Application of Wisconsin Power and Light Company for a Certificate of Authority to Acquire, Construct, Own, and Operate Six Solar Electric Generating Facilities, known as the Albany, Beaver Dam, Cassville, Paddock, Springfield, and Wautoma Projects, to be located in Green, Dodge, Grant, Rock, and Waushara Counties, Wisconsin

Docket No. 6680-CE-183

Application for Approval of Affiliated Interest Agreements Related to Wisconsin Power and Light Company's Ownership and Operation of Solar Projects

Docket No. 6680-AE-121

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I. INTRODUCTION

Wisconsin Power and Light Company (WPL or the Company), a public utility subsidiary of Alliant Energy, 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 submits this application for a Certificate of Authority (CA) from the Public Service Commission of Wisconsin (Commission) to acquire, construct, own, and operate six new utility-scale solar generation projects in Wisconsin, which have a collective nameplate capacity of 414 megawatts (MW) (Application or CA II). These projects include: the Albany project (50 MW, Green County), the Beaver Dam project (50 MW, Dodge County), the Cassville project (50 MW, Grant County), the Paddock project (65 MW, Rock County), the Springfield project (100 MW, Dodge County), and the Wautoma project (99 MW, Waushara County) (collectively, the Solar Projects).

Last year, WPL filed a similar request with the Commission, seeking authority to acquire, construct, own, and operate 675 MW of new solar generation in Wisconsin (CA I). That request was the product of an extensive, multi-year resource planning process that called for the retirement of WPL's existing coal-fired generating units and the replacement those units with new utility-scale solar generation by 2023. This Application builds on CA I by seeking authority from the Commission to develop and place in-service by 2023 the balance of WPL's capacity and energy need with the Solar Projects described herein.

As noted in CA I, WPL conducted an extensive resource planning process between 2019 and 2021, during which it sought and received feedback from stakeholders representing a variety of constituencies in Wisconsin's energy sector. WPL launched its enhanced resource planning process to consider, among other things, upcoming expenditures necessary for the continued

operation of its coal-fired generating units. WPL's process used up-to-date tools that model WPL's participation in the Midcontinent Independent System Operator (MISO) markets and considered a wide range of plausible future scenarios and alternative resources to meet the future energy and demand needs of WPL's customers.

The results of this process demonstrated that, compared to a base case portfolio (Base Case),[1] it is more economical and cost effective for WPL's customers for WPL to advance the previously planned retirement of its remaining coal-fired generating units at the Edgewater Generating Station (Edgewater 5) and the Columbia Generating Station (Columbia 1 and Columbia 2), and install more sustainable and cost competitive renewable generation. Based on this result, WPL developed its Clean Energy Blueprint resource plan (Blueprint), its preferred plan to benefit customers, which includes: retiring the Edgewater 5 generating unit by the end of 2022; retiring Columbia 1 and Columbia 2 by the end of 2023 and 2024, respectively; serving customers with capacity and energy from 1,089 MW of new utility-scale solar generation installed in Wisconsin by the end of 2023; and installing distributed solar and battery storage resources in the communities WPL serves.[2]

[1] The "Base Case" essentially reflects a "status quo" state of affairs in which WPL continues operating its current generation fleet under existing planning assumptions. It should not be confused with the various "future scenarios" that WPL developed as part of its modeling of the Blueprint, which are discussed in further detail below.

[2] As initially presented in CA I, the Blueprint called for the retirement of Columbia 1 and Columbia 2 by the end of 2027. However, at the time WPL filed CA I, it and the other co-owners (Wisconsin Public Service Corporation (WPSC) and Madison Gas and Electric Company (MGE)) had not definitively determined when the Columbia units would be retired. WPL and the Columbia co-owners subsequently announced their intent to retire Columbia Unit 1 by the end of 2023 and Unit 2 by the end of 2024. Accordingly, WPL has updated the Blueprint in this Application to reflect these new retirement dates. As described in further detail below, these new retirement dates do not materially change WPL's need for new solar generation by 2023 or the overall customer benefits of the Blueprint. WPL also updated the assumptions underlying its planning analysis to account for (among other things) an increase in the MISO planning reserve margin requirement, which increased the amount of new solar generation to be installed by 2023 pursuant to the Blueprint from 1,025 MW (as presented in CA I) to 1,089 MW, and updated cost assumptions for new solar generation.

Implementing the Blueprint will result in substantial avoided costs and other benefits for WPL's customers. Transitioning from coal generation toward renewable resources will allow WPL to take advantage of federal tax credits for new renewable resources before they phase down while avoiding capital and operations and maintenance (O&M) expenses WPL would otherwise incur if it continued under the Base Case. The plan also enhances system resiliency by reducing dependence on fuel supply chains and mitigates exposure to unexpected costs, such as those associated with unplanned maintenance outages. The Blueprint also benefits customers in a wide variety of potential future scenarios: based on the analyses that WPL performed, implementing the Blueprint is expected to enable WPL's customers to avoid approximately $1.6 billion to $6.3 billion in net costs over WPL's resource planning horizon, depending on the scenario studied.[3] Increasing the portion of energy WPL produces from renewable sources will also help WPL and its customers meet carbon-free and sustainability goals.

The Solar Projects described in this Application reflect the second tranche of solar generation that WPL is seeking to place in-service by 2023, in accordance with its Blueprint. WPL proposes to own and operate the Solar Projects through a tax equity partnership structure that is virtually identical to the structure presented in CA I. A tax equity partnership presents a more cost-effective mechanism of financing the Solar Projects than traditional utility ownership. A tax equity partnership will allow WPL's customers to share the costs of the Solar Projects with an

[3] The net avoided costs referenced here reflect the difference between the total nominal modeled revenue requirement associated with WPL's generation fleet from 2022 to 2055 under the Blueprint, and the total modeled revenue requirement associated with WPL's generation fleet over the same time period under the Base Case in each of the five planning scenarios WPL studied. For example, in a planning scenario reflecting long-term economic stagnation, the modeled total revenue requirement for generation in the Base Case was approximately $30 billion, compared to $27.2 billion with the Blueprint—a decrease of approximately $2.8 billion. On a present value revenue requirement (PVRR) basis, the Blueprint generates avoided costs that range from approximately $88 million to $1.1 billion across the five planning scenarios WPL studied.

investment partner for ten years or less, while ensuring that customers receive energy, capacity, and renewable energy credit benefits from the projects. WPL expects that it will purchase the tax equity partner's interest in the Solar Projects within ten years of operation, and then convert to a traditional ownership structure for the remainder of the useful life of the projects. Under this arrangement, WPL customers can expect to avoid approximately $113 million in nominal costs that would otherwise be incurred if WPL developed the projects entirely under a traditional ownership structure.[4]

WPL is a Wisconsin public utility engaged in providing electric service to the public under Wis. Stat. § 196.01(5)(a), and therefore, requires certain approvals before acquiring, constructing, owning, and operating these projects. Accordingly, pursuant to Wis. Stat. §§ 196.02, 196.49, 196.52, and 196.795; Wis. Admin. Code chs. PSC 4 and 112; and any other rule or law that the Public Service Commission of Wisconsin (Commission) deems applicable, WPL requests that the Commission grant WPL a Certificate of Authority to acquire, construct, own, and operate the Solar Projects; approve the affiliated interest agreements that are necessary to own and operate the Solar Projects in connection with the tax equity partnership arrangement described herein; and issue any other authorizations or approvals the Commission may require to permit WPL to acquire, construct, own, and operate the Solar Projects as described in this Application.[5] WPL requests that the Commission issue this order no later than January 31, 2022,

[4] WPL's avoided cost estimate of approximately $1.6 billion to $6.3 billion for the Blueprint reflects the use of the tax equity partnership financing mechanism. On a PVRR basis, WPL customers can expect to avoid approximately $59 million in costs compared to WPL developing the Solar Projects under a traditional ownership structure.

[5] WPL will address any issues that arise from the Commission's decision on CA I in testimony, as necessary.

to enable it to construct and place the Solar Projects in service on a timeline that will enable them to qualify for the maximum, 30 percent value of the ITC.

II. PROJECT DESCRIPTION AND OVERVIEW

WPL's Clean Energy Blueprint shows that advancing WPL's transition from coal-fired generation to additional solar resources will avoid billions of dollars in costs customers would otherwise incur through 2055. This is due in part to the costs required to continue to safely and reliably operate coal generation compared to the costs of solar generation. For example, to continue providing energy and capacity to WPL's customers, Edgewater 5 was expected to need over $200 million in capital and O&M expenses from 2021 through 2026, and both Columbia units were expected to need nearly $350 million in capital and O&M expenses, respectively, over that same timeframe.

At the same time, since 2010, the installed cost for utility-scale solar photovoltaic generation has fallen by almost 60 percent, on a dollar-per-watt basis, due to economies-of-scale in manufacturing, technological improvements, and the development of more experienced and trained installers.[6] Likewise, the levelized cost of energy from utility scale solar generation facilities fell by almost 90 percent between 2009 and 2019.[7] In addition, federal law provides an investment tax credit (ITC) for qualifying solar energy systems that are placed into service in a taxable year.[8] The ITC provides a tax credit on the capital cost of qualifying commercial solar

[6] *See* Solar Energy Industries Ass'n, *Photovoltaics*, *available at* https://www.seia.org/initiatives/photovoltaics (last accessed Jan. 26, 2020); Mark Bolinger & Joachim Seel, Lawrence Berkeley National Laboratory, *Utility-Scale Solar: Empirical Trends in Project Technology, Cost, Performance, and PPA Pricing in the United States*, at 15 (2018), *available at* https://emp.lbl.gov/sites/default/files/lbnl_utility_scale_solar_2018_edition_report.pdf.
[7] *See* Lazard, *Lazard's Levelized Cost of Energy Analysis - Version 13.0*, at 7 (Nov. 2019), *available at* https://www.lazard.com/media/451086/lazards-levelized-cost-of-energy-version-130-vf.pdf.
[8] *See* 26 U.S.C. § 48.

systems, which varies depending on when construction begins on the solar system and when that system is placed into service.[9] The maximum value of the ITC is 30 percent of eligible project costs and is available to projects that satisfy certain eligibility criteria and are placed in service by December 31, 2023. All the projects WPL is proposing in this Application are expected to qualify for the maximum ITC value. As explained in Section V, the tax equity partnership will further reduce the cost of the Solar Projects to customers by more efficiently utilizing these tax benefits.

A. Description of the Solar Projects

WPL requests Commission approval to join with a tax equity partner to own and operate six solar projects in Wisconsin known as: Albany, Beaver Dam, Cassville, Paddock, Wautoma, and Springfield. Figure 1 depicts the approximate megawatt size and geographic location of each Solar Project (as well as the CA I projects) on an overlay of WPL's retail electric service territory.[10] Five of the six Solar Projects (the Sub-100 MW Projects) are "self-developed" projects. WPL is securing land rights, conducting environmental assessments, procuring equipment, designing the project layout, and engaging in other development activities for each Sub-100 MW Project.

For the Springfield project, the project assets are currently held in a single-purpose, limited liability project company (Springfield Solar Farm, LLC or Developer ProjectCo) that is wholly owned by National Grid Renewables (National Grid).[11] WPL has executed a purchase and

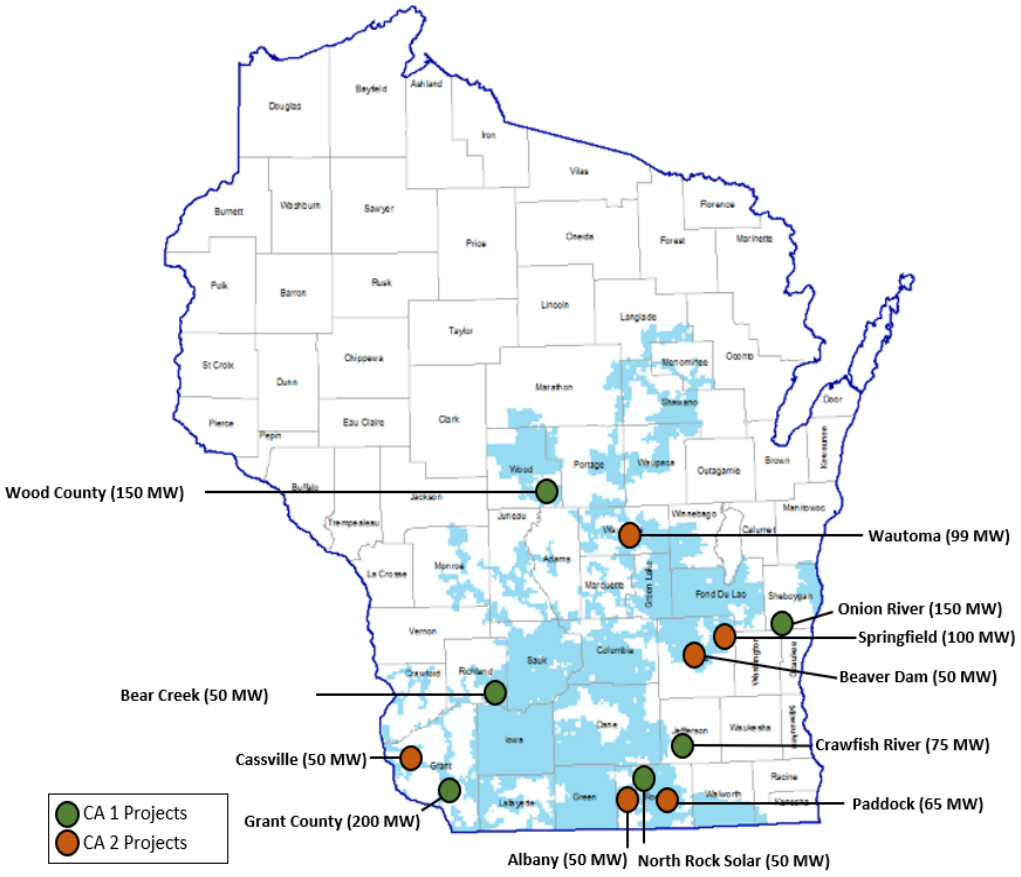
[9] *See* Internal Revenue Service, *Notice 2018-59: Beginning of Construction for the Investment Tax Credit Under Section 48*, *available at* https://www.irs.gov/pub/irs-drop/n-18-59.pdf (last accessed Jan. 26, 2020).

[10] Preliminary, conceptual layouts for the Solar Projects are included in Appendices C-2, D-2, E-2, F-2, G-2, and H.

