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MISSOURI PUBLIC SERVICE COMMISSION

FILE NO. ER-2022-0337

DIRECT TESTIMONY

OF

STEVEN M. WILLS

ON

BEHALF OF

UNION ELECTRIC COMPANY

D/B/A AMEREN MISSOURI

St. Louis, Missouri
August, 2022

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DIRECT TESTIMONY

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STEVEN M. WILLS

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I. INTRODUCTION

Q. Please state your name and business address.

A. Steven M. Wills, Union Electric Company d/b/a Ameren Missouri ("Ameren Missouri" or "Company"), One Ameren Plaza, 1901 Chouteau Avenue, St. Louis, Missouri 63103.

Q. What is your position with Ameren Missouri?

A. I am the Director of Regulatory Affairs.

Q. Please describe your educational background and employment experience.

A. I received a Bachelor of Music degree from the University of Missouri-Columbia in 1996. I subsequently earned a Master of Music degree from Rice University in 1998, then a Master of Business Administration ("M.B.A.") degree with an emphasis in Economics from St. Louis University in 2002. While pursuing my M.B.A., I interned at Ameren Energy in the Pricing and Analysis Group. Following completion of my M.B.A. in May 2002, I was hired by Laclede Gas Company as a Senior Analyst in its Financial Services Department. In this role, I assisted the Manager of Financial Services in coordinating all financial aspects of rate cases, regulatory filings, rating agency studies and numerous other projects.

In June 2004, I joined Ameren Services as a Forecasting Specialist. In this role, I developed forecasting models and systems that supported the Ameren operating companies' involvement in the Midwest Independent Transmission System Operator, Inc.'s ("MISO")[1] Day 2 Energy Markets. In November 2005, I moved into the Corporate Analysis Department of Ameren Services, where I was responsible for performing load research activities, electric and gas sales forecasts, and assisting with weather normalization for rate cases. In January 2007, I accepted a role I briefly held with Ameren Energy Marketing Company as an Asset and Trading Optimization Specialist before returning to Ameren Services as a Senior Commercial Transactions Analyst in July 2007. I was subsequently promoted to the position of Manager, Quantitative Analytics, where I was responsible for overseeing load research, forecasting and weather normalization activities, as well as developing prices for structured wholesale transactions.

In April 2015, I accepted a position with Ameren Illinois as its Director, Rates & Analysis. In this role, I was responsible for the group that performed Class Cost of Service, revenue allocation, and rate design activities for Ameren Illinois, as well as maintained and administered that company's tariffs and riders. In December 2016, I accepted a position with the same title at Ameren Missouri. In July of this year, I was promoted to Director, Regulatory Affairs. In this role, I oversee the teams responsible for contributing to all aspects of the Company's state regulated activities, including the Rates and Analysis team I previously directed.

[1] Now known as the Midcontinent Independent System Operator, Inc.

II. PURPOSE OF TESTIMONY

Q. What is the purpose of your direct testimony?

A. My testimony in this case will focus on residential rate design. As the Commission is aware, over the Company's last two electric general rate proceedings, File No. ER-2019-0335 ("the 2019 case"), and File No. ER-2021-0240 ("the 2021 case"), the Company has introduced several new innovative rate plans to its residential customers, which include a variety of different types of optional time-of-use ("TOU") rates. In this testimony, I will update the Commission on the progress made in this rate transition and discuss its next steps. I will go on to explain why an important step in achieving broad adoption of TOU rates and creating the benefits that can come with customers shifting load to periods of lower demand, is the implementation of a rate-switching tracker that will align the Company's financial interests with the interests of its customers in saving money with these innovative rates. I will also discuss the appropriate level of the fixed monthly residential customer charge for each rate plan, based on the nature of the rate plan and the goals of the customers that are likely to adopt those plans.

II. RESIDENTIAL RATE DESIGN – OVERVIEW

Q. Please provide an overview of the different residential rate plans that the Company now offers as a result of the 2019 case.

A. The settlement of the 2019 case resulted in the Company offering its residential customers five distinct rate plans, spanning a spectrum from simple rates to quite advanced rates. Each rate option currently includes a $9 per month fixed charge, and seasonally differentiated energy rates. The details of the five rate plans are described in Table 1 below:

Table 1 – Summary of Current Residential Rate Plans

Rate Plan	TOU Periods	Peak/Off-Peak Price Differential	Demand Charge?	Load Shift Savings Potential
Anytime User	None	None	No	None
Evening/Morning Savers	**Peak:** 9 a.m. to 9 p.m. daily **Off-Peak**: 9 p.m. to 9 a.m. daily	Small	No	Low
Overnight Savers[2]	**Peak:** 6 a.m. to 10 p.m. daily **Off-Peak:** 10 p.m. to 6 a.m. daily	Moderate	No	Moderate
Smart Savers[2]	**Summer Peak:** 3 - 7 p.m. weekdays **Non-summer Peak:** 6 - 8 a.m. and p.m. weekdays **Off-Peak:** 10 p.m. to 6 a.m. daily **Intermediate:** All other hours	Large	No	High
Ultimate Savers	**Summer Peak:** 3 - 7 p.m. weekdays **Non-summer Peak:** 6 - 8 a.m. and p.m. weekdays **Off-Peak:** All other hours	Large	Yes	Highest

The far-right column of Table 1, labeled "Load Shift Savings Potential," is a key to understanding the level of impact the rate plan may have on customers' bills and with respect to their enhanced ability to manage their energy costs on that rate plan. The potential for bill impacts – as well as the potential to save on energy costs – arises from higher TOU rate differentials[3] associated with the more advanced rates, as well as from the presence of the demand charge in the Ultimate Savers rate. Those same features of those more advanced rate plans, however, may create the possibility of higher bills for some customers that adopt these rates if their load characteristics are not well suited to the rate

