

BLACK HILLS POWER, INC.
d/b/a BLACK HILLS ENERGY
SD PUC DOCKET: EL16-042

REQUEST DATE : 1/6/17

RESPONSE DATE : 1/20/17

REQUESTING PARTY: Staff

SDPUC Request No. 1-20:

Refer to 18 CFR 292.304 (e). In addition to the data provided pursuant to 292.302 (b), (c), and (d), explain how BHP's determination of the avoided costs have taken into consideration factors (2), (3), and (4).

Response to SDPUC Request No. 1-20:

CFR 292.304

(e) *Factors affecting rates for purchases.* In determining avoided costs, the following factors shall, to the extent practicable, be taken into account:

2) The availability of capacity or energy from a qualifying facility during the system daily and seasonal peak periods, including:

(i) The ability of the utility to dispatch the qualifying facility;

The Company modeled the 10 MW, 20 MW, 30 MW and 40 MW solar projects each as zero cost, must take, dispatchable resource.

(ii) The expected or demonstrated reliability of the qualifying facility;

The Company modeled the 10 MW, 20 MW, 30 MW and 40 MW solar projects each with the assumption that the resource would be available based on the facility's production profile.

(iii) The terms of any contract or other legally enforceable obligation, including the duration of the obligation, termination notice requirement and sanctions for non-compliance;

Black Hills assumed that the terms of contracts or other legally enforceable obligations for the 10 MW, 20 MW, 30 MW and 40 MW solar projects would be met and modeled the resources based on the facility's production profile.

(iv) The extent to which scheduled outages of the qualifying facility can be usefully coordinated with scheduled outages of the utility's facilities;

Black Hills assumed that scheduled outages would be coordinated during periods of low or no energy production.

(v) The usefulness of energy and capacity supplied from a qualifying facility during system emergencies, including its ability to separate its load from its generation;

Black Hills did not assume that the qualifying facility would supply useful energy or capacity during system emergencies.

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(vi) The individual and aggregate value of energy and capacity from qualifying facilities on the electric utility's system; and

The Company only modeled the value of energy and capacity from individual qualifying facilities. Black Hills did not evaluate the aggregate value of energy and capacity from qualifying facilities.

(vii) The smaller capacity increments and the shorter lead times available with additions of capacity from qualifying facilities; and

For this informational filing Black Hills modeled a 10 MW, 20 MW, 30 MW and 40 MW qualifying facility. The Company assumed that each qualifying facility would be available in January 2017 based on the requirements of 292.302 (b) (1).

(3) The relationship of the availability of energy or capacity from the qualifying facility as derived in paragraph (e)(2) of this section, to the ability of the electric utility to avoid costs, including the deferral of capacity additions and the reduction of fossil fuel use; and

The Company used production cost modeling to simulate the hourly dispatch of two portfolios - Black Hills' system with a QF and Black Hills' system without a QF. Inputs to the production cost modeling include, among other things, the QF's hourly production profile and the Company's hourly load profile. Using these inputs, along with a host of other inputs, the model predicts each portfolio's hourly operation. These hourly profiles provide the data necessary for the model to account for the benefit of a QF during system daily and seasonal peak periods including the reduction of fossil fuel use, purchased power expense and variable cost expense.

Black Hills completes system-level peak demand and energy forecasts and a load and resource balance annually to determine the resources necessary to serve its customers. The load and resource balance showed that Black Hills will have sufficient capacity resources to serve customer electricity demand, including a 15 percent reserve margin, over the ten-year planning period (2017 through 2026). Therefore, the addition of a QF would not defer any capacity additions. However, the Company does estimate that seasonal firm energy will be required in years 2017 through 2021. Black Hills did evaluate the seasonal firm energy need for each portfolio and adjusted the seasonal firm energy purchase assumptions based on the capacity shortfall for the scenario.

(4) The costs or savings resulting from variations in line losses from those that would have existed in the absence of purchases from a qualifying facility, if the purchasing electric utility generated an equivalent amount of energy itself or purchased an equivalent amount of electric energy or capacity.

For purposes of this informational filing, the Company assumed that the QF would be located within the Company's service territory and that the difference in line losses between the system with the QF and the system without the QF is negligible.

Attachments:

None