### Exhibit No. 5

Ameren – Exhibit 5 Mike Granowski Surrebuttal Testimony File No. EA-2022-0245

005 Exhibit No.:

> Issue(s): Other Relevant

Regulatory Commissions' Viewpoints; Risk of Delay Analysis

Witness: Mike Granowski Type of Exhibit: Surrebuttal Testimony

Sponsoring Party: Union Electric

Company

File No.: EA-2022-0245 Date Testimony Prepared: January 18, 2023

MISSOURI PUBLIC SERVICE COMMISSION

FILE NO. EA-2022-0245

SURREBUTTAL TESTIMONY

**OF** 

MIKE GRANOWSKI

ON

**BEHALF OF** 

**UNION ELECTRIC COMPANY** 

d/b/a Ameren Missouri

Chicago, Illinois January 2023

#### **TABLE OF CONTENTS**

1.	PURPOSE OF TESTIMONY	.2		
II.	AMEREN MISSOURI'S RENEWABLE DEVELOPMENT PLAN IS	3		
NOT U	JNPRECEDENTED	.2		
III.	PUBLIC BENEFITS OF RENEWABLE RESOURCES	.5		
IV.	RISK MITIGATION EFFECT OF RENEWABLE RESOURCE			
DEPLOYMENT7				
V.	CONCLUSION	12		

#### SURREBUTTAL TESTIMONY

#### **OF**

#### MIKE GRANOWSKI

#### **FILE NO. EA-2022-0245**

1	Q.	Please state your name and business address.
2	A.	Mike Granowski, 300 North Lasalle St. Suite 2000 Chicago, IL 60654.
3	Q.	Did you file Direct Testimony in this proceeding?
4	A.	No, I did not. However, a report prepared under my supervision and direction in
5	suppo	ort of Ameren Missouri's June 2022 Preferred Resource Plan was included in the
6	Comp	pany's direct case filing, as Appendix A to Schedule MM-D2 to Company witness
7	Matt	Michels' Direct Testimony. I address that report later in my Surrebuttal Testimony.
8	Q.	By whom are you employed and what is your position?
9	A.	I am employed by Roland Berger LP as Director in the Regulated & Infrastructure
10	pract	ice. Roland Berger's Regulated & Infrastructure practice has significant experience
11	and e	expertise in generation planning, including with the significant implementation of
12	renev	vable energy resources being undertaken across the U.S. and the world. Our clients
13	inclu	de the largest utilities in the world, national and state level governments, renewable
14	and e	nergy technology investors, renewable developers, and equipment manufacturers.
15	Q.	Please describe your educational background and employment experience.
16	A.	I have BS degrees in nuclear engineering and physics from the University of
17	Wisc	onsin and an MBA from the University of Iowa. I was a power plant engineer with
18	Com	nonwealth Edison for 5 years at Quad Cities Nuclear Station and have been a

1 management consultant to the energy industry for a variety of firms since then for over 25 2 years. My *curriculum vitae* is attached to this testimony as Schedule MG-S1. 3 Q. What are your responsibilities in your current position? 4 In my current position, my primary duties and responsibilities include providing A. 5 strategy, transaction, and regulatory support in the electric and natural gas industries. I 6 serve multiple utilities, investors, and original equipment manufacturers in the space. In 7 the course of these duties, I have supported multiple resource planning efforts for US 8 utilities and am intimately familiar with the processes, tools, and issues surrounding 9 integrated resource planning. 10 T. **PURPOSE OF TESTIMONY** 11 What is the purpose of your Surrebuttal Testimony in this proceeding? Q. 12 A. The purpose of my testimony is to demonstrate two points: that Ameren Missouri's 13 renewable development plans, including the development of the Boomtown Solar Project ("the Project"), are not "unprecedented," and that there are tangible risks to delaying 14 15 Ameren Missouri's transition to a cleaner generation portfolio. II. AMEREN MISSOURI'S RENEWABLE DEVELOPMENT PLAN IS NOT 16 17 **UNPRECEDENTED** Is Ameren Missouri making an "unprecedented shift to renewables," as Staff 18 Q. 19 witness Fortson claims in his rebuttal testimony? No. 20 A. 21 On what do you base your opinion that Ameren Missouri's implementation of Q. 22 renewables at this time, and as planned, is not "unprecedented"?