[2] Includes an option to participate in TOU pricing during the summer only.
[3] Rate differential refers to the difference between the per kWh charge during different defined time periods, such as on-peak and off-peak periods. For example, the current Smart Savers rate has a peak summer rate of approximately 33 ½ cents/kWh, and an off-peak rate of almost 6 ½ cents/kWh, for a peak to off-peak price ratio of approximately 5:1. This large price differential creates more savings when customers shift usage to the off-peak period, but could increase costs for a customer that has significant usage during the 33 ½ cents/kWh on-peak periods that they are unable or unwilling to shift.

structure, and they are unable or unwilling to adjust their consumption patterns. Because of that, customers who are not engaged in managing their energy costs and prefer more certainty regarding their bill may prefer rate plans closer to the top of the list, with little or no savings potential, but also little or no chance of increasing the customer's cost relative to the rate they are familiar with. Customers that do not want to not worry about when they use energy may be perfectly happy with the Anytime User option. Customers that are interested in managing their bill – perhaps they already watch their energy usage closely, have invested in enabling technology like programmable thermostats, or are budget conscious and willing to make extra effort to use energy at times that allow them to save money – may choose to engage with an advanced rate and make the adjustments needed to lower their bills. These rate options allow residential customers to have more control over their energy costs.

Q. Please provide a brief update on the status of the rollout of the residential TOU rates?

A. All of the rate plans have been available to customers with an Advanced Metering Infrastructure ("AMI") meter for over a year now. The Company has a now well-established process for providing rate education and a detailed bill comparison for each rate plan to customers, and ultimately to default customers to the Evening/Morning Savers rate plan absent their election to adopt an advanced rate or not participate in a TOU plan.

When customers have their meter upgraded to an AMI meter, they receive a series of communications designed to educate them about TOU rates and to help them understand which rate plan might be best for them based on lifestyle characteristics and their own energy usage data. The Company has invested in new digital tools to allow customers to

view their usage information at a very granular level, to provide personalized energy savings tips and recommendations, and to compare their bills on the different rate plans based on their own personal usage information. Customers that do not affirmatively elect a rate plan[4] are transitioned to a low-impact TOU rate plan, the Evening/Morning Savers rate, six months after receiving their AMI meter.

Q. Is the Company recommending changes to the TOU peak periods or peak/off-peak rate differentials of any of the TOU plans in this case?

A. No. Availability of the rate plans is tethered to receipt of an AMI meter, and AMI meter deployment is still underway. Thus, just as in the 2021 case, the Company believes that it is important to provide a stable experience by maintaining continuity of such parameters while customers are being introduced to TOU rates. Making substantial changes to the TOU rate structures just as the Company is beginning to educate customers who recently received their AMI meter about what a time-varying rate is, and what their rate options are, would be disruptive to the message and education customers are in the process of receiving, and could potentially cause confusion or frustration with the TOU experience.

Even once the AMI meter rollout and TOU education and defaulting process is complete, the success of a TOU rate depends on the customer understanding the rate well – i.e., they need to internalize what times they need to avoid using energy (or program devices around those times) in order to benefit from low off-peak prices, and have consistency in the relative costs of the different time periods. It is therefore important to make any changes to rate parameters that may eventually be appropriate on a thoughtful

[4] Customers can also choose to remain on the legacy rate plan, Anytime User, which does not feature time differentiated rates throughout the day.

basis, and as infrequently as possible so that customers do not have to relearn their rate plan.

Q. What are the current levels of adoption of the various TOU rate plans?

A. The Company now has hundreds of thousands of customers taking service on TOU rates. The overwhelming majority are on the Evening/Morning Savers rate as a result of customers defaulting to that rate six months after receiving their AMI meter. But increasing numbers of customers are also opting for more advanced TOU rates. In fact, the three more advanced rate plans collectively passed the 1,000 customer mark with respect to customer adoption earlier this summer, and adoption continues to climb steadily. Table 2 below shows the number of customers on each TOU rate plan as of July 20, 2022, as well as the number of customers that are on the Anytime Users rate based on their affirmative election of that rate after receiving an AMI meter.

Table 2 – TOU Rate Enrollment Levels as of July 20, 2022

Rate Plan	Customers Enrolled
Anytime User[5]	**51,933**
Evening/Morning Savers	**359,115**
Overnight Savers	**522**
Smart Savers	**366**
Ultimate Savers	**302**

[5] Includes only Anytime User customers that affirmatively elected this rate option through the rate selection process.

Q. Are the adopters of advanced rates realizing bill savings as a result of their choice?

A. Yes, by and large they are. Across the intermediate and advanced TOU rate plans, around 80% of customer outcomes and individual bills are lower than they would be on the legacy Anytime User rate plan.[6] I prepared an analysis of each bill from the test year in this case associated with customers that had adopted either the Overnight Savers, Smart Savers, or Ultimate Savers rate plans, comparing those bills to what they would have been on the Anytime User rate.[7] Table 3 below summarizes my findings.

Table 3 – Summary of TOU Rate Plan Savings Outcomes from Test Year

Rate Option	Number of Bills	% of Bills with Savings	Number of Customer Accounts[8]	% of Customers that Saved	Total Savings ($)	Average Savings per Customer per Month	Total Savings (%)
Overnight Savers	1,808	83.3%	371	84.6%	$6,933	$3.83	4.2%
Smart Savers	1,088	81.4%	216	81.0%	$4,611	$4.24	4.8%
Ultimate Savers	992	79.6%	157	77.7%	$8,540	$8.61	8.3%
Total	3,888	81.8%	744	82.1%	$20,084	$5.17	5.5%

[6] By design, the Anytime User rate plan and the Evening/Morning Saver rate plan produce very similar bills for customers, so savings associated with these more advanced TOU rate plans relative to the new AMI default rate would be very similar to the levels reported relative to the legacy rate.

