Northwest Power and Conservation Council

Research on Energy Consumption and Efficiency for the Northwest Industrial Sector

Request for Proposals (RFP)

The Northwest Power and Conservation Council (NWPCC or "the Council") is requesting proposals to conduct research to help define the Pacific Northwest industrial sector's energy use and electric efficiency and demand response potential. The Council is seeking a streamlined approach to updating the data that relies on Northwest industry-specific expertise and analysis combined with readily available data sources. In 2016 research was conducted on 14 of the 20 segments and this RFP seeks proposals to complete the remaining six industrial segments.

Project Timeline

Release of RFP	March 10, 2017
Proposals Due	April 5, 2017 (5:00 pm Pacific)
Council Decision/Approval	April 12, 2017
Work Begins	April 17, 2017 (or as soon as contract is finalized; whichever occurs first)
Draft Final Report and Workbooks Due	August 31, 2017
Final Report and Workbooks Due	September 30, 2017

Proposals must be delivered electronically, no later than 5:00 p.m. PST on Wednesday, April 5, 2017, to:

Kevin Smit
Senior Energy Analyst
Northwest Power and Conservation Council
ksmit@nwcouncil.org

Overview of the Council

The Council was established by Congress, through the Pacific Northwest Electric Power Planning and Conservation Act of 1980, to assure the Pacific Northwest of an adequate, efficient, economical, and reliable power supply; to protect, mitigate and enhance the fish and wildlife, including related spawning grounds and habitat, of the Columbia River and its tributaries; and to give the citizens of Idaho, Montana, Oregon, and Washington a greater role in energy planning and fish and wildlife protection in

the Columbia River Basin. The Council has three primary responsibilities under the Act: (1) Developing a regional power plan for meeting the electric energy needs of the Pacific Northwest for the next 20 years; (2) Developing a regional program to protect and enhance fish and wildlife affected by the development and operation of hydroelectric facilities in the Columbia River Basin; and (3) Educating citizens and regional stakeholders on energy and fish and wildlife issues and involving them in the development of both the Council's regional power plan and fish and wildlife program.

Research Needs of the Council

Tracking and forecasting energy use and assessing conservation potential are a key part of the Council's energy planning responsibilities. In February 2016, the Council released its Seventh Power Plan, which identified energy efficiency as the primary and least cost resource for the region. Demand response is another important resource to help the regional meet adequacy needs. The energy efficiency and demand response supply curves used in determining the amount of potential available in the region are built-up by sector into regional totals. One of the Seventh Plan action items calls for a revised assessment of energy consumption and potential in the Northwest's industrial sector. The revised assessment for the industrial sector will improve the Council's annual load forecasting and will provide updated baseline data for use in the Eighth Power Plan.

The Council's assessment of energy consumption and potential in the industrial sector focuses on the approximately twenty individual industry segments that make up the majority of the region's industrial load. Updating this analysis requires assessing the composition, energy consumption, and electric savings potential of each segment. Those data are then aggregated to provide a regional view of each industrial segment's current and forecasted energy consumption and savings potential. In 2016, the Council released a similar RFP and conducted research on 14 of the 20 industrial segments. This 2017 RFP seeks research and data on the remaining six segments. For reference, the industrial segments, their NAICS codes, corresponding load, and Seventh Power Plan energy efficiency potential are shown in the table below.

Reference Industrial Segment Information from the Seventh Power Plan			
7P EE Industry Segments	**NAICS CODE**	**2035 Forecasted Load (MWh)**	**2035 Conservation Potential (aMW)**
Mechanical Pulp	322	4,261,225	104
Kraft Pulp	322	2,596,442	69
Paper	322	5,267,664	139
Foundries	331	673,247	3
Frozen Food	31141	1,243,766	29
Other Food	311	3,189,467	71
Wood – Lumber	3211	620,280	7
Wood – Panel	3212	718,938	13
Wood – Other	3212	1,525,349	38
Sugar	3113	582,684	11
Hi Tech - Chip Fabrication	3344	999,801	15
Silicon Manufacturing	**TBD (formerly 32518)**	**347,399**	**1**
Metal Fabrication	332	668,274	2
Transportation Equip Manufacturing	**336**	**1,697,223**	**9**
Refinery	**324**	**1,143,256**	**32**
Cold Storage	49312	1,129,112	13
Fruit Storage	**49313**	**3,380,049**	**66**
Chemical	**325**	**4,496,577**	**33**
Miscellaneous Manufacturing		**4,717,786**	
Water and Wastewater (Municipal)	2213	1,971,000	47

The highlighted segments (Bold Text) are those needing research under this RFP, those listed in light gray are segments for which research was conducted in 2016. As indicated in the Table, the six remaining segments are:

- Transportation Equipment Manufacturing (NAICS 336)
- Refinery (NAICS 334)
- Fruit Storage (NAICS 49313)
- Chemical (NAICS 325)
- Silicon Manufacturing (Formerly Hi Tech – Silicon), NAICS TBD
- Miscellaneous Manufacturing (See table below)

The “Silicon Manufacturing” segment refers to companies that make the silicon. In prior work, the NAICS code of 32518 was used to define this segment, however, there may be other NAICS that may better represent the industry (e.g., 327992, 331410).

Note that the Miscellaneous Manufacturing "segment" is relatively large and consists of multiple sub-industries. These industries and their corresponding NAICS codes are shown in the table below.

