

**BEFORE THE  
PUBLIC SERVICE COMMISSION OF WISCONSIN**

---

Application of Wisconsin Power and Light Company for a Certificate of Authority to Acquire, Construct, Own, and Operate Six Solar Electric Generation Facilities, Known as the North Rock, Grant County, Crawfish River, Onion River, Bear Creek, and Wood County Projects, to be located in Rock, Grant, Jefferson, Sheboygan, Richland, and Wood County, Wisconsin

Docket No. 6680-CE-182

---

**PETITION FOR LIMITED REOPENING AND MODIFICATION OF FINAL  
DECISION**

---

Pursuant to Wis. Stat. §§ 196.39, 196.395, 196.49, Wisconsin Power and Light Company (“WPL” or “the Company”) respectfully submits this petition for the Public Service Commission of Wisconsin (“Commission”) to reopen the above-captioned docket for the limited purpose of considering whether to amend the Final Decision of June 24, 2021 (“Final Decision”) to authorize WPL to construct, own, and operate 175 megawatts (“MW”) of battery energy storage system (“BESS”) components to be co-located at two of the previously approved project sites.<sup>1</sup>

In the Final Decision, the Commission granted WPL a certificate of authority (“CA”) to acquire, construct, and operate 675 MW of solar photovoltaic (“PV”) generating capacity at six different solar PV facilities. The six facilities include: the North Rock project (50 MW in Rock County (“North Rock Solar”)), the Grant County project (200 MW in Grant County (“Grant County Solar”)), the Crawfish River project (75 MW in Jefferson County (“Crawfish River Solar”)), the Onion River project (150 MW in Sheboygan County (“Onion River Solar”)), the Bear Creek project (50 MW in Richland County (“Bear Creek Solar”)), and the Wood County project (150 MW in Wood County (“Wood County Solar”)) (collectively, “the Solar Projects”).

---

<sup>1</sup> *Application of Wisconsin Power and Light Co.*, Docket No. 6680-CE-182, *Final Decision* (June 24, 2021) (PSC REF#: 414199).

## PUBLIC VERSION

In this petition, WPL addresses the need for and benefits to customers of a proposed 75 MW alternating current (“AC”) BESS project to be located at the Wood County Solar site (“Wood County BESS”) and a 100 MW<sub>AC</sub> BESS project to be located at the Grant County Solar site (“Grant County BESS”) (collectively, “the BESS Projects”). In keeping with the application structure for the Solar Projects, WPL is addressing the land and siting impacts of the BESS Projects in the companion petitions WPL is submitting in Docket Nos. 9803-CE-100 and 9804-CE-100 for a limited reopening of the Final Decisions approving the certificates of public convenience and necessity (“CPCNs”) for the Wood County Solar and Grant County Solar projects, respectively. Collectively, through the three petitions, WPL seeks Commission authorization to construct, own, and operate the BESS Projects.

### **I. BACKGROUND**

WPL is committed to providing safe, reliable, and affordable service to its customers and transitioning to more cost-effective and sustainable capacity and energy resources. To that end, WPL has been implementing its Clean Energy Blueprint (“CEB” or “Blueprint”), which is WPL’s preferred plan to benefit customers, by retiring WPL’s coal-fired generating stations, serving customers with capacity and energy from 1,089 MW of new utility-scale solar generation, installing distributed solar and battery storage resources in the communities WPL serves, and increasing WPL’s energy efficiency and demand response initiatives.<sup>2</sup> With this petition, the Company is entering the next phase of its Blueprint by advancing resources designed to further diversify WPL’s portfolio and meet a portion of WPL’s customers’ energy and capacity needs occasioned by (1) the Midcontinent Independent System Operator’s (“MISO”) recently approved capacity accreditation

---

<sup>2</sup> See Ex.-WPL-Augustine-1c (PSC REF#: 402512); see also Ex.-WPL-Augustine-2c (PSC REF#: 402515).

## PUBLIC VERSION

changes and seasonal capacity construct,<sup>3</sup> and (2) Wisconsin Public Service Corporation's ("WPSC") and Madison Gas and Electric Company's ("MGE") application for approval for WPSC and MGE to execute their first options to purchase portions of WPL's West Riverside natural gas-fired combined cycle facility ("West Riverside" or "the Facility") and WPL's expectation that WPSC and MGE will also seek approval to execute their second purchase options.<sup>4</sup>

The transfer of capacity to WPSC and MGE from the first set of West Riverside options and MISO's recently approved changes are expected to take effect June 1, 2023. As such, WPL's resource planning process focused on those resources that would provide benefits to WPL customers in all four seasons and that could be installed and operationalized quickly to meet near-term needs. The BESS Projects fit those requirements. The BESS Projects are dispatchable resources with strong capacity accreditation potential in each of the four seasons which will allow WPL to meet MISO's new seasonal planning reserve margin requirements ("PRMRs") while bolstering the resiliency and reliability of WPL's system.

Siting the BESS Projects at WPL's existing solar sites also allows WPL to accelerate the addition of resources by taking advantage of available transmission capacity, land, and infrastructure. Moreover, WPL has designed the BESS Projects to allow them to be charged and discharged directly to and from the grid in coordination with the generation produced by the corresponding solar project. This provides WPL the flexibility to operate the BESS Projects to maximize capacity accreditation, particularly in the forthcoming winter season, while providing

---

<sup>3</sup> *Midcontinent Indep. Sys. Operator Inc.*, 180 FERC ¶ 61,141, FERC Docket Nos. ER22-495-000 and ER22-495-001, Order Accepting Proposed Tariff Revisions Subject to Conditions (Aug. 31, 2022).

<sup>4</sup> See *Joint Application of WPL, WPSC, and MGE for Approval of the Sale and Purchase of Ownership Interests in West Riverside*, Docket No. 5-BS-265, *Application* (January 31, 2022) (PSC REF#: 430426). MGE and WPSC each hold two options to acquire portions of West Riverside. The docket currently before the Commission is for the first options, under which MGE and WPSC would acquire 25 MW and 100 MW, respectively. The second options enable MGE and WPSC, respectively, to acquire another 25 MW and 100 MW. Cumulatively, MGE and WPSC would acquire a total of 250 MW. WPL currently anticipates that MGE and WPSC will seek approval to acquire the additional shares under the second option.

energy arbitrage and ancillary service market opportunities when the BESS Projects are not needed for capacity accreditation.

In addition, WPL chose BESS project sites designed to minimize costs by maximizing economies of scale and by taking advantage of enhanced customer benefits available in the recently enacted Inflation Reduction Act (“IRA” or “the Act”). Under the IRA, WPL’s customers will be able to receive investment tax credits (“ITCs”) for the BESS Projects including a ten-percentage point ITC “add-on” for Grant County BESS due to that project being located in an “energy community” as defined by the Act.<sup>5</sup> WPL also continued its collaborative resource planning process and conducted analyses using the AURORA model that demonstrate the BESS Projects are a cost-effective and beneficial choice to meet WPL customers’ needs in comparison to alternatives.

