

# Updated Product Switching Analysis

## Aggregate Effect of All Requests to Change Products on BPA's Peak Load Forecast

### Introduction

Section 11 of BPA's Regional Dialogue Power Sales Agreements (RD contracts) gives each customer a one-time conditional right to request a change in its purchase obligation (also known as the product) to another purchase obligation available from BPA. Under section 11.1.2, if the aggregate effect of all customer requests to change purchase obligations increases BPA's forecast of its total monthly firm coincident peak loads in the first year that the changes become effective by more than 300 MW, then BPA has the option to either deny the request or delay the increase in BPA's monthly firm peak load obligations. BPA conducted an assessment of the aggregate effect on peak loads, consistent with section 11.1.2, which is summarized below.

### Assumptions and Methodology

Four customers submitted requests to change their products by the May 31, 2016 deadline. However, one customer, the City of Idaho Falls, subsequently decided not to switch products. The three remaining product change requests are:

- Klickitat PUD: Slice/Block to Load Following
- Okanogan PUD: Slice/Block to Block
- Seattle City Light: Slice/Block to Block

The aggregate change in BPA's monthly peak loads is evaluated for Fiscal Year (FY) 2020 consistent with the October 1, 2019 effective date stated in section 11.1.1 of BPA's RD contracts. In addition, the aggregate change in BPA's monthly peak loads is evaluated for FY 2018 for only Klickitat PUD and Seattle City Light based on their requests for an early product change. Quantifying the aggregate change in BPA's monthly peak loads can be broken down into three discrete steps:

1. For customers requesting to change products, forecast the aggregate monthly peak loads based on their current products.
2. For the same subset of customers, forecast the aggregate monthly peak loads based on their requested product change.
3. Calculate the difference between the aggregate monthly peak loads based on their requested product change (2) and their current products (1).

The data sources and methodologies for the first two steps are summarized below. A fundamental assumption in this analysis is that no amount of the unsubscribed Slice is reallocated to any existing Slice/Block customer.

### *Peak Loads for Current Products*

All customers requesting to change products are currently purchasing the Slice/Block product. BPA recognizes there may be multiple reasonable assumptions to make when forecasting its monthly peak loads for Slice. Consequently, results are presented for each of the following Slice assumptions:

- The highest monthly coincidental usage based on multi-year averages of Slice load data spanning May 2013 through July 2016
- The highest theoretical monthly usage obtained by assuming all product change customers used Slice in the same manner as the product change customer that shaped most aggressively in each month based on multi-year averages of Slice load data spanning May 2013 through July 2016



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- The 2015 White Book monthly 1-hour peak Slice load forecast under 1937 (critical) water conditions
- The 2015 White Book monthly 1-hour peak Slice load forecast under 1958 (average) water conditions

The monthly load forecast for Block is based on the 2015 White Book forecast. The monthly Slice and Block loads are summed to calculate BPA's monthly peak load.

## *Peak Loads for Requested Products*

Each product requested requires a different methodology to forecast the peak load. To the extent possible, consistent data sources are used for each product.

For Load Following, BPA's monthly peak load is calculated as the customer's forecast monthly peak total retail load minus the customer's forecast monthly dedicated resources. The 2015 White Book monthly 1-hour peak total retail load forecast and customer's RD contract Exhibit A dedicated resource information serve as the data sources for this calculation.

Calculating BPA's monthly peak load for Block requires multiple steps. First, the 2015 White Book forecasts of BPA's Slice load under 1937-critical water conditions and Block load amounts are used to determine BPA's total energy load to each customer. Second, BPA's total energy load is multiplied by the customer's contract-specified Monthly Shaping Factors to allocate the energy amounts into each month. Third, the energy amount in each month is multiplied by the customer's contract-specified Diurnal Shaping Factors to determine the amount of heavy load hour energy for each month. Finally, the monthly heavy load hour energy is divided by the number of heavy load hours in each month to convert the units to average megawatts.

## **Results**

The aggregate effects of customers' requests to change products on BPA's forecast of its total monthly peak loads in FY 2020 and FY 2018 are shown below, which include results for all four Slice assumptions. The results indicate that irrespective of the Slice assumption chosen, the increase in BPA's forecast of its total monthly peak loads does not exceed 300 MW in any month. Further, the largest increase in total monthly peak loads is produced by the 1937 (critical) water scenario and is 125 MW in both the FY 2020 and FY 2018 analyses.

Aggregate Effect of Product Change Requests on BPA's FY 2020 Peak Load Forecast												
	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1937 Water Year (Critical) Slice	-37	40	80	125	68	59	-135	-419	-474	-207	-213	10
1958 Water Year (Average) Slice	-53	36	55	-41	-81	-111	-321	-474	-578	-309	-234	10
Historical Coincidental Slice	-85	78	56	46	-83	-97	-313	-400	-463	-259	-165	10
Historical Theoretical Slice	-122	38	7	-12	-101	-118	-332	-421	-481	-288	-203	-78

Aggregate Effect of Product Change Requests on BPA's FY 2018 Peak Load Forecast												
	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1937 Water Year (Critical) Slice	3	31	76	125	90	-20	-103	-419	-432	-189	-208	42
1958 Water Year (Average) Slice	-11	28	54	-25	-50	-135	-270	-449	-534	-279	-224	42
Historical Coincidental Slice	-61	77	50	39	-65	-118	-274	-384	-434	-236	-170	37
Historical Theoretical Slice	-86	50	13	1	-70	-130	-288	-396	-440	-254	-197	-29

