BEFORE THE
PUBLIC SERVICE COMMISSION
OF WISCONSIN

Application of Wisconsin Power and Light Company for Authority to Adjust Electric and Natural Gas Rates For 2022 and 2023 Test Years

Docket No. 6680-UR-123

PRE-FILED DIRECT TESTIMONY OF

Jeffrey J. Ripp

FOR

WISCONSIN POWER AND LIGHT COMPANY

May 27, 2021

Q1. Please state your name and business address.

A. My name is Jeffrey J. Ripp. My business address is 4902 N. Biltmore Lane, Madison, Wisconsin, 53707. I am employed by Alliant Energy Corporate Services, Inc. (AECS), a service company subsidiary of Alliant Energy Corporation (Alliant Energy). My job title is Director of Regulatory Strategy and Solutions.

I am responsible for overseeing strategic regulatory projects and policies to advance Alliant Energy's efforts to serve customers and build stronger communities throughout our service territory in Iowa and Wisconsin. My specific responsibilities include transmission planning,

resource planning, energy efficiency, regulatory engagement, and retail pricing strategy, among other initiatives.

I am testifying on behalf of Wisconsin Power and Light Company (WPL or the Company) in this proceeding.

Q2. Please describe your relevant background in the utility industry.

A. I graduated from the University of Wisconsin–Madison in 1994 with a Bachelor of Science degree in Chemistry and Environmental Studies. I graduated from the University of Wisconsin–Madison in 1998 with a Master of Science degree in Water Resources Management. I have nearly 15 years of relevant experience in the utility industry, primarily in regulatory matters related to electric, natural gas, and water public utilities. Since October 2017, I have been employed by AECS as the Director of Regulatory Strategy and Solutions. I was previously employed by the Public Service Commission of Wisconsin (Commission) in a variety of roles, starting in 2007. This included serving as the Deputy Division Administrator and Division Administrator for the Division of Energy Regulation from 2014 to 2017, and as the Assistant Administrator for the Division of Water, Compliance and Consumer Affairs from 2011 to 2014.

Q3. Have you previously testified before the Commission on behalf of WPL?

A. No, I have not. However, I have testified on revenue requirement, cost of service, and rate design in several cases before the Commission in my former role as Commission staff. In addition, I have testified before the Iowa

Utilities Board on behalf of Interstate Power and Light Company, Alliant Energy's Iowa utility affiliate.

Q4. Please summarize your testimony in this case.

A. WPL's mission is to deliver the energy solutions and exceptional service that our customers and communities count on – safely, efficiently, and responsibly. We provide solutions that give our customers more convenient choices to meet their energy needs and manage their bills. We also work to ensure that all customers and communities, including financially disadvantaged customers and diverse communities, can fully participate in and benefit from the clean energy future.

My testimony outlines WPL's plans to implement and promote innovative customer solutions and incentives, as part of its Clean Energy Blueprint, to help customers better manage their energy use, improve affordability, and enhance overall system reliability and efficiency. Specifically, I describe WPL's integrated framework for new customer demand response programs, transportation electrification incentives, and promotion of time-varying pricing solutions.

These changes across the industry include declining costs of renewable energy and battery storage, increasing penetration of distributed energy resources, increasing customer interest in information and control over energy use, increasing interest in transportation electrification, and a desire for enhanced reliability and resiliency to support modern business needs and lifestyle choices. The energy system will only become more

complex as more utility and customer-owned renewable resources come online and as beneficial electrification proliferates. For example, it will become increasingly important to ensure that changes in customer usage resulting from electric vehicle (EV) charging do not create reliability issues or exacerbate system peak loads that could affect affordability for all customers.

The result of these changes is a more complex, advanced, and interconnected system. Nevertheless, WPL has a continuing obligation to meet the needs and expectations of its customers and communities – 24 hours a day, 365 days a year. As demonstrated in WPL's Clean Energy Blueprint, demand response programs are an increasingly important option for balancing supply and demand in a more dynamic system. While demand response is not a new concept, advances in technology and information systems provide opportunities to engage customers in more effective ways, including time-of-use (TOU) pricing and direct load control programs. The potential benefits of demand response programs are enhanced by investment in modern grid technology. For example, sensors on the distribution system can help to automatically divert or reduce load to minimize the chance of power failure. Advanced metering infrastructure expands the scope of time-varying rate programs that can be offered to consumers. Smart customer systems such as Wi-Fi enabled thermostats can make it easier for consumers to adjust their energy use to reduce peak period consumption.

The remainder of my testimony describes WPL's specific proposals in this case. First, I describe WPL's new residential and small business demand response offerings, which we collectively call Smart Hours, and which include using smart thermostats to adjust energy use in response to demand events. WPL is also proposing a controlled water heating program and advancing a pilot project on thermal load control. Through these programs, WPL will continue to partner with customers in the operation of the electric grid by reducing or shifting their electricity usage during peak periods in response to price signals and other financial incentives.

