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June 13, 2022

Request for Proposals **Industrial Energy Efficiency Measure Development**

I. Contracting Organizations

The Northwest Power and Conservation Council (Council) is issuing this Request for Proposals.

A. The Council

The Council is an interstate compact agency formed by the states of Idaho, Montana, Oregon, and Washington as authorized by Congress in the Pacific Northwest Electric Power Planning and Conservation Act, 16 U.S.C. §839, et seq. The Council is composed of eight Council members, two appointed by the governor of each of the four states. Congress charged the Council with developing two major planning documents:

- A program for the protection, mitigation and enhancement of fish and wildlife affected by the development and operation of hydroelectric facilities in the Columbia River Basin, and
- A plan for meeting the electric energy needs of the Pacific Northwest for the next 20 years that includes an examination of conservation, renewable, and conventional energy sources that are available to meet those needs.

Congress also charged the Council with informing the Pacific Northwest public of major regional power issues and insuring widespread public involvement in the formulation of its regional power plan and fish and wildlife program.

II. Services Sought by the Council

Background

The industrial sector in the Northwest is robust and consumes about 42,300 GWh per year. Some of the large industries include pulp and paper, food processing, refineries, and semiconductor manufacturing. For the regional energy efficiency potential assessments, the industrial sector is divided into 21 distinct segments as shown in Table 1, along with the corresponding electricity consumption by segment and the technical energy efficiency potential from the 2021 Power Plan. The Industrial segment accounted for 647 aMW of cost-effective EE potential (27 % of the total) in the 2021 Plan.

Table 1 – Northwest Industrial Segments

Industrial Segment	Descriptive Segment Name	Electricity Consumption (MWh)	Technical Potential (MWh)
Water Supply	Water Supply and Irrigation Systems	1,228,952	131,088
Wastewater	Sewage Treatment Facilities	1,252,537	344,393
Frozen Food	Frozen Food Manufacturing	2,121,376	361,342
Other Food	Food Manufacturing (Except Frozen Food)	2,902,041	487,928
Lumber	Sawmills and Wood Preservation	973,265	146,747
Panel	Veneer, Plywood, and Engineered Product Mfg.	344,075	78,269
Wood	Other Wood Product Manufacturing	1,911,207	375,728
Mech Pulp	Pulp, Paper, and Paperboard Mills	1,998,610	352,406
Kraft Pulp	Pulp, Paper, and Paperboard Mills	1,994,960	496,253
Paper	Converted Paper Product Manufacturing	354,753	75,881
Refinery	Petroleum Refineries	1,056,280	208,680
Chemical	Chemical Manufacturing	5,331,472	841,421
Silicon	Other Basic Inorganic Chemical Manufacturing	416,116	66,802
Cement	Nonmetallic Mineral Product Manufacturing	1,615,249	129,285
Foundries	Primary Metal Manufacturing	440,776	73,836
Metal Fabrication	Fabricated Metal Product Manufacturing	1,118,951	166,721
Electric Fabrication	Semiconductor and other Electronic Component Mfg.	4,284,741	598,833
Transportation	Transportation Equipment Manufacturing	3,966,859	865,559
Misc. Mfg.	Miscellaneous Manufacturing	2,212,994	385,428
Cold Storage	Refrigerated Warehousing and Storage	863,231	91,497
Fruit Storage	Farm Product Warehousing and Storage	1,535,863	361,629
Total		37,924,310	6,639,726

Estimating energy efficiency potential in the industrial sector was done at a broad-brush, high level (e.g., a percentage of Industrial sector consumption) up until the Sixth Power Plan (2010). In this plan, a much more detailed assessment was conducted along with the model that is largely still used (“Industrial Tool”). The approach utilizes a top-down methodology that starts with the total electricity consumption of an industry segment, then divides that out by end-use shares (e.g., lighting, motors, HVAC.) for each industry, and then each measure is defined as the percent savings of an end-use. When the tool was developed for the Sixth Plan, detailed research was also conducted to develop the energy efficiency measures. Each measure savings value was based on one or more research papers or other published study. For the Seventh Power Plan, many of these measures were slightly adjusted or updated based on past achievements or secondary research, but most of these measures were still based predominantly on sources identified prior to 2010.

For the 2021 Power Plan, a significant portion (approximately 85%) of the potential was completely revised and based on more recent sources. A significant amount of the new or revised potential is from motor-based measures which crosses all industries and comprises most of the electricity consumption in the Industrial sector. The measures that comprise the remaining potential are primarily industry specific.

Scope of Work

The Council is seeking a contractor to review and update Industrial sector measures that have outdated sources. Table 2 shows the 46 measure categories that were included in the 2021 Power Plan. Of those, 18 of them need review and revision (shown in left column). These measures represent about 15 percent of the total technical potential for the Industrial sector, and many are specific to a particular industry, as indicated in the measure name. The other measure categories (right column) had significant recent updates for the 2021 Plan and do not need review at this time. In addition, the Council is seeking measures that might be missing from our assessments.

