Advisory Opinion and WREGIS Certification (to be completed by Commerce)

It is the opinion of the Washington Department of Commerce that the facility identified in this application meets the statutory legal standard for an eligible renewable resource as defined in RCW 19.285.030, based on the factors set out below The facility will be designated in WREGIS as an eligible renewable resource under the Washington Energy Independence Act:

Facility Name:	**Rocky Reach Hydroelectric Project**	WREGIS GU ID:	Listed below

[X] The fuel source for the facility is identified in RCW 19.285.030 as renewable energy:

[ ]	Wind	[ ]	Wave, ocean, or tidal power
[ ]	Solar energy	[ ]	Gas from sewage treatment facilities
[ ]	Geothermal energy	[ ]	Biodiesel fuel
[ ]	Landfill gas	[ ]	Biomass energy
[X]	Water (incremental efficiency hydro)	[ ]	Water (pipe or canal)

[X] The efficiency improvements were completed after March 31, 1999, as required by RCW 19.285.030.

[X] The facility is located in the Pacific Northwest, or the electricity from the facility is delivered into Washington state on a real-time basis without shaping, storage, or integration services, as required by RCW 19.285.030.

Additional Provisions:
Applicable WREGIS GU IDs: W1320, W2875, W2876, W2877, W2878, W2879, W2880, W2881, W2882, W2883, W2884

Eligible resource is **14.73 percent** of total generation.

Washington Certification Number: WA2017-002

WASHINGTON DEPARTMENT OF COMMERCE

Director or Designee

3/27/17
Date

STATE OF WASHINGTON
DEPARTMENT OF COMMERCE
1011 Plum Street SE • *PO Box 42525 • Olympia, Washington 98504-2525 • (360) 725-4000*
www.commerce.wa.gov

March 20, 2017

To: Michael Furze, Assistant Director, Energy Division

From: Glenn Blackmon, Senior Energy Policy Specialist

RE: Decision Memo – Advisory Opinions 2017-002 (Rocky Reach Hydroelectric Project)

Recommendation

Issue an advisory opinion concluding that the incremental generation due to efficiency improvements at the Rocky Reach project (the "Project") qualifies as an eligible renewable resource for purposes of the Energy Independence Act, Chapter 19.285 RCW.

Approve an incremental generation percentage of 14.73 percent for the Project.

Background

The Energy Independence Act ("EIA," also known as I-937) requires that qualifying electric utilities use renewable resources to meet a specified portion of customers' energy requirements and establishes eligibility standards for renewable resources used to meet this requirement.

The EIA defines hydropower as a renewable resource, but it limits the eligibility of this resource to the incremental electricity produced as a result of efficiency improvements completed after March 31, 1999. Further, the generation project must be owned by a qualifying utility and must be located in the Pacific Northwest, and the additional generation must not result in new water diversions or impoundments.[1]

RCW 19.285.045 allows utilities and project owners to obtain an advisory opinion from Commerce regarding the eligibility of resources to meet a target under RCW 19.285.040. In this case, the advisory opinion from Commerce provides a basis to register the hydroelectric projects in the Western Renewable Energy Generation Information System, identifying the portion of each project's output that is eligible in Washington.

Procedural History

On February 10, 2017, Chelan County Public Utility District, a qualifying utility under the EIA, requested an advisory opinion concerning the eligibility of incremental generation from efficiency improvements to the Project. The application included a report describing the Project,

[1] RCW 19.285.030(12)(b).

the timing and nature of the efficiency improvements to the Project, and a summary of the engineering analysis used to determine the amount of additional generation resulting from the improvements.[2] Commerce determined on February 13, 2017, that the application was complete and posted it for public comment on the web page[3] that it maintains for advisory opinions. Commerce received no public comments on the applications.

Analysis – Eligibility of the Incremental Generation

Chelan PUD's application identifies two sources of incremental generation from the Project:

(1) Upgrades and replacements of the Project's generator and turbine equipment.[4] The new turbines and generators result in more hydroelectric generation from the same quantity of water passing through the Project.
(2) Operational efficiency improvements resulting from implementation of the Project's habitat conservation plan (HCP).[5] Implementation of the HCP, including installation of fish passage facilities to increase survival of migrating juvenile salmon, allowed the utility to avoid spill of water during certain months that would otherwise have been required to comply with environmental requirements. The water that otherwise would have been spilled became available for hydroelectric generation.

As discussed below, the Project's efficiency improvements meet each of the elements of the eligibility requirements in RCW 19.285.030(12)(b):

- *The incremental generation must result from efficiency improvements.* The Energy Independence Act does not restrict eligible efficiency improvements to changes in equipment. Commerce has interpreted efficiency improvements to include any change by a project owner that results in greater generation from the same quantity of water available to the Project. The turbine and generator modifications are clearly efficiency improvements, in that they result in greater hydroelectric output for any given quantity of water passing directly through the turbines. The eligibility of operational improvements is perhaps less obvious, since in some cases these changes result in additional water passing through the turbines due to reduced or avoided spill and in some cases may be the result of changes in operational practices rather than equipment changes. Commerce concluded

[2] *Renewable Incremental Hydro Engineering Report, Rocky Reach and Rock Island Hydroelectric Projects* (the "Engineering Report"), Chelan PUD, December 2016. The report is stamped by Brett M. Bickford, Professional Engineer.
[3] http://www.commerce.wa.gov/growing-the-economy/energy/energy-independence-act/eia-advisory-opinions/
[4] Engineering Report, pp. 6-7.
[5] *Anadromous Fish Agreement and Habitat Conservation Plan, Rocky Reach Hydroelectric Project, FERC License No. 2145,* March 26, 2002. Available at https://www.chelanpud.org/environment/habitat-conservation-plans.

in Advisory Opinion 2013-011, dated September 4, 2014, that incremental generation resulting from the Project's HCP implementation was an eligible renewable resource.[6]

- *The efficiency improvements must be completed after March 31, 1999.* Chelan PUD's application shows that it completed the efficiency improvements, including the turbine and generation upgrades and the implementation of the HCP, after the statutory date. The Engineering Report identifies turbine improvements occurring after this date.[7]

- *A qualifying utility must own the hydroelectric generation project.* Chelan PUD is a qualifying utility and owns the Project.

- *The hydroelectric generation projects must be located in the Pacific Northwest.* The Project is located in the state of Washington, which is within the Pacific Northwest as defined by the EIA.

- *The additional generation must not result in new water diversions or impoundments.* Chelan PUD has made no changes to the amount of water available to or impounded by the Project, so the additional generation did not result in new water diversions or impoundments.

Analysis – Amount of Incremental Generation

The second question presented by Chelan PUD's applications is how much of the generation from the Project is an eligible renewable resource. The incremental generation is not directly measured and must be calculated by modeling the amount of generation that would occur with and without the efficiency improvements. The Engineering Report submitted by Chelan PUD concludes that eligible incremental generation from the Project is 14.73 percent of total generation.[8] Chelan PUD used "Method 2" in determining the amount of eligible generation.[9] This method determines the average incremental generation, as a percentage of total generation, over representative historical stream flow conditions.

The quantity or percentage question is one not normally addressed in an advisory opinion. The advisory opinion provides advice regarding whether a resource is eligible, not how much energy from a project is eligible.[10] However, in the case of incremental hydro projects, the procedures of the regional tracking system, the Western Renewable Energy Generation Information System

[6] Advisory opinions are available at http://www.commerce.wa.gov/growing-the-economy/energy/energy-independence-act/eia-advisory-opinions/.
[7] Engineering Report, p. 7. .
[8] Engineering Report, p. 9.
[9] WAC 194-37-130(3)(c)(ii).
[10] RCW 19.285.045.

(WREGIS) require the identification by the state of the eligible portion of a resource being registered.

The Engineering Report supporting Chelan PUD's incremental generation models the amount of electricity that would be generated by the Project with and without the improvements. The analysis separately models the effects of turbine-generator upgrades and operational efficiencies. It uses a hydro operations optimization model to calculate the efficiency gains. Chelan PUD has used this model in determining incremental generation amounts for the Project in prior years, and these results were accepted by the State Auditor in determining Chelan PUD's compliance with the renewable requirements of the EIA.

The incremental hydro rule, WAC 194-37-130, requires that incremental generation be quantified using a historical study period reasonably representative of the stream flows that would have been available to the hydroelectric project over the period of time for which stream flow records are readily available. Chelan PUD satisfied this requirement by developing a measure of average stream flows using historical data from a 79-year period ending in 2007 for Columbia River flows as well as the best historical information available for upstream flows that affect the output of the Projects.[11]

We conclude that the hydro optimization model and the stream flow data used in Chelan PUD's analysis support the proposed calculation of the additional generation that results from the improvements to the Projects.

Conclusion

Incremental generation from the Project is an eligible renewable resource under the Energy Independence Act. Chelan PUD's engineering analysis supports the specific percentage amount of generation identified by the utility, and it is therefore reasonable to use this percentage amount in registering the generating units in WREGIS.

[11] Engineering Report, p. 10.

Department of Commerce

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Washington State Energy Independence Act

Application for Advisory Opinion and Renewable Energy Facility (WREGIS) Certification

All information provided in this application or any supplemental or additional materials is subject to public disclosure.

FACILITY NAME: **Rocky Reach Hydroelectric Project**
WREGIS Generating Unit ID (if already registered): **W2875**

A separate Washington application is required for each generating unit with a separate WREGIS GU ID. Applicant must select Washington in WREGIS generating unit registration.

Section 1: Agency Action Requested

☒ Advisory Opinion and WREGIS Certification ☐ Advisory Opinion Only

Section 2: Applicant Information

Applicant Contact: **Melissa Lyons** Title: **Trader/Analyst**

Applicant Phone: **509.661.4369**

Applicant E-mail: **melissa.lyons@chelanpud.org**

Applicant Company Name: **Public Utility District No. 1 of Chelan County**

Company Address: **327 N. Wenatchee Avenue**

City: **Wenatchee** State/Province: **WA**

Zip Code: **98801** Country: **USA**

Section 3: Facility Information

Facility Owner

Name of Facility Owner:

OR ☒ The Facility Owner is the same as the Applicant.

Address:

City/State/ZIP:

Contact Name, Phone, and Email:

Facility Identification and Location

Unit Name: **C1**

Facility Name: **Rocky Reach Hydroelectric Project**

Unit location (street address, legal description, or GPS coordinates):

5695 State Route 97A (7 miles north of city of Wenatchee, WA on Columbia River)

City: **Wenatchee** County: **Chelan**

State/Province: **WA** Zip: **98801** Country: **USA**

Provide a description of the facility.

The project consists of an 8,235-acre reservoir and a 2,847-foot-long by 130-foot-high concrete gravity dam spanning the Columbia River.

Facility Identification Numbers

WREGIS Generating Unit ID: **W2875** Other External ID:

EIA Utility Code: **3413** EIA Plant Code: **3883**

Section 4: Facility Eligibility

A. Facility Profile

Nameplate Capacity (MW): **114**

If this value will change, please explain:

Commercial Operation Date (COD): **06** / **01** / **1961**

Is your facility considered repowered by WREGIS? ☐Yes ☒No

If yes, please explain:

B. Facility Fuel

Indicate each energy source used by the facility. For definitions, refer to RCW 19.285.030. For multi-fuel generating facilities indicate all fuels used.

☐	Wind	☐	Wave power
☐	Solar energy	☐	Ocean power
☐	Geothermal energy	☐	Tidal power
☐	Landfill gas	☐	Gas from sewage treatment facility
☐	Biomass energy (must complete Section 5)	☐	Biodiesel fuel (must complete Section 6)
☒	Water (must complete Section 7)	☐	Other (please specify):

Will the facility use any fossil fuel or other non-qualifying fuel? ☐Yes ☒No

- Type of fossil fuel or other non-qualifying fuel:
- Average annual amount of non-qualifying fuel used (percent of net heat input):

Section 5: Biomass Energy Supplement (complete only if "biomass energy" is checked in Section 4)

Allowed Fuel Sources. Indicate each source of biomass energy used by the facility.

☐	Organic by-products of pulping and the wood manufacturing process	☐	Food waste and food processing residuals
☐	Animal manure	☐	Liquors derived from algae
☐	Solid organic fuels from wood	☐	Dedicated energy crops
☐	Forest or field residues	☐	Yard waste
☐	Untreated wooden demolition or construction debris		

Prohibited Fuel Sources. The following materials will NOT be used as a source of biomass energy by the facility.

☐	Wood pieces that have been treated with chemical preservatives such as creosote, pentachlorophenol, or copper-chrome-arsenic	☐	Wood from old growth forests
		☐	Municipal solid waste

Legacy Biomass. The Washington Energy Independence Act allows a biomass energy facility commencing operation before March 31, 1999 to qualify as an eligible renewable resource in certain circumstances. Contact Commerce to obtain application requirements.

Section 6: Biodiesel Fuel Supplement (complete only if "biodiesel fuel" is checked in Section 4)

The biodiesel fuel used by the facility meets each of the identified conditions:

☐	The fuel (a) is a mono alkyl ester of long chain fatty acids derived from vegetable oils or animal fats for use in compression-ignition engines and (b) meets the requirements of the American society of testing and materials specification D 6751 in effect as of January 1, 2003.
☐	The fuel is NOT from crops raised on land cleared from old growth or first-growth forests where the clearing occurred after December 7, 2006.

Section 7: Water/Hydroelectric Power (complete only if "water" is checked in Section 4)

The facility uses water as a fuel in the following manner:

☒	**Incremental Hydro.** Incremental electricity produced as a result of efficiency improvements completed after March 31, 1999, to hydroelectric generation projects owned by a qualifying utility and located in the Pacific Northwest where the additional generation does not result in new water diversions or impoundments.	
	Date efficiency improvement completed: **3/31/2003; 4/1/2003**	
	Method of measuring incremental generation:	
	☐	Incremental generation is separately metered or measured.
	☐	Incremental generation is modeled each year based on actual stream flows.
	☒	Incremental generation is modeled as a fixed percentage of total generation. Fixed percentage: **14.73**%
	☐	Incremental generation is modeled as a fixed generation amount. Fixed amount: megawatt-hours
	Note: If any box but the first is checked, the facility must register in WREGIS as a multi-fuel facility. Non-incremental generation will be classified as Large Hydro (LHN) and excluded from certificate creation.	
☐	**Canal or pipe.** Hydroelectric generation from a project completed after March 31, 1999, where the generation facility is located in irrigation pipes, irrigation canals, water pipes whose primary purpose is for conveyance of water for municipal use, and wastewater pipes located in Washington where the generation does not result in new water diversions or impoundments.	

Section 8: Eligibility for Washington Multipliers (Optional)

The facility qualifies for the following multipliers under the Washington Energy Independence Act:

☐	**Distributed Generation.** The facility has a generating capacity of 5 MW or less and is not part of any integrated cluster of facilities with an aggregate generating capacity of 5 MW or more.
☐	**Apprentice Labor.** The facility commenced operation after December 31, 2005 and in construction used an apprenticeship program approved by the Washington State Apprenticeship and Training Council.

NOTE: Commerce requests optional multiplier eligibility from facility owners for informational purposes only. Owners seeking certification of a facility as eligible for a multiplier should contact Commerce for application requirements.

Section 9: Reservation

The Washington Department of Commerce makes a determination of resource eligibility under the Washington Energy Independence Act based on the information provided by the applicant and does not independently verify that information. An applicant must promptly notify Commerce of any changes to the information submitted for certification that may affect the facility's eligibility. Commerce reserves the right to modify or withdraw a designation if it determines that the information supplied by the applicant was incomplete or inaccurate.

Section 10: Attestation

I declare that the information provided in this application and any supplemental forms and attachments are true and correct to the best of my knowledge, that the information contained in this submission is consistent with information on file with WREGIS unless otherwise indicated, that no information materially affecting the facility's eligibility has been withheld, and that I am authorized to file this submission on the facility owner's behalf.

Signature: 

Date Signed: **2/8/17**

Authorized Officer/Agent: **Gregg Carrington**

Officer Title and Company: **Managing Director- Energy Resources**

Name of Facility: **Rocky Reach Hydroelectric Facility**

Application Checklist for Submission

Applicants must select the Washington program administrator in the generating unit's WREGIS static data.

Applicants should ensure that the following documents are provided:

1. Electronic copy of entire application, including a signed attestation page.
2. WREGIS "static data" if the facility is already registered in WREGIS. A printout of your generator account profile screen in WREGIS.
3. Optional project background documentation. Background documentation can be submitted or published in regulatory settings (FERC or state commission filings) or informal forums (websites, articles or factsheets).
4. Payment of advisory opinion fee of **$1,250**. A separate application and application fee are required for each generating unit. However, if a facility owner has multiple WREGIS generating unit IDs for a single facility and all the static characteristics of the facility (other than the generating capacity) are identical, it may request that Commerce treat the combined generating units as a single application. The owner must document at the time of application that all GU IDs are part of a single facility in a single location. If GU IDs are added later, a separate application will be required.

To submit your facility for certification, e-mail the application and any supplemental materials listed above to (wregis@commerce.wa.gov). Submit payment of the advisory opinion fee to:

Department of Commerce
Attn: State Energy Office
P.O. Box 42525
Olympia, WA 98504-2525

Commerce will post each application on its website. Applications are subject to a public comment period.

Advisory Opinion and WREGIS Certification (<u>to be completed by Commerce</u>)

It is the opinion of the Washington Department of Commerce that the facility identified in this application meets the statutory legal standard for an eligible renewable resource as defined in RCW 19.285.030, based on the factors set out below The facility will be designated in WREGIS as an eligible renewable resource under the Washington Energy Independence Act:

Facility Name:		WREGIS GU ID:	

☐ The fuel source for the facility is identified in RCW 19.285.030 as renewable energy:

☐	Wind	☐	Wave, ocean, or tidal power
☐	Solar energy	☐	Gas from sewage treatment facilities
☐	Geothermal energy	☐	Biodiesel fuel
☐	Landfill gas	☐	Biomass energy
☐	Water (incremental efficiency hydro)	☐	Water (pipe or canal)

☐ The facility commenced operation after March 31, 1999, as required by RCW 19.285.030.

☐ The facility is located in the Pacific Northwest, or the electricity from the facility is delivered into Washington state on a real-time basis without shaping, storage, or integration services, as required by RCW 19.285.030.

Additional Provisions:

Washington Certification Number:

WASHINGTON DEPARTMENT OF COMMERCE

_____

Director or Designee Date

Department of Commerce

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Washington State Energy Independence Act

Application for Advisory Opinion and Renewable Energy Facility (WREGIS) Certification

All information provided in this application or any supplemental or additional materials is subject to public disclosure.

FACILITY NAME: **Rocky Reach Hydroelectric Project**
WREGIS Generating Unit ID (if already registered): **W2876**

A separate Washington application is required for each generating unit with a separate WREGIS GU ID. Applicant must select Washington in WREGIS generating unit registration.

Section 1: Agency Action Requested

☒ Advisory Opinion and WREGIS Certification ☐ Advisory Opinion Only

Section 2: Applicant Information

Applicant Contact: **Melissa Lyons**	Title: **Trader/Analyst**
Applicant Phone: **509.661.4369**	
Applicant E-mail: **melissa.lyons@chelanpud.org**	
Applicant Company Name: **Public Utility District No. 1 of Chelan County**	
Company Address: **327 N. Wenatchee Avenue**	
City: **Wenatchee**	State/Province: **WA**
Zip Code: **98801**	Country: **USA**

Section 3: Facility Information

Facility Owner

Name of Facility Owner:
OR ☒ The Facility Owner is the same as the Applicant.

Address:

City/State/ZIP:

Contact Name, Phone, and Email:

Facility Identification and Location

Unit Name: **C2**

Facility Name: **Rocky Reach Hydroelectric Project**

Unit location (street address, legal description, or GPS coordinates):
5695 State Route 97A (7 miles north of city of Wenatchee, WA on Columbia River)

City: **Wenatchee**	County: **Chelan**
State/Province: **WA**	Zip: **98801** Country: **USA**

Provide a description of the facility.
The project consists of an 8,235-acre reservoir and a 2,847-foot-long by 130-foot-high concrete gravity dam spanning the Columbia River.