Second, I describe WPL's approach to support our residential customers in making the transition to EVs. While the rate of adoption is still relatively small in our service territory, EVs will play a significant role in our customer's future energy needs. WPL's E-Ready Plan supports efforts to increase electric vehicle use by customers in a way that enhances the overall efficiency of our electric system. To do so, WPL proposes rebates for charging infrastructure and incentives for EV owners that will benefit all customers through increased load growth. The program is designed to help gather information that will guide our strategic investments to ensure that our system is ready to meet future needs as well as to inform WPL's planning of additional electrification efforts in the future.

Finally, I describe WPL's approach to promoting TOU and demand-based rates as a key component of our demand response efforts. While not new, providing information to help customers make informed decisions

about their energy use can help them control their energy bills while enhancing the overall efficiency of WPL's system. This includes working with financially disadvantaged customers who may be able to lower their monthly bills by taking service under the residential demand rate (Rd-1), even without significant changes in energy use.

These proposals advance WPL's Clean Energy Blueprint by leveraging technologies and pricing strategies that support a more dynamic and responsive energy system. These measures cost-effectively balance customer demand with supply, mitigate system peaks, and enhance the value of our service to customers. WPL's proposals also align with the recommendations from the 2020 Wisconsin Energy Distribution and Technology Initiative (WEDTI) final report.[1] As noted in that report, utilities will play an increasingly important role in coordinating the electric system to meet customers changing energy needs and expectations. The report further recognizes the need to balance customer and utility incentives to accelerate the energy sector transition and implement its recommendations. While WPL is not proposing any specific utility incentives as part of this case, I outline an approach for how these incentives could be used to support continued efforts by WPL to optimize for the reliable operation of the energy system.

[1] *See* Great Plains Institute & Mid-West Energy Research Consortium, *Wisconsin Energy Distribution and Technology Initiative*: *Stakeholder Recommendations to Accelerate the Clean Energy Transition and Optimize the Energy System for the Benefit of All* (July 2020), *available at* https://m-werc.org/wedti-report, *also available at* PSC REF # 406723 (hereafter, WEDTI report).

Q5. Are you sponsoring any exhibits?

A. Yes. I am sponsoring the following two exhibits:

- Ex.-WPL-Ripp-1, Schedules 1-5: WPL Demand Response Programs
- Ex.-WPL-Ripp-2, Schedules 1-3: WPL E-Ready Plan

Innovative Options to Help Customers Manage Demand and Enhance System Efficiency

Q6. Can you provide a definition of demand response?

A. In general, demand response is the opportunity for customers take part in time-based rates or incentive programs that help shift energy usage to off-peak times or lower energy usage in response to system needs.

Q7. Why is WPL seeking to implement new demand response programs?

A. WPL is rapidly transforming its generation fleet to include more renewable, intermittent generation sources, such as wind and solar, as we lead the way in reducing emissions and improving sustainability. In addition, as I noted earlier, system variability and complexity are increasing as more customers are connecting their own private generation sources and customer usage continues to evolve through adoption of EVs and other beneficial electric technologies. These changes will require increased flexibility in managing the system to ensure system reliability. WPL's demand response programs are intended to provide some of this needed flexibility by encouraging customers to shift their energy usage during times of peak demand or other challenging conditions.

WPL's demand response programs are premised on two strategies: creating *dispatchable load* that allows the utility to contour usage to better match favorable generation cost profiles; and *behavioral change* through education that encourages customers to make cost-conscious decisions about when and how they use energy. Both are important strategies to realize the value of demand response opportunities for the benefit of the whole system.

Q8. Please describe WPL's role in helping customers to manage their energy use.

A. As a trusted energy solutions provider for our customers, WPL is uniquely positioned to develop and implement demand response programs that benefit all customers. WPL is committed to working with its customers to help them better manage their energy usage and control their bills, which consequently helps WPL to better plan and optimize its system. The WEDTI report recognizes that utilities are well suited to conduct the efficient operation of the system, balancing for example, "customer-owned and small generators, battery storage and *demand response* technologies."[2] Moreover, the report encourages utility innovation, including pilots related to demand response.[3] The Governor's Task Force on Climate Change Report similarly recognizes that demand response is an important tool in

[2] WEDTI report at 16 (emphasis added).
[3] WEDTI report at 21.

assisting with load management and that additional education and incentives are needed to encourage its use.[4]

WPL is well underway in building the energy infrastructure needed to serve customers in the complex energy future. WPL has and will continue making foundational investments needed to support our customers, including advanced metering infrastructure (AMI) meters, communication system enhancements, and an advanced distribution management system (ADMS). Along with other benefits, these investments will enhance reliability for all customers by providing WPL with comprehensive insights into system operation that enable the Company to effectively predict, direct, and monitor demand response events. Moreover, these investments will enable all customers – including financially disadvantaged customers – to benefit from the deployment of demand response programs.

Q9. How does demand response align within WPL's resource planning strategy?

