**PACIFIC POWER**

**AVOIDED COST CALCULATION**

**WASHINGTON - DECEMBER 2009**

**PACIFIC POWER**

**AVOIDED COST CALCULATION**

**WASHINGTON - DECEMBER 2009**

The starting point for the avoided cost calculation is the load and resource balance developed for the Company’s 2008 Integrated Resource Plan (IRP). It should be noted that many of the input assumptions for the IRP were fixed in November 2008, in order to enable filing of the IRP in May 2009. Due to the age of the input assumptions, many of the inputs have been updated for known changes for purposes of this avoided cost calculation. The avoided cost prices were also developed consistent with the west control area allocation methodology adopted for the Company in Docket No. UE-061546.

## Loads and Resources

The Company’s October 2009 load forecast was used in the study.

Long-term sales and purchase contracts were updated to include information available as of December 2009. These changes include the addition or revision of several long-term purchase contracts[[1]](#footnote-1).

Table 1 presents the Company’s western control area loads and resource balance. Table 1 shows an energy balance with a surplus of 488 aMW in 2010 declining to a surplus of 326 aMW in 2014. The winter peak has a capacity deficit of 73 MW in 2010, a surplus of 109 MW in 2011 and a capacity deficit of over 600 MW in 2012 through 2014. The summer months have two years of surplus - 2010 and 2011 followed by a capacity deficit of over 800 MW in 2012 through 2014. The change in capacity position is primarily caused by the expiration of the BPA Peaking contract in August 2011.

## Avoided Cost Calculation

Based on the load and resource balance, the avoided cost calculation is separated into two distinct periods: (1) the Short Run – a period of resource sufficiency in which the avoided costs are based on the marginal production cost of existing resources plus the cost of purchasing summer capacity; and (2) the Long Run – a resource deficit period in which new resources are required to provide both capacity and energy to meet the Company’s resource requirements. Avoided costs during the deficit period are based on the cost of a combined cycle combustion turbine. The load and resource balances in **Table 1** indicate resource sufficiency for all five years, only Short Run avoided costs are included in the current study.

**Short Run Avoided Costs**

During periods of resource sufficiency, avoided energy costs are based on the displacement of purchased power and existing thermal resources calculated by the Company’s GRID model. The model input data includes the monthly load and resource data, which are the basis for the annual summary of loads and resources shown in **Table 1**. To calculate short-run avoided costs, two production cost studies are prepared. The only difference between the two studies is an assumed 50 aMW zero running cost system resource. The 50 aMW resource is a proxy for qualifying facility generation. The avoided energy cost is the difference between the two studies. The outputs of the production cost model run are provided as **Table 2**.

Winter capacity costs during the Short Run period are based on three-month capacity purchases. The annual value as shown in **Table 3** is one-fourth of the total fixed costs of a simple cycle combustion turbine (SCCT). Because energy generated by a qualifying facility may vary, avoided costs at 75%, 85% and 95% capacity factors are prepared to illustrate the impact of differing generation levels. This calculation is also shown in **Table 3**.

Avoided energy costs can be differentiated between on-peak and off-peak periods. To make this calculation, the Company assumed that all capacity costs are incurred to meet on-peak load requirements. On an annual basis, approximately 57% of all hours are on-peak and 43% are off-peak. **Table 4** shows the calculation of on-peak and off-peak avoided energy prices.

For informational purposes, **Table 5** shows a comparison between the avoided costs currently in effect in Washington and the proposed avoided costs in this filing.

**Table 6** shows the calculation of the total fixed costs of a SCCT that are used in **Table 3**.

1. Additions and revisions to the long-term contracts portfolio include the addition of a Pacific Gas and Electric sale contract and an Idaho Power purchase contract. The Weyerhaeuser Reserve contract has been removed. Included is a new adjustment for Lewis River loss of efficiency and motoring loss and the addition of Seattle City Light State Line reserves. Short term firm transmission capacity was included. [↑](#footnote-ref-1)