WPL is a Wisconsin public utility engaged in providing electric service to the public and, therefore, requires certain approvals before constructing, owning, and operating the BESS Projects. Because the BESS Projects will share land, transmission, and substation assets with the soon-to-be-completed Wood County Solar project<sup>6</sup> and the under-construction Grant County Solar project, WPL is also filing companion reopener applications of the CPCNs for those projects. Accordingly, pursuant to Wis. Stat. §§ 196.02, 196.39, 196.395, and 196.49; Wis. Admin. Code chs. PSC 4 and 112; and any other rule or law that the Commission deems applicable, WPL respectfully requests that the Commission (1) reopen the proceeding for the limited purpose of analyzing the addition of the BESS Projects to WPL’s resource portfolio, and (2) modify the Final Decision and issue any

---

<sup>5</sup> See IRC §48(a)(14) (referencing IRC §45(b)(11)) The definition of an energy community includes a census tract in which a coal-fired electric generating unit was retired after December 31, 2009, or a directly adjoining census tract. WPL’s coal-fired generating units known as Nelson Dewey 1 and 2 were retired in December 2015 and were located in the census tract immediately adjacent the census tract in which Grant County BESS will be located.

<sup>6</sup> See *Application of Wisconsin Power and Light Co.*, Docket No. 6680-AE-122, *Application* (Sep. 22, 2022) (PSC REF#: 447843).

other authorizations or approvals the Commission may require to permit WPL to construct, own, and operate the BESS Projects as described in this petition.

## **II. PROJECT DESIGN AND CHARACTERISTICS**

As explained in WPL's original application in this proceeding and its application in Docket No. 6680-CE-183, the Blueprint is WPL's preferred plan to benefit customers, which includes retiring WPL's coal-fired generating stations, serving customers with capacity and energy from over 1,000 MW of new utility-scale solar generation, installing distributed solar and battery storage resources in the communities WPL serves, and increasing WPL's energy efficiency and demand response initiatives.<sup>7</sup> WPL designed the BESS Projects as part of the next phase of its Blueprint to diversify WPL's portfolio, bolster the resiliency and reliability of WPL's system, meet changing capacity accreditation and seasonal construct requirements, and replace the capacity expected to be lost with the exercise of the West Riverside options.

WPL sited the BESS Projects at two of its solar sites to advance these objectives while saving time and expense by bypassing MISO's generator interconnection queue and using site and local authority knowledge gained from the solar construction process to efficiently coordinate installation of the BESS Projects. By advantaging the recently enacted IRA provisions, WPL is also able to secure ITCs for the BESS Projects to benefit customers, including a ten-percentage point ITC adder for Grant County BESS, and to efficiently pass those benefits to customers without the use of tax equity financing. Below is a brief description of the BESS Projects, how the projects were selected, their eligibility for ITCs, and their costs. More detailed project siting information can be found in the CPCN reopener application for each project.

---

<sup>7</sup> See Ex.-WPL-Application-r: Application-2; see also *Application of Wisconsin Power and Light Co.*, Docket No: 6680-CE-183, *Application*, at 2 (Sep. 13, 2021) (PSC REF#: 420632).

**A. Description of the BESS Projects**

Wood County BESS will be a 75 MW MW<sub>AC</sub>, 4-hour BESS sited within the project study area for Wood County Solar, and Grant County BESS will be a 100 MW MW<sub>AC</sub>, 4-hour BESS sited within the project study area for Grant County Solar. The BESS Projects will consist of battery cabinets connected to pad-mount inverter/transformer skids, which will connect directly to the collector substation for the respective solar project. Connection to the collector substation will be accomplished by 34.5 kV collector circuits. The BESS Projects will share the same interconnection point as their corresponding solar project. In April 2022, WPL applied to MISO for surplus interconnection rights<sup>8</sup> so the BESS Projects can use the transmission capacity rights not used by the solar project at the shared interconnection point. MISO has not yet completed its review, but WPL does not anticipate that the BESS Projects will increase the amount of service at the point of interconnection. WPL will update the Commission as additional information is received on this topic.

Generally, WPL intends to operate the BESS Projects with the goal of maximizing capacity accreditation value to meet seasonal capacity requirements. Charging and discharging the BESS Projects to and from the grid also provides flexibility to bring potential additional value to customers through energy arbitrage (e.g., charging the BESS when locational marginal prices (“LMPs”) are low and discharging the BESS when LMPs are high) or ancillary service market opportunities. WPL has provided additional information concerning the project layout and technical design for the BESS Projects in the CPCN reopeners for the BESS Projects.

---

<sup>8</sup> Section 6.7.3. of the MISO Business Practices Manual (BPM-015-r23) defines Surplus Interconnection Service as any:

Interconnection Service that is derived from the unneeded portion of Interconnection Service established in a [Generator Interconnection Agreement] or in agreement with, or under the tariff of, a Transmission Owner prior to integration into MISO, such that if Surplus Interconnection Service is utilized, the total amount of Interconnection Service at the Point of Interconnection would remain the same.

The BESS Projects are expected to receive a high capacity accreditation value from MISO in comparison to intermittent resources like solar and wind. Based on current guidance from MISO given MISO's assumptions as to the resource mix on the bulk electric system now and over the next several years, MISO expects the capacity accreditation level of BESS will shift as more intermittent resources are added and the net load profile changes over time. To model that expectation, WPL estimated the capacity accreditation value for the BESS Projects to be approximately [REDACTED]

[REDACTED]. Separately, the capability of batteries is expected to naturally degrade over time as the batteries are charged and discharged. To address those changes, WPL assumed periodic "augmentation" costs to bolster the battery capabilities back to (or near to) original design levels every four to six years throughout their expected life.

## **B. Project Selection**

As explained in detail in Section III below, through a comprehensive resource planning process, WPL identified BESS as an appropriate resource to meet approximately 275 MW of its near-term capacity and energy needs. WPL then sought to identify particular BESS projects to meet those needs. The BESS Projects were identified as beneficial projects based on their:

- ITC eligibility level;
- Efficient use of transmission assets;
- Site feasibility/land control;
- Proximity to existing infrastructure (e.g., substations); and
- Size/economies of scale.

## PUBLIC VERSION

Based on the recent enactment of the IRA, stand-alone BESS projects (i.e., BESS projects that are not charged solely from certain renewable facilities) are now eligible for ITCs.<sup>9</sup> For those projects that meet certain labor requirements, which WPL expects to achieve, the level of the tax credit available begins at 30 percent of the cost of eligible BESS components. This percentage can be increased via “adders” if, for example, a BESS project is sited in a location which the Act defines as an “energy community.”<sup>10</sup> The definition of an energy community includes a census tract in which a coal-fired electric generating unit was retired after December 31, 2009, or a directly adjoining census tract.

To enable the deployment of capacity to meet near-term needs while minimizing cost impacts on customers, WPL selected sites that would leverage existing transmission rights while optimizing tax benefits. To that end, WPL looked at potential BESS sites at which it had available transmission capacity rights and which were in or adjacent to a census tract meeting the “energy community” requirements. As shown in Table 1 below, that examination resulted in three potential WPL-controlled sites with transmission rights available that were also eligible for a ten-percentage point “energy community” ITC adder for BESS.

