

BP-18 Rate Proceeding

Final Proposal

Transmission Rates Study and Documentation

BP-18-FS-BPA-08

July 2017



TRANSMISSION RATES STUDY AND DOCUMENTATION

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COMMONLY USED ACRONYMS AND SHORT FORMS

AAC	Anticipated Accumulation of Cash
ACNR	Accumulated Calibrated Net Revenue
ACS	Ancillary and Control Area Services
AF	Advance Funding
AFUDC	Allowance for Funds Used During Construction
aMW	average megawatt(s)
ANR	Accumulated Net Revenues
ASC	Average System Cost
BAA	Balancing Authority Area
BiOp	Biological Opinion
BPA	Bonneville Power Administration
Bps	basis points
Btu	British thermal unit
CIP	Capital Improvement Plan
CIR	Capital Investment Review
CDQ	Contract Demand Quantity
CGS	Columbia Generating Station
CHWM	Contract High Water Mark
CNR	Calibrated Net Revenue
COB	California-Oregon border
COE	U.S. Army Corps of Engineers
COI	California-Oregon Intertie
Commission	Federal Energy Regulatory Commission
Corps	U.S. Army Corps of Engineers
COSA	Cost of Service Analysis
COU	consumer-owned utility
Council	Northwest Power and Conservation Council
CP	Coincidental Peak
CRAC	Cost Recovery Adjustment Clause
CSP	Customer System Peak
CT	combustion turbine
CY	calendar year (January through December)
DD	Dividend Distribution
DDC	Dividend Distribution Clause
dec	decrease, decrement, or decremental
DERBS	Dispatchable Energy Resource Balancing Service
DFS	Diurnal Flattening Service
DNR	Designated Network Resource
DOE	Department of Energy
DOI	Department of Interior
DSI	direct-service industrial customer or direct-service industry
DSO	Dispatcher Standing Order
EE	Energy Efficiency
EIM	Energy imbalance market

EIS	Environmental Impact Statement
EN	Energy Northwest, Inc.
ESA	Endangered Species Act
ESS	Energy Shaping Service
e-Tag	electronic interchange transaction information
FBS	Federal base system
FCRPS	Federal Columbia River Power System
FCRTS	Federal Columbia River Transmission System
FELCC	firm energy load carrying capability
FOIA	Freedom Of Information Act
FORS	Forced Outage Reserve Service
FPS	Firm Power and Surplus Products and Services
FPT	Formula Power Transmission
FY	fiscal year (October through September)
G&A	general and administrative (costs)
GARD	Generation and Reserves Dispatch (computer model)
GMS	Grandfathered Generation Management Service
GSP	Generation System Peak
GSR	Generation Supplied Reactive
GRSPs	General Rate Schedule Provisions
GTA	General Transfer Agreement
GWh	gigawatthour
HLH	Heavy Load Hour(s)
HOSS	Hourly Operating and Scheduling Simulator (computer model)
HYDSIM	Hydrosystem Simulator (computer model)
IE	Eastern Intertie
IM	Montana Intertie
inc	increase, increment, or incremental
IOU	investor owned utility
IP	Industrial Firm Power
IPR	Integrated Program Review
IR	Integration of Resources
IRD	Irrigation Rate Discount
IRM	Irrigation Rate Mitigation
IRPL	Incremental Rate Pressure Limiter
IS	Southern Intertie
kcfs	thousand cubic feet per second
kW	kilowatt
kWh	kilowatthour
LDD	Low Density Discount
LGIA	Large Generator Interconnection Agreement
LLH	Light Load Hour(s)
LPP	Large Project Program
LPTAC	Large Project Targeted Adjustment Charge
LTF	Long-term Form
Maf	million acre-feet

Mid C	Mid Columbia
MMBtu	million British thermal units
MNR	Modified Net Revenue
MRNR	Minimum Required Net Revenue
MW	megawatt
MWh	megawatthour
NCP	Non-Coincidental Peak
NEPA	National Environmental Policy Act
NERC	North American Electric Reliability Corporation
NFB	National Marine Fisheries Service (NMFS) Federal Columbia River Power System (FCRPS) Biological Opinion (BiOp)
NLSL	New Large Single Load
NMFS	National Marine Fisheries Service
NOAA Fisheries	National Oceanographic and Atmospheric Administration Fisheries
NOB	Nevada-Oregon border
NORM	Non-Operating Risk Model (computer model)
Northwest Power Act	Pacific Northwest Electric Power Planning and Conservation Act
NP-15	North of Path 15
NPCC	Pacific Northwest Electric Power and Conservation Planning Council
NPV	net present value
NR	New Resource Firm Power
NRFS	NR Resource Flattening Service
NT	Network Integration
NTSA	Non-Treaty Storage Agreement
NUG	non-utility generation
NWPP	Northwest Power Pool
OATT	Open Access Transmission Tariff
O&M	operation and maintenance
OATI	Open Access Technology International, Inc.
OS	Oversupply
OY	operating year (August through July)
PDCI	Pacific DC Intertie
Peak	Peak Reliability (assessment/charge)
PF	Priority Firm Power
PFp	Priority Firm Public
PFx	Priority Firm Exchange
PNCA	Pacific Northwest Coordination Agreement
PNRR	Planned Net Revenues for Risk
PNW	Pacific Northwest
POD	Point of Delivery
POI	Point of Integration or Point of Interconnection
POR	Point of Receipt
Project Act	Bonneville Project Act
PS	Power Services
PSC	power sales contract

PSW	Pacific Southwest
PTP	Point to Point
PUD	public or people's utility district
PW	WECC and Peak Service
RAM	Rate Analysis Model (computer model)
RCD	Regional Cooperation Debt
RD	Regional Dialogue
REC	Renewable Energy Certificate
Reclamation	U.S. Bureau of Reclamation
RDC	Reserves Distribution Clause
REP	Residential Exchange Program
REPSIA	REP Settlement Implementation Agreement
RevSim	Revenue Simulation Model
RFA	Revenue Forecast Application (database)
RHWM	Rate Period High Water Mark
ROD	Record of Decision
RPSA	Residential Purchase and Sale Agreement
RR	Resource Replacement
RRS	Resource Remarketing Service
RSC	Resource Shaping Charge
RSS	Resource Support Services
RT1SC	RHWM Tier 1 System Capability
SCD	Scheduling, System Control, and Dispatch rate
SCS	Secondary Crediting Service
SDD	Short Distance Discount
SILS	Southeast Idaho Load Service
Slice	Slice of the System (product)
T1SFCO	Tier 1 System Firm Critical Output
TCMS	Transmission Curtailment Management Service
TGT	Townsend-Garrison Transmission
TOCA	Tier 1 Cost Allocator
TPP	Treasury Payment Probability
TRAM	Transmission Risk Analysis Model
Transmission System Act	Federal Columbia River Transmission System Act
Treaty	Columbia River Treaty
TRL	Total Retail Load
TRM	Tiered Rate Methodology
TS	Transmission Services
TSS	Transmission Scheduling Service
UAI	Unauthorized Increase
UFT	Use of Facilities Transmission
UIC	Unauthorized Increase Charge
ULS	Unanticipated Load Service
USACE	U.S. Army Corps of Engineers
USBR	U.S. Bureau of Reclamation
USFWS	U.S. Fish & Wildlife Service

VERBS	Variable Energy Resources Balancing Service
VOR	Value of Reserves
VR1-2014	First Vintage Rate of the BP-14 rate period (PF Tier 2 rate)
VR1-2016	First Vintage Rate of the BP-16 rate period (PF Tier 2 rate)
WECC	Western Electricity Coordinating Council
WSPP	Western Systems Power Pool

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1 **1. INTRODUCTION TO THE TRANSMISSION RATES STUDY**

2

3 **1.1 Purpose**

4 The Transmission Rates Study describes the rate design process and the calculations used for
5 developing transmission rates for BPA’s wholesale transmission services for fiscal years (FY)
6 2018 and 2019. The primary purpose of this Study is to demonstrate that the rates have been
7 developed in a manner consistent with statutory directives and will recover the transmission
8 revenue requirement for the rate period. The transmission rates can be found in the
9 Transmission, Ancillary, and Control Area Service Rate Schedules, BP-18-A-04-AP04.

10

11 This Study also discusses the development and calculation of rates for two ancillary services that
12 are associated with transmission service: (1) Scheduling, System Control, and Dispatch (SCD)
13 Service, and (2) Reactive Supply and Voltage Control from Generation Sources Service (also
14 known as Generation Supplied Reactive (GSR) Service). The Generation Inputs Testimony,
15 BP-18-E-BPA-18, discusses the generation inputs settlement proposal and the rates for the
16 ancillary and control area services covered by the settlement proposal. Fredrickson & Fisher,
17 BP-18-E-BPA-18.

18

19 This Study is organized into seven sections. The first is this introduction, which includes a
20 discussion of the statutory and contractual basis for rate development and an overview of the
21 rate design process and methodology. Section 2 describes the sales and revenue forecasts used
22 to calculate the rates for network and intertie services. Section 3 describes revenue credits and
23 other adjustments that are applied to the revenue requirements. Section 4 describes the

1 calculation of the rates for transmission service over the Network segment. Section 5 describes
2 the calculation of the rates for intertie transmission services. Section 6 describes the calculation
3 of the rates for SCD and GSR services. Section 7 discusses other transmission services and the
4 General Rate Schedule Provisions (GRSPs). The Transmission Rates Study includes the
5 documentation to support the calculations performed in this Study.