[11] WPL notes that the assets for the Albany and Paddock projects were also previously held and single-purpose, limited liability companies. These project companies were prematurely dissolved prior to the Commission's ruling on this Application. In the CA I proceeding, the Commission approved the affiliated interest agreements for the dissolution of the CA I project companies, noting that there were "no concerns under the statutory standards for approval of these agreements" and that the "additional costs and complexities needed to maintain separate legal entities that are no longer required would not be in ratepayers' best interest." *See In Re Application for Approval of Affiliated Interest Agreements Related to Wis. Power and Light Co.'s Ownership and Operation of Solar Projects*,

sale agreement (PSA) with National Grid under which WPL will, at closing, acquire all the membership interests in the Developer ProjectCo and all rights and assets relating to the Springfield project. The transaction is subject to standard closing conditions, including a requirement that permits necessary for the development of the Springfield project (including the CPCN that National Grid has applied for and the CA that is the subject of this Application) have been issued.

Figure 1: Map of Solar Projects



Docket No. 6680-AE-120, *Interim Order*, at 8 (Jun. 8, 2021) (PSC REF#: 413298). Therefore, while the premature dissolution of these project companies had no effect on ratepayers, after consultation with Commission staff, WPL is requesting that the Commission retroactively approve these dissolutions, as discussed in Section III(C), *infra*.

More than enough land has been secured for the development, construction, and operation of each project. While many of these land contracts are long-term lease agreements or easements, WPL has negotiated or is negotiating options to purchase a small amount of land at all five Sub-100 MW Solar Projects. The majority of the Springfield project land has also been secured through purchase options. These purchase options bring additional value to WPL's customers because they provide the Company with more control and flexibility to repower the sites once the original equipment reaches the end of its depreciable life.[12]

Each project will consist of photovoltaic solar panels installed on a single-axis tracking system, which moves the panels on one axis of movement, aligned north and south. This setup allows panels to arc from east to west and track the sun as it rises and sets. The automatic solar tracker increases the efficiency of the solar panels by keeping the solar panels aligned with the direction of the sun. The projects are designed to route of the power generated from the solar panels to inverters, in order to convert the power from direct current (DC) to alternating current (AC) and allow for injection and use on the high-voltage transmission system; the generator interconnection agreement (GIA) for each Solar Project will also only provide interconnection service up to the facility's AC capacity. In addition to the solar modules and inverters, each project will involve construction and installation of additional equipment, including but not limited to: electric collector systems; step-up transformers; monitoring and communications equipment; access roads; a substation; and generation tie lines (as applicable). WPL intends to use its existing resources (operation centers and existing generation plants) for some of its storage needs at each

[12] The estimated cost to purchase land for the Solar Projects is approximately $20 million, although this is subject to change, as purchase agreements for certain projects are still under negotiation. As explained in Section V, WPL intends to sell the land to the tax equity partnership during the time the partnership owns the Solar Projects.

project. Maintenance staff will be located and dispatched from those same facilities. If it is determined that some form of property storage is needed at each site, WPL intends to use multiple metal storage containers (sea containers) to manage any additional storage needs.

Additional details concerning each of these projects are set forth below and in Table 1. With the exception of the Springfield Project, the other five Solar Projects are designed for nominal operation at less than 100 MW (the Sub-100 MW Projects) and will not require a Certificate of Public Convenience and Necessity (CPCN).[13] WPL has provided additional information concerning the technical, environmental, community, and land use impacts of these Sub-100 MW Projects in Appendices C through G of this Application. The Springfield Project is the subject of a separate CPCN proceeding before the Commission (Docket No. 9807-CE-100), and the Commission will have the opportunity to review its environmental, community, and land use impacts in that proceeding.

Table 1: Overview of Solar Projects

Project Name	Capacity (MWac)	Developer	Expected Commercial Operation Date	Estimated Cost[14]	
				($/kW)	Total ($M)
Albany	50	WPL	2023	$1,552	$78
Beaver Dam	50	WPL	2023	$1,483	$74
Cassville	50	WPL	2023	$1,539	$77
Paddock	65	WPL	2023	$1,436	$93
Springfield	100	National Grid Renewables	2023	$1,396	$140
Wautoma	99	WPL	2023	$1,398	$138
TOTAL	**414**			***Average:* $1,449**	**$600**

[13] As noted in Table 1, below, each Sub-100 MW Project is less than 100 MW on an AC basis. As discussed in Section III(A), the plain language of the CPCN Law, Commission precedent, and practical considerations all indicate that the AC capacity at which the Solar Projects are designed to operate is the appropriate metric to consider when determining whether the CPCN Law applies to that facility.

[14] Values may not sum due to rounding. The cost estimate excludes land purchase costs (currently estimated at $20 million for all projects), Allowance for Funds Used During Construction (AFUDC) (currently estimated at approximately $37 million for all projects), and transmission costs, which includes the cost for any transmission facilities or network upgrades on the high-side of the collector substation transformer.

1. Albany

The Albany Project will be a 50 MW solar project located in the Town of Decatur, Wisconsin, along the Green-Rock County line, just north of the City of Brodhead and southeast of the Village of Albany. The Project Area includes approximately 966 acres of land.[15] The project will consist of approximately 162,000 individual solar panels and is expected to generate approximately 110,000 megawatt-hours (MWh) of electricity each year.[16] On-site construction on the project is expected to commence by the second quarter of 2022, with commercial operation occurring by the fourth quarter of 2023.

2. Beaver Dam

The Beaver Dam Project will be a 50 MW solar project located in the City and Town of Beaver Dam and the Town of Burnett, in Dodge County, in an area bounded by County Trunk Highways A and B. The Project Area includes approximately 543 acres of land. The project will consist of approximately 164,000 individual solar panels and is expected to generate approximately 110,000 MWh of electricity each year. On-site construction is expected to commence by the second quarter of 2022 and commercial operation is expected by the fourth quarter of 2023.

[15] The "Project Area" covers all parcels on which Project facilities may be located, including the primary and alternate PV arrays, collector lines, substation, and gen-tie line, as applicable. Generally speaking, and as discussed in Section 5.3 of Appendices C-G, the acreage impacted by project facilities will be less than the acreage within the Project Area. Current project layouts are conceptual in nature and may change depending on each project's final detailed engineering design and panel and equipment selection.

[16] The number of panels is based on the primary facility array and may vary depending on final watt sizes for each panel and the final layout of each project.

3. Cassville

The Cassville Project will be a 50 MW solar project located in the Town of Cassville, Grant County, Wisconsin, east of State Highway 81 and north of State Highway 133. The Project Area includes approximately 490 acres of land. The project will consist of approximately 164,000 individual solar panels and is expected to generate approximately 112,000 MWh of electricity each year. On-site construction on this project is expected to commence by the second quarter of 2022 and commercial operation is expected to occur by the fourth quarter of 2023.

4. Paddock

The Paddock Project will be a 65 MW solar project located in the Town of Beloit, Rock County, Wisconsin, east of S. Brostuen Road, south of W. Creedy Road, and west of Nye School Road. The Project Area includes approximately 985 acres of land. The project will consist of approximately 210,000 individual solar panels and is expected to generate approximately 146,000 MWh of electricity each year. On-site construction is expected to commence by the second quarter of 2022, with commercial operation expected by the fourth quarter of 2023.

5. Springfield

The Springfield Project will be a 100 MW solar project that is being developed by a wholly-owned indirect subsidiary of National Grid Renewables (National Grid, formerly Geronimo Energy), which is headquartered in Minneapolis, Minnesota. National Grid has developed and operated over 2,200 MW of wind and solar energy projects in 16 different states, including throughout the Upper Midwest in Iowa, Minnesota, Michigan, North Dakota, and South Dakota.

The Springfield project is located in the Town of Lomira and the Village of Lomira, Dodge County, Wisconsin, west of Interstate 41 and east of County Highway Y. The Project Boundary

includes approximately 884 acres of land. The project will consist of approximately 300,000 individual solar panels and is expected to generate approximately 190,000 to 220,000 MWh of electricity each year. Commercial operation is expected to occur by the fourth quarter of 2023.

6. Wautoma

Finally, the Wautoma Project will be a 99 MW solar project located in the Town of Wautoma and City of Wautoma, Waushara County, Wisconsin, situated south of Highway 21, and along and west of Highway 22. The Project Area includes approximately 1,284 acres of land. The project will consist of approximately 318,000 individual solar panels and is expected to generate approximately 218,000 MWh of electricity each year. On-site construction of the project is expected to commence by the second quarter of 2022 and commercial operation is expected by the fourth quarter of 2023.

B. Capacity Factor and Accreditation

The blended average net capacity factor (NCF) for the above-identified projects is expected to begin at approximately 24 percent and decline slowly over time due to anticipated degradation of the solar panels from exposure to ultraviolet light and weather. MISO will accredit each project for use in meeting WPL's capacity requirements based on generation during summer peak hours.[17] Based on the expected output from the Solar Projects, WPL modeled approximately 70 percent capacity accreditation for each project, with that amount generally

[17] Initially a new solar project will receive accredited capacity equal to 50 percent of the maximum designed alternating current (AC) output capacity. *See* MISO, *Business Practice Manuals: BPM 011 - Resource Adequacy, Section 4.2.3.3.2* (eff. Dec. 15, 2020), *available at* https://www.misoenergy.org/legal/business-practice-manuals/. Once a minimum of 30 consecutive days' worth of historical summer peak data is available, the capacity accreditation is determined by the actual energy output during three hours of each day during the summer months: Hour Ending (HE) 15, 16, 17 EST during June, July and August.

declining over time to a base accreditation of 30 percent in 2040,[18] as well as an expected annual decline in output due to panel degradation.

C. Project Selection

These six projects, comprising 414 MW of new solar generation, represent the second tranche of the solar generation that WPL intends to add to its resource portfolio as outlined in the Blueprint resource plan. As explained in detail in Section IV below, through a comprehensive resource planning process, WPL identified utility-scale solar photovoltaic (PV) as an appropriate resource to meet its capacity and energy needs. WPL then sought to identify particular solar PV projects to meet those needs. WPL identified the Solar Projects as beneficial projects based on their:

- Attractive economics;
- Proximity to transmission infrastructure with sufficient injection capacity;
- Land acquisition status;
- Favorable topography and ability to avoid or mitigate environmental and/or community impacts;
- Ability to qualify for the maximum 30 percent ITC value;
- Ability to proceed on schedule to achieve full ITC benefits; and
- Advanced MISO queue position.

[18] MISO is currently in the process of analyzing its solar capacity accreditation requirements and has indicated (e.g. through the Renewable Integration Impact Assessment) that the value intermittent generation resources like solar and wind provide in reducing loss of load expectation declines as more intermittent resources are added to the system. WPL assumed decreasing solar accreditation consistent with planning scenario themes discussed in Section IV.

D. Construction, Operation, and Ownership of the Solar Projects

WPL intends to execute Engineering, Procurement, and Construction (EPC) agreements with qualified construction contractors to construct each of the Solar Projects. Construction at each project site will require limited grading of the existing land surfaces. Construction personnel will use conventional off-road construction equipment to install the solar panels and to construct each projects' substation. Dust will be controlled by watering and any tracking of soil onto public roads will be promptly cleaned up. Regarding drainage, WPL or its EPC contractor will work with each landowner to identify drain tile locations. Critical tiles that are damaged during construction will be repaired, as appropriate.

Construction will require managers, heavy equipment operators, licensed journeymen electricians, and laborers. WPL estimates that the Springfield Project will require approximately 100 to 200 workers on site during that project's peak construction period and will be staffed for ongoing operations and maintenance following commercial operation. For the Sub-100 MW Projects, WPL estimates approximately 150 workers will be required at each site during peak construction periods, with staffing for ongoing operations and maintenance at each site. Additional details regarding the facilities, equipment, and construction practices for each Sub-100 MW Project are provided in Section 2 of Appendices C-G of this Application.

As mentioned, WPL intends to initially own and operate the Solar Projects with one or more tax equity investors. At or around the time WPL and the investor(s) execute a term sheet, WPL will create a subsidiary (e.g., WPL Solar Holdings LLC) that will enter into various tax equity agreements with the investor(s) to jointly own the Solar Projects through a tax equity partnership agreement (LLC Agreement). WPL Solar Holdings LLC and each tax equity investor will also enter

into an Equity Capital Contribution Agreement that commits the tax equity investor to purchasing a membership interest in the partnership (subject to various closing conditions). After entering into these agreements, WPL will organize a set of affiliated limited liability companies (LLC): one that will be the direct owner of the Solar Project assets (the ProjectCos), and another that will directly own the ProjectCos (Project HoldCos). The Project HoldCos are the entity that is the "tax equity partnership" and will be governed by the LLC Agreement between a WPL subsidiary (e.g., WPL Solar Holdings LLC) and the tax equity partner.

Once each project is mechanically complete (i.e., within approximately three months of the commercial operation date (COD)),[19] WPL will transfer the assets and related liabilities of the Solar Projects to the ProjectCos. WPL will also sell the land that it purchased for the Albany, Cassville, Springfield, and Wautoma projects to the respective ProjectCos. Lastly, WPL will operate and maintain each project under an Operating and Maintenance Agreement with each ProjectCo, although it may subcontract certain responsibilities to other service providers.

After the tax equity partner earns its targeted return as agreed in the LLC Agreement (which is currently expected to occur seven to eight years after COD), WPL will have the option to buy out the tax equity partner's share in the project. If WPL seeks to exercise that option, it will request Commission approval at that time. Additional details concerning the nature, organizational structure, and agreements related to this tax equity arrangement are set forth in Section V. Appendix B to this Application depicts the ownership structure described above throughout the various stages of development, construction, and operation.

[19] Generally, a project reaches mechanical completion when it has been constructed in accordance with engineering specifications, startup and commissioning of all plant systems has been completed, and the project can be operated.

E. Expected Depreciable Life, Decommissioning, and Restoration

WPL expects that the Solar Projects will have a depreciable life of 30 years, based on the expected lifespan of the solar panels. This assumption is consistent with CA I and the Commission's recent approval of WPSC and MGE's application for a certificate of authority for the Badger Hollow and Two Creeks Solar Projects, which also assumed a 30-year economic life for those projects.[20] This expected depreciable life is reasonably attainable with adequate preventive maintenance, inspection, and an overhaul program for each project. Since WPL will own outright some of the land for some of the Solar Projects, the Company will have additional flexibility to repower those projects or add battery storage facilities on those sites in the future, while continuing the beneficial use of the Solar Projects' existing Generator Interconnection Agreement, substation equipment, roads and buildings, leasing arrangements, and siting studies, which will have already been paid for.

WPL has also considered both the economic and practical impacts of decommissioning the Solar Projects. WPL's decommissioning plans typically include removing the steel posts, racking and solar panels to at least 36 inches below grade, with the land then restored to its original condition. WPL expects to leave underground cables in place (roughly three feet below ground), unless otherwise required by local authorities. WPL will work with landowners to determine whether to leave the access roads on the project site intact. To restore the land to its original condition, the Company will decompact and replant areas where foundations and roads were once located. The Company will sell or dispose of removed equipment in accordance with

[20] *See In Re Joint Application of Wis. Pub. Serv. Co. and Madison Gas and Electric Co.*, Docket No. 05-BS-228, *Final Decision* at 10 (April 18, 2019) (PSC REF: 364436) [hereinafter, "*Badger Hollow I CA Proceeding*"].

applicable local, state, and federal law. A preliminary estimate of decommissioning the solar PV equipment for each of the Sub-100 MW Projects, net of scrap value, is presented in Appendices C-18, D-18, E-18, F-18, and G-18 of this Application.

