

# COVER PAGE

## Ex.-WPL-RIPP-1

### WISCONSIN POWER AND LIGHT COMPANY

### DOCKET 6680-UR-123

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

Filed May 27, 2021

Ex.-WPL-RIPP-1

Schedule 1- Bring Your Own Thermostat

| Program Name                   | Bring Your Own Thermostat Program   |
|--------------------------------|---|
| Purpose                        | <p>WPL will primarily use this program to help address summer peak capacity requirements. WPL may use this program to meet winter peak demand requirements.</p> <p>The program can also be used to meet operating reserve requirements since the program operates with little or no notification. WPL can utilize the program to address grid emergencies and address local capacity constraints on specific substations if sufficient customers are enrolled on a specific substation.</p>   |
| Program Description            | <p>This Direct Load Control program is available to customers with Wi-Fi enabled smart thermostats, where customer HVAC usage is controlled during DR events, typically using a temperature reset strategy.</p> <p>WPL contracts with a third-party service provider for the program, where multiple smart thermostat brands are controlled using the provider platform.</p>  |
| Event Triggers                 | <p>DR events may be triggered by any one of the following factors:</p> <ul style="list-style-type: none"> <li>• Economic dispatch (high day-ahead and real-time market prices)</li> <li>• Capacity/reliability needs (high day-ahead temp. forecast during summer peak hours); this program will be utilized primarily during summer months, but WPL may utilize this for winter peak reduction</li> <li>• System emergency conditions</li> <li>• Operating Reserves (to the extent operating reserves performance criteria are met by responding load)</li> </ul>  |
| Eligible Customers             | <ul style="list-style-type: none"> <li>• Residential customers on flat rate and Time of Use (TOU) rates (Rg-1, Rg-5, Rd-1), with: <ul style="list-style-type: none"> <li>○ central AC or Heat Pump; <i>and</i></li> <li>○ a smart thermostat</li> </ul> </li> </ul>   |
| Program Enrollment Assumptions | <ul style="list-style-type: none"> <li>• Residential participation: <ul style="list-style-type: none"> <li>○ Goal is to subscribe 3,500 customers annually in 2022 and 2023</li> </ul> </li> </ul>  |
| Program Parameters             | <p>Operating Months</p> <ul style="list-style-type: none"> <li>• Primarily summer (June-Aug.)</li> <li>• WPL may utilize this for winter peak reduction (Dec.-Feb.)</li> <li>• Events may be called anytime, all year round to address system emergencies and to help meet operating reserve requirements</li> </ul> <p>Event Window</p> <ul style="list-style-type: none"> <li>• Summer (11 am-7 pm); Winter (5-9 pm)</li> <li>• Operating reserves and system emergencies (anytime and all-year round)</li> </ul> <p>Event Notification</p> <ul style="list-style-type: none"> <li>• Depends on the thermostat provider</li> <li>• Customers on TOU rates can choose advance notification and may receive pre-cooling notification</li> </ul> |

| Program Name                               | Bring Your Own Thermostat Program  |
|--|--|
|  | Number of Events & Duration <ul style="list-style-type: none"> <li>• Max. number of events per year: 20</li> <li>• Event Duration: Max. 4 hours; average 2 hours</li> <li>• Max. event hours: 40 hours during summer</li> </ul>  |
| Unit impacts (kW reduction per thermostat) | Unit Impacts: approximately 0.8 kW per thermostat (average 1 thermostat per participant)   |
| Participation Incentives                   | <ul style="list-style-type: none"> <li>• \$25 sign-up payment per thermostat enrolled in the program, per season;</li> <li>• Additional \$25 per thermostat payment for each summer and winter period customer is enrolled</li> </ul>  |
| Marketing, Customer Education and Outreach | WPL is responsible for customer education and outreach and marketing the program and will coordinate customer outreach with third-party providers and Focus on Energy.   |
| EM&V Requirements                          | WPL is responsible for undertaking independent ex-post impact and process evaluation of the program and establishing baseline development methodologies and analytical framework for conducting annual impact and process evaluations. <p>Evaluation methodology:</p> <ul style="list-style-type: none"> <li>• Impact               <ul style="list-style-type: none"> <li>○ Impact Estimation Approaches</li> <li>○ Sample Design</li> <li>○ Baseline Methods</li> <li>○ Data collection</li> <li>○ Impact reporting</li> </ul> </li> <li>• Process               <ul style="list-style-type: none"> <li>○ Customer satisfaction</li> <li>○ Vendor performance</li> </ul> </li> </ul> |

