Exhibit N
Need for Non-Generating Facility

Umatilla-Morrow County Connect Project

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Application for Site Certificate

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TABLES

ATTACHMENTS

ACRONYMS AND ABBREVIATIONS

ASC	Application for Site Certificate
BPA	Bonneville Power Administration
BESS	Battery Energy Storage Systems
Council	Energy Facility Siting Council
kV	kilovolt
LaRC	Load and Resource Consolidated Tool
LLIR	Line and Load Interconnection Request
LRP	Long Range Plan
MW	megawatt
NERC	North American Electrical Reliability Corporation
OAR	Oregon Administrative Rule
Project	Umatilla-Morrow County Connect Project
Project Order	First Amended Project Order, *In the Matter of the Application for Site Certificate for the Umatilla-Morrow County Connect Project* (April 04, 2024)
pASC	preliminary Application for Site Certificate
UEC	Umatilla Electric Cooperative
WECC	Western Energy Coordinating Council

1.0 INTRODUCTION

The need for the Umatilla-Morrow County Connect Project (Project) has been defined in Umatilla Electric Cooperative's (UEC's) 2023 Long Range Plan (LRP), which is UEC's most current planning document. UEC's 2023 LRP outlines capital improvements needed to meet UEC firm capacity demand forecasts. The 2023 LRP forecasts a system capacity demand increase of 33% on an annual average for years 2023-2027. This Project will expand UEC's 230 kilovolt (kV) transmission system to increase reliability, provide a transmission path for renewable energy across the region, and establish an electrical grid capable of meeting these increasing capacity demands of local residential, agricultural, commercial, and industrial members within UEC's service territory. Importantly, the Project will increase reliability and capacity by providing a 230 kV transmission interconnection between the Boardman and Hermiston areas in UEC's service territory, which are currently not interconnected. The Project will also ensure continued compliance with the North American Electric Reliability Corporation (NERC) standards. In summary, the Project meets the system reliability rule for electrical transmission line need standards under Oregon Administrative Rule (OAR) 345-023-0030 as detailed in this Exhibit.

This Project will be designed and operated in a manner that supports continued system growth and will accommodate potential construction of additional service locations that will require ancillary facilities such as switchyards, substations, transmission, distribution, and/or other interconnection infrastructure.

2.0 ANALYSIS

2.1 Rules Under Which UEC Will Demonstrate Need

> OAR 345-021-0010(1)(n)(A): Identification of the rule in Division 23 of this chapter under which the applicant chooses to demonstrate need.

UEC chooses to demonstrate the need for the Project under the system reliability rule as allowed by OAR 345-023-0005(1), and as set forth in OAR 345-023-0030.

2.2 Demonstration of Need Under the System Reliability Rule

This section addresses the requirements of the system reliability rule, OAR 345-023-0030, and the relevant application content requirements of OAR 345-021-0010(n).

2.2.1 System Reliability Rule

OAR 345-023-0030: The Council shall find that the applicant has demonstrated need for an electric transmission line that is an energy facility under the definition in ORS 469.300 if the Council finds that: (1) The facility is needed to enable the transmission system of which it is to be a part to meet firm capacity demands for electricity or firm annual electricity sales that are reasonably expected to occur within five years of the facility's proposed in-service date based on weather conditions that have at least a 5 percent chance of occurrence in any year in the area to be served by the facility; (2) The facility is consistent with the applicable mandatory and enforceable North American Electric Reliability Corporation (NERC) Reliability Standards in effect as of September 18, 2015 as they apply either internally or externally to a utility system; and (3) Construction and operation of the facility is an economically reasonable method of meeting the requirements of sections (1) and (2) compared to the alternatives evaluated in the application for a site certificate.

The system reliability rule requires UEC to demonstrate that the Project is: (1) needed to allow UEC to meet its projected firm capacity demands or firm annual sales; (2) consistent with applicable NERC reliability standards; and (3) an economically reasonable method of meeting these requirements as compared to other alternatives.