Task 1 – Review and Update Existing EE Measures with Outdated Sources

For each existing measure/category:

1. Define the measure
2. Identify new sources of research or data to define the measure (savings, cost, life)
3. Develop new measure definition based on the new data. We realize that detailed or comprehensive data may not be available in all cases.
4. For measures where no new data source can be identified, recommend whether to continue including the measure in our assessments

Information about each measure must include baseline information, i.e., identify the existing or average efficiency of the technology in question

Deliverable: Excel Workbook and Report Summary of Updated Measures

Deadline: Draft Due by August 31, 2022, Final Due by September 30, 2022

Table 2 – Industrial Measure Categories from the 2021 Power Plan

Needs Review and Updating	Review not needed at this time
Forklift Battery Charger	Air Compressor Demand Reduction
HVAC	Air Compressor Variable Speed
Elec Chip Fab: Exhaust Injector	Air Compressor Equipment
Elec Chip Fab: Solid state Chiller	Fan Optimization
Refrigeration Retrofit (low temp)	Fan Equipment Upgrade
Refrigeration Retrofit (med temp)	Fan Variable Speed
Fruit Storage Refer Retrofit	Fan VS Trim
Panel: Hydraulic Press	Pump Equipment Upgrade
Wood: Replace Pneumatic Conveyor	Pump Variable Speed
Wood: Process Optimization	Pump Optimization
Metal: New Arc Furnace	Pump VS Trim
Mech Pulp: Refiner Optimization	Air Compressor (Large) System Optimization
Kraft: Effluent Treatment System	Advanced Motors - Material Processing
Kraft: Efficient Agitator	Advanced Motors - Material Handling
Paper: Efficient Pulp Screen	Efficient Lighting 1 Shift
Paper: Vacuum Upgrades	Efficient Lighting 2 Shift
Paper: Process Efficiency	Efficient Lighting 3 Shift
Mech and Kraft: Hydraulic Power Units	Lighting Controls
	High Bay Lighting 1 Shift
	High Bay Lighting 2 Shift
	High Bay Lighting 3 Shift
	Energy Management
	Energy Management2
	Water Supply
	Wastewater

Task 2 – Identify New Industrial EE Measures

Identify new energy efficiency measures or provide more definition for existing measure categories. We are looking for additional energy efficiency opportunities that are not currently included in our analysis. It is anticipated that there are some industry-specific opportunities that are not covered in our current categories. Keep in mind that we do already have broad coverage of motors and motor-driven systems, so these should not be included.

Deliverable: Excel Workbook and Report Summary of New Measures

Deadline: Draft Due by September 15, 2022, Final Due by September 30, 2022

The Council is considering selecting multiple contractors for the completion of this work. Proposers may bid on all or a portion of this request.

III. Timeline and Budget Expectations

The Council estimates around \$75,000 for the entire project. The Council reserves the right to revise this budget. Proposers shall include the proposer's estimated costs per task, irrespective of the Council's estimated budget. Proposals should be based on time and materials, with a not-to-exceed limit, and include a detailed cost estimate.

The Council would like to complete these studies in the Council's 2022 fiscal year, which ends on September 30, 2022

IV. How to Submit a Proposal and Required Elements

Proposals shall be submitted to the Council in electronic format by **June 24, 2022**.

Proposals shall be emailed to:

Northwest Power and Conservation Council
Kevin Smit
Senior Analyst
ksmit@nwcouncil.org
(503) 222-5161

Proposals shall include the following elements:

- Contact information and brief description of the firm submitting the proposal
- Description of the technical and management approach to complete the work and deliver the services
- Qualifications of all personnel who will be working on the project
- Budget proposal that includes the hours and rates of all personnel, with a not-to-exceed cost
- Reporting schedule and project timeline
- Web site addresses or listing of similar work that can be reviewed by the proposal evaluation team
- Any other material the proposer deems pertinent

Any questions regarding this RFP shall be directed to Kevin Smit. Please note that responses will be limited to correcting errors in the RFP or clarifying the RFP's provisions. If questions received identify significant information that would assist proposers in submitting proposals, such information will be made available by reasonable means, such as posting on the Council's webpage, to all persons or entities who have received the RFP to ensure all proposers have access to the same information.

V. How the Council Will Select a Final Proposal

An evaluation team will review the proposals. The team will be comprised of staff from the Council's Resources Team. Proposals will be evaluated based on the proposed approach to and the qualifications for the services sought in Section II above. The evaluation committee will also consider the proposer's cost of service.

As noted above, the Council may select multiple contractors for the completion of this work, depending on areas of specialty. However, a single contractor may also qualify. The number of awards shall be at its sole discretion based on the evaluation of each proposal per the criteria stated above.

VI. Right to Reject and Proposal Costs

The Council reserves the right to reject any and all proposals and may cancel, modify, or revise this RFP at any time. The Council shall not be obligated to procure any services resulting from this RFP. The Council is not liable to any proposer for any loss or expense caused by or resulting from a delay, suspension, or cancellation of the RFP, award, or rejection of any proposal. Proposer shall bear all costs incurred in developing and submitting its proposal.

VII. Project Schedule

Proposals Due:	June 24, 2022
Selection of Winning Proposal(s):	Week of June 27, 2022
Project Start Date:	Week of July 5, 2022 (or as agreed to)

VIII. Equal Opportunity

The Council promotes equal opportunity for all individuals without regard to race, color, national origin, religion, sex, gender, gender identity (including gender expression), sexual orientation, marital status, age, disability, genetic information, military or veteran status, or any other protected status in accordance with applicable federal, state, and local laws.

IX. Disclosure Notice

The Council does its work in public as required by the Northwest Power Act. The Council, although not a federal agency, complies with the Freedom of Information Act. The Council's policy is available for review on our [website](#).

X. References

Two references that may be useful in reviewing this RFP include:

- [Industrial Tool for 2021 Power Plan](#) – Industrial measure detail from the 2021 Power Plan
- [Original Industrial Tool from the Sixth Power Plan](#) – Refer to the "Detail" worksheet (at the bottom) for the original measure definition sources and references.