III. REGULATORY FRAMEWORK AND REQUESTED AUTHORIZATIONS

For WPL to acquire and operate the Solar Projects in the manner proposed, WPL must obtain a variety of approvals from the Commission, including:

- a Certificate of Authority to own, operate, and construct the Solar Projects and to purchase the land for the Albany, Cassville, Springfield, and Wautoma projects at the cost, and with the accounting measures, described in this Application;[21]

- approval under Wis. Stat. §§ 196.52 and 196.795(5)(s) for WPL to sell the Solar Projects to the ProjectCos and thereby transfer an indirect ownership stake in the Solar Projects to a tax equity partner;

- approval under Wis. Stat. §§ 196.52 and 196.795(5)(r) for WPL to enter into affiliated interest agreements related to the ownership and operation of the Solar Projects through a tax equity partnership;

- a finding that WPL's acquisition of the Solar Projects complies with Wis. Stat. § 196.49(4) regarding the use of brownfields (to the extent the Commission believes this statutory provision applies to the Solar Projects described herein);

- a finding that WPL's acquisition of the Solar Projects is consistent with the Energy Priorities Law under Wis. Stat. §§ 1.12 and 196.025;

- a finding that the Commission's review and approval of WPL's acquisition of the Solar Projects complies with Wisconsin Environmental Policy Act (WEPA) requirements under Wis. Stat. § 1.11; and

[21] *See* Wis. Stat. § 196.49(3); Wis. Admin. Code § PSC 112.05(1). Before WPL acquires the Solar Projects, the projects will not be "public utility plant" under Wis. Stat. § 196.80 because they are currently owned by independent, third-party developers (i.e., the projects will be non-public utility wholesale merchant plants). *See In Re Joint Application of Wis. Pub. Serv. Corp., Wis. Power and Light Co., and Madison Gas and Electric Co.*, Docket No. 05-BS-226, at 5-7 & FN.3 (Mar. 20, 2018) (PSC REF#: 339856) (citing cases). Accordingly, the Commission should evaluate WPL's initial acquisition of the Solar Projects under the CA statute, which requires a public utility to obtain Commission approval before constructing, installing, operating, extending, improving, or adding to its existing plant. *See* Wis. Stat. §§ 196.49(2), (3).

- a finding that WPL's acquisition of the Solar Projects will not affect any historic properties under Wis. Stat. § 44.40 or any threatened or endangered species under Wis. Stat. § 29.604.

A. Certificate of Authority

Under the Certificate of Authority statute, the Commission may refuse to certify the Solar Projects if it appears they will do any of the following:[22]

1. Substantially impair the efficiency of WPL's service;
2. Provide facilities unreasonably in excess of probable future requirements; or
3. When placed into operation, add to the cost of service without proportionally increasing the value or available quantity of service.

In recent proceedings regarding similar requests by public utilities to acquire utility-scale solar projects being constructed by independent developers, the Commission also addressed whether the acquisition satisfied the need-related criteria under the CPCN statute.[23] The need-related criteria in the CPCN statute are[24]:

1. The proposed project satisfies the reasonable needs of the public for an adequate supply of electric energy;
2. The design and location of the project is in the public interest considering alternative sources of supply, engineering, economic, safety, and reliability factors; and
3. The project will not have a material adverse impact on competition in the relevant wholesale market.

As described in further detail below, the planning analysis that supports this Application demonstrates that implementing the Blueprint is expected to avoid billions of dollars of costs through 2055. The Solar Projects for which WPL requests approval in this Application are one of

[22] Wis. Stat. § 196.49(3)(b); Wis. Admin. Code §§ PSC 112.05(1); 112.07(1).
[23] *See Badger Hollow I CA Proceeding*, at 4-5, 6-10; *In Re Joint Application of Madison Gas and Electric Co. and Wis. Electric Power Co.*, Docket No. 05-BS-234, *Final Decision*, at 5-6 (Mar. 6, 2020) (PSC REF#: 385279) [hereinafter "*Badger Hollow II CA Proceeding*"].
[24] *See* Wis. Stat. §§ 196.491(3)(d)2., 3., 7.

the steps WPL is taking to implement the Blueprint and deliver these long-term benefits to customers while maintaining or improving the reliability, sustainability, and flexibility of WPL's generation fleet. For these reasons and those explained in Section IV below, the Commission should find that WPL's acquisition and operation of the Solar Projects satisfies the need-related criteria in the CA and CPCN statutes.

WPL requests that the Commission issue a Certificate of Authority authorizing it to acquire, construct, install, and place in operation the proposed Solar Projects, at a total estimated capital cost of approximately $620 million (calculated without AFUDC or transmission costs), which includes an estimated $600 million in construction costs and an estimated $20 million in land purchase costs.[25] Since WPL intends to finance approximately 35 to 45 percent of the Solar Projects' estimated construction costs (excluding land acquisition costs) with capital from a tax equity partner, WPL requests authorization to include in rate base up to $410 million, plus AFUDC, subject to Commission review and audit in a future rate proceeding. Additional details regarding this request and the accounting treatment WPL proposes to apply to the Solar Projects is available in Section VI. In addition, for the Springfield Solar Project, WPL agrees to be bound by any conditions the Commission imposes on National Grid as part of the Springfield CPCN proceeding.[26]

WPL notes it need only obtain a CA for each of the Sub-100 MW Projects because each project's nameplate capacity is less than 100 MW_{AC}. A person must apply for and obtain a CPCN

[25] Transmission costs excluded from this estimate include the cost of any facilities on the high-side of the collector substation transformer, such as generator tie-lines or other network upgrades that may be required pursuant to each project's generator interconnection agreement.

[26] *See, e.g.*, *Badger Hollow I CA Proceeding*, at 17-18, 22; *Badger Hollow II CA Proceeding*, at 16-17, 23.

from the Commission prior to commencing construction on any "large electric generating facility."[27] A "large electric generating facility" means "electric generating equipment and associated facilities designed for nominal operation at a capacity of 100 megawatts or more."[28] While the Legislature did not specify whether a generating facility's AC or DC capacity is the relevant metric for purposes of applying the 100 MW threshold, the plain statutory language and practical considerations all indicate that the AC capacity at which a solar electric generating facility is designed to operate is the appropriate metric to consider when determining whether the CPCN Law applies to that facility.

Each of the Sub-100 MW Projects' "generating equipment *and associated facilities*" are "designed for" nominal operation at less than 100 MW_{AC}. The only power generating component of the Solar Projects is the solar panels themselves (i.e., the "generating equipment"), which produce electricity in DC. The electricity generated from the panels is then routed to inverters (i.e., the "associated facilities"), where it is converted into AC before being injected onto the transmission system for use in homes and businesses throughout the state. The design of the inversion system limits the generating capacity of each Solar Project to its AC rating (which, as noted, is less than 100 MW for each Solar Project, except Springfield). Moreover, the GIAs for each of the Solar Projects will limit the amount of interconnection service they can utilize to their AC rating. For example, the GIA for the Wautoma project explicitly limits that project's operation to 99 MW_{AC} In other words, the "generating equipment and associated facilities" for the Sub-100

[27] Wis. Stat. § 196.491(3)
[28] *Id.* § 196.491(1)(g).

MW Projects are designed to operate at less than 100 MW, meaning they are not subject to the CPCN Law.[29]

For these reasons, each Sub-100 MW Project's AC capacity rating is the relevant metric for determining the applicability of the CPCN Law. And since each project is designed for nominal operation at less than 100 MW_{AC}, no CPCN is required for the Sub-100 MW Projects.

B. Transfer Ownership Interests to Tax Equity Partnership

As noted, at the time the Solar Projects are mechanically complete, WPL intends to transfer the assets for each Solar Project to the ProjectCo.[30] This asset transfer will include the land that WPL intends to purchase outright for all six Solar Projects. Because these transactions will involve transfers between WPL and its affiliates, they cannot proceed unless the Commission finds that the proposed transactions are reasonable and in the public interest;[31] that the partnership will compensate WPL at fair market value for the project assets; and that the transfer of the project assets will not result in unjust discrimination against, or have an anticompetitive effect on, any competitor of the partnership.[32]

[29] This interpretation is also consistent with the Commission's previous holding that "it is not the actual level of operation that is relevant. Instead, it is what the project is 'designed for' that controls." *See In Re Application of Highland Wind Farm, LLC*, Docket No. 2535-CE-100, *Final Decision on Reopening*, at 8-9 (Oct. 25, 2013) (PSC REF#: 192339) ("The plain meaning of the statutory language anticipates jurisdiction based upon design values established by the facility's rating, not an estimate of power production based on assumptions of actual operation."). As discussed above, the inverters at each Solar Project are designed to convert electricity generated from the panels from DC to AC before that electricity is injected onto the grid for customer consumption. Therefore, each of the Sub-100 MW Projects is "designed for" operation at less than 100 MW.

[30] An organizational chart illustrating the relationship between WPL, the Project HoldCo, and the ProjectCo for each Solar Project is provided in Appendix B to this Application.

[31] *See* Wis. Stat. §§ 196.52.

[32] *See* Wis. Stat. § 196.795(5)(s). This provision does not apply to contracts or arrangements for the sale, lease, or transfer of real property between a public utility affiliate and a nonutility affiliate. Instead, such transfers can only be made "by public sale or offering to the highest qualified bidder." Wis. Stat. § 196.795(5)(k)1. WPL's sale of land to the ProjectCos for the Solar Projects will comply with this requirement, as set forth in Section V.

Several of the agreements governing the tax equity partnership are unlikely to be finalized until at earliest six to 12 months prior to COD;[33] thus, aside from several agreements that are *pro forma* in nature, WPL is not proposing specific agreements for approval at this time. However, WPL has engaged in discussions with several tax equity investors and expects to identify a range of commercial terms with which the subsequent agreements will align. These terms and their impacts are explained in greater detail in Section V below.

WPL will work to ensure that the commercial terms of the tax equity partnerships it executes for these Projects will fall within the range of terms represented in this proceeding. In Section VI, WPL demonstrates that tax equity financing will generate substantial benefits for customers, relative to a traditional utility ownership model. Therefore, WPL requests that the Commission find that it is in the public interest for WPL to acquire, finance, own, and operate the Solar Projects through the tax equity partnerships described in this Application, on the condition that the material commercial terms governing those partnerships will fall within the range of terms presented in this proceeding. Once the agreements governing the tax equity partnerships for each Solar Project are finalized and executed, WPL will file those agreements with the Commission. This will allow the Commission to verify that the material commercial terms of those agreements are consistent with the terms that it reviewed at as part of this proceeding and issue final approval of the executed agreements.

[33] Much like a bank refinancing a home mortgage may only be willing to "lock in" (i.e., commit) to a fixed rate for 60 to 75 days after an initial agreement, a tax equity investor is unwilling to make a financial commitment to the partnership with no expiration date, as such a commitment starts creating regulatory costs for the investor to ensure that it will have sufficient funding to meet its commitment. Because of the additional complexities in forming the partnership and doing adequate due diligence of a renewable energy project, such commitment typically does not occur until six to 12 months prior to COD.

C. Affiliated Interest Agreements

The proposed tax equity structure will also require WPL to execute several agreements related to the assignment and sale of the Solar Project assets to and from WPL and the ProjectCo[34]; the operation of the Solar Projects; the market hedge of energy revenue from the Solar Projects; the sale of capacity and renewable energy credits from the Projects; and the sale of land from WPL to the ProjectCo for those projects for which WPL exercises the option to purchase land.[35] The ProjectCo, the Project HoldCo, and WPL Solar Holdings LLC will be the counterparties to those agreements and WPL's "affiliated interests."[36] Accordingly, the Commission must find that the agreements are "reasonable and consistent with the public interest" and approve the agreements in writing before they become effective.[37] For those agreements under which WPL will permit affiliated interests within the tax equity structure to use the services of its employees, the Commission must also find that those affiliates: (1) will compensate WPL at fair market value for use of those services; and (2) use of those services will not have an anticompetitive impact on any of the affiliate's competitors.[38]

Again, some of these affiliated interest agreements are not yet finalized. This is because many of these agreements will need to involve the tax equity investor(s) with whom WPL partners for each Solar Project. Accordingly, WPL does not expect to finalize the affiliated interest

[34] As noted previously, *see supra* Section II(A), the assets for the Albany and Paddock projects were previously held in single-purpose, limited liability companies, which were prematurely dissolved prior to the Commission's ruling on this Application. Therefore, in addition to authorizing the affiliated interest agreements associated with the dissolution of Springfield Solar Farm, LLC, WPL is also requesting the Commission to retroactively approve dissolution of the project companies for the Albany and Paddock projects.
[35] These agreements are described in further detail in Sections II(D) and V of this Application.
[36] *See* Wis. Stat. § 196.52(1)(h) (affiliated interest of a public utility includes "any person[,] 5 percent or more of the securities of which are directly or indirectly owned by a public utility").
[37] *See* Wis. Stat. § 196.52(3)(a).
[38] *See* Wis. Stat. § 196.795(5)(r).

agreements until six to 12 months before the COD for each Solar Project. That said, this proceeding will outline the material commercial provisions associated with these agreements, as well as a defined range of potential commercial terms for each of those provisions.

Since these affiliated interest agreements have not yet been finalized, WPL requests that the Commission's approval of these agreements mirror the approach described in Section III(B). Specifically, WPL requests that the Commission find that the affiliated interest agreement terms described in this proceeding are reasonable and in the public interest, with the understanding and on the condition that the material commercial terms governing those agreements will fall within the range of terms described in this proceeding. WPL will file these affiliated interest agreements with the Commission once they are finalized and executed, which will allow the Commission to review and verify that the material commercial terms in each agreement are consistent with what the Commission reviewed and approved as part of this proceeding and issue final approval of the executed agreements.

D. Brownfields

Before issuing a CA for the construction of an electric generating facility, the Commission must determine that "brownfields" are used to the extent practicable.[39] As discussed in Section VII below, the Commission should find that WPL's acquisition and construction of the Solar Projects complies with the Brownfields Law, to the extent it applies, because the use of brownfields is not practicable for the construction of the Solar Projects.

[39] *See* Wis. Stat. § 196.49(4).

E. Energy Priorities Law

The Energy Priorities Law generally establishes priorities for demand- and supply-side resources that should be used to meet the state's energy demands, to the extent that it is technically and economically feasible to do so.[40] Non-combustible renewable energy resources such as utility-scale solar generation are among the highest priority resources listed in the statute. For the reasons explained in Section VIII below, the Commission should find that WPL's proposal to acquire, construct, install, and operate the Solar Projects is consistent with the Energy Priorities Law.