First, the Project is required to meet UEC's projected firm capacity demands. UEC transmission system design criteria aim to provide three transmission sources to substations serving large capacity loads. Three sources provide continuity of service for the loss of one transmission element, typically a line or transformer (a "single contingency event") followed by the loss of a second transmission element, or the loss of one transmission system element while another transmission system element is experiencing a planned outage such as a maintenance outage (a "double contingency event"). This Project will increase reliability by providing a third source of power for the Boardman and Hermiston areas in UEC's service territory. Those two areas are not currently interconnected, reducing UEC's options for responding to a single contingency event or a double contingency event.

Second, the Project is consistent with the applicable mandatory and enforceable NERC Reliability Standards in effect as of September 18, 2015. The UEC 2023 LRP was prepared in accordance with NERC TPL-001-5 Standard. The Project is necessary to meet the performance criteria as identified in Table 1 of TPL-001-5.

Third, the Project is an economically reasonable approach to meeting UEC's projected firm capacity demands. The Project is an economically reasonable alternative for meeting UEC's needs as detailed in Section 2.2.5 of this Exhibit. Accordingly, the Project meets the requirements of the system reliability rule.

2.2.2 Load Resource Balance Tables

> OAR 345-021-0010(1)(n)(F): If the applicant chooses to demonstrate need for a proposed electric transmission line under OAR 345-023-0030, the system reliability rule: (i) Load-resource balance tables for the area to be served by the proposed facility. In the tables, the applicant shall include firm capacity demands and existing and committed firm resources for each of the years from the date of submission of the application to at least five years after the expected in-service date of the facility.
>
> OAR 345-021-0010(1)(n)(F)(ii): Within the tables described in subparagraph (i), a forecast of firm capacity demands for electricity and firm annual electricity sales for the area to be served by the proposed facility. The applicant shall separate firm capacity demands and firm annual electricity sales into loads of retail customers, system losses, reserve margins and each wholesale contract for firm sale ...

UEC is a customer of the Bonneville Power Administration (BPA). UEC has a BPA Load Following Power Sales Agreement and a BPA Network Transmission Agreement. BPA is contractually obligated to follow UEC's load with firm resources to meet UEC's energy and capacity requirements. BPA does not, however, provide firm resources to serve large loads on the UEC system that qualify as New Large Single Loads under applicable federal statue and BPA policies.

UEC submits a long-term load and resource forecast to BPA, which is known as the Load and Resource Consolidated Tool (LaRC). The information listed in the Load-Resource tables in Table 1 of Attachment N-1 is consistent with UEC's LaRC forecast. These tables include annual firm capacity demands, annual firm electricity sales, existing and committed firm resources, systems losses, and reserve margins. The Load-Resource tables are for an 8-year period beginning in October 2024, which is at least 5 years beyond the facility's earliest expect in-service date of July 2027 and are based on weather conditions that have at least a 5 percent chance of occurrence in any year.

2.2.3 Reductions in Firm Capacity Demand and Firm Annual Electricity Sales

> OAR 345-021-0010(1)(n)(F)(ii): . . . In the forecast, the applicant shall include a discussion of how the forecast incorporates reductions in firm capacity demand and firm annual electricity sales resulting from: (I) Existing federal, state or local building codes, and equipment standards and conservation programs required by law for the area to be served by the proposed facility; (II) Conservation programs provided by the energy supplier, as defined in OAR 345-001-0010; (III) Conservation that results from responses to price; and (IV) Retail customer fuel choice;

UEC's forecast reflects "existing federal, state, or local building codes and equipment standards and conservation programs required by law for the area to be served by the proposed facility," as discussed in OAR 345-021-0010(1)(n)(F)(ii). UEC's forecasting incorporates the growth of industrial loads, which is the main driver for the 33% annual average firm capacity increase for the years 2023-2027. The industrial load profiles are modeled by 3rd party vendors which use analytics and industry knowledge to accurately forecast the industrial load projected electricity use and to compare this use with similar type loads throughout the nation.