---

<sup>9</sup> IRC §48(a)(3)(A)(ix) (applies to property placed in service after December 31, 2022).

<sup>10</sup> IRC §48(a)(14) (referencing IRC §45(b)(11)(B)); IRC §48(a)(12) (referencing IRC §45(b)(9)(B)).

**Table 1: Results of BESS Energy Community and Transmission Rights Examination**

Energy Community Site for BESS	Energy Community Site Eligibility	Currently Available Transmission Rights for BESS
Grant County Solar	Census tract adjacent to WPL’s Nelson Dewey 1 and 2 coal plants that were retired in December 2015	100 MW*
Edgewater Generating Station (“Edgewater”)	Census tract in which WPL’s Edgewater 3 (retired December 2015), 4 (retired September 2018), and 5 (to be retired by June 1, 2025) coal plants are or were located	100 MW** (commencing the date Edgewater 5 retires)
Cassville Solar	Census tract in which WPL’s retired Nelson Dewey 1 and 2 coal plants were located	25 MW*

\*Assumes approval of surplus interconnection requests submitted to MISO.

\*\*Assumes targeted sizing of the BESS at this location. More transmission rights will be available at this site after Edgewater 5 retires.

With this petition, and the companion Grant County Solar and Wood County Solar CPCN reopener petitions, WPL is seeking approval to construct Grant County BESS and Wood County BESS.<sup>11</sup> WPL is also analyzing the technical and siting feasibility of constructing 100 MW of BESS at Edgewater and expects to file an application for that project in the coming months depending on the results. Given the relatively small scale of available transmission rights at the Cassville Solar site, WPL is not intending to pursue an application to install BESS at that site at this time.

**C. ITC Benefits for Customers**

WPL estimates that approximately [redacted] percent of the costs to construct the BESS Projects will be considered ITC-eligible property for which it can receive ITCs. In addition to allowing stand-alone BESS projects to receive ITCs, the IRA also caused the ITC received on a BESS to not be subject to ITC normalization requirements and created a provision that allows taxpayers (like WPL) the ability to transfer the ITCs from BESS projects to another corporate taxpayer in exchange for cash (“transferability”). WPL expects the ITCs to be transferred at a discount to entice the receiving

---

<sup>11</sup> Simultaneous with this petition, WPL is also submitting a reopener application for Docket No. 6680-AF-100 to request deferral of incremental pre-certification costs and to begin accruing Allowance for Funds Used During Construction on pre-construction costs associated with the development of the BESS Projects.

taxpayer to receive the credits. With transferability and the ITC normalization opt out election, WPL believes it can own and operate the BESS Projects without the need for tax equity financing while still being able to efficiently provide the ITC benefits to its customers. Section IV below provides more details on WPL’s proposed return of ITCs to customers.

**D. Project Costs**

Due to supply chain disruptions and recent market volatility, WPL pursued strategies for the procurement of BESS technology that would allow WPL to secure BESS equipment while controlling and mitigating commercial risks. Lithium-based batteries are the most commercially available and commercially ready technologies for batteries, and WPL expects the BESS Projects to use lithium-based battery technology. WPL initiated a competitive procurement process and through that process selected an established vendor of BESS technology (FlexGen Power Systems, Inc. (“FlexGen”). WPL then worked with FlexGen to craft an agreement (the Battery Energy Storage System Supply Agreement (the “Supply Agreement”)) that allows WPL to [REDACTED]

[REDACTED]

Specifically, the Supply Agreement contains [REDACTED]

[REDACTED]

The Supply Agreement required WPL to [REDACTED]

[REDACTED] the total contract value upon execution, and then allows WPL to [REDACTED]

[REDACTED]

[REDACTED] in exchange for delivery, installation, and commissioning of the BESS equipment at

project sites to be designated by WPL. For BESS equipment pricing, the Supply Agreement [REDACTED]

[REDACTED]

Due to the volatility in the market, [REDACTED]

[REDACTED]

[REDACTED] Based on that information, the current estimated cost for the BESS Projects is included in Table 2 below. As such, WPL requests authorization to construct the BESS Projects at an estimated cost of approximately \$354 million,

plus Allowance for Funds Used During Construction (“AFUDC”), subject to Commission review and audit in a future rate proceeding.<sup>12</sup>

**Table 2: Overview of BESS Projects and Estimated Costs**

Project Name	Capacity (MW <sub>AC</sub> )	ITC Eligibility	Estimated Construction Costs <sup>13</sup>	
			(\$/kW)	Total (\$M)
Grant County BESS	100	40%	\$2,020	\$202
Wood County BESS	75	30%	\$2,020	\$152
<b>TOTAL</b>	<b>175</b>			<b>\$354</b>

### III. NEED AND JUSTIFICATION

#### A. Introduction.

WPL’s mission is to deliver energy and capacity to the customers and communities it serves in a safe, reliable, and affordable manner. One way that WPL seeks to achieve this objective is to engage in an extensive and holistic resource planning process to assess the capacity and energy needs of its customers and the resources available to meet those needs. In recent iterations of this process, WPL has relied upon an advanced modeling tool (AURORA) capable of simulating the MISO market, while also analyzing alternative resources for WPL to meet future planning reserve margin requirements and the energy needs of customers over time. In recent years, this process has helped WPL to determine whether needed investments in its coal facilities would be in the best interests of customers or whether other, more optimal alternatives would produce greater benefits. The modeling framework has been used to evaluate different coal retirement options, a range of

---

<sup>12</sup> In accordance with WPL’s past practice in standard construction applications, WPL also commits to notifying the Commission and any parties in this case as soon as it becomes aware of a possible change or cost increase that may exceed the estimated cost by more than 10 percent. *See e.g., Final Decision* at 49; *see also Application of Wisconsin Power and Light Co.*, Docket No: 6680-CE-183, *Application*, at 55 (June 13, 2022) (PSC REF#: 440156).

<sup>13</sup> The cost estimate excludes AFUDC.

different replacement strategies, and most recently, the impact of capacity accreditation changes and seasonal capacity requirements on resource selection.

WPL's resource planning effort was iterative and included a study of generation alternatives under a variety of plausible future scenarios. Among other factors, the future scenarios WPL studied included scenarios that varied the growth of WPL's customers' energy and demand needs, commodity prices, technology costs, and environmental policy outcomes. Under each scenario, what WPL calls the Blueprint emerged as substantially more cost-effective than the Base Case and provided other benefits like decreased emissions and water usage.<sup>14</sup>

WPL has already begun implementing the Blueprint by adding 1,089 MW of solar generation, 675 MW of which were approved in this docket.<sup>15</sup> This progress will help to meet WPL's customers' energy and capacity needs and is expected to result in substantial avoided costs and other benefits for WPL's customers. The expected energy production from the Solar Projects (including Grant County Solar and Wood Count Solar) is so significant that WPL was able to further enhance the financial benefits of the projects by taking advantage of the IRA provisions allowing solar projects to qualify for production tax credits ("PTCs") as opposed to only ITCs.<sup>16</sup>

In this petition, WPL is addressing recent events not analyzed in the Blueprint that have resulted in the need for WPL to add additional capacity and energy resources to its portfolio. Specifically, WPSC, MGE, and WPL have filed for approval for WPL to sell and WPSC and MGE to buy a portion of West Riverside in accordance with WPSC's and MGE's first West Riverside

---

<sup>14</sup> See Ex.-WPL-Augustine-1, Docket No. 6680-CE-182 (Jan. 5, 2021) (PSC REF#: 402513).