A. WPL's proposed demand response programs are aligned with the resource plans outlined in our Clean Energy Blueprint. These programs will supplement our generation portfolio and provide new resources for both long-term capacity planning and emergency dispatch. In the long run, these

[4] *See* State of Wisconsin, *Governor's Task Force on Climate Change Report* (December 2020), *available at* https://climatechange.wi.gov/Documents/FinalReport/GovernorsTaskForceonClimateChangeReport-HighRes.pdf, *also available at* PSC REF# 406724 (hereafter, Governor's Task Force Report).

programs could also enable WPL to manage resources on the grid more efficiently, supporting the conductor role described in the WEDTI report.

Q10. What demand response programs is WPL proposing to implement in this case?

A. WPL plans to launch three demand response programs in addition to conducting targeted customer education efforts to promote TOU and demand rates for residential and small general service customers. These programs, branded as Alliant Energy Smart Hours, build on WPL's existing interruptible rate credits, which will continue to be available to large commercial and industrial customers, and provide new opportunities to benefit residential and small business customers. Alliant Energy Smart Hours includes: (1) a bring-your-own-thermostat program, (2) a controlled water heating program, and (3) a thermal energy storage pilot program. These programs provide a foundation upon which expand WPL's Smart Hours programs and options to include other controllable devices such as EV chargers and batteries in the future.

Q11. Please describe the bring-your-own-thermostat program.

A. The bring-your-own-thermostat program is a dispatchable load program, which allows customers to use their qualified smart thermostat, in return for a modest incentive, to take part in a peak reduction program during cooling seasons (June to September) and heating seasons (December to March). The program is available to residential customers on the flat rate (Rg-1) or a TOU rate (Rg-5, Rd-1) and small commercial customers on the flat rate

(Gs-1) or TOU rate (Gs-3, Gd-1) who own a Wi-Fi-enabled smart thermostat capable of controlling HVAC usage during demand response events. Participating customers will receive a $25 incentive per thermostat for signing up for the program and an additional $25 incentive per thermostat for each summer and winter period that they are enrolled in the program.

WPL will coordinate the program through a third-party vendor, whose platform can operate with multiple smart thermostat brands. WPL estimates that participants would experience up to 20 demand response events each year. Events will be determined by temperature triggers or economic signals, such as high day-ahead and real-time market prices, depending on WPL's capacity and reliability needs. During an event, WPL would make small adjustments to a participating customer's HVAC usage (air conditioner or electric or natural gas heating) based on the customer's pre-identified, preferred tolerances.

A customer retains the option to opt out of an event by manually adjusting their thermostat. However, if they opt out of more than three events per season, they would not be eligible to receive the $25 participation bonus.

WPL's goal is to enroll approximately 3,500 customers in 2022 and another 3,500 customers in 2023. Based on WPL's market potential analysis, which is included in Ex.-WPL-Ripp-1, Schedule 5, the program is expected to deliver approximately 2.5 MW in peak reductions in the first year of the program (2022) and approximately 5 MW in peak reductions in

the second year of the program (2023). WPL intends to evaluate the success of the program in 2024, including customer satisfaction surveys, to determine whether to expand enrollment beyond 7,000 participants.

Q12. Please describe the controlled water heater program.

A. For approximately 30 years, WPL has offered controlled water heating options for its customers, under tariffs Rw-1, Rw-3, Rw-4, and Gw-1. These tariffs are closed, but approximately 3,200 customers remain on these rate options. The previous controlled water heating program relied on simple analog timers, with a time-of-use setting, to control electric water heating load. Over time, the water heater control equipment is aging and becoming obsolete, reducing the effectiveness of this program. Advances in technology offer an opportunity to bring two-way electric water heater control into the Alliant Energy Smart Hours demand response portfolio. Two-way water heater control will allow WPL to offset demand during peak usage events in summer or winter. The equipment can communicate either through Wi-Fi or a cellular network. WPL will provide any participating water heater demand customer with a one-time $25 enrollment reward and an annual $25 reward for completing a program year.

The controlled water heating program is open to all WPL residential customers, including customers on the standard Rg-1, Rg-5 TOU, and Rd-1 TOU demand rates. However, WPL will encourage Rg-1 customers to switch to a TOU rate option to realize additional savings on their bills. WPL

will market the new controlled water heating program to the 3,200 customers who remain on the old water heater rate, with the goal of transitioning all these customers to the standard rates by the end of 2026, regardless of whether they choose to participate in the controlled water heating program. This will allow WPL to eliminate the closed controlled water heating tariffs.

WPL's system and other customers will benefit from the estimated demand savings of an average of approximately 0.3 kW per customer per demand event. WPL plans to enroll up to 500 customers per year into this program.

Q13. Please describe the thermal energy storage (TES) pilot.

