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**MISSOURI PUBLIC SERVICE COMMISSION**

**FILE NO.**

**ET-2018-0132**

**SURREBUTTAL TESTIMONY**

**OF**

**DAVID K. PICKLES**

**ON**

**BEHALF OF**

**UNION ELECTRIC COMPANY**

**d/b/a AMEREN MISSOURI**

St. Louis, Missouri  
November, 2018

*UE/Ameren* Exhibit No. 5  
Date 12-4-18 Reporter TW  
File No. ET-2018-0132

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**SURREBUTTAL TESTIMONY**

**OF**

**DAVID K. PICKLES**

**FILE NO. ET-2018-0132**

1 **I. INTRODUCTION**

2 **Q. PLEASE STATE YOUR NAME.**

3 A. My name is David K. Pickles. My business address is 7160 North Dallas  
4 Parkway, Suite 340, Plano, Texas 75024. I am employed by ICF Resources,  
5 LLC. ("ICF"), as Senior Vice President.

6 **Q. ON WHOSE BEHALF ARE YOU SUBMITTING THIS TESTIMONY?**

7 A. I am submitting this testimony to the Missouri Public Service Commission  
8 ("Commission") on behalf of Ameren Missouri.

9 **Q. ARE YOU THE SAME DAVID K. PICKLES WHO SUBMITTED DIRECT**  
10 **TESTIMONY IN THIS DOCKET ON FEBRUARY 22, 2018?**

11 A. Yes.

12 **Q. WHAT IS THE PURPOSE OF YOUR SURREBUTTAL TESTIMONY?**

13 A. The purpose of my surrebuttal testimony is to address the recommendation  
14 by OPC Witness Dr. Geoff Marke and Staff Witness Byron Murray that the  
15 Commission reject Ameren Missouri's Charge Ahead – Business Solutions  
16 tariff. I will demonstrate that numerous errors, misunderstandings, and  
17 mischaracterizations by these witnesses undermine the factual basis for  
18 their recommendations, and that despite their criticisms, the Charge Ahead

1 - Business Solutions tariff is good public policy and very much in the public  
2 interest.

3 **Q. PLEASE SUMMARIZE YOUR UNDERSTANDING OF THE CRITICISMS**  
4 **RAISED BY DR. MARKE.**

5 A. Dr. Marke offers the following criticisms:

- 6 • An assertion that two of the illustrative programs offered by electric utilities  
7 in other jurisdictions that were cited in my direct testimony have “no direct  
8 subsidies from customers,” and that a program offered by a municipal utility  
9 is not directly comparable.
- 10 ○ My surrebuttal testimony will demonstrate that both programs cited  
11 do indeed offer subsidies from customers (as do at least 10 other  
12 utility programs), and that a utility’s municipal status does not  
13 invalidate its relevance, at least for the purposes of my direct  
14 testimony. Furthermore, my testimony will reveal that several of  
15 these utilities recover some or all of the costs of their electrification  
16 program in rates.
- 17 • A supposition that because electric forklifts currently have a significant  
18 market share, they do not need incentives to spur additional market  
19 adoption. He concludes (based on inappropriate application of “Diffusion of  
20 Innovation” theory) that program participants would be free riders and  
21 “would likely purchase the forklift regardless of the subsidy.”<sup>1</sup>

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<sup>1</sup> Dr. Marke Rebuttal, File No. ET-2018-0132, p. 10, l. 10.

- 1           o My surrebuttal testimony will demonstrate that the market share of  
2           electric forklifts has been stalled for several years and does not  
3           behave as Dr. Marke's theory would have us believe. Further, I will  
4           demonstrate that the program prohibits participation by those  
5           customers who are most likely to be free riders (those replacing  
6           existing electric forklifts), and has additional safeguards which limit  
7           other free riders. Finally, I will demonstrate that customer incentives  
8           are necessary, and that even allowing for a reasonable estimate of  
9           free ridership, the program remains cost-effective and provides  
10          significant downward pressure on rates and reductions in emissions.
- 11          • A citation to Missouri Department of Natural Resources Rules 10 CSR-  
12          2.385 and 10-5.385 (restricting the amount of time that trucks can idle in  
13          certain counties) and a claim that those regulations already enable much of  
14          the emissions reduction targeted by Ameren Missouri, thereby eliminating  
15          the need for the program.
- 16           o My surrebuttal testimony will demonstrate that these rules do not  
17           eliminate the need for the program due to exceptions in the rules  
18           which permit idling during government mandated rest periods or  
19           when powering refrigeration, as targeted by the program.
- 20          • An opinion that the administrative costs associated with the airport ground  
21          support equipment component of the program are excessive for a program  
22          with only one participant (Lambert International Airport), and that City of  
23          St. Louis Resolution 124 makes this participant a free rider.

- 1           o My surrebuttal testimony will demonstrate that it is actually the 12  
2           individual airline tenants (American, Frontier, Southwest, etc.) who  
3           each need to be solicited as participants in the program, not the  
4           airport itself. Further, I will demonstrate that the administrative costs  
5           are reasonable, and that Resolution 124, which commits the city to  
6           transitioning to 100% clean energy by 2035, does not result in any of  
7           the participants becoming free riders.

