Exhibit No. 402

Office of the Public Counsel – Exhibit 402
Geoff Marke
Rebuttal Testimony
File Nos. ER-2021-0240 & GR-2021-0241

Exhibit No.: 402

Issue(s): COVID-19 Response/ Customer Affordability/Residential Rate Design/ Decoupling Tracker/ 12M Aluminum Smelter Rate/ Class Cost of Service Studies/Low-income Programs/ Community Solar/Green Button

Witness/Type of Exhibit: Marke/Rebuttal

Sponsoring Party: Public Counsel

Case No.: ER-2021-0240

REBUTTAL TESTIMONY

OF

GEOFF MARKE

Submitted on Behalf of the Office of the Public Counsel

UNION ELECTRIC COMPANY D/B/A AMEREN MISSOURI

FILE NO. ER-2021-0240

October 15, 2021

BEFORE THE PUBLIC SERVICE COMMISSION
OF THE STATE OF MISSOURI

In the Matter of the Union Electric	)	
Company d/b/a Ameren Missouri's	)	
Tariffs to Increase its Revenues for	)	Case No. ER-2021-0240
Electric Service	)	
	)	

AFFIDAVIT OF GEOFF MARKE

STATE OF MISSOURI)
) **ss**
COUNTY OF COLE)

Geoff Marke, of lawful age and being first duly sworn, deposes and states:

1. My name is Geoff Marke. I am a Chief Economist for the Office of the Public Counsel.

2. Attached hereto and made a part hereof for all purposes is my rebuttal testimony.

3. I hereby swear and affirm that my statements contained in the attached testimony are true and correct to the best of my knowledge and belief.

Geoff Marke
Chief Economist

Subscribed and sworn to me this 15th day of October 2021.

NOTARY PUBLIC
NOTARY SEAL
STATE OF MISSOURI

TIFFANY HILDEBRAND
My Commission Expires
August 8, 2023
Cole County
Commission #15637121

Tiffany Hildebrand
Notary Public

My Commission expires August 8, 2023.

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REBUTTAL TESTIMONY

OF

GEOFF MARKE

UNION ELECTRIC COMPANY

D/B/A AMEREN MISSOURI

CASE NO. ER-2021-0240

I. INTRODUCTION

Q. Please state your name, title, and business address.

A. Geoff Marke, PhD, Chief Economist, Office of the Public Counsel (OPC or Public Counsel), P.O. Box 2230, Jefferson City, Missouri 65102.

Q. Are you the same Dr. Marke that filed direct revenue requirement testimony in this case?

A. I am.

Q. What is the purpose of your rebuttal testimony?

I am responding to the direct testimony of other parties' witnesses on select topics. The following is a list of those topics and the witnesses:

- COVID-19 response
  - Ameren Missouri witness Warren Wood
- Customer Affordability
  - Ameren Missouri witness Warren Wood
- Residential Rate Design
  - Ameren Missouri witnesses Ahmad Faruqui, Steven M. Wills and Michael W. Harding;
  - Missouri Public Service Commission Staff ("Staff") witness Sarah L.K. Lange and Robin Kliethermes; and
  - Consumer Council of Missouri ("CCM") witness Jacqueline A. Hutchinson
- 12M Aluminum Smelter Rate
  - Ameren Missouri witness Michael W. Harding

- Decoupling Tracker
    - o Ameren Missouri witness Steven. M. Wills
- Class Cost of Service Studies
    - o Ameren witness Thomas Hickman
    - o Staff witnesses Sarah L.K. Lange and Robin Kliethermes;
    - o Missouri Industrial Energy Consumers ("MIEC") witness Maurice Brubaker; and
    - o Midwest Energy Consumers Group ("MECG") Steve W. Chriss
- Low Income Programs
    - o CCM witness Jacqueline A. Hutchinson
- Community Solar
    - o Ameren Missouri witnesses Annemarie Nauert
- Green Button
    - o MECG witness Andrew D. Teague

My silence regarding any issue should not be construed as an endorsement of, agreement with, or consent to any other party's filed position.

II. COVID-19 RESPONSE

Q. Could you provide some context for the impact of COVID-19 on Missouri to date?

A. Yes. Consider what has occurred over just the past year. At the beginning of October 2020, we had registered 142,732 positive cases and 2,360 deaths. Since then, Missouri added 706,206 new cases and 10,036 new deaths. Of the new cases added in the last year, somewhere between 10% (70,000) to 35% (246,000) of those people became (or will become) "long haulers."[1] That is, they had symptoms that did not fade after days or weeks. For many, it continued months later or continues to exist today. Thus, this data obscures the tens or hundreds of thousands of

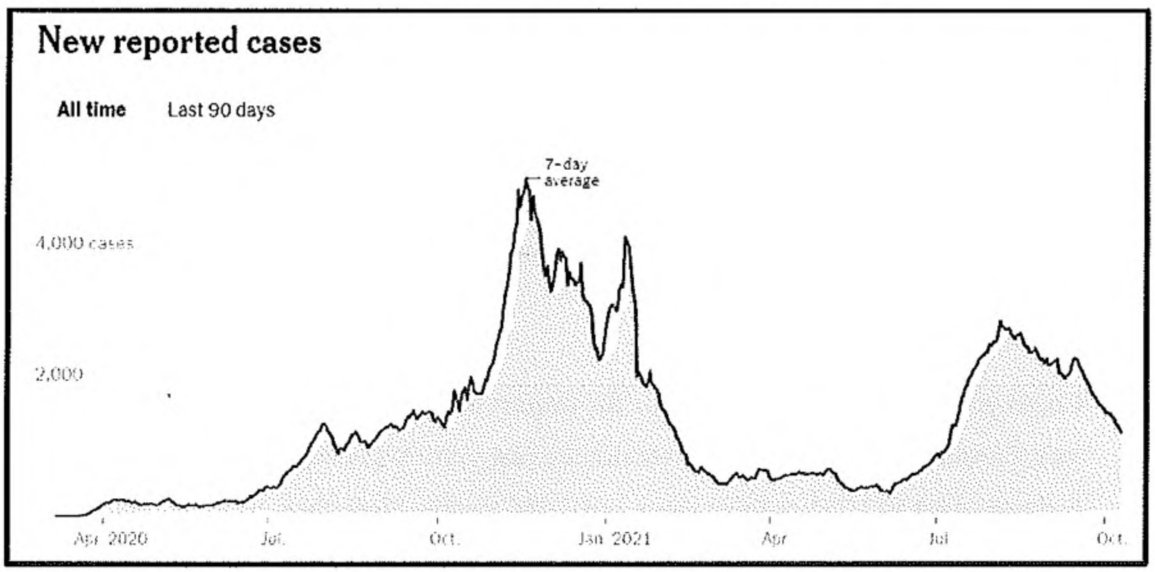
[1] Rubin, R. (2020) As Their Numbers Grow, COVID-19 "Long Haulers" Stump Experts. *Journal of American Medical Association.* https://jamanetwork.com/journals/jama/fullarticle/2771111; Hirschtick, Jana (2021) Severe COVID-19 may be linked to long-haul symptoms. University of Michigan. https://news.umich.edu/severe-covid-19-may-be-linked-to-long-haul-symptoms/

Missourians living with long-term, chronic health issues resulting from their COVID-19 illness. Table 1 provides a one-year comparison of total reported Missouri COVID-19 cases and deaths in early October 2020 and early October 2021 as reported by *The New York Times*. Figure 1 provides a graphical illustration of the daily positive cases in Missouri since the spring of 2020.

Table 1: *The New York Times* Missouri COVID-19 October 2020 and 2021 Data[2]

Missouri	Oct. 9, 2020	Oct. 9, 2021
Positive Cases	142,732	848,938[3]
Deaths	2,360	12,396

Figure 1: *The New York Times* Missouri COVID-19 New Reported Cases[4]



As of October 9th 2021 it is estimated that approximately 57% of Missouri citizens 12 and up are fully vaccinated with roughly 79% of Missourian's 65 and older fully vaccinated.[5] 2020

[2]Tracking Coronavirus in Missouri: Latest Map and Case Count (2021) *The New York Times*. https://www.nytimes.com/interactive/2021/us/missouri-covid-cases.html

[3] 848,938 represents approximately 14% of all Missourians based on the latest census data.

[4] Ibid.