Schedule 2 – Water Heater Control

| Program Name                   | Water Heater Control  |
|--------------------------------|---|
| Purpose                        | <p>This program will be used to:</p> <ol style="list-style-type: none"> <li>1) Transition customers off of a closed tariff for water heater control. WPL will help these customers switch to the standard TOU rate and install a new smart switch on their water heater to help them achieve savings.</li> <li>2) Enroll customers already on a regular or TOU rate to help them save energy and money on their water heating.</li> <li>3) Help WPL meet operating reserve requirements since the program operates with little or no notification. WPL can utilize the program to address grid emergencies and address local capacity constraints on specific substations if sufficient customers are enrolled on a specific substation.</li> </ol> |
| Program Description            | <p>This is a Direct Load Control program where WPL contracts with a service provider to install and operate Wi-Fi or cellular enabled water heater control switches using the provider platform.</p>  |
| Event Triggers                 | <p>DR events may be triggered by any one of the following factors and may also be used in conjunction with the WPL Bring Your Own Thermostat program:</p> <ul style="list-style-type: none"> <li>• Economic dispatch (high day-ahead and real-time market prices)</li> <li>• Capacity/reliability needs (high day-ahead temp. forecast during summer peak hours); this program will be utilized primarily during summer months, but WPL may utilize this for winter peak reduction</li> <li>• System emergency conditions</li> <li>• Operating Reserves (to the extent operating reserves performance criteria are met by responding load)</li> </ul>   |
| Eligible Customers             | <p>Residential flat rate and TOU customers with electric water heaters (Rg-1, Rg-5, Rd-1)</p>   |
| Program Enrollment Assumptions | <p>Residential participation:</p> <ul style="list-style-type: none"> <li>• Goal is to subscribe 500 customers annually</li> </ul>   |
| Program Parameters             | <p>Demand Response operation</p> <ul style="list-style-type: none"> <li>• Primarily summer (June-Aug.)</li> <li>• Winter peak reduction (Dec-Feb)</li> <li>• Events may be called any time, year-round, to address system emergencies and to help meet operating reserve requirements</li> </ul> <p>Event Window</p> <ul style="list-style-type: none"> <li>• Summer (11 am-7 pm); Winter (5-9 pm)</li> <li>• Operating reserves and system emergencies (any time, year-round)</li> </ul>   |