UEC's Energy Conservation Agreement with BPA obligates UEC to implement BPA's cost-effective conservation programs to reduce its firm power load requirements. UEC purchases the amount of conservation that BPA has determined to be attributable to any material, equipment, or activity associated with its conservation program. UEC is responsible for implementing cost-effective conservation measures, including measures applicable to irrigation systems in its service territory, and must report all conservation measures and project savings consistent with UEC's BPA power sales agreement.

UEC offers energy efficiency and conservation projects to assist its members and communities. The types of projects UEC offers are energy-saving incentives and the Energy Saver Loan Program, which allows their members to reduce energy consumption and costs. Over the past five years, UEC's energy saving programs have collectively helped members save an estimated 250 million kWh.

UEC's Scientific Irrigation Scheduling (SIS) program offers solutions to optimize water and energy use. This program enables precise management for irrigators that conserves resources and enhances long-term irrigation system efficiency for UEC's irrigation members. Since 2016, the program has helped UEC members save over 30 billion gallons of water, and over 80 million in kWhs saved.

UEC's 2023 LRP and the load-resource tables in Attachment N-1 incorporate these conservation measures into the forecast.

In regard to the "Retail customer fuel choice," UEC is not a dual fuel utility and, therefore, does not provide a fuel choice option in its rate schedules to members that would impact its forecasts.

2.2.4 Firm Resources to be Used to Meet Demands

OAR 345-021-0010(1)(n)(F)(iii): Within the tables described in subparagraph (i), a forecast of existing and committed firm resources used to meet the demands described in subparagraph (ii). The applicant shall include, as existing and committed firm resources, existing generation and transmission facilities, firm contract resources and committed new resources minus expected resource retirements or displacement. In the forecast, the applicant shall list each resource separately.

The load-resource balance tables included in Attachment N-1 include the existing and committed firm resources used to meet the demand to be served from the Project. As depicted in Table 2 and Table 3 of Exhibit N-1, the demand on the Project under normal conditions is forecast to be 260 MW in 2027, increasing to 305 MW by 2032. UEC has no expected retired or displaced resources, which is also noted in the load-resource balance tables.

2.2.5 Retirement or Displacement of Resources

OAR 345-021-0010(1)(n)(F)(iv): A discussion of the reasons each resource is being retired or displaced if the forecast described in subparagraph (iii) includes expected retirements or displacements.

No resources are being retired or displaced as a result of this Project.

2.2.6 Assumed Annual Capacity Factors

> OAR 345-021-0010(1)(n)(F)(v): A discussion of the annual capacity factors assumed for any generating facilities listed in the forecast described in subparagraph (iii).

This Project does not impact any generating facility's annual capacity factors. UEC owns a 1,000-kW solar facility for self-generation. The 1,000-kW solar facility capacity factor has averaged 16% for the last 3 years.

2.2.7 Reliability Criteria Demonstrating Need for the Project

> OAR 345-021-0010(1)(n)(F)(vi): A discussion of the reliability criteria the applicant uses to demonstrate the proposed facility is needed, considering the load carrying capability of existing transmission system facilities supporting the area to be served by the proposed facility.

UEC conducts an annual system assessment to evaluate the performance of the UEC Bulk Electric System and to identify system reliability deficiencies based on NERC Standard TPL-001-5.1 and Western Energy Coordinating Council (WECC) Criterion TPL-001-WECC-CRT-4. These reliability criteria require UEC to: (a) reliably serve customer demand; and (b) operate the system within facility limits, such that the most severe single contingency event does not result in loss of load or instability. The following discussion shows that the Project is needed to satisfy these criteria.

NERC Transmission Planning (TPL) standards provide the criteria for reliably serving future load and system performance under normal and outage conditions. These standards require that system facilities operate within NERC, WECC, and UEC accepted planning criteria for a wide range of system conditions, including loss of generator units and transmission facilities. With the Project modeled in-service, UEC has demonstrated through assessments that UEC can meet planning criteria for the planning horizon.