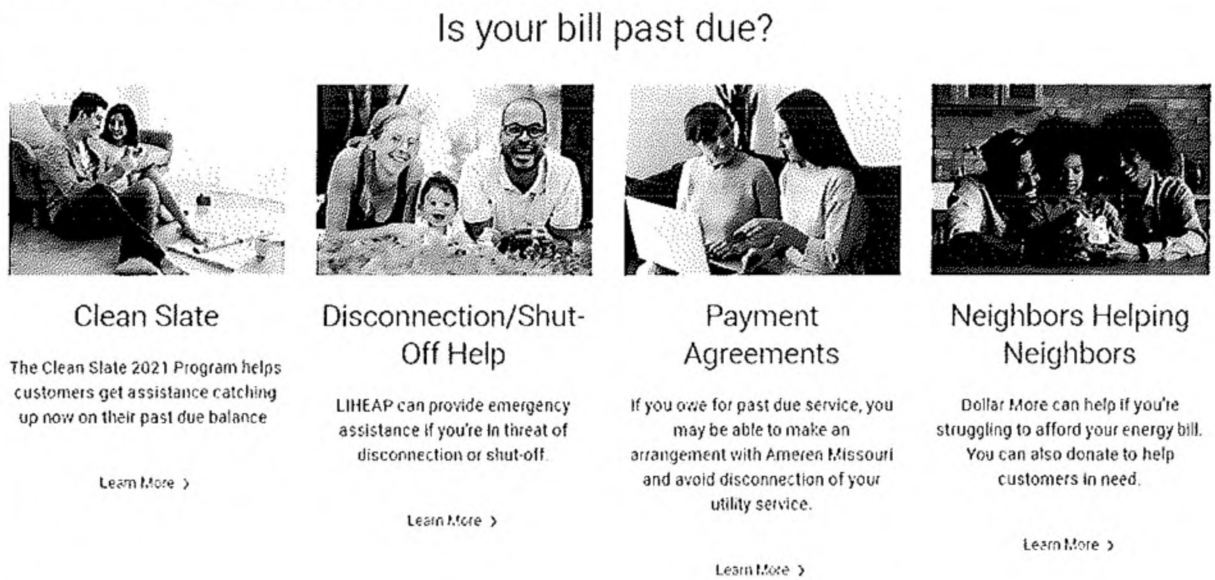
[5] Ibid.

also marked the first time in at least a century in which more people in Missouri died than were born (4,555 more deaths than births).[6]

Q. Mr. Wood claims that Ameren Missouri "earnestly endeavored to be a good corporate citizen" throughout the ongoing COVID-19 pandemic. Do you agree?

A. I do. Ameren Missouri's actions helped numerous customers afford Ameren's electric service during the pandemic. Some of those actions can be seen by looking at Ameren Missouri's payment assistance webpage shown in Figure 2.

Figure 2: Ameren Missouri Payment Assistance Webpage[7]



[6] Suntrup, Jack (2022) For the first time in at least a century, more people died in Missouri than were born, new figures show. *St. Louis Post Dispatch.* https://www.stltoday.com/news/local/state-and-regional/for-the-first-time-in-at-least-a-century-more-people-died-in-missouri-than/article_63a3f432-7179-5df6-821b-365965adb1cd.html

[7] Ameren Missouri (2021) Energy Assistance. https://www.ameren.com/missouri/residential/energy-assistance

Ameren Missouri has also been receptive to OPC's suggestions and requests regarding outreach, networking with state and non-profit agencies, and funding dispersal from various settlements since its last rate case.[8] As a result, Ameren's disconnection and arrearage numbers are considerably better than Liberty, Evergy Metro, or Evergy West and their networking and outreach is well positioned to help facilitate federal funding moving

[8] Case No. ER-2019-0335 $8M in shareholder funds and ratepayer/shareholder Keeping Current Funds were directed and redirected as follows:
March 28, 2020
- $500K for energy assistance related to T.E.H. Realty tenants (unused redirected to bill assistance)
- $500K for Missouri Community Action Network Agency Headquarters
- $7M to Ameren Missouri's Community Action Agencies that administer LIWAP.

May 31, 2020 - $7M reallocated as follows
- $3.5M donated to 14 CAAP agencies to administer LIWAP
- $500K to MOCAN Headquarters
- $3.5M to low income energy assistance (Clean Slate)

April 24, 2021 $3.5M reallocated as follows
- $1.3M to fund low-income energy efficiency programs
- $1.2M to fund low-income energy assistance (Clean Slate)
- $1M to fund administrative costs for agencies assisting low-income customers

September 4, 2021 $1.5M reallocated as follows
- $150K to fund Keeping Current Program Manager two-year period
- $150K to Keeping Current agencies to facilitate hiring of additional personnel, outreach and marketing
- $1M for energy assistance (Clean Slate)
- Keeping Cool expanded program from May through September

forward. Despite other issues I may have with Ameren Missouri in this rate case, I believe Ameren Missouri stepped up their efforts when it counted and continues to be a standard that I hope other utilities in Missouri strive to emulate.

Q. Did Ameren Missouri recently garner national attention regarding select utilities who received federal funding but continued disconnections from COVID-19?

A. Yes. A recent *UtilityDive* article with the headline "16 utilities took $1.2B in COVID relief while continuing power shutoffs: report" highlighted a report issued by the Center for Biological Diversity and Bailout Watch that included Ameren Corp. as a recipient of $8,500,000 in CARES ACT Benefits.[9]

Q. Did you issue discovery in response to this finding?

A. Yes. On October 1st, I issued OPC DR-2036 and DR-2037 which included the following questions for Ameren Missouri:

> 2036. Did Ameren Missouri receive any tax benefits from the government's COVID-19 economic relief packages (e.g., The CARES Act), while also disconnecting customers? If yes, how much and when was this money received?
>
> 2037. In relation to OPC-DR-2036, please provide a narrative response to the inclusion of Ameren Corporation in the "Powerless in the Pandemic: After Bailouts, Electric Utilities Chose Profits Over People" September 2021, from the Center of Biological Diversity found at the following url:https://bailout.cdn.prismic.io/bailout/973caeea-9a3f-4b46-bc1cf68eb8cf63b33_Powerless_Report_v5.pdf

Q. Did you receive a response?

A. Yes. OPC DR-2036's reply by Ameren Missouri witness Warren Wood is as follows:

> No, Ameren Missouri has not received any tax benefits from the government's COVID-19 economic relief packages.

[9] Su, Jean & Christopher Kuveke. (2021) Powerless in the Pandemic: After Bailouts, Electric Utilities Chose Profits Over People. *Bailout Watch*. https://bailout.cdn.prismic.io/bailout/973caeea-9a3f-4b46-bc1c-68eb8cf63b33_Powerless_Report_v5.pdf

OPC DR-2037's reply by Ameren Missouri witness Warren Wood is as follows:

> When the Covid-19 pandemic began impacting our customers and communities in early 2020, Ameren Missouri voluntarily implemented a disconnect for non-payment moratorium, reconnected recently disconnected accounts, stopped charging late fees, and, introduced new energy assistance funding and flexible payment agreement options. To support this need, besides shareholder funding, we also collaborated with the Missouri Office of Public Counsel to redirect funding from a previous agreement. These efforts ultimately provided energy assistance to thousands of customers in need of help.
>
> The company implemented these initiatives and revised policies in response to a real and ongoing crisis with relatively little new federal relief assistance funding available to help struggling customers. In the months that followed, significant federally funded energy assistance funding became available. The company noticed when we suspended regular policies, customers were accumulating large balances while energy assistance dollars were made available, but not being accessed. In other words, when we imposed the moratorium, we inadvertently discouraged customers from accessing available energy assistance. In parallel with resuming late payment fees and disconnections, to encourage customers to access energy assistance while available, we expanded our communications and partnership efforts with community action agencies on available energy assistance and extended payment agreements. These efforts have resulted in fewer customers being disconnected now than in 2019 before the pandemic. Average residential customer past due amounts are also very similar to where they were in 2019. We are continuing to communicate, through a number of outreach channels, available assistance funding and working to connect our customers to these programs.

Q. What is your response?

A It is not entirely clear to me where the $8,500,000 in federal funds went to, what they were applied to, and what, if any, limitations were made on these funds. Further inquiry is warranted as to whether or not Ameren Corporation or Ameren Illinois received the federal funds and whether or not Ameren Missouri could have received such funds and used said funds to offset arrearages or ratepayer expenses but chose not to solicit funding.

