BEFORE THE PUBLIC SERVICE COMMISSION
OF THE STATE OF MISSOURI

In the Matter of a Working Case to Evaluate Potential Mechanisms for Facilitating Installation of Electric Vehicle Charging Stations	))))	File No. EW-2019-0229

RENEW MISSOURI'S COMMENTS

COMES NOW, Renew Missouri Advocates d/b/a Renew Missouri ("Renew Missouri"), and offers the following comments:

Background

On February 14, 2019, the Missouri Public Service Commission ("Commission") issued its order establishing this working group and referencing its decision in Ameren Missouri's Efficient Electrification Program application in Case No. ET-2018-0132. Within its Order, the Commission asked participants to evaluate three mechanisms to facilitate the installation of Electric Vehicle ("EV") charging stations including, but not limited to:

- The model stipulated to by the parties and approved by the Commission in Kansas City Power & Light Company's last rate case, where the company can own the charging stations and seek cost recovery through rates.
- A "Make Ready" tariff proposal that includes an option to waive line extension charges from a customer seeking a line extension for separately metered EV charging that meets specific public policy considerations.
- An alternate incentive program where program parameters, implementation, and cost recovery would be evaluated and defined in the context of a future rate proceeding.

These mechanisms are a few possible ways for Missouri utilities and customers to realize the benefits of EV adoption that the Commission identified in its Report and Order in ET-2018-0132 (pp.16-17), including:

- Having more EVs on Missouri highways has local environmental and health benefits including cleaner local air because of no exhaust emissions or petroleum spills or leaks. Additionally, EVs can have other environmental benefits from the use of renewable sources to produce the electricity;
- Incentives for EV charging hardware and installation represent an efficient, low-risk model that will encourage long-term electric vehicle adoption;
- Incentive-based programs can provide fast deployments of charging stations, competitive choice for customers, and low administrative burdens to utilities and customers, and;
- Financial benefits from an EV charging network accrue to both the utility and the ratepayers. Utilities and ratepayers benefit economically from the improved utilization of fixed assets when charging is done in off-peak times. EVs are considered to be a flexible load that can charge during periods when demand is low.

With those benefits in mind, an additional complimentary financing mechanism the Commission should consider in this workshop is a tariffed, on-bill investment program like Pay-As-You-Save® ("PAYS®") for cities and local governments. Such a program could help municipalities develop electric-powered vehicle fleets. Doing so is an opportunity for utilities to meet the needs of municipal customers, realize financial benefits for the utility and customers alike, and generate environmental and health benefits.

Tariffed on-bill investment or Pay-As-You-Save®

Renew Missouri has advocated for PAYS® tariffs to be offered by electric utilities in Missouri and believes those principles can be applied to encourage investment in municipal electric fleets. Pay-As-You-Save® is a market-based system that enables utility customers to purchase and install cost-effective energy efficiency upgrades or distributed renewable energy assets through a voluntary program that assures immediate net savings to customers. The idea behind PAYS® is for energy-saving upgrades to be installed in a customer's home or building, but the utility pays the up-front cost of the installed energy saving measures. To recover its costs, the utility puts a fixed charge on the customer's electric bill that is significantly less than the estimated energy savings from the upgrades. Therefore, the customer sees immediate savings by incurring less expense for energy while paying a fixed charge that is below the total estimated energy savings. Once the utility recovers its costs, the obligation of the customer to pay ends.[1]

While no investor-owned utility in Missouri has adopted a PAYS® tariff, Missouri's electric IOUs have conducted PAYS® feasibility studies showing some degree of potential. PAYS® tariffs have been approved in several states including Arkansas, Kansas, New Hampshire, Michigan, Hawaii, and Kentucky.[2] Utilities are used to providing service and collecting charges from customers based on the terms contained in Commission-approved tariffs. The same principles can allow electric utilities to make investments on the customer's side of the meter to facilitate their beneficial electrification goals as well as transitioning municipal bus/vehicle fleets from diesel/gas to electric.

The Municipal PAYS® context is a more focused version of a general PAYS® tariff. First, the utility would develop terms of service (in the form of a Commission-approved tariff) for

[1] In its Report and Order in Case No. ER-2016-0285, the Commission provided this synopsis of PAYS®.
[2] http://eeivt.com/wordpress/commission-orders-establishing-pays-precedents/

investing in the charging stations, batteries, or other electric bus equipment for each new electric bus sought by a transit authority in its service territory. Then, the customer (the transit authority or municipality) would opt-in to the tariff that allows the utility to place a charge on the customer's monthly electric bill. This charge would be limited to a level that would allow the customer to still see net savings (i.e. netting out the cost of fuel for a diesel bus). As a result, the municipality or transit authority is able to offset any upfront cost difference that may prohibit it from buying electric buses in the future. The utility gains new revenue from powering the electric fleet as well as having its investment recovered through the tariff charge. The municipality is able to upgrade its fleet and reduce its operation costs without any loan, lien, or new debt. The utilities other customers may see financial benefits from improved utilization of fixed assets if fleet charging is done in off-peak times. Lastly, bus riders and the community served can see local environmental and health benefits including cleaner local air because of no exhaust emissions or petroleum spills or leaks.

Attached to these Comments as **Appendix 1** is a model PAYS® Electric Bus Tariff. While this model tariff may need to be modified to fit certain needs, it is an example for the stakeholders to consider.

Municipal Customer Needs

Municipalities and transit authorities throughout the country are increasingly interested in transitioning vehicle fleets from diesel/gas to electric power. This includes in Missouri. On March 7, 2019, the Council of Kansas City passed Resolution 181000 addressing a number of clean energy goals, including directing its City Manager to "work with other governmental entities to establish an electric vehicle procurement initiative, and ensure at least fifty percent of the City's new bus and passenger sedan purchases are all-electric or plug-in-hybrid-electric vehicles for

calendar years 2021 to 2026." A copy of the full resolution is attached as **Appendix 2**. The City of St. Louis also has ongoing interest in adding electric buses to Metro Transit's bus fleet. St. Louis has been selected as one of 20 cities to participate in the American Cities Climate Challenge ("ACCC") funded by Bloomberg, part of which focuses on transportation policy. Reducing fossil fuel-based transportation is a primary objective of St. Louis' current Sustainability Plan,[3] as well as Mayor Lyda Krewson's Action Plan around sustainability.[4] In addition to Mayors in Kansas City and St. Louis, Mayors for St. Peters, Columbia, University City, and Maplewood Missouri have joined the Mayor's National Climate Action Agenda (or "Climate Mayors").[5]

Municipal and transit authorities are situated to benefit from a PAYS® tariff for fleet electrification. Municipalities and transit authorities often face budget constraints that will slow the rate of fleet electrification if there are additional up-front costs – such as a charging station – associated with switching fuels. On-bill tariffed financing can allow these customers to accelerate investment in buses that will allow the transit authority to cut operational costs, reduce emissions, and possibly improve the public health in their cities. Attached as **Appendix 3** is a presentation developed by Dr. Holmes Hummel on how PAYS® financing can be used in the transportation sector. Given that at least one large municipal customer of a Commission-regulated utility in Missouri (Kansas City) has resolved to transition to an electric vehicle fleet, stakeholders and the Commission should consider adopting tariffed financing to help Missouri cities achieve their goals.

WHEREFORE, Renew Missouri submits these comments.

Respectfully,

[3] See "City of St. Louis Sustainability Plan." https://www.stlouis-mo.gov/government/departments/planning/documents/upload/130219%20STL%20Sustainability%20Plan.pdf
[4] https://www.stlouis-mo.gov/government/departments/mayor/initiatives/sustainability/plan/action-agenda.cfm
[5] http://climatemayors.org/about/members/

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Attorney for Renew Missouri

Certificate of Service

I hereby certify that copies of the foregoing have been mailed, emailed or hand-delivered to all counsel of record this 14th day of March 2019:

/s/ Tim Opitz

Model PAYS® All-Electric Bus Tariff[1]

1 **Eligibility:** Eligible on an optional and voluntary basis to any Utility Customer operating diesel buses who takes service under any rate schedule in the Utility service territory.