7 **1.2 Basis for Rate Development**

8 **1.2.1 Statutes**

9 In accordance with Section 4 of the Federal Columbia River Transmission System Act
10 (Transmission System Act), BPA constructs, operates, and maintains the Federal Columbia River
11 Transmission System (FCRTS) to (a) integrate and transmit electric power from existing or
12 additional Federal or non-Federal generating units; (b) provide service to BPA customers;
13 (c) provide interregional transmission facilities; and (d) maintain the electrical stability and
14 reliability of the system. 16 U.S.C. § 838b.

15
16 Section 7(a) of the Northwest Power Act sets forth the overall guidelines to be used in
17 establishing BPA's rates. 16 U.S.C. § 839e. Under Section 7(a)(2), rates are effective upon a
18 finding by the Federal Energy Regulatory Commission (Commission or FERC) that the rates:

- 19 • are sufficient to ensure repayment of the Federal investment in the Federal
20 Columbia River Power System over a reasonable number of years after first
21 meeting the BPA Administrator's other costs;
- 22 • are based upon the BPA Administrator's total system costs; and

- insofar as transmission rates are concerned, equitably allocate the costs of the Federal transmission system between Federal and non-Federal power utilizing the FCRTS. *Id.* § 839e(a)(2).

Section 9 of the Transmission System Act provides that rates shall be established (1) to encourage the widest possible diversified use of electric power at the lowest possible rates consistent with sound business principles; (2) to recover the cost of producing and transmitting electric power, including amortization of the capital investment allocated to power over a reasonable number of years; and (3) at levels that produce such additional revenues as may be required to pay the principal, premiums, discounts, expenses, and interest in connection with bonds issued under the Transmission System Act. 16 U.S.C. § 838g. Section 10 of the Transmission System Act allows for uniform rates and specifies that the costs of the Federal transmission system be equitably allocated between Federal and non-Federal uses of the system. *Id.* § 838h.

Section 212(i) of the Federal Power Act sets forth additional ratemaking requirements for transmission rates for transmission service ordered by the Commission. *Id.* § 824k(i).

Section 211A of the Federal Power Act authorizes the Commission to require unregulated transmitting utilities (including BPA) to provide transmission service at rates comparable to those that the unregulated transmitting utilities charge themselves. *Id.* § 824j-1.

1 **1.2.2 Existing Contractual Arrangements**

2 The transmission rates developed in this Study will apply to existing agreements and to new
3 agreements established under BPA’s Open Access Transmission Tariff (OATT) for the FY 2018
4 to 2019 rate period. For some contracts, such as Direct Service Industry (DSI) delivery
5 contracts, rates change according to a contract schedule independent of the rate proceeding.
6 Under those contracts, new rates will apply only if the rate is due to change under the contract
7 schedule. Other contracts, such as Operations and Maintenance (O&M) and Use-of-Facilities
8 (UFT) contracts, are fixed-price or formula rate contracts and are not affected by the rate design
9 process discussed in this Study.

10
11 **1.3 Overview of Transmission Rate Design Process and Methodology**

12 BPA establishes transmission rates by determining the overall costs of the transmission system
13 (revenue requirement) and allocating those costs to its various customer classes through
14 processes of segmentation (discussed below) and cost allocation. The costs allocated to the
15 various segments and customer classes are then divided by the forecast usage of those segments
16 and customer classes to derive transmission rates.

17
18 This Study relies on the results of the Transmission Segmentation Study and the Transmission
19 Revenue Requirement Study to calculate the rates. Sections 1.3.1 and 1.3.2 provide an overview
20 of these studies.

1 **1.3.1 Transmission Segmentation Study**

2 BPA assigns transmission facilities to segments based on how those facilities are used. The
3 Transmission Segmentation Study, BP-18-FS-BPA-07, explains how BPA established its
4 segments for the FY 2018–2019 rate period and determined the investment and O&M expense
5 ratios for each segment. BPA has established seven segments for the purposes of developing
6 rates for the rate period: Generation Integration, Network, Southern Intertie, Eastern Intertie,
7 Utility Delivery, DSI Delivery, and Ancillary Services.

8
9 The gross investment and historical O&M costs for each segment are identified in the
10 Transmission Segmentation Study. These inputs are used in the Transmission Revenue
11 Requirement Study to develop segmented investment ratios (the percentage of total net plant
12 investment represented by each segment’s plant investment) and O&M cost ratios (the share of
13 total O&M costs represented by each segment’s historical O&M costs). In the Transmission
14 Revenue Requirement Study, these ratios are used to determine the portion of the transmission
15 revenue requirement that is allocated to each segment.

16
17 **1.3.2 Transmission Revenue Requirement Study**

18 The Transmission Revenue Requirement Study, BP-18-FS-BPA-09, establishes the amount of
19 revenue needed to recover the costs associated with providing transmission services for the rate
20 period. The revenue requirement is based on program-level expenses and capital expenditures
21 developed in the 2016 Capital Investment Review and Integrated Program Review processes,
22 which preceded the rate development process.

1 The Transmission Revenue Requirement Study determines the revenue requirements for each
2 segment (the segmented revenue requirement) by applying the investment and O&M ratios
3 developed in the Transmission Segmentation Study to the overall transmission revenue
4 requirement. The segmented transmission revenue requirement for FY 2018–2019 is shown in
5 Table 1 in this Study. Section 2 of the Transmission Revenue Requirement Study, BP-18-FS-
6 BPA-09, describes this allocation.

8 **1.3.3 Transmission Rates Study**

9 Development of the rates for the transmission and ancillary services addressed in this Study
10 relies on two primary inputs: (1) sales forecasts developed as part of this Study; and (2) the
11 segmented transmission revenue requirements developed in the Transmission Revenue
12 Requirement Study. This Study takes the segmented transmission revenue requirements,
13 allocates these revenue requirements to the various transmission services, and divides the
14 allocated revenue requirements by the sales forecasts for each transmission service to calculate a
15 rate for each service. This Study demonstrates that the rates have been developed in a manner
16 consistent with statutory directives and that they are sufficient to recover the allocated
17 transmission revenue requirement for the rate period.

1 **2. SALES AND REVENUE FORECASTS**

2
3 **2.1 Overview**

4 This Study forecasts sales for each of the transmission services and certain ancillary services for
5 purposes of developing rates. Transmission sales forecasts are generally based on either forecast
6 load or contract transmission demand, depending on the type of transmission service. This Study
7 uses the sales forecast for two purposes: 1) as the basis for the transmission revenue forecasts,
8 which determine the expected levels of revenue for the rate period from transmission and
9 ancillary services rates and other sources; and 2) in the calculation of rates, as described below.

10
11 BPA prepared two revenue forecasts for the FY 2018–2019 rate period, both are based on the
12 sales forecast in Tables 4 and 5. One forecast applies the current (BP-16) rates to forecast sales
13 and the other applies the proposed (BP-18 Final Proposal) rates to the same sales forecast. These
14 revenue forecasts are used in the Transmission Revenue Requirement Study to test whether
15 current rates are sufficient to recover the transmission revenue requirement and whether
16 proposed rates are sufficient to recover the transmission revenue requirement. *See* Transmission
17 Revenue Requirement Study, BP-18-FS-BPA-09, §§ 3.2, 3.3.

18
19 Sales forecasts are discussed further in Sections 2.2, 2.3, 2.4, and 2.5 below and are shown on
20 Tables 4, 5, 9, 10.1, 13.1, 13.2, 14.1, 14.2, and 15 in this Study. Revenue forecasts are discussed
21 further in Section 2.6, and the revenue forecasts at current and proposed rates are shown in
22 Table 12.

1 In addition, BPA forecasts transmission credits and related interest expense associated with
2 generator interconnection agreements and the California-Oregon Intertie (COI) upgrade project.
3 These transmission credits are applied to customers' invoices for transmission service and result
4 in non-cash revenue (the related interest expense represents non-cash expenses). The non-cash
5 revenues are included in the revenue forecasts because the transmission services to which they
6 apply are included in the sales forecasts. BPA forecasts the transmission credits separately
7 because the non-cash revenues and expenses have other impacts on revenue requirements and
8 cost recovery. These impacts are described further in Section 2.2.5 of the Transmission Revenue
9 Requirement Study, BP-18-FS-BPA-09. The development of these credits are described later in
10 this document.

11

12 **2.2 Sales Forecasts for Transmission Service on BPA's Network**

13 Sales forecasts for long-term transmission services are generally based on measures of use to
14 which the charges for the service are applied. Sales forecasts of Network Integration (NT)
15 transmission service are based on load forecasts because the charges for this transmission service
16 are based on the customers' loads. Sales forecasts of long-term Point-to-Point (PTP)
17 transmission service, Integration of Resources (IR) transmission service, and Formula Power
18 Transmission (FPT) service are based on transmission contract demand or reserved capacity
19 because the charges for these services are based on the demand or capacity amounts specified in
20 the customers' transmission contracts. BPA includes both existing sales and expected future
21 sales in the forecasts.

1 Because short-term PTP service is not reserved far in advance, there are no existing reserved
2 capacities during the rate period on which to base the sales forecast. Instead, the forecast is
3 developed using the statistical relationship between historical short-term sales data and historical
4 price spread and streamflow data. It is assumed that the historical relationship represents the
5 future relationship between short-term sales and streamflow and forecast price spread. The
6 methodology for forecasting sales for each transmission service is discussed in more detail
7 below.