A. Cold storage warehouse facilities have among the highest energy demand per cubic foot of any commercial customer. The TES pilot is designed to test the ability of customers to store thermal energy for cooling applications to avoid on-peak usage. WPL proposes to test the program with one customer in 2022 and a second customer in 2023 to determine the effectiveness of reducing each customer's demands during high-peak summer days. Under the program, WPL will provide an incentive for a TES product that allows the customer to maximize refrigeration efficiencies and decrease compressor run times. By piloting with two customers, WPL will be able to learn more about TES and better evaluate the potential benefits of a more comprehensive TES deployment. WPL will contract with a third-party vendor to evaluate this technology 12 months after the TES system

becomes operational. The evaluation will include the extent to which the program helped reduce peak demand and whether the participating customer reduced their overall energy use. The information gleaned from this pilot will help to evaluate potential future expansion of TES to other customers. The cost of the pilot is relatively modest at approximately $13,500 in 2022 and $12,500 in 2023, including administrative costs, marketing, and incentives.

Q14. What are the total costs and benefits of these demand response programs?

A. Ex.-WPL-Ripp-1 provides additional details about the costs and benefits of WPL's proposed Smart Hours demand response programs. WPL estimates that these programs have the potential to achieve up to 6 MW of demand response in the second year, at the planned participation levels. However, by increasing customer participation beyond these levels, we can increase the potential demand savings that could be achieved by 2030. The Smart Hours portfolio of demand response programs will cost approximately $1.2 million in 2022 and $1.4 million in 2023. See Ex.-WPL-Ripp-1, Schedule 4. The annual costs include program administration (inclusive of third-party vendors), software-as-a-service, marketing, incentives, and equipment installation as shown in the table below.

Smart Hours Portfolio Budget

	2022	2023
Administration	$311,000	$236,000
IT (SaaS)	$178,000	$350,000
Marketing	$231,000	$200,000
Incentive	$231,500	$356,500
Install	$266,400	$266,400
Total	**$1,217,900**	**$1,408,900**

Q15. How is WPL proposing to recover the cost of these programs?

A. These demand response programs are designed to help reduce WPL's system peak and to help the company more efficiently manage the system during demand response events, which will benefit both participating and non-participating customers. Furthermore, these programs go beyond simply furthering voluntary conservation and will be integrated into the utility's ongoing system operations. Given the role that these programs will play in WPL's operations, WPL proposes to recover the cost of these programs through base rates.

Q16. What other factors should the Commission consider when expanding demand response programs to ensure alignment of customer and utility benefits?

A. The expansion of demand response programs will benefit both participating and non-participating customers by mitigating peak demand and managing costs. Customers who participate in these programs benefit from the participation credits and by lower bills resulting from changing their energy consumption patterns. Non-participating customers benefit from the demand response programs because they provide WPL with additional

tools to help manage the increasingly complex energy system's capacity and reliability needs.

As the energy system continues to transform, demand management activities will become an increasingly important mechanism to support reliability and customer affordability. Put another way, investments made in robust demand management programs have the potential to offset utility investments in additional generation, storage, and distribution assets, which results in lower overall system costs. To the extent that promoting and implementing demand response programs creates both customer and system benefits, the utility should be incentivized to do so. Under the current model, however, a utility's successful deployment of demand response programs could result in lower revenues, ultimately putting a strain on the utility's cash flow and earnings over time; this could, in turn, make it more difficult for the utility to remain financially healthy and attract capital for needed investments.

The WEDTI report recognizes the need to create the proper incentives to encourage utilities to fully leverage new technologies, such as expanded demand response programs and other distributed energy resources, that benefit customers and that help to optimize the system. The report identified a number of ways to do so, including capitalizing non-traditional investments, promoting pilot programs, and enhancing voluntary conservation efforts. WPL believes that incentive mechanisms can be

implemented in a way that still lowers costs for customers while also encouraging utilities to invest in programs, such as these.

Q17. In general, how could a demand response incentive mechanism work?

A. Other regulatory jurisdictions have implemented incentive mechanisms that could be considered. Two examples designed to further encourage utility-funded demand response programs are a net-benefits sharing mechanism and a performance scorecard mechanism. At a high level, a net-benefits sharing approach would establish one or more goals that would be used to determine the level of incentive granted to the utility. The goals could include customer participation and verified megawatts of demand savings resulting from the program. If the utility achieves the pre-determined goals, it would receive an incentive that represents a portion of the savings benefit to customers resulting from their participation in the program.

A performance scorecard approach is like the net-benefits sharing approach, except it typically establishes several metrics that are used to evaluate the success of the program. Often, the incentive is provided as an "adder" in a future rate review. The utility's incentive amount is predetermined and depends on how it scores on the metrics. In any incentive approach, the fundamental goal is to create a framework that encourages utilities to expand their demand response programs in a way that allows both customers and the utility to share in the financial success of the program.

Q18. Is WPL proposing such an incentive mechanism now?

A. WPL is not currently proposing an incentive mechanism for its demand response programs. However, WPL is interested in establishing incentives to support the continued development and expansion of demand response programs in the future.

Customer Support and Preparation for Vehicle Electrification

Q19. Please explain WPL's priorities regarding its electrification program.