Facility Identification Numbers

WREGIS Generating Unit ID: **W2876**	Other External ID:

EIA Utility Code: **3413** EIA Plant Code: **3883**

Section 4: Facility Eligibility

A. Facility Profile

Nameplate Capacity (MW): **114**
If this value will change, please explain:

Commercial Operation Date (COD): **06** / **01** / **1961**

Is your facility considered repowered by WREGIS? ☐ Yes ☒ No
If yes, please explain:

B. Facility Fuel

Indicate each energy source used by the facility. For definitions, refer to RCW 19.285.030. For multi-fuel generating facilities indicate all fuels used.

☐	Wind	☐	Wave power
☐	Solar energy	☐	Ocean power
☐	Geothermal energy	☐	Tidal power
☐	Landfill gas	☐	Gas from sewage treatment facility
☐	Biomass energy (must complete Section 5)	☐	Biodiesel fuel (must complete Section 6)
☒	Water (must complete Section 7)	☐	Other (please specify):

Will the facility use any fossil fuel or other non-qualifying fuel? ☐ Yes ☒ No

- Type of fossil fuel or other non-qualifying fuel:
- Average annual amount of non-qualifying fuel used (percent of net heat input):

Section 5: Biomass Energy Supplement (complete only if "biomass energy" is checked in Section 4)

Allowed Fuel Sources. Indicate each source of biomass energy used by the facility.

☐	Organic by-products of pulping and the wood manufacturing process	☐	Food waste and food processing residuals
☐	Animal manure	☐	Liquors derived from algae
☐	Solid organic fuels from wood	☐	Dedicated energy crops
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	Date efficiency improvement completed: **4/11/99; 11/22/2003; 4/1/2003**	
	Method of measuring incremental generation:	
	☐	Incremental generation is separately metered or measured.
	☐	Incremental generation is modeled each year based on actual stream flows.
	☒	Incremental generation is modeled as a fixed percentage of total generation. Fixed percentage: **14.73**%
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Section 10: Attestation

I declare that the information provided in this application and any supplemental forms and attachments are true and correct to the best of my knowledge, that the information contained in this submission is consistent with information on file with WREGIS unless otherwise indicated, that no information materially affecting the facility's eligibility has been withheld, and that I am authorized to file this submission on the facility owner's behalf.

Signature: 
Date Signed: **2/8/17**
Authorized Officer/Agent: **Gregg Carrington**
Officer Title and Company: **Managing Director- Energy Resources**
Name of Facility: **Rocky Reach Hydroelectric Facility**

Application Checklist for Submission

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2. WREGIS "static data" if the facility is already registered in WREGIS. A printout of your generator account profile screen in WREGIS.
3. Optional project background documentation. Background documentation can be submitted or published in regulatory settings (FERC or state commission filings) or informal forums (websites, articles or factsheets).
4. Payment of advisory opinion fee of **$1,250**. A separate application and application fee are required for each generating unit. However, if a facility owner has multiple WREGIS generating unit IDs for a single facility and all the static characteristics of the facility (other than the generating capacity) are identical, it may request that Commerce treat the combined generating units as a single application. The owner must document at the time of application that all GU IDs are part of a single facility in a single location. If GU IDs are added later, a separate application will be required.

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Department of Commerce
Attn: State Energy Office
P.O. Box 42525
Olympia, WA 98504-2525

Commerce will post each application on its website. Applications are subject to a public comment period.

Advisory Opinion and WREGIS Certification (to be completed by Commerce)

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Facility Name:		WREGIS GU ID:	

☐ The fuel source for the facility is identified in RCW 19.285.030 as renewable energy:

☐	Wind	☐	Wave, ocean, or tidal power
☐	Solar energy	☐	Gas from sewage treatment facilities
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☐	Landfill gas	☐	Biomass energy
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Additional Provisions:

Washington Certification Number:

WASHINGTON DEPARTMENT OF COMMERCE

Director or Designee Date

Department of Commerce
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Washington State Energy Independence Act

Application for Advisory Opinion and Renewable Energy Facility (WREGIS) Certification

All information provided in this application or any supplemental or additional materials is subject to public disclosure.

FACILITY NAME: **Rocky Reach Hydroelectric Project**
WREGIS Generating Unit ID (if already registered): **W2877**

A separate Washington application is required for each generating unit with a separate WREGIS GU ID. Applicant must select Washington in WREGIS generating unit registration.

Section 1: Agency Action Requested

☒ Advisory Opinion and WREGIS Certification ☐ Advisory Opinion Only

Section 2: Applicant Information

Applicant Contact: **Melissa Lyons** Title: **Trader/Analyst**

Applicant Phone: **509.661.4369**

Applicant E-mail: **melissa.lyons@chelanpud.org**

Applicant Company Name: **Public Utility District No. 1 of Chelan County**

Company Address: **327 N. Wenatchee Avenue**

City: **Wenatchee** State/Province: **WA**

Zip Code: **98801** Country: **USA**

Section 3: Facility Information

Facility Owner

Name of Facility Owner:

OR ☒ The Facility Owner is the same as the Applicant.

Address:

City/State/ZIP:

Contact Name, Phone, and Email:

Facility Identification and Location

Unit Name: **C3**

Facility Name: **Rocky Reach Hydroelectric Project**

Unit location (street address, legal description, or GPS coordinates):

5695 State Route 97A (7 miles north of city of Wenatchee, WA on Columbia River)

City: **Wenatchee** County: **Chelan**

State/Province: **WA** Zip: **98801** Country: **USA**

Provide a description of the facility.

The project consists of an 8,235-acre reservoir and a 2,847-foot-long by 130-foot-high concrete gravity dam spanning the Columbia River.

Facility Identification Numbers

WREGIS Generating Unit ID: **W2877** Other External ID:

EIA Utility Code: **3413** EIA Plant Code: **3883**

Section 4: Facility Eligibility

A. Facility Profile

Nameplate Capacity (MW): **114**
If this value will change, please explain:

Commercial Operation Date (COD): **06** / **01** / **1961**

Is your facility considered repowered by WREGIS? ☐ Yes ☒ No
If yes, please explain:

B. Facility Fuel

Indicate each energy source used by the facility. For definitions, refer to RCW 19.285.030. For multi-fuel generating facilities indicate all fuels used.

☐	Wind	☐	Wave power
☐	Solar energy	☐	Ocean power
☐	Geothermal energy	☐	Tidal power
☐	Landfill gas	☐	Gas from sewage treatment facility
☐	Biomass energy (must complete Section 5)	☐	Biodiesel fuel (must complete Section 6)
☒	Water (must complete Section 7)	☐	Other (please specify):

Will the facility use any fossil fuel or other non-qualifying fuel? ☐ Yes ☒ No

- Type of fossil fuel or other non-qualifying fuel:
- Average annual amount of non-qualifying fuel used (percent of net heat input):

Section 5: Biomass Energy Supplement (complete only if "biomass energy" is checked in Section 4)

Allowed Fuel Sources. Indicate each source of biomass energy used by the facility.

☐	Organic by-products of pulping and the wood manufacturing process	☐	Food waste and food processing residuals
☐	Animal manure	☐	Liquors derived from algae
☐	Solid organic fuels from wood	☐	Dedicated energy crops
☐	Forest or field residues	☐	Yard waste
☐	Untreated wooden demolition or construction debris		

Prohibited Fuel Sources. The following materials will NOT be used as a source of biomass energy by the facility.

☐	Wood pieces that have been treated with chemical preservatives such as creosote, pentachlorophenol, or copper-chrome-arsenic	☐	Wood from old growth forests
		☐	Municipal solid waste

Legacy Biomass. The Washington Energy Independence Act allows a biomass energy facility commencing operation before March 31, 1999 to qualify as an eligible renewable resource in certain circumstances. Contact Commerce to obtain application requirements.

Section 6: Biodiesel Fuel Supplement (complete only if "biodiesel fuel" is checked in Section 4)

The biodiesel fuel used by the facility meets each of the identified conditions:

☐	The fuel (a) is a mono alkyl ester of long chain fatty acids derived from vegetable oils or animal fats for use in compression-ignition engines and (b) meets the requirements of the American society of testing and materials specification D 6751 in effect as of January 1, 2003.
☐	The fuel is NOT from crops raised on land cleared from old growth or first-growth forests where the clearing occurred after December 7, 2006.

Section 7: Water/Hydroelectric Power (complete only if "water" is checked in Section 4)

The facility uses water as a fuel in the following manner:

☒	**Incremental Hydro.** Incremental electricity produced as a result of efficiency improvements completed after March 31, 1999, to hydroelectric generation projects owned by a qualifying utility and located in the Pacific Northwest where the additional generation does not result in new water diversions or impoundments.	
	Date efficiency improvement completed: **3/12/98; 4/1/03; 5/11/06**	
	Method of measuring incremental generation:	
	☐	Incremental generation is separately metered or measured.
	☐	Incremental generation is modeled each year based on actual stream flows.
	☒	Incremental generation is modeled as a fixed percentage of total generation. Fixed percentage: **14.73**%
	☐	Incremental generation is modeled as a fixed generation amount. Fixed amount: megawatt-hours
	Note: If any box but the first is checked, the facility must register in WREGIS as a multi-fuel facility. Non-incremental generation will be classified as Large Hydro (LHN) and excluded from certificate creation.	
☐	**Canal or pipe.** Hydroelectric generation from a project completed after March 31, 1999, where the generation facility is located in irrigation pipes, irrigation canals, water pipes whose primary purpose is for conveyance of water for municipal use, and wastewater pipes located in Washington where the generation does not result in new water diversions or impoundments.	

Section 8: Eligibility for Washington Multipliers (Optional)

The facility qualifies for the following multipliers under the Washington Energy Independence Act:

☐	**Distributed Generation.** The facility has a generating capacity of 5 MW or less and is not part of any integrated cluster of facilities with an aggregate generating capacity of 5 MW or more.
☐	**Apprentice Labor.** The facility commenced operation after December 31, 2005 and in construction used an apprenticeship program approved by the Washington State Apprenticeship and Training Council.

NOTE: Commerce requests optional multiplier eligibility from facility owners for informational purposes only. Owners seeking certification of a facility as eligible for a multiplier should contact Commerce for application requirements.

Section 9: Reservation

The Washington Department of Commerce makes a determination of resource eligibility under the Washington Energy Independence Act based on the information provided by the applicant and does not independently verify that information. An applicant must promptly notify Commerce of any changes to the information submitted for certification that may affect the facility's eligibility. Commerce reserves the right to modify or withdraw a designation if it determines that the information supplied by the applicant was incomplete or inaccurate.

Section 10: Attestation

I declare that the information provided in this application and any supplemental forms and attachments are true and correct to the best of my knowledge, that the information contained in this submission is consistent with information on file with WREGIS unless otherwise indicated, that no information materially affecting the facility's eligibility has been withheld, and that I am authorized to file this submission on the facility owner's behalf.

Signature: 
Date Signed: **2/8/17**
Authorized Officer/Agent: **Gregg Carrington**
Officer Title and Company: **Managing Director- Energy Resources**
Name of Facility: **Rocky Reach Hydroelectric Facility**

Application Checklist for Submission

Applicants must select the Washington program administrator in the generating unit's WREGIS static data.
Applicants should ensure that the following documents are provided:

1. Electronic copy of entire application, including a signed attestation page.
2. WREGIS "static data" if the facility is already registered in WREGIS. A printout of your generator account profile screen in WREGIS.
3. Optional project background documentation. Background documentation can be submitted or published in regulatory settings (FERC or state commission filings) or informal forums (websites, articles or factsheets).
4. Payment of advisory opinion fee of **$1,250**. A separate application and application fee are required for each generating unit. However, if a facility owner has multiple WREGIS generating unit IDs for a single facility and all the static characteristics of the facility (other than the generating capacity) are identical, it may request that Commerce treat the combined generating units as a single application. The owner must document at the time of application that all GU IDs are part of a single facility in a single location. If GU IDs are added later, a separate application will be required.

To submit your facility for certification, e-mail the application and any supplemental materials listed above to (wregis@commerce.wa.gov). Submit payment of the advisory opinion fee to:

Department of Commerce
Attn: State Energy Office
P.O. Box 42525
Olympia, WA 98504-2525

Commerce will post each application on its website. Applications are subject to a public comment period.

Advisory Opinion and WREGIS Certification (to be completed by Commerce)

It is the opinion of the Washington Department of Commerce that the facility identified in this application meets the statutory legal standard for an eligible renewable resource as defined in RCW 19.285.030, based on the factors set out below The facility will be designated in WREGIS as an eligible renewable resource under the Washington Energy Independence Act:

Facility Name:		WREGIS GU ID:	

☐ The fuel source for the facility is identified in RCW 19.285.030 as renewable energy:

☐	Wind	☐	Wave, ocean, or tidal power
☐	Solar energy	☐	Gas from sewage treatment facilities
☐	Geothermal energy	☐	Biodiesel fuel
☐	Landfill gas	☐	Biomass energy
☐	Water (incremental efficiency hydro)	☐	Water (pipe or canal)

☐ The facility commenced operation after March 31, 1999, as required by RCW 19.285.030.

☐ The facility is located in the Pacific Northwest, or the electricity from the facility is delivered into Washington state on a real-time basis without shaping, storage, or integration services, as required by RCW 19.285.030.

Additional Provisions:

Washington Certification Number:

WASHINGTON DEPARTMENT OF COMMERCE

Director or Designee Date

Department of Commerce
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commerce.wa.gov/eia

Washington State Energy Independence Act

Application for Advisory Opinion and Renewable Energy Facility (WREGIS) Certification

All information provided in this application or any supplemental or additional materials is subject to public disclosure.

FACILITY NAME: **Rocky Reach Hydroelectric Project**
WREGIS Generating Unit ID (if already registered): **W2878**

A separate Washington application is required for each generating unit with a separate WREGIS GU ID. Applicant must select Washington in WREGIS generating unit registration.

Section 1: Agency Action Requested

☒ Advisory Opinion and WREGIS Certification ☐ Advisory Opinion Only

Section 2: Applicant Information

Applicant Contact: **Melissa Lyons** Title: **Trader/Analyst**

Applicant Phone: **509.661.4369**

Applicant E-mail: **melissa.lyons@chelanpud.org**

Applicant Company Name: **Public Utility District No. 1 of Chelan County**

Company Address: **327 N. Wenatchee Avenue**

City: **Wenatchee** State/Province: **WA**

Zip Code: **98801** Country: **USA**

Section 3: Facility Information

Facility Owner

Name of Facility Owner:

OR ☒ The Facility Owner is the same as the Applicant.

Address:

City/State/ZIP:

Contact Name, Phone, and Email:

Facility Identification and Location

Unit Name: **C4**

Facility Name: **Rocky Reach Hydroelectric Project**

Unit location (street address, legal description, or GPS coordinates):

5695 State Route 97A (7 miles north of city of Wenatchee, WA on Columbia River)

City: **Wenatchee** County: **Chelan**

State/Province: **WA** Zip: **98801** Country: **USA**

Provide a description of the facility.

The project consists of an 8,235-acre reservoir and a 2,847-foot-long by 130-foot-high concrete gravity dam spanning the Columbia River.

Facility Identification Numbers

WREGIS Generating Unit ID: **W2878** Other External ID:

EIA Utility Code: **3413** EIA Plant Code: **3883**

Section 4: Facility Eligibility

A. Facility Profile

Nameplate Capacity (MW): **114**
If this value will change, please explain:

Commercial Operation Date (COD): **08** / **01** / **1961**

Is your facility considered repowered by WREGIS? ☐ Yes ☒ No
If yes, please explain:

B. Facility Fuel

Indicate each energy source used by the facility. For definitions, refer to RCW 19.285.030. For multi-fuel generating facilities indicate all fuels used.

☐	Wind	☐	Wave power
☐	Solar energy	☐	Ocean power
☐	Geothermal energy	☐	Tidal power
☐	Landfill gas	☐	Gas from sewage treatment facility
☐	Biomass energy (must complete Section 5)	☐	Biodiesel fuel (must complete Section 6)
☒	Water (must complete Section 7)	☐	Other (please specify):

Will the facility use any fossil fuel or other non-qualifying fuel? ☐ Yes ☒ No

- Type of fossil fuel or other non-qualifying fuel:
- Average annual amount of non-qualifying fuel used (percent of net heat input):

Section 5: Biomass Energy Supplement (complete only if "biomass energy" is checked in Section 4)

Allowed Fuel Sources. Indicate each source of biomass energy used by the facility.

☐	Organic by-products of pulping and the wood manufacturing process	☐	Food waste and food processing residuals
☐	Animal manure	☐	Liquors derived from algae
☐	Solid organic fuels from wood	☐	Dedicated energy crops
☐	Forest or field residues	☐	Yard waste
☐	Untreated wooden demolition or construction debris		

Prohibited Fuel Sources. The following materials will NOT be used as a source of biomass energy by the facility.

☐	Wood pieces that have been treated with chemical preservatives such as creosote, pentachlorophenol, or copper-chrome-arsenic	☐	Wood from old growth forests
		☐	Municipal solid waste

Legacy Biomass. The Washington Energy Independence Act allows a biomass energy facility commencing operation before March 31, 1999 to qualify as an eligible renewable resource in certain circumstances. Contact Commerce to obtain application requirements.

Section 6: Biodiesel Fuel Supplement (complete only if "biodiesel fuel" is checked in Section 4)

The biodiesel fuel used by the facility meets each of the identified conditions:

☐	The fuel (a) is a mono alkyl ester of long chain fatty acids derived from vegetable oils or animal fats for use in compression-ignition engines and (b) meets the requirements of the American society of testing and materials specification D 6751 in effect as of January 1, 2003.
☐	The fuel is NOT from crops raised on land cleared from old growth or first-growth forests where the clearing occurred after December 7, 2006.

Section 7: Water/Hydroelectric Power (complete only if "water" is checked in Section 4)

The facility uses water as a fuel in the following manner:

☒	**Incremental Hydro.** Incremental electricity produced as a result of efficiency improvements completed after March 31, 1999, to hydroelectric generation projects owned by a qualifying utility and located in the Pacific Northwest where the additional generation does not result in new water diversions or impoundments.	
	Date efficiency improvement completed: **4/1/03; 11/8/05**	
	Method of measuring incremental generation:	
	☐	Incremental generation is separately metered or measured.
	☐	Incremental generation is modeled each year based on actual stream flows.
	☒	Incremental generation is modeled as a fixed percentage of total generation. Fixed percentage: **14.73**%
	☐	Incremental generation is modeled as a fixed generation amount. Fixed amount: megawatt-hours
	Note: If any box but the first is checked, the facility must register in WREGIS as a multi-fuel facility. Non-incremental generation will be classified as Large Hydro (LHN) and excluded from certificate creation.	
☐	**Canal or pipe.** Hydroelectric generation from a project completed after March 31, 1999, where the generation facility is located in irrigation pipes, irrigation canals, water pipes whose primary purpose is for conveyance of water for municipal use, and wastewater pipes located in Washington where the generation does not result in new water diversions or impoundments.	

Section 8: Eligibility for Washington Multipliers (Optional)

The facility qualifies for the following multipliers under the Washington Energy Independence Act:

☐	**Distributed Generation.** The facility has a generating capacity of 5 MW or less and is not part of any integrated cluster of facilities with an aggregate generating capacity of 5 MW or more.
☐	**Apprentice Labor.** The facility commenced operation after December 31, 2005 and in construction used an apprenticeship program approved by the Washington State Apprenticeship and Training Council.

NOTE: Commerce requests optional multiplier eligibility from facility owners for informational purposes only. Owners seeking certification of a facility as eligible for a multiplier should contact Commerce for application requirements.

Section 9: Reservation

The Washington Department of Commerce makes a determination of resource eligibility under the Washington Energy Independence Act based on the information provided by the applicant and does not independently verify that information. An applicant must promptly notify Commerce of any changes to the information submitted for certification that may affect the facility's eligibility. Commerce reserves the right to modify or withdraw a designation if it determines that the information supplied by the applicant was incomplete or inaccurate.