9 **2.2.1 Sales Forecast for NT Transmission Service**

10 Network Integration service provides transmission service for a customer's designated network
11 load, including network load growth, over the Network segment. BPA develops two versions
12 of monthly load forecasts for NT service: a non-coincident peak forecast and a coincident peak
13 forecast. The non-coincident peak forecast, which is used in the Network segment cost
14 allocation methodology, is a forecast of the customer's highest hourly load. The customer's
15 highest hourly load is the sum of the hourly load at the customer's Point(s) of Delivery (PODs)
16 on the hour of the month in which this sum is the highest. The coincident peak forecast, which
17 is used to calculate the NT rate and to develop the sales forecasts used to forecast revenue at
18 the current and proposed NT rates, is a forecast of the customer's load at each POD on the hour
19 of the monthly BPA transmission system peak. These load forecasts include all retail loads
20 (residential, commercial, and industrial loads) in the customer's service territory.

1 **2.2.1.1 Determination of a Customer’s Non-Coincident Peak Load Forecast**

2 BPA uses a multi-step process to determine NT customers’ non-coincident peak POD load
3 forecasts. Steps 1 and 2 describe how BPA determines the customer’s maximum hourly load
4 at the customer’s PODs during each month of the rate period. Steps 3 and 4 explain how BPA
5 adjusts the maximum hourly load forecast to determine the sum of the hourly load at the
6 customer’s PODs on the hour in which this sum is the highest (the highest hourly load). The
7 non-coincident peak load forecast is used for the Network segment cost allocation, described in
8 Section 4.

9
10 **Step 1: Regression Analysis of Historical Meter Readings**

11 BPA uses a regression analysis to identify the historical relationship between POD load levels
12 and temperature. A regression analysis evaluates how one variable (in this case load levels)
13 changes, given changes in independent variables (such as temperature). The regression
14 analysis identifies the statistical relationship between historical load levels at individual PODs
15 and temperature, among other variables. For historical load level data, the analysis typically
16 uses historical monthly meter readings from individual PODs from 2003 to 2015, a period of
17 time that includes a large enough sample to perform meaningful statistical analysis. A shorter
18 period is used for any customer for which these years would not accurately reflect load growth,
19 such as a customer that added a sizeable new load in recent years.

20
21 For temperature data, BPA uses actual historical temperatures from National Oceanic and
22 Atmospheric Administration weather stations from the same time period. For each POD, the
23 analysis uses temperature data from a weather station near the POD and identifies the

1 relationship between the load levels and temperature. The model confirms that both increasing
2 and decreasing temperatures can result in increasing load levels. Increasing temperatures lead
3 to greater use of air conditioning during warm weather periods, while decreasing temperatures
4 lead to greater use of heating equipment during cold weather periods.

5
6 The analysis also calculates the relationship between load levels and month of the year. The
7 analysis confirms that in certain months loads are typically higher than in other months,
8 regardless of temperature. For example, January loads are typically higher than March loads
9 because there are fewer daylight hours and, thus, more lighting use in January than in March.
10 As another example, December loads tend to be higher because of increased use of decorative
11 lighting for the holiday season. The analysis determines the amount by which load changes in
12 each month, regardless of temperature. A variable assigned to each month, referred to as the
13 monthly indicator variable, represents the amount by which load varies in each month.

14
15 Finally, individual PODs may have a load shape that is independent of the temperature and
16 monthly variables. Energy efficiency measures, new construction, economic cycles and
17 population changes affect electrical consumption and can increase or decrease load at a POD.

18 Therefore, the analysis calculates how historical load levels at each POD change over time,
19 independent of both temperature and month. A variable assigned to each month, referred to as
20 the time trend variable, represents the amount by which load changes over time independent of
21 other variables.

1 BPA uses a forecasting model that incorporates the relationships identified by the regression
2 analysis for each POD and applies indicators of future conditions, discussed below, to develop
3 the load forecast. The model assumes that historical relationships between the dependent
4 variable (load) at each POD and the independent variables (temperature, the monthly indicator,
5 and the time trend variable) represent future relationships. The model applies variables
6 representing possible future conditions to the relationships to produce a load forecast.

7
8 **Step 2: Application of Indicators of Future Conditions to Model Forecast Load**
9 **at Each POD**

10 BPA forecasts the maximum hourly load at each POD in the customer's contract for each month
11 of the billing period, using the relationships identified in the regression analysis. BPA inputs
12 into the model independent variables that represent possible future conditions. The variables
13 include a temperature indicator, a monthly indicator, and time trend variables discussed above.

14
15 A temperature indicator is the average heating degree days and cooling degree days. Heating
16 and cooling degree days are calculated from daily average temperatures between 1970 and 2004
17 and area base temperatures for the geographic area. The daily average temperature is the average
18 of the daily minimum and maximum outdoor temperatures on a given day. The area base
19 temperature is the temperature that reflects the use of heating and cooling equipment in that area
20 and other characteristics of the residential, commercial, and industrial load. Heating degree days
21 are days that the daily average temperature is below the area base temperature for the geographic
22 area. Cooling degree days are days that the daily average temperature is above the area base
23 temperature for the geographic area. There is a positive relationship between heating and

1 cooling degree days and load change. More heating degree days mean colder than average
2 temperatures and higher loads from increased use of heating equipment. More cooling degree
3 days mean warmer than average temperatures and higher loads from increased use of air
4 conditioning equipment.

5
6 The model next applies a monthly indicator variable and the time trend variable to forecast loads
7 for each future month being evaluated. The monthly indicator variable triggers the model to
8 include in the forecast the amount by which historical loads in that month have tended to change
9 over time, regardless of temperature. For example, if the month being forecast is January, the
10 model forecasts loads based on the amount by which loads in January are historically higher than
11 loads in other months, regardless of temperature. Similarly, the time trend variable triggers the
12 model to include in the forecast the amount by which historical loads have changed over time,
13 regardless of temperature and monthly indicator. For example, if the forecast is being developed
14 for June in the first year of the rate period, the model will forecast loads differently, based on
15 historical time trends from Step 1, than it would if the forecast were for June of the second year
16 of the rate period. The time trend variable triggers the model to incorporate into the forecast the
17 amount of load increase that is not attributable to temperature or calendar month.

18
19 After the inputs are included in the model, the model produces a forecast of the maximum hourly
20 load at each POD for each month of the rate period.

1 **Step 3: Adjustment of Maximum Hourly Load at the PODs**

2 Because the maximum hourly load at each POD may not occur on the hour of the month in
3 which the sum of the customer's load at all of its PODs is highest, BPA adjusts the forecast of
4 the maximum hourly load at each POD by a coincident factor for each month. The coincident
5 factor is the average of the ratios of the historical POD load on the hour of the customer's
6 monthly peak load to the historical POD load on the hour of that POD's peak load during the
7 same month, for the same years used for the regression analysis (typically 2003 to 2016). For
8 example, to determine the July coincident factor, first BPA determines the ratio for each July
9 of the historical period. The ratio for July 2015, as an example, is calculated by dividing the
10 load at POD A during the hour of the customer's highest hourly load (assume it is 3 MW and
11 occurs at 1:00 p.m. on July 7, 2015) by the maximum load at POD A (assume it is 4 MW at
12 2:00 p.m. on July 8, 2015). In this example, the ratio would be 3 divided by 4, which equals
13 75 percent. Next, BPA averages the July ratios in the historical period to determine a July
14 coincident factor. BPA multiplies the forecast of the maximum hourly load for the month at
15 the POD by its monthly coincident factor to determine the forecast POD load on the hour of
16 the customer's peak load for the month.

17
18 **Step 4: Determination of Customer's POD Load Forecast**

19 BPA adds the adjusted POD load forecasts to determine the customer's highest hourly load for
20 that month. The POD load forecast is used for the Network segment cost allocation.

1 **2.2.1.2 Determination of Customer’s Coincident Peak POD Load Forecast**

2 BPA forecasts the customer’s coincident peak load on the hour of the monthly BPA
3 transmission system peak to calculate the rate and to develop the sales forecasts to forecast
4 revenue at the current and proposed NT rate. BPA develops the coincident peak forecast using
5 the same methodology used for the non-coincident peak POD load forecast described above in
6 steps 1 and 2 of Section 2.2.1.1 (BPA does not use steps 3 and 4). Next, BPA adjusts the
7 maximum hourly load forecast for the POD to reflect the load on the hour of BPA’s monthly
8 transmission system peak. (The billing factor for the NT-18 rate is the customer’s load on the
9 hour of BPA’s monthly transmission system peak.) These sales forecasts are shown in
10 Table 4, lines 16-19, 35-38, and 51-54. The forecast of revenue at current rates is shown in
11 Table 12.

12
13 **2.2.1.3 NT Sales Forecast**

14 As noted above, this Study develops a non-coincident peak NT load forecast for cost allocation
15 and a coincident peak NT load forecast to calculate the NT rate and for the NT sales forecast
16 used in the revenue forecast. *See* Table 4 (the non-coincident peak NT load forecasts developed
17 in Section 2.2.1.1 for FY 2018–2019 and the average over the rate period are shown in lines 17,
18 36, and 52; the coincident peak NT load forecasts developed in Section 2.2.1.2 for FY 2018–
19 2019 and the average over the rate period are shown in lines 13, 32, and 48).