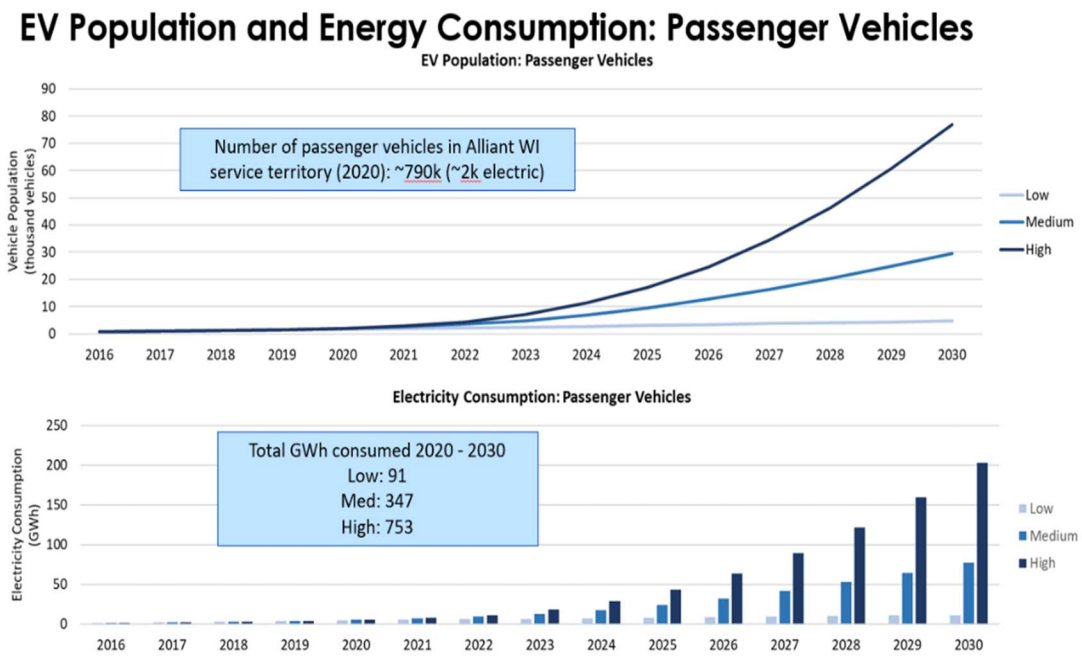
A. The transportation sector is poised to undergo a significant change as more customers and businesses adopt EVs to lower their costs and reduce carbon emissions. The Governor's Task Force Report recognized that "vehicle electrification is a key solution for decarbonizing the transportation sector, especially as the electric grid is decarbonized."[5] WPL, like other electric utilities, plays an important role in supporting this transformation because decarbonization of the transportation sector will require more renewable energy for vehicle charging. Through the Clean Energy Blueprint, WPL is accelerating the transition of its generation fleet to achieve the goal of reaching net-zero carbon emissions by 2050 and is making investments to enable a more dynamic distribution grid. Further, WPL is committed to helping customers make informed choices about their energy use by providing pricing solutions that meet their needs. These activities

[5] *See Governor's Task Force Report* at 48.

align with state and local initiatives to encourage EV adoption and will help to build stronger communities for the customers we serve.

Utilities across the U.S. are preparing and planning for transportation electrification. However, comparisons to other utilities may not be relevant for the customers and communities that WPL serves. For example, much of WPL's service territory is rural, which may affect the pace of change, system needs, and the way we engage with our customers. Nonetheless, EV adoption in WPL's service territory is expected to increase significantly in the next five to ten years and beyond.

WPL had an analysis conducted by Electric Power Research Institute (EPRI) of the potential growth in light-duty EVs – such as cars, SUVs, and pick-up trucks. The graph below shows projected incremental load growth in WPL's service territory from 2020 to 2030, based on a range of EV adoption scenarios. Specifically, projections indicate the number of potential EVs on the road in WPL's service territory could approach 20,000 vehicles by 2025 and 80,000 vehicles by 2030, representing an estimated incremental load of approximately 50 GWh in 2025 and 200 GWh in 2030.



Source: EPRI Electric Transportation Infrastructure Program Support WPL LDV Consumption Projections

This paradigm shift in the transportation sector requires preparation, planning, and investment in the electric system now – with the long-term time horizon in mind. In the near term, WPL has developed the E-Ready Plan, which is intended to remove barriers to residential customer adoption of EVs while gathering useful information that will enhance the understanding of the impacts of electric vehicles on our distribution system. Testing and collecting data on EV loads specifically in our service territory will help WPL to understand and plan for the long-term adequacy of supply, reliability, and system resilience *before* these loads begin to have meaningful impacts on utility service and customers.

Q20. How does the E-Ready Plan align with the Commission's work in Docket No. 05-EI-156?