III. CUSTOMER AFFORDABILITY

Q. Did Mr. Wood address customer affordability in reference to the 12% rate increase in his testimony?

A. He did. Mr. Wood devoted roughly a page-and-half of testimony on customer affordability stating, in part:

> "At the same time, the Company believes it must work to keep rates affordable, consistent with delivering safe and adequate service while also transitioning to more renewable power as set forth in Ameren Missouri's IRP. To help us achieve that balance, we have launched an initiative to ensure that during this time of major system investment, we don't forget to focus on customer affordability."[10]

Q. Did Mr. Wood provide examples of such initiatives to help Ameren not forget about customer affordability?

A. He did. In addition to providing high-level context for the $299 million overall revenue requirement increase he also identified the use of mechanized trimmers for vegetation management that have resulted in $5 million in annual savings.

Additionally, Mr. Wood identified two "value added" services (electrification and surge protectors) and past (and implied future) legislative changes that the Company has pursued as potential nonessential service revenue offsets.

Q. What is your response?

A. O&M savings are always welcomed; however, the alarming disproportion between CAPEX spending ($299 M) relative to O&M savings ($5 M) Mr. Wood chose to highlight is both disappointing and concerning moving forward. Perhaps this single example was meant to be

[10] ER-2021-0240 Direct Testimony of Warren Wood. P. 10, 9-13.

merely illustrative and greater ratepayer benefits have resulted from the copious amounts of CAPEX investment in this case, but I have seen no such analysis. My direct testimony discussed my concern over the lack of any cost-benefit analysis, or perhaps more importantly, any performance metrics to gauge success on Ameren Missouri's plant-in-service accounting (PISA) investments.

As it pertains to non-traditional, value-added service filings (promotional practice variances for electrification, surge protectors, bitcoin mining, broadband expansion, etc.) to potentially offset revenue requirements, I find it troubling to consider that this is where we are at to mitigate rate shock. Any time a natural monopoly (investor-owned utility) operates outside of its traditional, defined role it raises fair competition concerns and almost always results in increased risk exposure to ratepayers.

Q. You mentioned rate shock. Do you consider a 12% rate increase rate shock?

A. I do. Especially when you factor the many surcharge increases that are also increasing rates but outside the scope of this rate case (e.g., MEEIA, RESRAM, FAC) as well as the many households still struggling in light of the changing economy the COVID pandemic has ushered in. A double-digit rate increase will have a negative impact on effectively the bottom third of Ameren Missouri's residential households. Primarily low and fixed income households will be most impacted, with those impacts compounded by general rate and surcharge increases from their water and natural gas service providers.

Q. Have any Ameren Missouri customers publically raised concerns about this 12% rate increase that you would like to highlight?

A. Yes. In addition to comments made to the Commission through EFIS and in the public hearings, on September 8th a coalition of environmental, veteran and tenant advocates held a press conference publically opposing the rate increase and calling for a more equitable outcome in the Ameren rate case.[11] Specifically, the group listed the following concerns:

1. **No bill increases for families:** Ameren must put people first. In the midst of a pandemic and the resulting economic crisis it has caused, Ameren's residential customers–families, seniors, medically vulnerable individuals, and regular folks just trying to survive–cannot afford to pay higher utility bills.

2. **No increase to the fixed monthly charge:** Thousands of working families are already facing high energy burdens. Low-income households generally use less energy and higher fixed charges harm customers for conserving energy.

3. **Include consumer protections alongside new rate designs:** Ameren should work with communities to proactively protect Missourians. Innovations like time-of-use rates, which charge customers more for energy used during dangerously hot summer temperatures, should include robust consumer protections and be tested with non-low-income households first, until the impacts are better understood.

4. **No shut-offs for non-payment:** Ameren must immediately implement a shut-off moratorium for the duration of the COVID-19 pandemic. Further, as utility service is essential to public health, Ameren should propose and implement a plan to achieve permanent elimination of shut-offs due to non-payment of bills, including but not limited to higher bill assistance budgets to help families, greater debt forgiveness, realistic payment plans, the elimination of penalties and fees, better assistance programs, and tools like efficiency and renewables that reduce bills in the long term.

5. **Invest corporate profits in debt forgiveness:** Ameren shareholders should do their part by pitching in to forgive families' utility debts after the COVID-19 crisis, rather than expecting struggling households to shoulder this burden alone. Excess profits that Ameren earned from its residential customers during the COVID-19 crisis should be returned to directly benefit struggling households with low or fixed incomes via bill credits, debt forgiveness, and energy efficiency offerings. Debt forgiveness allows families to remove debt built up prior to program participation and meet current bill payment obligations. Families, seniors, and others who were unable to afford their bills prior to payment program participation are unlikely to be able to afford even a discounted bill if they also have responsibility for paying off large, accumulated past debt.

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[11] Kite, Allison (2021) 'Simply unconscionable': Advocates push Ameren to keep electric bills low during pandemic. *Missouri Independent*. https://missouriindependent.com/2021/09/08/simply-unconscionable-advocates-push-ameren-to-keep-electric-bills-low-during-pandemic/

6. **Realistic and expanded payment and billing plans:** Ameren should implement strategies to ensure families can keep the lights on, maintain a safe temperature, and stay in their homes. Payment plans should reflect the financial realities of the households Ameren serves. Payment plans should be available all year and include, but not be limited to, 18-month or longer payment plans, the ability for families to renegotiate plans, percent of income payments, and more. Families have expressed a preference for predictable monthly energy bills that do not fluctuate over the course of the year. Percent of income payment plans provide more equitable benefits based on energy burden, result in fixed monthly payments, serve lower-income households, and have greater impacts on reducing energy burden, providing a greater opportunity for bill management.

7. **No penalties/fees:** Ameren should eliminate penalties and fees that punish households–families, seniors, medically vulnerable individuals and regular folks just trying to survive–for not having the money to pay their utility bills. This should include, but is not limited to the following, no more late payment fees, shut-off fees, or reconnection of services fees.

8. **Greatly increase funding for bill assistance and do more to help working families and those on fixed incomes achieve lower bills in the long term:** Building on its success to date, Ameren should expand eligibility and greatly increase the budgets for the Keeping Current and Keeping Cool programs in order to allow more families to receive assistance and for a longer period. Ameren should continue the collaborative process to review bill assistance program recommendations and make consensus changes. Ameren should collaborate with partners to incentivize families to participate in other assistance programs, but avoid requirements that can pose barriers to participation. Further, Ameren needs to establish strong linkages between payment assistance programs, energy efficiency/weatherization, and income-eligible renewable energy programs in order to help struggling families achieve lower bills in the long term.

9. **Greater data transparency:** Ameren should track and publicly report out data on energy burden and residential shut-offs for non-payment, both demographically and geographically. This will enable better policy and program design so that families receive equitable benefits in proportion to their need for assistance.[12]

[12] Empower Missouri (2021) Ameren Rate Case Calls to Action. https://empowermissouri.org/affordable-housing-coalition/ameren-rate-case-calls-to-action/

Q. Do you agree with these sentiments?

A. I won't address each issue individually but I generally agree with many of the concerns/demands raised above and those are reflected in both my direct and rebuttal testimony in this case and in other dockets (e.g, Case No: AW-2020-0148 "In the Matter of a Working Case to Consider a Proposed Customer Disconnection Data Reporting Rule").

Q. Is there anything else the Commission should be aware of that will compound the crisis many households would face from a 12% rate increase?

A. Yes. Inflation has surged in 2021 and is at a 30-year high. According to the U.S. Bureau of Economic Analysis:

> The price index tracking consumer spending — the PCE price index — was up 4.3% over the 12 months ending in August. That was a faster pace than July's 4.2%. Inflation continued to run at the fastest pace since January 1991.[13]

Some analyst are concerned that the U.S. may be approaching a period of stagflation.[14] That is, a combination of inflation, slow economic growth and high unemployment. Regardless, an overall decrease in the purchasing power of the dollar coupled with Ameren Missouri's 12% rate increase will impact vulnerable households most of all and underscores the importance of my recommendations regarding low and fixed-income customers in direct, and now in rebuttal testimony to be discussed later. The Commission should also be cognizant that the U.S. Energy Information Administration reported on Wednesday (Oct. 13) that it expects households to see their heating bills jump as much as 54% compared to last winter as already tight global supply conditions will be pressed by colder overall forecasts.[15] A breakdown of expected rising energy prices in the coming months can be found in Figure 3.