[7] For customers that have elected the option to adopt the Overnight Savers or Smart Savers rate for the summer only and continue taking service on the Anytime User rate during the non-summer months, I excluded the bills for the non-summer period.

[8] Total customers do not equal the total from Table 2 due to timing differences between customers that were billed on a TOU rate during the test year relative to customers that had selected a TOU rate plan by July 20, 2022.

Q. What conclusions do you draw from the analysis summarized in Table 3?

A. As expected, customers are saving money by adopting TOU rates and managing their usage according to the parameters of their selected rate plan. Across all plans, around 80% of customers, and 80% of bills,[9] experience savings. Also as expected, the savings level increases as the TOU rate differentials increase, and as the demand charge is added in the case of Ultimate Savers. For adopters of the Ultimate Savers rate, savings for the test year exceeded 8%.

Q. Given the success of customers in saving money using these rate plans, does the Company have specific forecasts of, or targets for, the number of customers that will eventually take service on each available rate plan?

A. No, not at this time. Our initial rollout of TOU rates has been focused on providing options for customers to manage their energy bills based on their preferences, on educating customers about TOU rates, and on building the foundational tools and capabilities needed to interact with and bill customers on advanced rates. Ultimately, which customers are on which rates comes down to a matter of customer preference at this point. Customers are able to choose between the five plans and are empowered to choose the best rate option for their lifestyle.

However, TOU rates can also be a valuable system planning tool to help reduce peak demand and capacity needs, as well as to help integrate increasing levels of intermittent renewable generation. As the Company plans and executes on its generation

[9] The difference between these metrics arises from the fact that a given customer may have an individual bill that is higher for one month that shows up as a bill that did not include savings, but that same customer may save money cumulatively, across all of the bills that they experienced on the TOU rate plan during the test year.

transition that will result in much higher levels of renewable generation on the system, we are mindful of the ability of TOU rates to be one piece of the complex puzzle of reliably integrating large amounts of renewables and eventually retiring existing dispatchable fossil fueled resources. As discussed in the Company's Change in Preferred Resource Plan filed on June 22, 2022, in File No. EO-2022-0362, we are focused on working on detailed reliability modeling of a future system with a high penetration of renewables. So, with the benefits of TOU rates in mind, we are continuing to study and refine our vision of the future role of TOU rates in managing demand on the system.

Q. Please describe the activities the Company is undertaking to help inform that vision.

A. We are taking steps to learn from our customers about their satisfaction and preferences regarding their experiences with these rates. The Company is developing a customer research plan and also exploring analytics to understand the experience of those who have been introduced to TOU rates. This fall, after customers on a TOU rate have completed a full winter and summer period, we will execute our customer research plan, which is currently under development. This may include surveys, focus groups, interviews, or a variety of other means to collect and analyze feedback from customers. This research is expected to provide insights regarding customers' experiences with TOU rates, including their perceptions around whether and how much they are saving money, their motivations for participation in their rate plan, what they are doing to manage their usage and reduce their bill, and more.

Further, as a part of our Demand Side Management ("DSM") potential study that is currently being conducted with a target completion in the first half of 2023, we are studying

the adoption and load shifting potential of our portfolio of TOU rates (which may also be informed by the customer research plan just discussed), including the potential interactive effects with Demand Response programs. By completing thoughtful analysis of DSM potential including TOU rates, and reliability modeling in the context of ongoing IRP efforts that aim to ensure a reliable transition to cleaner renewable energy sources, we expect to determine the appropriate role TOU rates can play in managing the generation transition. At that time, depending on the findings, the Company may develop more specific adoption goals, and/or enhanced marketing strategies designed to promote adoption to the levels needed to achieve various objectives.

Q. Can you provide any sense of the potential value of these rate plans now?

A. Yes. The Commission may recall that in designing these rates, the Company worked closely with noted rate design expert Dr. Ahmad Faruqui, then of The Brattle Group ("Brattle"). Dr. Faruqui has since retired, but his analysis and testimony from the 2019 case and 2021 case provided context for the expected load shifting potential of each rate plan. Dr. Faruqui used the tool that he and his colleagues at Brattle developed, referred to as the Arc of Price Responsiveness ("Arc"). The Arc was based on an analysis of hundreds of utility programs and studies of TOU rates, and it allowed Dr. Faruqui to estimate the probable level of load shifting that may result from adoption of a particular TOU rate by residential customers, based on the characteristics of the rate plan. Based on the Arc, Dr. Faruqui estimated that adopters of the Company's rate plans could be expected to reduce peak demands by the levels reflected in Table 4 below:

Table 4 – Load Shifting Potential of TOU Rate Plans

	Peak/Off-peak Ratio		Expected Peak Load Reduction	
	Summer	Winter	Summer	Winter
Evening/Morning Savers	1.04	1.03	0.3%	0.2%
Overnight Savers	2.53	1.63	6.8%	3.5%
Smart Savers	5.04	3.42	11.8%	9.0%
Ultimate Savers	5.86	3.59	12.9%	9.3%

Q. Given the load shifting potential estimated by Dr. Faruqui in the 2021 case and the status of the TOU rate rollout generally, do you have any recommendations for this case?