2 **Participation:** To participate in the Program, a Customer must:

a) Provide the Utility with an analysis of the lifecycle cost of an all-electric bus compared to existing diesel buses based on a proposal to replace diesel buses with electric buses. Costs must include all costs associated with the procurement including electricity fuel costs on an available rate schedule, charging stations, maintenance required by the procurement that is not offset by savings from operations, eliminated maintenance, and planned replacements of batteries or other parts during the cost-recovery period.

b) Agree to pay the Utility's fee, if any, for reviewing the cost effectiveness analysis as described in Section 3.4,

c) Prevent re-use of diesel buses replaced by all-electric buses by disassembling and recycling the parts of the displaced bus(es) associated with diesel fuel use.

d) Agree to equip charging station(s) with switching that requires an override in order to charge at times other than those used in the cost effectiveness analysis described in Section 3.

e) Review and accept the Electric Bus Procurement Agreement (Agreement) that defines Customers' benefits and obligations.

3 **Electric Bus Procurement Plans:** The Utility will have its staff or approved vendor review procurement proposals using a cost effectiveness analysis, and it will approve any Electric Bus Procurement Plan (Plan) found to be cost effective to the Customer (Participant Cost Test) and the Utility (based on the Utility Cost Test). The Utility investment in electric bus procurement(s) will be limited to an amount equal to 90% of the estimated savings calculated for the new all-electric buses, providing the Utility's investment amount and cost recovery meets the parameters in Sections 3.2 and 6.

3.1 **Incentive Payment:** The Utility may make an incentive payment toward a an electric bus procurement project that is less than or equal to the value of the replacement of a diesel bus with an all-electric bus to the Utility based on the Utility Cost Test.

3.2 **Net Savings:** Approved Plans and utility investment amounts will be limited to those where the annual Program Service Charges (Service Charges) as described in Section 6, including program fees and the Utility's cost for capital, are no greater than 90% of the estimated annual benefit from net reduction in Customers' annual operating costs based on current fuel prices and rates for electricity and any documented reduced operations and maintenance costs. The Plan must specify any special rate used to calculate Customer savings and the conditions of such rate. In addition to any Utility incentive payments as described in 3.1, the Utility will include in its cost effectiveness analysis any grants, state or federal incentives available to the customer that can be used to lower the Customer's incremental cost of all-electric buses within 11 months of the delivery of the new bus .

3.3 **Copay Option:** In order to qualify a project for the Program that is not sufficiently cost effective, a Customer may agree to pay the portion of a project's cost that prevents it from qualifying for the program as an upfront payment to the seller. The Utility will assume no responsibility for such upfront payments.

3.4 **Cost Effectiveness Analysis Review Fee**: If the cost of the Utility's review of the Plan's cost effectiveness exceeds the lifecycle value to the Utility of all-electric buses procured by Customers, the

[1] Prepared by Energy Efficiency Institute, Inc.; Colchester, VT 05446; May, 2017

Appendix 1

Utility may recover from participants or vendors the portion of the cost for its analysis or review that is greater than the value of the investment to the Utility. The Utility will not recover costs for its review of analyses if Utility concludes that proposed all-electric bus procurements are cost effective only with a copay. The Utility will recover all of its costs for the analysis from a Customer who declines to procure electric buses identified as cost effective in a Plan that does not require a copayment.

4 **Acceptance of Tariffed Terms:** Should the Customer wish to proceed with implementing the Plan approved by the Utility, the Utility will determine the appropriate monthly Service Charge, as described in Section 6. The Customer will sign the Agreement and select a vendor from the Utility's list of approved vendors to effect the procurement of an all-electric bus and disposal of any decommissioned buses.

5 **Quality Assurance:** When the Customer's procurement is completed, the vendor will be paid the amount that is determined to be cost effective by the Utility as described in Section 3 and 6, following on-site or telephone inspection by the Utility or its Program Operator confirming operation of the new equipment from the seller.

6 **Program Service Charges:** The Utility will recover the costs for its investments in electric bus procurements including any fees as allowed in this tariff through monthly Service Charges assigned to the meter at the charging location of the Customer and paid by Customers responsible for bills at that location until all Utility costs have been recovered. Services Charges may not exceed 90% of the estimated annual benefit from net reduction in Customers' annual energy costs based on current fuel prices and rates for electricity and any documented reduced operation and maintenance costs. Service Charges will be set for a duration not to the exceed 80% of the estimated life of the new buses including any major part replacements such as batteries unless the replacements of these parts are covered by the Agreement or the length of a full parts and labor warranty whichever is longer. The Service Charges and duration of charges will be included in the Agreement.

6.1 **Cost Recovery:** No sooner than 45 days after approval of completed electric bus procurement(s) by the Utility or its Program Operator, the Customer shall be billed the monthly Service Charge as determined by the Utility. The Utility will bill and collect Service Charges until cost recovery is complete except in cases discussed in Section 7.

6.2 **Termination of Service Charge:** Once the Utility's costs for its investment in electric bus(es) at a location have been recovered, the monthly Service Charge shall no longer be billed, except as described in Section 7.

6.3 **Extension of Service Charge:** As described in Section 7 or for any other reason, if the monthly Service Charge is reduced or suspended, once repairs have been successfully effected or service reconnected, the number of total monthly payments shall be extended until the Service Charges collected equal the Utility's cost for its investment in an electric bus. The duration of Service Charges will also be extended if there are missed payments and the current Customer at the billing location is still benefitting from the all-electric buses in order for the Utility to recover its costs for its investment in all-electric bus. Service Charges will not be extended if the Utility obtains cost recovery from a reserve fund or from all ratepayers.

6.4 **Tied to the Meter:** Until cost recovery for the Utility's investments in electric buses for a Customer at a billing location is complete or these buses fail as described in Section 7, the terms of this tariff shall be binding at the metered location and on any future Customer who receives service at that location. If the Customer or its successor wishes to relocate its operations from the assigned meter, it must first obtain consent from Utility and the Customer must agree to assign its payment obligation to the new location.

6.5 **Disconnection for Non-Payment:** Without regard to any other Commission or Utility rules or policies, the Service Charges will be considered an essential part of the Customer's bill for electric service, and the Utility may disconnect the metered location for non-payment of Service Charges under the same provisions as for any other electric service.

Appendix 1

7 **Repairs:** Should, at any future time during the billing of Service Charges, the Utility determine that an electric bus in which it has invested is no longer functioning as intended and that the Customer did not damage or fail to maintain the electric bus, the Utility shall reduce or suspend the Service Charges until such time as the Utility and/or its vendor can repair the bus. If the electric bus cannot be repaired or replaced cost effectively, the Utility will waive remaining Service Charges.

If the Utility determines the Customer, or bus owner if different, damaged or failed to maintain the electric bus, it will seek to recover from the Customer all costs associated with the installation, including any fees, the Utility's cost for capital, incentives paid to lower project costs, and legal fees.

The Service Charges will continue until cost recovery is complete.

Appendix 1

RESOLUTION NO. 181000

Directing the City Manager to enter into negotiations to procure carbon-free energy; directing the City Manager to achieve certain Energy Star certifications by December 31, 2023; directing the City Manager to establish an electric vehicle procurement initiative and make certain all-electric or plug-in-hybrid-electric vehicle purchases in calendar years 2021 to 2026; directing the City Manager to identify land for community solar projects and develop a plan for City employees to procure energy from such projects; and directing the City Manager to make a progress report to Council by December 1, 2019.