8   **Q. PLEASE SUMMARIZE YOUR UNDERSTANDING OF THE CRITICISMS**  
9   **RAISED BY MR. MURRAY.**

10 A. Mr. Murray offers the following criticisms:

- 11       • A finding that “this program is in direct competition with energy sources  
12       provided by other Commission-regulated utilities. Ameren Missouri should  
13       not be granted a waiver from the applicable promotional practices  
14       prohibitions, as requested.”<sup>2</sup>

15           o My surrebuttal testimony will demonstrate that this criticism is  
16           unfounded since none of the competing fuel sources targeted by this  
17           program (gasoline, diesel and propane) are regulated by the  
18           Commission.

- 19       • An apparent belief that potential future availability of funds from the  
20       Volkswagen (“VW”) Environmental Mitigation Trust Agreement eliminates  
21       the opportunity for the program.

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<sup>2</sup> Byron M. Murray Rebuttal, File No. ET-2018-0132, p. 3, l. 8-10.

1           o My surrebuttal testimony will demonstrate that competition for these  
2           funds, their uncertain timing and magnitude, limitations on their use,  
3           and the complexity associated with applying for these funds makes  
4           them an unsuitable replacement for the program.

5           • A concern that the program does not limit incentives spent on any one  
6           measure type, and that 44% of the program budget is for implementation.<sup>3</sup>  
7           Mr. Murray offers no rationale for his concerns, nor any analysis of an  
8           appropriate limit on incentives or implementation cost.

9           o My surrebuttal testimony will demonstrate why a limit is not needed,  
10          and that the implementation costs: a) are reasonable given the  
11          activities to be performed, and b) reflect a reasoned balancing of  
12          customer needs for financial incentives, technical support,  
13          education, and other services.

14          Given the above flaws in Mr. Murray's and Dr. Marke's analysis and  
15          conclusions, the Charge Ahead – Business Solutions tariff should be  
16          approved by the Commission.

17   **II.    RESPONSE TO DR. MARKE'S TESTIMONY**

18   **A.    The Need for Direct Subsidies and Comparable Programs**

19   **Q.    HOW DO YOU RESPOND TO DR. MARKE'S ASSERTION THAT TWO**  
20   **OF THE ILLUSTRATIVE PROGRAMS CITED IN YOUR DIRECT**  
21   **TESTIMONY HAVE "NO DIRECT SUBSIDIES FROM CUSTOMERS"**

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<sup>3</sup> Ibid., p. 5, l. 3-6.

1           **AND THAT THE PROGRAM OFFERED BY A MUNICIPAL UTILITY IS**  
2           **NOT DIRECTLY COMPARABLE?”**

3    A.    Dr. Marke asks the Commission to note that the electrification programs of  
4           CenterPoint Energy and Entergy “required no direct subsidies from  
5           customers.”<sup>4</sup> He cites as evidence slides from a 2016 webinar in which I  
6           participated which indicate that the programs had either “No CenterPoint  
7           Incentives” or “No direct customer incentives.” It is important to recognize  
8           that having no direct customer incentives does not mean that there are no  
9           payments or services to participants.

10                 In the case of CenterPoint Energy, payments and services are in the  
11                 form of: marketing contributions that are paid to the forklift dealer, technical  
12                 trainings, sales trainings, and other activities. It is not, as Dr. Marke implies,  
13                 that no incentives are necessary.

14                 With respect to Entergy, the payments and services in the  
15                 Agricultural Pumping component of the program are in the form of line  
16                 extension credits, revenue justification credits, and special rates. It should  
17                 also be noted that cash incentives to customers are available for other  
18                 components of the Entergy program (including but not limited to forklifts,  
19                 digital billboards, golf carts, truck stop electrification, material handling,  
20                 marine equipment, locomotive equipment, mining equipment, industrial  
21                 equipment, and electrical infrastructure). Similarly, the Jacksonville Electric  
22                 Authority (“JEA”) provides cash incentives for forklifts, truck stop

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<sup>4</sup> Dr. Marke Rebuttal, File No. ET-2018-0132, p. 5, l. 4.



1           electrification ("TSE"), truck refrigeration units ("TRUs"), material handling  
2           equipment, airport ground support equipment ("GSE"), and custom  
3           opportunities. JEA's reasons for offering electrification incentives (cited by  
4           their Chief Customer Officer) include:

- 5                   a. Reducing Greenhouse Gases,
- 6                   b. Supporting Economic Growth,
- 7                   c. Improving Service Quality,
- 8                   d. Stabilizing Rates,
- 9                   e. Reducing System Cost, and
- 10                  f. Increasing Revenue.

11                   Although JEA is a municipal utility, these reasons are appropriate  
12           considerations for any utility, investor-owned or otherwise because costs  
13           incurred by a municipal utility of these types, like costs that would be  
14           incurred by an investor-owned utility, are ultimately reflected in customer  
15           rates. Finally, JEA's experience with customers and the incentive strategies  
16           they have used to drive participation are informative, since customer  
17           decision-making is insensitive to whether the utility is municipal or investor-  
18           owned.

19                   It is clear that a combination of incentives, services, and marketing  
20           is indeed necessary to support additional cost-effective adoption of these  
21           technologies. This is recognized not only by CenterPoint Energy, Entergy,  
22           and JEA, but also by Alliant Energy, ComEd, Connexus Energy, Consumers  
23           Energy, Georgia Power, Mississippi Power, Sacramento Municipal Utility

1 District ("SMUD"), Salt River Project ("SRP"), and Tennessee Valley  
2 Authority ("TVA") – all of which provide incentives for selected electro-  
3 technologies.