20
21 For the Network segment cost allocation (described further in Section 4), BPA reduces the
22 monthly non-coincident peak load forecasts to reflect the impact, in megawatts, of the NT Short
23 Distance Discount (SDD). The SDD applies to a customer’s Network Resources that are

1 designated for at least 12 months and that use FCRTS facilities for less than 75 circuit miles for
2 delivery to Network Load. BPA forecasts a reduction in sales due to the SDD by multiplying the
3 average generation of the designated network resource during heavy load hours (HLH) by the
4 SDD formula of $40\% \times (75 - \text{distance}) / 75$. See Table 4 (forecast NT SDD during the rate
5 period is shown in lines 11 and 30).

6
7 For the revenue forecast and as the billing determinant used to calculate the NT rate (discussed
8 further in Section 4), BPA reduces the monthly coincident peak load forecasts to reflect the
9 impact, in megawatts, of the NT SDD. See Table 4 (forecasts developed in Section 2.2.1.2 for
10 FY 2018–2019 and the average over the rate period, including a reduction for the NT SDD, are
11 shown in lines 14, 33, and 49). BPA uses the average of the monthly coincident peak load
12 forecasts, including a reduction for the NT SDD, for each fiscal year.

13
14 To calculate the NT SCD and GSR Ancillary Services rates (discussed further in Section 6), this
15 Study uses the average of the monthly coincident peak load forecasts, not including a reduction
16 for the NT SDD.

17 18 **2.2.2 Sales Forecast for PTP Transmission Service on the Network**

19 PTP transmission service provides for the transmission of energy on a firm or non-firm basis
20 from specific point(s) of receipt to specific point(s) of delivery under Part II of BPA’s OATT.

21 PTP service may be long-term (one year or longer) or short-term (hourly, daily, weekly, or
22 monthly service). BPA separately forecasts sales of long-term and short-term PTP transmission
23 service on the Network.

1 **2.2.2.1 Long-Term PTP Transmission Service Sales Forecast**

2 This Study includes forecasts of both existing sales and expected additional sales of long-term
3 PTP service on the Network during the rate period. The forecast of existing long-term PTP sales
4 is based on:

5 (a) current long-term reserved capacities effective through the FY 2018–2019 rate period.

6 This forecast includes all confirmed reservations for service during the rate period,
7 including confirmed reservations for Conditional Firm Service; and

8 (b) current long-term firm reserved capacities with start dates that have been deferred
9 pursuant to OATT Section 17.7 (extensions for commencement of service), which
10 reduce the sales forecast for the period of the deferral.

11
12 The forecast of expected additional long-term PTP sales on the Network is based on:

13 (a) long-term sales that have not yet been requested, but are expected to be requested and
14 begin during the rate period, including renewals of service under OATT Section 2.2
15 (associated with existing agreements);

16 (b) Network Open Season reservations that are expected to be confirmed during the rate
17 period (that is, service BPA expects to offer as a result of new or additional
18 infrastructure BPA plans to place into service during the rate period);

19 (c) long-term PTP sales to customers whose existing IR or FPT agreements are expiring
20 during the rate period and that are expected to convert their transmission to PTP service
21 on the Network; and

22 (d) expected OATT Section 17.7 customer deferrals (extensions for commencement of
23 service), which reduce the sales forecast for the period of the deferral.

1 In forecasting expected additional long-term PTP sales on the Network, BPA also considers a
2 variety of information sources. BPA examines requests in the queue. BPA consults with
3 customers, account executives, and others with knowledge about long-term PTP requests
4 concerning expected service demand, start date, length of the service, and whether the customer
5 is expected to accept the offer. BPA also considers the potential for additional sales as a result of
6 new or changed business practices that are expected to be in effect during the rate period. The
7 forecast reflects the most likely scenario based on this information. If there is a great deal of
8 uncertainty in the information gathered through this process, BPA looks at historical sales to the
9 customer to determine whether the additional sales should be included in the forecast.

10
11 Table 4 also includes adjusted forecasts that are developed in this Study to reflect the impact of
12 the SDD in the PTP rate schedules. The PTP SDD applies to the contract demand for any long-
13 term reservation using less than 75 circuit miles of BPA transmission. The adjusted forecasts are
14 developed by multiplying the reserved capacity for each reservation or request to which the SDD
15 applies by the distance-based percentage: $40\% \times (75 - \text{distance}) / 75$. This adjustment is made to
16 both existing and expected sales to which the SDD applies.

17
18 This Study calculates the average of the monthly sales forecasts, including the reduction for the
19 SDD, over the rate period and for each fiscal year. The average of the monthly sales forecasts
20 for each fiscal year, including the reduction for the SDD, is used to establish the revenue forecast
21 from long-term PTP sales. The average of the sales forecasts over the rate period, not including
22 the reduction for the SDD, is used for the Network segment cost allocation, discussed in
23 Section 4.

1 This Study uses the average PTP sales forecast for each fiscal year, not including the reduction
2 for the SDD, to calculate an average for the rate period, which is used to establish the sales
3 forecast for SCD and GSR services (described further in Section 2.4). *See* Table 4.
4

5 **2.2.2.2 Short-Term PTP Network Sales Forecast**

6 Short-term PTP sales are firm or non-firm sales of less than one year, including monthly,
7 weekly, daily, and hourly sales. Because short-term PTP service is not reserved far in advance,
8 there are no existing reserved capacities on which to base the sales forecast. Therefore, the
9 forecast of short-term PTP sales expected to occur during the rate period is developed with a
10 regression model that relies on key market variables – streamflow and price spreads. This
11 method develops a forecast that reflects (1) historical relationships between sales and market
12 indicators and (2) expected market conditions over the rate period.
13

14 BPA performs a regression analysis to determine the statistical relationship between short-term
15 PTP sales and market indicators (streamflow and price spread). The streamflow data used is
16 historical regulated streamflow at The Dalles, obtained from the U.S. Geological Survey
17 (USGS). The price spread data used is historical day-ahead power prices at North-of-Path 15
18 (NP-15, a weighted price of Northern California) and at Mid-Columbia (Mid-C, a trading point
19 in the Pacific Northwest) obtained from Intercontinental Exchange (ICE, an operator of over-
20 the-counter electricity markets) and the California Independent System Operator. The analysis
21 uses historical data from October 2006 through April 2016 for all sets of data—sales,
22 streamflow, and price spread.
23

1 BPA performs one regression analysis for BPA Power Services' short-term PTP reservations
2 and another for all other customers' short-term PTP reservations. BPA analyzes BPA Power
3 Services' reservations separately from other customers because its reservations correlate with
4 different variables than other customers. For sales of short-term PTP service to BPA's Power
5 Services, the regression analysis is performed on historical short-term PTP sales against
6 streamflow only, because as streamflow increases, short-term sales to Power Services tend to
7 increase, while price spread and seasonality do not tend to influence short-term sales for Power
8 Services. This is because streamflow at The Dalles is a proxy for power generated on the
9 Federal Columbia River Power System (FCRPS). This generation can occur whether or not
10 there are strong price spreads that incentivize generation. For short-term PTP sales to
11 customers other than BPA Power Services, BPA performs the regression analysis on historical
12 short-term PTP sales against streamflow, price spread, and seasonality. For these customers,
13 there is a significant statistical relationship between sales and streamflow, price spread, and
14 seasonality.

15
16 The forecast for future market conditions (streamflow, price spread and seasonality) are inputs to
17 the development of the rate forecast. The streamflow model uses average streamflow at
18 The Dalles from 1950 through 2015. This dataset has streamflow data for each month in each of
19 those years. The price spread forecast is derived from Mid-C and NP-15 forward prices obtained
20 from AURORAxmp®. These forward prices represent expected power prices during the rate
21 period. The Mid-C forecast price is subtracted from the NP-15 forecast price to obtain the price
22 spread input to the forecasting model to predict future sales. To account for monthly seasonality,

1 the model incorporates dummy variables to capture the monthly trends of short-term sales
2 observed in the first step.

3
4 BPA incorporates uncertainty around the streamflow, price spread and other parameters using a
5 Microsoft Excel add-in, @RISK[®], Professional version 6.1.1 (© Palisade Corporation).

6 @RISK[®] uses a Monte Carlo-based simulation (a method that uses repeated simulations to
7 determine a range of possible outcomes) to run 3,500 short-term sales forecasting iterations to
8 generate the distribution of possible sales under a variety of streamflow and price spread
9 conditions. BPA also models risk around the forecast of other market indicators that are used to
10 develop the sales forecast. BPA models variability in streamflow using the 1950–2015
11 streamflow dataset for the Columbia River at The Dalles. To determine the variability for price
12 spread used in @RISK[®], BPA uses ICE forward prices for Mid-C and NP-15 to represent
13 expected power prices during the rate period. The model creates variability around the
14 AURORAxmp[®] prices by inputting factors that affect power prices, such as natural gas prices,
15 Columbia River streamflows, and ambient temperatures in the BPA load area. By running
16 games that randomly sample natural gas, streamflow, and temperature data and applying that
17 data to the historical relationships between these factors and power prices, the model produces
18 power prices at Mid-C and NP-15 for each month, which are adjusted for natural gas price,
19 streamflow, and seasonal variation. The outcome of each game is a forecast for short-term sales
20 for each month of each year of the rate period, given the assumed market conditions. The
21 resulting forecast of short-term sales for each month of the rate period is the mean, or average, of
22 the 3,500 games.

