouri West, Inc.)
d/b/a Evergy Missouri West’s 2023) File No. EO-2023-0213
Integrated Resource Plan Annual Update)
Filing)

COMMENTS OF RENEW MISSOURI

COMES NOW Renew Missouri Advocates d/b/a Renew Missouri, pursuant to the Commission’s August 1, 2023 Order Granting Extension of Time and Request for Expedited Treatment, and submits these comments on Evergy Missouri Metro and Evergy Missouri West’s 2023 Integrated Resource Plan (“IRP”) Annual Update filings.

The below comments were prepared by Renew Missouri staff, in cooperation with our expert Kylah McNabb of Vesta Strategic Solutions, LLC.

I. Introduction

In broad strokes, Evergy’s 2023 annual update outlines the utility company’s plans to delay and reduce the addition of previously announced renewable generation, while accelerating and increasing the addition of new natural gas generation. Renew Missouri believes these changes rest on inaccurate assumptions and are motivated more by profit considerations than a genuine attempt to best serve customers and meet demand in a cost-efficient manner.

There are aspects of Evergy’s 2023 annual update that have Renew Missouri’s full agreement. For example, we support Evergy’s determination to move to a Realistic Achievable Potential Plus (RAP+) scenario, over the previous RAP scenario in the Company’s Demand-Side

Management (“DSM”) planning. Utilities should maintain an aggressive orientation toward DSM in their long-term planning, as the emergence of new technologies and new program delivery frameworks may unlock previously unexpected potential energy and demand savings. However, in the below comments we have chosen to focus on the assumptions around renewable pricing, transmission, and interconnection. We urge the Commission to thoroughly vet Evergy’s assumptions around the interconnection queue, solar energy, and natural gas generation going forward.

II. Transmission Assumptions

a. Generation Interconnection Queue

Transmission planning and expansion plays a pivotal role in shaping the landscape for energy, ensuring efficient, cost-effective, and reliable power resources to utility customers. Part of the transmission planning process involves management and study of those resources projected to come online. This is where the SPP Interconnection Queue comes into play.

Evergy cites the SPP Interconnection queue status and process as a cause for increased risk and justification for delays in bringing projects online.¹ SPP recognized in 2019 that the generation interconnection queue was flooded with entries working to gain access to SPP’s system. SPP chose to initiate process changes on two fronts – first to clear the backlog in the queue and update interconnection procedures going forward to mitigate the potential for future interconnection queue backlogs. This clearing effort over the past 18 months has shown success.

¹ *Evergy Metro Integrated Resource Plan 2023 Annual Update*, EO-2023-0212, June 2023, pg. 31, lines 1-3: “The SPP interconnection queue continues to be highly backlogged, slowing the ability of new projects to assess their economic viability considering transmission upgrade costs, and increasing their lag time to achieve commercial operation.”

In fact, SPP is halfway completed with their Generation Interconnection study backlog mitigation effort enabling over 14.5 Gigawatts of new generation to be installed across the SPP footprint by 2027.² SPP continues to make progress in adapting and making the Generation Interconnection process more efficient to enable projects to come online in a timely manner. Stakeholders recently approved a move to consolidate language across multiple business practices into a single stand-alone GI Manual, with the intent to make further process efficiency updates.³ The Southwest Power Pool recognized the generation interconnection backlog issue and took decisive action to address it with process modifications. Their plan, as approved by FERC in January 2022, continues and is on track as proposed to fully clear the generation interconnection queue backlog by the end of 2024.⁴

Simply stated, the backlog of SPP's generation interconnection queue can no longer be considered an issue as it once was and is not a source of risk to be cited by Evergy for any part of their Integrated Resource Plan.

b. Market Outlook and SPP's Integrated Transmission Planning Process Futures Discussion

The integrated transmission planning process for SPP is a result of a stakeholder-driven method of development based on dues-paying members of SPP sitting on respective stakeholder committees. A result of this construct is a decision framework heavily influenced and steered by SPP members, such as Evergy, in certain directions. This is evident in the level of the various resources determined to be part of the SPP ITP Futures Scenarios, particularly in Future 2 and