F. Wisconsin Environmental Policy Act (WEPA)

Broadly speaking, WEPA requires that the Commission consider whether a proposed action is a "major action" that could "significantly affect the quality of the human environment."[41] Historically, the Commission has found that utility-scale solar projects are unlikely to have a significant impact on the human environment. For the reasons explained in Section IX below, the Commission should find that: (1) WPL's proposed acquisition of the Springfield Project is a Type III action under Wis. Admin. Code § PSC 4.10(2) and is unlikely to have a significant impact on the human environment; and (2) since the Commission will evaluate the environmental impacts of this project in Docket No. 9807-CE-100, WPL's proposed acquisition of this project complies with Wis. Stat. § 1.11 and Wis. Admin. Code ch. PSC 4. Similarly, the Commission should find: (1) WPL's proposed acquisition and construction of the Sub-100 MW Projects are Type III actions under Wis. Admin. Code § PSC 4.10(2) and are unlikely to have a

[40] Wis. Stat. §§ 1.12, 196.025(1).
[41] Wis. Stat. § 1.11.

significant impact on the human environment, and (2) WPL's proposed acquisition and construction of these projects complies with Wis. Admin. Code ch. PSC 4.

WPL also understands that, when acquiring projects for which the Commission has already issued a CPCN (i.e., the Springfield Project), WPL will only acquire those rights afforded to the project developers at the time the Commission issued the CPCN.[42] WPL agrees to be bound by any conditions the Commission imposes on the development of the Springfield Project in Docket No. 9807-CE-100. Given this commitment and the diligence that WPL has conducted on the Solar Projects to date, WPL does not expect that the Solar Projects will impact any historic properties under Wis. Stat. § 44.40 or any threatened or endangered species under Wis. Stat. § 29.604, and requests that the Commission make a similar finding if and when it approves this Application.

* * * * *

For the reasons discussed in greater detail in this Application, WPL believes that its proposal to acquire and operate the Solar Projects is reasonable, in the public interest, and otherwise satisfies all applicable statutory and regulatory requirements. Accordingly, WPL respectfully requests that the Commission approve its Application.

IV. NEED AND JUSTIFICATION

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 regularly and critically assess the operation and future cost-effectiveness of its electric generating fleet. This type of assessment is especially important before committing

[42] *See, e.g.*, *Badger Hollow II CA Proceeding*, at 16-17.

substantive investments in its fleet, particularly given the significant changes that have occurred—and will continue to occur—in the electric power sector. As noted above, Edgewater Unit 5 and the Columbia units are facing substantial capital and O&M expenditures in the coming years to remain operational. In addition, federal tax credits for large-scale renewable energy investments are in the process of phasing down.

Given that, WPL undertook an extensive and holistic review of its generation fleet to determine whether the needed investments in its coal facilities would be in the best interests of customers, or whether other, more optimal alternatives would produce greater benefits. To reflect the realities of the MISO market in which WPL trades energy and capacity, WPL relied upon an advanced modeling tool capable of simulating that reality known as AURORA.

WPL's resource planning effort was iterative and included a thorough study of generation alternatives under a wide variety of plausible future scenarios. Among other things, the future scenarios WPL studied included scenarios in which the growth of WPL's customers' energy and demand needs varied, including one scenario in which customer load is assumed to remain flat for 20 years and another in which it is assumed to decrease. 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.

The Blueprint calls for several changes to WPL's generating fleet, including advancing the retirement of Edgewater 5 and both Columbia units. To replace the energy and capacity previously provided and to maintain reliability, the Blueprint calls for WPL to add 1,089 MW of solar generation to its portfolio by the end of 2023, and to install 100 MW of wind generation and over 100 MW of distributed generation resources by 2030. Compared to the Base Case, the

Blueprint is expected to reduce WPL's overall revenue requirement by approximately $1.6 to $6.3 billion in nominal dollars ($88 million to $1.1 billion on a present value basis) through 2055 (roughly $3.6 billion nominally on average across future scenarios).[43]

WPL developed the Blueprint after an in-depth examination of multiple portfolios, analyzing the retirement of Edgewater 5 and Columbia Units 1 and 2 at different dates, and with a wide variety of resources available to meet the energy and capacity needs of WPL's customers. Among the resource alternatives studied were natural gas combined cycle and peaking units, utility-scale solar and wind facilities, utility-scale battery energy storage systems, and distributed solar and storage facilities. These analyses demonstrated that installing both utility scale and distributed solar facilities resulted in fewer overall costs for customers compared to the Base Case. From those analyses, WPL developed the Blueprint, which provides significant benefits to customers relative to the Base Case. (*See* Table 2)

Table 2: Resource Portfolio Plans

	Base Case	**Blueprint**
Generation Retirement Date	Edgewater 5, 2045	Edgewater 5, 2022
Expected Generation Retirement Date	Columbia 1, 2035 Columbia 2, 2038	Columbia 1, 2023 Columbia 2, 2024
Average Change in Revenue Requirement[1]	—	-$3.60 billion
Average Change in Net Present Value Revenue Requirement	—	-$552 million
New Solar Added by End of 2023	0 MW	1,089 MW
New Wind Added by 2023	0 MW	100 MW
New Distributed Resources Added by 2030	0 MW	130 MW

NOTES:

[43] In line with the Commission's February 2020 draft Application Filing Requirements for Solar Large Solar Energy Projects, WPL also modeled the Blueprint in AURORA with a 30-year "extension period" out to 2070, beyond the generation expansion plan timeframe (2041). Across all planning scenarios studied, the Blueprint results in nominal avoided costs of approximately $4.7 to 14 billion ($296 million to 1.6 billion on a net PVRR basis) over that extended study period (2022- 2070).

[1] These values reflect average avoided costs across all modeled scenarios, relative to the Base Case, over the planning window (2022-2055). For additional information regarding the scenarios that WPL developed in connection with the Blueprint, reference Appendix A.

As shown above, the Blueprint calls for the addition of 1,089 MW of new utility-scale solar generation by the end of 2023. In conjunction with the recently announced retirements of Edgewater 5 and the Columbia Generating Station, WPL's request for authority to acquire, operate, and place in-service approximately 414 MW of additional, new solar generation reflects the next step WPL is taking to implement its proposed Blueprint. WPL's rigorous resource planning analysis demonstrates that its proposal to acquire and operate these new solar resources satisfies applicable statutory and regulatory requirements and is otherwise in the public interest. For the reasons set forth in further detail below, the Commission should approve the Application.

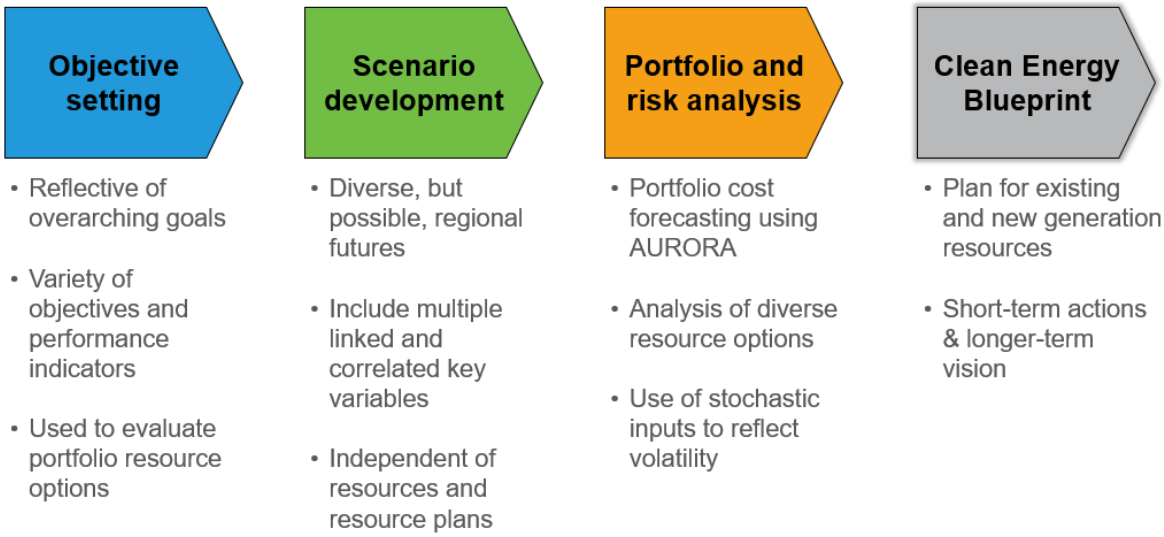
A. Economic Analysis and Benefits

1. Planning Process Overview

The Blueprint is the product of an extensive, multi-faceted resource planning analysis. (*See* Figure 2) The first step of this analysis was to define the objectives and metrics against which WPL would evaluate the various resource plans it developed. WPL developed these metrics to illustrate and assess the performance of the different resource portfolio options against an objective and defined set of criteria. This provided, at the outset, a structured means of identifying tradeoffs between portfolios and selecting a preferred option. Next, WPL developed a set of five distinct "planning scenarios," which were intended to forecast distinct but plausible futures for the electric power sector over the next several decades. WPL used advanced modeling methods to evaluate, across the five planning scenarios, the costs and risks of each resource

portfolio studied. WPL then evaluated the results of this modeling effort across the metrics, made revisions based on updated information, and developed its preferred plan (the Blueprint).

Figure 2: Overview of Planning Process



The advanced modeling methods WPL used in its resource planning process included a modeling tool—AURORA—that differs from the tools WPL has used previously. Previously, WPL relied primarily on the Electric Generation Expansion Analysis System (EGEAS) software tool to conduct resource planning. EGEAS models a utility's generation fleet relative to the utility's expected load using an algorithm to identify new resources that can serve individual utility load in a least cost manner. EGEAS is a useful tool for identifying low-cost and reliable energy resources in a relatively predictable and stable planning environment, but it is not capable of simulating the dynamic nature of the MISO energy market in which WPL participates.

The Commission has recognized that it does not require one particular modeling tool or evaluation method when considering a utility's proposed project or acquisition.[44] AURORA is a robust model with capabilities that combines the tools of a capacity expansion model (like EGEAS)

[44] *Badger Hollow II CA Proceeding*, at 14-15.

and a market-tied production cost model (like PROMOD).[45] For purposes of the Blueprint analysis, AURORA enabled WPL to (among other things) forecast future generation portfolios and power prices across MISO in each planning scenario; identify low cost resource options to meet WPL's future system needs; and simulate the dispatch pattern, costs, and revenues of those portfolios within the MISO market in each planning scenario.[46]

WPL also invited a variety of stakeholders, including representatives from Commission staff, ratepayer advocacy organizations, and environmental organizations, to participate in joint meetings to discuss the purpose, methodology, and results of its resource planning analysis. During these meetings WPL solicited feedback, and WPL considered and incorporated that feedback into its analyses and subsequent presentations.

2. Development of Planning Scenarios

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. Historically, WPL examined the potential impact of such changes through a series of discrete "sensitivity analyses." For example, WPL would analyze one possible future scenario and then test the sensitivity of it by re-running that scenario with one variable modified at a time (e.g., assuming natural gas prices increased by 10 percent), regardless of potential impacts of that modification on other variables (e.g., increased market electricity prices). In this case, WPL developed a wide range of integrated and plausible future scenarios, designed to test the

[45] PROMOD is a fundamental electric market simulation tool that incorporates extensive details in generating unit operating characteristics, transmission grid topology and constraints, and market system operations to support economic transmission and generation planning. WPL has historically used PROMOD to provide nodal locational marginal price (LMP) forecasting and anticipated unit dispatch by independent system operators such as MISO.

[46] Since AURORA was new to WPL, WPL worked with a consulting firm, Charles River Associates (CRA), with extensive experience in AURORA modeling to assist WPL in preparing and performing its resource planning analyses.

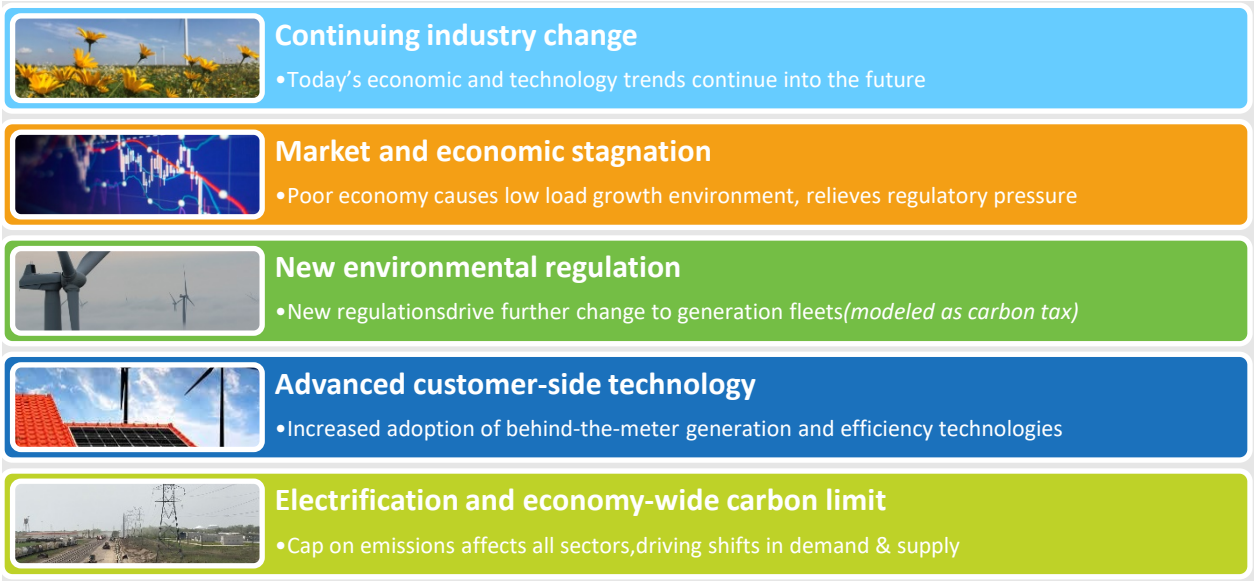
performance of various resource portfolio options in a variety of possible future conditions. Each scenario featured different assumptions about key variables that could affect the performance of the alternative in question.[47] Over a long-range (e.g., 20 to 40-year) planning horizon, it is highly unlikely that events will unfold in a manner that is completely consistent with one scenario. Therefore, it is important to assess the performance of a portfolio across several different scenarios. A resource plan that performs well across a variety of scenarios, taking into account possible tradeoffs, is more likely to be a flexible and robust plan that will benefit customers.

WPL developed five planning scenarios that reflected distinct, but plausible, futures of the electric power sector over the next 20 years. These scenarios are 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 the last decade (Continuing Industry Change) and one which assumes zero load growth over the next 20 years (Market and Economic Stagnation). (*See* Table 3) Key assumptions within each scenario—such as fuel prices, energy and capacity prices, load growth, new generation costs, carbon regulation, and capacity accreditation for solar resources—were adjusted in a manner that was consistent with the theme for that scenario. (*See* Appendix A) 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

[47] 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.

scenario. WPL then modeled the performance of different resource plans for its generation fleet within each scenario.