1 BPA then allocates the total short-term sales forecast (for sales to Power Services and to all
2 customers other than Power Services) for each month across the different short-term services
3 (monthly, weekly, daily, and hourly service), resulting in a forecast for sales under the Hourly,
4 Block 1 (days 1-5), and Block 2 (days 6+) rates for each month of the rate period. This
5 allocation is made by applying the historical distribution of short-term sales across the three
6 rates, using sales data from October 2006 through April 2016 (the same data used to forecast
7 total short-term sales). This allocation determines the overall short-term PTP sales forecasts
8 for each month under each rate. The forecast of short-term PTP sales is shown in Table 5.

10 **2.2.3 Sales Forecast for IR Transmission Service**

11 Integration of Resources contracts are transmission service agreements under which customers
12 integrate multiple resources and transmit non-Federal power over BPA's Network and Delivery
13 facilities to multiple points of delivery on the customer's system. With BPA's agreement, firm
14 transmission deliveries may be made to other points on BPA's Network, such as to an intertie.
15 Customers may schedule non-firm transmission under IR contracts from alternate points of
16 integration or to alternate points of delivery, such as to the Southern Intertie, at the IR rate up to
17 the contractually specified total transmission demands, subject to the availability of transmission
18 capacity. The transmission demand associated with IR contracts is not transferable to third
19 parties.

21 The sales forecast of IR service is the sum of the contract demands in each IR contract. For IR
22 agreements that expire during the rate period, the forecast includes only the revenues associated
23 with the agreements while they are in effect. During the rate period, BPA anticipates average IR

1 sales of 244 MW during FY 2018 and no IR sales in FY 2019. Table 4, lines 5, 24. No IR sales
2 are forecast for FY 2019 because the remaining 266 MW of IR agreements expire after August
3 of 2018. BPA expects all of the expiring IR agreements to convert to OATT service on the
4 Network. BPA includes expected conversions in the sales forecasts for OATT service on the
5 Network by increasing the PTP sales forecast by the number of megawatts expected to convert to
6 OATT service.

7
8 The sales forecast is shown in Table 4. The fiscal year averages of the sales forecasts are used to
9 calculate forecast revenues in Table 12. The average monthly sales over the rate period is used
10 for the Network segment cost allocation and in the sales forecast for SCD.

11 12 **2.2.4 Sales Forecast for FPT Service**

13 Formula Power Transmission contracts are transmission service agreements that provide firm
14 transmission of non-Federal power on the Network for both full-year and partial-year service.
15 The forecast of sales of FPT service is the sum of the contract demands in each FPT contract.
16 For FPT agreements that expire during the rate period, the forecast includes only the sales
17 associated with the agreements while they are in effect. During the rate period, FPT agreements
18 totaling 83 MW will expire. This figure is shown in the reduction in the FPT sales forecasts for
19 FY 2019 in Table 4, lines 22 and 23. BPA expects the agreements that are expiring to convert to
20 OATT service on the Network. BPA includes expected conversions in the sales forecasts for
21 OATT service on the Network by increasing the PTP sales forecast by the number of megawatts
22 expected to convert to OATT service. The adjustment for each contract is made beginning with
23 the month that the FPT contract expires. The fiscal year averages of the sales forecasts are used

1 to forecast revenues. The sales forecast for FPT is not used for the Network segment cost
2 allocation or in the sales forecast for SCD and GSR, as described in Sections 2.4 and 4.1.

3 4 **2.3 Sales Forecasts for Transmission Service on BPA's Interties**

5 BPA segments the facilities comprising its external interconnections with California/Nevada
6 (Southern Intertie) and Montana (Eastern Intertie) separately from its Network facilities.

7 8 **2.3.1 Sales Forecast for IS Transmission Service**

9 BPA offers PTP transmission service on the Southern Intertie. BPA separately forecasts sales of
10 long-term and short-term transmission service on the Southern Intertie.

11 12 **2.3.1.1 Sales Forecast for Long-Term IS Transmission Service**

13 Forecasts of long-term IS sales include existing and expected long-term sales. The forecast of
14 existing long-term sales is based on:

- 15 (a) current confirmed long-term reserved capacities effective through the FY 2018–2019
16 rate period; and
- 17 (b) confirmed OATT 17.7 customer deferrals (extensions for commencement of service),
18 which reduce the Intertie sales forecast for the duration of the deferral.

19
20 Long-term capacity on the Southern Intertie is almost fully subscribed in the north to south
21 direction, meaning that BPA cannot make additional sales unless existing agreements terminate
22 or are not renewed, or until reliability upgrades on the Pacific DC Intertie (PDCI) increase

1 transfer capability. There is no assumption for increased sales south to north. As a result, the
2 forecast of additional expected long-term IS sales is based on:

- 3 (a) long-term sales that have been requested, such as OATT Section 2.2 renewals
4 (associated with existing agreements) and sales that BPA expects to make if an existing
5 agreement is not renewed; and
- 6 (b) expected OATT Section 17.7 deferrals during FY 2018–2019 (extensions for
7 commencement of service), which reduce the long-term IS sales forecast for the
8 duration of the deferral.

9
10 In developing the long-term IS sales forecasts, BPA examines requests in the queue that are
11 seeking service. BPA also consults with customers, account executives, and other subject matter
12 experts about expected long-term IS requests that could be offered service. BPA receives
13 information on expected service demand, start date, and length of the service, and whether the
14 customer is expected to accept the offer. The forecast reflects the most likely scenario based on
15 this information. If there is a great deal of uncertainty in the information gathered through this
16 process, BPA also reviews historical sales to the customer to determine whether to include the
17 additional sales in the forecast.

18
19 Table 4 includes the forecasts of confirmed IS sales and expected additional sales for each month
20 of the rate period. Table 4 also shows the total forecast of long-term IS sales (the sum of existing
21 sales and expected additional sales), the fiscal year averages, and the averages for the entire rate
22 period. The fiscal year averages are used to forecast revenues, and the average forecast over the
23 rate period is used in the sales forecast for SCD and GSR.

1 **2.3.1.2 Sales Forecast for Short-Term IS Transmission Service**

2 Short-term IS sales are firm or non-firm sales of less than one year and include monthly,
3 weekly, daily, and hourly sales. Because short-term IS service is not reserved far in advance,
4 there are no existing reservations for this service on which to base the sales forecast.

5 Therefore, the forecast of short-term IS sales expected to occur during the rate period is based
6 on historical short-term sales data and price spreads between the Mid-Columbia trading hub
7 and California energy prices. The price spread data used is historical day-ahead power prices
8 at North-of-Path 15 (NP-15, a weighted price of northern California prices), South-of-Path 15
9 (SP-15, a weighted price of southern California prices) and at Mid-Columbia (Mid-C, a trading
10 point in the Pacific Northwest) obtained from Intercontinental Exchange (ICE, an operator of
11 over-the-counter electricity markets) and the California Independent System Operator.

12
13 Original hourly reservations in the north to south direction are forecast using models developed
14 with regression analysis. The analysis uses historical data from October 2009 through April
15 2016. BPA performed separate regression analysis for hourly north to south reservations on
16 the COI and hourly reservations on the PDCI. The regression model for the COI estimates the
17 statistical relationship between hourly reservations and the price spread between the Mid-
18 Columbia trading hub and North of Path 15 trading hub net of BPA Southern Intertie hourly
19 transmission costs. As the price spread between the two trading hubs increases, so does the
20 mean or expected value of hourly reservations and the variance of the hourly reservations. At
21 a higher price spread, the model would estimate a higher expected volume of hourly
22 reservations and a higher variability of the volume of hourly reservations. BPA anticipates that
23 the proposed increase to the rate for hourly transmission on the Southern Intertie will have the

1 same effect on demand as a decrease in the price spread. By including both the price spread
2 and the rate for hourly transmission in the model, BPA is able to forecast anticipated hourly
3 reservations given a future price spread and transmission rate estimate. To estimate hourly
4 north to south reservations in the rate period, BPA assumed the hourly non-firm rate would be
5 \$10.00 mills/kWh. BPA made this assumption because it did not know what the hourly
6 transmission rate would be for the BP-18 rate period and this was the rate Staff proposed in the
7 Initial Proposal. The regression model for hourly reservations on the PDCI was developed
8 using the same methodology as the COI model, except it uses price spreads between Mid-C
9 and SP-15 net of BPA Southern Intertie transmission costs.

10
11 BPA did not include any north to south daily, weekly or monthly reservations in the rate
12 forecast. This is because in the rate period, BPA anticipates long-term reservations will equal
13 both the COI and PDCI scheduling limits in all months of the rate period and there should be
14 no inventory for these products. Historically this has not been true. Prior to FY 2011, BPA
15 did not sell long-term firm up to the COI and PDCI scheduling limits. This allowed for
16 seasonal reservations of daily, weekly and monthly transmission. Upon completion of the COI
17 upgrade, BPA was able to sell up to the scheduling limit with long-term firm transmission, but
18 there were other reasons for daily, weekly, and monthly inventory during certain periods of the
19 year. The reasons included long-term reservations where demand varied by season and timing
20 differences between service for one request ending and new service beginning. No requests
21 with demand that varies by season are in place for the rate period. Assuming all customers
22 decide to renew their service, there should be no daily, weekly, and monthly inventory
23 available for sale.