<sup>15</sup> See Final Decision; see also *In Re Application of Wis. Power and Light Co.*, Docket No. 6680-CE-183, *Final Decision* (Jun. 13, 2022) (PSC REF#: 440156).

<sup>16</sup> See generally *Application of Wisconsin Power and Light Co.*, Docket No: 6680-CE-182, *WPL's Notice of Termination of Tax Equity Financing*, (Sep. 15, 2022) (PSC REF#: 447412). The fact that PTCs are not subject to Internal Revenue Service normalization rules, in conjunction with WPL's ownership of the projects, increases customer benefits from the solar project portion of the Blueprint by approximately \$138 million in present value savings compared to tax equity ownership with ITCs under prior tax law.

options. WPL anticipates that WPSC and MGE will also seek Commission approval to acquire additional shares under the second purchase option.<sup>17</sup> In addition, MISO recently received approval to modify its capacity accreditation methodology for certain types of resources and to create a seasonal capacity construct that impacts WPL's capacity needs in the forthcoming winter season.<sup>18</sup> The next sections describe WPL's resource planning efforts to address those needs and how those planning efforts resulted in the selection of the BESS Projects.

## **B. WPL Has a Need for Additional Resources that Can Provide Capacity and Energy on a Year-Round Basis**

### **1. West Riverside Option Exercise**

West Riverside is a natural gas-fired combined cycle facility that went into commercial operation in 2020. In total, West Riverside has a nameplate capacity of 727.2 MW. Prior to receiving approval to construct West Riverside, WPL entered into agreements with WPSC and MGE that would provide book-value purchase options for partial ownership of the Facility after it commenced operations. The first purchase option allowed WPSC and MGE to acquire a total of up to 125 MW with capacity accreditation to transfer on June 1, 2023, and a second purchase option allows for an additional 125 MW with capacity accreditation transferring on June 1, 2024. WPL, WPSC, and MGE have sought approval from the Commission for the transfer of partial ownership interests in the Facility related to the first 125 MW option agreement,<sup>19</sup> and WPL expects that a request for approval for the second 125 MW option agreement will be sought in the near future.

In its 2019 Blueprint analysis, WPL did not speculate whether WPSC and MGE would execute their purchase options, and therefore, the potential sale was not reflected in WPL's modeled

---

<sup>17</sup> The options also entitle WPSC and MGE to a share of the four MW solar facility located at the West Riverside site.

<sup>18</sup> *Midcontinent Indep. Sys. Operator Inc.*, 180 FERC ¶ 61,141, FERC Docket Nos. ER22-495-000 and ER22-495-001, Order Accepting Proposed Tariff Revisions Subject to Conditions (Aug. 31, 2022).

<sup>19</sup> *Joint Application of Wisconsin Power and Light Company, Wisconsin Public Service Corporation, and Madison Gas and Electric Company for Approval of the Sale and Purchase of Ownership Interests in the West Riverside Energy Center*, Docket No. 5-BS-265, Application (Jan. 31, 2022) (PSC REF#: 430327).

capacity position. Also, in that analysis, WPL expected to retire Edgewater Unit 5 by December 31, 2022, Columbia Unit 1 by December 31, 2023, and Columbia Unit 2 by December 31, 2024. With no other changes to WPL's resource portfolio, [REDACTED]. [REDACTED]. However, on June 23, 2022, WPL announced its intent to shift the retirement dates of its remaining coal plants, and WPL now plans to retire Edgewater Unit 5 by June 1, 2025, and Columbia Units 1 and 2 by June 1, 2026. These shifts are not expected to substantially impact WPL's near-term capacity and energy needs and do not indicate a change in position regarding the benefits customers can expect to receive from the coal plant retirements and resource transition. WPL identified the amount of capital and O&M items necessary to briefly extend operation of the units; however, WPL does not intend to expend additional resources to operate them past the currently announced dates. Consequently, WPL is not considering further extension of those resources to be a viable or attractive option for customers, and WPL's starting point for its load and capability assessment begins at the previously announced retirement dates. To that end, Confidential Figure 1 below depicts WPL's supply/demand balance in the summer season assuming:

- No resource additions beyond the 1,089 MW of solar approved by the Commission and the recently executed Kossuth II wind power purchase agreement ("PPA") (70 MW);
- Retirement of WPL's coal-fired generating facilities on their originally announced retirement schedules; and
- WPSC's and MGE's exercise of W. Riverside options 1 and 2 (total 250 MW, nameplate).

**CONFIDENTIAL Figure 1: WPL Summer Supply-Demand Balance – Previous Retirement End Dates**



As shown above, WPSC's and MGE's exercise of the first West Riverside options [REDACTED]

[REDACTED]

[REDACTED] When WPL joined WPSC and MGE in the joint application to transfer ownership interests of West Riverside, WPL anticipated that it would [REDACTED]

[REDACTED]

As shown in Confidential Figure 2 below, WPL's decision to shift its coal plant retirement dates provides the Company flexibility to weather multiple uncertainties, [REDACTED]

[REDACTED], in the near term. However, the Company

needs longer-term solutions, including the BESS Projects, to continue to provide reliable and affordable electric service to its customers.

**CONFIDENTIAL Figure 2: WPL Summer Supply-Demand Balance – Current Retirement End Dates**



**2. MISO Capacity Accreditation Changes and New Seasonal Construct**

Another significant change impacting WPL customers’ capacity needs since WPL conducted its previous Blueprint analyses was MISO’s capacity accreditation criteria modifications and seasonal construct requirement. That is, MISO recently received Federal Energy Regulatory Commission (“FERC”) approval for a new Seasonal Accredited Capacity (“SAC”) methodology to determine the capacity accreditation of certain classes of resources that MISO calls “Schedule 53 Resources.”<sup>20</sup> Schedule 53 Resources are demand response resources or generation resources that are not what MISO’s tariff defines as dispatchable intermittent resources, intermittent generation,

---

<sup>20</sup> *Midcontinent Indep. Sys. Operator Inc.*, 180 FERC ¶ 61,141, ¶ 243, FERC Docket Nos. ER22-495-000 and ER22-495-001, Order Accepting Proposed Tariff Revisions Subject to Conditions (Aug. 31, 2022).

electric storage resources, external resources, or use limited resources. Under the new methodology, WPL's thermal resources will no longer be accredited based on installed capacity adjusted for forced outage rates from the Generation Availability Data System ("GADS") but instead will primarily be accredited based on the average capacity available in times of highest need given resource offers in MISO's Day-Ahead and Real-Time markets.<sup>21</sup> This change primarily impacts expected capacity accreditation for WPL's natural gas-fired resources.