4 **Q. ARE THE COSTS OF THESE PROGRAMS RECOVERED FROM**  
5 **CUSTOMERS IN RATES?**

6 A. JEA recovers the full cost of the program in rates. Entergy recovers the full  
7 program costs in two states, and in two others the costs are apportioned  
8 between customers and shareholders. While public information on the  
9 method of cost recovery used by all utilities with electrification programs is  
10 not available, I believe that all or a portion of the costs are recovered in rates  
11 by at least Georgia Power, CenterPoint Energy, SMUD, SRP, and TVA –  
12 and perhaps others.

13 **B. Forklift Market Share and the Need for Incentives**

14 **Q. HOW DO YOU RESPOND TO DR. MARKE'S SUPPOSITION THAT**  
15 **BECAUSE ELECTRIC FORKLIFTS CURRENTLY HAVE A SIGNIFICANT**  
16 **MARKET SHARE, THEY DO NOT NEED INCENTIVES TO SPUR**  
17 **ADDITIONAL MARKET ADOPTION?**

18 A. There are numerous flaws in Dr. Marke's argument. Specifically, Dr. Marke:  
19 • Uses outdated North American data including irrelevant and biasing classes  
20 of forklifts, instead of current, relevant, Ameren Missouri specific data, to  
21 support his market share calculations.

- 1       • Inappropriately applies “Diffusion of Innovation” theory to support his  
2       contention that electric forklifts will ultimately gain 100% market share and  
3       therefore the Ameren Missouri program is unnecessary.
- 4       • Fails to recognize that, contrary to the Diffusion of Innovation theory, the  
5       actual market share of electric forklifts in the Ameren Missouri service  
6       territory has been stalled for several years, and has so far declined in 2018.
- 7       • Ignores the fact that Ameren Missouri recognized the need to manage free  
8       ridership and built appropriate participation requirements and other  
9       safeguards into its program design.
- 10      • Does not acknowledge that, even if a technology has a significant market  
11      share, it may still be possible to intercede and grow that market share – and  
12      do so cost-effectively and to the benefit of all utility customers, investors,  
13      and the environment.

14      I will address each of these flaws below.

15                   1.     **The Use of Biased Data**

16   **Q.   DID DR. MARKE USE APPROPRIATE ESTIMATES OF CURRENT**  
17   **ELECTRIC FORKLIFT MARKET SHARE?**

18   A.   No. Dr. Marke's citation of a 66%<sup>5</sup> market share, and his illustration of trends  
19   from 1992-2016, appear to include Class 3 forklifts (electric hand trucks and  
20   hand/rider trucks). Class 3 forklifts are not eligible for the Ameren Missouri  
21   Program<sup>6</sup> and should not be included in any market share calculations. By  
22   including Class 3 forklifts, Dr. Marke overstates the electric market share of

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<sup>5</sup> Ibid., p. 7, Figure 4.

<sup>6</sup> See ET-2018-0132, Tariff Sheet No. 166.1.

1           *forklifts eligible to participate in the program* by approximately  
2           16 percentage points.

3           Also, the data used by Dr. Marke reflects the entire North American  
4           market, including Canada and Mexico. In my opinion, it would be more  
5           appropriate to use current market share data for only eligible forklift classes  
6           and in only those counties served by Ameren Missouri. Using such data,  
7           the 2018 (to date) Class 1 and 2 electric forklift market share is 49.6%. Note  
8           that this does not imply that almost half of the participants in the program  
9           will be free riders since, as discussed below, the program targets only the  
10          remaining non-electric 50.4% of forklift purchases, and that many of the  
11          customers who comprise the "electric 49.6%" will be precluded from  
12          participating in the program because the program does not allow anyone  
13          that is replacing an electric forklift to receive incentives.

14                   **2.     Inappropriate Use of Diffusion of Innovation Theory and**  
15                   **Program Need**

16   **Q.   DR. MARKE INDICATES THAT HE DOES NOT BELIEVE THAT**  
17   **ELECTRIC FORKLIFTS NEED ADDITIONAL SUBSIDIES TO SPUR**  
18   **MARKET ADOPTION.<sup>7</sup> DO YOU AGREE?**

19   **A.**   No. Dr. Marke relies solely upon "Diffusion of Innovation" theory to support  
20          his conclusion. In my opinion, it is inappropriate to apply this theory to the  
21          task of forecasting the market share of electric forklifts in this program for  
22          several reasons, including this theory's: 1) difficulty in forecasting market