A. In Docket No. 05-EI-156 (Investigation of Electric Vehicle Policy and Regulation), the Commission investigated policies and regulations related to EVs and associated utility infrastructure. The Commission found that "Commission and utility policies and regulations related to electric service in the state of Wisconsin can significantly influence EV deployment."[6] This includes policies related to load management and the role of utilities in supporting charging infrastructure. The Commission's Order encourages utilities to submit plans for at least one residential pilot program aimed at addressing the priority issues identified in the investigation, including rate design, load management, and barriers to adoption. Moreover, the Order allows utilities to file plans for any other pilot programs that would be appropriate to serve customer needs and explore EV-related issues. WPL's E-Ready Plan, responds in part to the Commission's encouragement in that Docket.

Q21. How does the E-Ready Plan support and promote EV adoption?

A. The E-Ready Plan aligns with the Commission's direction in Docket No. 5-EI-156 by focusing on understanding the charging behaviors of EV owners in WPL's service territory, maintaining grid reliability through proactive upgrade and management of the distribution system, and by educating customers on the steps needed to get plug-in ready and the importance and benefits of off-peak charging. The Plan includes three specific components:

[6] *In Re Investigation of Electric Vehicle Policy and Regulation*, Docket No. 05-EI-156, *Order*, at 4 (Dec. 23, 2020) (PSC REF# 402117).

1) systems readiness; 2) customer education and outreach; and 3) residential charging pilots.

The systems readiness component is intended to help WPL gain a better understanding of the impacts of electric vehicle charging on the distribution system in order to plan for investments necessary to support the anticipated growth in EV load. Systems readiness includes transportation electrification load studies, distribution system planning studies, streamlining customer processes and procedures, and incremental IT applications build out to support the E-Ready Plan.

Lack of awareness and information about EVs has been identified as a barrier to EV adoption. The E-Ready Plan's education and outreach component will promote the benefits of EVs for customers by expanding education efforts, primarily through WPL's website and direct community engagement. This includes building awareness of the new residential charging pilots to promote customer participation. WPL also plans to develop tools and resources to help customers evaluate their rate options. Providing customers with knowledge and information will help them make informed decisions and promote customer choice.

Q22. Can you please describe the E-Ready Plan pilots that WPL is proposing?

A. The E-Ready Plan includes two residential EV charging pilots: 1) the E-Charge program, which provides rebates to residential EV owners to offset the cost of charging equipment; and 2) the SmartCharge E-Perks program,

which provides incentives to current residential EV owners to share data about their charging behaviors. WPL currently does not have complete information about the number of customers who own EVs within its service territory or which customers are likely to own one in the future. These pilots are designed to enhance WPL's understanding of the adoption, use, and charging patterns of EVs within its service territory programs and to increase engagement with customers who own EVs. The pilots are targeted to residential customers because WPL anticipates that 80 percent of all personal EV charging will take place at home. Accordingly, understanding how residential customers use and charge EVs, and the effects of that load on the distribution system, will help WPL better plan for future grid investments. The information from the E-Charge and SmartCharge E-Perks pilots will also allow WPL to analyze customer behavior to inform future rate designs and opportunities for demand response.

Q23. Please describe the E-Charge pilot.

A. The E-Charge pilot provides rebates to residential electric customers who opt to install a Level-2 charger at their home. WPL will offer a $500 rebate for non-networked Level-2 chargers and a $750 rebate for networked and connected Level-2 chargers. In return, participants agree to provide WPL with access to data about their charging patterns. In addition, the customers will be asked to complete surveys and participate advisory groups over the course of the three-year pilot. WPL's access to this information will benefit

all customers by enabling WPL to study and plan for the adoption of EVs within its service territory.

The E-Charge pilot is intended for EV drivers who own or rent single family homes. Customers can choose certified Level 2 charging equipment that best meets their needs; WPL will not require that the customers use a specific vendor or technology.[7] WPL will limit participation to a total of 600 customers and proposes to run the program for three years, inclusive of a six-month "ramp-up" period starting in January 2022. Ex.-WPL-Ripp-2, Schedule 1 provides more information regarding the pilot, consistent with the Commission's Order in Docket No. 5-EI-156.

Q24. Please describe the SmartCharge E-Perks pilots.

A. The SmartCharge E-Perks pilot offers incentives to residential EV owners in exchange for sharing more detailed information with WPL about EV use and charging behaviors. WPL will provide participating customers with an initial $50 incentive and a monthly $5 incentive for continued participation during the pilot, in the form of a PayPal or Amazon gift card. Residential customers who opt into the program will install an in-vehicle data logger that will track the types of EVs that customers are driving, when charging is occurring (whether within or outside of WPL's service territory), the types of chargers used, length of charging time, distances traveled, and other data. The pilot will be managed through a third-party vendor.

[7] Certification is pursuant to Underwriters Laboratories (UL) and Edison Testing Laboratories (ETL) specifications.