MISO's approval of its new seasonal capacity market construct also impacts WPL's customers' capacity needs. The seasonal construct created a new PRMR for each of the four new capacity market seasons, and indications from MISO are that capacity accreditation methodology for those resources currently excluded from Schedule 53 (including intermittent resources like wind and solar) is also expected to change and to vary by season. As shown in Confidential Figure 3 below, these revisions to MISO's accreditation and PRMR, in addition to the exercise of the West Riverside options, create additional capacity and energy needs for WPL in the forthcoming winter season.

---

<sup>21</sup> *Id.* at ¶¶ 91 and 243.

**CONFIDENTIAL Figure 3: WPL Winter Supply-Demand Balance – Current Retirement  
End Dates**



**C. WPL’s Analysis of Resource Alternatives**

Given the needs identified above, WPL developed a thorough study of generation alternatives that could fill the Company’s anticipated capacity shortfall, including:

- Solar PV;
- Onshore wind;
- A range of energy storage options including:
  - 4-hour: Lithium-ion, zinc-based, and sodium sulfur batteries;
  - 8-hour: Vanadium redox flow batteries;
  - 20-hour: compressed air, pumped hydro, and thermal energy storage;

## PUBLIC VERSION

- Hydrogen-enabled thermal peaking options, including reciprocating internal combustion engines (“RICE”) and aeroderivative turbines;
- Natural-gas combined cycles with carbon capture and storage;
- Demand side management programs; and
- Various upgrade options at existing natural gas facilities, including capacity uprates and firm gas contracts at peaking plants to support winter capacity accreditation.

West Riverside provides capacity and energy to WPL customers on a dispatchable basis year-round, and the new capacity accreditation modifications and seasonal construct increase WPL’s winter season needs. Therefore, the Company focused its resource alternative analyses on those resources that would be capable of providing capacity on a year-round basis. To that end, WPL performed a series of portfolio optimization analyses in the AURORA model to assess the most economic resource additions, with a focus on the anticipated winter capacity gap. Depending on new resource timing and availability constraints, WPL determined that the least cost winter capacity options included upgrades at existing gas-fired facilities, commitments and investments to increase natural gas deliverability during winter peaks, new Wisconsin wind, 4-hour lithium-ion battery storage, and hydrogen-enabled thermal peaking capacity (i.e., RICE).

With respect to 4-hour lithium-ion battery storage, the optimization analyses suggested that WPL’s portfolio should include up to 475 MW of BESS over the next several years. Given that, WPL developed a 275 MW BESS portfolio based on its analysis of sites with excess transmission capacity rights and locations designed to maximize ITC benefits, ease of installation, and economies of scale in the near term. WPL also developed three additional portfolios for further study, including alternative resources identified as feasible candidates in the optimization analysis or resources that would further diversify its generation portfolio. In total, the four near-term generation portfolio alternatives that WPL developed are: (i) BESS (the “BESS Portfolio”); (ii) wind generation (the

“Wind Portfolio”); (iii) hydrogen-enabled RICE (the “Hydrogen Enabled RICE Portfolio”); and (iv) combined cycle with carbon capture and sequestration (the “Combined Cycle Portfolio”). Within all four portfolio concepts, WPL included a series of upgrades to existing units that it believes will be cost effective. WPL also identified demand side management programs to be included in all portfolio options, although winter capacity contributions for these resources are expected to be minimal relative to summer peak savings.

1. Alternatives Analyzed

a. BESS Portfolio

The Solar Projects approved in this docket are well positioned to add BESS resources to complement solar production. By co-locating the Grant and Wood BESS projects with the Grant and Wood Solar projects, the BESS Projects can take advantage of available land as well as existing transmission interconnection rights –through MISO’s surplus interconnection process – allowing for cost-effective and timely interconnection of resources. Grant County BESS is also eligible for the 10-percentage point energy community ITC adder under the recently enacted IRA, as is the potential Edgewater BESS that WPL may file for approval in the coming months, subject to its ongoing analysis.

In addition, locating the BESS Projects adjacent to but not dependent on the energy produced from the solar projects offers WPL the opportunity to explore energy price arbitrage and ancillary service market benefits for customers when the BESS Projects are not needed for capacity accreditation:

- Energy price arbitrage opportunities
  - Energy price arbitrage is the practice of charging the batteries when market prices are low, storing it, and then discharging the energy when market prices are higher. By monitoring the difference in market prices, WPL can provide

economical load shifting energy services to the market from its BESS Projects.

- Ancillary service market opportunities
  - Regulating reserve is an ancillary service that BESS can provide to the MISO market because the energy output from BESS can be increased or decreased within a few seconds in response to a control signal from the system operations energy management system.
  - Spinning reserve, which refers to energy that is available to assist in stabilizing the system following a disturbance, is another ancillary service that BESS can provide given the speed with which it can discharge energy.

Based on its expectation that WPL will operate the BESS Projects primarily to maximize capacity accreditation value, and to be conservative, WPL's modeling included limited expected value from these potential benefits.

Although BESS typically have a useful life of 15 to 20 years, WPL modeled the BESS facilities in its alternative generation analysis to remain in operation throughout the 30-year study period to ensure comparability between the alternatives being analyzed (the remainder of which have 30-year useful lives). To account for the extended life of the BESS, the analysis included extra costs for battery augmentation throughout the life of the project, as well as ongoing capital expenditures to account for major repowering.

b. Wind Portfolio

WPL also considered a Wind Portfolio, which would provide the Company with additional zero emission electricity generation on top of the recently approved solar generation facilities. Wind generation is an increasingly cost-effective energy resource compared to new fossil-fueled generation, and WPL modeled a Wisconsin wind portfolio to minimize potential congestion costs

and to meet WPL's Local Clearing Requirement. However, wind is dependent on the intermittent availability of wind for generating electricity. Because of its dependence on weather conditions, wind projects provide less reliable capacity per MW of nameplate capacity than other dispatchable resources, and MISO's new seasonal construct is expected to limit the capacity accreditation available to wind resources. Consequently, WPL modeled 1,032 MW of wind to provide a direct comparison from a capacity perspective with the 275 MW of BESS included in the BESS Portfolio.

c. Hydrogen Enabled RICE Portfolio

RICE units have become a more common technology choice for utility power generation in recent years. This is largely due to the ability of such engines to ramp quickly to offset fluctuations in intermittent resources, as well as operational advancements in fuel flexibility. The technology relies upon heat and pressure to convert the expansion of gases and the resultant increased pressure from the combustion of fuel inside one or more confined cylinders into a mechanical force that moves pistons back and forth to rotate a central shaft and produce mechanical power.

WPL assumed that new RICE resource additions would be hydrogen enabled, meaning that they included the option to blend hydrogen with natural gas at some point in the future to generate electricity.<sup>22</sup> Although large-scale deployment of hydrogen fuel has yet to be achieved, government policies currently aim to bring clean hydrogen costs down, and the IRA offers a PTC for hydrogen produced from clean energy<sup>23</sup> For modeling purposes, all RICE units were considered capable of blending between 0 percent to 60 percent hydrogen by 2035, with actual blended ratios and associated incremental investment levels varying across scenarios.