1 The forecast of short-term reservations from south to north on the Southern Intertie is based on
2 historical reservations from FY 2014 to FY 2015. BPA used average historical data because
3 that represents a reasonable expectation of reservations in the rate period.
4

5 BPA incorporates uncertainty around price spreads and other parameters using a Microsoft Excel
6 add-in, @RISK[®], Professional version 6.1.1 (© Palisade Corporation). @RISK[®] uses a Monte
7 Carlo-based simulation (a method that uses repeated simulations to determine a range of possible
8 outcomes) to run 3,500 short-term sales forecasting iterations to generate the distribution of
9 possible sales under a variety of streamflow and price spread conditions. BPA also models the
10 impact of variation in the forecast market indicators that are used to develop the sales forecast.

11 To determine the variability for price spread used in @RISK[®], BPA uses AURORAxmp[®] prices
12 for Mid-C, NP-15, and SP-15 to represent expected power prices during the rate period. The
13 model creates variability around the AURORAxmp[®] forwards prices by inputting factors that
14 affect power prices, such as natural gas prices, Columbia River streamflows, and ambient
15 temperatures in the BPA load area. By running games that randomly sample natural gas,
16 streamflow, and temperature data and applying that data to the historical relationships between
17 these factors and power prices, the model produces power prices at Mid-C, NP-15 and SP-15 for
18 each month, which are adjusted for natural gas price, streamflow, and seasonal variation. The
19 outcome of each game is a forecast for hourly sales for each month of each year of the rate
20 period, given the assumed market conditions and variability. The resulting forecast of short-term
21 sales for each month of the rate period is the mean, or average, of the 3,500 games.
22
23

1 One further adjustment is made to the sales forecasts for rate development purposes, as
2 described in Section 4. The average sales forecast (including the sales for all three rates) over
3 the rate period, including this adjustment, is used in the sales forecast for SCD and GSR.
4

5 **2.3.2 Sales Forecast for IM Transmission Service**

6 BPA offers PTP service over its capacity on the Eastern Intertie. The Montana Intertie
7 Agreement between BPA, Avista Corp., NorthWestern Energy, PacifiCorp, Portland General
8 Electric Company, and Puget Sound Energy, Inc., identifies the facilities that constitute the
9 Eastern Intertie (the Townsend-to-Garrison facilities). It also establishes BPA's share of
10 capacity on the Eastern Intertie as any capacity on the line in either direction that is not allocated
11 under the agreement to another party. BPA offers its capacity for sale under the IM rate.
12

13 The forecast of IM rate sales is based on contract demand. The IM sales forecast during the
14 FY 2018–2019 rate period totals 16 MW of existing long-term sales in each year of the rate
15 period. Table 4, lines 69, 71. BPA does not forecast any additional long-term IM sales.

16 Historically, BPA has made very few sales of short-term service on the Montana Intertie and
17 does not expect any short-term sales on the Montana Intertie during the rate period. As a result,
18 the sales forecast for short-term IM service is zero.
19

20 The sales forecast for IM service is shown in Table 4. The fiscal year average sales forecasts are
21 used to forecast revenues, and the average forecast over the rate period is used in the sales
22 forecast for SCD and GSR.
23

1 **2.4 Sales Forecasts for Ancillary Services: SCD and GSR**

2 BPA provides the Ancillary Services described in Section 3 of its OATT. The two ancillary
3 services customers are required to purchase from BPA are (1) Scheduling, System Control, and
4 Dispatch Service, and (2) Reactive Supply and Voltage Control from Generation Sources
5 Service. The sales forecasts for these Ancillary Services are discussed below.

6
7 SCD service is necessary for the provision of basic transmission service within BPA’s balancing
8 authority area (the area in which the responsible entity, or balancing authority, must maintain a
9 balance between generation and load (consumption)). System control and communications
10 equipment and dispatch of generating resources and transmission facilities maintain generation
11 and load balance and physical and electronic security requirements for North American Electric
12 Reliability Corporation critical infrastructure facilities, and preserve system reliability for all
13 transactions. SCD service can be provided only by the operator of the balancing authority area
14 in which the transmission facilities used are located, since the service is used to schedule the
15 movement of power through, out of, within, or into the balancing authority area.

16
17 GSR Service also is necessary for the provision of basic transmission service within BPA’s
18 balancing authority area. GSR is the provision of reactive power and voltage control by
19 generating facilities under the control of BPA as the operator of the balancing authority area.

20 The GSR rate is set on a quarterly basis according to a formula in the GSR rate schedule.

21
22 Because all transmission customers taking service within BPA’s balancing authority area must
23 purchase SCD and GSR, the sales forecast for both services is the sum of the sales forecasts of

1 the transmission services within BPA’s balancing authority area (for NT customers, BPA uses
2 the coincident peak load forecast), with one exception. The FPT sales forecast is not included in
3 the SCD and GSR sales forecast because the FPT rate includes the costs of the SCD and GSR
4 services associated with FPT service. Therefore, the FPT revenues that recover SCD and GSR
5 costs are removed from the SCD and GSR revenue requirement before rates are calculated.
6 The short-distance discount associated with NT and PTP service does not apply to SCD and GSR
7 sales. Therefore, the sales forecast for SCD and GSR is not adjusted to reflect the SDD. The
8 sales forecast used for developing the SCD rate is shown in Table 10.1. The same sales forecast
9 is included in the formula in the GSR rate schedule. *See* Transmission, Ancillary, and Control
10 Area Service Rate Schedules, BP-18-A-04-AP04, ACS-18, § II.B.1.

11
12 For purposes of developing revenue forecasts, BPA does not separately forecast sales for SCD
13 and GSR. Instead, the SCD and GSR rates are applied to the sales forecast for long-term and
14 short-term PTP, IS, and IM service and to the coincident peak load forecast for NT service. The
15 IR rate developed in this Study incorporates the SCD and GSR rates developed here. Therefore,
16 BPA does not separately forecast SCD or GSR revenue associated with IR service. IR revenue
17 includes the revenue from those services. *See* Table 12.

18 19 **2.5 Sales Forecast for Utility Delivery Service**

20 Utility customers who utilize facilities in BPA’s Utility Delivery segment pay a separate rate
21 for that service. *See* Transmission Segmentation Study and Documentation, BP-18-FS-
22 BPA-07, § 2.5. Sales forecasts of Utility Delivery service are based on load forecasts because
23 the charges for the Utility Delivery service are based on the customers’ loads. BPA forecasts

1 sales for Utility Delivery service using coincident peak POD load forecasts, which are used to
2 develop the rate. The POD load forecast for Utility Delivery service is developed in the same
3 manner as is described in Section 2.2.1.1 for the load forecasts for NT service, except that BPA
4 separately calculates the POD load forecast for Utility Delivery customers that take NT service
5 and for the single Utility Delivery customer that takes PTP service. BPA uses the average of
6 the monthly total Utility Delivery POD load forecasts to calculate the Utility Delivery rate,
7 which is discussed in greater detail in Section 7.6.1. The annual sales forecasts are shown in
8 Table 9. For the Utility Delivery revenue forecast, the Utility Delivery customers' monthly
9 POD load forecast is multiplied by the proposed Utility Delivery rate for each month in the rate
10 period.

11

12 **2.6 Revenue Forecasts**

13 The transmission revenue forecasts determine the expected levels of revenue from transmission
14 and ancillary services rates and other sources for the rate period, as indicated in Table 12. As
15 discussed above, this Study includes forecast revenues at current rates and at proposed rates to
16 perform the current revenue test and the revised revenue test. The forecast of revenue at current
17 rates applies the transmission and ancillary services rates placed into effect on October 1, 2015,
18 to the sales forecasts. The forecast of revenue at proposed rates applies the Final Proposal rates
19 to the sales forecasts. The forecasts are used to test whether the current and proposed rates are
20 sufficient to recover the transmission revenue requirement. Sections 3.2 and 3.3 of the
21 Transmission Revenue Requirement Study, BP-18-FS-BPA-09, further describe the revenue
22 tests.

1 Both revenue forecasts include revenue credits. Section 3 of this Study discusses revenue credits
2 in detail. In general, revenue credits are revenues from sources other than the transmission rates
3 determined in this rate proceeding. This Study includes revenue credits in the revenue forecasts
4 to ensure that the revenue tests performed in the Transmission Revenue Requirement Study
5 incorporate all sources of transmission-related revenue. Table 12 includes all of the revenue
6 credits applied in the revenue forecast.

7
8 **2.6.1 Forecast of Non-Cash Revenues: Transmission Credits and Interest Expense**
9 **Associated with Customer-Financed Projects**

10 A portion of the revenues that BPA forecasts is non-cash revenues due to credits that customers
11 receive against their transmission service charges. (BPA provides these credits in two general
12 circumstances, described below.) The credits (non-cash revenues) are forecast as part of this
13 Study and are included in the revenue forecasts discussed above because the transmission
14 services to which they apply are included in the sales forecasts. However, because BPA does
15 not receive the revenue in the form of cash, the credit (and the related interest expense,
16 described below) has a different impact on BPA's revenue requirements and cost recovery than
17 cash revenue. *See* Transmission Revenue Requirement Study, BP-18-FS-BPA-09, § 2.2.5.

18
19 BPA forecasts transmission credits and related interest expense associated with generator
20 interconnection agreements and the COI upgrade project. Under the generator interconnection
21 agreements, interconnection customers advance fund Network Upgrades (upgrades to the
22 transmission system at or beyond the point at which the interconnection facilities connect to the
23 transmission system) if BPA, as the transmission provider, does not provide the funding. The

1 advance funds are then returned to the customers, with interest, either as credits to the
2 customers' transmission bills or as monthly cash payments. The credits are applied to
3 transmission service used to transmit power from the generating facility. The cash payments
4 are designed to approximate the comparable credits and are based on the generating facility's
5 capacity and its plant capacity factor. The customer chooses whether to receive credits or cash
6 payments.