Section 10: Attestation

I declare that the information provided in this application and any supplemental forms and attachments are true and correct to the best of my knowledge, that the information contained in this submission is consistent with information on file with WREGIS unless otherwise indicated, that no information materially affecting the facility's eligibility has been withheld, and that I am authorized to file this submission on the facility owner's behalf.

Signature: 
Date Signed: **2/8/17**
Authorized Officer/Agent: **Gregg Carrington**
Officer Title and Company: **Managing Director- Energy Resources**
Name of Facility: **Rocky Reach Hydroelectric Facility**

Application Checklist for Submission

Applicants must select the Washington program administrator in the generating unit's WREGIS static data.
Applicants should ensure that the following documents are provided:

1. Electronic copy of entire application, including a signed attestation page.
2. WREGIS "static data" if the facility is already registered in WREGIS. A printout of your generator account profile screen in WREGIS.
3. Optional project background documentation. Background documentation can be submitted or published in regulatory settings (FERC or state commission filings) or informal forums (websites, articles or factsheets).
4. Payment of advisory opinion fee of **$1,250**. A separate application and application fee are required for each generating unit. However, if a facility owner has multiple WREGIS generating unit IDs for a single facility and all the static characteristics of the facility (other than the generating capacity) are identical, it may request that Commerce treat the combined generating units as a single application. The owner must document at the time of application that all GU IDs are part of a single facility in a single location. If GU IDs are added later, a separate application will be required.

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Department of Commerce
Attn: State Energy Office
P.O. Box 42525
Olympia, WA 98504-2525

Commerce will post each application on its website. Applications are subject to a public comment period.

Advisory Opinion and WREGIS Certification (to be completed by Commerce)

It is the opinion of the Washington Department of Commerce that the facility identified in this application meets the statutory legal standard for an eligible renewable resource as defined in RCW 19.285.030, based on the factors set out below The facility will be designated in WREGIS as an eligible renewable resource under the Washington Energy Independence Act:

Facility Name:		WREGIS GU ID:	

☐ The fuel source for the facility is identified in RCW 19.285.030 as renewable energy:

☐	Wind	☐	Wave, ocean, or tidal power
☐	Solar energy	☐	Gas from sewage treatment facilities
☐	Geothermal energy	☐	Biodiesel fuel
☐	Landfill gas	☐	Biomass energy
☐	Water (incremental efficiency hydro)	☐	Water (pipe or canal)

☐ The facility commenced operation after March 31, 1999, as required by RCW 19.285.030.

☐ The facility is located in the Pacific Northwest, or the electricity from the facility is delivered into Washington state on a real-time basis without shaping, storage, or integration services, as required by RCW 19.285.030.

Additional Provisions:

Washington Certification Number:

WASHINGTON DEPARTMENT OF COMMERCE

Director or Designee Date

Department of Commerce

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commerce.wa.gov/eia

Washington State Energy Independence Act

Application for Advisory Opinion and Renewable Energy Facility (WREGIS) Certification

All information provided in this application or any supplemental or additional materials is subject to public disclosure.

FACILITY NAME: **Rocky Reach Hydroelectric Project**
WREGIS Generating Unit ID (if already registered): **W2879**

A separate Washington application is required for each generating unit with a separate WREGIS GU ID. Applicant must select Washington in WREGIS generating unit registration.

Section 1: Agency Action Requested

☒ Advisory Opinion and WREGIS Certification ☐ Advisory Opinion Only

Section 2: Applicant Information

Applicant Contact: **Melissa Lyons**	Title: **Trader/Analyst**
Applicant Phone: **509.661.4369**	
Applicant E-mail: **melissa.lyons@chelanpud.org**	
Applicant Company Name: **Public Utility District No. 1 of Chelan County**	
Company Address: **327 N. Wenatchee Avenue**	
City: **Wenatchee**	State/Province: **WA**
Zip Code: **98801**	Country: **USA**

Section 3: Facility Information

Facility Owner

Name of Facility Owner:
OR ☒ The Facility Owner is the same as the Applicant.

Address:

City/State/ZIP:

Contact Name, Phone, and Email:

Facility Identification and Location

Unit Name: **C5**

Facility Name: **Rocky Reach Hydroelectric Project**

Unit location (street address, legal description, or GPS coordinates):
5695 State Route 97A (7 miles north of city of Wenatchee, WA on Columbia River)

City: **Wenatchee**	County: **Chelan**
State/Province: **WA**	Zip: **98801** Country: **USA**

Provide a description of the facility.
The project consists of an 8,235-acre reservoir and a 2,847-foot-long by 130-foot-high concrete gravity dam spanning the Columbia River.

Facility Identification Numbers

WREGIS Generating Unit ID: **W2879**	Other External ID:

EIA Utility Code: **3413** EIA Plant Code: **3883**

Section 4: Facility Eligibility

A. Facility Profile

Nameplate Capacity (MW): **114**
If this value will change, please explain:

Commercial Operation Date (COD): **08** / **01** / **1961**

Is your facility considered repowered by WREGIS? ☐ Yes ☒ No
If yes, please explain:

B. Facility Fuel

Indicate each energy source used by the facility. For definitions, refer to RCW 19.285.030. For multi-fuel generating facilities indicate all fuels used.

☐	Wind	☐	Wave power
☐	Solar energy	☐	Ocean power
☐	Geothermal energy	☐	Tidal power
☐	Landfill gas	☐	Gas from sewage treatment facility
☐	Biomass energy (must complete Section 5)	☐	Biodiesel fuel (must complete Section 6)
☒	Water (must complete Section 7)	☐	Other (please specify):

Will the facility use any fossil fuel or other non-qualifying fuel? ☐ Yes ☒ No

- Type of fossil fuel or other non-qualifying fuel:
- Average annual amount of non-qualifying fuel used (percent of net heat input):

Section 5: Biomass Energy Supplement (complete only if "biomass energy" is checked in Section 4)

Allowed Fuel Sources. Indicate each source of biomass energy used by the facility.

☐	Organic by-products of pulping and the wood manufacturing process	☐	Food waste and food processing residuals
☐	Animal manure	☐	Liquors derived from algae
☐	Solid organic fuels from wood	☐	Dedicated energy crops
☐	Forest or field residues	☐	Yard waste
☐	Untreated wooden demolition or construction debris		

Prohibited Fuel Sources. The following materials will NOT be used as a source of biomass energy by the facility.

☐	Wood pieces that have been treated with chemical preservatives such as creosote, pentachlorophenol, or copper-chrome-arsenic	☐	Wood from old growth forests
		☐	Municipal solid waste

Legacy Biomass. The Washington Energy Independence Act allows a biomass energy facility commencing operation before March 31, 1999 to qualify as an eligible renewable resource in certain circumstances. Contact Commerce to obtain application requirements.

Section 6: Biodiesel Fuel Supplement (complete only if "biodiesel fuel" is checked in Section 4)

The biodiesel fuel used by the facility meets each of the identified conditions:

☐	The fuel (a) is a mono alkyl ester of long chain fatty acids derived from vegetable oils or animal fats for use in compression-ignition engines and (b) meets the requirements of the American society of testing and materials specification D 6751 in effect as of January 1, 2003.
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Section 7: Water/Hydroelectric Power (complete only if "water" is checked in Section 4)

The facility uses water as a fuel in the following manner:

☒	**Incremental Hydro.** Incremental electricity produced as a result of efficiency improvements completed after March 31, 1999, to hydroelectric generation projects owned by a qualifying utility and located in the Pacific Northwest where the additional generation does not result in new water diversions or impoundments.	
	Date efficiency improvement completed: **4/1/03; 10/30/06**	
	Method of measuring incremental generation:	
	☐	Incremental generation is separately metered or measured.
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	☒	Incremental generation is modeled as a fixed percentage of total generation. Fixed percentage: **14.73**%
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Section 8: Eligibility for Washington Multipliers (Optional)

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☐	**Distributed Generation.** The facility has a generating capacity of 5 MW or less and is not part of any integrated cluster of facilities with an aggregate generating capacity of 5 MW or more.
☐	**Apprentice Labor.** The facility commenced operation after December 31, 2005 and in construction used an apprenticeship program approved by the Washington State Apprenticeship and Training Council.

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Section 9: Reservation

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Section 10: Attestation

I declare that the information provided in this application and any supplemental forms and attachments are true and correct to the best of my knowledge, that the information contained in this submission is consistent with information on file with WREGIS unless otherwise indicated, that no information materially affecting the facility's eligibility has been withheld, and that I am authorized to file this submission on the facility owner's behalf.

Signature: 
Date Signed: **2/8/17**
Authorized Officer/Agent: **Gregg Carrington**
Officer Title and Company: **Managing Director- Energy Resources**
Name of Facility: **Rocky Reach Hydroelectric Facility**

Application Checklist for Submission

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Applicants should ensure that the following documents are provided:

1. Electronic copy of entire application, including a signed attestation page.
2. WREGIS "static data" if the facility is already registered in WREGIS. A printout of your generator account profile screen in WREGIS.
3. Optional project background documentation. Background documentation can be submitted or published in regulatory settings (FERC or state commission filings) or informal forums (websites, articles or factsheets).
4. Payment of advisory opinion fee of **$1,250**. A separate application and application fee are required for each generating unit. However, if a facility owner has multiple WREGIS generating unit IDs for a single facility and all the static characteristics of the facility (other than the generating capacity) are identical, it may request that Commerce treat the combined generating units as a single application. The owner must document at the time of application that all GU IDs are part of a single facility in a single location. If GU IDs are added later, a separate application will be required.

To submit your facility for certification, e-mail the application and any supplemental materials listed above to (wregis@commerce.wa.gov). Submit payment of the advisory opinion fee to:

Department of Commerce
Attn: State Energy Office
P.O. Box 42525
Olympia, WA 98504-2525

Commerce will post each application on its website. Applications are subject to a public comment period.

Advisory Opinion and WREGIS Certification (to be completed by Commerce)

It is the opinion of the Washington Department of Commerce that the facility identified in this application meets the statutory legal standard for an eligible renewable resource as defined in RCW 19.285.030, based on the factors set out below The facility will be designated in WREGIS as an eligible renewable resource under the Washington Energy Independence Act:

Facility Name:		WREGIS GU ID:	

☐ The fuel source for the facility is identified in RCW 19.285.030 as renewable energy:

☐	Wind	☐	Wave, ocean, or tidal power
☐	Solar energy	☐	Gas from sewage treatment facilities
☐	Geothermal energy	☐	Biodiesel fuel
☐	Landfill gas	☐	Biomass energy
☐	Water (incremental efficiency hydro)	☐	Water (pipe or canal)

☐ The facility commenced operation after March 31, 1999, as required by RCW 19.285.030.

☐ The facility is located in the Pacific Northwest, or the electricity from the facility is delivered into Washington state on a real-time basis without shaping, storage, or integration services, as required by RCW 19.285.030.

Additional Provisions:

Washington Certification Number:

WASHINGTON DEPARTMENT OF COMMERCE

Director or Designee Date

Department of Commerce
Innovation is in our nature.

commerce.wa.gov/eia

Washington State Energy Independence Act

Application for Advisory Opinion and Renewable Energy Facility (WREGIS) Certification

All information provided in this application or any supplemental or additional materials is subject to public disclosure.

FACILITY NAME: **Rocky Reach Hydroelectric Project**
WREGIS Generating Unit ID (if already registered): **W2880**

A separate Washington application is required for each generating unit with a separate WREGIS GU ID. Applicant must select Washington in WREGIS generating unit registration.

Section 1: Agency Action Requested

☒ Advisory Opinion and WREGIS Certification ☐ Advisory Opinion Only

Section 2: Applicant Information

Applicant Contact: **Melissa Lyons** Title: **Trader/Analyst**

Applicant Phone: **509.661.4369**

Applicant E-mail: **melissa.lyons@chelanpud.org**

Applicant Company Name: **Public Utility District No. 1 of Chelan County**

Company Address: **327 N. Wenatchee Avenue**

City: **Wenatchee** State/Province: **WA**

Zip Code: **98801** Country: **USA**

Section 3: Facility Information

Facility Owner

Name of Facility Owner:

OR ☒ The Facility Owner is the same as the Applicant.

Address:

City/State/ZIP:

Contact Name, Phone, and Email:

Facility Identification and Location

Unit Name: **C6**

Facility Name: **Rocky Reach Hydroelectric Project**

Unit location (street address, legal description, or GPS coordinates):

5695 State Route 97A (7 miles north of city of Wenatchee, WA on Columbia River)

City: **Wenatchee** County: **Chelan**

State/Province: **WA** Zip: **98801** Country: **USA**

Provide a description of the facility.

The project consists of an 8,235-acre reservoir and a 2,847-foot-long by 130-foot-high concrete gravity dam spanning the Columbia River.

Facility Identification Numbers

WREGIS Generating Unit ID: **W2880** Other External ID:

EIA Utility Code: **3413** EIA Plant Code: **3883**

Section 4: Facility Eligibility

A. Facility Profile

Nameplate Capacity (MW): **114**
If this value will change, please explain:

Commercial Operation Date (COD): **08** / **01** / **1961**

Is your facility considered repowered by WREGIS? ☐ Yes ☒ No
If yes, please explain:

B. Facility Fuel

Indicate each energy source used by the facility. For definitions, refer to RCW 19.285.030. For multi-fuel generating facilities indicate all fuels used.

☐	Wind	☐	Wave power
☐	Solar energy	☐	Ocean power
☐	Geothermal energy	☐	Tidal power
☐	Landfill gas	☐	Gas from sewage treatment facility
☐	Biomass energy (must complete Section 5)	☐	Biodiesel fuel (must complete Section 6)
☒	Water (must complete Section 7)	☐	Other (please specify):

Will the facility use any fossil fuel or other non-qualifying fuel? ☐ Yes ☒ No

- Type of fossil fuel or other non-qualifying fuel:
- Average annual amount of non-qualifying fuel used (percent of net heat input):

Section 5: Biomass Energy Supplement (complete only if "biomass energy" is checked in Section 4)

Allowed Fuel Sources. Indicate each source of biomass energy used by the facility.

☐	Organic by-products of pulping and the wood manufacturing process	☐	Food waste and food processing residuals
☐	Animal manure	☐	Liquors derived from algae
☐	Solid organic fuels from wood	☐	Dedicated energy crops
☐	Forest or field residues	☐	Yard waste
☐	Untreated wooden demolition or construction debris		

Prohibited Fuel Sources. The following materials will NOT be used as a source of biomass energy by the facility.

☐	Wood pieces that have been treated with chemical preservatives such as creosote, pentachlorophenol, or copper-chrome-arsenic	☐	Wood from old growth forests
		☐	Municipal solid waste

Legacy Biomass. The Washington Energy Independence Act allows a biomass energy facility commencing operation before March 31, 1999 to qualify as an eligible renewable resource in certain circumstances. Contact Commerce to obtain application requirements.

Section 6: Biodiesel Fuel Supplement (complete only if "biodiesel fuel" is checked in Section 4)

The biodiesel fuel used by the facility meets each of the identified conditions:

☐	The fuel (a) is a mono alkyl ester of long chain fatty acids derived from vegetable oils or animal fats for use in compression-ignition engines and (b) meets the requirements of the American society of testing and materials specification D 6751 in effect as of January 1, 2003.
☐	The fuel is NOT from crops raised on land cleared from old growth or first-growth forests where the clearing occurred after December 7, 2006.

Section 7: Water/Hydroelectric Power (complete only if "water" is checked in Section 4)

The facility uses water as a fuel in the following manner:

☒	**Incremental Hydro.** Incremental electricity produced as a result of efficiency improvements completed after March 31, 1999, to hydroelectric generation projects owned by a qualifying utility and located in the Pacific Northwest where the additional generation does not result in new water diversions or impoundments.	
	Date efficiency improvement completed: **4/1/03; 5/3/05**	
	Method of measuring incremental generation:	
	☐	Incremental generation is separately metered or measured.
	☐	Incremental generation is modeled each year based on actual stream flows.
	☒	Incremental generation is modeled as a fixed percentage of total generation. Fixed percentage: **14.73**%
	☐	Incremental generation is modeled as a fixed generation amount. Fixed amount: megawatt-hours
	Note: If any box but the first is checked, the facility must register in WREGIS as a multi-fuel facility. Non-incremental generation will be classified as Large Hydro (LHN) and excluded from certificate creation.	
☐	**Canal or pipe.** Hydroelectric generation from a project completed after March 31, 1999, where the generation facility is located in irrigation pipes, irrigation canals, water pipes whose primary purpose is for conveyance of water for municipal use, and wastewater pipes located in Washington where the generation does not result in new water diversions or impoundments.	

Section 8: Eligibility for Washington Multipliers (Optional)

The facility qualifies for the following multipliers under the Washington Energy Independence Act:

☐	**Distributed Generation.** The facility has a generating capacity of 5 MW or less and is not part of any integrated cluster of facilities with an aggregate generating capacity of 5 MW or more.
☐	**Apprentice Labor.** The facility commenced operation after December 31, 2005 and in construction used an apprenticeship program approved by the Washington State Apprenticeship and Training Council.

NOTE: Commerce requests optional multiplier eligibility from facility owners for informational purposes only. Owners seeking certification of a facility as eligible for a multiplier should contact Commerce for application requirements.

Section 9: Reservation

The Washington Department of Commerce makes a determination of resource eligibility under the Washington Energy Independence Act based on the information provided by the applicant and does not independently verify that information. An applicant must promptly notify Commerce of any changes to the information submitted for certification that may affect the facility's eligibility. Commerce reserves the right to modify or withdraw a designation if it determines that the information supplied by the applicant was incomplete or inaccurate.

Section 10: Attestation

I declare that the information provided in this application and any supplemental forms and attachments are true and correct to the best of my knowledge, that the information contained in this submission is consistent with information on file with WREGIS unless otherwise indicated, that no information materially affecting the facility's eligibility has been withheld, and that I am authorized to file this submission on the facility owner's behalf.

Signature: 
Date Signed: **2/8/17**
Authorized Officer/Agent: **Gregg Carrington**
Officer Title and Company: **Managing Director- Energy Resources**
Name of Facility: **Rocky Reach Hydroelectric Facility**

Application Checklist for Submission

Applicants must select the Washington program administrator in the generating unit's WREGIS static data.
Applicants should ensure that the following documents are provided:

1. Electronic copy of entire application, including a signed attestation page.
2. WREGIS "static data" if the facility is already registered in WREGIS. A printout of your generator account profile screen in WREGIS.
3. Optional project background documentation. Background documentation can be submitted or published in regulatory settings (FERC or state commission filings) or informal forums (websites, articles or factsheets).
4. Payment of advisory opinion fee of **$1,250**. A separate application and application fee are required for each generating unit. However, if a facility owner has multiple WREGIS generating unit IDs for a single facility and all the static characteristics of the facility (other than the generating capacity) are identical, it may request that Commerce treat the combined generating units as a single application. The owner must document at the time of application that all GU IDs are part of a single facility in a single location. If GU IDs are added later, a separate application will be required.

To submit your facility for certification, e-mail the application and any supplemental materials listed above to (wregis@commerce.wa.gov). Submit payment of the advisory opinion fee to:

Department of Commerce
Attn: State Energy Office
P.O. Box 42525
Olympia, WA 98504-2525

Commerce will post each application on its website. Applications are subject to a public comment period.

Advisory Opinion and WREGIS Certification (to be completed by Commerce)

It is the opinion of the Washington Department of Commerce that the facility identified in this application meets the statutory legal standard for an eligible renewable resource as defined in RCW 19.285.030, based on the factors set out below The facility will be designated in WREGIS as an eligible renewable resource under the Washington Energy Independence Act:

Facility Name:		WREGIS GU ID:	

☐ The fuel source for the facility is identified in RCW 19.285.030 as renewable energy:

☐	Wind	☐	Wave, ocean, or tidal power
☐	Solar energy	☐	Gas from sewage treatment facilities
☐	Geothermal energy	☐	Biodiesel fuel
☐	Landfill gas	☐	Biomass energy
☐	Water (incremental efficiency hydro)	☐	Water (pipe or canal)

☐ The facility commenced operation after March 31, 1999, as required by RCW 19.285.030.