The Project, a 230 kV transmission line from UEC's new Ordnance Switchyard to UEC's Highway 730 Switchyard will provide an additional 230 kV transmission source to both the Boardman and Hermiston areas in UEC's service territory and provide a third transmission source for both the Hermiston area and Boardman area loads. Without this Project, the Hermiston area loads and the Boardman area loads are at risk of an outage when one of the 230 kV feeds or a BPA 500 kV/230 kV transformer is out of service for maintenance or schedule work. For example, as shown in Table 3 of Exhibit N-1, the demand on the Project is forecast to be 260 MW in 2027 under normal conditions, but that demand increases to 322 MW during a single contingency event, and 361 MW during a double contingency event. Without the Project, those amounts would be shifted to the existing systems and reduce the reliability of those systems.

2.2.8 The Project is an Economically Reasonable Alternative

> OAR 345-021-0010(1)(n)(F)(vii): A discussion of reasons why the proposed facility is economically reasonable compared to the alternatives described below. In the discussion, the applicant shall include a table showing the amounts of firm capacity and firm annual electricity available from the proposed facility and each alternative and the estimated direct cost, as defined in OAR 345-001-0010, of the proposed facility and each alternative. The applicant shall include documentation of assumptions and calculations supporting the table. . . .

This Project is an economically reasonable alternative for providing reliability by building a tie line between two large load areas in UEC's service territory that are radially fed. An alternative to the Project would be for BPA to build a new 500/230 kV substation in the South Hermiston area near Stanfield to provide a tie to the Hermiston area loads. This was studied by the BPA in a Line and Load Interconnection Request (LLIR) and expected costs are five times higher than the project. This alternative would not support or increase reliability for the Boardman area loads. To support and increase reliability of the Boardman area loads, another LLIR was conducted by BPA that calls for construction of a 500/230 kV Station in the Boardman area, which is called Six Mile (Option #4). The Six Mile project would initially just support loads just in its local area. Additional 230 kV lines would be required to tie the Six Mile substation to the Boardman area, which also requires upgrading the existing BPA 230 kV system or UEC building a new 230 kV line in the area (Option #5). Both BPA Options #4 and Option #5 would require land procurement for the new substations, as well as expected construction timelines of 36 months, which is later than the expected in-service date of the Project. Option #4 and Option #5 are also estimated to cost significantly more than the Project.

OPTION	PROJECT DESCRIPTION	MEETS SINGLE CONTINGENCY RELIABILITY (N-1)	MEETS DOUBLE CONTINGENCY RELIABILITY (N-1-1)	ESTIMATED COST
1	Build 14 miles of 230 kV DC – The Project	Yes	Yes	$85M
2	BPA build Stanfield 500/230 kV Substation (1)	No	No	2-3 Times Cost of Option 1
3	Option #2 and Loop 500 kV Line to Lower Monumental (1)	Yes	Yes	5-6 Times Cost of Option 1
4	BPA build Six Mile 500/230 kV Substation (2)	Yes	No	2-3 Times Cost of Option 1
5	Option #4 and Expand 230 kV System	Yes	Yes	Option 4 Costs Plus $72M

(1) (2) - Project costs developed by BPA are included in the LLIR Studies, which are confidential documents.

2.2.9 Required Alternatives Evaluated

OAR 345-021-0010(1)(n)(F)(vii): . . . The applicant shall evaluate alternatives to construction and operation of the proposed facility that include, but are not limited to: (I) Implementation of cost-effective conservation, peak load management and voluntary customer interruption as a substitute for the proposed facility. (II) Construction and operation of electric generating facilities as a substitute for the proposed facility. (III) Direct use of natural gas, solar or geothermal resources at retail loads as a substitute for use of electricity transmitted by the proposed facility. (IV) Adding standard sized smaller or larger transmission line capacity.

Energy Efficiency

Energy efficiency is not considered an effective alternative to constructing the proposed transmission Project. UEC already has a robust energy efficiency and conservation program. UEC has invested more than $4.6 million in these programs in the last five years and achieved 250 million kWh of energy savings in this period. More than 10,800 UEC members have benefited from UEC's energy efficiency and conservation program in the last five years, which includes an energy and efficiency savings kit mailed to 9,000 residential members in the fall of 2021. The load growth on the UEC system, however, outpaces those conservation gains and those forecast to be implemented in the future.