A. Yes. It is clear that customers that have taken the initiative to enroll in an advanced rate plan are benefitting from these rates already. It is also clear that the potential for peak load reductions and load shifting arising from these rates can be meaningful in magnitude. This suggests that TOU rates, when studied through additional customer research as well as the upcoming DSM potential study to be completed in 2023 and the 2023 triennial resource plan itself (including in the reliability modeling phase of the IRP process), are likely to contribute to efforts to either reduce capacity needs or to help integrate renewable generation, or both. However, unlike other demand side management measures which are governed by the Missouri Energy Efficiency Investment Act ("MEEIA"), TOU rates have an inherent disincentive for the utility to pursue a rapid transition toward broad adoption. In order to address this issue, I recommend that the Commission approve a rate switching tracker in this case to address that disincentive.

IV. A TWO-WAY RATE SWITCHING TRACKER SHOULD BE ESTABLISHED TO ALIGN THE INCENTIVES OF THE COMPANY AND ITS CUSTOMERS

Q. Please describe the request that the Company is making for the Commission to authorize it to track changes in revenues that may arise as customers avail themselves of the new rate offerings that the Company has implemented as a result of the 2019 case.

A. The framework outlined in the 2019 case settlement, and the robust TOU implementation efforts the Company has been engaging in as a result of it, demonstrate the Company's commitment to providing customers the rate plans and tools needed to take more control than ever before over their energy bills. And as just discussed above, the benefits of those rates may warrant consideration of whether the Company should take additional measures to promote more rapid customer adoption of them in the future. However, such changes in the rate plans under which customers will take service necessarily result in some level of bill impacts for the adopting customer, as well as heightened revenue uncertainty for the utility. Because the most advanced rate plans with the greatest potential bill impacts and savings are being offered on an opt-in basis, and the Company is providing education and tools for customers to empower them to choose the best rate for them, bill impacts are generally expected to be favorable on balance for customers (i.e., customers will opt-in to more advanced rates with larger bill impacts and savings potential if they are likely to save money). However, that fact means that the Company is also expected to experience revenue erosion from rate switching that may occur, which can negatively impact the Company's opportunity to recover its revenue

requirement, and in turn, cause a potential misalignment of the Company's financial incentives with its customers' interests in adopting TOU rates. In order to provide for a smooth transition to TOU rates that maintains a reasonable level of revenue stability, the Company requests authority from the Commission to track changes in revenue that are directly attributable to residential customers optimizing their rate as new options are adopted.

Q. Why are "opt-in" rates particularly prone to causing revenue erosion?

A. This is true for two reasons. First, each of the TOU rates were designed to be revenue neutral to the legacy rate for the class as a whole – i.e., for the average customer. However, most customers are not average, and none of them are precisely average. Every customer could naturally be a "winner" or "loser" on a new rate before making a single behavior change in response to the new rate. This is not a bad thing as long as the rate is aligned well with the cost of serving those customers. The bill changes that create the various customer outcomes should generally be moving customers' bills closer to their true cost of service – this is generally a good thing to be sure. But, because the Company is empowering customers to make informed rate choices, using enhanced usage information from AMI meters, adoption should be very asymmetric. Expected "winners" should adopt new rates much more readily, realizing bill savings that reflect the lower cost of serving these customers that generally have more favorable load characteristics. Customers whose bills are likely to increase under the new optional rate plans due to inconsistent loads with peakier usage may simply choose to stay on a flat rate plan. Therefore, the revenue erosion caused by bill savings of the adopters will not be immediately offset by increases for others. I would note that this revenue shortfall should be made up prospectively in a subsequent

rate case, so the issue I am addressing is really one of regulatory lag that is harmful to the Company at the same time that the TOU offerings that are causing the harm are benefitting its customers.

The second reason that opt-in rates are prone to causing revenue erosion is that an affirmative choice to go on a new rate plan is much more likely to be made by a customer more engaged in controlling their energy bill. They are, therefore, also more likely to make changes to their lifestyles and energy consuming decisions to further benefit from the rate and lower their bills. Again, this is a good thing. If it comes to pass, it means that the improved price signal of the TOU rate is working and causing customers to use energy more thoughtfully and efficiently. That should lower system costs over time. However, those lower costs manifest themselves over a period of many years, as needed future investments in generation, transmission, and distribution infrastructure are lower than they otherwise would be. However, the revenue erosion is immediate, with no offset in short-run utility costs. This revenue erosion is detrimental to the utility's opportunity to recover its revenue requirement.

Q. Can you quantify the potential revenue erosion that Ameren Missouri could experience between rate cases due to residential customer rate migration?

A. Yes. In fact, I used the same sample of residential customers that was developed to analyze rate design in depth in the 2019 case. I analyzed a scenario, using some assumptions applied to that residential load research sample, where all customers that, based on their actual historical usage patterns, would have been able to save more than 5% on their electric bill by switching to the Smart Savers rate eventually adopt that rate. Of the sample customers studied, 28.9% fell into that category of saving 5% or more. I then

applied the average savings that advanced rate adopters have experienced so far based on the analysis of the test year outcomes of those customers presented earlier in my testimony - approximately $61.99 per year – to the number of assumed advanced rate adopters. Based on a gradual acceleration of advanced rate adoption, arriving at the 28.9% total adoption I mentioned previously over a period of five years, and an assumption that the Company would file rate cases every two years and would absorb the regulatory lag in between those cases, I modeled the revenue erosion that the Company would experience from this rate adoption scenario. Table 5 below summarizes the analysis of that scenario.

Table 5 – Regulatory Lag on Revenue Erosion from TOU Adoption Scenario

Year	Illustrative TOU Participants by Year End	Utility Revenue Erosion
2022	2,000	N/A
2023	64,202	-$1,989,917
2024	126,404	-$5,623,122
2025	188,606	-$5,623,122
2026	250,809	-$5,623,122
2027	313,011	-$6,131,881

While this scenario is not intended to be a forecast of participation, rate case timing, or actual revenue impacts, it is intended to represent a plausible outcome to give a sense of the potential scale of revenue instability that the Company could be faced with as a result of its promotion of modern rates. Clearly, there is potential for the Company to experience significant adverse impacts of customer rate migration as more rate options are offered.