² Southwest Power Pool. (2023, July 12). *Southwest Power Pool achieves milestone in Generator Interconnection study backlog mitigation* [Press release]. <https://www.spp.org/news-list/southwest-power-pool-achieves-milestone-in-generator-interconnection-study-backlog-mitigation/>

³ Approval of RR493 at July 2023 SPP MOPC: <https://www.spp.org/Documents/69744/2023-07-10%20MOPC%20Minutes.pdf>

⁴ Southwest Power Pool. (2023, July 12). *Southwest Power Pool achieves milestone in Generator Interconnection study backlog mitigation* [Press release]. <https://www.spp.org/news-list/southwest-power-pool-achieves-milestone-in-generator-interconnection-study-backlog-mitigation/>

Future 3 with increased levels of renewable resources.⁵ Despite stakeholder feedback that the proposed levels of solar and wind resources to be considered in Future 2 and Future 3 should be considerably higher, SPP ultimately kept installation levels moderate. This leads to an underestimation of solar and wind resource potential, especially in the near-term timeframe.

Evergy even cites the fact that Future 3 Scenario is informative and utilizes its market pricing, yet chooses not to utilize the Futures 3 data for the forecast of resources.⁶ This is a disjointed approach and a misinformed path, enabling Evergy to manipulate SPP's ITP data to their liking. Evergy's use of SPP's Future 3 Scenario for their Carbon Restrictions approach shows that Evergy believes a deep decarbonized future is possible, if not likely. Evergy should utilize SPP's ITP Future 3 Scenario for all market price forecasts and resource addition considerations for their 2023 Integrated Resource Plan.

c. Transmission Congestion

The addition of transmission congestion considerations by Evergy in the 2023 Annual Update provides a mixed signal for its pricing and risk justifications. It is extremely shortsighted to assume that no new or upgraded transmission would be built in the long-term timeframe between now and 2042. Evergy even goes so far as to plainly state that “models are likely to overestimate future congestion,…”⁷ Evergy overlooks the substantial resources being put towards transmission development under the Bipartisan Infrastructure Law and other national programs directed at advancing transmission buildout in the short term.⁸ At the SPP level, the

⁵ SPP 2022 Operating Plan. August 19, 2021.

<https://www.spp.org/Documents/65211/2022%20Operating%20Plan%2020210707.pdf>.

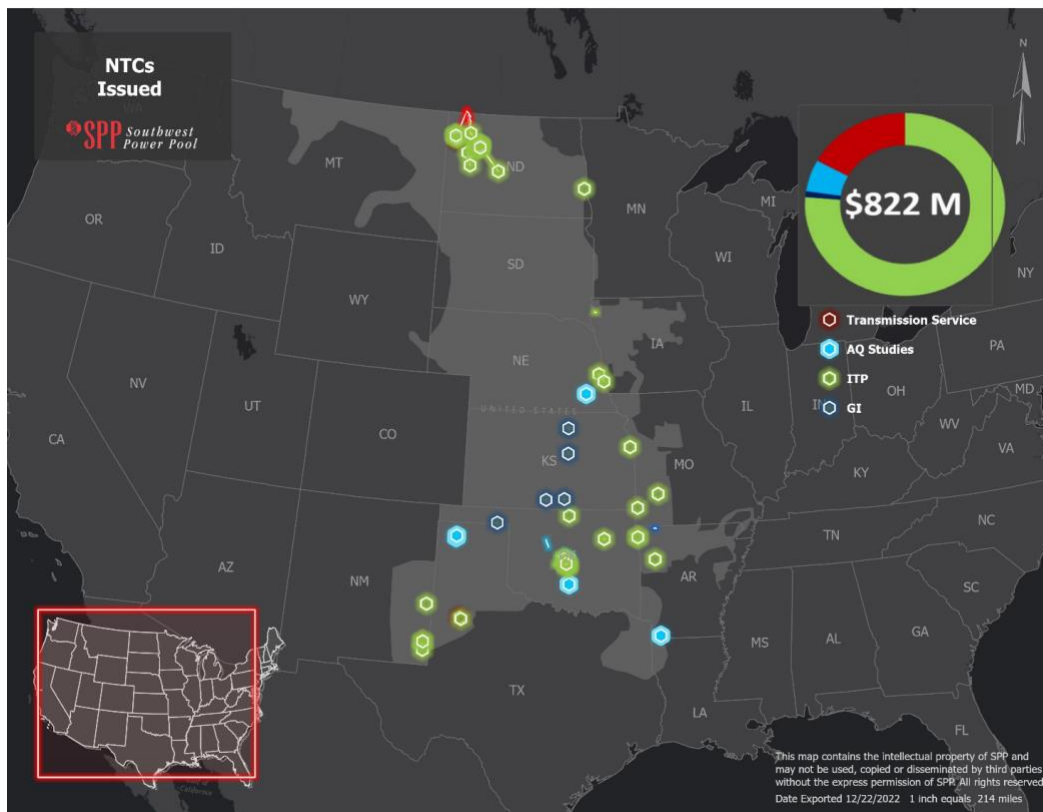
⁶ Page 14, Evergy IRP 2023 Annual Update. June 2023.