WHEREAS, Kansas City has been a leader in acknowledging the effects of climate change, on the City, region, State and Nation; and

WHEREAS, the City, in partnership with local energy providers, the business community and general public, is making progress to ensure that buildings are more energy efficient, wind and solar are increasingly a greater part of the City's electricity mix, and electric vehicles are being used in significantly greater numbers; and

WHEREAS, the Mayor and Council have consistently expressed their support of the goals of the 2015 Paris Climate Agreement, including the reduction of greenhouse gas emissions; and

WHEREAS, Mayor Sly James reaffirmed the City's commitment to abide by the targets set out in the Paris Climate Agreement by joining other mayors from cities across the country in pledging to "adopt, honor, and uphold the commitments to the goals enshrined in the Paris Agreement"; and

WHEREAS, Council, in Resolution No. 170484 adopted on July 20, 2017, asserted that the City "continues to support the principles of the Paris Climate Agreement" and the City "will continue to stand with cities and other public and private sector partners throughout the world to advance action in accordance with the goals outlined in the Paris Climate Agreement"; and

WHEREAS, Council, in Resolution No. 170586, adopted on August 17, 2017, directed the City Manager to study the feasibility of implementing certain measures necessary to make progress towards the City's goals related to the Paris Climate Agreement; and

WHEREAS, the City Manager, on March 29, 2018, reported that it was feasible to enact the measures outlined in Resolution No. 170586;

WHEREAS, achieving these measure would improve the health of City residents, reduce energy costs, create jobs, and help to mitigate climate change by greatly reducing the City's carbon footprint; and

Appendix 2

WHEREAS, in order to make progress towards the City's commitment to achieve targets set out by the Paris Climate Agreement, the City needs to obtain all its electricity used for municipal operations from carbon-free sources, make City buildings more energy efficient, procure electric vehicles for municipal fleets, and allow municipal land to be used for community solar facilities; NOW, THEREFORE,

BE IT RESOLVED BY THE COUNCIL OF KANSAS CITY:

Section 1. That the City Manager shall enter into negotiations in the first quarter of 2019 to procure all of its electricity for municipal operations from carbon free sources with KCP&L with a goal of converting to carbon free electricity by December 31, 2020.

Section 2. That the City Manager is directed to achieve Energy Star certification for 90% of all eligible municipal buildings of 25,000 square feet or more by no later than December 31, 2023.

Section 3. That the City Manager shall work with other governmental entities to establish an electric vehicle procurement initiative, and ensure at least fifty percent of the City's new bus and passenger sedan purchases are all-electric or plug-in-hybrid-electric vehicles for calendar years 2021 to 2026.

Section 4. That the City Manager shall survey and identify by June 30, 2020, what parcels of City-owned land might be appropriate for community solar projects, and shall develop a plan by June 30, 2020 that allows City employees to procure solar for their own needs from such community solar projects.

Section 5. That the City Manager shall provide a report to the City Council by December 1, 2019, on the progress towards achieving the above initiatives.

Authenticated as Passed

Sly James, Mayor

Marilyn Sanders, City Clerk

MAR 07 2019

Date Passed

Appendix 2

Innovative Financing in the Power Sector Can Drive Carbon Out of the Transportation Sector

100% EV transit bus in Louisville, KY

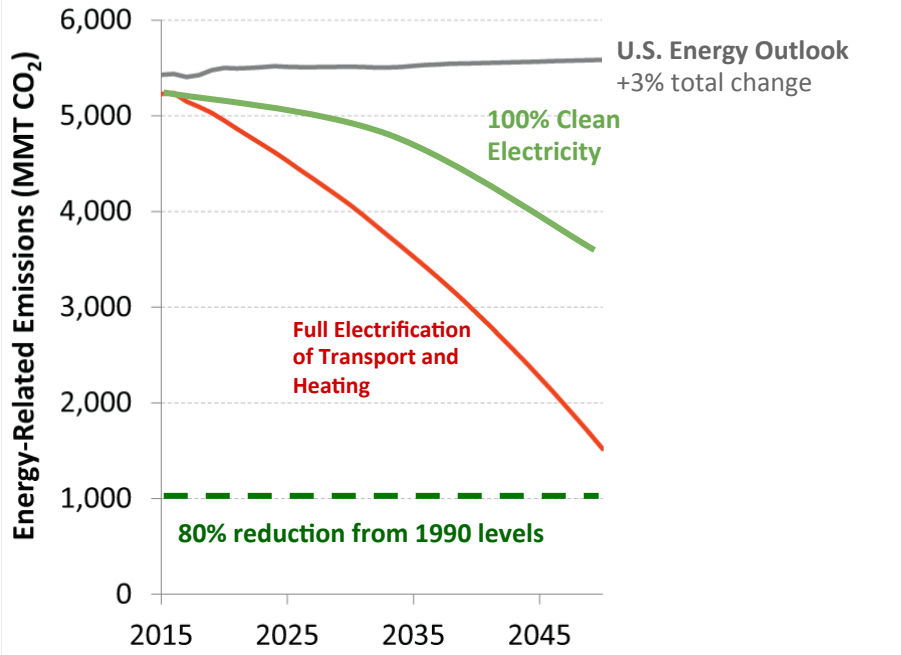
Clean Energy WORKS

Holmes Hummel, PhD
Principal, Clean Energy Works
Holmes.Hummel@CleanEnergyWorks.org

Appendix 3

Transformation needed in the Power Sector and Transportation

100% Green Grid won't be enough to reach carbon targets



Adapted from Figures 1 and 8
Weiss, Jürgen, et al., The Brattle Group
Electrification: Emerging Opportunities for Utility Growth. January 2017

Background on PAYS: Financing Energy Efficiency

- Over more than a decade, a dozen utilities operating in six states have invested tens of millions of dollars in cost effective energy efficiency in thousands of sites using *an opt-in tariff with on-bill cost recovery*.

- All used an innovative approach called Pay As You Save® (PAYS®)

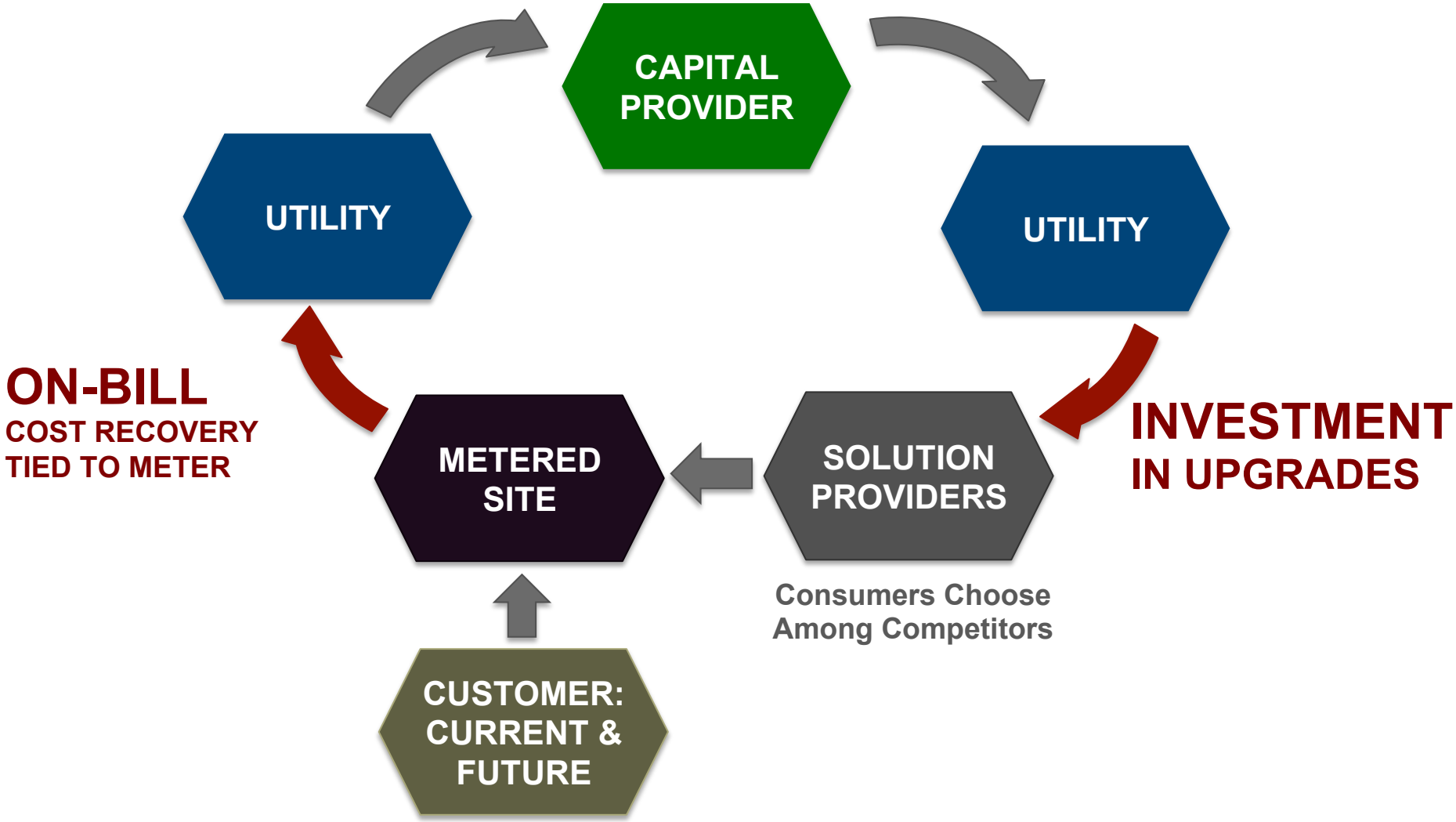
- All reported that high uptake rates compared to other financing options, and that they were able to reach customers that were underserved.