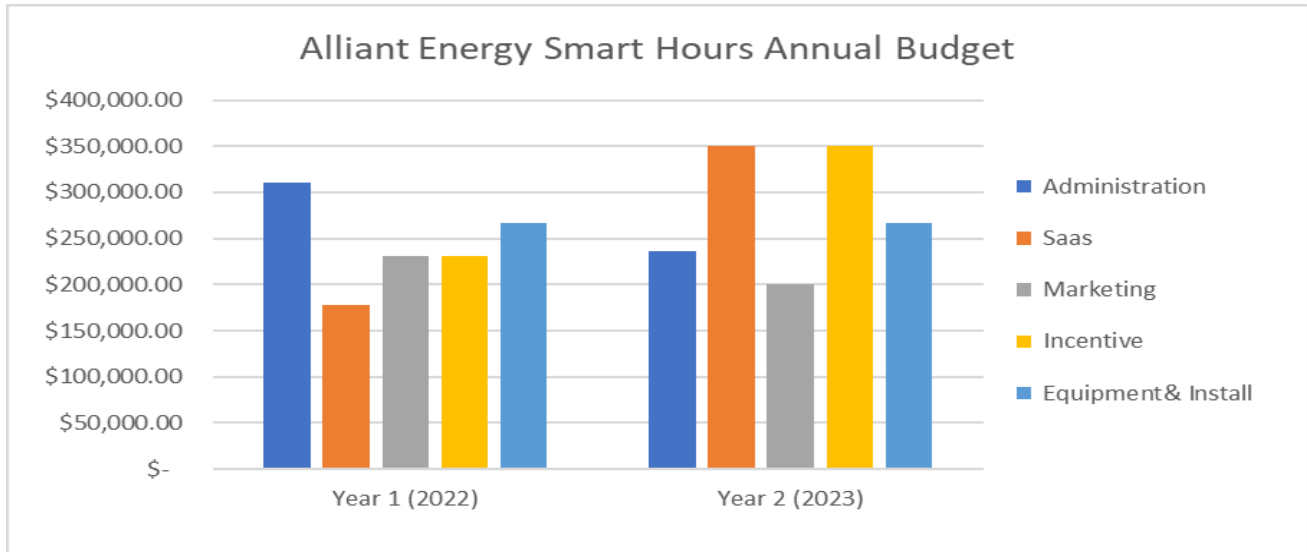
| Program Name                               | Water Heater Control  |
|--|---|
| Unit impacts (kW reduction per thermostat) | Unit Impacts: approximately 0.3 kW per customer per demand event  |
| Participation Incentives                   | <ul style="list-style-type: none"> <li>• \$25 sign-up payment per enrolled household</li> <li>• \$25 annual incentive payment per year completed</li> </ul>   |
| Marketing, Customer Education and Outreach | WPL will be responsible for customer education and outreach and marketing the program and will coordinate customer outreach with third-party providers and Focus on Energy.   |
| EM&V Requirements                          | <p>WPL is responsible for undertaking independent ex-post impact and process evaluation of the program and establishing baseline development methodologies and analytical framework for conducting annual impact and process evaluations.</p> <p>Evaluation methodology:</p> <ul style="list-style-type: none"> <li>• Impact             <ul style="list-style-type: none"> <li>○ Impact Estimation Approaches</li> <li>○ Sample Design</li> <li>○ Baseline Methods</li> <li>○ Data collection</li> <li>○ Impact reporting</li> </ul> </li> <li>• Process             <ul style="list-style-type: none"> <li>○ Customer satisfaction</li> <li>○ Vendor performance</li> </ul> </li> </ul> |