<sup>&</sup>lt;sup>1</sup> Fortson Rebuttal Testimony, p. 4, l. 18.

A. Based on my experience with the implementation of renewable energy resources occurring across the U.S. and the world, including the fact that there are numerous utilities that do not have a statutory mandate or unfulfilled renewable portfolio standard ("RPS") to serve more of their load with renewables who are nonetheless adding renewable energy resources.

## Q. How did you determine that numerous utilities without such mandates or RPS requirements are adding renewable energy resources?

A. Roland Berger conducted research relating to renewable energy resource development in the U.S. That research indicates that of the 387 utilities in the United States with decarbonization commitments,<sup>2</sup> 41 utilities are regulated investor-owned utilities ("IOUs") operating in states without state-level decarbonization targets and without unmet RPS targets.<sup>3</sup> These 41 utilities are therefore in similar circumstances to Ameren Missouri relative to renewable mandates and unmet RPS requirements and can serve as useful comparison points to determine if Ameren Missouri's proposed renewable development plan is in fact "unprecedented."

#### Q. Are those identified 41 utilities developing renewable resources?

A. Yes. These 41 utilities have received approval for 3,699 megawatts ("MW") of solar generation and 6,001 MW of wind generation from their respective state regulatory commissions, above and beyond their state RPS requirements.

<sup>&</sup>lt;sup>2</sup> Smart Electric Power Alliance "Utility Carbon-Reduction Tracker"

<sup>&</sup>lt;sup>3</sup> Please see Schedule MG-S2 for a list of the 41 comparable utilities

10

11

12

13

14

15

16

17

18

19

	Mike Granowski
1	Q. Of those 41 utilities, do any of them find themselves in situations like Ameren
2	Missouri, with an existing fleet of primarily fossil-based resources undertaking a
3	transition to a cleaner generating portfolio, despite no specific legal requirement to
4	do so?
5	A. Yes. While the specific circumstance of each individual utility and jurisdiction are
6	unique, and the precise conditions vary to some degree across the industry, it is evident
7	that themes are emerging in other state regulatory commission approvals of renewables
8	like those Ameren Missouri is proposing to add. Based on my research, other utilities, with

- Transitioning away from fossil generation facilities;
- Developing renewable generation facilities, sometimes with fossil resource facilities in parallel;

the support of their state commissions, have a different viewpoint of "need" than the

viewpoint reflected in the rebuttal testimony of the Missouri Public Service Commission

Staff. As evidenced by multiple decisions from eight different jurisdictions,<sup>4</sup> Ameren

- Using Integrated Resource Plan analysis as guidance and support for intended development and timing; and
- Developing renewables beyond immediate or "just in time" capacity needs as measured by their planning reserve margins at a given point in time.

Indiana South Dakota North Dakota Wisconsin Michi

Missouri's peer utilities are:

<sup>&</sup>lt;sup>4</sup> Indiana, South Dakota, North Dakota, Wisconsin, Michigan, Oklahoma, Arkansas, Mississippi. I selected these eight jurisdictions because of their geographic and other similarities to Ameren Missouri.

1	Q. For these approved projects, what was the rationale used by their state
2	commissions when those commissions approve the projects?
3	A. Across the multiple cases, these state commissions commonly referenced two
4	themes in their rationale for approval:
5	Public benefits of renewable resources; and
6	Risk mitigation effects of renewable resource deployment.
7	In sections III and IV below, I will discuss relevant examples from the eight selected
8	jurisdictions where one of these two rationales was referenced in the approval of renewable
9	energy projects, and I will discuss the specific work Roland Berger completed for Amerer
10	Missouri, as referenced earlier, related to the risk of delayed renewable resource
11	deployment.
12	III. PUBLIC BENEFITS OF RENEWABLE RESOURCES
13	Q. Staff witness Fortson references Boomtown as a renewable facility "providing
14	limited, if any, benefits to those ratepayers." 5 Do you agree?
15	A. No, and my disagreement is shared when looking at similar renewable additions
16	approved by regulatory commissions in the eight jurisdictions I referenced above, where
17	the state commissions have consistently cited public benefits that Boomtown would also
18	provide, including providing environmental benefits such as emissions reduction and
19	satisfying customer demands for renewable energy.
20	The Boomtown Solar Project will make the MISO fleet greener (as will continued
21	renewable generation additions by Ameren Missouri, according to its plans). The Project

will also satisfy customer demands for renewable energy given that ten customers have

<sup>&</sup>lt;sup>5</sup> Brad Fortson Rebuttal Testimony, p. 8, l. 12.

already signed up for the proposed Renewable Solutions Program for all 150 MW of available capacity from the Project.