---

<sup>22</sup> The modeling assumed the option to blend hydrogen could be exercised in 2035. The amount of hydrogen blending and the costs associated with hydrogen production were varied across market scenarios.

<sup>23</sup> I.R.C. § 45V provides a credit of \$0.60/kg for qualified clean hydrogen production, or \$3.00/kg if various labor requirements are met (in both cases, adjusted for inflation) for which construction begins before January 1, 2033. Although hydrogen blending was assumed to begin in 2035 for modeling purposes, an earlier construction start date for the renewable resources and electrolyzer equipment needed to produce hydrogen could ensure qualification for the IRA's hydrogen PTC.

From an operational perspective, WPL considered RICE technology because multiple units could be placed at a site to achieve lower capital costs per megawatt of installed capacity, and the RICE Portfolio is expected to be able to take advantage of existing transmission interconnection rights. Lastly, RICE units can economically cycle off and on to lower load levels without loss of efficiency to meet shorter demand periods when renewable energy resources are not available. Based on RICE's expected capacity accreditation, WPL modeled the RICE Portfolio with a nameplate capacity of approximately 250 MW to make it directly comparable to the 275 MW BESS Portfolio.

d. Combined Cycle with Carbon Capture and Sequestration Portfolio

Natural gas-fired combined cycle power systems have been a common new generation technology addition throughout the industry for the last 20 years, and therefore, WPL included this well-established technology in its generation alternative analysis. A combined cycle power plant uses both gas and steam to produce electricity from the same fuel source. To supplement the electricity produced from burning natural gas in a turbine, this technology utilizes waste heat from the combustion process to convert water to high pressure steam to generate additional electricity and achieve greater overall efficiency. The resource type can provide year-round capacity.

Given WPL's carbon emission reduction goals, the combined cycle option included carbon capture and sequestration ("CCS"). This technology involves capturing carbon dioxide produced from fuel combustion and storing it in a manner that prevents it from entering the atmosphere. Although this process has not been deployed at scale, it typically involves compressing CO<sub>2</sub> and storing it deep underground or converting it to calcium carbonate through a chemical process known as carbon mineralization.<sup>24</sup> Adding CCS to a combined cycle generating turbine ("CCGT")

---

<sup>24</sup> Note that WPL's analysis incorporated costs associated with the transportation and storage of CO<sub>2</sub> based on U.S. Department of Energy regional estimates.

increases its net heat rate, but also significantly reduces its emissions. WPL's analysis assumed that the CCS addition would reduce the carbon emissions by 90 percent and be eligible for federal tax credits in accordance with the IRA. In order to meet its capacity needs and to provide a direct comparison to the BESS Portfolio, WPL modeled the Combined Cycle Portfolio with a nameplate capacity of approximately 250 MW.

## 2. Future Scenarios Developed

A key constraint in long-range planning is uncertainty about what the future will look like, as changes in external conditions can affect the viability of various planning alternatives. In this case, as it did in preparing the 2019 Blueprint, WPL developed a wide range of integrated and plausible future scenarios, designed to test the revenue requirement of the various alternative resource options in a variety of possible future conditions. Each scenario featured different assumptions about key variables that could affect the performance of the resource alternative in question.<sup>25</sup> Over a long-range (e.g., 20 to 40-year) planning horizon, it is highly unlikely that events will unfold in a manner that is completely consistent with any one scenario. Therefore, it is important to assess the performance of a portfolio across several different scenarios. Analyzing the economics of the various resource alternatives across a variety of scenarios is more likely to account for possible tradeoffs between scenarios and to predict the most economical and beneficial project for customers.

As part of the analysis, and as was done in the 2019 Blueprint, WPL developed five planning scenarios that reflected distinct, but plausible, futures of the electric power sector over the next 20 years. These scenarios were based on themes intended to encompass a variety of potential market futures, including one which assumes no change from the industry trends that have occurred over

---

<sup>25</sup> The methodology WPL used is similar to that employed by MISO in the development of its future planning scenarios. *See, e.g., MISO, MISO Futures – Final, Futures Siting Workshop (April 27, 2020), available at [https://cdn.misoenergy.org/20200427%20MTEP%20Futures%20Item%2002a%20Futures%20Presentation443760\[.pdf](https://cdn.misoenergy.org/20200427%20MTEP%20Futures%20Item%2002a%20Futures%20Presentation443760[.pdf)*

the last decade (Continuing Industry Change), one which assumes zero load growth over the next 20 years (Market and Economic Stagnation), one that incorporates significant changes in customer distributed energy adoption (Advanced Customer-side Technology), and two different scenarios focused on different means of regulating carbon emissions from the power sector and the broader economy (New Environmental Regulation and Aggressive Decarbonization). (See Table 3 below). Key assumptions within each scenario—such as fuel prices, energy and capacity prices, load growth, new generation costs, carbon regulation, and capacity accreditation for different resources—were adjusted in a manner that was consistent with the theme for that scenario. For each of the five scenarios, WPL performed long-term power market modeling for the entire MISO footprint to develop system-wide forecasts for unit retirements, resource additions, and power price forecasts consistent with the theme and modeling inputs for each scenario. WPL is utilizing consistent planning scenarios relative to those developed for the Blueprint in order to model the economics of the various portfolio alternatives.<sup>26</sup>

---

<sup>26</sup> The description of the fifth planning scenario was changed from that used in the original application (i.e., “Electrification and economy-wide carbon limit”) to “Aggressive decarbonization” to describe the driving force in that future more succinctly.

**Table 1: Overview of Planning Scenarios**

	<b>Continuing industry change</b> <ul style="list-style-type: none"><li>• Today's economic and technology trends continue into the future</li></ul>
	<b>Market and economic stagnation</b> <ul style="list-style-type: none"><li>• Poor economy causes low load growth environment, relieves regulatory pressure</li></ul>
	<b>New environmental regulation</b> <ul style="list-style-type: none"><li>• New regulations drive further change to generation fleets(<i>modeled as carbon tax</i>)</li></ul>
	<b>Advanced customer-side technology</b> <ul style="list-style-type: none"><li>• Increased adoption of behind-the-meter generation and efficiency technologies</li></ul>
	<b>Aggressive decarbonization</b> <ul style="list-style-type: none"><li>• Cap on emissions affects all sectors, driving shifts in demand &amp; supply</li></ul>

### 3. Updates to AURORA Modeling

WPL's resource planning analysis relied upon the same AURORA model it used for its 2019 Blueprint analyses. Given the amount of time that has passed since WPL originally input data into its AURORA modeling, WPL engaged in a systematic update of assumptions to incorporate more current information. Specifically, WPL updated:

- Load growth to reflect a more recent WPL load forecast and associated ranges in line with the scenarios described above;
- WPL's existing supply side portfolio characteristics to reflect the latest plant ratings and changes to the near-term supply-demand balance as described above;
- Natural gas prices to reflect recent market developments and the latest long-term forecasts and scenario ranges;
- Capital costs for new resource options to reflect recent, observed project estimates and the latest expectations and ranges for cost trends over time;
- Environmental policy drivers, particularly the extension and expansion of clean energy and storage tax credits; and

**PUBLIC VERSION**

- MISO market conditions, including market design changes like the seasonal capacity construct and market supply and demand expectations based on utility announcements and long-term economic expectations.