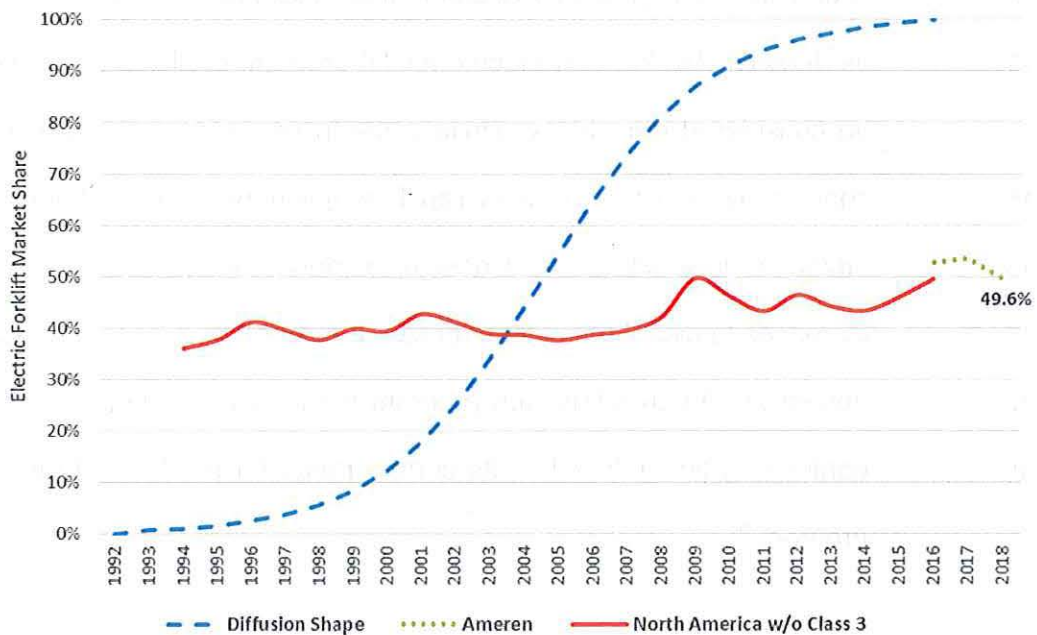
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<sup>7</sup> Dr. Marke Rebuttal, p. 7, l. 5.

1 share of comparatively mature products that do not fit the definition of an  
2 "innovation" (such as electric forklifts), 2) difficulty in forecasting market  
3 shares of competing products (such as propane and electric forklifts),  
4 3) difficulty in forecasting the impacts of marketing, incentives, and other  
5 market interventions, and 4) lack of precision regarding short-term shifts in  
6 market share.

7 While a complete discussion of this theory is outside the scope of  
8 this testimony, it is perhaps easiest to understand why it is inappropriate by  
9 reviewing the information provided in Dr. Marke's Figures 4 and 5, and  
10 summarized in my Figure 1 below.

**Figure 1. Comparison of Actual Forklift Market Share in North America and Ameren Missouri's Service Territory to Market Share Predicted by Diffusion of Innovation Theory**



11 The dashed blue line (as shown in Dr. Marke's Figure 5) shows his  
12 projected market adoption for forklifts over time, starting with 0% when they

1           are introduced and rising to 100% over time.<sup>8</sup> While this shape may be  
2           appropriate for certain innovations, one can see by inspection that it does  
3           not reflect what has happened with the actual North American market share  
4           of electric forklifts, as the solid red line shows (taken from Dr. Marke's  
5           Figure 4 and corrected by excluding Class 3 forklifts). This alone shows that  
6           Dr. Marke's theoretical adoption in fact fails to match what is happening in  
7           the real world since, as the red line shows, the actual market share has  
8           been relatively constant for almost 25 years. Indeed, the market share in  
9           the Ameren Missouri service territory (shown by the green dotted line) has  
10          declined so far in 2018.

11                   Given that the Diffusion of Innovation theory as applied by Dr. Marke  
12          is directly contradicted by actual market share data, we cannot conclude,  
13          as does Dr. Marke, that electric forklift program participants would largely  
14          be considered free riders. While some increase in electric forklift market  
15          share may occur if there is rapid adoption of significant technological  
16          advances in electric forklift design, or price shocks in the form of large  
17          increases in diesel or propane prices, I believe it is logical to conclude that  
18          absent the Ameren Missouri program the electric forklift market share will  
19          continue to fluctuate within its current range for the term of the proposed  
20          program.<sup>9</sup>

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<sup>8</sup> The Diffusion Shape in this example does not have a specific time dimension and the years shown are not relevant to interpretation of the shape.

<sup>9</sup> The program could last for less than five years if the budget is earlier exhausted.

1    **Q.    WHY DO YOU THINK THE AMEREN MISSOURI PROGRAM IS**  
2    **NECESSARY TO INCREASE THE MARKET SHARE OF ELECTRIC**  
3    **FORKLIFTS?**

4    A.    Based on review of 6 utility forklift programs which have delivered more than  
5    7,000 individual forklifts through more than 48 dealers and 27  
6    manufacturers, in addition to the market research with 17 forklift dealers in  
7    the Ameren Missouri service territory conducted as a part of developing this  
8    program, I believe the barriers include:

- 9    •    **Price.** The typical electric forklift costs \$4,000 - \$5,000 more than an  
10    internal combustion engine ("ICE") forklift, and may require additional  
11    investment in staff training, electrical infrastructure, wiring upgrades, floor  
12    space (for a battery room), ventilation, lifting equipment for heavy batteries,  
13    and safety stations and equipment.
- 14    •    **Unfamiliarity.** Existing ICE forklift users may be unsure of the battery  
15    charging and maintenance requirements, duty cycle, and life of the battery.  
16    Many ICE forklift users also need to be educated on the ability of electric  
17    forklifts to operate outside or in cold or wet weather.
- 18    •    **Skepticism and Fear.** Buyers may doubt both the heavy load handling  
19    capabilities and/or the operating and maintenance cost savings of electric  
20    forklifts, fear that the business case may not materialize in a way that is  
21    visible to management, or fear of forgetting to charge overnight.
- 22    •    **Dealer desire to close the sale quickly.** In many cases, if a forklift  
23    salesperson learns that a customer owns or has familiarity with ICE forklifts,

1           they will not attempt to educate the customer with respect to the advantages  
2           of electric lifts for fear it will complicate, slow down, or derail the buying  
3           process. Anything that forces the customer to do research, seek additional  
4           input and approvals, or take risk is perceived to be a threat to closing the  
5           sale.