# Q. Can you provide examples where state regulatory commissions cited environmental benefits in the approval of a renewable facility approval?

A. Yes. In Docket No. 45462, Indiana's Utility Regulatory Commission approved NIPSCO's Bridge I & II and Cavalry Solar facilities totaling 900 MW, stating "The Solar Offtake Agreements terms and costs are reasonable, they provide needed energy, diversify NIPSCO's supply portfolio, provide environmental benefits, and defend against fuel cost volatility."

In Docket No. 19-019-U Order No. 7, the Arkansas Public Service Commission approved Entergy Arkansas' 100 MW Searcy Solar facility, stating "Searcy Solar offers an opportunity to further diversify EAL's generation portfolio with the addition of a resource that avoids exposure to volatile fuel prices as well as anticipated CO2 and other environmental emission-based costs."

# Q. Are there any examples of these jurisdictions citing customer demand for renewable energy as a rationale for renewable development approval?

A. Yes. In Docket EL-18-003, the South Dakota Public Utilities Commission approved Northern States Power Company (d/b/a Xcel Energy)'s 302 MW Dakota Range I & II Wind Farm, stating "Applicant presented evidence of consumer demand and need for the Project. The Project would install up to 302.4 MW of wind generating capacity in South Dakota that would contribute to satisfying utilities', commercial and industrial

<sup>&</sup>lt;sup>6</sup> Pg. 73, Indiana Regulatory Utility Commission, NIPSCO 900 MW Bridge I & II, Cavalry Solar Project, Cause No. 45462, Approved 05/05/2021.

<sup>&</sup>lt;sup>7</sup> Pg. 96, Arkansas Public Service Commission, Entergy 100 MW Searcy Solar facility, Docket No. 19-019-U Order No. 7, Approved 4/23/2020.

1 customers', and consumers' demands for renewable energy and meet utility renewable requirements or individual sustainability goals."8 Northern States Power Company (d/b/a 2 3 Xcel Energy)'s 2016 South Dakota Biennial 10-Year Plan analysis noted they "expect to have sufficient capacity to meet [their] customers' needs through 2024," indicating a 4 5 proactive move towards "a combination of renewable resource additions in the early 6 years." 7 IV. RISK MITIGATION EFFECT OF RENEWABLE RESOURCE 8 **DEPLOYMENT** 9 O. How have these jurisdictions characterized risk mitigation when approving these renewable projects? 10 In these eight jurisdictions, commissions have consistently cited the following 11 A. 12 risks which renewables mitigate as a rationale for approval: 13 Fuel Diversity; 14 Price Volatility; and 15 Implementation Risk. 16 These are the same kinds of risks Ameren Missouri is seeking to address, starting 17

with the Boomtown Solar Project, and continuing to steadily add additional renewable resources in the near- to intermediate-terms.

<sup>9</sup> Pg. 20, Northern States Power Company Biennial 2016 South Dakota 10-Year Plan, Xcel Energy.

<sup>&</sup>lt;sup>8</sup> Pg. 6, South Dakota Public Utility Commission, Xcel Energy 302 MW Dakota Range I & II Wind Farm, Docket No. EL-18-003, Final Decision and Order Granting Permit to Construct Wind Energy Facility, Approved 7/23/2018.

Q.	Are there specific examples of jurisdictions citing the risks of fuel diversity as
a ratio	onale for renewable development approval?

A. Yes. In Docket No. 19-019-U Order No. 7, the Arkansas Public Service Commission approved Entergy Arkansas' 100 MW Searcy Solar facility, stating "...Searcy Solar offers an opportunity to further diversify EAL's generation portfolio with the addition of a resource that avoids exposure to volatile fuel prices." <sup>10</sup>

In Docket No. 45529, the Indiana Utility Regulatory Commission approved NIPSCO's 200 MW Elliott Solar Facility, stating the "Solar Projects and Solar Offtake Agreements is a reasonable and necessary addition to NIPSCO's portfolio of generating resources to meet the need for electricity within NIPSCO's service area, while also mitigating the risk through the diversification and use of an economic mix of resources that provides flexibility."<sup>11</sup>

# Q. What have other commissions had to say about the risk of price volatility as a rationale for renewable development approval?