7
8 BPA also provides transmission credits for customer financing for the COI upgrade. The
9 upgrade increased the availability of the COI and PDCI so that BPA is able to provide
10 long-term firm transmission service up to the full rating of the COI and PDCI. The forecasts of
11 transmission credits and related interest expense include transmission credits related to the COI
12 upgrade and generator interconnection agreements. These credits are expected to expire at the
13 end of FY 2018. The forecasts of transmission credits and related interest expense at current
14 rates and at proposed rates are provided in Tables 16.1 and 16.2.

15 16 **2.6.2 Forecast of TGT Revenues**

17 The Eastern Intertie segment includes the Townsend-Garrison transmission (TGT) lines and a
18 portion of the Garrison substation facilities. *See* Transmission Segmentation Study and
19 Documentation, BP-18-FS-BPA-07, § 2.4. BPA constructed these facilities under the Montana
20 Intertie Agreement (Contract No. DE-MS79-81BP90210, as amended), under which BPA
21 provides transmission service from the Colstrip generating facility in Montana to BPA's
22 Network. *Id.* As part of the agreement, the Colstrip Parties (Avista, NorthWestern Energy,
23 PacifiCorp, Portland General Electric, and Puget Sound Energy) acquired transmission rights

1 over a portion of the capacity of the Eastern Intertie. BPA receives payments from each party
2 for its share of the Townsend-to-Garrison capacity under the TGT rate. Pursuant to the
3 Montana Intertie Agreement, BPA has the contractual right to exclusively market any remaining
4 transmission capacity in either direction on the Eastern Intertie. During the BP-18 rate period,
5 as stated in the Montana Intertie Agreement, the projected sales for the Colstrip Parties is 1,730
6 MW of TGT sales. Table 8, line 24. This is anticipated to result in \$12.4M of annual revenues.
7 Table 12, line 93.

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1 **3. REVENUE CREDITS AND ADJUSTMENTS TO THE**
2 **SEGMENTED REVENUE REQUIREMENTS**
3

4 Revenue credits and adjustments reflect known costs and revenues that are not accounted for in
5 the Transmission Revenue Requirement Study. To develop the revenue requirements for use in
6 calculating rates, this Study allocates the revenue credits among the various segments and then
7 applies these credits and other adjustments to the segmented revenue requirements determined in
8 the Transmission Revenue Requirement Study. It then calculates the net segmented revenue
9 requirements after these credits and adjustments.
10

11 **3.1 Revenue Credits**

12 Revenue credits are transmission revenues from sources other than the general transmission
13 rates developed in the rate proceeding. Revenue credits include revenue from items such as
14 fixed-price contracts, contracts that specify the rates for services, use-of-facilities contracts, and
15 fixed-price fees. This Study forecasts revenue credits based on existing contract charges or
16 rates, expectations of additional sales at such charges or rates, and receipt of fixed-price fees.
17

18 The revenue credits for fixed-price contracts and fees relate to items such as fiber and wireless
19 leases (in which BPA leases communications capacity that exceeds BPA's operational needs),
20 land leases, reservation and application fees, direct funding of projects and facilities, and O&M
21 charges. The use-of-facilities contracts include agreements such as those governing DSI
22 delivery contracts, under which parties pay for the rights to use specified BPA facilities.
23

1 The segmented revenue requirements are initially set without regard to these additional
2 revenues. This Study allocates revenue credits to particular segments, which reduces the
3 segmented revenue requirements and ensures that this Study accounts for all sources of revenue
4 in determining the net segmented revenue requirements used to calculate rates. If this Study did
5 not account for the revenue represented by the revenue credits, the rates would be higher than
6 needed to recover costs. The allocation and application of the revenue credits described in this
7 section are separate and distinct from the inclusion of the transmission credits in the revenue
8 forecasts discussed in Section 2.

9
10 This Study allocates revenue credits associated with a particular transmission segment entirely to
11 that segment. For example, revenues related to the O&M charges for customers using facilities
12 on the Southern Intertie are allocated entirely to the Southern Intertie. If revenue credits are not
13 associated with a particular segment, the revenues are allocated across all segments based on the
14 ratio of net plant investment in each segment to total net plant investment. For example, this
15 Study allocates revenues from fiber and wireless leases to all segments based on portion of the
16 net plant investment in each segment. Table 2 identifies all of the expected revenue credits from
17 various sources and the allocation of the credits by segment.

18 19 **3.2 Adjustments to the Segmented Revenue Requirements**

20 This Study includes certain adjustments to the segmented revenue requirements. These
21 adjustments are not categorized as revenue credits because they do not account for additional
22 revenues. The adjustments are made for the Eastern Intertie and DSI Delivery segments where
23 all costs are recovered through contractually set rates and fees. In general, the adjustments

1 allocate (1) individual segment revenues in excess of costs and (2) individual segment costs in
2 excess of revenues. A segment's revenues in excess of costs represent a surplus, which is
3 allocated to the other segments as a credit, reducing the other segments' overall revenue
4 requirements. A segment's costs in excess of revenues represents a cost, which is allocated to
5 the other segments as an additional revenue requirement, increasing the other segments' revenue
6 requirements.

8 **3.2.1 Eastern Intertie Adjustment**

9 To determine the net segmented revenue requirement for the Eastern Intertie, this Study begins
10 with the gross Eastern Intertie revenue requirement shown in Table 1. This Study then applies
11 revenue credits and adjustments to the Eastern Intertie segmented revenue requirement.

12 Table 2 shows the expected revenue credits that apply to the Eastern Intertie segment. The most
13 significant revenue credit relates to revenue from payments to BPA under the Montana Intertie
14 Agreement for rights to transmission service on the TGT transmission lines. The total payment
15 for use of the facilities is set in the Montana Intertie Agreement and totals \$12.5 million
16 annually. During the rate period \$12.4 million of this revenue is anticipated to come from the
17 TGT rate charged to parties of the Montana Intertie Agreement. Table 3, line 31. The IM rate,
18 which applies to PTP transmission service on BPA's capacity share of the Eastern Intertie, is
19 forecast to recover \$0.98 million annually during the rate period. Table 3, line 30. Since these
20 revenues arise solely through the use of the Eastern Intertie, this Study applies the entire amount
21 of this revenue credit to the Eastern Intertie segment. *See* Table 3.

1 The segmented revenue requirement for the Eastern Intertie is \$11.3 million annually. Table 1,
2 line 27. After applying all of the revenue credits, the TGT revenues, and the IM rate revenues to
3 the Eastern Intertie's segmented revenue requirement, the forecast revenues and credits for the
4 Eastern Intertie segment exceed the net segmented revenue requirement by approximately
5 \$1.849 million annually. Table 3, line 34.

6
7 This Study allocates the \$1.849 million in excess revenue from the Eastern Intertie segment to all
8 the other segments proportionally based on net plant investment determined in the Transmission
9 Segmentation Study. This allocation reduces the difference between the Eastern Intertie
10 segment's adjusted revenue requirement and its revenue recovery to zero. *See* Table 3. This
11 Study then applies the excess revenue allocated to each segment as an adjustment to reduce the
12 revenue requirement for each segment. Once the difference between the Eastern Intertie
13 segment's adjusted revenue requirement and its revenue recovery has been reduced to zero, no
14 other revenue credits or costs from other segments are allocated to the Eastern Intertie segment,
15 since these credits or costs would have to be re-allocated back to other segments.

17 **3.2.2 DSI Delivery Adjustment**

18 The DSI Delivery segment consists of low-voltage transmission facilities that provide
19 transmission service to DSI customers. Charges for service on the DSI Delivery segment are
20 established by contract and change based on a schedule incorporated in those contracts. As a
21 result, this Study does not calculate a rate for delivery service on DSI facilities. *See*
22 Transmission Segmentation Study and Documentation, BP-18-FS-BPA-07, § 2.6.

1 However, this Study does account for the revenues and costs associated with this segment to
2 ensure total cost recovery. The average annual segmented revenue requirement attributable to
3 the DSI Delivery segment is \$1.575 million. Table 1, line 27. The revenues generated from
4 sales under the DSI delivery contracts, the Eastern Intertie adjustment, and the other revenue
5 credits allocated to this segment are forecast to average \$1.94 million annually during the rate
6 period. Table 3, lines 26 to 34. After applying all of the revenue credits and the DSI Delivery
7 revenues to the DSI Delivery segmented revenue requirement, the forecast revenues for the DSI
8 Delivery segment exceed the net segmented revenue requirement an average of \$0.37 million
9 annually. *Id.*, line 35.

10
11 This Study allocates the \$0.37 million in excess revenue from the DSI Delivery segment to all
12 the other segments proportionally based on net plant investment as determined in the
13 Transmission Segmentation Study. This allocation reduces the difference between the DSI
14 Delivery segment's adjusted revenue requirement and its revenue recovery to zero. *See* Table 3.
15 As with the Eastern Intertie adjustment, once the difference between the DSI Delivery segment's
16 adjusted revenue requirement and its revenue recovery has been reduced to zero, no other
17 revenue credits or costs from other segments are allocated to the DSI Delivery segment, since
18 these credits or costs would have to be re-allocated back to other segments.