- All reported a cost recovery rate from program participants above 99%, outperforming the mainline business of electricity sales.

- These reported field results and a vision for broader potential helped PAYS win of a Fire Award for high-impact innovation at the Bloomberg New Energy Finance Summit in 2015.

Tariffed On-Bill Investment Program

PAYS offers all utility customers the option to access cost effective energy upgrades using a proven investment and cost recovery model that benefits both the customer and utility.

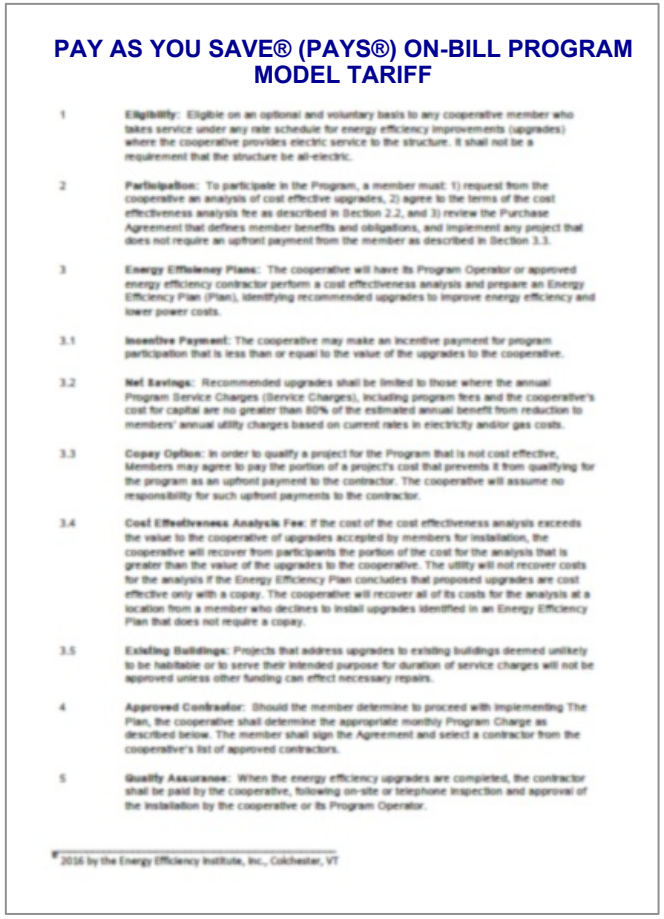


PAYS® Offer – Here's how it works:

- Energy saving upgrades are installed at your location (building, home, etc.), and you pay nothing upfront. The utility pays for the installed energy solution.
- To recover its costs, the utility puts a fixed charge on your electric bill that is significantly less than the estimated energy savings from these upgrades.
- You have no loan, no lien, and no debt associated with this transaction; just lower utility bills and a better quality of service.
- When the utility recovers its costs, your obligation to pay ends.
- If you leave this location sooner, or if an upgrade fails and is not repaired, your obligation to pay ends if you have followed your responsibilities.

Experience gained in multiple U.S. markets – and even larger appliance programs in India

Approved by Utility Commissions in New Hampshire, Kansas, Kentucky, and Arkansas



PAY AS YOU SAVE® (PAYS®) ON-BILL PROGRAM MODEL TARIFF

1 **Eligibility:** Eligible on an optional and voluntary basis to any cooperative member who takes service under any rate schedule for energy efficiency improvements (upgrades) where the cooperative provides electric service to the structure. It shall not be a requirement that the structure be all-electric.

2 **Participation:** To participate in the Program, a member must: 1) request from the cooperative an analysis of cost effective upgrades, 2) agree to the terms of the cost effectiveness analysis fee as described in Section 2.2, and 3) review the Purchase Agreement that defines member benefits and obligations, and implement any project that does not require an upfront payment from the member as described in Section 3.3.

3 **Energy Efficiency Plans:** The cooperative will have its Program Operator or approved energy efficiency contractor perform a cost effectiveness analysis and prepare an Energy Efficiency Plan (Plan), identifying recommended upgrades to improve energy efficiency and lower power costs.

3.1 **Incentive Payment:** The cooperative may make an incentive payment for program participation that is less than or equal to the value of the upgrades to the cooperative.

3.2 **Net Savings:** Recommended upgrades shall be limited to those where the annual Program Service Charges (Service Charges), including program fees and the cooperative's cost for capital are no greater than 80% of the estimated annual benefit from reduction to members' annual utility charges based on current rates in electricity and/or gas costs.

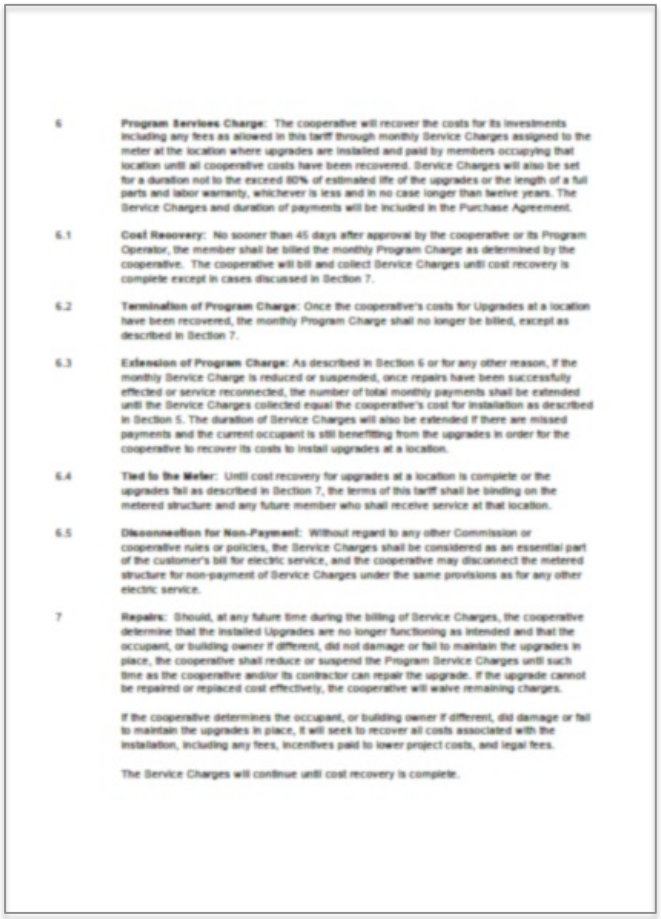
3.3 **Copay Option:** In order to qualify a project for the Program that is not cost effective, Members may agree to pay the portion of a project's cost that prevents it from qualifying for the program as an upfront payment to the contractor. The cooperative will assume no responsibility for such upfront payments to the contractor.