A. In addition to the Arkansas case cited previously, in Docket EL-18-003, the South Dakota Public Utilities Commission approved Northern States Power Company (d/b/a Xcel Energy)'s 302 MW Dakota Range I & II Wind Farm, stating the project offers "firm price stability due to the availability of a renewable resource that would replace the need for ongoing fuel costs." 12

<sup>&</sup>lt;sup>10</sup> Pg. 96, Arkansas Public Service Commission, Entergy 100 MW Searcy Solar facility, Docket No. 19-019-U Order No. 7, Approved 4/23/2020.

<sup>&</sup>lt;sup>11</sup> Pg 29, Indiana Utilities Regulatory Commission, NIPSCO 200 MW Elliott Solar Facility, Docket No. 45529, Approved 7/21/2021.

<sup>&</sup>lt;sup>12</sup> Pg. 6, South Dakota PUC, Xcel Energy 302 MW Dakota Range I & II Wind Farm, Docket No. EL-18-003, Final Decision and Order Approved 7/23/2018.

In Docket No. 2018-UA-267, the Mississippi Public Service Commission approved Entergy Mississippi's 100 MW Sunflower Solar facility, stating "The Commission finds that the Facility diversifies and balances EML's resource portfolio, thereby mitigating the risk to EML customers of future significant and unexpected fuel price increases. The diversity in EML's owned generation portfolio provided by ownership of the Facility will mitigate the risk to EML customers of fluctuations in cost, availability and disruptions associated with particular fuel sources or delivery channels." <sup>13</sup>

## Q. And do you also have an example of these jurisdictions citing implementation risks of renewables as a rationale for renewable development approval?

A. Yes. In Docket No. 45462, Indiana's Utility Regulatory Commission approved NIPSCO's Bridge I & II and Cavalry Solar facilities totaling 900 MW, stating "In an uncertain world, making several smaller resource decisions over time and maintaining decision optionality as long as practical can be beneficial, particularly compared to making fewer larger commitments that foreclose opportunities to adapt to changing industry circumstances." We have also expressed the need for a utility's overall generation portfolio to be diverse, flexible, and adaptable. NIPSCO's implementation of the Short-Term Action Plan, as illustrated by its evidence, reveals NIPSCO has been cognizant of these principles. NIPSCO has now sought approval from the Commission for ten different renewable projects to replace Schahfer's retiring capacity, <sup>14</sup> which are a mix of wind, solar, and solar plus storage. Only two of these projects are 400 MW or larger, with all others being 300 MW or smaller. NIPSCO has also utilized a mix of ownership/joint venture and PPA

<sup>&</sup>lt;sup>13</sup> Pg 16, Mississippi Public Service Commission, Entergy 100 MW Sunflower Solar Project, Docket No. 2018-UA-267, 4/14/2020.

<sup>&</sup>lt;sup>14</sup> Rollin M. Schafer Coal Generating Station

structures, and the duration of renewable generation project commitments has been staggered at various lengths between 20 and 30 years—both of which diversify NIPSCO's portfolio in metrics beyond fuel-source diversity."<sup>15</sup>

## Q. Has Ameren Missouri evaluated the risk of delaying or waiting to transition to a cleaner generation portfolio?

A. Yes. Ameren Missouri asked Roland Berger to conduct a study this past spring in connection with the submission of a change to its Preferred Resource Plan. The study identified eight risks associated with delaying a transition to a cleaner generation portfolio and was submitted as part of the Company's June 2022 Notice of Change in Preferred Resource plan. As noted, the study report was included with Company witness Michels' Direct Testimony in this case.