Battery Energy Storage System

The expansion of the UEC 230 kV transmission system is needed to provide each large load substation with three transmission sources to ensure high reliability and to allow for maintenance of the transmission system per the UEC system performance criteria. There are very few options to provide the required three sources that are not wired solutions. Battery Energy Storage Systems (BESS) for example, can provide a source of energy, but their effectiveness is limited to a relatively short window of time. Due to the high load factor of the UEC loads, and the need to provide reliable service for potentially days at a time, a BESS is not considered an effective solution or an alternative to the Project.

2.2.10 Earliest and Latest Expected In-Service Dates

OAR 345-021-0010(1)(n)(F)(viii): The earliest and latest expected in-service dates of the facility and a discussion of the circumstances of the energy supplier, as defined in OAR 345-001-0010, that determine these dates.

The Project is estimated to be in-service by July of 2027 at the earliest and by the end of 2028 at the latest based on UEC's updated assessment of siting, permitting, regulatory approvals, in-service date requirements of the parties electing to construct the line, the terms of any resulting joint construction agreements, shipment of long-lead-time materials, and other conditions and factors.

3.0 CONCLUSION

Exhibit N includes the application information provided for in OAR 345-021-0010(1)(n) and provides the evidence necessary to show the need for the Project under the system reliability rule for transmission lines (OAR 345-023- 0030).

4.0 COMPLIANCE CROSS REFERENCES

Table N-1 identifies the location within the application for site certificate of the information responsive to the need standard for non-generating facilities, OAR 345-0023-0005, the application submittal requirements in OAR 345-021-0000(8) and OAR 345-021-0010(n), and the relevant Project Order provisions. (Updated based on changes above)

TABLE N-1. COMPLIANCE REQUIREMENTS AND RELEVANT CROSS-REFERENCES

REQUIREMENT	LOCATION
OAR 345-021-0010(1)(n)	
(F) If the applicant chooses to demonstrate need for a proposed electric transmission line under OAR 345-023-0030, the system reliability rule:	Exhibit N, Section 2.2
(viii) Load-resource balance tables for the area to be served by the proposed facility. In the tables, the applicant shall include firm capacity demands and existing and committed firm resources for each of the years from the date of submission of the application to at least five years after the expected in-service date of the facility.	Exhibit N, Section 2.2.2.1 and Attachment N-1
(ii) Within the tables described in subparagraph (i), a forecast of firm capacity demands for electricity and firm annual electricity sales for the area to be served by the proposed facility. The applicant shall separate firm capacity demands and firm annual electricity sales into loads of retail customers, system losses, reserve margins and each wholesale contract for firm sale. In the forecast, the applicant shall include a discussion of how the forecast incorporates reductions in firm capacity demand and firm annual electricity sales resulting from:	Exhibit N, Section 2.2.2.2
(I) Existing federal, state or local building codes, and equipment standards and conservation programs required by law for the area to be served by the proposed facility;	Exhibit N, Section 2.2.2.2
(II) Conservation programs provided by the energy supplier, as defined in OAR 345-001-0010;	Exhibit N, Section 2.2.2.2
(III) Conservation that results from responses to price; and	Exhibit N, Section 2.2.2.2
(IV) Retail customer fuel choice;	Exhibit N, Section 2.2.2.2
(iii) Within the tables described in subparagraph (i), a forecast of existing and committed firm resources used to meet the demands described in subparagraph (ii). The applicant shall include, as existing and committed firm resources, existing generation and transmission facilities, firm contract resources and committed new resources minus expected resource retirements or displacement. In the forecast, the applicant shall list each resource separately;	Exhibit N, Section 2.2.3
(iv) A discussion of the reasons each resource is being retired or displaced if the forecast described in subparagraph (iii) includes expected retirements or displacements;	Exhibit N, Section 2.2.4
(v) A discussion of the annual capacity factors assumed for any generating facilities listed in the forecast described in subparagraph (iii);	Exhibit N, Section 2.2.5
(vi) A discussion of the reliability criteria the applicant uses to demonstrate the proposed facility is needed, considering the load carrying capability of existing transmission system facilities	Exhibit N, Section 2.2.6,