6                        I believe that if the market share of electric forklifts is to increase  
7           above current levels, it will be necessary to address the above barriers with  
8           a combination of financial incentives, education, training, and marketing  
9           activities. This is exactly what is proposed in the Charge Ahead - Business  
10          Solutions program.

11   **Q.    DID THE FORKLIFT DEALERS YOU SURVEYED AS A PART OF THE**  
12   **RESEARCH YOU FILED WITH YOUR DIRECT TESTIMONY (SCHEDULE**  
13   **DP-D2) INDICATE WHAT LEVEL OF INCENTIVE THEY FELT WOULD**  
14   **BE NECESSARY?**

15   A.    Yes. As noted in my direct testimony, we surveyed forklift dealers in the  
16   Ameren Missouri service territory to gain their perspectives on the program  
17   design. Eight dealers provided estimates of the amount of incentive  
18   necessary, with the average being \$1,631. The incentive proposed by  
19   Ameren Missouri is either \$1,500 or \$1,700 depending on the type of forklift.

20   **Q.    DO YOU HAVE ADDITIONAL COMMENTS REGARDING THE**  
21   **PROPOSED INCENTIVES?**

22   A.    Yes. Upon additional review of the program tariff filed when this case began,  
23   I note that it lacks flexibility in one area that I believe would make the



1 program more successful, that is, as currently written it appears to require  
2 100% of a given incentive payment to be paid to the end use customer  
3 purchasing the equipment (e.g., the purchaser of a qualifying electric  
4 forklift). I recommend that any Commission order approving the program  
5 allow the Company to include in the program tariff that is filed to implement  
6 the program a provision that will allow a portion of an incentive that  
7 otherwise would be paid to an end-use customer to be paid (on an as-  
8 needed basis), to participating equipment dealers and vendors to help offset  
9 their costs and encourage active promotion of the electric technologies  
10 covered by the program.

11 **3. Management of Free Ridership and Cost-Effectiveness**

12 **Q. DOES AMEREN MISSOURI RECOGNIZE THE IMPORTANCE OF**  
13 **REDUCING, TO THE EXTENT PRACTICAL, FREE RIDERSHIP IN THE**  
14 **PROGRAM?**

15 **A.** Yes. As noted by Ameren Missouri witness Steven Wills in his surrebuttal  
16 testimony, Ameren Missouri only benefits from this program when it also  
17 provides net benefits to customers. To help ensure these benefits, the  
18 program prohibits participation by buyers who are replacing existing electric  
19 forklifts. That is to say, approximately 50% of those purchasing new electric  
20 forklifts will not be eligible for the program since they are more likely to be  
21 free riders (even though experience has shown that some owners of electric  
22 forklifts do switch back to ICE forklifts due to up-front cost concerns).  
23 Further, to the extent possible, the program will be targeted to buyers that

1           are expanding their fleets *and* who would otherwise have chosen an ICE  
2           forklift.

3                   The program requires that buyers who are replacing existing forklifts  
4           permit site inspections both before and after the new forklifts are purchased  
5           to verify that the existing forklifts are indeed not electric. As noted in the  
6           tariff:

7                   The Program will conduct Customer and Measure eligibility  
8                   verification for 100 percent of applications. The Program will  
9                   conduct on-site post-installation equipment verification  
10                  inspections for at least 25 percent of each measure type to  
11                  ensure the Measures are installed and operating as intended.

12                  Buyers who are expanding a fleet or constructing a new facility will  
13           be asked a series of questions to establish their intent prior to the purchase,  
14           to attest to the fact that absent the program they would have been less likely  
15           to purchase an electric forklift, and in certain circumstances investigations  
16           into corporate policies and procurement practices will be conducted.

17   **Q.   WHAT IMPACT DOES FREE RIDERSHIP HAVE ON THE COST-**  
18   **EFFECTIVENESS OF A FORKLIFT?**

19   A.   The cost-effectiveness of a single conventional forklift (measured by the  
20   Ratepayer Impact Measure ("RIM") test) is 2.20. That is to say, the benefits  
21   to all ratepayers are more than double the incentive costs paid for that  
22   forklift. If we were to assume a free ridership rate of 20%, which I believe to  
23   be a reasonable estimate given the strong participation limitations  
24   established by the program, then the RIM test would drop only to 1.76. Even  
25   with a very conservative free ridership rate of 30%, the RIM drops only to

1           1.54. Indeed in order for the RIM test to drop below 1.0, the free ridership  
2           rate would have to exceed 54% - a highly unlikely outcome.

3                   While it is not practical to eliminate all free ridership (since it would  
4           make the program participation process so restrictive and time consuming  
5           as to discourage participation by targeted participants), I believe that:  
6           a) Ameren Missouri has taken appropriate steps to reduce free ridership,  
7           and b) the program remains cost-effective even with free ridership  
8           significantly higher than assumed by Ameren Missouri in its filing.