⁷ Id. at 22.

⁸ The White House. *FACT SHEET: The Biden-Harris Administration Advances Transmission Buildout to Deliver Affordable, Clean Electricity* [Press Release]. (2022, November 18).

<https://www.whitehouse.gov/briefing-room/statements-releases/2022/11/18/fact-sheet-the-biden-harris-administration-advances-transmission-buildout-to-deliver-affordable-clean-electricity/>.

2023 SPP Transmission Expansion Plan Report cites multiple upgrades approved for construction with Notices to Construct (NTCs) issued,⁹ shown in the image below:



SPP also recognizes the impact of congestion on rising costs and is taking steps to address it. Four of the top ten congested flowgates in SPP will be addressed as part of their regional transmission plan, with future ITP assessments looking to address the other congested flowgates.¹⁰

Energy is lacking in providing a consistent approach to risk assessment with its disjointed application of SPP’s Integrated Transmission Planning Futures in their 2023 IRP Annual Update. This enables Energy to show increased risk leading to resource decisions that are not in the best

⁹ 2023 SPP Transmission Expansion Plan Report Version 1.1, Page 9. Published January 17, 2023.

¹⁰ United States Department of Energy, *National Transmission Needs Study – Draft for Public Comment*. February 2023. pg. 68.

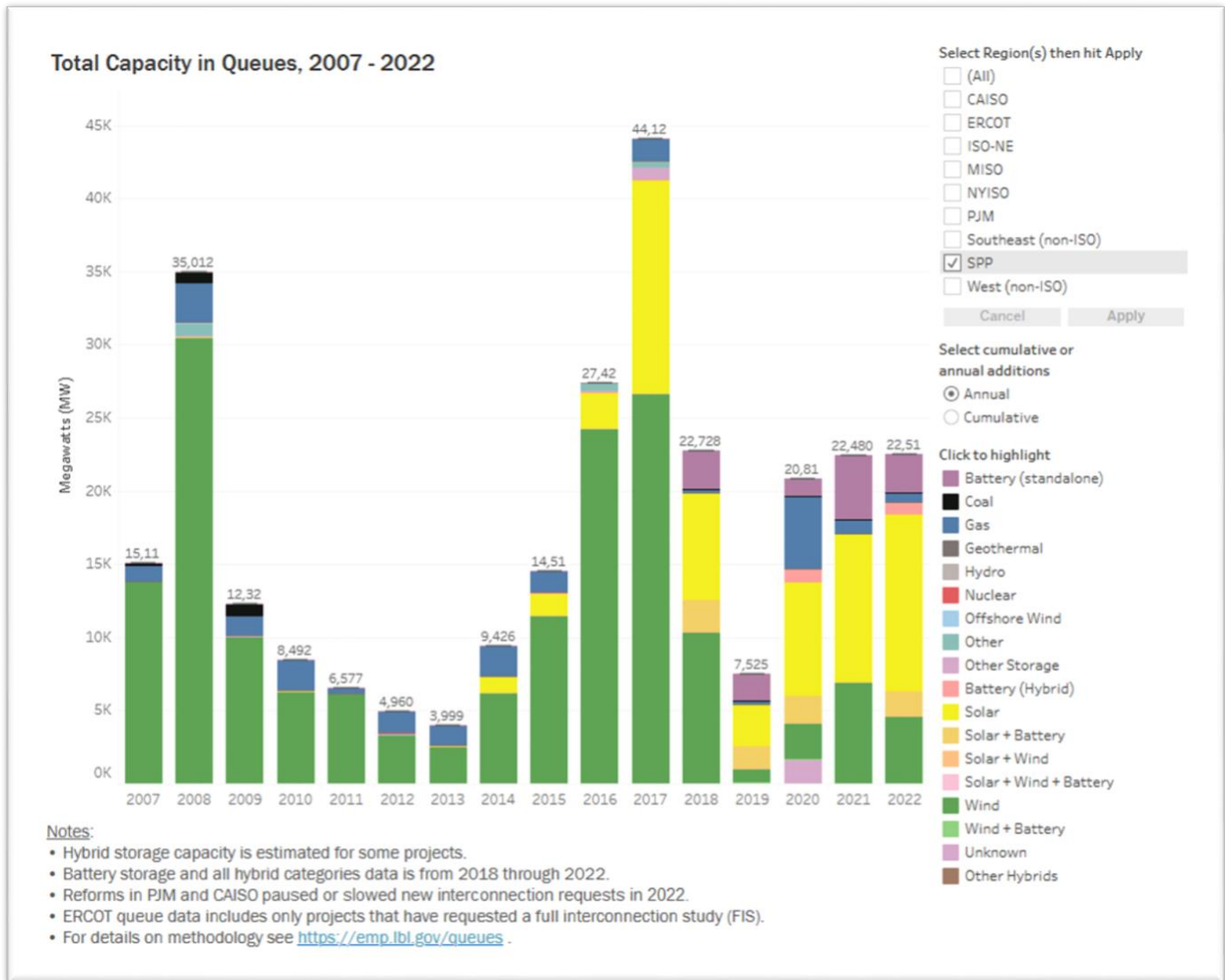
interest of their customers. In addition, Evergy provides an inaccurate picture of the transmission interconnection queue status, making the queue backlog more of an issue than what it really is. Evergy manipulates data provided by SPP to try and justify unnecessary levels of risk, leading to additional costs. This is unnecessary and not a burden that should be borne by Evergy customers.

I. Renewable Generation Assumptions

a. *Solar and Wind Delays*