Q. How does the rate switching tracker address that significant level of potential revenue erosion?

A. In order to truly align the incentives of the Company with empowering customers to choose the best rate for them, a solution to mitigate those impacts is

appropriate. The authority to track revenues lost through this migration would clearly create this alignment. I would note that this request is for a two-way tracker. If, for any reason, rate migration results in higher utility revenues, the excess revenues that are tracked would be returned to customers via an amortization of those amounts when future revenue requirements are set in later rate reviews. While on balance, I expect the revenue impact to be negative, there are certainly cases where increased revenues could be realized, and this solution ensures that those revenues would flow back to benefit all customers.

Q. How do you propose to calculate the impact of rate switching in order to track the impacts?

A. Impacts would be calculated for each customer that adopts any of the optional residential TOU rates after the true-up date in this case (Overnight Savers, Smart Savers, and Ultimate Savers).[10] Their bill on the new rate they have chosen will be compared to what their bill would have been on their legacy plan, the Anytime User rate. Any difference will be accumulated in the tracker for recovery from, or return to, customers in a future rate review. Note that the calculation of savings that would be tracked is based on application of two different rate plans to the same level of usage. As such, *the requested tracker is not in any way, shape or form analogous to the concept of revenue decoupling* as it exists in the industry.

[10] If the Commission were to order an increase in the peak/off-peak rate differential associated with the Evening/Morning Savers rate such that participants' savings opportunities increased, I would also recommend that rate plan be covered by the operation of this tracker under the same methodology as I have outlined for the other three TOU rate plans.

Q. Are there any policies currently implemented by this Commission that are designed to provide the type of alignment of incentives you are proposing with the rate switching tracker?

A. Yes, the rate switching tracker is in fact very analogous to how certain provisions of the MEEIA align utility incentives with helping customers use energy more efficiently by ensuring utilities are not financially harmed in the form of lost revenues when taking actions that benefit customers. The legislation that created MEEIA requires this alignment of incentives for energy efficiency programs. Although such treatment is not legislatively required in the circumstance of rate design, it is good policy for the exact same reasons that the legislature saw fit to create such a requirement for energy efficiency.

Q. Does the Commission have any cases where a tracker was used to advance new programs or practices that are in the public interest?

A. Absolutely. In the Company's "Charge Ahead" case (File No. ET-2018-0132), the Company requested a tracker for the costs of incentives and program administrative and education costs associated with its electric vehicle charging infrastructure program. In its Report and Order in that case, the Commission's findings of fact included the following numbered paragraphs:

> 13. The Commission also uses another type of deferral accounting mechanism referred to as a "tracker." Unlike AAOs, trackers tend to concern ongoing costs ***for which there is a public policy interest***. The criteria that the Commission has utilized for approving trackers has differed from the criteria it follows for an AAO.
>
> 14. The Commission has approved deferral accounting on many occasions without a finding of an "extraordinary event." ***The Commission has often authorized a deferral mechanism when it is authorizing a new program that is beneficial to customers, but where without the deferral mechanism***

in place, it could be financially detrimental to the utility to pursue. (emphasis added)[11]

The last sentence in that section of the order clearly indicates that, where the Commission sees an opportunity to align the financial incentives of a utility it regulates with an opportunity for that utility to provide benefits to its customers, a tracker can be good public policy. The logic that applied to the Charge Ahead tracker applies almost identically with respect to this rate switching tracker.

Specifically, the TOU rate options are very much a new programmatic offering made available to customers, that can provide significant benefits to those customers in the form of lower bills, achieved in a manner that can also provide system benefits for all customers arising from the shifting of usage away from periods of high demand, and therefore higher cost, on the system. The Commission has expressed a public policy interest in advancing TOU rates in recent years in several contexts. However, as I have discussed throughout this section of my testimony, the public policy benefits – which are manifested in the form of lower bills for customers – result in reduced revenues to the Company, which negatively impact its opportunity to cover its revenue requirement. This means that, exactly as the Commission stated in its Charge Ahead Report and Order, that something that "is beneficial to customers … could be financially detrimental to the utility to pursue."[12]

Obviously the TOU rates are already approved, and the Company is "pursuing" them. That said, the alignment of financial incentives is still good policy, as it removes that potential financial detriment to the utility. This alignment also encourages the Company to propose more advanced TOU rates and otherwise pursue modernization of rates in the

[11] File No. ET-2018-0132, *Report and Order*, p. 27, paras. 13-14, issued February 6, 2019.
[12] *Id*. at p. 27.

future as well, and will allow the Company to consider additional promotional activities around TOU rates if they appear to provide benefits through the IRP analysis I described earlier.

V. THE TOU RATE PLANS SHOULD HAVE DIFFERENTIATED CUSTOMER CHARGES DESIGNED WITH CONSIDERATIONS SPECIFIC TO THE RATE PLAN

Q. Please provide some context for consideration of the parameters of the Company's residential rate options.

A. In the 2019 case, I discussed at length the changes in the electric utility industry that are driving the need for, and the capability of utilities to offer, updated modern rate plans that better reflect the cost structure of the utility. Those changes include adoption of electric vehicles ("EVs"), increasing penetration of intermittent renewable generation (both behind the meter and at utility scale), and technologies like smart thermostats and other home automation that increase customers' ability to control their electric usage. Additionally, battery technology continues to evolve and may become increasingly economic for customers to deploy in their homes – paired with solar generation or on its own – in the not-too-distant future. These changes are increasingly familiar to the Commission and stakeholders. On the utility side, deployment of AMI systems is enabling the billing and communications capabilities needed to offer such rates and help customers succeed on them. With the increasing prevalence of such new energy-related technologies, many of which can represent significant investments on the part of customers, and which can also have significant impacts on the way customers interact with the electric grid and may correspondingly cause different costs to be incurred or avoided by the utility, it is

increasingly important for electric rates to reflect the cost structure of the utility. Cost-based rates help to promote equity between customers and also promote economic efficiency of the electric system. These are two of the important goals of electric rate design originally spelled out by the widely recognized and often cited rate design authority Dr. James C. Bonbright in his *Principles of Public Utility Rates*.[13]