#### Q. Please summarize the key risks identified in the study.

- A. The key risks we identified and were able to quantify are as follows:
  - Financing costs may rise if the transition is delayed. Investors are increasingly looking to carbon intensity as a gauge for the risk of certain investments. If Ameren Missouri is seen as delaying its transition to a cleaner generation portfolio, its cost of capital may rise and as a result, increase costs to customers.
  - Attractive land suitable for development may not be available later in time,
     particularly for wind generation facilities.<sup>16</sup>

<sup>&</sup>lt;sup>15</sup> Pg 64-65, Indiana Regulatory Utility Commission, NIPSCO 900 MW Bridge I & II, Cavalry Solar Projects, Cause No. 45462, Approved 05/05/2021.

<sup>&</sup>lt;sup>16</sup> While this case does not involve the addition of a wind resource, Ameren Missouri's plans do call for wind additions in the next few years as it builds out a geographically and technologically diverse set of resources. And while land availability is less of an issue for solar facilities than it is for wind facilities, solar project development is still challenging, as one can see from the discussion in Company witness Arora's Surrebuttal Testimony about the relatively small number of viable solar projects Ameren Missouri was able to pursue from its most recent RFP.

- Equipment costs may rise in the future, particularly for solar equipment. There has been a strong push in the US to "reshore" several manufacturing industries, solar PV included. The recently passed Inflation Reduction Act provides significant incentives to bring solar manufacturing back to the US. While this may be good industrial policy for the nation, the costs of solar panels could rise by up to 30% as a result of the reshoring. It will take some years to accomplish the reshoring, so waiting to develop projects may lead to increased customer costs.
  - At the time of the report, there was no formal extension of the Investment Tax Credit or the Production Tax Credit, but there was speculation that the renewable tax credits were to be extended, resulting in further support for renewable development. The passage of the Inflation Reduction Act preserves and enhances the Production and Investment Tax Credits.

Table 1, below, summarizes the estimated impact of these risks:

Table 1. Summary of the Impact of Key Risk Variables

Risk Variable Description		Change in PVRR	
Financing Costs  Financing Costs  Financing Costs  Financing Costs  Fossil-heavy generation portfolios likely to have higher financing costs than cleaner and less carbon-intensive portfolios		\$ 292 million	
Land availability	Continued renewable build out will make "good land" scarcer over time, limiting capacity factors for wind	\$ 247 million	
Wind equipment Cost	Wind equipment cost declines and performance improvements may be less pronounced than NREL ATB assumes \$ 122		
Solar equipment cost	Onshoring of solar PV equipment manufacturing as consequence of trade relations with China may result in higher costs	\$ 59 million	
Extension of ITC and PTC per the proposal in the Build Back Better plan done through separate congressional action		\$ 339 million	

3

4

5

6

7

8

9

10

11

12

13

14

15

16

17

18

19

20

21

22

1 V. CONCLUSION

#### Q. Please summarize your key conclusions.

Ameren Missouri's planned transition to cleaner energy resources, which the A. Boomtown Solar Project is a part of, is consistent with the plans and actions many of their peer utilities are currently pursuing, with the approval of those peers' state commissions. These utilities have received approval and support from their relevant state commissions to move forward with the development of nearly 10 GW of solar and wind capacity, despite no legal requirement to do so. State commissions in other similar jurisdictions have often pointed to public benefits and the risk mitigation provided by renewable resources in their approval of solar and wind projects much like the Boomtown Solar Project. It is safe to say that Ameren Missouri's transition to renewables is in no way "unprecedented." In my opinion, waiting to transition to a cleaner generating portfolio is no longer a viable option - which is supported by our work last year, indicating that waiting to transition is a high risk and potentially high cost proposition for Ameren Missouri customers. As Wisconsin Commissioner Ellen Nowak put it, while discussing the Wisconsin Commission's unanimous approval of the 200 MW Paris solar facility in Wisconsin: "There's not a statutory mandate to do it, which I'm glad there's not. But, I also think that if we said, 'Well, let's not do it now, and wait,' there's going to be criticism that why is Wisconsin so far behind on other states (and) not moving to renewable energy?" Given that Ameren Missouri and the state of Missouri are in circumstances similar to those on which commissioner Nowak commented, those comments, in my opinion, apply equally to Missouri.

Surrebuttal Testimony of Mike Granowski

- 1 Q. Does this conclude your Surrebuttal Testimony?
- 2 A. Yes, it does.