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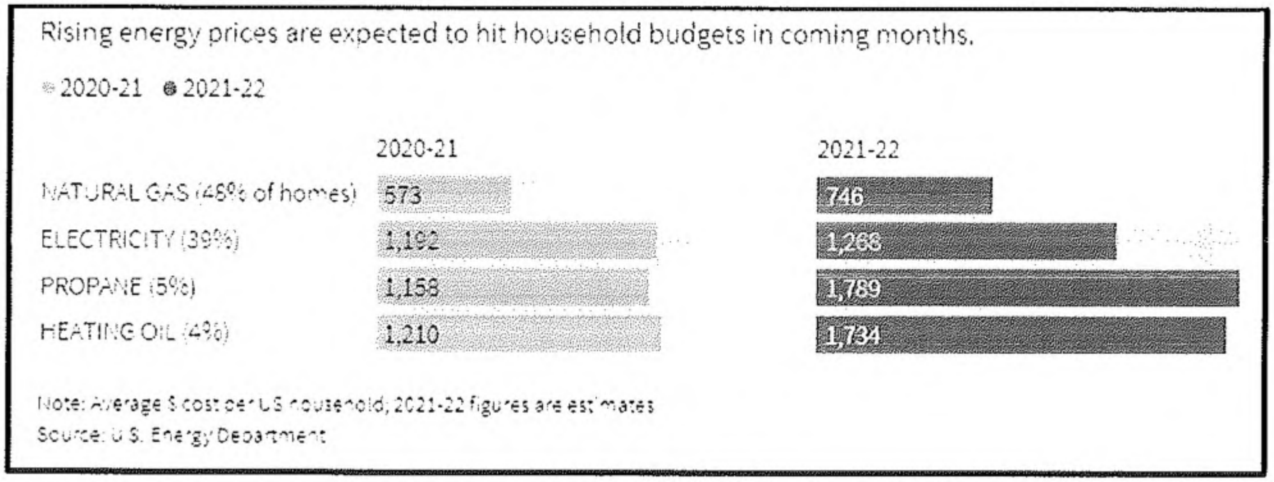
[13] Bureau of Economic Analysis (2021) News Release: Personal Income and Outlays, August 2021. https://www.bea.gov/news/2021/personal-income-and-outlays-august-2021

[14] Detrixhe, John (2021) Why economists are talking about stagflation. *Quartz* https://qz.com/2068772/why-economists-are-talking-about-stagflation/

[15] Disavino, Scott (2021) U.S. home heating bills expected to surge this winter EIA says. *Reuters*. https://www.reuters.com/world/us/us-home-heating-bills-seen-higher-this-winter-eia-says-2021-10-13/

Figure 3: Home Heating bills to rise this winter (2021-2022) [16]



Finally, the Commission should be cognizant that potentially major costs could be on the horizon related to the recent U.S. Court of Appeals ruling on Ameren's Rush Island Power Station.[17] What exactly Ameren Missouri will do with Rush Island and the interplay between shareholder/management or ratepayer responsibility looms large in the background of this rate case.

Q. Do you have any recommendations for the Commission as it pertains to customer affordability, cost-effectiveness and performance metrics regarding PISA investments?

A. Yes. I recommend the Company work with OPC, Staff and other interested stakeholders to solicit feedback on quantitative metrics to both justify cost expenditures moving forward and select performance metrics to demonstrate that expensive PISA investments are not solutions looking for problems that don't exist. This could be done over a series of stakeholder webinars and/or live workshops where the end result would include quarterly reports to the Commission in Ameren Missouri's PISA docket beginning within the first quarter of Ameren Missouri's

[16] Ibid.

[17] Barker, Jack (2021) US Court of Appeals: Ameren must install scrubbers at Jefferson County Coal Plant. *St. Louis Post-Dispatch* https://www.stltoday.com/news/local/state-and-regional/u-s-court-of-appeals-ameren-must-install-scrubbers-at-jefferson-county-coal-plant/article_4209c272-4bef-56c6-a27c-08b6ad7a8ccc.html

new rates going into effect to provide proper, transparent accountability and regulatory oversight.

Q. Do any metrics come to mind?

A. Yes. Of course any benchmark metrics would need to consider historic numbers that preceded investments, and should include: disconnections and reconnections; average arrearages; reliability metrics overall as well as select grid locations; affordability benchmarks; load shape data, time-of-use (TOU) participation, O&M savings, and customer service metrics. No doubt parties could offer up additional suggestions and perhaps the Commission may have some specific metrics they would want tracked.

Such an ask seems more than reasonable and long-overdue considering the billions in funding ratepayers are being asked to shoulder.

IV. RESIDENTIAL RATE DESIGN

Evening/Morning Savers Billing Issues

Q. What is the status of residential TOU rates since Ameren Missouri's last rate case?

A. Not good. The 2019 rate case stipulation called for a staged implementation of a new default rate that Ameren Missouri refers to as the "Evening/Morning Savers" rate. The idea was that existing AMR customers would be assigned the same traditional rates (Ameren Missouri refers to these as the "Anytime Users") and that as AMI was deployed customers would be defaulted to the "training wheel" TOU rate that Ameren refers to as the "Evening/Morning Savers" rate. Each rate customer with an AMI would then have an option to choose from one of the other suite of rate offerings.

In October of 2020, Ameren Missouri requested additional time to complete the transformation of its billing system to support the default process, rate comparisons, and implementation of new rates. In short, nothing has happened since we last had Ameren Missouri here for a rate case. No training wheels. No rate comparisons, no online tool comparisons based on historic data—everything has been postponed to the spring of 2022.

Q. What is your response?

A. I am disappointed. Admittedly, my disappointment with Ameren Missouri does not approach that of Evergy Metro or Evergy West that has had AMI hardware and software fully deployed and in rate base earning a return on and return of its investment for six years, but this is not a good start to Ameren Missouri's Smart Energy Plan roll-out. According to Mr. Wills' testimony:

> As of March 1, 2021, there are approximately 170,000 residential customers that are currently being served through AMI meters. Of these customers, 5 are currently taking service on the Overnight Savers rate, and 14 on the Smart Savers rate.[18]

To be clear, a grand total of 19 customers were utilizing TOU rates as of the date of Ameren Missouri's filing and more than 170,000 units of AMI are being added to rate base for the Company to earn a profit off of. I encourage the Commission to be mindful of this cost-ineffective ratio when it considers the appropriate ROE to set for Ameren Missouri.

Q. Do you support Ameren Missouri's recommendation to keep the residential rate parameters largely the same?

A. I do. To be clear, I support that largely across the board. It also extends to maintaining the residential customer charge and not instituting a decoupling tracker to account for potential "lost" revenues. On those two topics, I have more to say in this testimony. Ameren Missouri dropped the ball on what they could deliver with its TOU rates from the last rate case. I am willing to give the Company the benefit of the doubt, especially in light of the COVID-19 pandemic that immediately followed their last rate case, but if the Company wants to not rock the boat on rate differentials—then it needs to be consistent—across the board.

[18] ER-2021-0240 Direct Testimony of Steven M. Wills p. 8, 17-20.

Customer Charge

Q. What is the customer charge?

A. A fixed charge to customers each billing period, typically to cover metering, meter reading and billing costs that do not vary with size or usage. Also known as a basic service charge or standing charge.

Q. What kind of costs should be recovered in the customer charge?

A. To state the obvious, customer-related costs should be recovered in the customer charge. These should be costs sensitive to connecting a customer irrespective of the customer's load (e.g., meter, billing). That is, customer-related costs exist even when kW demand and kWh are zero.

When adding one or more customers on the system raises the utility's cost regardless of how much the customer uses (billing is an example) then a fixed charge to reflect that additional fixed cost the customer imposes on the system makes perfect economic sense. Utilities can justify a customer charge recovering these basic costs because they are directly related to the number of customers receiving an essential monopoly service. The idea that each household has to cover its customer-specific fixed cost also has obvious appeal on grounds of equity. This is contrasted with system-wide "fixed" costs, such as maintaining the distribution network, which do not change if one customer were to drop off the system.

Q. What is the end-result of raising or lowering the customer charge?

A. An increase to the customer charge positively impacts above-average use customers and negatively impacts below-average use customers. On the other hand, a decrease to the customer charge positively impacts below-average use customers and negatively impacts above-average use customers. Stated differently, "in general," a lower customer charge tends to favor low-income customers, renters, and customers who have invested in energy efficiency and solar (or plan on investing in those items).[19] In contrast, a higher customer

[19] I say "in general", as there will be affluent customers who have below average use and low-income customers with above-average usage.

charge favors affluent customers and electric space-heating customers. It also provides greater revenue certainty for the utility.