The modern rates that the Company has now introduced feature price signals that are intended to encourage decisions around the adoption of the technologies I described above by customers in a manner that promotes the economic efficiency of the electric system. Once adopted, it promotes fairness between customers where the bills of customers choosing these new technologies reasonably reflect the cost of serving them, avoiding the creation of undue cross-subsidies between customers.

Q. Given the heightened importance of equitable and economically efficient rates in today's environment, can you please describe the considerations that go into developing a cost basis for such rates?

A. Yes. Truly cost based rates can only be developed with the aid of a detailed class cost of service study ("CCOSS"). Company witness Thomas Hickman's direct testimony supports the Company's CCOSS. He provides detail regarding the functionalization, classification, and allocation of costs to the various customer classes.

I will elaborate on this process to some degree, particularly regarding how the principles used to allocate costs to customer classes can and should be extended in order to allocate costs appropriately on an intra-class basis to individual customers, by using the class cost of service information to inform the design of the specific rate elements used to

[13] James C. Bonbright, *Principles of Public Utility Rates*, Columbia University Press, 1961.

bill those customers. In doing so, it is first instructive to review the process of classifying costs in the CCOSS and how those classifications relate to the various rate design elements used to price electric service.

Costs are classified as either customer-related, demand-related, or energy-related based on an assessment of the activities and investments that give rise to those costs. The key costs to consider for the fixed monthly customer charge are those that are customer-related.

Q. What costs are classified as customer-related?

A. The costs of assets dedicated to individual customers, such as meters and service lines that directly connect to the customer premises and billing costs, are classified as customer-related costs. Beyond the basic costs of customer connections and billing, the costs of the minimum distribution system are included in the customer-related classification, which witness Hickman discusses further. Witness Hickman also describes the other major cost classifications – energy and demand – in more detail.

Q. How do the three cost classifications – customer, demand, and energy – relate to rate design?

A. These classifications of cost, which are used to reflect costs in the CCOSS to the various customer classes that cause them, are also useful for reflecting cost causation down to the bills of different individual customers within the class. This is based on their load characteristics in a way that is an extension of the cost allocation concept as applied at the class level. The rate designs employed by electric utilities, including Ameren Missouri for many rate classes, are often described as three-part rates. The three parts relate back directly to the three categories identified for classification of costs in the CCOSS:

customer, demand, and energy. Under the three-part rate structure, there is a logical mapping of costs from the classifications of the CCOSS to the rate design. Customer charges are generally used to collect customer-related costs; demand charges generally collect demand-related costs; and energy charges generally collect energy-related costs. Rate designs based on these relationships tend to result, at the individual customer level, in outcomes similar to those that occur when the results of the CCOSS are followed for allocating the revenue requirement at the class level. That is to say, when this mapping of costs to charge types is followed, customer bills tend to be more reflective of the cost to serve them. In general, while there are still a considerable number of details to consider[14] and decisions to make when designing equitable cost-based rates, it is fair to say the practice of collecting costs in the charge type that corresponds to the classification of those costs generally promotes cost-based rates.

Q. Do the residential rate plans approved in the 2019 case and continued in substantially similar form in the 2021 case reflect the costs identified in the CCOSS accurately?

A. Generally, yes, but to varying degrees depending on the rate plan. I analyzed that in depth in my testimony in the 2019 case, and found that the Ultimate Savers rate, which is the only plan that features a demand charge, along with a significant time-varying energy charge, produced individual customer bills most aligned with the cost of serving them. The Smart Savers rate does not have a demand charge, but does feature significant time-variation in the energy charge, which is aligned around the times that give rise to costs

[14] For example, while mapping energy costs to energy charges generally is a critical step for creating cost based rates, a detail that can enhance the extent to which rates reflect cost is further consideration of the time of day and year that customers use energy through differentiated TOU and seasonal charges.

on the electric system. This results in the Smart Savers rate being the second most cost-reflective rate offered by the Company based on my analysis from the 2019 case.

The other rate plans are for the most part about as cost reflective as can be achieved using simpler rate structures with no demand charge and no or modest time-variation in the energy charges. This cost alignment is generally achieved through seasonal energy charges and the declining block winter structure reflected in the Anytime Users and Evening/Morning Savers rate plans, and the more modest time-variation of energy charges reflected in the Overnight Savers and Evening/Morning Savers rate plans. For customers that are not ready for more advanced rates and/or do not have an AMI meter that enables the billing of the advanced rates, these are generally appropriate cost-based rates. However, across the board for all of the rate plans, but most significantly with respect to the less advanced rate plans, better alignment between bills and the cost of service could be achieved by reflecting more of the customer-related costs in the customer charge.

Q. What is the current monthly residential customer charge, and what does the CCOSS study suggest it should be?

Q. For all residential rate plans, the fixed monthly customer charge is currently $9. However, the process I discussed above of mapping the customer-related costs from the CCOSS to the customer charge suggests that a residential customer charge that truly reflects customer-related costs would be approximately $25.94 per month. At this level, the customer charge would be designed to cover the customer-related costs: meters and service lines that directly connect to the customer premises, billing costs, as well as an equitable allocation of the fixed costs of the shared distribution grid that are incurred

irrespective of the demand or energy requirements of customers, and which are simply necessary to construct and operate a functional electric grid and connect customers to it.

