

WASHINGTON UTILITIES AND TRANSPORTATION COMMISSION

Docket No. UE-061895

COMMENTS OF COGENERATION COALITION OF WASHINGTON

Initiative 937 provides that in meeting its conservation targets, a utility may include the generation savings produced by high-efficiency cogeneration. The Cogeneration Coalition of Washington (CCW) suggests that the proposed regulations for WAC Chapter 480-109 should be augmented. To provide for clarity in the implementation of the Initiative, the regulations should include a definition of “high efficiency cogeneration” and a section providing for the calculation of savings imputed to the cogeneration operation. CCW has proposed additions for these two purposes in an attachment.

The definition of “high efficiency cogeneration” is taken from the initiative, but also clarifies how the electrical and thermal outputs will be converted into the same units of measure.

The proposed addition to Sec. 480-109-040 first explicitly allows savings from cogeneration to be included in meeting the conservation target. Second, the addition provides a methodology for calculating the savings attributable to cogeneration. The first formula calculates the Fuel Chargeable to Power heat rate, as the fuel input not converted to thermal energy (in BTUs) divided by the net electricity output (in KWh). The fuel input is the total amount of natural gas supplied to the facility, and would not include any fuel supplied by the industrial process itself, such as “refinery gas.” The actual thermal output of the cogeneration process must be grossed up to reflect the lack of total efficiency in

converting the input energy into thermal output. The formula suggests a factor of 80%, the conversion efficiency of a stand-alone boiler. In the second formula, the difference between the Fuel Chargeable to Power heat rate and the heat rate of a new combined cycle unit is the efficiency savings provided by the cogeneration process. Because of that efficiency, a cogeneration unit produces electricity at a lower imputed heat rate than a comparable stand-alone generator. The savings in this case is the reduced amount of fuel required to produce the same amount of electricity. This difference in heat rates is multiplied by the electrical output. This calculates the portion of the electrical output that is attributable to the improved heat rate of the cogenerator.

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Respectfully submitted,

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PROPOSED ADDITIONS TO RULE

WAC 480-109-007 Definitions.

() “High-efficiency cogeneration” means a cogeneration facility with a useful thermal output of no less than 33% of the total energy output, under normal operating conditions. Electrical output will be calculated as the kwh output of the facility over a period of time, converted to BTUs using the conversion factor of 3413 BTUs/kwh. Total energy output shall be calculating by summing all useful energy outputs of the cogeneration facility over the same period of time expressed in BTU units.

WAC 480-109-040 Annual reporting requirements.

(1) (c) The report may also include electricity savings from any high-efficiency cogeneration operating within the utility’s service area during the preceding year. The electricity savings reported for each high efficiency cogeneration facility shall be the amount of energy consumption avoided by the sequential production of electricity and useful thermal energy from a common fuel source. The savings shall be calculated as follows:

$$\frac{\text{total nat'l gas input (BTUs)} - \frac{\text{useful thermal energy output}}{.8 \text{ (thermal conversion efficiency)}}}{\text{net electricity output (net of auxiliary power) (kwh)}} = \text{Fuel Chargeable to Power heat rate}$$

$$\frac{\text{new CC heat rate} - \text{FCP heat rate}}{\text{new CC heat rate}} \times \text{net electricity output} = \text{savings (kwh)}$$