REQUIREMENT	LOCATION
supporting the area to be served by the proposed facility; and	
(vii) A discussion of reasons why the proposed facility is economically reasonable compared to the alternatives described below. In the discussion, the applicant shall include a table showing the amounts of firm capacity and firm annual electricity available from the proposed facility and each alternative and the estimated direct cost, as defined in OAR 345-001-0010, of the proposed facility and each alternative. The applicant shall include documentation of assumptions and calculations supporting the table. The applicant shall evaluate alternatives to construction and operation of the proposed facility that include, but are not limited to:	Exhibit N, Section 2.2.7 and Table N-1
(I) Implementation of cost-effective conservation, peak load management and voluntary customer interruption as a substitute for the proposed facility;	Exhibit N, Section 2.2.8
(II) Construction and operation of electric generating facilities as a substitute for the proposed facility;	Exhibit N, Section 2.2.8
(III) Direct use of natural gas, solar or geothermal resources at retail loads as a substitute for use of electricity transmitted by the proposed facility; and	Exhibit N, Section 2.2.8
(IV) Adding standard sized smaller or larger transmission line capacity;	Exhibit N, Section 2.2.8,
(viii) The earliest and latest expected in-service dates of the facility and a discussion of the circumstances of the energy supplier, as defined in OAR 345-001-0010, that determine these dates; and	Exhibit N, Section 2.2.9

ATTACHMENT N-1 PEAK FORECAST TABLES

Table 1

Fiscal Year**	Firm Capacity System Demand (MW)	Firm Annual Electricity System Sales (MWh)	System Losses (MWh)	Reserve Margins	BPA Power Sales Agreement (MWh)	Committed Firm Contract Resources (MWh)	Self Generation (MWh)	Resource Retirements (MWh)
2025	1,592	12,404,343	293,983	None	2,917,247	9,485,617	1,479	0
2026	1,952	15,393,105	364,817	None	2,939,435	12,452,190	1,479	0
2027	2,240	17,777,540	421,328	None	2,961,846	14,814,215	1,479	0
2028	2,636	21,063,308	499,200	None	2,984,480	18,077,349	1,479	0
2029	3,155	25,376,520	601,424	None	3,007,341	22,367,699	1,479	0
2030	3,827	30,959,801	733,747	None	3,030,431	27,927,891	1,479	0
2031	4,440	36,054,714	854,497	None	3,053,751	32,999,484	1,479	0
2032	4,816	39,174,119	928,427	None	3,077,305	36,095,336	1,479	0

**- Fiscal Years run from October 1 to September 30. For example, Fiscal Year 2025 is October 1, 2024 to September 30, 2025.

Table 2

Fiscal Year	Normal Demand on Project (MW)	Firm Annual Electricity Sales from Project (MWh)(1)	Estimated Reduction in System Losses (MWh) (2)
2025		-	
2026		-	
2027	260	2,063,603	10,877
2028	267	2,133,731	13,498
2029	276	2,219,908	15,589
2030	287	2,321,776	18,470
2031	298	2,419,725	22,253
2032	305	2,480,808	27,149

**- Fiscal Years run from October 1 to September 30. For example, Fiscal Year 2025 is October 1, 2024 to September 30, 2025.

(1)-Based on percentage of total system sales

(2) Based on a 3.7% reduction in system losses.

Table 3

Fiscal Year**	Firm Capacity System Demand (MW)	Normal Demand/Flow on Project (MW)	Single Contingency Demand/Flow on Project (MW)	Double Contingency Demand/Flow on Project (MW)
2025	1,592			
2026	1,952			
2027	2,240	260	322	361
2028	2,636	267	340	395
2029	3,155	276	362	438
2030	3,827	287	390	491
2031	4,440	298	417	544
2032	4,816	305	435	578

**- Fiscal Years run from October 1 to September 30. For example, Fiscal Year 2025 is October 1, 2024 to September 30, 2025.