Q. Why is the customer charge so much lower than the customer-related costs suggest it should be?

A. The determination of the customer charge is often a source of significant disagreement between parties with varying perspectives in rate reviews. While the policy considerations of promoting the rate design goals of equity and economic efficiency are very important – which I have argued in past cases, and still believe, that they should be the primary determinative factors of the optimal customer charge – there are policy considerations that others have argued as supporting a lower customer charge. Through settlement agreements and Commission orders in past cases, some of those policy considerations have resulted in the customer charge remaining at a very low level.

Q. What policy considerations are cited to support the low customer charge?

A. Generally, because customer charges are fixed and cannot be avoided by customers, they may be viewed as limiting customers' ability to manage their bill by reducing usage. It is also sometimes argued that higher fixed charges reduce customers' incentive to invest in energy efficiency measures, and that they may have an outsized impact on low-use customers, which are often perceived to include many low-income customers.

I believe, however, that the existence of a portfolio of residential rate plans that are available to customers allows us to think a little bit differently about the issue of the customer charge in this case relative to how it has been discussed in the past, and perhaps

represents an opportunity to reconsider, and better balance, the sometimes competing policy objectives that go into establishing the customer charge.

Q. What opportunity does the existence of different rate plans create for the reconsideration of the residential customer charge?

A. Ameren Missouri now offers five distinct rate plans with unique characteristics, which may appeal to different customers with different energy-related preferences and priorities. I discussed previously how customers with an interest in actively managing their energy cost by changing consumption behaviors should gravitate toward the more advanced rate plans, where their actions to shift energy usage can create significant bill savings. These rates – with significant time-variation in their energy charges, and in one case the existence of a demand charge – already inherently reflect the cost structure of the electric system better than the other rates. The less advanced rates with flat, or more moderate TOU energy charges, are appropriate for customers that do not want to or are unable to engage as seriously with changing their energy usage to manage their bills. These rates are also currently less fully reflective of the cost structure of the electric system.

I think this creates the opportunity to differentiate the customer charge across the rate plans to improve the extent to which the less advanced rates reflect cost, and also to meet the objectives of the customers that may utilize different rate plans based on their preferences for engaging in actions to control their usage and bills.

Q. How do you propose to differentiate the customer charges of the different rate plans?

A. Table 6 below summarizes the customer charges that I propose for the various residential rate plans. I will discuss further below the rationale for these specific recommendations.

Table 6 – Proposed Customer Charge by Rate Plan

Rate Plan	Peak/Off-Peak Price Differential	Demand Charge?	Load Shift Savings Potential	Proposed Fixed Monthly Customer Charge
Anytime User	None	No	None	**$13**
Evening/Morning Savers	Small	No	Low	**$13**
Overnight Savers	Moderate	No	Moderate	**$13**
Smart Savers	Large	No	High	**$11**
Ultimate Savers	Large	Yes	Highest	**$9**

As is shown in Table 6, I propose maintaining the existing $9 per month fixed monthly charge for the Ultimate Savers rate plan. This rate plan already creates the best alignment between customer bills and the cost of serving them. Said another way, although it is not perfect, it is already a highly cost-reflective rate plan. The existence of the demand charge provides more assurance that customers will fairly contribute revenues that cover the fixed costs of the shared minimum distribution system. While I still think that the minimum distribution system costs are best reflected in a customer charge for purposes of promoting equity and economic efficiency, in recognition of the other rate design policy considerations discussed in relation to customer charges, the Company is proposing to maintain the $9 level and reflect those additional minimum distribution system costs in the demand charge. The elegant part of this solution is that the rate plan designed for customers that *want* to actively manage their bills will create the *greatest opportunity* to do so, not only because of the demand and TOU elements, but also because of the lower fixed charge

with correspondingly larger variable charges that may be avoided by customers that manage their usage well.

I observed previously that the Smart Savers rate plan is the second most cost-reflective rate design, and also affords customers a significant opportunity to control their bills by adjusting their usage. It is, however, not as cost-reflective as Ultimate Savers with its demand charge, and customers on this rate are less certain to share in covering the fixed costs of the minimum distribution system. For this reason, I propose a small increase in the monthly fixed charge, from $9 to $11. This will modestly improve alignment of bills with the cost of serving customers, but still afford a great opportunity for customers to create savings by managing their energy consumption.

The other three rate plans – Anytime Users, Evening/Morning Savers, and Overnight Savers – are not as sophisticated as the other two advanced rate plans. They are a little less cost reflective, and more prone to outcomes where certain customers may not contribute equitably to the minimum distribution system fixed costs. These circumstances can be partially remedied with a little bit larger increase in the fixed monthly charge. And because these rates are positioned in the portfolio of rates offered to residential customers to be more attractive to customers that are *less* active in managing their whole house energy usage[15] and more interested in *certainty of energy costs* – regardless of when they use electricity – the higher fixed charge, and corresponding *lower variable charges*, will produce more stable bills and will align well with a potential goal of the adopters of these rates. This outcome is created by increasing the customer charge for these specific rate

[15] Overnight Savers was originally designed to give EV owners a path to a rate that allows savings for charging an EV at night without negatively impacting the cost of electricity for customers who were unwilling or unable to make the other changes needed to avoid higher on-peak charges throughout the day.

plans – because the higher customer charge is offset on a revenue neutral basis by lower variable charges. This increase of the portion of the bill that is associated with fixed (stable) charges, and the corresponding reduction of the portion of the bill derived from variable energy charges, creates an environment where these customers who may be more interested in bill stability, will be able to achieve this outcome.