9           **C.    Impact of Missouri Department of Natural Resources Idle**  
10           **Reduction Rules**

11    **Q.    DR. MARKE ASSERTS THAT THESE RULES WOULD ENABLE MUCH**  
12    **OF THE EMISSIONS REDUCTION ACTION TARGETED BY THE**  
13    **PROGRAM.<sup>10</sup> IS HE CORRECT?**

14    A.    No. While Missouri Department of Natural Resources rules 10 CSR  
15    10-2.385 and 10-5.385 do indeed limit idling for certain large vehicles in  
16    Clay, Platte, and Jackson Counties<sup>11</sup> and the St. Louis metro area<sup>12</sup>  
17    respectively, the rules also contain 13 important exemptions. While  
18    Dr. Marke notes the existence of these exemptions,<sup>13</sup> he excludes the three  
19    most relevant from his list of examples. The rules state:<sup>14</sup>

20                   Exempt Idling Activities. The following activities are exempt  
21                   from 10 CSR 10-2.385 (and 5.385):<sup>15</sup>

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<sup>10</sup> Dr. Marke Rebuttal, p. 10, l. 20-21.

<sup>11</sup> Which is irrelevant since none of Ameren Missouri's service territory is in those counties.

<sup>12</sup> St. Louis, City and Franklin, Jefferson, St. Charles, and St. Louis Counties.

<sup>13</sup> Marke Rebuttal, p. 11, l. 2-3.

<sup>14</sup> 10 CSR 10-2.385(3)(C) and 10 CSR 10-5.385(3)(C).

<sup>15</sup> Italics added

1 (6) A primary propulsion engine idling when necessary to  
2 power work related mechanical or electrical operations other  
3 than propulsion (e.g., mixing, operating hydraulic lifts,  
4 processing cargo, or straight truck refrigeration). This  
5 exemption does not apply when idling for cabin comfort or to  
6 operate non-essential onboard equipment;

7 (9) An occupied heavy-duty diesel vehicle with a sleeper berth  
8 compartment idling for purposes of air conditioning or heating  
9 during government mandated rest periods;

10 (12) Operating an auxiliary power unit as an alternative to  
11 idling the main engine

12 The exemptions reflect the very activities (e.g., operation of a diesel  
13 auxiliary power unit, operation of refrigeration, and provision of air-  
14 conditioning and heat during mandated rest periods) targeted by the  
15 program. Note that Federal Motor Carrier Safety Administration Regulation  
16 395.3 mandates that after 11 hours of driving, a driver must take 10  
17 consecutive hours off-duty. This often results in considerable idling  
18 pursuant to the exemptions above. It is clear that the cited rules do not  
19 enable the actions sought by the Ameren Missouri program, and that the  
20 program remains necessary if these emissions are to be reduced.

21 **D. Cost and Free Riders in the Airport GSE Component**

22 **Q. DR. MARKE OPINES THAT THE AIRPORT GROUND SUPPORT**  
23 **EQUIPMENT COMPONENT OF THE PROGRAM HAS**  
24 **"DISPROPORTIONATE ADMINISTRATIVE OVERHEAD."<sup>16</sup> DO YOU**  
25 **AGREE?**

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<sup>16</sup> Dr. Marke Rebuttal, p. 11, l. 18-19.

1 A. No. Dr. Marke neither accurately characterizes the program and its target  
2 participants, nor does he provide any analysis of the administrative costs  
3 upon which to base his opinion.

4 Dr. Marke asserts that the program will have only one participant –  
5 St. Louis Lambert International Airport. This is incorrect. The equipment  
6 targeted by the program is owned not by the airport, but by the airline  
7 operators who lease gates at the airport. There are 12 individual airline  
8 tenants (American, Frontier, Southwest, etc.) who each need to be solicited  
9 as participants in the program. In addition, other regional airports such as  
10 Cape Girardeau and Spirit of St. Louis may be eligible to apply. This will  
11 result in considerable sales and technical support expense, as well as travel  
12 and other direct costs. As noted by Dr. Marke, the program administrative  
13 costs (which include sales, marketing, technical support, site inspections,  
14 QA/QC, tracking and documentation, etc.) average \$42,240 per year. In my  
15 opinion, this is a reasonable budget for this component of the program, and  
16 is in fact reduced significantly by economies of scope associated with being  
17 a component of the larger Charge Ahead – Electric Vehicle program,  
18 instead of being a stand-alone program which would incur greater  
19 management, IT, accounting, and other overhead costs.

20 **Q. DR. MARKE CITES THE CITY OF ST. LOUIS RESOLUTION 124 AS**  
21 **LIKELY MAKING THE AIRPORT'S PARTICIPATION IN THE PROGRAM**  
22 **FREE RIDERSHIP.<sup>17</sup> DO YOU AGREE?**

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<sup>17</sup> Ibid., p. 11, l. 15-17.

1 A. No. As noted above, the airport itself will not be a participant, rather it is the  
2 airline tenants who will be participating. Further, the resolution states:

3 NOW THEREFORE IT BE RESOLVED by the Board of  
4 Aldermen of the City of St. Louis authorizes the City's  
5 Sustainability Plan and calls for the City to commit to transition  
6 to 100 percent clean energy in the form of wind and solar and  
7 energy efficiency measures within the electricity sector by  
8 2035. The Board of Aldermen requests that the City develops  
9 a plan by December 2018 to meet the clean energy goal  
10 through a transparent and inclusive stakeholder process  
11 which includes community members as well as  
12 representatives from organizations representing labor, faith,  
13 social justice, environmental justice, frontline communities  
14 and those most impacted by our current energy systems,  
15 public health and the environment, economic development,  
16 utility sector, clean energy sector, universities and academic  
17 institutions, business, housing, employment services, low  
18 income advocates, government, and any other relevant  
19 groups.