3.4 **Cost Effectiveness Analysis Fee:** If the cost of the cost effectiveness analysis exceeds the value to the cooperative of upgrades accepted by members for installation, the cooperative will recover from participants the portion of the cost for the analysis that is greater than the value of the upgrades to the cooperative. The utility will not recover costs for the analysis if the Energy Efficiency Plan concludes that proposed upgrades are cost effective only with a copay. The cooperative will recover all of its costs for the analysis at a location from a member who declines to install upgrades identified in an Energy Efficiency Plan that does not require a copay.

3.5 **Existing Buildings:** Projects that address upgrades to existing buildings deemed unlikely to be habitable or to serve their intended purpose for duration of service charges will not be approved unless other funding can effect necessary repairs.

4 **Approved Contractor:** Should the member determine to proceed with implementing The Plan, the cooperative shall determine the appropriate monthly Program Charge as described below. The member shall sign the Agreement and select a contractor from the cooperative's list of approved contractors.

5 **Quality Assurance:** When the energy efficiency upgrades are completed, the contractor shall be paid by the cooperative, following on-site or telephone inspection and approval of the installation by the cooperative or its Program Operator.



6 **Program Services Charge:** The cooperative will recover the costs for its investments including any fees as allowed in this tariff through monthly Service Charges assigned to the meter at the location where upgrades are installed and paid by members occupying that location until all cooperative costs have been recovered. Service Charges will also be set for a duration not to the exceed 80% of estimated life of the upgrades or the length of a full parts and labor warranty, whichever is less and in no case longer than twelve years. The Service Charges and duration of payments will be included in the Purchase Agreement.

6.1 **Cost Recovery:** No sooner than 45 days after approval by the cooperative or its Program Operator, the member shall be billed the monthly Program Charge as determined by the cooperative. The cooperative will bill and collect Service Charges until cost recovery is complete except in cases discussed in Section 7.

6.2 **Termination of Program Charge:** Once the cooperative's costs for Upgrades at a location have been recovered, the monthly Program Charge shall no longer be billed, except as described in Section 7.

6.3 **Extension of Program Charge:** As described in Section 6 or for any other reason, if the monthly Service Charge is reduced or suspended, once repairs have been successfully effected or service reconnected, the number of total monthly payments shall be extended until the Service Charges collected equal the cooperative's cost for installation as described in Section 5. The duration of Service Charges will also be extended if there are missed payments and the current occupant is still benefitting from the upgrades in order for the cooperative to recover its costs to install upgrades at a location.

6.4 **Tied to the Meter:** Until cost recovery for upgrades at a location is complete or the upgrades fail as described in Section 7, the terms of this tariff shall be binding on the metered structure and any future member who shall receive service at that location.

6.5 **Disconnection for Non-Payment:** Without regard to any other Commission or cooperative rules or policies, the Service Charges shall be considered as an essential part of the customer's bill for electric service, and the cooperative may disconnect the metered structure for non-payment of Service Charges under the same provisions as for any other electric service.

7 **Repairs:** Should, at any future time during the billing of Service Charges, the cooperative determine that the installed Upgrades are no longer functioning as intended and that the occupant, or building owner if different, did not damage or fail to maintain the upgrades in place, the cooperative shall reduce or suspend the Program Service Charges until such time as the cooperative and/or its contractor can repair the upgrade. If the upgrade cannot be repaired or replaced cost effectively, the cooperative will waive remaining charges.

If the cooperative determines the occupant, or building owner if different, did damage or fail to maintain the upgrades in place, it will seek to recover all costs associated with the installation, including any fees, incentives paid to lower project costs, and legal fees.

The Service Charges will continue until cost recovery is complete.

The model tariff here is based on the most recent filing, unanimously approved in Arkansas.

New Hampshire's Leadership Experience

EVERSOURCE

MUNICIPAL SMART START PROGRAM

Our Smart Start Program gives our municipal customers the opportunity to install energy saving measures with no up front costs.

Payment for services and products are made over time with the savings obtained from lower energy costs.

Here's how it works:

- Eversource applies rebates for all eligible retrofit measures.
- Eversource finances the remaining costs associated with the purchase and installation of approved measures.
- A Smart Start Purchase and Installation Charge, calculated to be less than the monthly savings, is added to your monthly electric bill until all costs are repaid.
- The new energy efficient, environmentally friendly equipment you install through this program pays for itself over time.

Financing Energy Efficiency: Load Erosion vs. Load Growth

- Many utilities resist investment in building energy efficiency (i.e. sales erosion) unless they are assured a financial reward.

- Fuel economy benefits of electrification in transport can exceed 500% for vehicle categories with the largest carbon footprints – like transit buses.

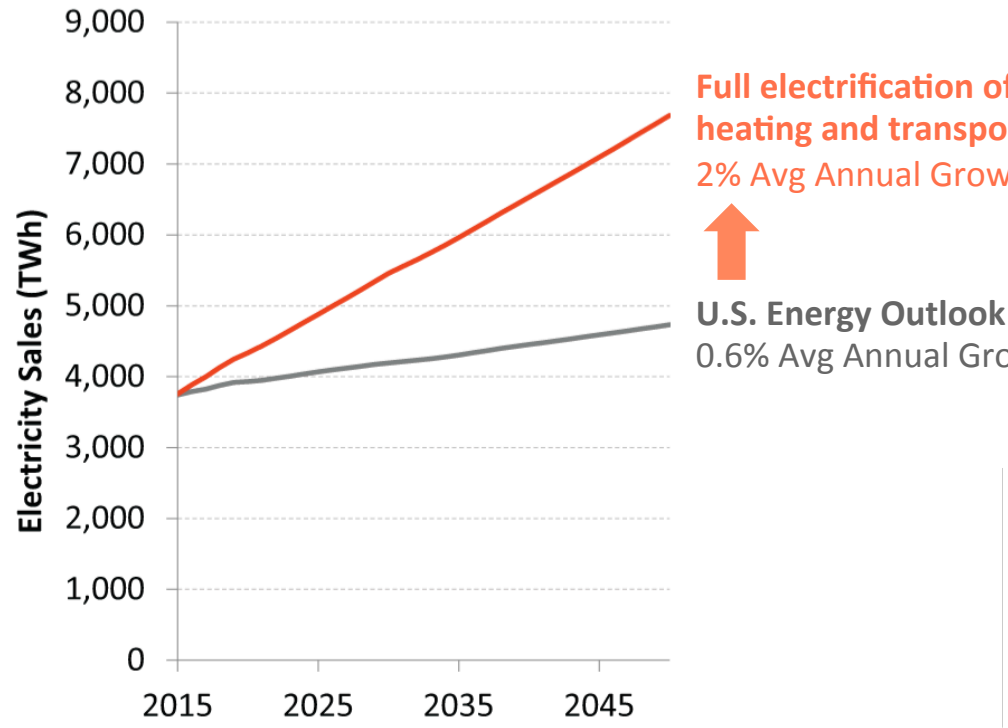
- However, prospective buyers of EV transit buses face a familiar upfront cost barrier - up to 50% compared to a diesel bus. Virtually all of it can be attributed to the on-board battery and grid connected charging station.

- Because electrification can *increase* sales, more utilities are motivated to consider offering a PAYS option to capitalize the incremental upfront cost of a cost-effective energy efficiency upgrade.