Customers who prefer a lower fixed customer charge in order to manage their bills will have the option to move to the Ultimate Savers or the Smart Savers rate plans – giving them an even more enhanced ability to control their bills – now both by reducing usage and/or shifting it.

Q. How will an increased customer charge impact customers' savings associated with the adoption of electric energy efficiency measures?

A. The impact will be negligible. In the Company's 2016 electric rate case, File No. ER-2016-0179, the Company analyzed the impact of its proposed Energy Grid Access Charge on the participant payback of various energy efficiency measures. First, it is noteworthy that the Company's proposal in that case included an almost $5 increase in monthly fixed charges, whereas the pending proposal in this case for certain rate plans is only for a $4 per month increase. But even with that larger increase, the payback for the average energy efficiency measure in the Company's residential programs only increased from one year and ninety days to one year and one hundred fifteen days. It is hard to imagine that a customer that is willing to invest in an energy efficiency measure with just over a year payback would forego that same investment when the payback took just twenty-five days longer. And again, the impact of the proposal in the current case on measure paybacks would likely be even less than the magnitude from the prior proposal, given the

requested increase in the fixed charge for certain rate plans is only $4 versus the almost $5 underlying that analysis. That said, to the extent that there is *any* negative impact on the economic case for customers to adopt *electric* energy efficiency measures associated with an increased fix charge, there will also be a *positive* impact on the economics of the adoption of *efficient electrification* measures that promote overall energy efficiency. And I will reiterate that the impact of the change in paybacks of measure adoption associated with modest changes in the fixed charge is *quite* small. But that said, it almost certainly represents a more significant favorable total dollar impact on customers adopting efficient electrification measures like EVs than it represents a negative impact on customers adopting electric energy efficiency measures, simply because EVs are such a large energy consuming end use and there are therefore more marginal kilowatt-hours ("kWh") to benefit from the slightly lower variable rate.

Q. How does a higher customer charge support the economics of clean efficient electrification?

A. By shifting revenue recovery to a fixed charge, the variable price seen by residential electric customers will be lower than it otherwise would be. That means marginal usage of customers will be less costly than if the fixed charge were lower (and variable charges a commensurate amount higher). Adoption of EVs represents a significant source of marginal residential electricity usage – but a source that generally drives overall efficiency of total energy costs in addition to improved environmental outcomes. A higher fixed charge and lower variable charge can, if just slightly, enhance the economics of electrification and help encourage the adoption of EVs.

This tradeoff between fixed and variable charges also supports the economic efficiency goal of rate design more generally. The most actionable charge with respect to customers' energy consumption decisions is by far the energy charge. By building recovery of the shared fixed costs of the distribution system into energy charges, as happens with basic and traditional rate designs, energy charges are typically much higher than the marginal cost of energy. This potentially discourages consumption – such as that associated with efficient electrification – that has real value to customers and potential benefits to the energy system and environment, and therefore reduces overall economic efficiency and slows progress on environmental issues.

Q. Would low-use customers be negatively impacted by this proposal?

A. No, I do not believe they would be negatively impacted at all. Customers who are truly low users can gain the benefits of a lower fixed charge by adopting the Ultimate Savers or Smart Savers rate. If those customers' lifestyles are not a good fit for those rates, it can only be true because they have high peak period usage, or a high peak demand that would establish their demand charge. It is fair to say, then, that the cost of serving those customers must also be commensurately higher. Allowing them to remain on a flat rate with a lower customer charge would almost certainly result in that customer being unfairly subsidized by the rest of the residential customer base, rather than being unfair to them.

Q. What about the impact on low-income customers?

A. With respect to low-income and other vulnerable customers, I believe the focus on fixed monthly charges has been misplaced. Regardless of whether low-income customers are low-users on average or not, it is certain that there are substantial numbers

of low-income customers all across the usage spectrum, including many with very high usage. This is empirically true, and logical as well, as many low-income customers have inefficient homes and appliances and do not have the resources to make needed efficiency upgrades to reduce their usage.

Reducing the customer charge, then, has a disparate impact on the bills of low-income customers. A lower customer charge reduces bills for some low-users at the expense of *increasing* the bills of higher users. But this much is certain: the low-income customers that are negatively impacted by lower fixed charges – those high usage low-income customers, many of whom rely on electricity to heat their homes in the winter – are those customers who already have the *highest electric energy burdens*. Energy burden is a metric used to assess the percent of a household's income that is dedicated to their energy costs. High users by definition have higher bills and a higher energy burden than low users at similar income levels. High using low-income customers by definition have the highest energy burdens of any customers on the system. An artificially low customer charge, and correspondingly higher variable charge, exacerbates the problem for these higher using low-income customers and increases the energy burden on those who have the highest energy burden to begin with.

Q. Does this conclude your direct testimony?

A. Yes, it does.

BEFORE THE PUBLIC SERVICE COMMISSION
OF THE STATE OF MISSOURI

In the Matter of Union Electric Company	**)**	
d/b/a Ameren Missouri's Tariffs to Adjust	**)**	Case No. ER-2022-0337
Its Revenues for Electric Service.	**)**	

AFFIDAVIT OF STEVEN M. WILLS

STATE OF MISSOURI)
) ss
CITY OF ST. LOUIS)

Steven M. Wills, being first duly sworn states:

My name is Steven M. Wills, and on my oath declare that I am of sound mind and lawful age; that I have prepared the foregoing *Direct Testimony*; and further, under the penalty of perjury, that the same is true and correct to the best of my knowledge and belief.

/s/ Steven M. Wills
Steven M. Wills

Sworn to me this 1st day of August, 2022.