Table 4: Evergy-Level Preferred Plan Comparison shown on Page 6 of the Evergy Metro IRP 2023 Annual Update (June 2023) illustrates in black and white the stark reduction in renewable energy resource additions. Not only are the overall Solar Additions reduced by over 20% from a total of 3,250MW as planned in the 2021 Triennial IRP down to 2,550MW in the 2023 IRP Annual Update, but the additions are substantially delayed with the majority of installations taking place after 2028. The Table also shows the delayed installation of Wind Resource Additions, noted to take place further into the 2030 timeframe. These considerations are in stark contrast to the trends seen in SPP's interconnection queue. Since 2016, solar projects have outpaced wind projects in entering the interconnection queue, highlighting the shift in the market as the cost of solar technologies continues to decrease. The chart from Lawrence Berkley National Lab (LBNL) below highlights this trend.¹¹

¹¹ Lawrence Berkley National Lab. *Generation, Storage, and Hybrid Capacity in Interconnection Queues*. 2023, August 30. <https://public.tableau.com/app/profile/berkeley.lab.emp/viz/USInterconnectionQueues2022/Queues>.



Once again, Eversource is not utilizing the best resource market data to account for what trends are truly happening in resource development.

b. Impact of the Federal Inflation Reduction Act

In August 2022, the U.S. Congress passed the Inflation Reduction Act (“IRA”), representing a historic investment in American energy, particularly in the solar sector. The legislation altered and extended both the Investment Tax Credit (“ITC”) and Production Tax Credit (“PTC”) for solar, which have key impacts on the ways that utilities can utilize solar tax credits. Renew Missouri believes there are certain deficiencies in Eversource’s assumptions around

solar tax credits that may have important implications for the Company’s long-term resource planning.

i. PTC modeling deficiencies

In November 2022, the IRS issued updated guidance on the PTC for wind,¹² closed-loop biomass, geothermal energy, and solar energy up to 2.75 cents per kilowatt hour¹³ on the sale of electricity produced in any qualified facility placed in service after December 31, 2021.