Table 3: Overview of Planning Scenarios



3. Description of Modeling and Analysis

The type of modeling WPL conducted in support of the Blueprint also differed from the conventional approach it has historically taken to resource planning. Traditional resource planning assesses the adequacy of a utility's existing resources and identifies any additions necessary: the utility forecasts future load growth, evaluates what new resources should be added to meet its forecasted need, and determines when those new resources should be added to its portfolio, assuming that existing resources continue to operate until the end of their current depreciation schedules.

However, a key distinction in this case was that the continued operation of WPL's three remaining coal-fired generating units (Edgewater 5 and Columbia Units 1 and 2) was not taken as a "given." Under baseline planning assumptions, these units are expected to operate until the late 2030s or mid-2040s. Ceasing operations at any of these units early could result in several

impacts, including the need to acquire new generating capacity sooner in time. A primary purpose of WPL's planning analysis was to determine whether it was more beneficial to WPL's customers to continue investing in the continued operation of these units or to transition to alternative resources.

There were several reasons WPL focused its analysis on early retirement of existing coal units. In the last decade, declining natural gas prices, reduced capital costs for wind and solar generation, the widespread availability of low-cost renewable power, and other factors have generally impacted the energy prices paid to generators in the MISO wholesale market. This has resulted in WPL's coal-fired units dispatching less frequently and producing less revenue to cover their operating costs. These units are also not agile enough to quickly ramp up or down in response to variable output from renewable generators and could be subject to more stringent environmental requirements that may be implemented in the future.

As explained in Section II above, WPL also faced significant near-term investments that will be needed to allow its coal-fired generating units to continue operating. WPL's resource planning analysis included a focus on determining whether it made sense to continue operating these units and incurring these expenses, or whether customers would be better off if WPL retired these units early and replaced them with different resources.

In addition to these economic considerations, studying the early retirement of WPL's existing coal-fired units is consistent with customer and investor expectations. Customers are increasingly cognizant of the environmental impact of their energy consumption and are more interested in obtaining power from sustainable, renewable resources. Likewise, given the current regulatory environment and conditions in wholesale power markets, the operation of coal-fired

generation units carries certain environmental and financial risks. Investors have expressed an interest in mitigating exposure to these risks.

With this background in mind, WPL developed and studied several options for the future operation of its coal-fired generating resources. WPL then conducted an analysis of new resources that could replace coal-fired units, which included wind generation, solar generation, solar generation and storage, battery storage, natural gas generation, and MISO capacity purchases, as shown in Table 4. WPL used AURORA's portfolio optimization tool to select the least-cost mix of replacement resources that would satisfy its future capacity needs. Specifically, this tool used an algorithm to identify the type, size of, and schedule for installing new resources that could replace the capacity being retired within a given planning option, at the lowest present value cost. Across all studied portfolio options, AURORA selected a portfolio comprised almost entirely of large-scale solar photovoltaic generation as the least-cost replacement resource.

Table 4: Replacement Options Modeled

Replacement Option	*Parameters*	*Earliest Start Date*	*Unit Capacity (MW)*	*Capacity Factor (%)*	*MISO Accredited Capacity (%)*
Wind - Wisconsin		2021	100	40%	15.7%
Wind - Iowa		2021	100	45%	15.7%
Solar - Wisconsin	Single-Axis Tracking	2021	50	24%	(note 1)
Solar and Storage – Wisconsin	4:1 Solar: Storage Capacity Ratio	2021	50 (note 2)	*varies*	(note 1)
Lithium-ion Battery Storage	87.5% Storage Efficiency	2021	25	*varies*	100%
Gas Combined Cycle	6,637 Btu/kWh Heat Rate	2025	650	*varies*	100%
Gas Peaker Aeroderivative	9,200 Btu/kWh Heat Rate	2022	50	*varies*	100%
Distributed Solar (note 3)	Single-Axis Tracking	2021	-	24%	-
Distributed Storage (note 4)	87.5% Storage Efficiency	2021	-	*varies*	100%
Distributed Solar and Storage (note 4)	2:1 Solar: Storage Capacity Ratio	2021	-	*varies*	(note 5)
MISO Capacity Purchase		2020	25	-	100%
[redacted]					

NOTES:

[1] The assumed solar capacity credit varies across the five scenarios. For example, in the Continuing Industry Change scenario, the assumed capacity credit for stand-alone solar linearly declines from current accreditation rules through 2023 to a base assumption of 30% of capacity by 2040.

[2] 50 MW of total solar and storage at 4:1 ratio - 40 MW of installed solar, and 10 MW battery.

[3] Distribution-level solar resources are modeled to receive energy value and avoid average of 5% transmission and distributed losses but receive no MISO capacity credit.

[4] Distribution-level battery storage and solar + storage resources targeted based on distribution cost deferral opportunity.

[5] For combined solar + storage resources, 2:1 ratio accounts for the need to meet higher capacity value standards throughout the year in order to achieve distribution deferral cost savings. MISO accredited capacity is based on storage unit capacity.

[6] [redacted]

WPL then modeled each portfolio option (both existing and new resources) in AURORA across all five planning scenarios and calculated the full net present value revenue requirement

(PVRR) of each option within each planning scenario. Across all studied scenarios, the least cost portfolios identified by AURORA were those with earlier retirement of Edgewater 5 and the portfolios limiting coal combustion residual (CCR) rule compliance costs for Columbia. WPL then evaluated the results of this analysis against a range of criteria. That analysis shows that advancing the retirement of WPL's existing coal-fired generating capacity and replacing that capacity with utility-scale solar generation results in substantial customer benefits across a range of metrics, relative to the Base Case.

In addition to deterministic least-cost modeling, WPL also refined those resource portfolio options to examine additional alternatives for new resources and used stochastic analysis to assess risk and potential variability in the performance of each option. Alternative mixes of replacement resources used for refinement were exogenously "forced-in" to the model to replace a portion of the utility-scale solar that AURORA's optimization tool had previously selected.[48] In addition to utility-scale solar, the replacement resources analyzed various combinations of battery storage, wind, gas combined cycle, advanced (i.e., aerodynamic) peaker, and distributed solar units, as well as other distributed projects (storage or solar with storage) that could also be used to offset otherwise necessary distribution costs. The stochastic analysis consisted of over ten thousand total model runs (100 for each alternative in each scenario), introducing random volatility into key variables of energy market prices, natural gas prices, and solar output. The results of that in-depth analysis showed that additional volatility did not change

[48] Exogenous development was necessary to "force" new resources into the modeling that were not optimized based on least-cost criteria within AURORA. This was done to weigh potential trade-offs in other performance metrics.

the best path forward for customers. It also showed that large-scale solar, along with cost-effective distributed resources, continued to be the best replacement technology option.

4. Development of Blueprint

Based on the results of this comprehensive analysis, WPL developed and modeled the Blueprint. The Blueprint refines the best performing portfolios from the previous modeling to, among other updates, incorporate feedback from stakeholders and include information on market-available solar projects and costs. Table 5 shows key parameters incorporated in the Blueprint.

Table 5: Key Blueprint Parameters

Description	Purpose
Existing Facilities	
• Advance retirement of coal generation	– Reduce plant costs including fuel, operations, and maintenance, allow for curtailment of future investment and emission reductions
• Curtailment of future investment in coal	– Minimize upcoming major project costs, and avoid costs associated with other investment to extent practicable
• No change in asset recovery plan for retired plant	– Maintain current depreciation schedule for recovery of and on prior investments, to avoid near-term cost increases associated with accelerated depreciation
• No change in plan for other existing facilities	– Maintain generation, capacity, and reliability functions provided by current operations at non-coal facilities
New Facilities	
• Addition of new solar generating facilities by 2023	– Identified as least-cost new generation technology to be added as needed in all future planning scenarios – Installation by 2023 to provide full Investment Tax Credit for solar facilities (30% ITC)

• Use of tax equity financing	– Partnership with external tax entity to allow most effective use of ITC and accelerated tax depreciation to reduce cost of new solar resources to customers
• New distributed resources	– Use of customer-hosted and other distributed solar to provide local customer benefits – Targeted use of energy storage and solar + storage resources to avoid future high cost distribution system projects

The result is WPL's Clean Energy Blueprint resource plan. Since CA I, WPL implemented several key updates to the modeling supporting the Blueprint. First, and as noted earlier, at the beginning of the CA I proceeding, WPL and the Columbia co-owners had not decided on a path forward for the two Columbia units, but recognized that cost-effective compliance with the CCR rules would require retirement of those units no later than the end of 2027. Therefore, the Blueprint modeling initially presented in CA I assumed those two units would retire in 2027. Since that time, WPL, WPSC, and MGE have decided to retire Columbia Units 1 and 2 in 2023 and 2024, respectively. Therefore, in support of this Application, WPL updated and conducted additional modeling of the Blueprint, assuming Columbia Units 1 and 2 retire in 2023 and 2024, as currently planned.

Second, WPL updated several modeling parameters regarding its compliance with MISO's resource adequacy requirements. For the 2021/22 Planning Year, MISO increased the planning reserve margin (PRM) requirement for WPL from 8.9 percent (the modeling assumption used in CA I) to 9.4 percent. MISO also updated the unforced capacity (UCAP) value for WPL's generating units, which are used to calculate WPL's compliance with MISO resource adequacy requirements

(i.e., the PRM). WPL updated the Aurora model to reflect the updated PRM requirements and UCAP values for its generating units.[49]

Third, WPL updated assumptions regarding the capital cost of constructing new solar generation and other resources. Unusual and unexpected market shifts and increased logistical issues, caused at least in part by the COVID-19 pandemic, have increased certain commodity, labor, and other costs. These changes have impacted not just the electric power sector, but other industries as well, and have placed upward cost pressure on the Solar Projects. Accordingly, WPL updated its capital cost estimates for the Solar Projects and incorporated those estimates into the Aurora modeling for CA II: whereas the modeling in CA I assumed a capital cost of $1,245/kW, the current modeling assumes a higher capital cost of $1,447/kW.[50]

Table 6 shows the type and amount of resources that WPL expects to add to its generating portfolio through 2030 under the Blueprint, with the updated assumptions regarding (among other things) the Columbia unit retirement dates and MISO resource adequacy requirements. The primary change from the Blueprint modeling presented in CA I is an increase in WPL's need for additional solar capacity by 2023. Specifically, the updated modeling demonstrated an increased near-term need for new utility-scale solar generation from 1,025 MW (as presented in CA I) to 1,089 MW to continue to meet MISO resource adequacy requirements.

[49] Practically speaking, the PRM assumption acts as a modeling constraint in Aurora, meaning that, when analyzing potential resource portfolio options, the model can only select portfolios that comply with the PRM requirement.
[50] Although this figure differs slightly from the average per kW cost presented for the Solar Projects in Table 1 ($1,449/kW), this *de minimis* difference would not have any material impact on the results of the Aurora modeling.

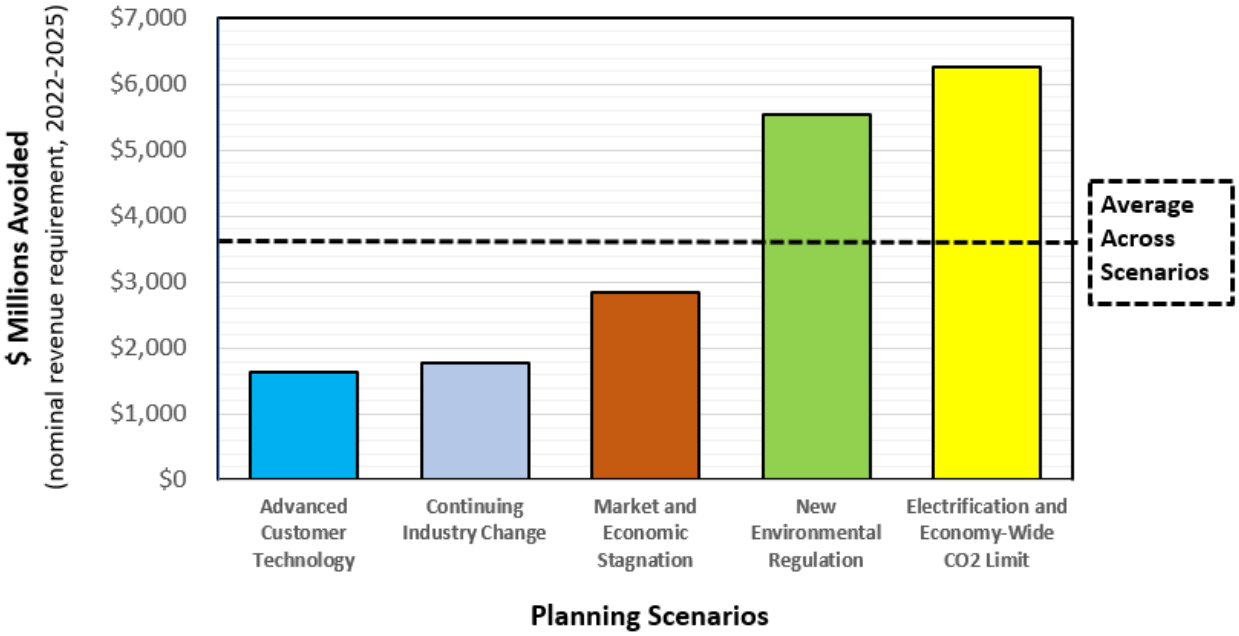
Table 6: Blueprint Resource Additions

Year	Resource Additions (Retire Edge 5 – 2022 Retire Columbia 1 – 2023 Retire Columbia 2 – 2024)		
	Distributed Resources[51]	Solar	Wind
2021	13 MW	-	-
2022	7 MW	425 MW	100 MW[52]
2023	7 MW	664 MW	-
2024	8 MW	-	-
2025	9 MW	-	-
2026	14 MW	-	-
2027	15 MW	100 MW	-
2028	17 MW	100 MW	-
2029	21 MW	100 MW	-
2030	18 MW	100 MW	

The Blueprint modeling updates did not materially change WPL's calculation of the Blueprint's benefits to customers. WPL's updated modeling of the Blueprint demonstrates that it is still the best path to achieve WPL's mission of providing customers with safe, affordable, reliable, and sustainable energy. WPL's planning analysis indicates that this approach will generate approximately $1.6 billion to $6.3 billion in nominal revenue requirement savings ($88 million to $1.1 billion on a present value basis) for customers through 2055, as shown in Figure 3. In addition, WPL's analysis indicates that the Blueprint would maintain or improve the reliability, flexibility, and sustainability of WPL's generating fleet.