Transportation is a Lifeline for the Power Sector

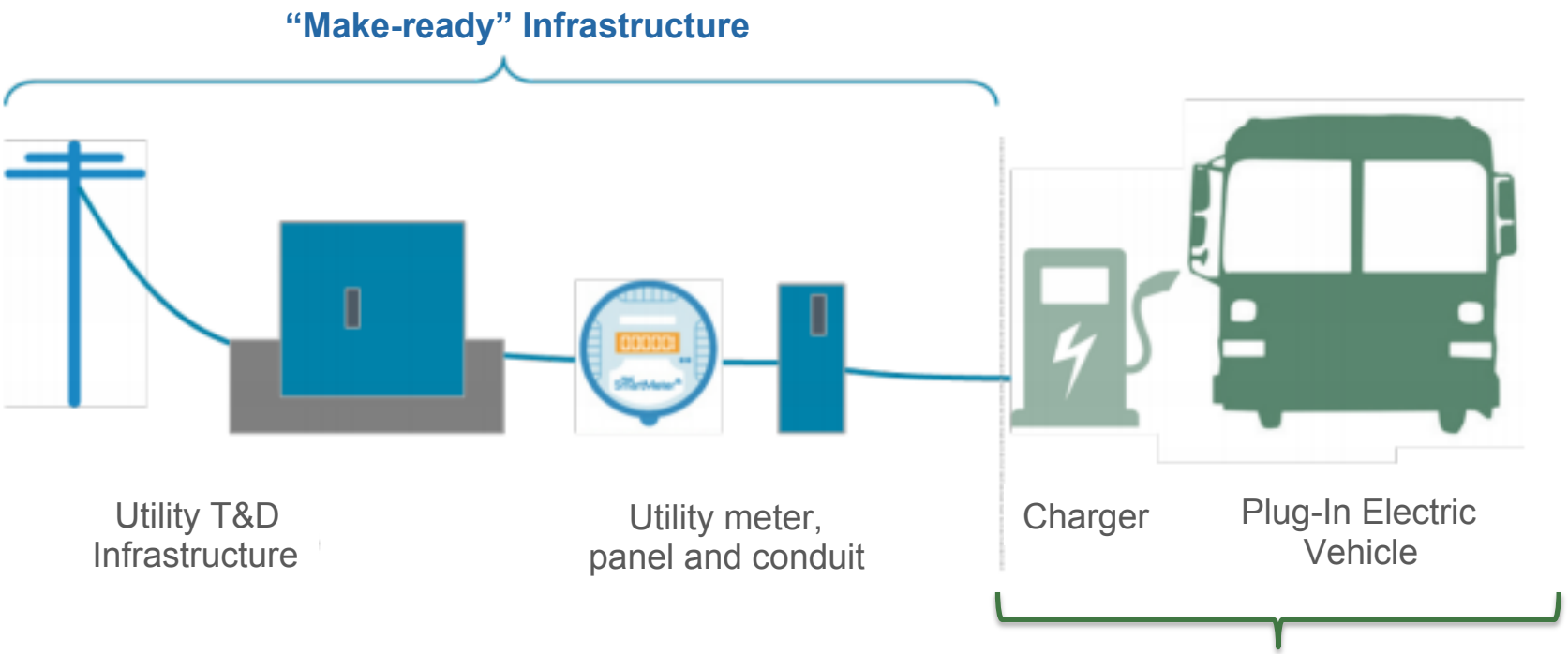
The Prize for Utilities:

Double Annual Sales Growth



Weiss, Jürgen, et al., The Brattle Group
Electrification: Emerging Opportunities for Utility Growth. January 2017.

Utility regulations often prevent utilities from investing on the customers's side of the meter

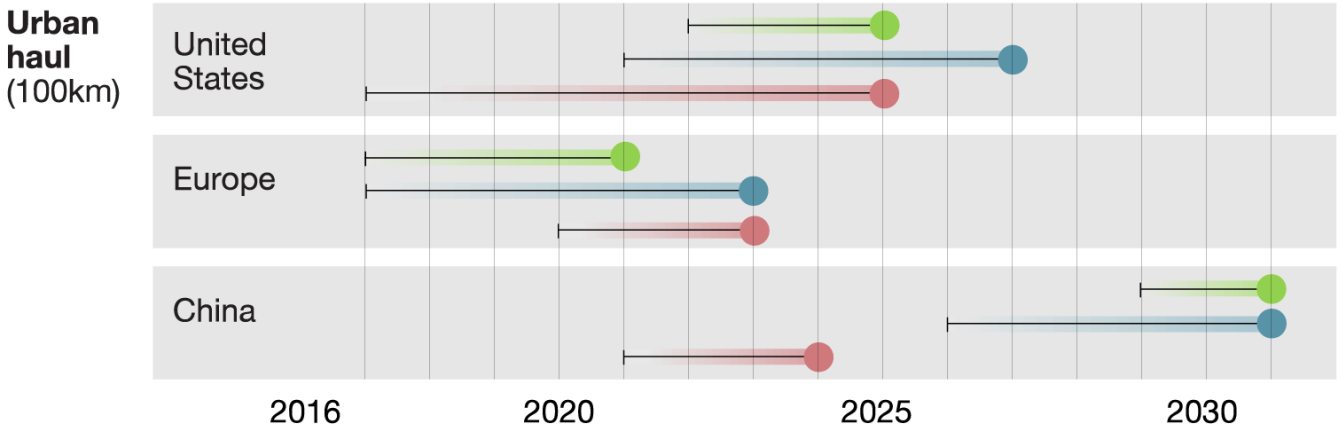


PAYS offers the option to deploy and recover capital for grid-connected equipment on the customer's side of the meter (e.g. battery and charger)

Transit buses have a compelling business case…

Different applications and weight classes will see varying breakeven points for electric vehicle total cost of ownership.

Timing of battery electric vehicle total cost of ownership parity with diesel vehicle, year achieved range



McKinsey&Company | Source: McKinsey Center for Future Mobility

… yet still most transit agencies interested in zero emissions buses are seeking grants