Schedule 3 – Thermal Energy Storage Load Reduction

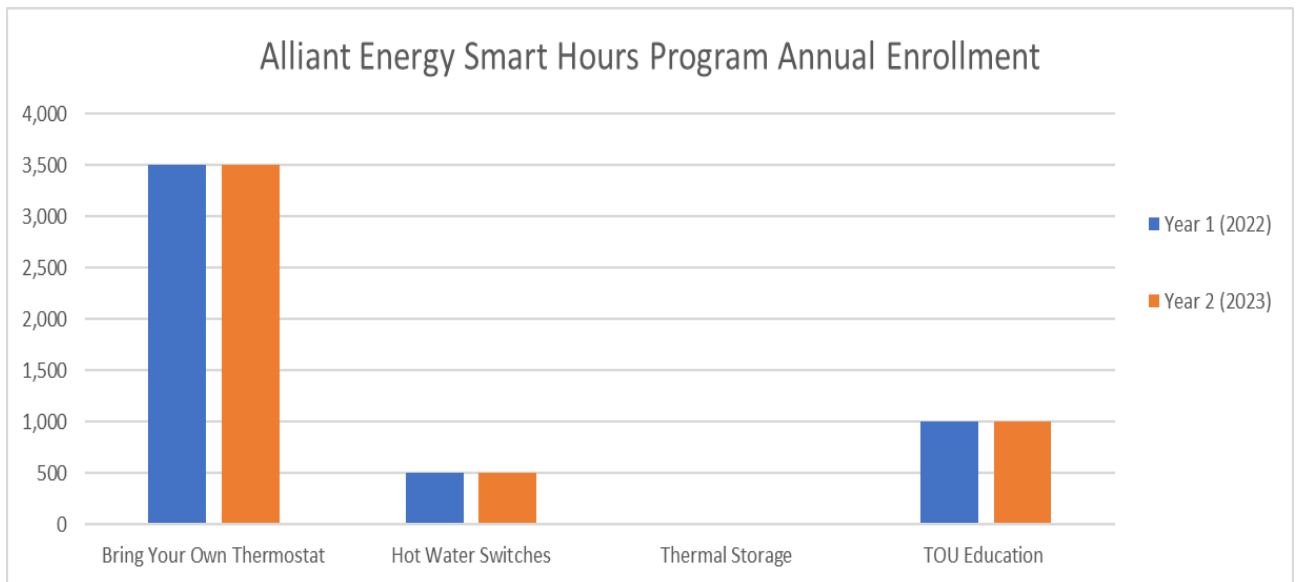
| Program Name                   | Thermal Energy Storage (TES)   |
|--------------------------------|--|
| Purpose                        | WPL will primarily use this program to help address summer peak capacity requirements. In addition, WPL may use this program to meet winter peak demand requirements for smart thermostats that control electric space heating.  |
| Program Description            | Thermal Energy Storage program offer to WPL eligible refrigerated warehouses.WPL sends DR event notification to these sites for shifting load to these TES units during DR event periods.  |
| Event Triggers                 | <p>DR events may be triggered by any one of the following factors:</p> <ul style="list-style-type: none"> <li>• Economic dispatch (high day-head and real-time market prices)</li> <li>• Capacity/reliability needs (high day-ahead temp. forecast during summer peak hours); this program will be utilized primarily during summer months, but WPL would like to utilize this for winter peak reduction.</li> <li>• System emergency conditions</li> <li>• Operating Reserves (to the extent operating reserves performance criteria are met by responding load)</li> </ul>   |
| Eligible Customers             | <ul style="list-style-type: none"> <li>• Customers with refrigerated warehouses</li> </ul>   |
| Program Enrollment Assumptions | <ul style="list-style-type: none"> <li>• 1 customer in 2022 and 1 customer in 2023</li> </ul>  |
| Program Parameters             | <p>Operating Months</p> <ul style="list-style-type: none"> <li>• Primarily summer (June-August)</li> <li>• WPL would like to utilize this for winter peak reduction (Dec-Feb).</li> <li>• Events may be called anytime, all year round to address system emergencies and to help meet operating reserve requirements.</li> </ul> <p>Event Window</p> <ul style="list-style-type: none"> <li>• Summer (11 am to 7 pm); Winter (5-9 pm)</li> <li>• Operating reserves and system emergencies (anytime and all-year round).</li> </ul> <p>Event Notification</p> <p style="padding-left: 20px;">Max. Number of Events during summer: 20</p> <p style="padding-left: 20px;">Event Duration: Max. 4 hours; average 2 hours.</p> <ul style="list-style-type: none"> <li>o Max. event hours: 40 hours during summer.</li> </ul> |
| Unit impacts (kW reduction)    | Unit Impacts: 150 kW   |
| Participation Incentives       | <ul style="list-style-type: none"> <li>• \$6,500</li> </ul>  |

| Program Name                               | Thermal Energy Storage (TES)  |
|--|---|
| Marketing, Customer Education and Outreach | <ul style="list-style-type: none"> <li>• WPL will be primarily responsible for customer education and outreach and marketing the Thermal Energy Storage program.</li> </ul>   |
| EM&V Requirements                          | <p>WPL is responsible for undertaking independent ex-post impact and process evaluation of the program, establish baseline development methodologies and analytical framework for conducting annual impact and process evaluations.</p> <p>Evaluation methodology:</p> <ul style="list-style-type: none"> <li>• Impact             <ul style="list-style-type: none"> <li>○ Impact Estimation Approaches</li> <li>○ Sample Design</li> <li>○ Baseline Methods</li> <li>○ Data collection</li> <li>○ Impact reporting</li> </ul> </li> <li>• Process             <ul style="list-style-type: none"> <li>○ Customer satisfaction</li> <li>○ Vendor performance</li> </ul> </li> </ul> |