4. Results of AURORA Analyses

As explained above, WPL’s analysis of new resources that could fill the capacity needs created by exercise of the West Riverside purchase options and the changes to MISO’s capacity accreditation and seasonal constructs included the BESS Portfolio, Wind Portfolio, RICE Portfolio, and Combined Cycle with CCS Portfolio. Each portfolio was modeled with a capacity accreditation directly comparable to 275 MW of BESS. WPL then modeled each resource portfolio option (both existing and new resources) in AURORA across all five of the Blueprint’s planning scenarios and calculated the full net present value revenue requirement (“PVRR”) of each option within each planning scenario. Table 4 below shows the net PVRR of the four portfolio alternatives WPL studied under its five Blueprint futures over the planning period.

**Table 4: NPV PVRR for Years 2022 to 2056**

<b>Portfolio</b>	<b>Continuing Industry Change</b>	<b>Market Stagnation</b>	<b>New Regulation</b>	<b>Advanced Customers Technology</b>	<b>Accelerated Decarbonization</b>
BESS	\$12,819	\$12,622	\$16,117	\$11,794	\$14,561
Wind	\$11,474	\$11,189	\$13,609	\$10,620	\$13,291
CCS	\$13,272	\$13,086	\$16,678	\$12,268	\$15,002
RICE	\$12,909	\$12,697	\$16,340	\$11,969	\$14,723
<b>Delta to "BESS"</b>					
<i>Wind</i>	<i>(\$1,345)</i>	<i>(\$1,432)</i>	<i>(\$2,508)</i>	<i>(\$1,174)</i>	<i>(\$1,269)</i>
<i>CCS</i>	<i>\$453</i>	<i>\$464</i>	<i>\$561</i>	<i>\$474</i>	<i>\$441</i>
<i>RICE</i>	<i>\$89</i>	<i>\$76</i>	<i>\$223</i>	<i>\$175</i>	<i>\$162</i>

As shown above, the BESS Portfolio is expected to meet WPL’s capacity and energy requirements in a cost-effective manner in comparison to the alternatives. Although the modeling identified the Wind Portfolio as having a lower revenue requirement, WPL chose to pursue the

BESS Projects at this time to diversify its portfolio and meet near-term capacity requirements. In order to match the 275 MW of year-round accredited capacity modeled in the BESS Portfolio, WPL modeled the Wind Portfolio to include 1,032 MW of Wisconsin wind, based on how these resources are expected to be accredited by MISO. This volume of wind energy is not feasible to install in the timeframe that WPL needs firm capacity and dispatchable energy, particularly given the limited number of Wisconsin wind resources that have advanced through the MISO generator interconnection queue and the restrictions in the Wind Energy Systems siting rules in Wis. Admin. Code ch. PSC 128. However, WPL expects wind (along with other generation resources) to be an important component of its future resource plans and, as shown in Confidential Figure 4 below, 



WPL also chose to pursue the BESS Projects over the combined cycle with carbon capture and sequestration alternative given the appreciably higher cost of CCS in comparison to BESS as well as the lack of feasible technology to install in the near term. Lastly, although the RICE alternative was relatively comparable in overall revenue requirement across the futures studied, BESS provides an efficient near term capacity solution which has the potential to be further complemented from a resource portfolio perspective by the installation of RICE or other resources in the future. Confidential Figure 4 below shows WPL's winter supply-demand balance, with current expected coal plant retirement end dates, with the addition of the BESS Portfolio. Note that the 275 MW of near-term battery storage additions referenced in this application are highlighted with hatched shading.

**CONFIDENTIAL Figure 4: WPL Winter Supply-Demand Balance – Current Retirement End Dates and BESS Portfolio Addition**



5. Analysis of Energy Efficiency/Demand-Side Options and PPAs

Demand-side resources serve resource adequacy needs by reducing load, which may reduce the need for additional energy generation. Typically, these resources result from one of two methods of reducing load: (1) energy efficiency; or (2) demand response/load management. WPL’s base modeling included its long-standing interruptible demand side resources, and WPL’s load forecast incorporated its energy efficiency efforts as a reduction to load. WPL’s updated AURORA modeling also included 50 MW of demand-side management (“DSM”) between now and 2030 in accordance with WPL’s prior analyses and its Blueprint.

Neither energy efficiency nor demand response are viable alternatives to the BESS Projects. While energy efficiency technologies can reduce energy use and are generally recognized through

lower net load forecasts (and therefore lower obligations), they do not directly receive any capacity accreditation from MISO. Thus, energy efficiency technologies are not a viable option to address WPL's capacity needs, regardless of the progress WPL has made or expects to make on its energy conservation and efficiency programs.

Although demand response/load management may receive capacity accreditation from MISO, it is not yet a viable solution to WPL's capacity shortfall. Demand response/load management encourages consumers to reduce their electricity consumption, particularly during times of high demand, and commonly involves reduced service during these times. WPL's existing interruptible rate credits, which are available to WPL's large commercial and industrial customers, enable the curtailment of load based upon reliability or economic conditions.<sup>27</sup> Building upon that program, WPL recently launched three demand response programs, branded as Alliant Energy Smart Hours.<sup>28</sup> Alliant Energy Smart Hours has the potential to achieve up to 6 MW of demand response as soon as next year, at the planned participation levels, and signifies a large step towards WPL's goal to implement at least 50 MW of demand response by 2030. While WPL will continue to develop its demand response alternatives, demand-side resources are not a viable option to timely meet its capacity need.

WPL also believes that construction and ownership of the BESS Projects is more beneficial than obtaining capacity on the market or entering into a PPA. As detailed above, the recent MISO planning resource auction results indicate the scarcity of capacity resources for short-term purchase in MISO's North and Central regions and emphasizes the need for new capacity and to protect

---

<sup>27</sup> See WPL Tariff Volume III, 22nd Revision, Sheet No. 7.60, Amendment 541, Schedule Cp-INT, PSCW Authorization Docket 6680-UR-123, Dated 12/22/2021.

<sup>28</sup> 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, all of which were approved in the Applicant's last rate proceeding. See *Application of Wisconsin Power and Light Company for Authority to Adjust Electric and Natural Gas Rates*, Docket No. 6680-UR-123, *Final Decision*, at 14 (Dec. 22, 2021) (PSC REF#: 427760).

customers from risks of relying on market-capacity purchase options. Additionally, the BESS Projects will take advantage of the existing transmission interconnection and land rights of the co-located solar projects allowing for cost-effective and timely interconnection of resources. Moreover, a PPA would deprive utility customers of additional benefits of utility ownership, such as the benefit of avoided future site development costs and the advantage of future technology improvements in energy storage.