Alaska Department of Transportation & Public Facilities

Alabama A&M University

City of Los Angeles, Department of Transportation

Redding Area Bus Authority

Antelope Valley Transit Authority

City of Fairfield

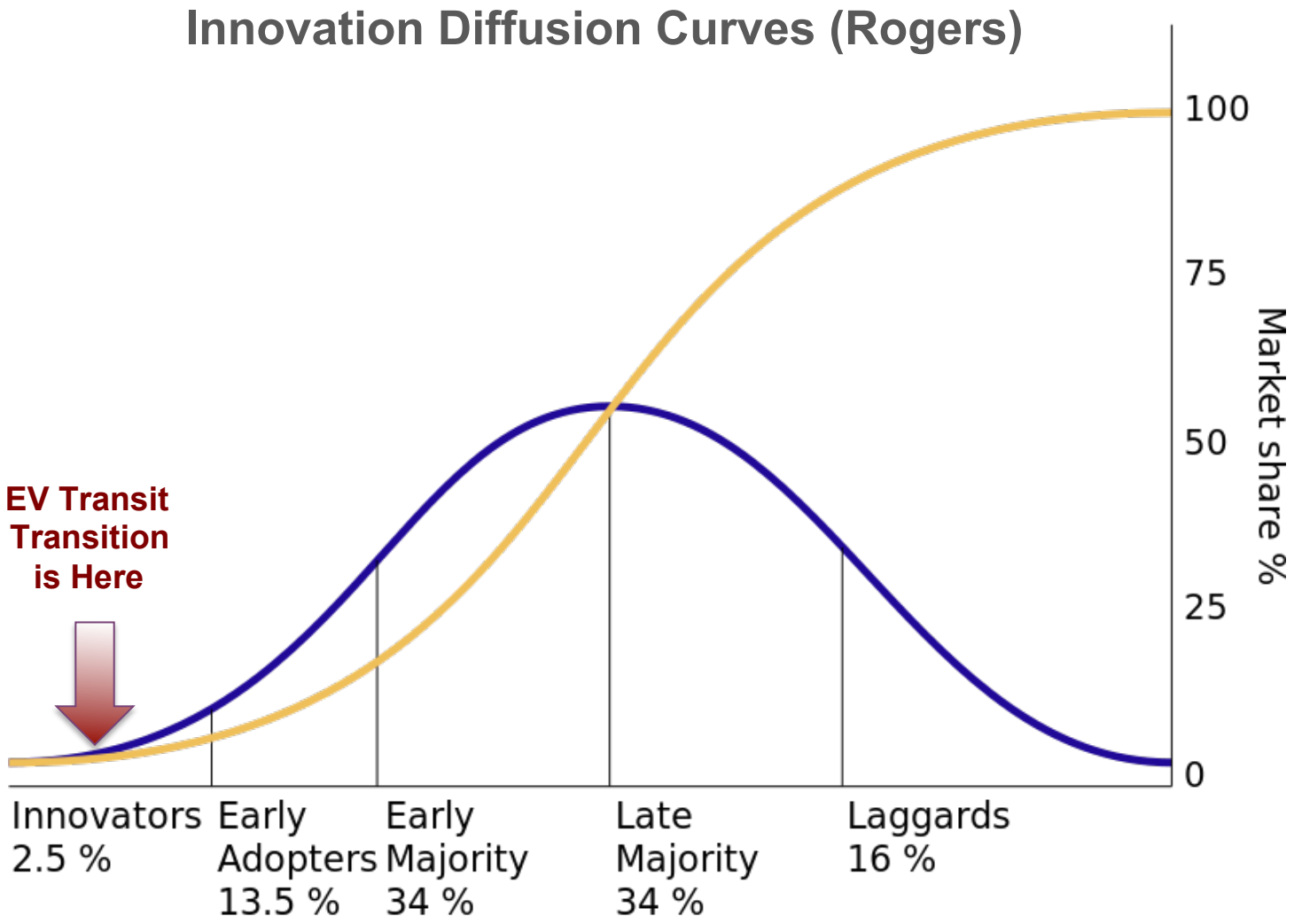
Napa Valley Transportation Authority

State of Colorado Department of Transportation

Connecticut Department of Transportation

~90% of grant funding requested in the largest U.S. program was denied: Insufficient Funds

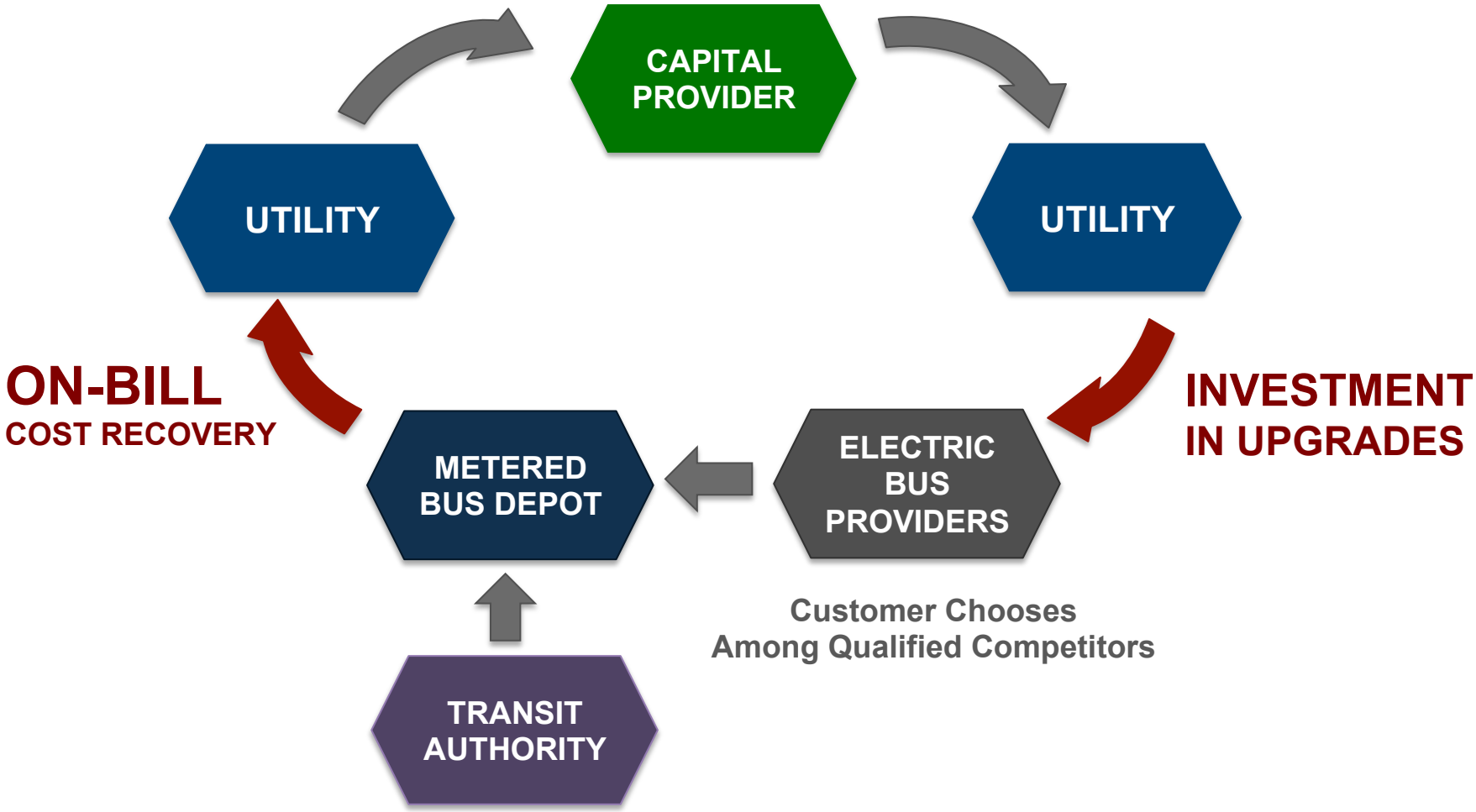
To Increase the Scale and Speed of Deployment, Better Financing Solutions are Needed



Utilities can offer to finance the upfront cost of cost effective clean transport, using PAYS

Tariffed On-Bill Financing:

An Innovation Approved by Utility Commissions for Buildings in Multiple States

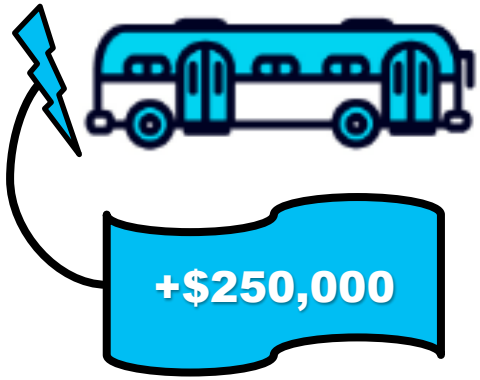


Example Transit Case: Midcity

The **Midcity Transit District** wants to buy new electric buses instead of diesels, but can't afford the higher upfront costs.