Q. What amount is Ameren Missouri proposing for a residential customer charge?

A. Ameren Missouri has effectively proposed a 22.2% increase to the customer charge ($9 to $11) for the majority of its customers (i.e., the "anytime user" or non-TOU plan, as well as the Evening/Morning Savers or AMI-default plan, and the Overnight Savers). Ameren has proposed a lower residential customer charge for rate plans it deems as "more risky". A breakdown of the proposed residential customer charges is as follows in Table 2 below:

Table 2: Ameren Missouri's Proposed Residential Rate Plan Customer Charge Amounts

Rate Plan Name	Proposed Customer Charge
Anytime User (non-AMI)	$11
Evening/Morning Savers	$11
Overnight Savers	$11
Smart Savers	$10
Ultimate Savers	$9

Q. What amount is Staff proposing for a residential customer charge?

A. Staff's class cost of service (CCOS) study resulted in a residential customer charge of $7.92. However, given the data limitations expressed earlier in this testimony, Staff is recommending that the customer charge remain at its current level of $9.00.

Q. What amount is CCM proposing for a residential customer charge?

A. Citing the importance of maintaining customer control of their bills, CCM has proposed to maintain the residential customer charge at $9.00.

Q. How did stakeholders reach such different conclusions?

A. Different methodologies utilized in their CCOS studies produce different results. However, this specific issue comes down to how FERC Accounts 364-368, or the fixed distribution investments, are allocated.

The appropriate allocation of these costs are not a new problem. In his 1961 seminal work, *Principles of Public Utility Rates*, James Bonbright concludes that there is no sound basis for the allocation of these costs as either customer or demand:

> But if the hypothetical costs of a minimum-sized distribution system is properly excluded from the demand-related costs for the reasons just given, while it also denied a place among the customer costs for the reason stated previously, to which cost function does it belong then? **The only defensible answer, in my opinion, is that it belongs to none of them. Instead, it should be recognized as a strictly unallocable portion of total costs.** And this is the disposition that it would probably receive in an estimate of long-run marginal costs. But the fully-distributed cost analyst dare not avail himself of this solution, since he is the prisoner of his own assumption that "the sum of the parts equals the whole." **He is therefore under impelling pressure to "fudge" his cost apportionments by using the category of customer costs as a dumping ground for costs that he cannot plausibly impute to any of his other cost categories** (emphasis added).[20]

Q. Is the allocation process involved in the fixed distribution costs arbitrary?

A. Like Bonbright, I believe so. If the allocation can be dramatically changed by replacing one persuasive allocation criterion by another with no less plausibility, then the process ultimately functions as suggestive "guideposts" for the Commission to consider when setting how revenue will be collected. Economist William J. Baumol concurred:

> No form of cost allocation can pretend to be compatible, generally, with efficiency in resource allocation, no matter how sophisticated its derivation.[21]

It is also unfair to allocate these cost increases uniformly because any standard of "uniformity" inherently handicaps one class of customers to the benefit of another. As Economist Richard L. Schmalensee notes:

[20] Bonbright, J., et al. (1988) Principles of Public Utility Rates p. 492
[21] Baumol, W.J. & D. Fischer (1986) Superfairness: Applications and Theory. Cambridge. p. 146

> It is not a matter of improving cost studies or methodologies; costs that do not vary with the volume of service cannot be allocated on a cost-causative basis to individual services. Indeed, any allocation of fixed costs is necessarily arbitrary. . . . Shippers of diamonds, coal and feathers would prefer that the railroad allocate the fixed common costs of the railroad tracks on the basis of volume, value, and weight respectively, but none of these allocators is objectively better than the others. Since these fixed costs do not vary with the volume shipped, there is no objectively 'reasonable share of the joint and common costs of facilities' to allocate, and yet each party has a passionate stake in the outcome of the allocation.[22]

Q. If allocations are in part arbitrary, what should the Commission rely on?

A. I suggest that the Commission be cognizant that reasonable minds can and will differ over the appropriate allocation of the distribution system. Moreover, the Commission is not bound to set the customer charge based solely on the results of any CCOS. Cost studies (both marginal and embedded) rely on a host of simplifying assumptions in order to produce workable results. Since one objective of regulation is to serve as a proxy for competition, to impose upon a single provider the disciplines of competitive markets, it is reasonable to consider the structure of prices in competition when pricing monopoly services. Two relevant facts emerge. The first is that goods and services in competition are invariably available and priced on a unit basis. And the second is that the extent to which more restrictive pricing schemes exist is a measure of the lack of competition in that particular market. In competition, a consumer who does not consume a product or service does not nevertheless pay for the mere ability to consume it. Thus, as a general matter, prices should be structured so that, if a consumer chooses not to purchase a good or service, he or she has

[22] Qtd in (1999) Federal Communications Commission filings found in: http://apps.fcc.gov/ecfs/document/view;jsessionid=yRkfTYLdrdGzpzSNVhHML9FcznF98ppyPfQ1vMgvSky3cDnL14LY!1281169505!1675925370?id=1319580003

no residual obligation to pay for some portion of the costs to provide that good or service. In this sense, from the consumer's perspective, costs should be "avoidable."[23]

Looking at how energy markets operate, it is apparent that the marginal cost of electricity generation goes up at higher-demand times, and all generation gets paid during those high peak prices. That means extra revenue for Ameren Missouri's baseload plants above its marginal costs, and those revenues can go to pay the fixed costs of said plants. The same argument goes for transmission lines, where price differentials between locations means that the transmission line generates revenue above its marginal cost (which is effectively zero), and can go to pay the fixed cost of transmission lines.

In fact, the fixed costs of generation and transmission should generally be covered without resorting to increased fixed monthly charges. Likewise, distribution costs are driven by demand, number of customers, and energy needs. This is true both in the short and long runs. Utilities are continually investing in distribution plants—new facilities, upgrades, and replacements—in response to changes in load, and therefore costs can be avoided. Collecting this revenue through a fixed customer charge suggests that on-peak consumption is less costly than in fact it is.

An efficient price signal recognizes resource allocation is most efficient when all goods and services are priced at marginal cost. For efficient electricity investments to be made, the marginal cost should be based on the appropriate timeframe. Bonbright states:

> I conclude this chapter with the opinion, which would probably represent the majority position among economists, that, as setting a general basis of minimum public utility rates and of rate relationships, the more significant marginal or incremental costs are those of a relatively long-run variety—of a variety which treats even capital costs or "capacity costs" as variable costs.[24]

[23] Weston F. (2000) Charging for distribution utility services: issues in rate design. The Regulatory Assistance Project.http://www.oca.state.pa.us/cinfo/DistributedResourcesWorkshop/DistributionUtilityIssues/DistributionUtilityRateDesign.pdf

[24] Bonbright, J., et al. (1961) Principles of Public Utility Rates (New York: Columbia University Press) p. 336

A fixed charge including long-run marginal costs provides no price signal relevant to resource allocation, since customers cannot reduce consumption enough to avoid the charge. In contrast, an energy charge reflecting long-run marginal costs will encourage customers to consume electricity efficiently and, thereby avoiding inefficient future utility investments.[25]

Economist Jim Lazard provides a useful analogy for Commission consideration:

> "A person living alone pays much less to the grocery store, where all fixed costs are built into the per-item prices, than a family of six, and we consider that fair," Lazar said. The per-item price is like the per-kWh price, which is where grocery store and the utility must meet their revenue requirements.
>
> A fixed charge is like a price all customers would pay to enter the store. "A market cannot charge $20 to enter the store, because the customer would go to another store," Lazar said. "The purpose of regulation is to enforce on monopolies the pricing discipline that markets enforce under competition."[26]

Q. What is your recommendation?

A. Historically, distribution costs have been recovered through the energy charge in light of economic and public welfare characteristics. More recently, an emphasis on public policy goals focusing on energy efficiency and environmental stewardship have reinforced those decisions. I see very little reason to deviate from that rationale. This is especially true in light of Ameren Missouri's MEEIA Cycle III compensation, reward and two additional extensions. I recommend that the Commission maintain the $9.00 residential customer charge across each of the residential offerings.

[25] Whited, M. et al. (2016) Caught in a fix Synapse Energy Economics http://www.synapseenergy.com/sites/default/files/Caught-in-a-Fix.pdf
[26] Trabish, Herman K. (2018) Are regulators starting to rethink fixed charges? *Utility Dive*. https://www.utilitydive.com/news/are-regulators-starting-to-rethink-fixed-charges/530417/

Smart Savers Rate Change

Q. What changes does Ameren Missouri propose for its Smart Savers Rate?

A. Despite taking the position to not change rate design parameters, Mr. Wills does recommend changing the rate design parameters around the Smart Savers rate by removing the 2 o'clock hour from the peak period during the summer months. To his credit, Mr. Wills is forthright with this inconsistency and provides eight pages of testimony supporting his position. Mr. Wills request is premised on the idea that such a move will help future-proof the rate as more rooftop solar comes online.