The SmartCharge E-Perks pilot is available to any WPL residential electric customer who drives an EV. Customers who sign up for the program will be able to access their own data through the vendor's website. In addition to the data described above, participating customers will also be able to access information about their vehicle's performance, estimated greenhouse gas reductions compared to a fossil-fueled vehicle, and EV battery health. WPL will limit participation in the SmartCharge E-Perks pilot to 600 customers over three years, inclusive of a six-month "ramp-up" period starting in January 2022. Ex.-WPL-Ripp-2, Schedule 2 provides more information regarding the pilot, consistent with the Commission's Order in Docket No. 5-EI-156.

Q25. Why is WPL proposing rebates and incentives as opposed to other pilot options?

A. WPL has carefully considered its options and has determined at this time that rebates and incentives offer benefits over more complicated program structures, such as WPL ownership of residential charging infrastructure. In addition, the rebates support the following objectives:

- Foster competition and choice in the market for both EV charging equipment and installation providers;
- Maintain flexibility to modify or terminate programs, subject to customer EV adoption levels and market conditions;

- Minimize program complexity; customers are familiar with rebates and incentives and they don't require complex accounting or administration;
- Ensure fair compensation to participating customers for providing information that will allow WPL to study effects of EVs on the distribution system; and
- Encourage customer engagement by providing a forum to promote discussion between participants, the utility, and community members about EVs.

Q26. How did WPL determine the rebate amounts for the E-Charge pilot?

A. Since 2016, Alliant Energy has offered rebates to eligible residential customers who purchased EVs. These rebates were funded with below-the-line (i.e., shareowner) dollars and have provided WPL with a baseline of information about customer behavior and the EV market in our service territory. Based on information collected from customers who received rebates between 2016 and 2020, the average acquisition and installation cost of a Level 2, networked and connected home charger is approximately $1,250. WPL's proposed rebate of $750 represents just over half of the total equipment and installation cost. WPL is offering a larger incentive for network connected chargers and a reduced incentive ($500) for non-networked chargers to encourage customers to select network connected units, as they have greater communication and load management capabilities. Level 2 network connected chargers enable two-way

communication between the vehicle, its owner, and potentially a host of other supporting services through a station management application. WPL will also use education and outreach efforts to inform customers about the benefits of network connected chargers. Offering rebates on both types of chargers allows for customer choice, and it will provide data which provides a more complete picture of where EVs are located, vehicle charging, and its impacts on our distribution system.

Q27. Does the E-Ready program include customer education and outreach?

A. Yes, we are proposing education, outreach, and support measures to help raise customer awareness about the benefits and costs of EVs. Lack of awareness and familiarity with EVs is a commonly cited barrier to EV adoption. In addition to promoting the E-Charge and SmartCharge E-Perks rebates, WPL will introduce tools and resources aimed at educating potential and existing EV drivers on rate choices and influencing charging behaviors that will ultimately benefit all customers. WPL's marketing plans include the use digital display adds, social media adds, e-mail and the Alliant Energy webpage for these efforts.

Q28. What is the total cost of WPL's E-Ready Program in 2022?

A. WPL is seeking recovery for the following program costs:

E-Ready Program Costs

	2022	2023
Utility Readiness Studies	$191,667	$191,667
Residential Incentives	$183,000	$201,000
Vendor Costs	$419,300	$195,300
Administrative & General	$72,450	$66,360
Customer Education & Outreach	$106,406	$106,406
Total	**$972,823**	**$760,733**

Q29. How does WPL intend to recover the cost of the E-Ready Program?

A. WPL intends to recover the cost of the E-Ready program through base rates. WPL has previously funded EV rebates and pilots below-the-line. The E-Ready programs will provide WPL with greater visibility to EV charging in its service area and enable the utility to plan, prepare, and implement measures that ensure all customers receive safe, reliable, and affordable energy. The positive cost-benefit analysis shows that all customers will benefit from the program, not just those who receive the incentives. See Ex.-WPL-Ripp-2, Schedule 3 for further information. These programs align with the Governor's Task Force recommendations to encourage transportation electrification and with the Commission's Order in Docket No. 5-EI-156.

Q30. Is WPL undertaking other efforts to support electrification?

A. WPL continues to refine its plans to enable and accelerate beneficial electrification, including electric vehicles and other off-road applications. These efforts could include additional pilots, utility-supported public charging infrastructure, education on beneficial electrification, and other customer-focused activities. As WPL works to support electrification, it is coordinating with and learning from industry groups and coalitions, including

EPRI, Edison Electric Institute, Smart Electric Power Alliance, Alliance for Transportation Electrification, and Wisconsin Clean Cities. These interactions are helping to inform WPL's electrification strategy and the design of future programs.

In addition to the E-Ready plan, Alliant Energy has announced plans to electrify 100 percent of its own light-duty fleet vehicles by 2030 as part of its corporate sustainability efforts. We know that transitioning our own fleet to EVs will reduce emissions and reduce the cost of ownership, benefitting our customers, our employees, and the communities in which we live and are proud to serve. WPL has also installed EV chargers at its general office and several of its operation centers to support fleet charging. Alliant Energy is also adding a limited number (six to date) of below-the-line public chargers that support EVs traveling in its service area. Currently, these chargers are available to the public free-of-charge; allowing us to monitor utilization and load shapes and gain an understanding of station implementation, operation, and ownership. Alliant Energy is proactively working with stakeholders to develop an infrastructure plan, which will be introduced in a future transportation electrification plan.