Schedule 4 – Demand Response Budget



|                                   | Administration       | Saas                 | Marketing            | Incentive            | Equipment & Install  | Total                  |
|-----------------------------------|----------------------|----------------------|----------------------|----------------------|----------------------|------------------------|
| Year 1 (2022)                     | \$ 311,000.00        | \$ 178,000.00        | \$ 231,000.00        | \$ 231,500.00        | \$ 266,400.00        | \$ 1,217,900.00        |
| Year 2 (2023)                     | \$ 236,000.00        | \$ 350,000.00        | \$ 200,000.00        | \$ 358,500.00        | \$ 266,400.00        | \$ 1,408,900.00        |
| <b>Alliant Energy Smart Hours</b> | <b>\$ 547,000.00</b> | <b>\$ 528,000.00</b> | <b>\$ 431,000.00</b> | <b>\$ 588,000.00</b> | <b>\$ 532,800.00</b> | <b>\$ 2,626,800.00</b> |

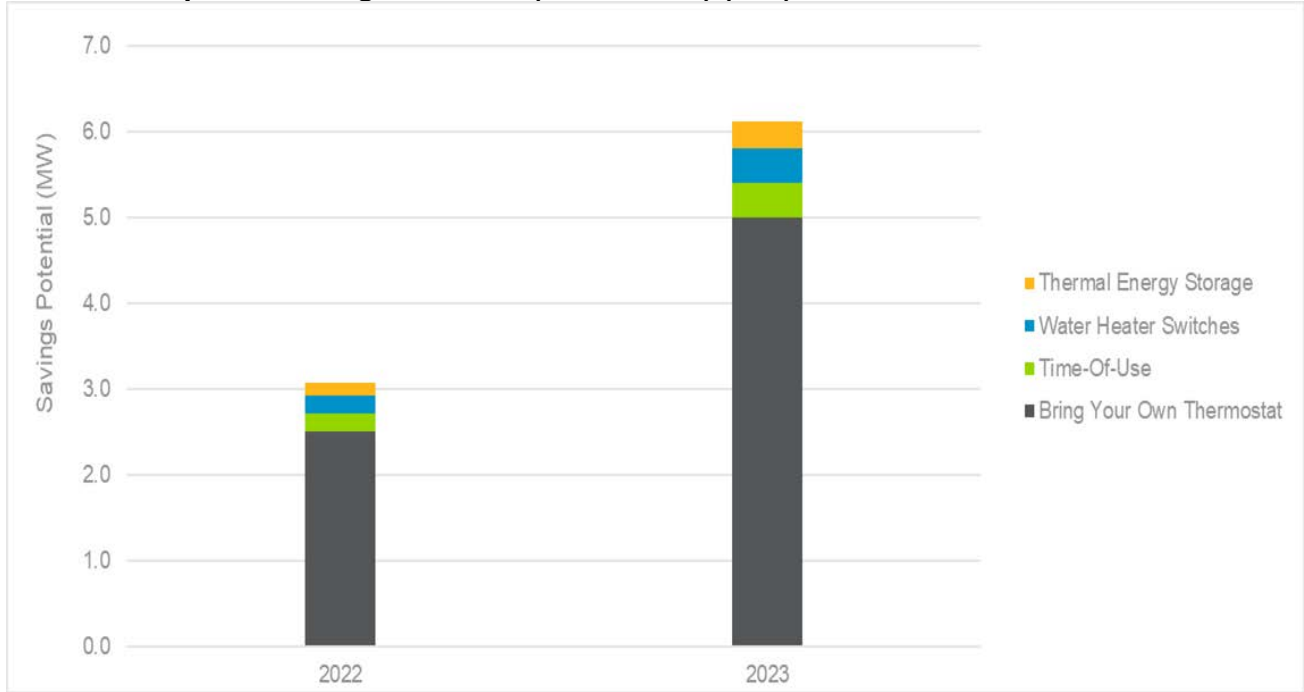


| Enrollment                        | Bring Your Own Thermostat | Hot Water Switches | Thermal Storage | TOU Education |
|-----------------------------------|---------------------------|--------------------|-----------------|---------------|
| Year 1 (2022)                     | 3,500                     | 500                | 1               | 1,000         |
| Year 2 (2023)                     | 3,500                     | 500                | 1               | 1,000         |
| <b>Alliant Energy Smart Hours</b> | <b>7,000</b>              | <b>1,000</b>       | <b>2</b>        | <b>2,000</b>  |



Schedule 5 – Demand Response Savings Potential

**Demand Response Savings Potential (2022 – 2023) (MW)**



**Demand Response Savings Potential (2022 – 2030) MW**