Table 52: Summary of IRA Tax Benefits

Qualification Criteria	ITC Value (% of qualified project cost)	PTC Value (% of historical maximum)
IRA Baseline tax incentive	6% of qualified spend	20% PTC/MWh (\$5.20/MWh)
Prevailing Wages & Apprenticeship	5x ITC multiplier (30% ITC on qualified spend)	5x PTC multiplier (100% PTC) (\$26/MWh)
Domestic Content	+10% ITC Bonus	+10% PTC Bonus
Energy Communities	+10% ITC Bonus	+10% PTC Bonus

It appears that modeling completed by the company only looked at applying the PTC to solar systems, but did not adjust this modeling for the updated IRS guidance. Table 52: Summary of IRA Tax Benefits incorrectly details the PTC amount per MWh at the levels published prior to issuance of the IRS guidance late last year. The table has \$5.20/MWh which should be \$5.5/MWh calculated from the 55-cent base credit for any project that does not meet labor

¹² Internal Revenue Service. “IRS Announcement of Renewable Electricity Production Credit Amounts for Calendar Year 2022.” IRS.Gov, 29 Nov. 2022. www.irs.gov.

¹³ Department of Energy, Energy Office, Solar Technologies. “Federal Solar Tax Credits for Businesses.” August 1, 2023. www.energy.gov/eere/solar/federal-solar-tax-credits-businesses.

requirements. Additionally, the updated 5x PTC multiplier rate is incorrect in the table at \$26/MWh instead of the proper value at \$27.5/MWh.

The DOE chart¹⁴ below displays the updated credit amounts coming from the IRS announcement issuing guidance on the updated ITC and PTC values for 2023 through 2033. The tax credit values included in Table 52 differ from the values being shown in this chart for 2023.

Summary of Investment Tax Credit (ITC) and Production Tax Credit (PTC) Values Over Time

			Start of Construction						
			2006 to 2019	2020 to 2021	2022	2023 to 2033	The later of 2034 (or two years after applicable year ^a)	The later of 2035 (or three years after applicable year ^a)	The later of 2036 (or four years after applicable year ^a)
ITC	Full rate (if project meets labor requirements ^b)	Base Credit	30%	26%	30%	30%	22.5%	15%	0%
		Domestic Content Bonus				10%	7.5%	5%	0%
		Energy Community Bonus				10%	7.5%	5%	0%
	Base rate (if project does not meet labor requirements ^b)	Base Credit	30%	26%	6%	6%	4.5%	3%	0%
		Domestic Content Bonus				2%	1.5%	1%	0%
		Energy Community Bonus				2%	1.5%	1%	0%
	Low-income bonus (1.8 GW/yr cap)	<5 MW projects in LMI communities or Indian land				10%	10%	10%	10%
		Qualified low-income residential building project / Qualified low-income economic benefit project				20%	20%	20%	20%
	PTC for 10 years (\$2022)	Full rate (if project meets labor requirements ^b)	Base Credit			2.75 ¢	2.75 ¢	2.0 ¢	1.3 ¢
Domestic Content Bonus						0.3 ¢	0.2 ¢	0.1 ¢	0.0 ¢
Energy Community Bonus						0.3 ¢	0.2 ¢	0.1 ¢	0.0 ¢
Base rate (if project does not meet labor requirements ^b)		Base Credit			0.55 ¢	0.55 ¢	0.4 ¢	0.3 ¢	0.0 ¢
		Domestic Content Bonus				0.1 ¢	0.0 ¢	0.0 ¢	0.0 ¢
		Energy Community Bonus				0.1 ¢	0.0 ¢	0.1 ¢	0.0 ¢

a "Applicable year" is defined as the later of (i) 2032 or (ii) the year the Treasury Secretary determines that there has been a 75% or more reduction in annual greenhouse gas emissions from the production of electricity in the United States as compared to the calendar year 2022.
b "Labor requirements" entail certain prevailing wage and apprenticeship conditions being met.