☐ The facility is located in the Pacific Northwest, or the electricity from the facility is delivered into Washington state on a real-time basis without shaping, storage, or integration services, as required by RCW 19.285.030.

Additional Provisions:

Washington Certification Number:

WASHINGTON DEPARTMENT OF COMMERCE

Director or Designee Date

Department of Commerce

Innovation is in our nature.

commerce.wa.gov/eia

Washington State Energy Independence Act

Application for Advisory Opinion and Renewable Energy Facility (WREGIS) Certification

All information provided in this application or any supplemental or additional materials is subject to public disclosure.

FACILITY NAME: **Rocky Reach Hydroelectric Project**
WREGIS Generating Unit ID (if already registered): **W2881**

A separate Washington application is required for each generating unit with a separate WREGIS GU ID. Applicant must select Washington in WREGIS generating unit registration.

Section 1: Agency Action Requested

☒ Advisory Opinion and WREGIS Certification ☐ Advisory Opinion Only

Section 2: Applicant Information

Applicant Contact: **Melissa Lyons**	Title: **Trader/Analyst**
Applicant Phone: **509.661.4369**	
Applicant E-mail: **melissa.lyons@chelanpud.org**	
Applicant Company Name: **Public Utility District No. 1 of Chelan County**	
Company Address: **327 N. Wenatchee Avenue**	
City: **Wenatchee**	State/Province: **WA**
Zip Code: **98801**	Country: **USA**

Section 3: Facility Information

Facility Owner

Name of Facility Owner:
OR ☒ The Facility Owner is the same as the Applicant.

Address:

City/State/ZIP:

Contact Name, Phone, and Email:

Facility Identification and Location

Unit Name: **C7**

Facility Name: **Rocky Reach Hydroelectric Project**

Unit location (street address, legal description, or GPS coordinates):
5695 State Route 97A (7 miles north of city of Wenatchee, WA on Columbia River)

City: **Wenatchee**	County: **Chelan**
State/Province: **WA**	Zip: **98801** Country: **USA**

Provide a description of the facility.
The project consists of an 8,235-acre reservoir and a 2,847-foot-long by 130-foot-high concrete gravity dam spanning the Columbia River.

Facility Identification Numbers

WREGIS Generating Unit ID: **W2881**	Other External ID:

EIA Utility Code: **3413** EIA Plant Code: **3883**

Section 4: Facility Eligibility

A. Facility Profile

Nameplate Capacity (MW): **114**
If this value will change, please explain:

Commercial Operation Date (COD): **09** / **01** / **1961**

Is your facility considered repowered by WREGIS? ☐ Yes ☒ No
If yes, please explain:

B. Facility Fuel

Indicate each energy source used by the facility. For definitions, refer to RCW 19.285.030. For multi-fuel generating facilities indicate all fuels used.

☐	Wind	☐	Wave power
☐	Solar energy	☐	Ocean power
☐	Geothermal energy	☐	Tidal power
☐	Landfill gas	☐	Gas from sewage treatment facility
☐	Biomass energy (must complete Section 5)	☐	Biodiesel fuel (must complete Section 6)
☒	Water (must complete Section 7)	☐	Other (please specify):

Will the facility use any fossil fuel or other non-qualifying fuel? ☐ Yes ☒ No

- Type of fossil fuel or other non-qualifying fuel:
- Average annual amount of non-qualifying fuel used (percent of net heat input):

Section 5: Biomass Energy Supplement (complete only if "biomass energy" is checked in Section 4)

Allowed Fuel Sources. Indicate each source of biomass energy used by the facility.

☐	Organic by-products of pulping and the wood manufacturing process	☐	Food waste and food processing residuals
☐	Animal manure	☐	Liquors derived from algae
☐	Solid organic fuels from wood	☐	Dedicated energy crops
☐	Forest or field residues	☐	Yard waste
☐	Untreated wooden demolition or construction debris		

Prohibited Fuel Sources. The following materials will NOT be used as a source of biomass energy by the facility.

☐	Wood pieces that have been treated with chemical preservatives such as creosote, pentachlorophenol, or copper-chrome-arsenic	☐	Wood from old growth forests
		☐	Municipal solid waste

Legacy Biomass. The Washington Energy Independence Act allows a biomass energy facility commencing operation before March 31, 1999 to qualify as an eligible renewable resource in certain circumstances. Contact Commerce to obtain application requirements.

Section 6: Biodiesel Fuel Supplement (complete only if "biodiesel fuel" is checked in Section 4)

The biodiesel fuel used by the facility meets each of the identified conditions:

☐	The fuel (a) is a mono alkyl ester of long chain fatty acids derived from vegetable oils or animal fats for use in compression-ignition engines and (b) meets the requirements of the American society of testing and materials specification D 6751 in effect as of January 1, 2003.
☐	The fuel is NOT from crops raised on land cleared from old growth or first-growth forests where the clearing occurred after December 7, 2006.

Section 7: Water/Hydroelectric Power (complete only if "water" is checked in Section 4)

The facility uses water as a fuel in the following manner:

☒	**Incremental Hydro.** Incremental electricity produced as a result of efficiency improvements completed after March 31, 1999, to hydroelectric generation projects owned by a qualifying utility and located in the Pacific Northwest where the additional generation does not result in new water diversions or impoundments.	
	Date efficiency improvement completed: **4/1/03; 11/17/04**	
	Method of measuring incremental generation:	
	☐	Incremental generation is separately metered or measured.
	☐	Incremental generation is modeled each year based on actual stream flows.
	☒	Incremental generation is modeled as a fixed percentage of total generation. Fixed percentage: **14.73**%
	☐	Incremental generation is modeled as a fixed generation amount. Fixed amount: megawatt-hours
	Note: If any box but the first is checked, the facility must register in WREGIS as a multi-fuel facility. Non-incremental generation will be classified as Large Hydro (LHN) and excluded from certificate creation.	
☐	**Canal or pipe.** Hydroelectric generation from a project completed after March 31, 1999, where the generation facility is located in irrigation pipes, irrigation canals, water pipes whose primary purpose is for conveyance of water for municipal use, and wastewater pipes located in Washington where the generation does not result in new water diversions or impoundments.	

Section 8: Eligibility for Washington Multipliers (Optional)

The facility qualifies for the following multipliers under the Washington Energy Independence Act:

☐	**Distributed Generation.** The facility has a generating capacity of 5 MW or less and is not part of any integrated cluster of facilities with an aggregate generating capacity of 5 MW or more.
☐	**Apprentice Labor.** The facility commenced operation after December 31, 2005 and in construction used an apprenticeship program approved by the Washington State Apprenticeship and Training Council.

NOTE: Commerce requests optional multiplier eligibility from facility owners for informational purposes only. Owners seeking certification of a facility as eligible for a multiplier should contact Commerce for application requirements.

Section 9: Reservation

The Washington Department of Commerce makes a determination of resource eligibility under the Washington Energy Independence Act based on the information provided by the applicant and does not independently verify that information. An applicant must promptly notify Commerce of any changes to the information submitted for certification that may affect the facility's eligibility. Commerce reserves the right to modify or withdraw a designation if it determines that the information supplied by the applicant was incomplete or inaccurate.

Section 10: Attestation

I declare that the information provided in this application and any supplemental forms and attachments are true and correct to the best of my knowledge, that the information contained in this submission is consistent with information on file with WREGIS unless otherwise indicated, that no information materially affecting the facility's eligibility has been withheld, and that I am authorized to file this submission on the facility owner's behalf.

Signature: 
Date Signed: **2/8/17**
Authorized Officer/Agent: **Gregg Carrington**
Officer Title and Company: **Managing Director- Energy Resources**
Name of Facility: **Rocky Reach Hydroelectric Facility**

Application Checklist for Submission

Applicants must select the Washington program administrator in the generating unit's WREGIS static data.
Applicants should ensure that the following documents are provided:

1. Electronic copy of entire application, including a signed attestation page.
2. WREGIS "static data" if the facility is already registered in WREGIS. A printout of your generator account profile screen in WREGIS.
3. Optional project background documentation. Background documentation can be submitted or published in regulatory settings (FERC or state commission filings) or informal forums (websites, articles or factsheets).
4. Payment of advisory opinion fee of **$1,250**. A separate application and application fee are required for each generating unit. However, if a facility owner has multiple WREGIS generating unit IDs for a single facility and all the static characteristics of the facility (other than the generating capacity) are identical, it may request that Commerce treat the combined generating units as a single application. The owner must document at the time of application that all GU IDs are part of a single facility in a single location. If GU IDs are added later, a separate application will be required.

To submit your facility for certification, e-mail the application and any supplemental materials listed above to (wregis@commerce.wa.gov). Submit payment of the advisory opinion fee to:

Department of Commerce
Attn: State Energy Office
P.O. Box 42525
Olympia, WA 98504-2525

Commerce will post each application on its website. Applications are subject to a public comment period.

Advisory Opinion and WREGIS Certification (to be completed by Commerce)

It is the opinion of the Washington Department of Commerce that the facility identified in this application meets the statutory legal standard for an eligible renewable resource as defined in RCW 19.285.030, based on the factors set out below The facility will be designated in WREGIS as an eligible renewable resource under the Washington Energy Independence Act:

Facility Name:		WREGIS GU ID:	

☐ The fuel source for the facility is identified in RCW 19.285.030 as renewable energy:

☐	Wind	☐	Wave, ocean, or tidal power
☐	Solar energy	☐	Gas from sewage treatment facilities
☐	Geothermal energy	☐	Biodiesel fuel
☐	Landfill gas	☐	Biomass energy
☐	Water (incremental efficiency hydro)	☐	Water (pipe or canal)

☐ The facility commenced operation after March 31, 1999, as required by RCW 19.285.030.

☐ The facility is located in the Pacific Northwest, or the electricity from the facility is delivered into Washington state on a real-time basis without shaping, storage, or integration services, as required by RCW 19.285.030.

Additional Provisions:

Washington Certification Number:

WASHINGTON DEPARTMENT OF COMMERCE

Director or Designee Date

Department of Commerce

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Washington State Energy Independence Act

Application for Advisory Opinion and Renewable Energy Facility (WREGIS) Certification

All information provided in this application or any supplemental or additional materials is subject to public disclosure.

FACILITY NAME: **Rocky Reach Hydroelectric Project**
WREGIS Generating Unit ID (if already registered): **W2882**

A separate Washington application is required for each generating unit with a separate WREGIS GU ID. Applicant must select Washington in WREGIS generating unit registration.

Section 1: Agency Action Requested

☒ Advisory Opinion and WREGIS Certification ☐ Advisory Opinion Only

Section 2: Applicant Information

Applicant Contact: **Melissa Lyons** Title: **Trader/Analyst**

Applicant Phone: **509.661.4369**

Applicant E-mail: **melissa.lyons@chelanpud.org**

Applicant Company Name: **Public Utility District No. 1 of Chelan County**

Company Address: **327 N. Wenatchee Avenue**

City: **Wenatchee** State/Province: **WA**

Zip Code: **98801** Country: **USA**

Section 3: Facility Information

Facility Owner

Name of Facility Owner:

OR ☒ The Facility Owner is the same as the Applicant.

Address:

City/State/ZIP:

Contact Name, Phone, and Email:

Facility Identification and Location

Unit Name: **C8**

Facility Name: **Rocky Reach Hydroelectric Project**

Unit location (street address, legal description, or GPS coordinates):

5695 State Route 97A (7 miles north of city of Wenatchee, WA on Columbia River)

City: **Wenatchee** County: **Chelan**

State/Province: **WA** Zip: **98801** Country: **USA**

Provide a description of the facility.

The project consists of an 8,235-acre reservoir and a 2,847-foot-long by 130-foot-high concrete gravity dam spanning the Columbia River.

Facility Identification Numbers

WREGIS Generating Unit ID: **W2882** Other External ID:

EIA Utility Code: **3413** EIA Plant Code: **3883**

Section 4: Facility Eligibility

A. Facility Profile

Nameplate Capacity (MW): **125.4**
If this value will change, please explain:

Commercial Operation Date (COD): **08** / **01** / **1973**

Is your facility considered repowered by WREGIS? ☐ Yes ☒ No
If yes, please explain:

B. Facility Fuel

Indicate each energy source used by the facility. For definitions, refer to RCW 19.285.030. For multi-fuel generating facilities indicate all fuels used.

☐	Wind	☐	Wave power
☐	Solar energy	☐	Ocean power
☐	Geothermal energy	☐	Tidal power
☐	Landfill gas	☐	Gas from sewage treatment facility
☐	Biomass energy (must complete Section 5)	☐	Biodiesel fuel (must complete Section 6)
☒	Water (must complete Section 7)	☐	Other (please specify):

Will the facility use any fossil fuel or other non-qualifying fuel? ☐ Yes ☒ No

- Type of fossil fuel or other non-qualifying fuel:
- Average annual amount of non-qualifying fuel used (percent of net heat input):

Section 5: Biomass Energy Supplement (complete only if "biomass energy" is checked in Section 4)

Allowed Fuel Sources. Indicate each source of biomass energy used by the facility.

☐	Organic by-products of pulping and the wood manufacturing process	☐	Food waste and food processing residuals
☐	Animal manure	☐	Liquors derived from algae
☐	Solid organic fuels from wood	☐	Dedicated energy crops
☐	Forest or field residues	☐	Yard waste
☐	Untreated wooden demolition or construction debris		

Prohibited Fuel Sources. The following materials will NOT be used as a source of biomass energy by the facility.

☐	Wood pieces that have been treated with chemical preservatives such as creosote, pentachlorophenol, or copper-chrome-arsenic	☐	Wood from old growth forests
		☐	Municipal solid waste

Legacy Biomass. The Washington Energy Independence Act allows a biomass energy facility commencing operation before March 31, 1999 to qualify as an eligible renewable resource in certain circumstances. Contact Commerce to obtain application requirements.

Section 6: Biodiesel Fuel Supplement (complete only if "biodiesel fuel" is checked in Section 4)

The biodiesel fuel used by the facility meets each of the identified conditions:

☐	The fuel (a) is a mono alkyl ester of long chain fatty acids derived from vegetable oils or animal fats for use in compression-ignition engines and (b) meets the requirements of the American society of testing and materials specification D 6751 in effect as of January 1, 2003.
☐	The fuel is NOT from crops raised on land cleared from old growth or first-growth forests where the clearing occurred after December 7, 2006.

Section 7: Water/Hydroelectric Power (complete only if "water" is checked in Section 4)

The facility uses water as a fuel in the following manner:

☒	**Incremental Hydro.** Incremental electricity produced as a result of efficiency improvements completed after March 31, 1999, to hydroelectric generation projects owned by a qualifying utility and located in the Pacific Northwest where the additional generation does not result in new water diversions or impoundments.	
	Date efficiency improvement completed: **12/31/99; 4/1/03**	
	Method of measuring incremental generation:	
	☐	Incremental generation is separately metered or measured.
	☐	Incremental generation is modeled each year based on actual stream flows.
	☒	Incremental generation is modeled as a fixed percentage of total generation. Fixed percentage: **14.73**%
	☐	Incremental generation is modeled as a fixed generation amount. Fixed amount: megawatt-hours
	Note: If any box but the first is checked, the facility must register in WREGIS as a multi-fuel facility. Non-incremental generation will be classified as Large Hydro (LHN) and excluded from certificate creation.	
☐	**Canal or pipe.** Hydroelectric generation from a project completed after March 31, 1999, where the generation facility is located in irrigation pipes, irrigation canals, water pipes whose primary purpose is for conveyance of water for municipal use, and wastewater pipes located in Washington where the generation does not result in new water diversions or impoundments.	

Section 8: Eligibility for Washington Multipliers (Optional)

The facility qualifies for the following multipliers under the Washington Energy Independence Act:

☐	**Distributed Generation.** The facility has a generating capacity of 5 MW or less and is not part of any integrated cluster of facilities with an aggregate generating capacity of 5 MW or more.
☐	**Apprentice Labor.** The facility commenced operation after December 31, 2005 and in construction used an apprenticeship program approved by the Washington State Apprenticeship and Training Council.

NOTE: Commerce requests optional multiplier eligibility from facility owners for informational purposes only. Owners seeking certification of a facility as eligible for a multiplier should contact Commerce for application requirements.

Section 9: Reservation

The Washington Department of Commerce makes a determination of resource eligibility under the Washington Energy Independence Act based on the information provided by the applicant and does not independently verify that information. An applicant must promptly notify Commerce of any changes to the information submitted for certification that may affect the facility's eligibility. Commerce reserves the right to modify or withdraw a designation if it determines that the information supplied by the applicant was incomplete or inaccurate.

Section 10: Attestation

I declare that the information provided in this application and any supplemental forms and attachments are true and correct to the best of my knowledge, that the information contained in this submission is consistent with information on file with WREGIS unless otherwise indicated, that no information materially affecting the facility's eligibility has been withheld, and that I am authorized to file this submission on the facility owner's behalf.

Signature: 
Date Signed: **2/8/17**
Authorized Officer/Agent: **Gregg Carrington**
Officer Title and Company: **Managing Director- Energy Resources**
Name of Facility: **Rocky Reach Hydroelectric Facility**

Application Checklist for Submission

Applicants must select the Washington program administrator in the generating unit's WREGIS static data.
Applicants should ensure that the following documents are provided:

1. Electronic copy of entire application, including a signed attestation page.
2. WREGIS "static data" if the facility is already registered in WREGIS. A printout of your generator account profile screen in WREGIS.
3. Optional project background documentation. Background documentation can be submitted or published in regulatory settings (FERC or state commission filings) or informal forums (websites, articles or factsheets).
4. Payment of advisory opinion fee of **$1,250**. A separate application and application fee are required for each generating unit. However, if a facility owner has multiple WREGIS generating unit IDs for a single facility and all the static characteristics of the facility (other than the generating capacity) are identical, it may request that Commerce treat the combined generating units as a single application. The owner must document at the time of application that all GU IDs are part of a single facility in a single location. If GU IDs are added later, a separate application will be required.

To submit your facility for certification, e-mail the application and any supplemental materials listed above to (wregis@commerce.wa.gov). Submit payment of the advisory opinion fee to:

Department of Commerce
Attn: State Energy Office
P.O. Box 42525
Olympia, WA 98504-2525

Commerce will post each application on its website. Applications are subject to a public comment period.

Advisory Opinion and WREGIS Certification (to be completed by Commerce)

It is the opinion of the Washington Department of Commerce that the facility identified in this application meets the statutory legal standard for an eligible renewable resource as defined in RCW 19.285.030, based on the factors set out below The facility will be designated in WREGIS as an eligible renewable resource under the Washington Energy Independence Act:

Facility Name:		WREGIS GU ID:	

☐ The fuel source for the facility is identified in RCW 19.285.030 as renewable energy:

☐	Wind	☐	Wave, ocean, or tidal power
☐	Solar energy	☐	Gas from sewage treatment facilities
☐	Geothermal energy	☐	Biodiesel fuel
☐	Landfill gas	☐	Biomass energy
☐	Water (incremental efficiency hydro)	☐	Water (pipe or canal)

☐ The facility commenced operation after March 31, 1999, as required by RCW 19.285.030.

☐ The facility is located in the Pacific Northwest, or the electricity from the facility is delivered into Washington state on a real-time basis without shaping, storage, or integration services, as required by RCW 19.285.030.

Additional Provisions:

Washington Certification Number:

WASHINGTON DEPARTMENT OF COMMERCE

Director or Designee Date

Department of Commerce
Innovation is in our nature.

commerce.wa.gov/eia

Washington State Energy Independence Act

Application for Advisory Opinion and Renewable Energy Facility (WREGIS) Certification

All information provided in this application or any supplemental or additional materials is subject to public disclosure.