### Mike Granowski

### Director Chicago

#### Languages

English

#### **Professional experience**

Since 2019	Roland Berger Strategy Consultants
2013-2019	Enovation Partners, Partner
2011-2013	Bridge Strategy Group, Principal, Energy Practice
2009-2011	Charles River Associates, Principal, Energy Practice
2007-2011	Hawksnest Advisory, Founder
2002-2007	Navigant Consulting, Director
2000-2002	Barrington Energy Partners, Principal Consultant
1996-2000	Metzler & Associates, Manager
1991-1996	Commonwealth Edison, Nuclear Engineer

#### **Key projects**

- Led multiple utility asset portfolio strategy and resource planning cases in North America for IOU's, IPP's, Municipalities, and Coop's
- Led multiple "steel for fuel" coal plant replacement with renewable rate and revenue requirement projects
- Led multiple capital planning and strategic growth projects focusing on revenue and EPS growth including impact on rates
- · Led or participated in 6 electric utility mergers from screening through negotiation, financing and integration
- Supported over 50 GW of successful electric generation transactions as a market and valuation expert covering all generation types including wind, solar, storage, hydro, geothermal, nuclear, coal, gas, etc.
- · Led multiple new market entry cases in the utility technology, renewable, and storage sectors
- · Led multiple utility scenario planning efforts for executives and boards
- Provided diligence for over 30 early stage technology and service providers for multiple clients
- · Led water utility and services landscape analysis for a large privately held conglomerate
- Performed a water services market screening to support deploying \$500 in the sector

#### Education

1995-1996	University of Iowa, MBA
1986-1991	University of Wisconsin-Madison, BS Nuclear Engineering
1986-1990	University of Wisconsin-Madison, BS Physics

#### **Key Testimony Support**

- · Provided expert testimony supporting the case against the RMR filing of Mystic Development, LLC before FERC (DOCKET NO. ER06-427-000) on behalf of NStar
- · Served as special advisor to the Commission Staff regarding Case Numbers 05-0402-E-CN, "Application for a Certificate of Convenience and Necessity to Authorize Construction of Emission Control Facilities at the Fort Martin Generating Station in Monongalia County, West Virginia"
- Developed testimony in support of Public Service of New Mexico's consolidated application of the abandonment, financing, and resource replacement for San Juan Generating Station, Case No. 19-00195-UT

#### Industries

- · Energy & Utilities
- Renewables
- Storage
- Infrastructure
- Financial investors
- OFMs

#### **SCHEDULE MG-S1**

### **Schedule MG-S2**

Utility Name
Xcel Energy
Commonwealth Edison Co
El Paso Electric
Southern Company
Entergy Corporation
Tucson Electric Power
Madison Gas & Electric
FirstEnergy
Ameren Illinois Company
Otter Tail Power Company
NextEra Energy, Inc.
Exelon Utilities
Minnesota Power
Southwestern Public Service
Public Service Company of New Mexico
UGI Corporation
Tampa Electric Company
MidAmerican Energy Co
Avista Utilities
Duke Energy
Evergy
Consumers Energy

NIPSCO
Arizona Public Service
Alliant Energy
American Electric Power
DTE Energy
Emera
Oklahoma Gas & Electric
AES Corporation
Ameren Corporation
NiSource Inc.
Mt Carmel Public Utility Co
Northwestern Energy
PacifiCorp
WEC Energy Group
PPL Corporation
Idaho Power
CenterPoint Energy
Eversource Energy
Dominion Energy

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

)

ssouri for Approval newable Energy Program	)	File No.: EA-2022-0245
AFFIDAVIT OF MIKE G	RANO	WSKI
)		
) ss )		
duly sworn on his oath, sta	ites:	
Granowski and hereby decl	are on	oath that I am of sound mind and
red the foregoing Surrebutto	ıl Testin	nony; and further, under the penalty
rue and correct to the best of	of my kı	nowledge and belief.
	AFFIDAVIT OF MIKE G  ) ) ss ) t duly sworn on his oath, sta Granowski and hereby declared the foregoing Surrebutta rue and correct to the best of	AFFIDAVIT OF MIKE GRANO  ) ) ss ) t duly sworn on his oath, states: Granowski and hereby declare on o

Sworn to me this 18th day of January, 2023.

In the Matter of the Application of Union Electric