¹⁴ Id.

ii. PTC vs. ITC Modeling for Solar Resources

While the company needs to model the higher valuation for the solar PTC as described above, it would be prudent to model the ITC for solar facilities based on the current max capacity factor available with utility scale PV systems today. The company listed the Max Capacity Factor for solar to be at 26%. NREL's future projections for utility scale PV ranges from 21-34% for 2023 (based on 2023 data)¹⁴ and does fall within the acceptable range to elect for the PTC. While it is acceptable to elect for the PTC at the current levels a higher capacity factor will only be achievable with cutting edge and high performing PV panels.

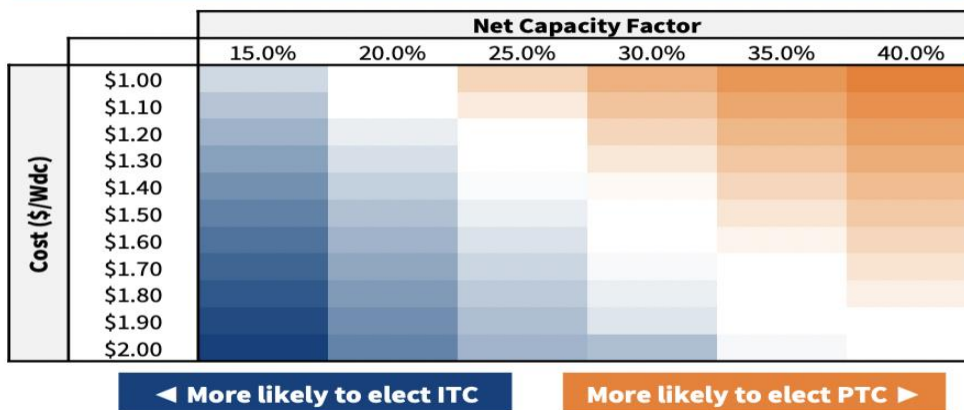
Additionally, Berkeley Lab's "Utility-scale solar, 2022 edition" report indicated that project-level capacity factors varied widely from 9-35% with a sample median of 24%.¹⁵ These real-world results vary from the NREL projections and with that in mind we would encourage leaning towards a more conservative estimate for the PV capacity factor. These sources are looking at national trends and are taking a snapshot of systems operating throughout multiple RTOs. When looking specifically at the Southwest Power Pool's long-term annual average solar resources the 26% max capacity factor presented by the company is likely higher than the actual output will be. Until the capacity factor for solar improves to be at or above 30%, it may be more economically beneficial for the company to elect for the ITC for solar projects. For this reason, Evergy should, at the very least, model using the ITC for its planned solar additions in its next IRP filing.

¹⁴ "Electricity Annual Technology Baseline (ATB) Data Download." *National Renewable Energy Laboratory*, NREL, 28 June 2023, atb.nrel.gov/electricity/2022/data.

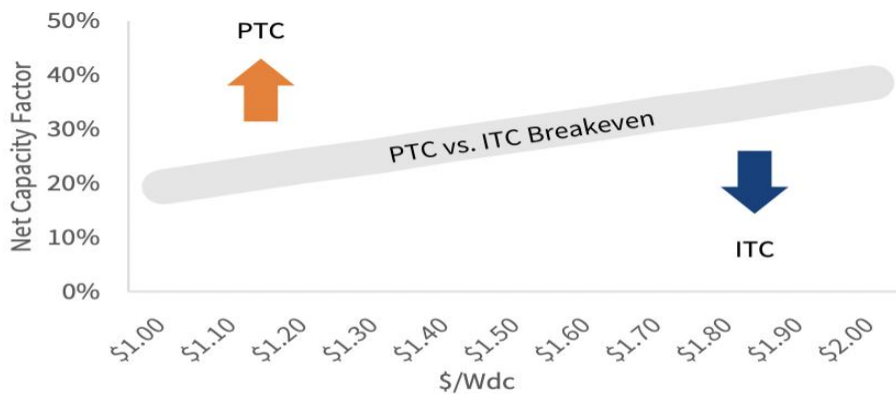
¹⁵ Electricity Markets & Policy, Berkeley Lab. "PV Capacity Factors." *PV Capacity Factors*, Electricity Markets and Policy Group, 20 Sept. 2022, emp.lbl.gov/pv-capacity-factors.