[51] Distributed resources include potential customer-hosted solar, as well as targeted storage and storage + solar.
[52] 100 MW wind is [redacted]

Figure 3: Avoided cost of WPL Blueprint compared to status quo in various planning scenarios, 2022-2055



B. Analysis of Demand-Side Options

This Application focuses on the generation resource (i.e., supply-side) alternatives WPL needs to meet its customers' energy and demand needs over the next several years under a variety of scenarios. However, as part of this analysis, WPL also considered variations on the demand-side. Specifically, the scenarios WPL examined include a wide range of different assumptions for load growth and peak demand that encompassed a range of demand-side projections. For example, the Market and Economic Stagnation scenario assumes zero load growth over the entire scenario horizon. Even more aggressively, the Advanced Customer-Side Technology scenario assumes a nearly seven percent decrease in net load growth over 20 years, with peak demand also declining. WPL assumed that these low levels of growth over such an extensive duration would result from sustained recessionary economic activity and/or a significant increase in investment and deployment of energy efficiency and customer-owned

generation. The modeling demonstrates that the resource additions identified as part of the Blueprint are the best plan under both these scenarios (and the other three scenarios WPL studied). WPL is not seeking approval for demand-side management programs in this Application; however, WPL is preparing proposals to implement new demand response programming alongside the resource additions in the Blueprint.[53]

C. Reliability Analysis and Benefits

WPL's Blueprint will also maintain the reliability of the electric service that it provides to customers. As a part of an interconnected system, the reliability of electric supply is largely a measure of how resilient that system is to severe conditions. Severe conditions that have the highest risk of resulting in service interruptions are generally caused by unexpected generation or transmission outages or extreme weather—especially when demand is at or near peak.

Numerous entities play a part in ensuring the reliability of the interconnected system, including the Commission and MISO. Both the Commission and MISO have established a planning reserve margin—that is, a requirement for each utility to maintain a specific amount of generation capacity in excess of a utility's expected system demand. MISO also uses the Attachment Y process to maintain the security and reliability of the regional grid when generating units file a request to retire, and MISO's generation interconnection queue process ensures that new generators coming online will keep the system in balance even under contingency conditions.

[53] WPL anticipates addressing demand response programs in its next full rate review filing, currently estimated as Spring 2021.

WPL has complied with, or will comply with, each of these requirements.[54] As discussed earlier, WPL's AURORA modeling accounted for the MISO PRM, which is more stringent than that required by the Commission. WPL's modeling also assumes a conservative capacity accreditation rate for utility-scale solar projects.[55]

Given the importance of maintaining reliability in even the most challenging conditions, WPL also examined its ability to serve load in an extreme weather event when variable renewable resources may be less available. Specifically, WPL compared the availability of its emergency levels of capacity to winter peak demand, assuming that wind resources cannot produce at more than 10 percent of installed capacity and that solar resources produce at zero percent of installed capacity.[56] As shown in Table 7, this analysis demonstrates that, even with no solar output during these emergency conditions and WPL's remaining coal-fired generation retired, WPL has sufficient capacity to meet its expected winter peak demand.

[54] [redacted]

[55] MISO rules currently provide that capacity accreditation for solar resources will initially be set at 50 percent of installed nameplate capacity. When actual performance data is available, solar resources are accredited based on output during key summer peak hours (hours ending 15, 16, 17 EST during June, July August). Based on the expected output of the Solar Projects, WPL's modeling of the Blueprint included capacity accreditation going to 70 percent, then generally decreasing over time to a base accreditation of 30 percent in 2040 as described in Section II(B).

[56] The use of winter peak demand with zero output from the solar projects is intended as a conservative, worst-case assumption. Annual peak demand generally coincides with hot summer afternoons, which allows for some solar output contributing to supply and reliability—as reflected by current MISO capacity accreditation rules for solar projects.

Table 7: WPL Winter Peak Capability Scenario (2025 Portfolio, MW) (Confidential)

Resource Type	Effective ICAP (MW)	Winter Capability Rate	Winter Capability (MW)
Coal	0	100%	0
Gas CC	[redacted]	100%	[redacted]
Gas CC Winter Emergency		100%	
Gas Peaking		100%	
Gas CT Winter Emergency		100%	
Hydro		80%	
Other		100%	
Wind		10%	
New Wind		10%	
Solar		0%	
New Solar	1,089	0%	0
New Storage	[redacted]	50%	[redacted]
Demand Response and Interruptible		93%	
New Demand Response		93%	
Total Winter Capability, MW:			
Winter Load, MW:			
Capability vs Load, %:			**118%**
Capability Above (Below) Load, MW:			[redacted]

NOTES:

[1] The MISO 2021-2022 Wind Capacity Credit is 16.3 percent of nameplate capacity. For purposes of this analysis, this value was reduced to 10 percent to be conservative.

[2] This analysis assumes that combustion turbines and combined cycle units have slightly higher capacity for winter emergencies and is based on emergency max offerings during historic winter peak hours.

[3] This analysis assumes that combined cycle units without historical data can produce an additional 10 percent of their output for winter emergencies.

[4] Assumes 80 percent of summer capacity hydro, based on historical summer versus winter comparison.

D. Conclusion to Planning Analysis

WPL's planning analysis shows that this Application for authority to acquire, construct, own, and operate 414 MW of utility-scale solar generation meets applicable regulatory requirements and is in the public interest. WPL's Blueprint analysis supports the need for 1,089 MW of additional utility-scale solar generation to WPL's generation fleet by the end of 2023. In

conjunction with the changes to the remainder of WPL's generation fleet, customers are expected to avoid approximately $1.6 to $6.3 billion in nominal costs ($88 million to $1.1 billion on a present value basis) through 2055, depending on the future scenario studied. Therefore, the approval WPL is requesting in this Application 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.[57]

For similar reasons, approval of this Application will satisfy the reasonable needs of the public for an adequate supply of electric energy.[58] When interpreting this statutory factor, the Commission considers not only whether a project will "keep the lights on," but also other relevant factors including "increased reliability, economic benefits, and public policy considerations."[59] Indeed, the "reasonable needs" of the public include "the financial needs of electric utility customers."[60] Modifying WPL's existing generation fleet and installing utility-scale solar generation reduces the overall revenue requirement associated with WPL's generating fleet, relative to the status quo, and improves or maintains the flexibility, reliability, and sustainability of that fleet. For these reasons, the Solar Projects will satisfy the reasonable needs of the public for an adequate supply of energy and should be approved.

[57] *See* Wis. Stat. § 196.49(3)(b).
[58] *See* Wis. Stat. § 196.491(3)(d)2.
[59] *See Town of Holland v. Pub. Serv. Comm'n of Wis.*, 2018 WI App 38, ¶ 382 Wis. 2d 799.
[60] *See Application of American Transmission Company to Construct a 345 kV Transmission Line from the Rockdale Substation to the Paddock Substation*, Docket No. 137-CE-149, *Final Decision*, at 3, 6 (June 13, 2008) (PSC REF#: 96410); *Application of American Transmission Company to Construct a 345 kV Transmission Line from the Pleasant Prairie Substation to the Zion Substation*, Docket No. 137-CE-161, *Final Decision*, at 3, 6 (May 7, 2012) (PSC REF#: 164279); and *Application of Wisconsin Power and Light Company for a Certificate of Authority to Construct the Kossuth Wind Project*, Docket No. 6680-CE-181, *Final Decision*, at 3, 8-9 (Jan. 7, 2019) (PSC REF#: 356813).

Approval of this the Application is also in the public interest considering alternative sources of supply, engineering, and economic factors.[61] WPL thoroughly evaluated a variety of replacement resources as part of its planning analysis. AURORA's portfolio optimization tool showed that adding utility-scale solar generation is the least-cost replacement resource under a variety of planning alternatives. To test the robustness of these results, WPL conducted additional analyses on a more extensive list of potential replacement resources and modeled those resources in greater detail to determine whether they could be used in combination with utility-scale solar generation to provide additional long-term savings and customer benefits. This analysis shows that replacement portfolios with the largest amount of utility-owned solar generation produce the largest long-term customer savings, relative to the Base Case.

WPL's acquisition of the Solar Projects is also more beneficial than entering into a Power Purchase Agreement (PPA) with a solar developer. As noted in Section II(C) above, WPL selected projects that have favorable positions in the MISO interconnection queue and are located on land over which WPL will have control for an extensive period. Given these positive attributes, the amount of generation in the MISO interconnection queue, and the competitive market for utility-scale solar development in the Upper Midwest, WPL believes that it is important to secure ownership of these assets rather than rent them from a third-party developer. 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 utility-scale solar and energy storage.

[61] *See* Wis. Stat. § 196.491(3)(d)3.

Finally, approving the Solar Projects will not have a material adverse impact on competition in the relevant wholesale market.[62] The Application requests authority for WPL to acquire and operate 414 MW of utility-scale solar generation. The output from these projects will be offered into the MISO wholesale market, which has a total of approximately 156,000 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 Solar Projects relative to the significant amount of installed capacity in MISO, the addition of these resources will have minimal effect on wholesale competition.

V. TAX EQUITY FINANCING STRUCTURE

One of WPL's primary tax management objectives is to pursue tax treatments that benefit customers. The Company monitors current tax legislation, evaluates opportunities, and makes tax-related decisions that reduce the Company's tax liability or cash taxes paid or that otherwise minimize costs for customers.

Consistent with these objectives, WPL intends to develop and finance the Solar Projects using a tax equity financing structure. As noted earlier, federal law currently provides substantial tax incentives—including ITCs and accelerated depreciation—for solar electric generating property. These tax incentives have helped reduce the overall cost of utility-scale solar generation and made solar generation more cost-competitive. But due to the Company's current tax position and federal tax rules, WPL is unable to directly and immediately monetize these incentives for the benefit of its customers.

[62] *See* Wis. Stat. § 196.491(3)(d)7.

Therefore, to more efficiently deliver the value of available tax benefits to customers and offset the capital costs it would otherwise incur to acquire the Solar Projects, WPL intends to use a tax equity financing mechanism to own and operate those projects. Since 2014, tax equity investors have provided over $10 billion annually to finance renewable energy projects in the United States.[63] Utilities in California, Missouri, and Indiana have also successfully obtained regulatory approval to finance new renewable energy projects with tax equity investors.[64] Under existing law, this financing structure will allow WPL to optimize the value of the Solar Projects' tax incentives, which will reduce the amount of capital the Company must invest to own the projects and thereby generate significant customer benefits. Indeed, WPL's analysis shows that developing the Solar Projects through tax equity financing will save customers approximately $113 million in nominal dollars ($59 million on a present value basis), relative to a scenario in which WPL develops the projects under a traditional utility ownership model.

[63] See, *e.g.*, Norton Rose Fulbright, Cost of Capital: 2021 Outlook (Feb. 18, 2021), *available at* https://www.projectfinance.law/publications/2021/february/cost-of-capital-2021-outlook/; *see also* Alex Tiller, Bloomberg Tax, *Insight: Tax Equity Remains an Under-Utilized Tool for Corporate Tax Strategy* (Jan. 29, 2019 8:01 a.m.), *available at* https://news.bloombergtax.com/daily-tax-report/insight-tax-equity-remains-an-under-utilized-tool-for-corporate-tax-strategy.

[64] *See Verified Joint Petition of Northern Indiana Public Service Company LLC ("NIPSCO") and Indiana Crossroads Wind Generation LLC (the "Joint Venture") for Approval*, Cause No. 45310, *Order of the Commission* (Ind. Utility Regulatory Utilities Comm'n, Feb. 19, 2020), *available at* https://iurc.portal.in.gov/legal-case-details/?id=fc7d8c21-9df5-e911-a989-001dd800ba25; *Verified Joint Petition of Northern Indiana Public Service Company LLC ("NIPSCO") and Rosewater Wind Generation LLC (the "Joint Venture") for Approval*, Cause No. 45194, *Order of the Commission* (Ind. Utility Regulatory Comm'n, Aug. 7, 2019), *available at* https://iurc.portal.in.gov/legal-case-details/?id=94e9d4bf-5126-e911-814c-1458d04e2938; *In Re Empire District Electric Co.*, File No. EA-2019-0010, *Report and Order*, (Mo. Pub. Service Comm'n, June 29, 2019), *available at* https://www.efis.psc.mo.gov/mpsc/Docket.asp?caseno=EA-2019-0010; *In Re Application of Liberty Utilities (CalPeco Electric)*, Docket No. 16-12-009, *Decision Adopting All-Party Settlement* (Cal. Pub. Utilities Comm'n, Dec. 19, 2017), *available at* http://docs.cpuc.ca.gov/SearchRes.aspx?DocFormat= ALL&DocID=202084352; *In Re Application of Liberty Utilities (CalPeco Electric)*, Docket 15-04-016, *Decision Approving Settlement Agreement Subject to Conditions* (Cal. Pub. Utilities Comm'n, Jan. 22, 2016), *available at* http://docs.cpuc.ca.gov/SearchRes.aspx?DocFormat=ALL&DocID=157874237.

For these reasons, tax equity financing is currently the best means for WPL to transition its generation fleet and optimize the Solar Projects' value to its customers.[65] Although WPL has not yet selected a tax equity investor to participate in the project financing, the Company will provide in this proceeding the range of material commercial terms on which it would expect to transact with any such investor. WPL has been working with several potential partners that are significant investors in tax equity partnerships to gauge market interest in the Solar Projects and identify reasonable terms for a tax equity partnership based on current market conditions and WPL's partnership goals. As such, WPL believes the range of material commercial terms presented in this proceeding are reasonable. As discussed below, WPL will ensure that any agreements it ultimately executes with a tax equity investor are materially consistent with these terms and will provide customers with the benefits represented in this Application.

A. Tax Equity Overview

Under the tax equity structure, a sponsor of a renewable energy project (e.g., WPL) partners with one or more large taxpaying corporations (e.g., global banks or insurance companies) that have the ability to use the tax incentives for a renewable energy project and are willing to invest in the project and earn a rate of return on such investment that takes into consideration such tax incentives. The large taxpaying corporation thus becomes a tax equity investor in the partnership. An indirectly-owned affiliate of the sponsor (in this instance, a WPL affiliate) and the tax equity investor enter into a partnership agreement laying out the terms and

[65] The Company regularly monitors and evaluates developments in federal tax policy. Changes in federal tax laws could create alternatives that simplify financing mechanisms for the Solar Projects while simultaneously generating benefits for customers that are comparable to or greater than the tax equity financing arrangement WPL is proposing here. If such an alternative emerges before WPL finalizes a tax equity financing arrangement with a third-party investor, WPL will carefully evaluate and, if appropriate, pursue such alternatives, subject to required regulatory approvals, to maximize the Solar Projects' benefits to customers.

conditions of their ownership participation in the renewable energy project. Ultimately, the tax equity investor invests a significant portion of the initial capital needed for the project (typically 35 to 45 percent of the fair market value of the project (excluding land acquisition costs).