FACILITY NAME: **Rocky Reach Hydroelectric Project**
WREGIS Generating Unit ID (if already registered): **W2883**

A separate Washington application is required for each generating unit with a separate WREGIS GU ID. Applicant must select Washington in WREGIS generating unit registration.

Section 1: Agency Action Requested

☒ Advisory Opinion and WREGIS Certification ☐ Advisory Opinion Only

Section 2: Applicant Information

Applicant Contact: **Melissa Lyons** Title: **Trader/Analyst**

Applicant Phone: **509.661.4369**

Applicant E-mail: **melissa.lyons@chelanpud.org**

Applicant Company Name: **Public Utility District No. 1 of Chelan County**

Company Address: **327 N. Wenatchee Avenue**

City: **Wenatchee** State/Province: **WA**

Zip Code: **98801** Country: **USA**

Section 3: Facility Information

Facility Owner

Name of Facility Owner:

OR ☒ The Facility Owner is the same as the Applicant.

Address:

City/State/ZIP:

Contact Name, Phone, and Email:

Facility Identification and Location

Unit Name: **C9**

Facility Name: **Rocky Reach Hydroelectric Project**

Unit location (street address, legal description, or GPS coordinates):

5695 State Route 97A (7 miles north of city of Wenatchee, WA on Columbia River)

City: **Wenatchee** County: **Chelan**

State/Province: **WA** Zip: **98801** Country: **USA**

Provide a description of the facility.

The project consists of an 8,235-acre reservoir and a 2,847-foot-long by 130-foot-high concrete gravity dam spanning the Columbia River.

Facility Identification Numbers

WREGIS Generating Unit ID: **W2883** Other External ID:

EIA Utility Code: **3413** EIA Plant Code: **3883**

Section 4: Facility Eligibility

A. Facility Profile

Nameplate Capacity (MW): **125.4**
If this value will change, please explain:

Commercial Operation Date (COD): **11** / **01** / **1973**

Is your facility considered repowered by WREGIS? ☐ Yes ☒ No
If yes, please explain:

B. Facility Fuel

Indicate each energy source used by the facility. For definitions, refer to RCW 19.285.030. For multi-fuel generating facilities indicate all fuels used.

☐	Wind	☐	Wave power
☐	Solar energy	☐	Ocean power
☐	Geothermal energy	☐	Tidal power
☐	Landfill gas	☐	Gas from sewage treatment facility
☐	Biomass energy (must complete Section 5)	☐	Biodiesel fuel (must complete Section 6)
☒	Water (must complete Section 7)	☐	Other (please specify):

Will the facility use any fossil fuel or other non-qualifying fuel? ☐ Yes ☒ No

- Type of fossil fuel or other non-qualifying fuel:
- Average annual amount of non-qualifying fuel used (percent of net heat input):

Section 5: Biomass Energy Supplement (complete only if "biomass energy" is checked in Section 4)

Allowed Fuel Sources. Indicate each source of biomass energy used by the facility.

☐	Organic by-products of pulping and the wood manufacturing process	☐	Food waste and food processing residuals
☐	Animal manure	☐	Liquors derived from algae
☐	Solid organic fuels from wood	☐	Dedicated energy crops
☐	Forest or field residues	☐	Yard waste
☐	Untreated wooden demolition or construction debris		

Prohibited Fuel Sources. The following materials will NOT be used as a source of biomass energy by the facility.

☐	Wood pieces that have been treated with chemical preservatives such as creosote, pentachlorophenol, or copper-chrome-arsenic	☐	Wood from old growth forests
		☐	Municipal solid waste

Legacy Biomass. The Washington Energy Independence Act allows a biomass energy facility commencing operation before March 31, 1999 to qualify as an eligible renewable resource in certain circumstances. Contact Commerce to obtain application requirements.

Section 6: Biodiesel Fuel Supplement (complete only if "biodiesel fuel" is checked in Section 4)

The biodiesel fuel used by the facility meets each of the identified conditions:

☐	The fuel (a) is a mono alkyl ester of long chain fatty acids derived from vegetable oils or animal fats for use in compression-ignition engines and (b) meets the requirements of the American society of testing and materials specification D 6751 in effect as of January 1, 2003.
☐	The fuel is NOT from crops raised on land cleared from old growth or first-growth forests where the clearing occurred after December 7, 2006.

Section 7: Water/Hydroelectric Power (complete only if "water" is checked in Section 4)

The facility uses water as a fuel in the following manner:

☒	**Incremental Hydro.** Incremental electricity produced as a result of efficiency improvements completed after March 31, 1999, to hydroelectric generation projects owned by a qualifying utility and located in the Pacific Northwest where the additional generation does not result in new water diversions or impoundments.	
	Date efficiency improvement completed: **4/1/03**	
	Method of measuring incremental generation:	
	☐	Incremental generation is separately metered or measured.
	☐	Incremental generation is modeled each year based on actual stream flows.
	☒	Incremental generation is modeled as a fixed percentage of total generation. Fixed percentage: **14.73**%
	☐	Incremental generation is modeled as a fixed generation amount. Fixed amount: megawatt-hours
	Note: If any box but the first is checked, the facility must register in WREGIS as a multi-fuel facility. Non-incremental generation will be classified as Large Hydro (LHN) and excluded from certificate creation.	
☐	**Canal or pipe.** Hydroelectric generation from a project completed after March 31, 1999, where the generation facility is located in irrigation pipes, irrigation canals, water pipes whose primary purpose is for conveyance of water for municipal use, and wastewater pipes located in Washington where the generation does not result in new water diversions or impoundments.	

Section 8: Eligibility for Washington Multipliers (Optional)

The facility qualifies for the following multipliers under the Washington Energy Independence Act:

☐	**Distributed Generation.** The facility has a generating capacity of 5 MW or less and is not part of any integrated cluster of facilities with an aggregate generating capacity of 5 MW or more.
☐	**Apprentice Labor.** The facility commenced operation after December 31, 2005 and in construction used an apprenticeship program approved by the Washington State Apprenticeship and Training Council.

NOTE: Commerce requests optional multiplier eligibility from facility owners for informational purposes only. Owners seeking certification of a facility as eligible for a multiplier should contact Commerce for application requirements.

Section 9: Reservation

The Washington Department of Commerce makes a determination of resource eligibility under the Washington Energy Independence Act based on the information provided by the applicant and does not independently verify that information. An applicant must promptly notify Commerce of any changes to the information submitted for certification that may affect the facility's eligibility. Commerce reserves the right to modify or withdraw a designation if it determines that the information supplied by the applicant was incomplete or inaccurate.

Section 10: Attestation

I declare that the information provided in this application and any supplemental forms and attachments are true and correct to the best of my knowledge, that the information contained in this submission is consistent with information on file with WREGIS unless otherwise indicated, that no information materially affecting the facility's eligibility has been withheld, and that I am authorized to file this submission on the facility owner's behalf.

Signature: 
Date Signed: **2/8/17**
Authorized Officer/Agent: **Gregg Carrington**
Officer Title and Company: **Managing Director- Energy Resources**
Name of Facility: **Rocky Reach Hydroelectric Facility**

Application Checklist for Submission

Applicants must select the Washington program administrator in the generating unit's WREGIS static data.
Applicants should ensure that the following documents are provided:

1. Electronic copy of entire application, including a signed attestation page.
2. WREGIS "static data" if the facility is already registered in WREGIS. A printout of your generator account profile screen in WREGIS.
3. Optional project background documentation. Background documentation can be submitted or published in regulatory settings (FERC or state commission filings) or informal forums (websites, articles or factsheets).
4. Payment of advisory opinion fee of **$1,250**. A separate application and application fee are required for each generating unit. However, if a facility owner has multiple WREGIS generating unit IDs for a single facility and all the static characteristics of the facility (other than the generating capacity) are identical, it may request that Commerce treat the combined generating units as a single application. The owner must document at the time of application that all GU IDs are part of a single facility in a single location. If GU IDs are added later, a separate application will be required.

To submit your facility for certification, e-mail the application and any supplemental materials listed above to (wregis@commerce.wa.gov). Submit payment of the advisory opinion fee to:

Department of Commerce
Attn: State Energy Office
P.O. Box 42525
Olympia, WA 98504-2525

Commerce will post each application on its website. Applications are subject to a public comment period.

Advisory Opinion and WREGIS Certification (to be completed by Commerce)

It is the opinion of the Washington Department of Commerce that the facility identified in this application meets the statutory legal standard for an eligible renewable resource as defined in RCW 19.285.030, based on the factors set out below The facility will be designated in WREGIS as an eligible renewable resource under the Washington Energy Independence Act:

Facility Name:		WREGIS GU ID:	

☐ The fuel source for the facility is identified in RCW 19.285.030 as renewable energy:

☐	Wind	☐	Wave, ocean, or tidal power
☐	Solar energy	☐	Gas from sewage treatment facilities
☐	Geothermal energy	☐	Biodiesel fuel
☐	Landfill gas	☐	Biomass energy
☐	Water (incremental efficiency hydro)	☐	Water (pipe or canal)

☐ The facility commenced operation after March 31, 1999, as required by RCW 19.285.030.

☐ The facility is located in the Pacific Northwest, or the electricity from the facility is delivered into Washington state on a real-time basis without shaping, storage, or integration services, as required by RCW 19.285.030.

Additional Provisions:

Washington Certification Number:

WASHINGTON DEPARTMENT OF COMMERCE

Director or Designee Date

Department of Commerce
Innovation is in our nature.

commerce.wa.gov/eia

Washington State Energy Independence Act

Application for Advisory Opinion and Renewable Energy Facility (WREGIS) Certification

All information provided in this application or any supplemental or additional materials is subject to public disclosure.

FACILITY NAME: **Rocky Reach Hydroelectric Project**
WREGIS Generating Unit ID (if already registered): **W2884**

A separate Washington application is required for each generating unit with a separate WREGIS GU ID. Applicant must select Washington in WREGIS generating unit registration.

Section 1: Agency Action Requested

☒ Advisory Opinion and WREGIS Certification ☐ Advisory Opinion Only

Section 2: Applicant Information

Applicant Contact: **Melissa Lyons** Title: **Trader/Analyst**

Applicant Phone: **509.661.4369**

Applicant E-mail: **melissa.lyons@chelanpud.org**

Applicant Company Name: **Public Utility District No. 1 of Chelan County**

Company Address: **327 N. Wenatchee Avenue**

City: **Wenatchee** State/Province: **WA**

Zip Code: **98801** Country: **USA**

Section 3: Facility Information

Facility Owner

Name of Facility Owner:

OR ☒ The Facility Owner is the same as the Applicant.

Address:

City/State/ZIP:

Contact Name, Phone, and Email:

Facility Identification and Location

Unit Name: **C10**

Facility Name: **Rocky Reach Hydroelectric Project**

Unit location (street address, legal description, or GPS coordinates):

5695 State Route 97A (7 miles north of city of Wenatchee, WA on Columbia River)

City: **Wenatchee** County: **Chelan**

State/Province: **WA** Zip: **98801** Country: **USA**

Provide a description of the facility.

The project consists of an 8,235-acre reservoir and a 2,847-foot-long by 130-foot-high concrete gravity dam spanning the Columbia River.

Facility Identification Numbers

WREGIS Generating Unit ID: **W2884** Other External ID:

EIA Utility Code: **3413** EIA Plant Code: **3883**

Section 4: Facility Eligibility

A. Facility Profile

Nameplate Capacity (MW): **125.4**
If this value will change, please explain:

Commercial Operation Date (COD): **01** / **01** / **1974**

Is your facility considered repowered by WREGIS? ☐ Yes ☒ No
If yes, please explain:

B. Facility Fuel

Indicate each energy source used by the facility. For definitions, refer to RCW 19.285.030. For multi-fuel generating facilities indicate all fuels used.

☐	Wind	☐	Wave power
☐	Solar energy	☐	Ocean power
☐	Geothermal energy	☐	Tidal power
☐	Landfill gas	☐	Gas from sewage treatment facility
☐	Biomass energy (must complete Section 5)	☐	Biodiesel fuel (must complete Section 6)
☒	Water (must complete Section 7)	☐	Other (please specify):

Will the facility use any fossil fuel or other non-qualifying fuel? ☐ Yes ☒ No

- Type of fossil fuel or other non-qualifying fuel:
- Average annual amount of non-qualifying fuel used (percent of net heat input):

Section 5: Biomass Energy Supplement (complete only if "biomass energy" is checked in Section 4)

Allowed Fuel Sources. Indicate each source of biomass energy used by the facility.

☐	Organic by-products of pulping and the wood manufacturing process	☐	Food waste and food processing residuals
☐	Animal manure	☐	Liquors derived from algae
☐	Solid organic fuels from wood	☐	Dedicated energy crops
☐	Forest or field residues	☐	Yard waste
☐	Untreated wooden demolition or construction debris		

Prohibited Fuel Sources. The following materials will NOT be used as a source of biomass energy by the facility.

☐	Wood pieces that have been treated with chemical preservatives such as creosote, pentachlorophenol, or copper-chrome-arsenic	☐	Wood from old growth forests
		☐	Municipal solid waste

Legacy Biomass. The Washington Energy Independence Act allows a biomass energy facility commencing operation before March 31, 1999 to qualify as an eligible renewable resource in certain circumstances. Contact Commerce to obtain application requirements.

Section 6: Biodiesel Fuel Supplement (complete only if "biodiesel fuel" is checked in Section 4)

The biodiesel fuel used by the facility meets each of the identified conditions:

☐	The fuel (a) is a mono alkyl ester of long chain fatty acids derived from vegetable oils or animal fats for use in compression-ignition engines and (b) meets the requirements of the American society of testing and materials specification D 6751 in effect as of January 1, 2003.
☐	The fuel is NOT from crops raised on land cleared from old growth or first-growth forests where the clearing occurred after December 7, 2006.

Section 7: Water/Hydroelectric Power (complete only if "water" is checked in Section 4)

The facility uses water as a fuel in the following manner:

☒	**Incremental Hydro.** Incremental electricity produced as a result of efficiency improvements completed after March 31, 1999, to hydroelectric generation projects owned by a qualifying utility and located in the Pacific Northwest where the additional generation does not result in new water diversions or impoundments.	
	Date efficiency improvement completed: **8/5/01; 4/1/03**	
	Method of measuring incremental generation:	
	☐	Incremental generation is separately metered or measured.
	☐	Incremental generation is modeled each year based on actual stream flows.
	☒	Incremental generation is modeled as a fixed percentage of total generation. Fixed percentage: **14.73**%
	☐	Incremental generation is modeled as a fixed generation amount. Fixed amount: megawatt-hours
	Note: If any box but the first is checked, the facility must register in WREGIS as a multi-fuel facility. Non-incremental generation will be classified as Large Hydro (LHN) and excluded from certificate creation.	
☐	**Canal or pipe.** Hydroelectric generation from a project completed after March 31, 1999, where the generation facility is located in irrigation pipes, irrigation canals, water pipes whose primary purpose is for conveyance of water for municipal use, and wastewater pipes located in Washington where the generation does not result in new water diversions or impoundments.	

Section 8: Eligibility for Washington Multipliers (Optional)

The facility qualifies for the following multipliers under the Washington Energy Independence Act:

☐	**Distributed Generation.** The facility has a generating capacity of 5 MW or less and is not part of any integrated cluster of facilities with an aggregate generating capacity of 5 MW or more.
☐	**Apprentice Labor.** The facility commenced operation after December 31, 2005 and in construction used an apprenticeship program approved by the Washington State Apprenticeship and Training Council.

NOTE: Commerce requests optional multiplier eligibility from facility owners for informational purposes only. Owners seeking certification of a facility as eligible for a multiplier should contact Commerce for application requirements.

Section 9: Reservation

The Washington Department of Commerce makes a determination of resource eligibility under the Washington Energy Independence Act based on the information provided by the applicant and does not independently verify that information. An applicant must promptly notify Commerce of any changes to the information submitted for certification that may affect the facility's eligibility. Commerce reserves the right to modify or withdraw a designation if it determines that the information supplied by the applicant was incomplete or inaccurate.

Section 10: Attestation

I declare that the information provided in this application and any supplemental forms and attachments are true and correct to the best of my knowledge, that the information contained in this submission is consistent with information on file with WREGIS unless otherwise indicated, that no information materially affecting the facility's eligibility has been withheld, and that I am authorized to file this submission on the facility owner's behalf.

Signature: 
Date Signed: **2/8/17**
Authorized Officer/Agent: **Gregg Carrington**
Officer Title and Company: **Managing Director- Energy Resources**
Name of Facility: **Rocky Reach Hydroelectric Facility**

Application Checklist for Submission

Applicants must select the Washington program administrator in the generating unit's WREGIS static data.
Applicants should ensure that the following documents are provided:

1. Electronic copy of entire application, including a signed attestation page.
2. WREGIS "static data" if the facility is already registered in WREGIS. A printout of your generator account profile screen in WREGIS.
3. Optional project background documentation. Background documentation can be submitted or published in regulatory settings (FERC or state commission filings) or informal forums (websites, articles or factsheets).
4. Payment of advisory opinion fee of **$1,250**. A separate application and application fee are required for each generating unit. However, if a facility owner has multiple WREGIS generating unit IDs for a single facility and all the static characteristics of the facility (other than the generating capacity) are identical, it may request that Commerce treat the combined generating units as a single application. The owner must document at the time of application that all GU IDs are part of a single facility in a single location. If GU IDs are added later, a separate application will be required.

To submit your facility for certification, e-mail the application and any supplemental materials listed above to (wregis@commerce.wa.gov). Submit payment of the advisory opinion fee to:

Department of Commerce
Attn: State Energy Office
P.O. Box 42525
Olympia, WA 98504-2525

Commerce will post each application on its website. Applications are subject to a public comment period.

Advisory Opinion and WREGIS Certification (to be completed by Commerce)

It is the opinion of the Washington Department of Commerce that the facility identified in this application meets the statutory legal standard for an eligible renewable resource as defined in RCW 19.285.030, based on the factors set out below The facility will be designated in WREGIS as an eligible renewable resource under the Washington Energy Independence Act:

Facility Name:		WREGIS GU ID:	

☐ The fuel source for the facility is identified in RCW 19.285.030 as renewable energy:

☐	Wind	☐	Wave, ocean, or tidal power
☐	Solar energy	☐	Gas from sewage treatment facilities
☐	Geothermal energy	☐	Biodiesel fuel
☐	Landfill gas	☐	Biomass energy
☐	Water (incremental efficiency hydro)	☐	Water (pipe or canal)

☐ The facility commenced operation after March 31, 1999, as required by RCW 19.285.030.

☐ The facility is located in the Pacific Northwest, or the electricity from the facility is delivered into Washington state on a real-time basis without shaping, storage, or integration services, as required by RCW 19.285.030.

Additional Provisions:

Washington Certification Number:

WASHINGTON DEPARTMENT OF COMMERCE

Director or Designee Date

Department of Commerce
Innovation is in our nature.

commerce.wa.gov/eia

Washington State Energy Independence Act

Application for Advisory Opinion and Renewable Energy Facility (WREGIS) Certification

All information provided in this application or any supplemental or additional materials is subject to public disclosure.

FACILITY NAME: **Rocky Reach Hydroelectric Project**
WREGIS Generating Unit ID (if already registered): **W1320**

A separate Washington application is required for each generating unit with a separate WREGIS GU ID. Applicant must select Washington in WREGIS generating unit registration.

Section 1: Agency Action Requested

☒ Advisory Opinion and WREGIS Certification ☐ Advisory Opinion Only

Section 2: Applicant Information

Applicant Contact: **Melissa Lyons** Title: **Trader/Analyst**

Applicant Phone: **509.661.4369**

Applicant E-mail: **melissa.lyons@chelanpud.org**

Applicant Company Name: **Public Utility District No. 1 of Chelan County**

Company Address: **327 N. Wenatchee Avenue**

City: **Wenatchee** State/Province: **WA**

Zip Code: **98801** Country: **USA**

Section 3: Facility Information

Facility Owner

Name of Facility Owner:

OR ☒ The Facility Owner is the same as the Applicant.