Furthermore, an investment firm, CohnReznick Capital Markets Securities LLC, analyzed the Solar PTC vs. ITC Tax Equity based on the Capacity Factor of the generating facility in August of last year. As is evident in the tables below,¹⁶ the PTC makes more sense to be used for most projects with a capacity factor at or above 30%. With the current max capacity factor for solar being modeled at 26%, it would be worthwhile to model the addition of solar resources under the ITC as it may be more beneficial for new solar facilities at the current capacity factor.

Solar PTC vs. ITC Comparison Chart



Solar PTC vs. ITC Breakeven Line

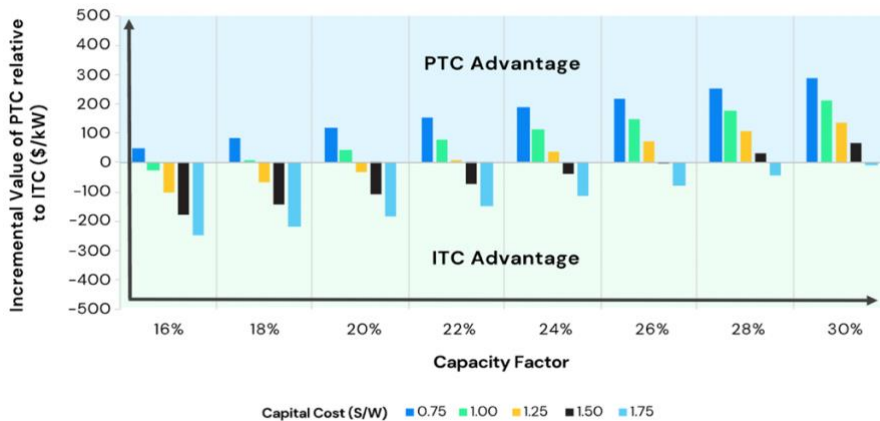


¹⁶ “Inflation Reduction Act: Tax Credit Monetization Analysis.” <https://Cohnreznickcapital.Com>, CohnReznick Capital, 1 Aug. 2022. <https://cohnreznickcapital.com/wp-content/uploads/2022/08/Inflation-Reduction-Act-Tax-Credit-Monetization-Analysis.pdf>

Additionally, the firm provides guidance that “solar projects with an NCF greater than 25% and build cost less than \$1.50/Wdc may benefit from choosing the PTC over ITC Tax Equity.” Based on costs included in Table 10: Supply-Side Technology Options, the company has detailed 2023 IRP costs for Solar at \$1,780/kW. For comparison, this would come in at \$1.78/Wdc which would be 28 cents above the recommended build cost price point. If the company was able to maintain the 2022 IRP prices for solar at \$1.500/kW, they would be exactly at the upper limit for the build cost instead of being well above the target.

ICF also evaluated the benefits of applying for PTC vs. ITC. Evergy has a discount rate at 7.54% and is close to the discount rate of 8% included in the analysis in the figure below.¹⁷ With the solar capital cost coming in at \$1.78/W the figure below would indicate that at 26% the ITC has an advantage. This advantage decreases as the capacity factor increases over time, but the advantage also increases if the system underperforms below the 26% max capacity factor.

Figure 1: Relative benefit of PTC over ITC – Sensitivity to capacity factor and investment cost (for projects meeting labor requirements but no bonus)



Source: ICF
 Note: Assumes PTC increases at 2.1% rate of inflation, project COD of 2025, solar degradation of 0.5%, and discount rate of 8% (used to calculate NPV of PTC benefit over 10 years).



¹⁷ Batra, Lalit, et al. “Solar Economics: The PTC vs. ITC Decision.” ICF, ICF, 15 Dec. 2022. www.icf.com/insights/energy/solar-economics-ptc-vs-itc.

It will be most advantageous for Evergy to update the IRP for both PTC and ITC tax incentives through 2030. The PTC will likely perform better for PV in later years as the capacity factor improves. But since we are not at that point, the company should model out the ITC for new solar additions through 2030. We would strongly encourage the company to update the modeling done throughout the IRP for new solar resources to include the ITC and to update the PTC modeling at the corrected incentive levels.

WHEREFORE Renew Missouri submits these comments and asks that they be made part of the record in this case.

Respectfully Submitted,

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