In return, the tax equity investor receives most (up to 99 percent) of the tax incentives (ITCs and tax depreciation) generated from the project. The tax equity investor will also receive a portion (between 15 and 35 percent) of cash distributions from the project. The partnership will track the tax equity investor's investment balance in the partnership, starting with its initial investment and reducing that by the value of the federal tax benefits and the cash distributions that it receives through time (less any tax that may be required on such distributions), with such amounts calculated in accordance with the terms of the LLC Agreement.

Once the tax equity investor's after-tax internal rate of return achieves the target yield specified in the LLC Agreement (expected to be between six and seven percent), the percent allocation of the partnership's tax and cash attributes "flip." Such "flip" date will be targeted to occur approximately seven to eight years after COD based on the partnership's funding model, with the actual "flip" date dependent on actual results. At the time of the partnership flip, the tax equity investor's percent allocations of both taxable income and cash distributions are typically reduced to approximately five percent. The partnership flip will also trigger an option for the sponsor (i.e., WPL) to purchase the tax equity investor's remaining ownership stake at a fair market value methodology provided in the LLC Agreement. With Commission approval, WPL expects that it will exercise this purchase option at that time to regain 100 percent ownership of the Solar Projects.[66]

[66] IRS Revenue Procedure 2007-65 addresses the partnership flip structure in the context of a wind energy project.

B. Benefits of Proposed Tax Equity Structure

WPL is focused on managing both near-term and long-term customer costs. The tax equity structure that WPL is proposing for these Solar Projects will help achieve these objectives. Tax equity financing effectively reduces the amount of capital investment WPL will include in rate base for the Solar Projects by optimizing the value of federal tax incentives—namely, accelerated tax depreciation and the ITC. Such federal tax incentives are optimized both by accelerating the timing of when the value can be realized, and by creating partnership allocations of those benefits that are not subject to the normalization rules of the Internal Revenue Code.

A key benefit of the proposed tax equity structure relates to WPL's current federal income tax net operating loss (NOL) and tax credit carryforward position. Over the last decade, Congress has on multiple occasions passed legislation extending the availability of bonus depreciation. Bonus depreciation is a form of accelerated depreciation that reduces a company's tax liability below what it would otherwise be under a "typical" tax depreciation schedule. WPL has repeatedly taken bonus depreciation, which has benefitted customers by reducing the Company's overall rate base. However, this tax strategy has created large tax deductions and put the Company in an NOL position.[67] Deferred tax liabilities resulting from accelerated tax depreciation generally reduce rate base. However, the rate reduction does not occur until the tax savings are realized (i.e., after the NOL carryforwards are utilized).

This NOL position has also limited WPL's ability to use any of its earned tax credits, thus creating tax credit carryforwards. Since most tax credits are currently non-refundable, WPL must

[67] This simply means that WPL has had zero federal income tax liability because its tax deductions have exceeded its taxable income.

have taxable income before it can use its earned tax credits to offset tax payments. Regulated rates are not reduced by ITC benefits until the credit is realized by WPL, which would not occur until WPL fully utilizes its NOL carryforwards.

WPL currently expects to be out of its NOL position by 2023. However, the Internal Revenue Service's ordering rules generally require that tax credits be utilized on a "first-in, first-out" basis. Practically speaking, this means that under traditional ownership WPL would not be able to start utilizing an ITC generated from a Solar Project put in service in 2023 until it first uses all tax credits generated prior to 2023. Based on current projections and assuming no change in federal tax law, WPL anticipates that it will not utilize ITCs earned in 2023 until at least [redacted] later.

WPL's proposed tax equity partnership structure effectively resolves this issue. While WPL currently lacks the tax capacity needed to immediately realize the tax benefits of accelerated depreciation and the ITC, this is not the case for large taxpaying corporations that typically act as tax equity investors in renewable projects. Financing construction of the Solar Projects with a tax equity investor brings significant additional value to WPL's customers. The tax equity investor can take full and immediate advantage of accelerated depreciation and the ITC, and in exchange, the tax equity investor provides a large portion of the capital needed for the Solar Projects, which reduces the overall cost of the Solar Projects to customers relative to traditional utility ownership.

Finally, the federal income tax normalization rules provide conditions on the availability of accelerated depreciation and the ITC with respect to public utility property, based on how these tax benefits are reflected in ratemaking. In general, a utility owner must "normalize" tax

credits related to solar generation property by spreading their benefit over the expected useful life of the project, which WPL assumes to be 30 years for regulatory purposes. Thus, if WPL directly owned the Solar Projects, the normalization requirements would limit the sharing of the related ITC with WPL customers to a ratable reduction of recoverable tax expense over the 30-year life of the plant. Further, and as noted earlier, such benefits could not be shared with customers until at least the time when WPL realizes the value of the ITC. The normalization rules do not apply to the Solar Projects owned by a tax equity partnership, as described above.

Indeed, as shown in Table 9 in Section VI below, financing the Solar Projects through tax equity financing is expected to generate approximately $113 million in nominal ($59 million in present value) savings for customers, relative to a scenario in which WPL developed the projects under traditional utility ownership.

C. Significant Contracts Related to Tax Equity Partnership

WPL has not executed or otherwise finalized a definitive agreement with a tax equity investor for the Solar Projects since tax equity financing arrangements are generally not finalized until closer in time to COD. Much like a bank refinancing a home mortgage may only be willing to commit to a fixed rate for limited period (e.g., 60 days) after an initial agreement, a tax equity investor is unwilling to make a financial commitment to a partnership with no expiration date. Because of the additional complexities in forming the partnership and doing adequate due diligence of a renewable energy project, such commitment typically does not occur until approximately six to 12 months prior to COD.

In this case, the Solar Projects are not expected to be placed in-service until 2023. However, WPL has entered into discussions with and exchanged preliminary term sheets from

three financial institutions that are among the largest investors in the tax equity market for renewable energy projects. These organizations have expressed an interest in entering into tax equity partnerships with WPL to develop these projects. Given the feedback that WPL has received from these potential tax equity investors, the large market for renewable tax equity investment, and based on current federal tax law, WPL is confident that there will be sufficient interest to transact a tax equity agreement for the Solar Projects at reasonable, market-based terms.

Although the specific terms of a tax equity partnership have not yet been finalized, the Company has identified the basic structure and key expected terms for any such partnership. As described earlier, WPL currently owns all tangible and intangible assets for the Albany, Beaver Dam, Cassville, Paddock, and Wautoma projects and has directly undertaken the development work for those projects. WPL also entered into a PSA with National Grid to acquire Springfield Solar Farm, LLC (Developer ProjectCo)—the project company holding the assets for the Springfield project. Once closing conditions in the PSA have been satisfied, WPL will acquire Springfield Solar Farm, LLC, which will become a WPL subsidiary. WPL will immediately dissolve Springfield Solar Farm, LLC, resulting in WPL directly owning the assets for that project—just as it currently owns the assets for the other Sub-100 MW Projects.[68]

Around the time that WPL has reached a term sheet for a tax equity agreement with its tax equity investor, WPL will establish new legal entities to accomplish the various tax equity partnerships. One set of entities (the ProjectCos) will hold the assets of the Solar Projects. The

[68] As noted in Sections II(A) and III(C), *supra*, the assets for the Albany and Paddock projects were formerly held in single-purpose, limited liability companies, which have already been dissolved. WPL is, therefore, requesting that the Commission retroactively approve the dissolution of those entities.

other set of entities (the Project HoldCos) will hold one or more of the ProjectCos for each tax equity partnership. Once each project is mechanically complete, WPL will transfer each Solar Project to the related ProjectCo. WPL may consolidate multiple Solar Projects under the umbrella of one Project HoldCo. That is, there may not be one tax equity partnership for each of the six Solar Projects described in this Application. Whether, how many, and in what combination individual projects are consolidated underneath a single tax equity partnership will be determined through future consultation with potential tax equity investors.

Each Project HoldCo will be governed by a partnership agreement (LLC Agreement) between WPL Solar Holdings LLC and the tax equity investor.[69] The LLC Agreement will create Class A and Class B membership interests that allocate cash distributions, tax incentives, and various other project attributes, and creates other rights and responsibilities, between WPL Solar Holdings LLC and the tax equity investor. These entities will also enter into an Equity Capital Contribution Agreement (ECCA), which obligates the partners to contribute capital to purchase the Class A and Class B membership interests. The ECCA will cause WPL to transfer 100 percent of the Class A membership interests in the Project HoldCo to the tax equity investor. The tax equity investor will fund approximately 20 percent of its capital obligation at or around mechanical completion for the project and the remaining 80 percent at or around COD. A summary of key commercial terms associated with the tax equity partnership are presented in Table 8, and an overview of the organizational structure of the tax equity partnership is provided in Appendix B.

[69] WPL has not yet made a final decision regarding the names for the affiliates that it will organize as part of the tax equity structure. Any names for affiliated entities used in this proceeding are for illustrative purposes only and subject to change based on the final structure of the tax equity partnership.

Table 8: Key Commercial Terms for Solar Tax Equity Partnership

Commercial Term	Sponsor (WPL) Class B Member	Tax Equity Investor(s) Class A Member(s)
Initial Capital Contribution (excluding land acquisition costs)	55-65%	35-45%
Target Yield (After-Tax)	-	6.0-7.0%
Partnership tax allocations[1]		
Year 1-2[2]	1%	99%
Years 3-6	33%	67%
Year 7 to Flip Date[3] (Expect Year 8)	1%	99%
Flip Date to DRO Cure Date[4]	1%	99%
Thereafter	90-95%	5-10%
Partnership Cash Distribution		
Year 1 to Flip Date (Expect Year 8)	65-85%	15-35%
Thereafter	90-95%	5-10%
Purchase Option	After the flip date, option to purchase 100% of Class A member interests for 100% of their fair market value	None[4]
Creditworthiness/Parent Guaranty	Alliant Guaranty of Sponsor obligations	A-/A3 or better

NOTES:

[1] "Year" refers to a tax year, meaning Year 1 for a project going into service in 12/1/2022 would be the period ending 12/31/2022.

[2] Depending on the actual in-service date of the project, the tax allocation for Year 2 could be adjusted to match the tax allocations for Years 3 through 6.

[3] The "Flip Date" is the date at which the tax equity investor has achieved its target yield.

[4] Because the tax equity investor receives a substantial allocation of the value of the ITC and tax losses in the early years of the partnership due to accelerated tax depreciation, its tax capital account balance typically becomes negative during the early years of a partnership. The tax equity investor is typically willing to accept some level of a negative tax capital account balance to preserve its allocation of tax attributes through the creation of a limited deficit restoration obligation (DRO), which obligates it to restore its tax capital account balance back to $0 by making capital contributions if necessary. If tax losses were to cause the tax equity investor's capital account balance to fall below its DRO limit, such tax losses would be reallocated back to WPL. The tax equity investor's negative tax capital account balance is typically "cured" through a preferred allocation of taxable income, although it could also occur through capital contributions.

WPL also intends to enter into several additional agreements related to the tax equity financing mechanism it is proposing here. A brief description of each agreement is provided below.[70]

[70] WPL will provide additional details concerning the material commercial terms associated with each agreement in testimony submitted later in this proceeding.

- **O&M Agreements**: WPL intends to enter into an operating and maintenance (O&M) agreement with each of the ProjectCos. Under the O&M Agreements, WPL will operate and maintain each Solar Project, although it may subcontract certain responsibilities to other service providers.

- **Asset Management Agreements**: WPL intends to enter into asset management agreements with each of the Project HoldCos. Under these agreements, WPL (through its affiliated service company, Alliant Energy Corporate Services (AECS)) will provide accounting, legal, management, tax, and other overhead services to the tax equity partnerships and underlying ProjectCos.

- **Land Sales**: As noted earlier, WPL and Springfield Solar Farm, LLC have or are currently negotiating options to purchase certain parcels of land for the Albany, Cassville, Springfield, and Wautoma projects. WPL would exercise those options and sell the land to the Project Cos.[71]

- **Revenue Agreements:** WPL intends to enter into one or more agreements with each of the ProjectCos related to the revenue attributes for each Solar Project: namely, the sale of energy, capacity (Zonal Resource Credits (ZRCs)) and environmental attributes (Renewable Energy Credits (RECs)). Specifically:

    - **ZRCs and RECs:** WPL intends to have the ProjectCos transfer the ZRCs and RECs to WPL either through (i) an allocation of such attributes in the tax equity partnership agreement or (ii) a separate agreement between the ProjectCo and WPL that will sell those attributes to WPL.

    - **Energy:** The ProjectCos will sell the energy produced by the Solar Projects directly to the MISO market and will receive the revenue for such sales (just as WPL would if it was the sole owner of the projects). WPL intends to receive the value of the revenue through the cash distributions to WPL from the partnership, the allocation of which will be addressed in the LLC Agreement.

      WPL also expects to enter into a market-based Contract for Differences (CfD) agreement with each ProjectCo. A CfD is a financial instrument that is often used in energy markets to hedge price exposure when a party is not physically transacting in the underlying commodity (in this case, the energy from the Solar Projects). The CfD benefits the tax equity partnership structure by providing greater assurance of the time period within which the tax equity investor can expect to receive its targeted yield.

      Under the CfD, WPL would pay to or receive from the ProjectCo the difference between the hedge price and a market price (e.g., MISO Indiana hub day-ahead

[71] Pursuant to Wis. Stat. § 196.795(5)(k)1., such land sales will be put up for public offering to the highest qualified bidder with the qualification being that each bidder must use the land to host the Solar Projects.

prices) for the actual or expected energy production from the Solar Project. That is, WPL would pay the ProjectCo the hedge price, the ProjectCo would pay WPL the market price, and there would likely be monthly settlements between the two parties, based on the differences between the two prices and the amount of power covered by the agreement. Ultimately, the net effect of the CfD on WPL customers is expected to be minimal.

D. Conclusion to Tax Equity Analysis

In this proceeding, WPL requests that the Commission authorize WPL to enter into the agreements described above and to consummate the transactions contemplated thereunder. WPL will provide the Commission and interested intervenors these agreements on a confidential basis upon completion of the agreements. When WPL transfers the assets for each Solar Project to each ProjectCo, the assets will be sold at a price that reflects their fair market value, and the transaction itself will not have any discriminatory or anticompetitive effects.[72] Likewise, partnership-related entities will compensate WPL at fair market value for any operational or administrative services that WPL provides (including those services provided to WPL by AECS), and the partnership's use of these employees' services will not have any discriminatory or anticompetitive impacts.[73] In turn, WPL expects any revenue received under the agreements or expenses incurred to be included as an offset to its normal utility cost of service in determining its revenue requirement.