Address:

City/State/ZIP:

Contact Name, Phone, and Email:

Facility Identification and Location

Unit Name: **C11**

Facility Name: **Rocky Reach Hydroelectric Project**

Unit location (street address, legal description, or GPS coordinates):

5695 State Route 97A (7 miles north of city of Wenatchee, WA on Columbia River)

City: **Wenatchee** County: **Chelan**

State/Province: **WA** Zip: **98801** Country: **USA**

Provide a description of the facility.

The project consists of an 8,235-acre reservoir and a 2,847-foot-long by 130-foot-high concrete gravity dam spanning the Columbia River.

Facility Identification Numbers

WREGIS Generating Unit ID: **W1320** Other External ID:

EIA Utility Code: **3413** EIA Plant Code: **3883**

Section 4: Facility Eligibility

A. Facility Profile

Nameplate Capacity (MW): **125.4**
If this value will change, please explain:

Commercial Operation Date (COD): **02** / **01** / **1974**

Is your facility considered repowered by WREGIS? ☐ Yes ☒ No
If yes, please explain:

B. Facility Fuel

Indicate each energy source used by the facility. For definitions, refer to RCW 19.285.030. For multi-fuel generating facilities indicate all fuels used.

☐	Wind	☐	Wave power
☐	Solar energy	☐	Ocean power
☐	Geothermal energy	☐	Tidal power
☐	Landfill gas	☐	Gas from sewage treatment facility
☐	Biomass energy (must complete Section 5)	☐	Biodiesel fuel (must complete Section 6)
☒	Water (must complete Section 7)	☐	Other (please specify):

Will the facility use any fossil fuel or other non-qualifying fuel? ☐ Yes ☒ No

- Type of fossil fuel or other non-qualifying fuel:
- Average annual amount of non-qualifying fuel used (percent of net heat input):

Section 5: Biomass Energy Supplement (complete only if "biomass energy" is checked in Section 4)

Allowed Fuel Sources. Indicate each source of biomass energy used by the facility.

☐	Organic by-products of pulping and the wood manufacturing process	☐	Food waste and food processing residuals
☐	Animal manure	☐	Liquors derived from algae
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☐	Untreated wooden demolition or construction debris		

Prohibited Fuel Sources. The following materials will NOT be used as a source of biomass energy by the facility.

☐	Wood pieces that have been treated with chemical preservatives such as creosote, pentachlorophenol, or copper-chrome-arsenic	☐	Wood from old growth forests
		☐	Municipal solid waste

Legacy Biomass. The Washington Energy Independence Act allows a biomass energy facility commencing operation before March 31, 1999 to qualify as an eligible renewable resource in certain circumstances. Contact Commerce to obtain application requirements.

Section 6: Biodiesel Fuel Supplement (complete only if "biodiesel fuel" is checked in Section 4)

The biodiesel fuel used by the facility meets each of the identified conditions:

☐	The fuel (a) is a mono alkyl ester of long chain fatty acids derived from vegetable oils or animal fats for use in compression-ignition engines and (b) meets the requirements of the American society of testing and materials specification D 6751 in effect as of January 1, 2003.
☐	The fuel is NOT from crops raised on land cleared from old growth or first-growth forests where the clearing occurred after December 7, 2006.

Section 7: Water/Hydroelectric Power (complete only if "water" is checked in Section 4)

The facility uses water as a fuel in the following manner:

☒	**Incremental Hydro.** Incremental electricity produced as a result of efficiency improvements completed after March 31, 1999, to hydroelectric generation projects owned by a qualifying utility and located in the Pacific Northwest where the additional generation does not result in new water diversions or impoundments.	
	Date efficiency improvement completed: **8/18/02; 4/1/03**	
	Method of measuring incremental generation:	
	☐	Incremental generation is separately metered or measured.
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Signature: 
Date Signed: **2/8/17**
Authorized Officer/Agent: **Gregg Carrington**
Officer Title and Company: **Managing Director- Energy Resources**
Name of Facility: **Rocky Reach Hydroelectric Facility**

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3. Optional project background documentation. Background documentation can be submitted or published in regulatory settings (FERC or state commission filings) or informal forums (websites, articles or factsheets).
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Advisory Opinion and WREGIS Certification (to be completed by Commerce)

It is the opinion of the Washington Department of Commerce that the facility identified in this application meets the statutory legal standard for an eligible renewable resource as defined in RCW 19.285.030, based on the factors set out below The facility will be designated in WREGIS as an eligible renewable resource under the Washington Energy Independence Act:

Facility Name:		WREGIS GU ID:	

☐ The fuel source for the facility is identified in RCW 19.285.030 as renewable energy:

☐	Wind	☐	Wave, ocean, or tidal power
☐	Solar energy	☐	Gas from sewage treatment facilities
☐	Geothermal energy	☐	Biodiesel fuel
☐	Landfill gas	☐	Biomass energy
☐	Water (incremental efficiency hydro)	☐	Water (pipe or canal)

☐ The facility commenced operation after March 31, 1999, as required by RCW 19.285.030.

☐ The facility is located in the Pacific Northwest, or the electricity from the facility is delivered into Washington state on a real-time basis without shaping, storage, or integration services, as required by RCW 19.285.030.

Additional Provisions:

Washington Certification Number:

WASHINGTON DEPARTMENT OF COMMERCE

Director or Designee Date

WREGIS
Incremental Resources Process & Intake Form

An Incremental Resource is one where generating facility upgrades or other improvements, including expansions, produce electricity that qualifies for a compliance or voluntary renewable energy program even when the full output of the facility does not qualify. This is most often the result of project phases which cross program facility eligibility dates.

As the GU owner (or representative), you need to complete the form on the last page of this document and submit an electronic copy to WREGIS. An example of a completed form is on the next page for reference.

This information allows Renewable Portfolio Standard and voluntary Program Administrators (PA) to make an initial review of your facility. Any PA that finds an element in your facility that may be eligible for their program will be invited to work towards issuing appropriate WREGIS program certifications for your facility. The group will seek to develop a repeatable, durable analysis tool that calculates output attributed to each relevant project component. This analysis tool is likely to be a spreadsheet with a fixed number of inputs.

You may want to contact the appropriate PA for any program you believe your facility to be eligible for. Additional information may be needed for an initial review. Active WREGIS PA contact information is available from the Public Reports section by accessing "WREGIS Active Account Holders" located on your Account Holders page.

Submit your completed form to the WREGIS Administrator at wregisadmin@wecc.biz. If you have questions about in this form, please contact the WREGIS Help Desk at wregishelp@wecc.biz, or by calling 1-888-225-4213.

WREGIS
Incremental Resources Process & Intake Form

Incremental Resource GU Summary Data - sample for a facility with an existing WREGIS GU ID-					
Item		**Base Plant**	**Increment 1**	**Increment 2**	**Total**
1a	GU ID	W1480	W1480	W1480	n/a
1b	External Unit ID (EIA Plant Code)	13212	same	Same	n/a
2a	Generating Unit Name	SSPC Cogen	n/a	n/a	n/a
2b	Description of component or upgrade	Cogen	Recovery Boiler	Rec. Boiler Expansion	n/a
3	Facility Owner Name	Silver State Pulp Co.	same	same	n/a
4	Commenced Operation Date [1]	01-27-1960	06-11-1978	08-20-1997	n/a
5	Nameplate Capacity of Component (MW)	18.3	4.2	1.5	24.0
6a	Max. Annual Generation of component (MWh/yr)	150,00	40,000	10,000	200,000
6b	Typ. Annual Generation of component (MWh/yr)	136,300	29,400	7,900	173,600
6c	Typ. Annual Generation Share of component	78%	17%	5%	100%
7	Repower Date [2]	n/a	n/a	n/a	n/a
8	PURPA QF	No	Yes	Yes	n/a
9	Generation Technology / Prime Mover	Steam Boiler, Extraction Turbine	Steam Boiler, Extraction Turbine	Steam Boiler, Extraction Turbine	n/a
10	Fuel Type / Energy Source (Primary)	Natural Gas	Spent Pulping Liquor	Spent Pulping Liquor	n/a
11	Fuel Type / Energy Source (Secondary)	n/a	Natural Gas	Natural Gas	n/a
12	Meter ID	623-AR12	Same	Same	n/a

[1] Show as mm-dd-yyyy; [2] Show, if applicable, as mm-dd-yyyy.

Site Location	Battle Mountain, NV
Owner/Rep contact name	S. Lignin
Contact title	Environmental Compliance Officer
Contact phone	555-555-5555
Contact e-mail	lignin.s@sspc.com

WREGIS
Incremental Resources Process & Intake Form

Incremental Resource GU Summary Data						
Item		**Base Plant**	**Increment 1**	**Increment 2**	**Increment 3**	**Total**
1a	GU ID	W2875	W2875	W2875	W2875	n/a
1b	External Unit ID (EIA Plant Code)	3883	3883	3883	3883	n/a
2a	Generating Unit Name	C1	C1	C1	C1	n/a
2b	Description of component or upgrade	Hydro	Generator & Turbine Upgrade	Generator & Turbine Upgrade	Operational Efficiency Gain	n/a
3	Facility Owner Name	Chelan PUD	Chelan PUD	Chelan PUD	Chelan PUD	n/a
4	Commenced Operation Date [1]	06/1961	03/31/2003	03/31/2003	4/1/2003	n/a
5	Nameplate Capacity of Component (MW)	114	n/a	n/a	n/a	114
6a	Max. Annual Generation of component (MWh/yr)	585,808	22,904	8,730	96,443	713,886
6b	Typ. Annual Generation of component (MWh/yr)	515,415	20,152	7,681	84,854	628,102
6c	Typ. Annual Generation Share of component	82.059%	3.208%	1.223%	13.510%	100.00%
7	Repower Date [2]	n/a	n/a	n/a	n/a	n/a
8	PURPA QF	n/a	n/a	n/a	n/a	n/a
9	Generation Technology / Prime Mover	Hydro	Incremental Hydro	Incremental Hydro	Incremental Hydro	n/a
10	Fuel Type / Energy Source (Primary)	Water	Water	Water	Water	n/a
11	Fuel Type / Energy Source (Secondary)	n/a	n/a	n/a	n/a	n/a
12	Meter ID	91041343	91041343	91041343	91041343	91041343
13	Eligible Program	n/a	Oregon	Washington & Oregon	Washington	

[1] Show as mm-dd-yyyy; [2] Show, if applicable, as mm-dd-yyyy.

WREGIS
Incremental Resources Process & Intake Form

Incremental Resource GU Summary Data						
Item		**Base Plant**	**Increment 1**	**Increment 2**	**Increment 3**	**Total**
1a	GU ID	W2876	W2876	W2876	W2876	n/a
1b	External Unit ID (EIA Plant Code)	3883	3883	3883	3883	n/a
2a	Generating Unit Name	C2	C2	C2	C2	n/a
2b	Description of component or upgrade	Hydro	Generator & Turbine Upgrade	Generator & Turbine Upgrade	Operational Efficiency Gain	n/a
3	Facility Owner Name	Chelan PUD	Chelan PUD	Chelan PUD	Chelan PUD	n/a
4	Commenced Operation Date [1]	06/1961	4/11/1999 & 11/22/2003	4/11/1999 & 11/22/2003	4/1/2003	n/a
5	Nameplate Capacity of Component (MW)	114	n/a	n/a	n/a	114
6a	Max. Annual Generation of component (MWh/yr)	584,642	22,859	8,713	96,251	712,465
6b	Typ. Annual Generation of component (MWh/yr)	471,205	18,424	7,022	77,576	574,226
6c	Typ. Annual Generation Share of component	82.059%	3.208%	1.223%	13.510%	100.00%
7	Repower Date [2]	n/a	n/a	n/a	n/a	n/a
8	PURPA QF	n/a	n/a	n/a	n/a	n/a
9	Generation Technology / Prime Mover	Hydro	Incremental Hydro	Incremental Hydro	Incremental Hydro	n/a
10	Fuel Type / Energy Source (Primary)	Water	Water	Water	Water	n/a
11	Fuel Type / Energy Source (Secondary)	n/a	n/a	n/a	n/a	n/a
12	Meter ID	91041342	91041342	91041342	91041342	91041342
13	Eligible Program	n/a	Oregon	Washington & Oregon	Washington	

WREGIS
Incremental Resources Process & Intake Form

Incremental Resource GU Summary Data						
Item		**Base Plant**	**Increment 1**	**Increment 2**	**Increment 3**	**Total**
1a	GU ID	W2877	W2877	W2877	W2877	n/a
1b	External Unit ID (EIA Plant Code)	3883	3883	3883	3883	n/a
2a	Generating Unit Name	C3	C3	C3	C3	n/a
2b	Description of component or upgrade	Hydro	Turbine Upgrade	Generator Upgrade	Operational Efficiency Gain	n/a
3	Facility Owner Name	Chelan PUD	Chelan PUD	Chelan PUD	Chelan PUD	n/a
4	Commenced Operation Date [1]	06/1961	3/12/1998	5/11/2006	4/1/2003	n/a
5	Nameplate Capacity of Component (MW)	114	n/a	n/a	n/a	114
6a	Max. Annual Generation of component (MWh/yr)	578,691	22,626	8,624	95,271	705,212
6b	Typ. Annual Generation of component (MWh/yr)	459,077	17,949	6,841	75,579	559,447
6c	Typ. Annual Generation Share of component	82.059%	3.208%	1.223%	13.510%	100.00%
7	Repower Date [2]	n/a	n/a	n/a	n/a	n/a
8	PURPA QF	n/a	n/a	n/a	n/a	n/a
9	Generation Technology / Prime Mover	Hydro	Incremental Hydro	Incremental Hydro	Incremental Hydro	n/a
10	Fuel Type / Energy Source (Primary)	Water	Water	Water	Water	n/a
11	Fuel Type / Energy Source (Secondary)	n/a	n/a	n/a	n/a	n/a
12	Meter ID	91041344	91041344	91041344	91041344	91041344
13	Eligible Program	n/a	Oregon	Washington & Oregon	Washington	

WREGIS
Incremental Resources Process & Intake Form

Incremental Resource GU Summary Data						
Item		**Base Plant**	**Increment 1**	**Increment 2**	**Increment 3**	**Total**
1a	GU ID	W2878	W2878	W2878	W2878	n/a
1b	External Unit ID (EIA Plant Code)	3883	3883	3883	3883	n/a
2a	Generating Unit Name	C4	C4	C4	C4	n/a
2b	Description of component or upgrade	Hydro	Turbine Upgrade	Generator Upgrade	Operational Efficiency Gain	n/a
3	Facility Owner Name	Chelan PUD	Chelan PUD	Chelan PUD	Chelan PUD	n/a
4	Commenced Operation Date [1]	8/1961	5/30/1997	11/8/2005	4/1/2003	n/a
5	Nameplate Capacity of Component (MW)	114	n/a	n/a	n/a	114
6a	Max. Annual Generation of component (MWh/yr)	566,337	22,143	8,440	93,237	690,157
6b	Typ. Annual Generation of component (MWh/yr)	443,726	17,349	6,613	73,052	540,740
6c	Typ. Annual Generation Share of component	82.059%	3.208%	1.223%	13.510%	100.00%
7	Repower Date [2]	n/a	n/a	n/a	n/a	n/a
8	PURPA QF	n/a	n/a	n/a	n/a	n/a
9	Generation Technology / Prime Mover	Hydro	Incremental Hydro	Incremental Hydro	Incremental Hydro	n/a
10	Fuel Type / Energy Source (Primary)	Water	Water	Water	Water	n/a
11	Fuel Type / Energy Source (Secondary)	n/a	n/a	n/a	n/a	n/a
12	Meter ID	91041346	91041346	91041346	91041346	91041346
13	Eligible Program	n/a	Oregon	Washington & Oregon	Washington	

WREGIS
Incremental Resources Process & Intake Form

Incremental Resource GU Summary Data						
Item		**Base Plant**	**Increment 1**	**Increment 2**	**Increment 3**	**Total**
1a	GU ID	W2879	W2879	W2879	W2879	n/a
1b	External Unit ID (EIA Plant Code)	3883	3883	3883	3883	n/a
2a	Generating Unit Name	C5	C5	C5	C5	n/a
2b	Description of component or upgrade	Hydro	Turbine Upgrade	Generator Upgrade	Operational Efficiency Gain	n/a
3	Facility Owner Name	Chelan PUD	Chelan PUD	Chelan PUD	Chelan PUD	n/a
4	Commenced Operation Date [1]	8/1961	12/20/1996	10/30/2006	4/1/2003	n/a
5	Nameplate Capacity of Component (MW)	114	n/a	n/a	n/a	114
6a	Max. Annual Generation of component (MWh/yr)	553,219	21,630	8,244	91,078	674,172
6b	Typ. Annual Generation of component (MWh/yr)	477,099	18,654	7,110	78,546	581,409
6c	Typ. Annual Generation Share of component	82.059%	3.208%	1.223%	13.510%	100.00%
7	Repower Date [2]	n/a	n/a	n/a	n/a	n/a
8	PURPA QF	n/a	n/a	n/a	n/a	n/a
9	Generation Technology / Prime Mover	Hydro	Incremental Hydro	Incremental Hydro	Incremental Hydro	n/a
10	Fuel Type / Energy Source (Primary)	Water	Water	Water	Water	n/a
11	Fuel Type / Energy Source (Secondary)	n/a	n/a	n/a	n/a	n/a
12	Meter ID	91041336	91041336	91041336	91041336	91041336
13	Eligible Program	n/a	Oregon	Washington & Oregon	Washington	

WREGIS
Incremental Resources Process & Intake Form

Incremental Resource GU Summary Data						
Item		**Base Plant**	**Increment 1**	**Increment 2**	**Increment 3**	**Total**
1a	GU ID	W2880	W2880	W2880	W2880	n/a
1b	External Unit ID (EIA Plant Code)	3883	3883	3883	3883	n/a
2a	Generating Unit Name	C6	C6	C6	C6	n/a
2b	Description of component or upgrade	Hydro	Turbine Upgrade	Generator Upgrade	Operational Efficiency Gain	n/a
3	Facility Owner Name	Chelan PUD	Chelan PUD	Chelan PUD	Chelan PUD	n/a
4	Commenced Operation Date [1]	8/1961	2/23/1996	5/3/2005	4/1/2003	n/a
5	Nameplate Capacity of Component (MW)	114	n/a	n/a	n/a	114
6a	Max. Annual Generation of component (MWh/yr)	535,106	20,922	7,974	88,096	652,099
6b	Typ. Annual Generation of component (MWh/yr)	424,283	16,589	6,323	69,851	517,045
6c	Typ. Annual Generation Share of component	82.059%	3.208%	1.223%	13.510%	100.00%
7	Repower Date [2]	n/a	n/a	n/a	n/a	n/a
8	PURPA QF	n/a	n/a	n/a	n/a	n/a
9	Generation Technology / Prime Mover	Hydro	Incremental Hydro	Incremental Hydro	Incremental Hydro	n/a
10	Fuel Type / Energy Source (Primary)	Water	Water	Water	Water	n/a
11	Fuel Type / Energy Source (Secondary)	n/a	n/a	n/a	n/a	n/a
12	Meter ID	91041337	91041337	91041337	91041337	91041337
13	Eligible Program	n/a	Oregon	Washington & Oregon	Washington	