#### **IV. ITCs AND ANNUAL REVENUE REQUIREMENT IMPACTS**

As noted above, WPL expects Grant County BESS to qualify for ITCs at the forty percent level and Wood County BESS to qualify for ITCs at the thirty percent level. Further, the IRA provides the opportunity to (1) elect out of normalization for stand-alone BESS ITCs and (2) provides the ability to transfer ITCs to third parties.

If a utility does not transfer the ITCs to a third party, regardless of the opportunity to elect out of normalization, any ITCs retained at the utility will be subject to tax credit ordering rules before a utility would be able to monetize the ITCs. WPL currently plans to transfer ITCs associated with stand-alone BESS. Transferring the stand-alone BESS ITCs affords the opportunity to return the ITCs to customers through rates more expeditiously. WPL anticipates that a market for ITCs will develop over time as the ITCs enabled by the provisions of the IRA are generated. WPL further anticipates that funding generated through transferability will result in a discount to full value as WPL and other transferors in the market seek to entice potential transferees to purchase the credits, but that the net benefit to customers will be positive relative to the carrying costs associated with maintaining credit carryforwards. WPL will address the provision of benefits to customers of the ITCs in future rate reviews, but currently anticipates proposing to return the net benefit of the ITCs through revenue requirement during the early years of the BESS Projects' useful lives when the revenue requirement impacts of the projects are otherwise at their highest.

WPL estimates the annual retail revenue requirements of the BESS Projects to be between one and three percent of annual retail revenue at current rates. The actual revenue requirement impacts will vary by year and are dependent, in part, upon decisions about the timing of return of ITC benefits through rates.

**V. THE COMMISSION SHOULD REOPEN AND AMEND THE FINAL DECISION TO INCLUDE APPROVAL OF THE BESS PROJECTS.**

In the Wood County Solar and Gant County Solar CPCN proceedings, the Commission considered the land impacts associated with the solar projects at those locations.<sup>29</sup> With its companion petitions to reopen those CPCN Final Decisions, WPL is informing the Commission of the siting impacts associated with locating the BESS Projects on land within the same study area identified for each of the solar projects. In each of those petitions, WPL requests that the Commission reopen the proceeding for the limited purpose of analyzing those impacts and modifying the respective CPCN Final Decisions to incorporate each of the BESS Projects into the scope of the Commission's approval for each facility site.

In this proceeding, the Commission originally examined WPL's capacity and energy needs and the economic and other benefits of installing the Solar Projects. With this petition, WPL is updating the Commission on changes impacting its capacity and energy needs and offering additional information and analyses as to why the Commission should authorize WPL to construct, own, and operate the BESS Projects to meet a portion of those needs.

As explained above, WPL's planning analysis shows that this petition for authority to construct, own, and operate Grant County BESS and Wood County BESS meets applicable regulatory requirements and is in the public interest. WPL's capacity shortfall supports the need for

---

<sup>29</sup> See *Application for Wood County Solar Project, LLC*, Docket No: 9803-CE-100, *Final Decision*, at 20-28 (Mar. 4, 2021) (PSC REF#: 406282); see also *Application for Grant County Solar, LLC*, Docket No: 9804-CE-100, *Final Decision*, at 24-32 (May 14, 2021) (PSC REF#: 9804-CE-100).

new capacity and WPL's alternative generation analysis supports the BESS Projects as an economical means by which WPL can feasibly meet its near-term capacity requirements. Therefore, the approval WPL is requesting in this petition will not substantially impair the efficiency of WPL's service; provide facilities unreasonably in excess of probable future requirements; or add to the cost of service without proportionately increasing the value or available quantity of service.<sup>30</sup>

To the extent required, and for similar reasons, the construction and operation of the BESS Projects will satisfy the reasonable needs of the public for an adequate supply of electric energy.<sup>31</sup> WPL also believes that approval of the BESS Projects is in the public interest considering alternative sources of supply, engineering, economic, safety, reliability, and environmental factors.<sup>32</sup> As explained in Section III, WPL evaluated a variety of replacement resources as part of its planning analysis, and believes that the BESS Projects are a cost-effective strategy for WPL to meet its capacity needs.

In addition, the Energy Priorities Law generally establishes priorities for resources needed to meet energy demands to the extent that it is technically and economically feasible to do so.<sup>33</sup> Battery energy storage systems are not specifically identified in the list of resources, and the BESS Projects are being proposed more to meet capacity, rather than energy, demands. Regardless, to the extent consideration of this provision is required, the BESS Projects are consistent with the Energy Priorities Law since they are most akin to non-combustible renewable energy resources, and it is not cost effective or technically feasible to meet WPL's capacity needs with higher priority resources.

---

<sup>30</sup> See Wis. Stat. § 196.49(3)(b).

<sup>31</sup> See Wis. Stat. § 196.491(3)(d)2. The criteria of the CPCN statute is generally inapplicable to CA applications; however, in light of the concurrent reopener CPCN applications associated with this docket, WPL is addressing these criteria and believes that this application satisfies the need whether analyzed under Wis. Stat. § 196.49 or Wis. Stat. § 196.491.

<sup>32</sup> See Wis. Stat. § 196.491(3)(d)3.

<sup>33</sup> See Wis. Stat. §§ 1.12 and 196.025(1).

Finally, approving the BESS Projects will not have a material adverse impact on competition in the relevant wholesale market.<sup>34</sup> The petition requests authority for the Commission to reopen this docket and amend the Final Decision to grant WPL approval to construct, own, and operate 175 MW of BESS at the Grant County Solar and Wood County Solar sites. The energy stored in the BESS will be offered into the MISO wholesale market, which has a total of approximately 175,000 MW of installed generation capacity, including over 15,000 MW of installed generation capacity in MISO Zone 2 (eastern Wisconsin and the Upper Peninsula of Michigan). Given the small size of the BESS Projects compared to the significant amount of installed capacity in MISO and its inability to generate electricity, the addition of this resource will have minimal effect on wholesale competition.

## **VI. CONCLUSION**

The Commission has jurisdiction to alter or amend any of its Final Decisions and to “reopen any case following the issuance of an order in the case, for any reason.” Wis. Stat. § 196.39(1). For the reasons stated above, WPL respectfully requests that the Commission reopen the proceeding for the limited purpose of analyzing the addition of the BESS Projects to WPL’s resource portfolio and modify the Final Decision and issue any other authorizations or approvals the Commission may require to permit WPL to construct, own, and operate the BESS Projects as described in this petition.

Respectfully submitted this 30th day of September 2022.

*/s/ Michael S. Greiveldinger*

\_\_\_\_\_  
Michael S. Greiveldinger  
Director, Regulatory & Wholesale Customer Affairs  
Wisconsin Power and Light Company  
4902 North Biltmore Lane  
Madison, Wisconsin 53718  
MichaelGreiveldinger@alliantenergy.com  
608.458.3318

---

<sup>34</sup> See Wis. Stat. § 196.491(3)(d)7.