Finally, and most importantly, the tax equity financing mechanism that WPL has proposed is in the public interest. Acquiring and developing the Solar Projects through tax equity financing is expected to save customers approximately $113 million in nominal dollars ($59 million, on a PVRR basis), relative to a situation in which WPL acquired the projects under traditional utility

[72] *See* Wis. Stat. § 196.795(5)(s).
[73] *See* Wis. Stat. § 196.795(5)(r)

ownership. WPL will present the Commission with the range of commercial terms that are material to ensuring these benefits are realized and is committed to selecting a tax equity investor who will transact on those terms. Therefore, WPL requests that the Commission find that it is in the public interest for WPL to acquire, finance, own, and operate the Solar Projects through the tax equity partnerships described in this Application, with the understanding and on the condition that the material commercial terms governing those partnerships will fall within the range of terms presented in this proceeding.

VI. REVENUE REQUIREMENT

A. Revenue Requirement Analysis

As noted in Section IV above, WPL's planning analysis indicates customers are expected to avoid approximately $1.6 to $6.3 billion in nominal costs ($88 million to $1.1 billion on a present value basis) through 2055, depending on the future scenario studied. In addition to the AURORA modeling that WPL conducted in support of its planning analysis, WPL also used its financial model to calculate the present value revenue requirement of the Solar Projects described in this application.[74] Table 9 provides the overall revenue requirement associated with its investment in the Solar Projects, in both nominal and present value dollars, and compares traditional ownership of the Solar Projects to ownership through a tax equity partnership. As shown in Table 9, financing a portion of the Solar Project costs with tax equity investment is expected to save customers approximately $113 million on a nominal basis (or $59 million on a

[74] The revenue requirement calculation focuses on the comparison between traditional utility ownership and ownership through a tax equity partnership. It should not be viewed as a substitute for the Blueprint analyses, which evaluated multiple courses of action across all resource options.

present value basis), relative to a situation in which WPL developed the projects through traditional utility ownership.

Table 9: Revenue Requirement for Solar Projects and Comparison of Traditional Ownership to Ownership Through a Tax Equity Partnership[75]

Revenue Requirement for Solar Projects ($ millions)	$ Nominal		$ Present Value (2023)		Savings with Tax Equity	
	Traditional Ownership	Tax Equity Partnership	Traditional Ownership	Tax Equity Partnership	$ Nominal	$ Pres. Val. (2023)
Return On and Of Investment	$1,446	$1,029	$637	$458	$417	$180
ITC Amortizations	$(244)	$(3)	$(78)	$(1)	$(241)	$(77)
Other Operating Costs and Benefits	$(955)	$(893)	$(311)	$(267)	$(62)	$(44)
Net Revenue Requirement	$247	$134	$249	$190	**$113**	**$59**

B. Estimated Project Cost and Requested Authorization

The estimated capital cost of the Solar Projects is approximately $620 million (calculated without AFUDC or transmission costs).[76] This amount includes an estimated $600 million in construction costs and an estimated $20 million in land purchase costs. WPL requests that the Commission issue a Certificate of Authority authorizing it to acquire, construct, install, and place in operation the proposed Solar Projects, at a total estimated capital cost of approximately $620 million, plus AFUDC. If WPL discovers that the cost of the Solar Projects, including *force majeure* costs, may exceed the total estimated construction cost by more than 10 percent, WPL will promptly notify the Commission as soon as it becomes aware of the possible change or cost increase. WPL also intends to finance approximately 35 to 45 percent of the Solar Projects' estimated construction cost (excluding land acquisition costs) with an investment from tax equity

[75] Numbers may not sum due to rounding.
[76] *See supra*, note 25, for additional clarification regarding the transmission costs excluded from this estimate.

partner(s). Therefore, WPL further requests that the Commission authorize it to recover in rate base up to $410 million, plus AFUDC, subject to Commission review and audit in a future rate case. [77]

In addition, to ensure that customers receive the net benefits of this transaction, WPL intends to:

- Include in rate base and seek recovery of its net investment in the tax equity partnerships for each of the Solar Projects by recording those investments in FERC Account 182.3 (Other Regulatory Assets).
- Seek recovery of the amortization of its investment in the Solar Projects over the useful life of the project, which is expected to be 30 years.
- Record its share of the cash distributions for net operating benefits of the tax equity partnerships as an operating income component of its revenue requirement calculations utilizing escrow accounting, specifically:
    - WPL intends to record any differences in cash distributions for net operating benefits from the tax equity partnership to FERC Account 254 (Other Regulatory Liabilities) if amounts assumed in revenue requirements are lower than actual cash distributions, or FERC Account 182.3 (Other Regulatory Assets) if cash distributions assumed in revenue requirements exceed actual cash distributions; and
    - WPL intends to record any activity associated with the CfD and potential ZRC and REC purchases in either FERC Account 182.3 (Other Regulatory Assets) or FERC Account 254 (Other Regulatory Liabilities). WPL intends that the net costs or benefits of this activity net against cash distributions.

Lastly, WPL requests approval to record 100 percent AFUDC during construction and to record 100 percent AFUDC on any amounts related to the Solar Projects that are recorded in FERC Account 182.3 upon mechanical completion but prior to COD, unless otherwise included in rates.

[77] WPL arrived at a rate base amount of $410 million by conservatively assuming that it finances 65 percent of the construction cost for the Solar Projects (approximately $390 million) and the tax equity investor finances the other 35 percent. The requested rate base amount ($410 million) reflects WPL's assumed 65 percent share of the construction costs (approximately $390 million) and all land purchase costs ($20 million) and excludes AFUDC.

VII. BROWNFIELDS

The Commission cannot issue a certificate of authority for the construction of electric generating equipment unless it finds that brownfields, as defined in Wis. Stat. §§ 283.13(1)(a), 560.13(1)(a), are used to the extent practicable.[78] Because this statute speaks only to the "construction" of a facility, the Commission has previously expressed doubt about whether the Brownfields law applies to the purchase of electric generating equipment.[79] In this case, WPL is seeking authorization to acquire one Solar Project for which a developer has submitted a CPCN application (Springfield), rendering the Brownfields law potentially inapplicable to that project in this proceeding. On the other hand, WPL is seeking authorization to construct the other five Solar Projects (Albany, Beaver Dam, Cassville, Paddock, and Wautoma), meaning that the Brownfields law would likely apply to those projects.

In any event, WPL is not aware of any brownfield site that has the same favorable development attributes, including sufficient size, as the land for the Solar Projects. Utility-scale solar generators, such as those proposed as part of this Application, inherently require a large amount of undeveloped land and are therefore often sited in rural areas across several hundred acres of real estate. WPL is not aware of any brownfield in Wisconsin that could accommodate the construction of these Solar Projects. Moreover, WPL reviewed the United States Environmental Protection Agency's RE-Powering Mapper, which is "an online interactive web application [that] allows users to visualize EPA's information about renewable energy potential

[78] *See* Wis. Stat. § 196.49(4).
[79] *Badger Hollow II CA Proceeding*, at 20.

on contaminated lands, landfills and mine sites."[80] A review of brownfield sites in that database revealed the following:

- Albany: The largest brownfield site in Green County is approximately 34 acres, which is not large enough to accommodate the Albany project.
- Beaver Dam/Springfield: The largest brownfield site in Dodge County is approximately 145 acres, which is not large enough to accommodate either the Beaver Dam or the Springfield projects.
- Cassville: The website lists no brownfield sites in Grant County.
- Paddock: The largest brownfield site in Rock County is approximately 70 acres, which is not large enough to accommodate the Paddock project.
- Wautoma: The largest brownfield site in Waushara County is approximately 12 acres, which is not large enough to accommodate the Wautoma project.

Since a brownfield site is not practicable for the Solar Projects, WPL requests that the Commission find that the Application complies with Wis. Stat. § 196.49(4), to the extent it applies.

VIII. ENERGY PRIORITIES LAW

When reviewing a CA application, the Commission must also consider the Energy Priorities Law, which establishes the preferred means of meeting Wisconsin's energy demands.[81] Under the Energy Priorities Law, Wisconsin's policy is to prioritize the following resources (in the order listed) for meeting the state's energy demands, to the extent that it is cost-effective and technically feasible to do so:

> (a) Energy conservation and efficiency;
>
> (b) Noncombustible renewable energy resources;
>
> (c) Combustible renewable energy resources;
>
> (cm) Advanced nuclear energy using a reactor design or amended reactor design approved after December 31, 2010, by the U.S. Nuclear Regulatory Commission;

[80] *See RE-Powering Mapper*, U.S. EPA (last updated Mar. 12, 2020), *available at* https://www.epa.gov/re-powering/re-powering-mapper.
[81] *See* Wis. Stat. §§ 1.12, 196.025(1)

(d) Nonrenewable combustible energy resources, in the order listed:

1. Natural gas.

2. Oil or coal with a sulphur content of less than 1 percent.

3. All other carbon-based fuels.

For several reasons, the Solar Projects satisfy the requirements of the Energy Priorities Law. First, as noncombustible renewable energy resources, these projects are prioritized above all other electric generation resources for meeting the state's energy demands.

Second, as WPL's planning analysis shows, there is not another noncombustible renewable energy resource that would be more cost-effective, technically feasible, and environmentally sound in meeting WPL's future capacity needs. WPL studied a variety of potential replacement resources in multiple modeling runs. The totality of WPL's analysis demonstrates that utility-scale solar generation is the preferred, least-cost resource for meeting WPL's capacity need. Even in planning scenarios with low load growth (due to, for example, increased energy efficiency or demand response), the Aurora model still showed substantial avoided costs and other benefits from new utility-scale solar generation, which demonstrates that demand-side alternatives do not alter the need for the Solar Projects.

Finally, the only higher priority resource in the Energy Priorities Law is energy conservation and efficiency. In accordance with the requirements specified in Wis. Stat. § 196.374(8), WPL has spent 1.2 percent of its annual operating revenues derived from retail sales to fund statewide energy efficiency and renewable resource programs for calendar year 2020. While the Commission cannot "order or otherwise impose energy conservation or efficiency

requirements" on WPL as part of this proceeding,[82] WPL will continue with such spending (as specified and required by law).[83]

Thus, WPL requests that the Commission find that the Solar Projects comply with the Energy Priorities Law.

IX. WISCONSIN ENVIRONMENTAL POLICY ACT (WEPA)

WEPA requires state agencies to prepare "a detailed statement, substantially following the guidelines issued [in the National Environmental Policy Act]" for every "major action" that could "significantly affect the quality of the human environment."[84] The Commission has codified regulations in the Wisconsin Administrative Code to implement WEPA's requirements.[85] Under those regulations, the construction of a solar-powered electric generation facility is considered a "Type III" action for which an Environmental Assessment (EA) or Environmental Impact Statement (EIS) is not normally required.[86] This is because the action does not "normally have the potential to significantly affect the quality of the human environment."[87] In recent proceedings, including WPL's recent CA I proceeding, the Commission has determined that preparation of an EA was appropriate.[88]

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[82] *See* Wis. Stat. § 196.025(1)(b)1.
[83] *See* Wis. Stat. § 196.374(2)(a)1., (3)(b)2.
[84] Wis. Stat. § 1.11.
[85] *See* Wis. Admin. Code § PSC ch. 4.
[86] *See* Wis. Admin. Code § PSC 4.10(3), Table 3(cr).
[87] *Id.*
[88] *See, e.g., In Re Application of Wis. Power and Light Co.*, Docket No. 6680-CE-182, *Environmental Assessment of Crawfish River Solar, North Rock County Solar, and Richland County Solar Photovoltaic Facilities* (Dec. 2020) (PSC REF#: 403642); *In Re Application of Point Beach Solar, LLC*, Docket No. 9802-CE-100, *Environmental Assessment of Point Beach Solar LLC: Point Beach Solar Electric Generation Facility Project* (Sept. 2019) (PSC REF#: 377047); *In Re Application of Badger State Solar LLC*, Docket No. 9800-CE-100, *Environmental Assessment of Badger State Solar LLC: Badger State Solar Solar Electric Generation Facility Project* (Sept. 2019) (PSC REF#: 377844); *In Re Application of Two Creeks Solar LLC*, Docket Nos. 9696-CE-100 and 9696-CE-101, *Environmental Assessment of Two Creeks Solar LLC: Two Creeks Solar Solar Electric Generation Facility and Electric Tie Line Project* (Dec. 2018) (PSC REF#: 357516); *In Re Application of Badger Hollow Solar Farm LLC*, Docket Nos. 9697-CE-100 and 9697-CE-101, *Environmental Assessment*

Here, WPL is seeking to acquire one utility-scale solar project (the Springfield Project) that is currently being developed by an independent third party that has filed a CPCN application with the Commission. In that CPCN proceeding, the Commission will examine the environmental impacts of the proposed facilities and (if it deems necessary) prepare an EA or EIS for the project, in consultation with the Wisconsin Department of Natural Resources.[89] Therefore, preparation of an EA or an EIS for WPL's acquisition of the Springfield Project in this proceeding is not required, and WPL has not included in this Application any environmental screening information for that project.

Rather, consistent with past practice, the Commission can and should consider environmental issues related to the Springfield Project in its CPCN proceeding and incorporate findings from any EA or EIS prepared for those projects into the record in this proceeding.[90] WPL also understands that, when acquiring projects for which the Commission has already issued a CPCN, WPL will only acquire those rights afforded to the project developers at the time the Commission issued such CPCNs, and WPL agrees to be bound by any conditions the Commission imposes on the development of the Solar Projects in those CPCN proceedings. Thus, WPL requests that the Commission find that (1) WPL's proposed acquisition of the Springfield Project is a Type III action under Wis. Admin. Code § PSC 4.10(2) and is unlikely to have a significant impact on the human environment; and (2) since the Commission will evaluate the

of Badger Hollow Solar Farm LLC: Badger Hollow Solar Electric Generation Facility and Electric Tie Line Project (Dec. 2018) (PSC REF#: 357520).

[89] *See* Wis. Stat. § 196.025(2m).

[90] *See Badger Hollow I CA Proceeding*, at 19-20.

environmental impacts of these projects in its CPCN docket, WPL's proposed acquisition of this project complies with Wis. Stat. § 1.11 and Wis. Admin. Code ch. PSC 4.

The Albany, Beaver Dam, Cassville, Paddock, and Wautoma projects will have nominal operating capacities of less than the 100 MW threshold for which a CPCN is required. WPL has included with this Application information concerning the environmental, land use, community, and other site-specific impacts of these projects, in the event the Commission determines an EA is warranted.[91] To the extent the Commission believes an environmental review of these projects is appropriate or necessary as part of this proceeding, WPL requests that the Commission find (1) WPL's proposed acquisition and construction of the Albany, Beaver Dam, Cassville, Paddock, and Wautoma projects are Type III actions under Wis. Admin. Code § PSC 4.10(2) and are unlikely to have a significant impact on the human environment, and (2) WPL's proposed acquisition and construction of these projects complies with Wis. Admin. Code ch. PSC 4.

X. CONCLUSION

For the reasons set forth above, WPL respectfully requests that the Commission approve the Application and issue a Certificate of Authority, as well as any other approvals that it deems necessary, to permit WPL to acquire, construct, install, and operate the Solar Projects.

[91] *See* Appendices C through G.