WREGIS
Incremental Resources Process & Intake Form

Incremental Resource GU Summary Data						
Item		**Base Plant**	**Increment 1**	**Increment 2**	**Increment 3**	**Total**
1a	GU ID	W2881	W2881	W2881	W2881	n/a
1b	External Unit ID (EIA Plant Code)	3883	3883	3883	3883	n/a
2a	Generating Unit Name	C7	C7	C7	C7	n/a
2b	Description of component or upgrade	Hydro	Turbine Upgrade	Generator Upgrade	Operational Efficiency Gain	n/a
3	Facility Owner Name	Chelan PUD	Chelan PUD	Chelan PUD	Chelan PUD	n/a
4	Commenced Operation Date [1]	9/1961	7/15/1996	11/17/2004	4/1/2003	n/a
5	Nameplate Capacity of Component (MW)	114	n/a	n/a	n/a	114
6a	Max. Annual Generation of component (MWh/yr)	562,199	21,981	8,378	92,556	685,114
6b	Typ. Annual Generation of component (MWh/yr)	412,282	16,120	6,144	67,875	502,420
6c	Typ. Annual Generation Share of component	82.059%	3.208%	1.223%	13.510%	100.00%
7	Repower Date [2]	n/a	n/a	n/a	n/a	n/a
8	PURPA QF	n/a	n/a	n/a	n/a	n/a
9	Generation Technology / Prime Mover	Hydro	Incremental Hydro	Incremental Hydro	Incremental Hydro	n/a
10	Fuel Type / Energy Source (Primary)	Water	Water	Water	Water	n/a
11	Fuel Type / Energy Source (Secondary)	n/a	n/a	n/a	n/a	n/a
12	Meter ID	91041157	91041157	91041157	91041157	91041157
13	Eligible Program	n/a	Oregon	Washington & Oregon	Washington	

WREGIS
Incremental Resources Process & Intake Form

Incremental Resource GU Summary Data						
Item		**Base Plant**	**Increment 1**	**Increment 2**	**Increment 3**	**Total**
1a	GU ID	W2882	W2882	W2882	W2882	n/a
1b	External Unit ID (EIA Plant Code)	3883	3883	3883	3883	n/a
2a	Generating Unit Name	C8	C8	C8	C8	n/a
2b	Description of component or upgrade	Hydro	Generator Upgrade	Generator Upgrade	Operational Efficiency Gain	n/a
3	Facility Owner Name	Chelan PUD	Chelan PUD	Chelan PUD	Chelan PUD	n/a
4	Commenced Operation Date [1]	8/1973	12/31/1999	12/31/1999	4/1/2003	n/a
5	Nameplate Capacity of Component (MW)	114	n/a	n/a	n/a	114
6a	Max. Annual Generation of component (MWh/yr)	683,426	26,721	10,185	112,514	832,845
6b	Typ. Annual Generation of component (MWh/yr)	450,555	17,616	6,714	74,176	549,061
6c	Typ. Annual Generation Share of component	82.059%	3.208%	1.223%	13.510%	100.00%
7	Repower Date [2]	n/a	n/a	n/a	n/a	n/a
8	PURPA QF	n/a	n/a	n/a	n/a	n/a
9	Generation Technology / Prime Mover	Hydro	Incremental Hydro	Incremental Hydro	Incremental Hydro	n/a
10	Fuel Type / Energy Source (Primary)	Water	Water	Water	Water	n/a
11	Fuel Type / Energy Source (Secondary)	n/a	n/a	n/a	n/a	n/a
12	Meter ID	91041340	91041340	91041340	91041340	91041340
13	Eligible Program	n/a	Oregon	Washington & Oregon	Washington	

WREGIS
Incremental Resources Process & Intake Form

Incremental Resource GU Summary Data						
Item		**Base Plant**	**Increment 1**	**Increment 2**	**Increment 3**	**Total**
1a	GU ID	W2883	W2883	W2883	W2883	n/a
1b	External Unit ID (EIA Plant Code)	3883	3883	3883	3883	n/a
2a	Generating Unit Name	C9	C9	C9	C9	n/a
2b	Description of component or upgrade	Hydro	Generator Upgrade	Generator Upgrade	Operational Efficiency Gain	n/a
3	Facility Owner Name	Chelan PUD	Chelan PUD	Chelan PUD	Chelan PUD	n/a
4	Commenced Operation Date [1]	11/1973	12/4/1998		4/1/2003	n/a
5	Nameplate Capacity of Component (MW)	114	n/a	n/a	n/a	114
6a	Max. Annual Generation of component (MWh/yr)	688,529	26,921	10,261	113,354	839,064
6b	Typ. Annual Generation of component (MWh/yr)	541,599	21,176	8,071	89,165	660,010
6c	Typ. Annual Generation Share of component	82.059%	3.208%	1.223%	13.510%	100.00%
7	Repower Date [2]	n/a	n/a	n/a	n/a	n/a
8	PURPA QF	n/a	n/a	n/a	n/a	n/a
9	Generation Technology / Prime Mover	Hydro	Incremental Hydro	Incremental Hydro	Incremental Hydro	n/a
10	Fuel Type / Energy Source (Primary)	Water	Water	Water	Water	n/a
11	Fuel Type / Energy Source (Secondary)	n/a	n/a	n/a	n/a	n/a
12	Meter ID	91041341	91041341	91041341	91041341	91041341
13	Eligible Program	n/a	Oregon	Washington & Oregon	Washington	

WREGIS
Incremental Resources Process & Intake Form

Incremental Resource GU Summary Data						
Item		**Base Plant**	**Increment 1**	**Increment 2**	**Increment 3**	**Total**
1a	GU ID	W2884	W2884	W2884	W2884	n/a
1b	External Unit ID (EIA Plant Code)	3883	3883	3883	3883	n/a
2a	Generating Unit Name	C10	C10	C10	C10	n/a
2b	Description of component or upgrade	Hydro	Generator Upgrade	Generator Upgrade	Operational Efficiency Gain	n/a
3	Facility Owner Name	Chelan PUD	Chelan PUD	Chelan PUD	Chelan PUD	n/a
4	Commenced Operation Date [1]	1/1974	8/5/2001	8/5/2001	4/1/2003	n/a
5	Nameplate Capacity of Component (MW)	114	n/a	n/a	n/a	114
6a	Max. Annual Generation of component (MWh/yr)	662,789	25,914	9,877	109,116	807,697
6b	Typ. Annual Generation of component (MWh/yr)	388,974	15,208	5,797	64,038	474,016
6c	Typ. Annual Generation Share of component	82.059%	3.208%	1.223%	13.510%	100.00%
7	Repower Date [2]	n/a	n/a	n/a	n/a	n/a
8	PURPA QF	n/a	n/a	n/a	n/a	n/a
9	Generation Technology / Prime Mover	Hydro	Incremental Hydro	Incremental Hydro	Incremental Hydro	n/a
10	Fuel Type / Energy Source (Primary)	Water	Water	Water	Water	n/a
11	Fuel Type / Energy Source (Secondary)	n/a	n/a	n/a	n/a	n/a
12	Meter ID	91041345	91041345	91041345	91041345	91041345
13	Eligible Program	n/a	Oregon	Washington & Oregon	Washington	

WREGIS
Incremental Resources Process & Intake Form

Incremental Resource GU Summary Data						
Item		**Base Plant**	**Increment 1**	**Increment 2**	**Increment 3**	**Total**
1a	GU ID	W1320	W1320	W1320	W1320	n/a
1b	External Unit ID (EIA Plant Code)	3883	3883	3883	3883	n/a
2a	Generating Unit Name	C11	C11	C11	C11	n/a
2b	Description of component or upgrade	Hydro	Generator Upgrade	Generator Upgrade	Operational Efficiency Gain	n/a
3	Facility Owner Name	Chelan PUD	Chelan PUD	Chelan PUD	Chelan PUD	n/a
4	Commenced Operation Date [1]	2/1974	8/18/2002	8/18/2002	4/1/2003	n/a
5	Nameplate Capacity of Component (MW)	114	n/a	n/a	n/a	114
6a	Max. Annual Generation of component (MWh/yr)	695,371	27,188	10,363	114,480	847,402
6b	Typ. Annual Generation of component (MWh/yr)	487,667	19,067	7,267	80,286	594,288
6c	Typ. Annual Generation Share of component	82.059%	3.208%	1.223%	13.510%	100.00%
7	Repower Date [2]	n/a	n/a	n/a	n/a	n/a
8	PURPA QF	n/a	n/a	n/a	n/a	n/a
9	Generation Technology / Prime Mover	Hydro	Incremental Hydro	Incremental Hydro	Incremental Hydro	n/a
10	Fuel Type / Energy Source (Primary)	Water	Water	Water	Water	n/a
11	Fuel Type / Energy Source (Secondary)	n/a	n/a	n/a	n/a	n/a
12	Meter ID	91041338	91041338	91041338	91041338	91041338
13	Eligible Program	n/a	Oregon	Washington & Oregon	Washington	

Renewable Incremental Hydro Engineering Report

Rocky Reach and Rock Island Hydroelectric Projects

Public Utility District No. 1 of Chelan County

Turbine-Generator Efficiency Upgrades & Operational Efficiency Gains

P.U.D.
CHELAN COUNTY
POWER

December 2016

Rocky Reach and Rock Island Hydroelectric Projects
PUD No. 1 of Chelan County- December 2016

Renewable Incremental Hydro Engineering Report

Rocky Reach and Rock Island Hydroelectric Projects

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Rocky Reach and Rock Island Hydroelectric Projects
PUD No. 1 of Chelan County- December 2016

OVERVIEW

Public Utility District No. 1 of Chelan County (District) is providing an engineering review of the incremental energy gains that are generated from turbine-generator efficiency upgrades and operational changes at the Rocky Reach Hydroelectric Project (Rocky Reach) and Rock Island Hydroelectric Project (Rock Island). Certain incremental energy gains are eligible under both the Oregon Renewable Portfolio Standard (Oregon RPS) and Washington Renewable Portfolio Standard (Washington RPS). The following report summarizes the engineering review and the District's analysis.

Summary of Work

Oregon RPS

Incremental hydro is qualified under ORS 469A.025 (4)(b), which allows hydroelectric facilities that have installed efficiency upgrades on or after January 1, 1995 to receive RPS eligible credit for the electricity attributable to the efficiency upgrades.

Rocky Reach efficiency gains were approved starting in 2011 (unit C11) and 2013 (units C1-C10) and most recently units C1-C7 were re-certified in January 2016.

The District is submitting this report and supporting documentation in order to revise the efficiency gains at Rocky Reach for units C1-C11 and register efficiency gains at Rock Island. The revised analysis for Rocky Reach will ensure alignment with the Washington RPS analysis.

Washington RPS

Incremental hydro is qualified under RCW 19.285.030(12)(b), which allows incremental electricity produced as a result of efficiency improvements completed after March 31, 1999 to qualify as an eligible renewable resource.

The District is submitting this report and supporting documentation to register the incremental hydro efficiency gains in WREGIS in accordance with both WAC 194-37-130(3)(c)(ii) and WAC 480-109-200(7)(c).

The District performed the following work:

1. Calculated the qualified efficiency upgrades under both the Washington RPS and Oregon RPS at Rocky Reach and Rock Island using the District's Hydro Optimization Model.
2. Prepared a report summarizing the results.

Project Owner

Project owner information for both Rocky Reach and Rock Island is summarized in the following table.

Rocky Reach and Rock Island Hydroelectric Projects
PUD No. 1 of Chelan County- December 2016

Project Owner:	Public Utility District No. 1 of Chelan County, Washington
Street/P.O. Box:	327 N. Wenatchee Ave.
City:	Wenatchee
State/Region:	Washington
Post/Zip:	98801
Country:	United States of America
Telephone:	(509) 663-8121
Fax:	(509) 661-8155
Website:	www.chelanpud.org
Project Representative:	Melissa Lyons
Title:	Trader/Analyst
Department:	Energy Planning & Trading
Mobile Number:	(509) 293-1926
Direct Telephone:	(509) 661-4369
E-mail:	Melissa.lyons@chelanpud.org

Site Description

Rocky Reach

Project Location

Rocky Reach is located on the Columbia River in Chelan County, Washington, approximately seven miles upstream of the city of Wenatchee as shown on Figure 1. The dam is 215 river miles below the Canadian border and 474 river miles above the mouth of the Columbia River at Astoria, Oregon.

Project Description

Rocky Reach consists of a 130-foot-high concrete gravity dam. The powerhouse is 1,088 feet long, 206 feet wide and 218 feet high, and contains 11 generating units. Seven of the generating units are rated at 114 MW (C1-C7), and four are rated at 125.4 MW (C8-C11). Up until September 2013[1], all 11 units at Rocky Reach were equipped with vertical shaft, adjustable blade turbines. The variable pitch blade design allows the turbines to maintain maximum operating capacity and efficiency despite variations in the river flow and generator output. They are turned by the water flow and connected to the electricity-producing generators by large steel shafts. Power from Rocky Reach flows to a single distribution point: the Rocky Reach Hydroelectric Project switchyard, which is located on the east bank of the Columbia River, opposite the powerhouse.

The crest of the reservoir can be regulated by 12 spillway gates (each 50 feet wide), which open individually and allow water to pass through separate spillway bays. The gates pass water seasonally that is surplus to power generation needs, or as required for assisting fish in their downstream migration. Rocky Reach also has fish passage facilities, including a fish ladder that is adjacent to the

[1] A summary of the large unit modifications is provided in the Rocky Reach Eligibility section.

west bank and a juvenile salmon surface collection system near the forebay wall.

With a project nameplate capacity of 1,299.6 MW, Rocky Reach produces an average of about 6.1 million megawatt-hours (MWh) of electric energy per year. The project's current FERC license was issued in February 2009 and expires in February 2052.

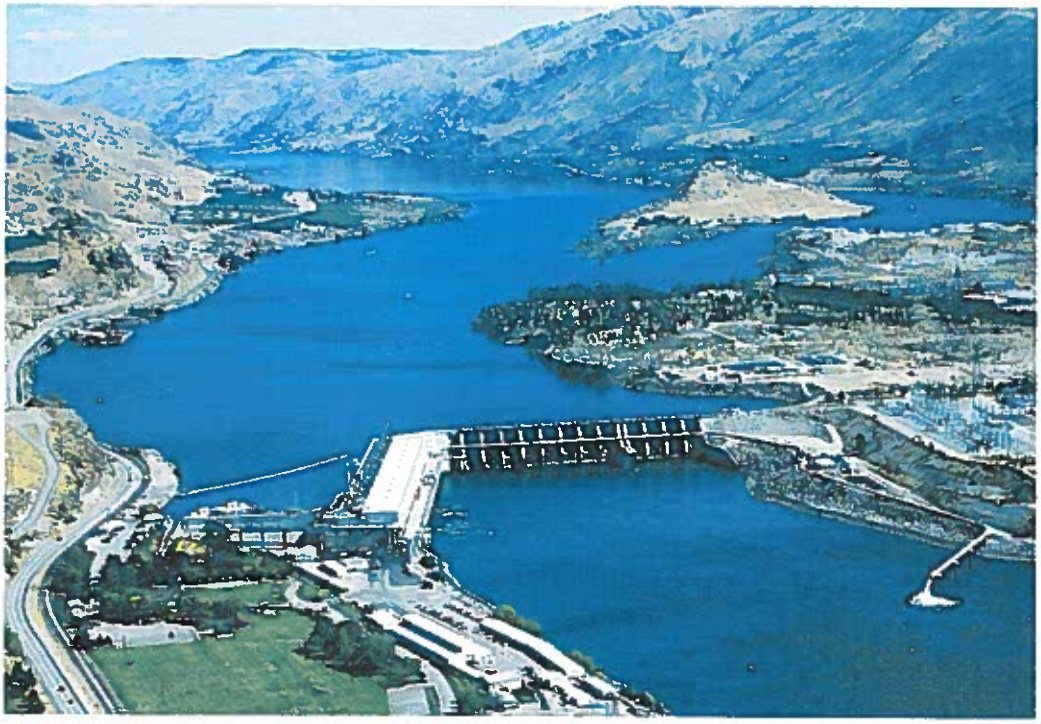

Photo 1: Rocky Reach Dam

Rock Island

Project Location

Rock Island is located near the geographical center of Washington State, on the Columbia River about 12 miles downstream from the city of Wenatchee. By river, the dam is 235 miles below the Canadian border and 453 miles above the mouth of the river at Astoria, Oregon.

Project Description

Rock Island is a reinforced concrete structure. The base of the project is anchored to solid basaltic bedrock. Looking from the Douglas County side, a 590-foot-long gravity dam section rises above and in front of the left bank fishway. Attached to this wall is the 870-foot-long headworks which includes the first powerhouse. The spillway is divided by the center fishway and has a total length of 1,424 feet. The east spillway contains a total of 14 gates. The west spillway has 17 gates. The second powerhouse is 470 feet wide. The remaining length of the dam is taken up by the right bank fish facilities and assembly area.

In Powerhouse 1, the four original 1930's generator stators have been replaced and have a nameplate rating of 20.7 MW. The six 1950's generators are each rated at 22.5 MW. Powerhouse 2 contains eight horizontal bulb turbine generators. Each generator has a nameplate rating of 51.3 MW, bringing the nameplate capacity of the eight units to 410.4 MW.

Although the turbines are classified as hydraulic turbines, the prime movers are immense water wheels closely resembling a ship propeller. There are 11 of these vertical shaft impellers in Powerhouse 1. There are eight horizontal shaft turbines in the Powerhouse 2.

The crest of the reservoir can be regulated by spillway gates, which open individually and allow water to pass through. The gates pass water seasonally that is surplus to power generation requirements or as required for downstream fish passage. There are 31 crest gates.

With a project nameplate capacity of 628.9 MW, Rock Island produces an average of about 2.8 million megawatt-hours (MWh) of electric energy per year. The project's current FERC license was issued in January 1989 and expires in December 2028.

Photo 2: Rock Island Dam

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ENGINEERING REVIEW

An engineering review of the revised data and incremental energy calculations is required under the Oregon RPS to modify the Rocky Reach unit efficiency gains and certify the Rock Island unit efficiency gains. The Washington RPS does not require an engineering review, however the District included those efficiency gains in this review as the analyses are related and performed at the same time. Melissa Lyons, Trader/Originator, collected the data and performed the calculations which were reviewed by Professional Engineer, Brett Bickford. Melissa Lyons has over ten years of power management experience and has worked on incremental hydro analyses for other renewable and carbon programs. Brett Bickford has over 20 years experience in hydro unit rehabilitation including model testing, design, construction, absolute flow measurement and index testing. Brett has also been involved with development and installation of real time unit dispatch optimization programs in hydro power plants.

OREGON & WASHINGTON RPS ELIGIBILITY

Oregon RPS Summary

The Oregon RPS requires Oregon utilities to deliver a percentage of their electricity from renewable resources by 2025. For Oregon's three largest utilities, the RPS starts at 5% in 2011, increases to 15% in 2015, 20% in 2020, and 25% in 2025. In 2016, the state standard was expanded and the state's largest utilities will now provide 50% of their electricity through renewable resources by 2040. Smaller utilities have similar but smaller requirements. Eligible resources include biomass, geothermal, hydropower, ocean thermal, solar, tidal, wave, wind, and hydrogen. Biomass and hydropower resources have conditional limitations. Facilities must be located in the Western Electricity Coordination Council (WECC).

Hydro Eligibility

ORS 469A.025(4)(b) states electricity generated by a hydroelectric facility may be used to comply with the Oregon RPS if the electricity is attributable to efficiency upgrades made to the facility on or after January 1, 1995. OAR 330-160-0050 further clarifies efficiency upgrades are limited to upgrades to existing generators, turbines and other Department-approved equipment changes.

Per OAR 330-160-0020, renewable energy credits (REC) must be tracked through the Western Renewable Energy Generation Information System (WREGIS).

Washington RPS Summary

The Washington RPS establishes renewable energy targets as a percentage of customer load. The targets increase over time, from 3% in 2012, to 9% in 2016, to 15% in 2020. Eligible resources include water, wind, solar energy, geothermal energy, landfill gas, wave, ocean or tidal power, gas for sewage treatment plants and biodiesel fuel and biomass energy. Some of these resources have restricted

eligibilities. Renewable resources must be located in the Pacific Northwest or delivered to Washington on a real-time basis.

Hydro Eligibility

RCW 19.285.030(12)(b) states that incremental electricity produced as a result of efficiency improvements completed after March 31, 1999, to hydroelectric generation projects owned by a qualifying utility, are an eligible renewable resource. On September 4, 2014, Commerce issued an Advisory Opinion to further clarify that operational efficiency gains (e.g. implementation of Habitat Conservation Plan) are eligible under the Washington RPS.