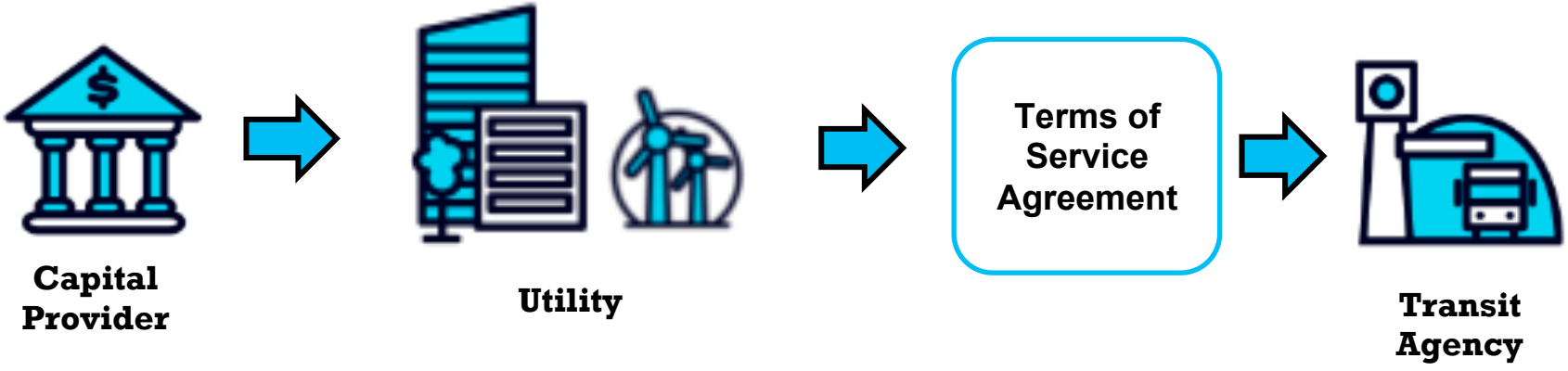
PowerCo, Midcity Transit's local utility, offers to make an investment to help them purchase these new buses realizing it's good for their business in the long-term.

Example Transit Case: Midcity

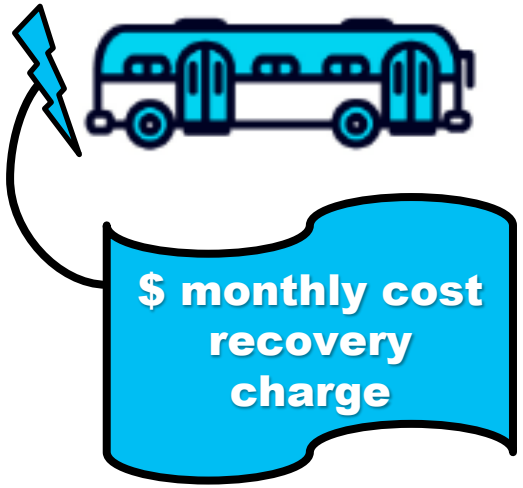


The difference in purchase price between a electric and diesel bus is $250,000, so **PowerCo** agrees to make the investment in the battery and charging station of the buses on behalf of **Midcity Transit**.

The investment is made using a utility "tariff" or terms of service agreement and covers the difference in cost.

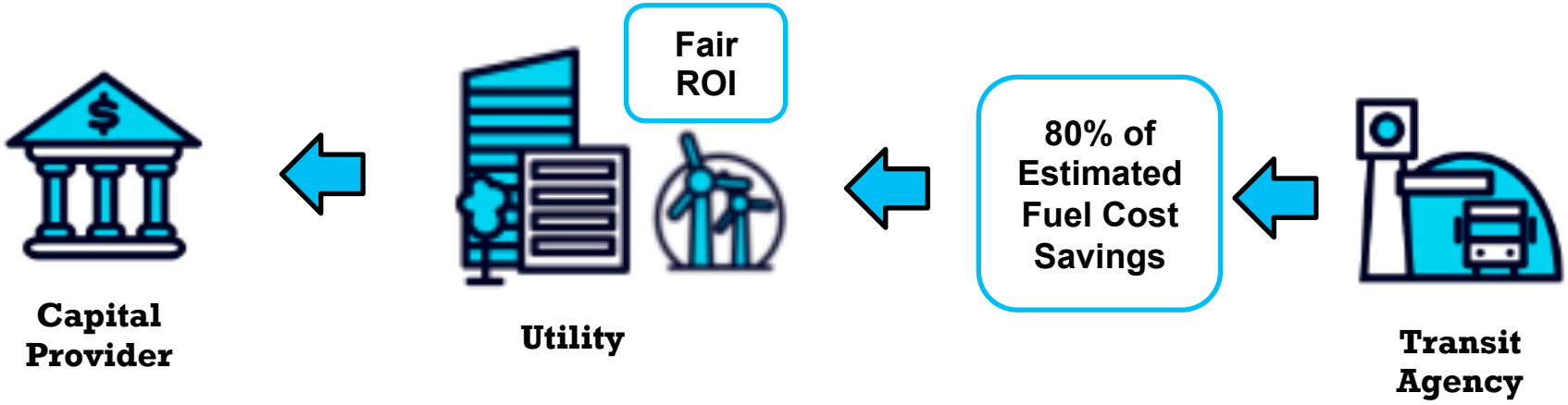


Example Transit Case: Midcity



PowerCo then recovers the cost of $250,000 investment through **Midcity Transit's** monthly electricity bill.

PowerCo's cost recovery is set at a rate of 80% of the expected savings, so **Midcity Transit** saves money over what fueling and repairing a diesel bus would have cost, but provides the utility with fair return on its investment.



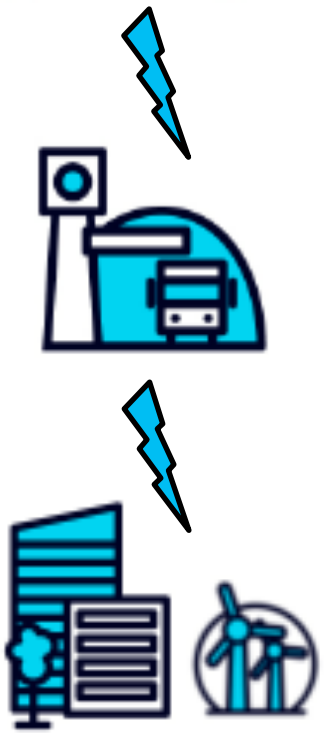
Good for utilities, transit and residents

PowerCo gets the benefit of selling the district electricity instead of **Midcity Transit** buying diesel from another fuel provider and they recover these low-risk investments.

PowerCo might even buy back the bus batteries once they're no longer useful for transit to re-use for stationary storage projects.

Midcity Transit saves on fuel costs.

Midcity residents get the benefit of cleaner and healthier air without a regressive tax to pay for it, and we all benefit from lower GHG emissions.



Recap: The PAYS® Offer

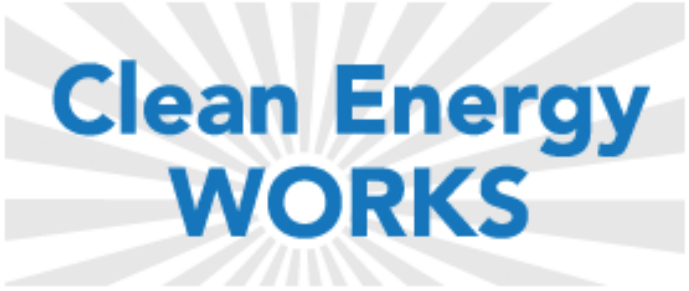
- ✓ The utility pays for energy-saving upgrades to the bus fleet, and the transit authority pays nothing upfront for the premium;
- ✓ To recover its costs, the utility puts a fixed charge on the electric bill for the transit authority at its charging stations and that charge is less than the estimated energy savings from the upgrades;
- ✓ The transit authority has no loan, no lien, and no debt associated with this transaction, just lower costs of operation and a better bus fleet;
- ✓ When the utility recovers its costs, the monthly charges end. The utility may opt to buy battery packs for second life applications for stationary storage;
- ✓ If the equipment has been maintained as per warranty conditions, the utility can call on the warranty to address upgrades that need repair or remedy.

2018: Global Innovation Lab for Climate Finance Selects PAYS for Clean Transport

Source: Lights at Night, NASA

Financing on a Scale that Matters and a Time Frame that Makes a Difference

Let's mobilize $1 billion for 4,000 EV buses, driving new diesel buses out of transit fleets in more than 50 cities within 3 years.



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