Miscellaneous Manufacturing	
Industry Name	**NAICS Code**
Furniture	337
Textiles	313
Apparel	314
Leather	316
Printing	323
Rubber, plastic	326
Cement	3273
Mineral Product Manufacturing	327 (except 327992 and 3273)
Electrical Equipment Manufacturing	335
Miscellaneous Manufacturing	339

Specific Tasks

For each of the industrial segments, the Council seeks a report and data set providing the following information: industry description, total energy consumption, energy consumption by end-use, and energy efficiency and demand response potential (cost and savings). Additional details related to the four areas of research desired for each industry segment follows. The proposed scope of analysis, approach, data sources, and expertise used to develop the research in each of the four areas will be a key consideration in evaluating proposals.

1. Industry segment description
    a. type of production facilities (primary product or process)
    b. description of primary and secondary products and markets
    c. number of facilities in the Northwest
    d. employment
    e. location of facilities by state and utility name
    f. production/productivity (e.g., tons of product, board feet for lumber)
    g. key trends that might affect energy consumption
    h. operational profile information (e.g., number of shifts, hours of operation, seasonality)
    i. sales or revenue
    j. age of facilities and primary process equipment
2. Annual energy use for the industry segment in the Northwest
    a. Electricity use (kWh/year)
    b. Natural gas use (Btu/MCF/DT)
    c. Other fuels (e.g., oil, biomass)
    d. Energy intensity metrics for electricity and major fuels (e.g., kWh/employee, kWh/plant output, kWh/cu.ft. storage)

e. On-site generation amounts (renewable, fossil fuel)
f. Electric load profile information (hourly, monthly)

3. Determine the overall segment's electricity and fuel end-use shares
    a. Describe major energy (especially electricity)-using equipment in the industry
    b. Disaggregate the total electricity consumption into end-use categories
    c. Example end-use shares for the Fruit Storage segment from the Seventh Power Plan analysis is shown below:

Fruit Storage End-Use	Share (%)
Med Temp Refrigeration	57%
HVAC	1%
Lighting	18%
Other Process	9%
Total	100%
All Electric	85%
All Motors	58%

4. Provide energy-efficiency and demand response information
    a. Identify the energy efficiency measures that could be applied by industry segment
        i. Review the Seventh Power Plan list of energy efficiency measures at https://nwcouncil.app.box.com/7thplanconservationdatafiles/1/6722932589
        ii. Include a review and recommendation of possible additional opportunities for efficiency
    b. Determine the energy efficiency measures and/or practices that have already been implemented by industry segment. The mix of efficient v. inefficient devices or practices will define the baseline
    c. Identify industry segment demand response opportunities (e.g., eligible end-use or process, existing demand response, size and availability of DR potential) http://www.nwcouncil.org/energy/powerplan/7/technical
    d. Comprehensive detailed cost and savings data about all the energy efficiency and demand response measures, but the scope of analysis, approach, and data sources should be detailed in the proposal.

The primary deliverable is a report summarizing the results of these four tasks, along with accompanying Excel workbooks. A good example of the type and level of information being sought can be found here.

Timeline and Budget Expectations

The scope of this RFP is primarily for those six segments listed and must be completed in fiscal year 2017 (i.e., by the end of September). Proposers can bid on one or multiple industrial segments. For bids on multiple segments, distinguish in the bid between the approach and costs for each segment as the Council may choose to contract with different bidders for different segments.

All work performed under this Request for Proposals must be completed by September 30, 2017. There is no flexibility in the completion date insofar as the budget for the work resulting from this RFP cannot be rolled-over into FY 2018.

Proposal Review

All proposals meeting the RFP's requirements will be evaluated by a proposal review panel consisting of members of Council staff. Proposals meeting the requirements will be evaluated on the following criteria:

- Proposer's capabilities, experience, qualifications, and expertise in the relevant industrial segment(s) in the Pacific Northwest
- Proposed method and approach to obtaining and developing the data
- Proposed data sources, data vintage, and data structure for ease of updating
- Price
- Ability and commitment to complete the project on time

Selection of Winning Proposal

The review panel will make a recommendation to the Council for its consideration. The final decision on proposal selection, if any, will be made by the Council at a regularly-scheduled Council meeting (anticipated to occur April 11-12, 2017).

Proposal Instructions

Proposals should be sufficiently comprehensive for the Council to evaluate without requiring additional meetings or communication. All proposals must be organized according to the following topics and sequence:

i. Overview of your company
ii. Industry-specific expertise
iii. Project team with qualifications and roles, including any sub-contract arrangements
iv. Project approach
v. Quality of data sources
vi. Proposed project schedule

vii. Pricing

viii. References (three preferred)

For each industrial segment included in your bid, please provide your cost in the following format.

Industrial Segment:			
	Hours by team Member	Rate by Team Member ($/hr)	Total Cost for Task ($)
Industry Description			
Energy Consumption			
Consumption by End-use			
Energy Efficiency and Demand Response Information			
Total			

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 (see Council's policy).

Discussion of the proposals with the Council will take place at a regularly-scheduled Council meeting that is open to the public. The Council will consider requests for non-disclosure of confidential commercial or financial information submitted with a proposal. Any such information considered by the submitter to constitute confidential commercial or financial information should be clearly marked and separate and distinct from the rest of the proposal. Any such confidential commercial or financial information will not be disclosed to persons outside the Council or Council staff. Be aware, however, that the Council strives to be as transparent as possible when conducting its business and therefore encourages submitters to be as transparent and open as possible about their work especially as it relates to factors submitters may want the Council to consider in selecting the winning proposal.

Council Bears No Costs or Obligations

Prospective or actual respondents shall bear any and all costs and risks of participation in this RFP process. The Council shall not be obligated to procure any services resulting from this RFP.