The use of unbundled freshwater generated RECs cannot be used for Washington RPS compliance per RCW 19.285.020(20), however the Washington Utility Transportation Commission (UTC) requires all eligible renewables be tracked through the WREGIS per WAC 480-109-200(1)(3) and under the Clean Air Rule (CAR) incremental hydro can create RECs per WAC 173-442-020(1)(r).

Rocky Reach Eligibility

Rocky Reach has 11 generating units, seven of which were completed in 1961 (C1-C7), and four of which were completed in 1973 and 1974 (C8- C11). Between 1996 and 2003, the C1 to C7 vertical shaft, 6 blade, Kaplan turbines were replaced with new 6 blade Kaplan units. From 1998 to 2002, the C8 to C11 turbines were replaced and changed from vertical shaft, 5 bladed, propeller units (fixed blade) to 5 blade adjustable blade Kaplan units, and the generators were refurbished. Between 2003 and 2006, the C1-C7 generators were replaced, increasing the nameplate rating from 111.15 MW to 114 MW. At the time they were installed, the new turbines used state-of-the-art technology to improve system efficiencies and to improve fish passage survival. The project modernization improved the efficiency and reliability of the hydro plant. The end result is more power generation with the same amount of water.

Planned work: Rocky Reach Large Unit (C8-C11) Repair

In March 2013, C10 was taken out of service after the District discovered excess oil around the generator shaft and metal shavings. Further investigation revealed a deep crack in the stainless steel rod that delivers oil to a servo motor. The motor adjusts the angle of the turbine blades. In September 2013, the other three large turbines, C8, C9, and C11 also were taken out of service since they are of the same design. All four units were brought back on-line by April 2014 in a temporary, fixed-blade configuration. Once repaired, each of the units will be returned to variable pitch operation. One unit at a time will be taken out of service for the permanent repair.

The fixed blade configuration is modeled in the Current Case as it dramatically changes the performance characteristics of C8-C11. As the units are restored to variable pitch operation, the model will be updated to reflect these changes.

The below table summarizes the commissioning dates for the new turbines and generating units and applicable modification dates.

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Rocky Reach Generating Unit	New Turbine Runners	Generator Rehabilitation	Equipment Modifications	OR RPS Eligible	WA RPS Eligible[2]
C1	3/31/2003	3/31/2003		Yes	Yes
C2	4/11/1999	11/22/2003		Yes	Yes
C3	3/12/1998	5/11/2006		Yes	Generator only
C4	5/30/1997	11/8/2005		Yes	Generator only
C5	12/20/1996	10/30/2006		Yes	Generator only
C6	2/23/1996	5/3/2005		Yes	Generator only
C7	7/15/1996	11/17/2004		Yes	Generator only
C8	12/31/1999	12/31/1999	Fixed Blade until June 2017[3]	Yes	Yes
C9	12/4/1998	12/4/1998	Fixed Blade until February 2020[3]	Yes	No
C10	8/5/2001	8/5/2001	Fixed Blade until April 2021[3]	Yes	Yes
C11	8/18/2002	8/18/2002	Fixed Blade until December 2018[3]	Yes	Yes

Rock Island Eligibility

Rock Island has 18 generating units. Development of the dam began in January 1930, with Powerhouse 1 and the first four operating units (B1-B4). Work on completion of the dam, powerhouse expansion and installation of six additional units (B5-B10) was completed in April 1953. Powerhouse 2, with its eight turbine generators (U1-U8), was placed in commercial operation in August 1979. The District began the project modernization on Powerhouse 1 in 2006. Turbine and generator replacements were completed for both B9 (May 2012) and B10 (May 2008).

Planned work: Rock Island Modernization (B1-B4)

The generator stators were replaced on units B1, B3, and B4 from 2009 to 2011, and B2 was replaced in 2016. However, those units have since been taken out of service due to cracks in their turbine blades. The District plans to rehabilitate all four units by December 2019. Due to the extended outage, the generator efficiency gains were not modeled and will not be registered in WREGIS at this time. As the

[2] In addition to equipment efficiency gains, operational efficiency gains are eligible under the Washington RPS and are generated by all units at the applicable project.
[3] Current outage schedule, subject to change.

units are rehabilitated, the model will be updated to reflect these changes and the units will then be registered.

The below table summarizes the commissioning dates for the eligible new turbines and generating units.

Rock Island Generating Unit	New Turbine Runners	Generator Rehabilitation	OR RPS & WA RPS Eligible[4]
B1			
B2			
B3			
B4			
B5			
B6			
B7			
B8			
B9	5/1/2012	5/1/2012	Yes
B10	5/15/2008	5/15/2008	Yes
U1			
U2			
U3			
U4			
U5			
U6			
U7			
U8			

HYDRO OPTIMIZATION MODELING

The District used the RHODOS-Hydro Operations Optimization Model (Model) to calculate the incremental efficiency gain attributable to both Rocky Reach and Rock Island. The Model was developed by John C. Howard and Charles D. D. Howard of CddHoward Consulting Ltd. and is the product of many years of incremental development of computer models for optimizing hydroelectric system operations.

The District ran the Model with average water under several scenarios to determine the Oregon Baseline (as of January 1, 1995), Washington Baseline (as of March 31, 1999), and Current Case generation. The difference between the baseline generation and current generation determines the annual incremental energy gain. This approach complies with both the requirements under OAR 330-

[4] In addition to equipment efficiency gains, operational efficiency gains are eligible under the Washington RPS and are generated by all units at the applicable project.

160-0050(2) and WAC 194-37-130(3)(c)(ii). Appendix A provides a summary of the key inputs and assumptions used in each model run.

Rocky Reach Results

The below table summarizes the incremental energy gains for Rocky Reach under both the Oregon and Washington RPS using the hydro optimization model and average water.

Model Run	Total Rocky Reach Generation (MWh)	Rocky Reach Incremental Generation (MWh)	Energy Gain %[5]
Washington Baseline	5,502,304	950,684	14.732%
Oregon Baseline	6,167,036	285,952	4.431%
Current Case	6,452,988		

Rock Island Results

The below table summarizes the incremental energy gains for Rock Island using the hydro optimization model and average water.

Model Run	Total Rock Island Generation (MWh)	Rock Island Incremental Generation (MWh)	Energy Gain %[5]
Washington Baseline	2,361,209	252,830	9.672%
Oregon Baseline	2,599,006	15,032	.575%
Current Case	2,614,039		

SUMMARY

Beginning January 1, 2017, the below annual energy gain percentages will be multiplied by the actual monthly unit generation, less station service, to determine the incremental energy gain MWh to be certified as eligible for RPS compliance in both Oregon and Washington.

WREGIS Category	Rocky Reach Efficiency Gain %	Rock Island Efficiency Gain %
Washington RPS Only	13.510%	9.097%
Oregon RPS Only	3.208%	
Washington RPS & Oregon RPS	1.223%	.575%

[5] See efficiency gain document for specific calculations.

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APPENDIX A

The District used the RHODOS-Hydro Operations Optimization Model (Model) to calculate the incremental efficiency gain under average water. The Model globally optimizes all three of the District's hydro projects in each model run, but only Rocky Reach and Rock Island results are being covered in this report. Extensive documentation is provided for all the Model inputs and assumptions.

Average Water Input

For average water, the District used the best available flow data to develop a long-term average water year. The historical water data is only available in a month average time step, but the Model requires an hourly time step. In order to convert the monthly data into hourly data, an hourly shape was developed from hourly 2007 flow and discharge data which accounts for current system constraints during a near average water year.

Average Water Data	Years (consecutive years)	Long-term Average Flow (cfs)	2007 Hourly Shape Data	2007 Average Flow (cfs)
Re-regulated average monthly Wells outflows	1929-2007 (79 years)	111,500	Wells hourly discharge data	110,000
Entiat River average monthly flows	1997-2015 (19 years)	480	Entiat daily flows	560
Lake Chelan average monthly inflow	1980-2015 (36 years)	2,040	Lake Chelan daily inflows	2,400
Wenatchee River average monthly flows	1963-2015 (53 years)	3,200	Wenatchee River hourly flows	3,300

Key Model Constraints- Rocky Reach

	Washington Baseline	Oregon Baseline	Current Case	
Forebay Maximum Elevation	707 ft.	707 ft.	707 ft.	*Set by FERC License*
Forebay Minimum Elevation	703 ft.	703 ft.	703 ft.	*Set by FERC License*
Gen Project Min Outflow	5 KCFS	24 KCFS, 4/1- 8/31 5 KCFS, 9/1-3/31	24 KCFS, 4/1-8/31 5 KCFS, 9/1-	*Oregon Baseline & Current Case- Higher min. generation target*

			3/31	*required for C1 & C2 when the juvenile fish bypass is operating 4/1-8/31.*
Project Spill	40% of total project discharge, 4/12-9/2	9% of total project discharge, 5/30-8/14	9% of total project discharge, 5/30-8/14	*Spill varies between scenarios based on whether or not the HCP was implemented.*
Maximum Spill (Gas Cap)	50 KCFS	50 KCFS	50 KCFS	*Total dissolved gas limit on spill per the District's Rocky Reach Water Quality Management Plan*
Fish Mode Operations	Unit loading sequence: ON: 1,2,3,4,5,6,7,8,9,10,11 OFF: reverse order	Unit loading sequence: ON: 1,2,3,4,5,6,7,8,9,10,11 OFF: reverse order	Unit loading sequence: ON: 1,2,3,4,5,6,7,8,9,10,11 OFF: reverse order	*During fish operations, there is a set start/stop sequence for unit dispatch.*

Unit Efficiencies- Rocky Reach

The below table summarizes the unit performance curves used in each model run.

Unit	Washington Baseline	Oregon Baseline	Current Case
C1	Old C1-C7	Old C1-C7	New C1-C7
C2	Old C1-C7	Old C1-C7	New C1-C7
C3	New turb/old gen C3-C7	Old C1-C7	New C1-C7
C4	New turb/old gen C3-C7	Old C1-C7	New C1-C7
C5	New turb/old gen C3-C7	Old C1-C7	New C1-C7
C6	New turb/old gen C3-C7	Old C1-C7	New C1-C7
C7	New turb/old gen C3-C7	Old C1-C7	New C1-C7
C8	Old C8-C11	Old C8-C11	Temporary Fixed C8-C11
C9	New C8-C11	Old C8-C11	Temporary Fixed C8-C11
C10	Old C8-C11	Old C8-C11	Temporary Fixed C8-C11
C11	Old C8-C11	Old C8-C11	Temporary Fixed C8-C11

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Below is a summary of the applicable unit performance curves at the rated gross head.

Baseline Equipment				
MW	C1-C7 (Old Turb/Gen)	C3-C7 (New Turb/Old Gen)	C8-C11 (Old Turb/Gen)	C8-C11 (New Turb/Gen)
35	83.13%	86.80%		88.80%
40	84.14%	88.93%		90.73%
45	84.98%	90.35%		91.99%
50	85.96%	91.33%	47.39%	92.83%
55	86.70%	91.99%	50.72%	93.37%
60	87.24%	92.41%	53.89%	93.67%
65	87.46%	92.61%	56.79%	93.78%
70	87.65%	92.69%	59.61%	93.77%
75	87.63%	92.66%	62.29%	93.68%
80	87.51%	92.56%	64.87%	93.51%
85	87.40%	92.41%	67.26%	93.29%
90	87.34%	92.21%	69.61%	93.05%
95	87.33%	92.00%	71.84%	92.78%
100	87.26%	91.77%	74.04%	92.51%
105	87.24%	91.53%	76.08%	92.22%
110	86.98%	90.92%	78.02%	91.58%
115	85.48%	89.32%	79.88%	89.94%
120	82.13%		81.74%	
125			83.53%	
130			85.24%	
135			86.80%	
140			88.29%	

Current Equipment		
MW	C1-C7 (New Turb/Gen)	C8-C11 (Fixed Turb/New Gen)
35	88.80%	
40	90.73%	
45	91.99%	
50	92.83%	45.82%
55	93.37%	49.14%
60	93.67%	52.32%
65	93.78%	55.22%
70	93.77%	58.04%
75	93.68%	60.72%
80	93.51%	63.30%
85	93.29%	65.68%
90	93.05%	68.04%
95	92.78%	70.27%
100	92.51%	72.46%
105	92.22%	74.51%
110	91.58%	76.44%
115	89.94%	78.31%
120		80.16%
125		81.89%
130		83.79%
135		85.70%
140		87.47%

Key Model Constraints- Rock Island

	Washington Baseline	Oregon Baseline	Current Case	
Forebay Maximum Elevation	613 ft.	613 ft.	613 ft.	*Set by FERC License*
Forebay Minimum Elevation	609 ft.	609 ft.	609 ft.	*Set by FERC License*
Gen Project Min Outflow	6 KCFS	6 KCFS	6 KCFS	
Project Spill	40% of total project discharge, 4/15-8/29	10% of total project discharge 4/16-5/30; 21% of total project discharge 5/31-8/19	10% of total project discharge 4/16-5/30; 21% of total project discharge 5/31-8/19	*Spill varies between scenarios based on whether or not the HCP was implemented.*
Maximum Spill (Gas Cap)	55 KCFS	55 KCFS	55 KCFS	*Total dissolved gas limit on spill per the District's Rock Island*

				Water Quality Management Plan
Fish Mode Operations	Unit loading sequence: ON: U1-U8, B6-B10, B1 or B2, B4, B3 OFF: reverse order	Unit loading sequence: ON: U1-U8, B6-B10, B1 or B2, B4, B3 OFF: reverse order	Unit loading sequence: ON: U1-U8, B10 or B9, B8, B1-B4, B5-B7 OFF: reverse order	*During fish operations, there is a set start/stop sequence for unit dispatch.*

Unit Efficiencies- Rock Island

The below table summarizes the unit performance curves used in each model run.

Unit	Washington/Oregon Baseline	Current Case
B1	Old B1-B4	Old B1-B4
B2	Old B1-B4	Old B1-B4
B3	Old B1-B4	Old B1-B4
B4	Old B1-B4	Old B1-B4
B5	Old B5-B10	Fixed blade turb B5-B7
B6	Old B5-B10	Fixed blade turb B5-B7
B7	Old B5-B10	Fixed blade turb B5-B7
B8	Old B5-B10	Old B5-B10
B9	Old B5-B10	New B9
B10	Old B5-B10	New B10
U1	Old U1-U8	Old U1-U8
U2	Old U1-U8	Old U1-U8
U3	Old U1-U8	Old U1-U8
U4	Old U1-U8	Old U1-U8
U5	Old U1-U8	Old U1-U8
U6	Old U1-U8	Old U1-U8
U7	Old U1-U8	Old U1-U8
U8	Old U1-U8	Old U1-U8

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Below is a summary of the applicable unit performance curves at the rated gross head.

Baseline Equipment

MW	B1	B2	B3	B4	B5-B10	MW	U1-U8
1	6 22%	6 22%	6 22%	6 22%	29 02%	2	26 38%
2	12 14%	12 14%	12 14%	12 14%	46 54%	4	44 24%
3	17 77%	17 77%	17 77%	17 77%	57 81%	6	56 92%
4	23 06%	23 06%	23 06%	23 06%	64 91%	8	65 12%
5	28 15%	28 15%	28 15%	28 15%	69 68%	10	71 49%
6	32 94%	32 94%	32 32%	32 94%	72 54%	12	76 28%
7	37 49%	37 52%	36 80%	37 49%	75 07%	14	79 75%
8	42 37%	41 86%	40 58%	41 86%	76 48%	16	82 05%
9	46 54%	46 00%	44 61%	45 77%	77 62%	18	84 40%
10	51 26%	50 28%	48 48%	49 61%	78 80%	20	86 09%
11	55 15%	53 92%	52 08%	53 27%	79 80%	22	86 82%
12	58 87%	57 43%	55 56%	56 70%	80 65%	24	88 09%
13	62 44%	60 78%	58 94%	59 98%	81 18%	26	88 94%
14	65 80%	63 92%	62 09%	63 10%	81 83%	28	89 46%
15	69 08%	66 86%	65 15%	66 08%	82 03%	30	89 15%
16	72 11%	69 67%	67 98%	68 93%	82 22%	32	89 90%
17	74 83%	72 17%	70 69%	71 65%	82 54%	34	89 69%
18	77 35%	74 44%	73 17%	74 14%	82 52%	36	90 05%
19	79 38%	76 59%	75 49%	76 41%	82 51%	38	89 95%
20	80 74%	78 22%	77 48%	78 11%	82 49%	40	89 69%
21	81 67%	80 10%	79 25%	79 20%	82 22%	42	89 30%
22	80 24%	79 84%		79 01%	81 97%	44	89 32%
23		79 57%			81 27%	46	88 99%
24					80 54%	48	88 02%
25					79 67%	50	88 09%
26					78 49%	52	87 25%
27					76 20%	54	87 05%
28					73 94%	56	86 87%
29					73 36%	58	85 92%
						60	85 10%
						62	84 39%
						64	83 52%

Current Equipment

MW	B1	B2	B3	B4	B5-B7	B8	B9	B10	MW	U1-U8
1	6 22%	6 22%	6 22%	6 22%	5 12%	29 02%	19 81%	79 22%	2	26 38%
2	12 14%	12 14%	12 14%	12 14%	9 92%	46 54%	36 13%	80 81%	4	44 24%
3	17 77%	17 77%	17 77%	17 77%	14 45%	57 81%	49 40%	82 06%	6	56 92%
4	23 06%	23 06%	23 06%	23 06%	18 74%	64 91%	60 06%	83 23%	8	65 12%
5	28 15%	28 15%	28 15%	28 15%	22 83%	69 68%	68 52%	84 35%	10	71 49%
6	32 94%	32 94%	32 32%	32 94%	26 73%	72 54%	75 14%	85 42%	12	76 28%
7	37 49%	37 49%	36 80%	37 49%	30 47%	75 07%	80 25%	86 44%	14	79 75%
8	42 37%	42 37%	40 58%	41 86%	34 05%	76 48%	84 12%	87 38%	16	82 05%
9	46 54%	46 54%	44 61%	45 77%	37 48%	77 62%	86 98%	88 24%	18	84 40%
10	51 26%	51 26%	48 48%	49 61%	40 78%	78 80%	89 00%	88 99%	20	86 09%
11	55 15%	55 15%	52 08%	53 27%	43 94%	79 80%	90 36%	89 60%	22	86 82%
12	58 87%	58 87%	55 56%	56 70%	46 98%	80 65%	91 18%	90 06%	24	88 09%
13	62 44%	62 44%	58 94%	59 98%	49 89%	81 18%	91 55%	90 35%	26	88 94%
14	65 80%	65 80%	62 09%	63 10%	52 67%	81 83%	91 58%	90 44%	28	89 46%
15	69 08%	69 08%	65 15%	66 08%	55 33%	82 03%	91 32%	90 32%	30	89 15%
16	72 11%	72 11%	67 98%	68 93%	57 85%	82 22%	90 84%	89 97%	32	89 90%
17	74 83%	74 83%	70 69%	71 65%	60 24%	82 54%	90 18%	89 39%	34	89 69%
18	77 35%	77 35%	73 17%	74 14%	62 50%	82 52%	89 37%	88 56%	36	90 05%
19	79 38%	79 38%	75 49%	76 41%	64 62%	82 51%	88 46%	87 48%	38	89 95%
20	80 74%	80 74%	77 48%	78 11%	66 61%	82 49%	87 46%	86 17%	40	89 69%
21	81 67%	81 67%	79 25%	79 20%	68 45%	82 22%	86 40%	84 62%	42	89 30%
22	80 24%	80 24%		79 01%	70 15%	81 97%	85 29%	82 85%	44	89 32%
23					71 70%	81 27%	84 15%	80 87%	46	88 99%
24					73 11%	80 54%	82 98%		48	88 02%
25					74 37%	79 67%	81 80%		50	88 09%
26					75 49%	78 49%	80 62%		52	87 25%
27					76 45%	76 20%	79 44%		54	87 05%
28						73 94%	78 26%		56	86 87%
29						73 36%	77 09%		58	85 92%
									60	85 10%
									62	84 39%
									64	83 52%