Q. Do you support this change?

A. I do. Mr. Wills makes a persuasive argument as it will likely be a few years before the solar development will be at a level that can have an impact on the net system load shape.

Promotional Names for TOU Rates

Q. What is Staff's position regarding Ameren Missouri's promotional names for rates?

A. Ameren Missouri has utilized a series of residential TOU rate names that Staff has characterized are promotionally positive but omit the risk inherent in, for example, being an "Ultimate Saver." As such, Staff recommends that the Commission order Ameren Missouri to rename their rates with more objective titles.

Q. Do you agree?

A. I do. Admittedly, I had not given Ameren Missouri's TOU residential rate names as much thought as is probably warranted, but based on Staff's position I could see a scenario where such promotional name "nudges" could result in unintended repercussions due to misunderstandings on the customers' end.

Q. What do you propose as an alternative?

A. For the sake of discussion I'll suggest a color scale rate plan name as an alternative as shown below in Table 3:

Table 3: Possible Color Coded Rate Plan Name

Current Rate Plan Name	Color Code Rate Plan Name
Anytime User (non-AMI)	Blue
Evening/Morning Savers	Purple
Overnight Savers	Orange
Smart Savers	Red
Ultimate Savers	Yellow

Any emphasize on risk and reward for a given plan should then lean heavily on Ameren's marketing and education side. I would encourage other parties to weigh in accordingly in surrebuttal testimony as there are no doubt other objective names that warrant consideration.

V. 12M ALUMINUM SMELTER RATE

Q. Ameren Missouri proposes to remove the 12M rate from its tariff. Do you agree?

A. No. I would offer up the same arguments I made in Case No: ED-2019-0309 to keep this tariff in place:

- The Commission and the General Assembly have recognized the importance of the New Madrid Smelter's load to current Ameren customers and to the Missouri economy at large;
- Since 2003, the New Madrid Smelter has switched electric providers four times;
- Currently, the New Madrid Smelter has three options for procuring reliable electricity at competitive rates.[27] The cancellation of the Ameren certificate will eliminate one future option and may have a detrimental impact on the future financial viability of the smelter.

[27] 1.) Associate Electric Cooperative; 2.) Access through the electric market under Section 91.026; and 3.) Ameren Missouri at a discounted retail rate under Section 393.355.

- There are presently no direct costs incurred for keeping the tariff open and the certificate active. Therefore, there are no benefits associated with cancelling the 12M rate class;
- Ameren Missouri lost approximately 10% of its energy sales following the Noranda bankruptcy and is otherwise forecasting no future load growth; and
- Ameren Missouri is long on capacity, is planning on spending billions of dollars in their "smart energy plan" over the next few years and could be exposed to either hundreds of millions of dollars in stranded investments or environmental compliance costs in the near future dedicated to its Rush Island Energy Center. A 12M customer would help shoulder these costs.

Given the aforementioned facts, it would be irrational and detrimental to the public interest to take actions to actively discourage a future customer when there are virtually no costs associated with maintaining the tariffed rate. Canceling the 12M rate class option merely increases the uncertainty for the smelter and the economic health of Southeast Missouri. Finally, it negates the potential that the New Madrid smelter could help mitigate future Ameren rate increases.

VI. DECOUPLING TRACKER

Q. Why is Ameren Missouri proposing a decoupling tracker?

A. To provide revenue certainty for shareholders.

Q. Can Ameren Missouri propose a decoupling tracker?

A. No.

Senate Bill 564 allows utilities to elect Plant-In-Service Accounting *or* revenue decoupling. Ameren Missouri elected the former. Effectively, the only difference between the SB 564 decoupling option and what Ameren Missouri is proposing is the ability for the Company to collect "lost" revenues outside of a rate case. Ameren Missouri is proposing a tracker which provides the same end result—shareholder risk reduction through revenue certainty. Ameren

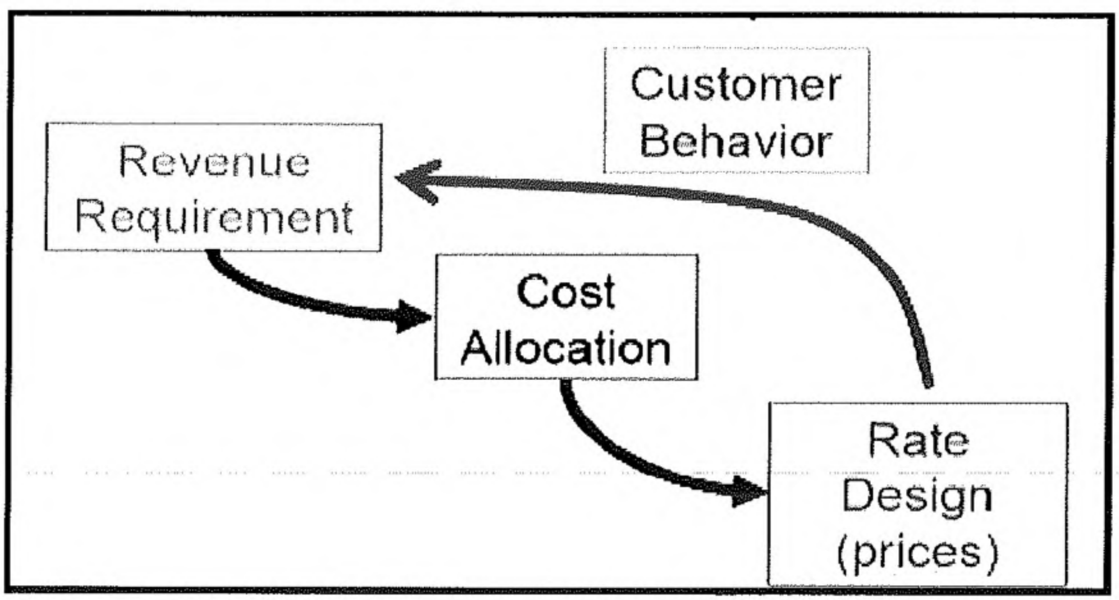
Missouri wants to have it both ways. The Commission should reject this request out-of-hand as the General Assembly only allowed for one shareholder risk reduction track.

VII. CLASS COST OF SERVICE STUDIES

Q. What is a CCOS?

A. It is an analysis that allocates a utility's allowed costs to provide service among its various customer classes. The total cost allocated to a given class represents the costs that class would pay to produce an equal rate of return to other classes. There is no one definitive accepted method. Instead, there are different methodologies (e.g., Average and Peak, Average and Excess, Base-Intermediate-Peak, Capacity-Assigned, etc.) and cost allocation factors that produce different outcomes. If step one in a rate case is determining the revenue requirement then step two is allocating those costs among customer classes. Step three then focuses on designing the rates for appropriate cost recovery. How rates are designed influences future revenue requirements, thus providing a feedback loop on the entire process. Figure 4 provides a simplified, illustrative feedback loop of the rate case process.

Figure 4: The Rate Case Feedback Loop



Q. What were the parties' CCOS positions?

A. Predictably, they all varied.

Q. Did OPC perform a CCOS study?

A. No. There was not enough time or resources available so I base my recommendations, in part, on the studies filed in this case.

Q. What CCOS study do you believe the Commission should rely on?

A. In my opinion, the Commission should rely on Staff's study for an objective perspective in this case. I would strongly encourage the Commission to read Staff's CCOS report in total as the text and footnotes document the many challenges the Staff had in securing cost allocation data from Ameren Missouri in this case.

Q. Wasn't this a theme in the last Ameren Missouri rate case as well?

A. It was. In fact, a Corrected Non-Unanimous Stipulation and Agreement was entered into in which Ameren Missouri would provide disaggregation data related to distribution system infrastructure investments (the primary cost driver in this case) to prevent the very thing Staff is frustrated with.

As it stands, I will wait to see Ameren Missouri's response to the Staff report before I opine further on this topic (in surrebuttal testimony).