20 The resolution is, therefore, a call for a plan to transition wind, solar, and  
21 energy efficiency sources for electricity requirements by 2035. It says  
22 nothing about fossil fuels, it does not impose any requirements on the  
23 airport or its tenants, and given its transition date of 2035 its impact is likely  
24 to be felt long after the five-year period of authorization sought in this  
25 application. In my opinion, it will not have any impact on free ridership within  
26 the Charge Ahead – Business Solutions program. What the resolution may  
27 do is increase the likelihood that the electrified loads induced by the  
28 program will be powered by renewables, further reducing the associated  
29 emissions beyond the level that was assumed in the initial analysis of this  
30 program.

1 **III. RESPONSE TO MR. MURRAY'S TESTIMONY**

2 **A. Program Competition with Other Commission-Regulated**  
3 **Energy Fuels**

4 **Q. MR. MURRAY FINDS THAT THIS PROGRAM IS IN DIRECT**  
5 **COMPETITION WITH ENERGY SOURCES PROVIDED BY OTHER**  
6 **COMMISSION-REGULATED UTILITIES.<sup>18</sup> IS HE CORRECT?**

7 **A.** No. Recall that the program targets technologies that use gasoline, diesel,  
8 or propane, none of which are Commission-regulated fuels.

9 **B. Impact of the VW Environmental Mitigation Trust Agreement**  
10 **(the "VW" Trust)**

11 **Q. MR. MURRAY STATES THAT THERE ARE OTHER PROGRAMS**  
12 **AVAILABLE IN MISSOURI THAT PROVIDE INCENTIVES FOR**  
13 **ELECTRIFICATION OF GAS/DIESEL POWERED EQUIPMENT.<sup>19</sup> IS**  
14 **THIS CORRECT?**

15 **A.** Mr. Murray is correct in that it may be possible for funds which become  
16 available through the VW Trust to be used for electrification of certain  
17 existing equipment. However, in my opinion the possible future availability  
18 of these funds does not negate or compete with the need for the Ameren  
19 Missouri program.

20 The relevant technologies potentially addressed by both the VW  
21 Trust funds and the Ameren Missouri Charge Ahead – Business Solutions  
22 program include a portion of the forklifts market (only large forklifts with

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<sup>18</sup> Byron M. Murray Rebuttal, p. 3, l. 8-9.

<sup>19</sup> Ibid., p. 3, l. 11-13.

1 greater than 8,000 pounds of lifting capacity are eligible for VW funding)  
2 and airport ground support equipment. It should be noted that the VW Trust  
3 funds only address retirement of existing pieces of equipment, and require  
4 that the equipment being replaced be scrapped. New or expanding fleets of  
5 equipment are not eligible (thereby precluding approximately half of the  
6 forklift market from participating in the VW Trust settlement).

7 Further, there is considerable uncertainty as to the future availability  
8 of the VW Trust funds. The funds are expected to be made available  
9 through a series of bidding rounds, wherein applicants for the funds "bid in"  
10 the amount of funding they require to support purchase of the electric  
11 technology and provide emissions reductions. The bids compete based on  
12 the cost per ton of emissions reduced, and are funded in a least cost order  
13 up to the funding cap. It should be noted that there is considerable  
14 uncertainty as to the timing, and indeed the availability, of funds to support  
15 this process. There is no funding for applicable technologies in the VW Trust  
16 though June 2019, and any future funding will depend on additional annual  
17 appropriations by the Missouri legislature.<sup>20</sup>

18 In addition to the uncertain timing and amount of the VW Trust funds  
19 and the "replacement only" restriction, the limitation on forklift eligibility by  
20 capacity, the requirement that existing equipment be scrapped instead of  
21 traded in, the complex bidding process and long lead time before a bid is  
22 accepted, and the lack of synchronization with the buying process and

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<sup>20</sup> Missouri's Beneficiary Mitigation Plan, Missouri Department of Natural Resources, August 6, 2018, p. 14.



1            timeline used by many purchasers all suggest that the VW Trust funds are  
2            an unlikely substitute for the Ameren Missouri program. I believe it would  
3            be unadvisable to rely upon availability of the VW Trust funds to drive  
4            significant increases in the electric market share of forklifts and airport GSE.

5            **C.    Incentive Limits and Implementation Budget**

6            **Q.    MR. MURRAY EXPRESSES CONCERN THAT THE PROGRAM DOES**  
7            **NOT LIMIT THE AMOUNT OF INCENTIVES SPENT ON ANY ONE**  
8            **MEASURE TYPE.<sup>21</sup> IS HIS CONCERN WARRANTED?**

9            A.    I do not believe so, and Mr. Murray does not provide any reasons for his  
10            concern. It is not necessary to impose limits on the amount of incentives by  
11            measure type since every measure included in the program is cost-  
12            effective. As noted in my Schedule DP-D2 (at page 22) to my direct  
13            testimony, the measure RIM benefit cost ratios all exceed 1.0, and range  
14            from 1.6 to 5.0. Every measure will bring net benefits to the program.

15            Further, I believe that Ameren Missouri should be afforded the  
16            flexibility to accommodate the market demand for incentives for each  
17            measure, rather than setting an arbitrary cap. While it may be appropriate  
18            to set an overall incentive budget for the program (as Ameren Missouri has  
19            done), I believe that it is important to permit Ameren Missouri to allocate  
20            incentives to measures that are most important to customers and to the  
21            program's success – especially since the importance of individual measures  
22            may evolve during the five-year program cycle.