Promoting Time-Varying Rate Options That Benefit Customers

Q31. What are WPL's time-varying rate options, and how do they benefit customers?

A. Time-varying rates are those that include a differential in the price of energy (per kWh) based on when the energy is used. This contrasts with traditional

electricity rates for residential customers that are a based on a flat per-kWh charge regardless of when the energy is used. Time varying rates are intended to send a price signal that more closely matches the wholesale price of energy; that is, higher prices during peak demand and lower prices at other times. These rates can help customers to manage their energy bills by encouraging customers to shift some of their energy usage to off-peak times – e.g. operating appliances or charging EV vehicles at times when the price of energy is lower. In turn, customers who shift their usage based on these rates help the utility in managing peak loads, promoting a more effective and economical operation of the system, which benefits all customers.

WPL residential and general service customers may choose from the following time-varying rate options:

- Residential TOU rate (Rg-5);
- Residential TOU demand rate (Rd-1);
- General Service TOU rate (Gs-3); and
- General Service TOU demand rate (Gd-1)

These rate options complement WPL's Smart Hours and E-Ready programs and provide additional opportunities to manage WPL's peak demand and lower customer bills. Currently, less than two percent of WPL's residential customers participate in a TOU rate. To increase participation and awareness of the rates, WPL intends to expand its efforts to educate

customers about these rate options and encourage changes in behavior that could help them save money on their bills.

Q32. How does WPL's proposed TOU education program relate to other customer solutions.

A. The success of WPL's demand response and electrification programs is dependent upon increasing our customers' understanding and awareness of how these programs work in conjunction with TOU rate options. This includes helping customers understand their energy usage and how TOU rates, demand response, electrification, and energy efficiency can work together to help them save energy and money. For example, customers can expand the benefits of participating in a demand response program – such as bring-your-own-thermostat – by also signing up for a TOU rate. Similarly, customers with electric vehicles can benefit from understanding how TOU rates and charging during off-peak hours could save them money, while helping WPL manage the load for the entire system.

WPL's education efforts will build on existing energy-saving tools, such as Energy Edge. Energy Edge lets commercial customers audit their business and discover energy-saving and electrification opportunities. Similar tools will help residential customers make informed decisions on programs and rate options. To do this, WPL will use hourly data and energy analytics to identify and market to customers who would benefit from demand response and TOU opportunities. In addition, helping customers understand their energy usage will build the foundation for a future

customer-facing rate calculator that will give them better insights into choosing the best rate option for them. Finally, these education efforts will be helpful in expanding WPL's *SmartHours* program in the future to a bring-your-own-device program that includes technologies beyond thermostats and water heaters to help customers lower demand.

Q33. Is WPL proposing any changes to its time-varying rates at this time?

A. Yes. WPL witness Harvey Dorn discusses WPL's proposed changes to the residential demand rate (Rd-1), which is a TOU rate with a demand component. WPL is refining that rate to strengthen the connection to a customer's energy demand and further improve customers' ability to manage their energy bill. The success of the Rd-1 rate will depend greatly on helping customers understand how this rate could benefit them. While residential customers may not be familiar with demand rates for electricity, the concept is not completely unfamiliar. In fact, it is not too dissimilar from a cellular phone bill with overage charges for data usage. While demand rates can be difficult to understand, customers may be more familiar with using energy during "less busy" times to save money. Using simpler, less business-oriented language will help us reach our customers in a way that is understandable. WPL will develop marketing materials, such as web pages, on-line video explainers, and social media infographics, to simplify and explain the Rd-1 rate to customers who could benefit.

Q34. How can time-varying rates improve affordability for financially disadvantaged customers?

A. WPL witness Dorn's analysis shows that 52 percent of WPL's LIHEAP customers could benefit from the Rd-1 demand rate, compared to the standard (flat) residential rate, and 65 percent would be neutral or benefit from this rate. These customers can benefit even more if they are able to shift the time of their energy use. WPL is planning targeted communications to reach out to these customers to help them understand how this energy rate can assist in lowering their energy bill. These efforts include the following:

- Using the Low Income Home Energy Assistance Program (LIHEAP) indicator to identify customers that might benefit from the rate and providing materials through direct engagement, email, billing inserts, Illuminate articles, and targeted social media posts.
- Creating materials and digital brochures that explain energy use concepts and rates that can be distributed through the Community Action Agencies and other partners to share with families seeking energy assistance, and food banks and other targeted non-profits community support organizations.
- Using analytics to analyze customer billing data to identify and market to customers just above the low-income threshold that are not eligible for LIHEAP.

Q35. Does this conclude your pre-filed direct testimony?

A. Yes.