Q. What did the Staff CCOS conclude?

A. Utilizing three separate methodologies the Staff concluded the following:

> These results indicate that the lighting rate class appears to be over-contributing to Ameren Missouri's return on investment, and that the LPS class may be under-contributing to Ameren Missouri's return on investment, however, most classes are generally within a reasonable range of providing their target contribution to Ameren Missouri's Staff-recommended rate of return upon application of a system average increase to revenue requirement. . . .
>
> based on the results of Staff's direct CCoS Studies and its expert judgement considering the precision of such studies in general and known shortcomings of

> these studies in particular Staff recommends that the approximate $221,386,208, or 8.88%, be allocated to the classes as an equal percentage increase, based on Staff's direct revenue requirement as constituted and analyzed as described in this Report.[28]

Q. Do you have any recommendations now?

A. I recommend an equivalent percentage increase in rates across all classes consistent with Staff recommendations.

Q. Are you concerned about the data underlying Ameren Missouri's Smart Energy Plan Capital Projects as raised by Staff?

A. I am, and will monitor that development accordingly. OPC represents all customer classes and will strive to provide an objective, equitable analysis, as such; I reserve the right to amend my recommendation.

VIII. LOW-INCOME PROGRAMS

Q. What were Consumers Council of Missouri's recommendations regarding the Keeping Current program?

A. CCM witness Ms. Hutchinson recommended the following modifications:

- Increase annual funding to $5 million annually, split 50/50 shareholders and ratepayers; and
- Increase eligibility to 250% of the federal poverty level ("FPL").

Q. Do you agree with these recommendations?

A. I support the increase and the sharing of funding for the Keeping Current program. Keeping Current has long been held up as a gold standard for utility low-income assistance programs in Missouri. Multiple 3rd party studies have validated its results and shown spillover benefits for all ratepayers. An increase in overall funding is both appropriate and frankly overdue.

[28] ER-2021-0240 Staff Class Cost of Service Report, p. 46, 7-11 & p. 48, 19-23.

Normally I would be less inclined to support Ms. Hutchinson's recommendation to expand the eligibility threshold to 250% FPL; however, given the uncertainty surrounding federal assistance, the ongoing pandemic, as well as the sheer size of Ameren Missouri's requested rate increase and the increase in inflation, I think a 250% increase could be justified and reexamined in the next rate case. Table 4 provides a breakdown of the income/household size eligibility requirements for Keeping Current (200% FPL) and Keeping Cool (250% FPL) programs. [29]

Table 4. Breakdown of Exisiting Keeping Cool and Keeping Current Eligibilty

Keeping Current (200% Poverty)			**Keeping Cool (250% Poverty)**		
Family	Annually	Monthly	Family	Annually	Monthly
1	$25,760	$2,147	1	$32,200	$2,683
2	$34,840	$2,903	2	$43,550	$3,629
3	$43,920	$3,660	3	$54,900	$4,575
4	$53,000	$4,417	4	$66,250	$5,521
5	$62,080	$5,173	5	$77,600	$6,467
6	$71,160	$5,930	6	$88,950	$7,413
7	$80,240	$6,687	7	$100,300	$8,358

Q. Did Ms. Hutchinson make any additional low-income recommendations?

A. Yes. She recommended the following:

[29] Keeping Cool provides up to three bill credits of $25 during summer months. Best suited for seniors, people with disabilities, the chronically ill or households with young children, it is effectively a subsidy to ensure vulnerable households do not have their AC disconnected in the summer. In contrast, Keeping Current is a payment assistance program that includes a monthly bill credit, along with help to reduce the total amount you owe.

- Redesign Ameren's medical registry, including an online portal that is accessible to medical health professionals; and
- To no longer institute reconnect, collection trip and late fee charges.

Q. Do you agree with these recommendations?

A. Yes. I support the inclusion of an online registry accessible to medical health professionals. I believe such an option complements my recommendation in direct testimony regarding funding for the Critical Needs Program.

Reconnection and collection trip charges should no longer be applicable moving forward with AMI technology. As it pertains to late fees I continue to maintain my recommendation that late fees be set at Ameren Missouri's short-term debt which should align more closely with the actual cost of service, minimize the punitive pressure on struggling customers and still incentivize timely payments by having the "threat" of late payment.

IX. COMMUNITY SOLAR

Q. What changes does Ameren Missouri propose to the Community Solar Pilot Program?

A. A summary of the changes to the existing Community Solar Pilot Program proposed in the Direct Testimony of Ameren witness Annemarie Nauert are included in Table 5:

Table 5: Ameren Missouri's Current and Proposed Community Solar Change

Pilot	Proposed
Solar Blocks of 100 kWh	Fixed Percentage of kWh
Customers can subscribe to replace up to 50% of last 12 months' average annual energy usage, in whole block increments (rounding down)	Customers can subscribe to replace up to 100% of monthly usage, in 1% increments
Resource construction cannot begin until 90% subscription level	Resource construction cannot begin until 50% subscription level
Participation fee of $25/block for new resource (not replacement from waitlist) enrollments only	Fixed participation fee of $25 for all enrollments

Q. Do you support changing the subscription blocks to a fixed percentage?

A. Yes. The amendment appears reasonable.

Q. Do you support changing the subscription percentage to include up to 100% of usage?

A. Yes. The amendment appears reasonable.

Q. Do you support changing beginning new resource construction from 90% subscription level to 50% subscription level?

A. No.

Q. Why?

A. My primary concern surrounding Ameren Missouri's Community Solar program centers on liability surrounding unsubscribed blocks that could result in non-participants having to pay for even more generation that is not needed to serve load. The 90% subscription threshold was put in place to ensure that there would be enough customers interested to justify future projects. It's great that Ameren Missouri was able to fulfill subscriptions in under 100 days with its first pilot program. The same could not be said for the west-side of the state.[30] We are however relatively early in this process (i.e., one operational project in five years).[31] At this point, I believe it is premature to move off the 90% subscription threshold. The program is working as intended but with only a sample size of 1 considerable more evidence is warranted.

Q. Do you support a fixed participation fee of $25 for all enrollments?

A. Yes. The amendment appears reasonable.

Q. Do you have any additional recommendations to the Community Solar program?

A. Yes. I articulated my concern about building out additional rate base and excess generation at a reduced subscription level, but that is not the only fear I have surrounding the viability of the Community Solar Program. Long-term concerns remain surrounding participating customers

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[30] Uhlenhuth, Karen (2020)Kansas City utility's community solar project a slow starter with customers. *Midwest Energy News*. https://energynews.us/2020/03/16/kansas-city-utilitys-community-solar-project-a-slow-starter-with-customers/

[31] The Montgomery Community Solar project was approved by the Commission on June 12, 2021 and is not expected to be completed until March 2022 based on Ameren Missouri's 3rd Quarter Report issued October 11, 2021.

continuing to stay subscribed to a program that is asking for additional fees in light of Ameren Missouri's double-digit rate increase in this case and future PISA spending. With that in mind, I recommend the Commission adjust the tariff to align with Evergy's Community Solar risk-sharing mechanism that allocates 75% of any undersubscribed costs to shareholders and 25% to ratepayers. Alternatively, I could also support shareholders bearing the risk for any undersubscribed portion of the Community Solar program to a 50% undersubscribed threshold. If the subscription rate falls below 50%, non-participant ratepayers would shoulder the costs.

For ease of understanding, imagine there were 100 solar blocks and 100 community solar participants each with a single block subscribed. If an economic downturn resulted in 35 customers withdrawing from the program and no replacement customers, Ameren would absorb the costs. If the hypothetical economic downturn resulted in 75 customers dropping out of the program Ameren would bear 50% of the non-subscribed costs and ratepayers would bear the other 25%.

I believe both sharing mechanisms recognize that shareholders stand to gain more in profit from an increase in rate base from a generation source that is not needed than non-participant ratepayers stand to gain from excess generation from a Community Solar program. The mechanisms I propose place the risk and reward accordingly.

X. GREEEN BUTTON

Q. What changes does MECG witness Andrew D. Teague propose regarding customer data?

A. Mr. Teague recommends:

> ...that the Commission require the Company to include the option for customers to retrieve and download energy usage interval data for multiple accounts, up to and including all accounts, through one data file. MECG also recommends that the Commission require

customer interval data for commercial and industrial customers be available in the Green Button CMD format.[32]

Q. What is the Green Button platform?

A. According to its website:

> The Green Button initiative is an industry-led effort that responds to a 2012 White House call-to-action to provide utility customers with easy and secure access to their energy usage information in a consumer-friendly and computer-friendly format for electricity, natural gas, and water usage.[33]

The history of Green Button as well as select questions OPC issued to Green Button's Executive Director Jeremy J. Roberts in 2018 can be found in GM-1.