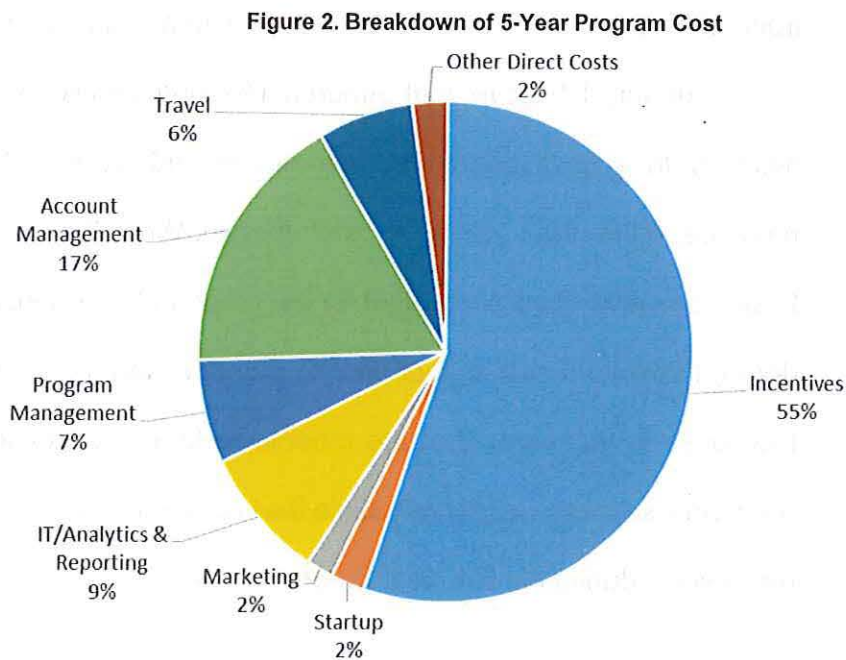
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<sup>21</sup> Byron Murray Rebuttal, p. 5, l. 3-4.

1 **Q. MR. MURRAY EXPRESSES CONCERN THAT THE APPROXIMATELY**  
2 **44% OF THE PROGRAM BUDGET IS FOR IMPLEMENTATION.<sup>22</sup> IS HIS**  
3 **CONCERN JUSTIFIED?**

4 **A.** No. Although Mr. Murray does not discuss his reasons for being concerned  
5 about the implementation costs of the program, I am confident that the  
6 costs, including both implementation and incentives, is appropriate.

7 The components of program cost were provided in Schedule DP-D2  
8 to my direct testimony, and are summarized in Figure 2 below. It is my  
9 experience that this is a reasonable distribution of costs for a program of  
10 this age, scope, and overall size – especially given that this program  
11 requires a significant amount of account management time with dealers  
12 providing customer education, sales training, technical support, incentive  
13 processing support, and documentation.



<sup>22</sup> Ibid., p. 5, l. 5-7.

1                   Further, as noted earlier with respect to the need for customer  
2                   incentives, it is not correct to assume that the incremental cost of the electric  
3                   measures is the only barrier. Additional barriers include: unfamiliarity,  
4                   skepticism, fear, and dealer desire to close the deal quickly. The program  
5                   cost reflects a careful consideration of each of these barriers and the  
6                   program services necessary to overcome them, as well as validation of the  
7                   incentive levels with forklift distributors.

8   **Q.   MR. MURRAY ALSO HIGHLIGHTS THE EXISTING MARKET SHARE OF**  
9   **ELECTRIC FORKLIFTS AS A CONCERN.<sup>23</sup> HOW DO YOU RESPOND?**

10 A.   I would refer the reader to my response to Dr. Marke, who raised a similar  
11       concern. As I demonstrated in that response, the market share for electric  
12       forklifts has been stalled for some time, is not likely to change so  
13       significantly over the next five years as to undermine the economic  
14       fundamentals of the program, leaves plenty of room for cost-effective  
15       actions to increase the electric market share in a manner that benefits all  
16       Ameren Missouri customers, and is appropriately addressed by the  
17       protections against free ridership included in the program design.

18 **Q.   DOES THIS CONCLUDE YOUR SURREBUTTAL TESTIMONY?**

19 A.   Yes, it does.

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<sup>23</sup> Ibid., p. 5, l. 10.

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

In the Matter of the Application of Union )  
Electric Company d/b/a Ameren Missouri )  
for Approval of Efficient Electrification ) File No. ET-2018-0132  
Program. )

**AFFIDAVIT OF DAVID K. PICKLES**

STATE OF Texas )  
 ) ss  
COUNTY OF Collin )

David K. Pickles, being first duly sworn on his oath, states:

1. My name is David K. Pickles; my office is located in Plano, Texas and I am Senior Vice President of ICF Resources, LLC.
2. Attached hereto and made a part hereof for all purposes is my Surrebuttal Testimony on behalf of Union Electric Company d/b/a Ameren Missouri consisting of 25 pages and Schedule(s) N/A, all of which have been prepared in written form for introduction into evidence in the above-referenced docket.
3. I hereby swear and affirm that my answers contained in the attached testimony to the questions therein propounded are true and correct.

*David K. Pickles*

\_\_\_\_\_  
DAVID K. PICKLES

Commonwealth of Virginia, City of Hampton  
Subscribed and sworn to before me this 14th day of November, 2018, by David K. Pickles.

*Janet Gail Bradsher*

Janet Gail Bradsher - Electronic Notary Public  
Notary Public

My commission expires 02/28/2019



Notarized online using audio-video communication