Q. Has OPC supported the Green Button option in other cases before this Commission?

A. Yes. In Case Nos: ER-2018-0145 (KCPL) and ER-2018-0146 (KCPL GMO) I recommended that KCPL and KCPL GMO adopt the Green Button platform which was agreed to by parties and approved by the Commission. The Green Button service is a secure, cost-effective platform that allows data access to be shared with 3rd parties that is currently in place with a number of utilities across the country. Figure 5 shows a snippet from Evergy's website demonstrating their adoption of the Green Button platform.

[32] Case No. ER-2021-0240 Direct Testimony of Andrew D. Teague p. 6, 18-22.
[33] Green Button Data (2021) The Green Button Alliance. https://www.greenbuttondata.org/

Figure 5: Example of Evergy Green Button notice on website[34]

> **Green Button**
>
> ***Evergy now offers customers an easy and secure way to download their account's energy-usage data by using the "Green Button."***
>
> The Green Button is a safe way to download your energy usage data so you can better understand how to manage your home's electrical use and to even save money. Simply select the "Green Button" link to download billing and usage data to either a CSV (Comma Separated Value) or XML (Extensible Markup Language) computer-readable file at any time.
>
> *Note: For more information visit the Green Button Alliance or Energy.gov*

Q. Were there any related data/privacy actions undertaken by the Commission following that case?

A. Yes. The Commission opened working docket AW-2018-0393 on July 11, 2018 to consider a new rule regarding the treatment of customer information. Excluding utilities, parties that filed comments included:

- Missouri Office of Public Counsel
- Consumers Council of Missouri
- Pepper IoT ("Internet of Things")
- ArchCity Defenders
- Empower Missouri
- ACLU of Missouri
- Missouri Attorney General's Office (Joshua D. Hawley)
- State Representative Bill Kidd
- TGH Litigation, LLC.

Q. What came of the data/privacy docket?

A. The docket was progressing with comments and draft language and then COVID-19 hit and it has since been stagnant.

[34] https://www.evergy.com/ways-to-save/resources/energy-tools/energy-analyzer

Q. What is your position in this case?

A. I support MECG's recommendation for Ameren Missouri to offer interval data from AMI meters in customer-friendly, easy-to-access formats under the Green Button platform.

I would also strongly encourage the Commission to consider moving forward with the AW-2018-0393 case in 2022 to ensure proper consumer protections as it pertains to data privacy. The most appropriate action would be to hold another workshop in the first quarter of 2022 to solicit any changes to Staff's proposed language in light of the two-year pause with the docket.

Q. Does this concluded your testimony?

A. Yes.

Marke, Geoff

From:	Jeremy J. Roberts <jroberts@greenbuttonalliance.org>
Sent:	Tuesday, July 31, 2018 4:09 PM
To:	Marke, Geoff
Subject:	Re: Green Button inquiry

Hello again, Geoff:

Thanks for your patience with the delay. We're in the process of preparing for our launch of the CMD testing program and it's been an all-hands-on-deck process to get it ready to go. Look for an announcement soon.

To your bullet points:

- **This history of the Green Button**

  Although efforts to secure the stability of the electrical grid and enhance the transparency of energy usage began long before the White House got involved, in September 2011, U.S. Chief Technology Officer, Aneesh Chopra, set-forth a challenge to utilities across the country to develop "Green Button" so that consumers would be able to make better-informed decisions about their energy consumption. By standardizing on the data format, the industry—through third-party companies—could create innovative applications that might transform the way people use energy. This call-to-action was followed by the Ontario Ministry of Energy in 2012; making the Green Button ecosystem an international goal. To create the Green Button ecosystem, NIST, the U.S. DOE, and the Smart Grid Interoperability Panel (a group of industry experts spanning from trade associations, to vendors, to real estate owners) worked to create the foundational pieces of the ecosystem and it was made a part of the smart grid users group of the Utility Communications Architecture International Users Group (UCAIug) and then standardized through the North American Energy Standards Board (NAESB).

  To promote the efforts publically, move the ecosystem out of the government arms, and to have a group dedicated to developing a testing program for compliance, the non-profit Green Button Alliance was formed in 2015.

  Today, the Green Button Alliance is building on the foundation of technical activities to support the development, testing, and deployment of the Green Button standard and to facilitate its acceleration and widespread adoption across the natural gas and water markets in-addition-to the electricity markets using the same Green Button data format.

- **How the application is utilized for residential and commercial/industrial**

  The Green Button platform was designed to be able to handle simple, unidirectional, single-resource, single-meter residential needs all the way up to complex, bidirectional, multi-resource, multi-meter, multi-property commercial/industrial needs. A file or data stream can handle electricity, natural gas, water, and is flexible-enough to handle other resources as needed. Additional information, like timestamped weather information, can also be included in the files/streams.

  Through the use of granular, historic usage data, solar deployment and financing firms can use Green Button usage data to help a potential customer understand how-many solar panels, panel orientation needs, and how much battery storage would be needed to meet the customer's goals of net-zero energy, peak shaving in time-of-use rate areas, pool cleaning, cheaply charging electric vehicles, or other personalized customer goals.

Although the above can be for residential, commercial, or industrial, it's finding most of its value in the residential space today. The commercial/industrial space will grow more as large, multi-location firms are enabled in the various geographies with the ability to obtain and compare all of their energy and water usage across their real estate portfolio to find where improvements can be made and what rate plans work best with their resource usage patterns.

- **Level of security for ratepayers and standardization for third party vendors that the button provides**

The GBA has partnered with the U.S. DOE's DataGuard Energy Data Privacy Program to encourage utilities and third-party companies to adopt their voluntary code of conduct. Utilities in many jurisdictions would already meet all the DataGuard requirements by following their states' regulations and getting their implementations certified to the Green Button standard.

While Green Button does not dictate security methods at the end points, and leaves that to state and federal regulators, the platform design does dictate security in how those data are transported; including TLS 1.2 -level encryption between utilities and their authorized third-party application providers. The design separates personally identifiable information (PII) from usage data, keeping each in its own file or stream and associating the data only by unique identifiers within each file/stream. Therefore, receiving a file of data via email would not reveal meter numbers, names, addresses, or account information. Having a file of personal information would not reveal any usage patterns or values.

Further, customers always remain firmly in-control of their data: Through *Download My Data*, the customer downloads and handles the files; and gives them only to firms and applications desired by the customer. Using *Connect My Data*, that sharing only takes-place as the customer dictates the type of resource (electricity, natural gas, and/or water) to be shared, the duration (for only a year or two, for example), and if offered, the amount of historical data and the resolution of the measured intervals -- fully retaining the ability to revoke their authorized sharing at any moment.

- **Current utilities/states that have deployed it and the different varieties of usage**

This is the tough one. There are many munis and coops that provide their communities with Green Button platforms and aren't even aware that they offer it because it's simply a part of the software platforms they utilize. Therefore, it's difficult to track those deployments. Larger utilities, investor-owned utilities, and others, can also be difficult to pinpoint because the offering isn't advertised outside their login pages, so only their own customers know of their Green Button platforms.

California and Illinois have mandated Green Button for their investor-owned utilities and New York and Texas have stated their plans for similar rollouts. One GBA member company has created a map of know deployments and the number of customers in those deployments:
http://bigdataenergyservices.com/rdPage.aspx?rdReport=OurMarkets

Some consumer-advocacy groups, like Mission:data, have done similar research:
http://www.missiondata.org/activities/

I hope this helps. Please let me know if there's more you need; I'd be happy to provide whatever information I can.

One last thing: if you are interested in receiving our monthly newsletters, you may find them to be quite valuable in keeping you up-to-speed on everything Green Button:

You can sign-up at this ConstantContact link and unscribribe anytime you want:
http://visitor.constantcontact.com/d.jsp?m=1122055619081&p=oi

Past newsletter can be viewed here, if you are interested in seeing what we share:
https://www.greenbuttonalliance.org/newsletters-archive

Best regards, Geoff,
- Jeremy

Jeremy J. Roberts
General Manager &
Executive Director
Green Button Alliance
tel:+1-215-918-1026
jroberts@greenbuttonalliance.org
www.GreenButtonAlliance.org

On Mon, Jul 23, 2018 at 8:24 PM, Jeremy J. Roberts <jroberts@greenbuttonalliance.org> wrote:

Hello, Geoff:

Please forgive me for the delay. I haven't forgotten about you; we've been a bit swamped with some of our staff our on vacation last week.

I hope to get you everything you need soon.

Many thanks,
- Jeremy

Jeremy J. Roberts
Green Button Alliance
tel:+1-215-918-1026
jroberts@greenbuttonalliance.org