20 **3.2.3 Adjustment for NT Redispatch Costs**

21 Under Attachment M to BPA's OATT, Transmission Services initiates redispatch of Federal
22 resources as part of congestion management efforts on the Network. There are three types of
23 redispatch that Transmission Services can request from Power Services to relieve flowgate

1 congestion: Discretionary Redispatch, NT Firm Redispatch, and Emergency Redispatch.
2 Transmission Services requests Discretionary Redispatch to maintain all transmission schedules.
3 Power Services provides this service at its discretion based on real-time operating objectives and
4 constraints. Transmission Services requests NT Firm Redispatch to maintain firm NT schedules,
5 and may redispatch firm NT schedules only after it has curtailed all non-firm Point-to-Point and
6 secondary NT schedules in a sequence consistent with NERC curtailment priority. Power
7 Services must provide NT Firm Redispatch to the extent that it can do so without violating non-
8 power constraints. Transmission Services requests Emergency Redispatch if it declares a System
9 Emergency as defined by NERC. Power Services must provide this service even if doing so may
10 violate non-power constraints.

11
12
13 Power Services may respond to requests for redispatch through redispatch of Federal generation,
14 through purchases or sales of energy, or through purchases of transmission. The forecast of costs
15 for Attachment M redispatch is \$225,000 per year. *See* Fredrickson & Fisher, BP-18-E-BPA-18,
16 Appendix A, Attachment 3, line 8. These costs are included in the segmented revenue
17 requirement for the Network. *See* Transmission Revenue Requirement Study Documentation,
18 BP-18-FS-BPA-09A, § 2.2.

19
20 Consistent with Section 33.3 of BPA's OATT, which provides that NT customers are allocated
21 the redispatch costs associated with firm service to NT load, costs associated with NT Firm
22 Redispatch are allocated to NT customers, because this type of redispatch benefits only NT
23 customers. Accordingly, this Study credits the cost of NT Firm Redispatch to the Network

1 segment revenue requirement so that these costs are not included in all Network rates.
2 *See* Table 3, line 32. The costs are then included in the calculation of rates for NT service.
3 *See* Table 7, line 58. Section 4 of this Study discusses the calculation of the NT rate. Costs
4 associated with Discretionary Redispatch and Emergency Redispatch are allocated to all
5 Network segment users because Discretionary Redispatch and Emergency Redispatch benefit all
6 Network segment users.

7
8 Of the \$225,000 annual forecast for Attachment M redispatch, the forecast of costs for NT Firm
9 Redispatch is \$160,000 per year. This forecast is based on the historical actual amounts paid by
10 Transmission Services to Power Services in FY 2014 to 2016 (the most recent for which BPA
11 has actual data). Calculation of the actual revenue Power Services receives from Transmission
12 Services for providing NT Firm Redispatch is based on one of two sources: (1) for redispatch
13 provided from Federal generation, market prices for incrementing and decrementing Federal
14 generation at the time the redispatch is provided, or (2) for redispatch provided by purchases or
15 sales of energy or purchases of transmission, the actual cost to Power Services of the purchase or
16 sale. The forecast of costs for Discretionary Redispatch and Emergency Redispatch are based on
17 this same methodology.

18
19 In addition, BPA's OATT provides that NT customers will make their Network Resources
20 available for redispatch to avoid curtailments to NT service when there are transmission
21 constraints (this type of redispatch is referred to as non-Federal NT redispatch). BPA has not
22 seen any significant costs in its non-Federal NT redispatch program since its inception.
23 Therefore, no non-Federal NT redispatch costs are included in this Study

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3.3 Allocation of Generation Integration Revenues

The Generation Integration segment consists of transmission facilities that integrate Federal resources into BPA’s Network. The costs allocated to the Generation Integration segment plus all revenue credits and adjustments averages \$12.565 million annually. Table 3, line 36. These costs are assigned to BPA Power Services and recovered through power rates. The payments that Power Services makes to Transmission Services are included as a revenue credit in the transmission revenue forecast and are applied to the Generation Integration segment.

1 **4. NETWORK TRANSMISSION SERVICES**

2

3 BPA establishes separate rates for four types of transmission service on its Network: Network
4 Integration Transmission Service (NT), Point-to-Point Transmission Service (PTP), Integration
5 of Resources (IR), and Formula Power Transmission (FPT). BPA provides NT and PTP
6 service pursuant to the terms and conditions set forth in its OATT, and it provides FPT and IR
7 service under legacy (or grandfathered, pre-FERC Order 888) agreements.

8

9 In general terms, this Study calculates the rates for Network services by taking the net
10 segmented revenue requirement for the Network segment, subtracting the forecast revenues
11 associated with the transmission portion of FPT service, and allocating a proportionate share of
12 the resulting remaining Network costs to NT, PTP, and IR service. The rates for FPT service
13 are based on certain simplifying assumptions described in Section 4.5. The rates for NT, PTP,
14 and IR service are calculated by dividing the costs to be recovered by those services by the NT,
15 PTP, and IR billing determinants, respectively.

16

17 **4.1 Network Segment Cost Allocation**

18 To calculate the rates for Network services, this Study allocates the adjusted Network segment
19 revenue requirement among the various services. This Study takes the annual average
20 Network segment revenue requirement from the Transmission Revenue Requirement Study,
21 \$659.613 million. Table 1, line 27. Revenue credits and other adjustments are then applied,
22 resulting in an adjusted Network segment revenue requirement of \$638.275 million. Table 3,
23 line 36.

1 As explained in Section 4.5, FPT service is provided under contracts that address specific
2 classifications of Network transmission facilities, and FPT rates separately recover a subset of
3 Network costs. Therefore, this Study subtracts from the adjusted Network segment revenue
4 requirement \$15.119 million in forecast annual revenue attributable to sales of FPT service on
5 the Network. Table 7, lines 2-4. Subtracting the forecast FPT revenues excludes the costs and
6 revenues attributable to FPT service from the costs allocated among NT, PTP, and IR service,
7 thus ensuring that rates for NT, PTP, and IR service are based only on costs and revenues
8 properly attributable to those services. The result is an annual average cost of
9 \$623.157 million to be allocated among NT, PTP, and IR service. *Id.*

10
11 This Study allocates costs to PTP and IR service based on contract demand and to NT service
12 based on forecast load. The NT load forecast is based on a 12 non-coincident peak (NCP)
13 measure. *See* § 2. This Study calculates an allocation percentage for each service based on the
14 ratio of the forecast for each individual service to the total forecast average annual sales for all
15 three services, 35,301 MW. Table 7, line 25. The allocation percentages for NT, PTP, and IR
16 services are 21.24 percent, 78.42 percent, and 0.35 percent, respectively. *Id.*, lines 29, 32, 35.
17 Multiplying the total adjusted average annual Network revenue requirement of
18 \$623.157 million by the allocation percentage for each service yields an allocated cost of
19 \$132.354 million for NT service, \$488.651 million for PTP service, and \$2.152 million for IR
20 service. *Id.*, lines 40, 47, 57. This Study uses these allocated costs to calculate the rates for
21 NT, PTP, and IR service.

1 **4.2 Network Integration Rate (NT-18)**

2 Network Integration service provides transmission service for a customer’s designated network
3 load, including network load growth. BPA provides this service according to the terms and
4 conditions in Part III of its OATT.

5
6 The NT-18 rate schedule identifies a single rate for NT Service and NT Conditional Firm Service
7 under the OATT. Transmission, Ancillary, and Control Area Service Rate Schedules, BP-18-A-
8 04-AP04, NT-18, § II. The monthly billing factor for the NT-18 rate is the customer’s Network
9 Load on the hour of the Monthly Transmission System Peak Load for the month (the billing
10 period). *Id.* § III.

11
12 The NT-18 rate schedule includes a variety of adjustments and references to charges from other
13 rate schedules. The rate schedule includes an SDD available to customers with designated
14 Network Resources that use less than 75 circuit miles of BPA’s transmission facilities for
15 delivery to Network Load. *Id.* § IV.D. The SDD is a credit applied to the customer’s monthly
16 bill according to the following formula:

17
$$\text{SDD credit} = \text{NT Rate} \times \text{Average HLH Generation} \times (75 - \text{distance}) / 75 \times 0.4$$

18 *Id.*

19
20 For resources that are directly connected to the customer’s system or that do not use any FCRTS
21 facilities, the discount is 40 percent of the NT rate multiplied by the average generation of the
22 resource during heavy load hours.

1 Other charges and provisions in the NT-18 rate schedule include:

- 2 • a requirement to purchase Scheduling and Reactive ancillary services;
- 3 • the Delivery Charge;
- 4 • the Failure to Comply Penalty Charge;
- 5 • a Short-Distance Discount;
- 6 • notice that BPA will collect capital and related costs of a Direct Assignment Facility
- 7 under the Advance Funding rate or Use-of-Facilities rate;
- 8 • notice of BPA's intent to charge incremental cost rates under specified conditions;
- 9 • allowance for a rate adjustment pursuant to a FERC order under Section 212 of the
- 10 Federal Power Act; and
- 11 • the Transmission Cost Recovery Adjustment Clause and Reserves Distribution Clause.

12 *Id.* § IV. Section 7 of this Study discusses the rate schedule provisions.

13
14 To calculate the NT rate, this Study begins with the \$132.354 million in Network costs allocated
15 to NT service and adds the NT redispatch costs (\$160,000 in NT Firm Redispatch of Federal
16 resources costs and \$0 in non-Federal NT redispatch costs), which equals total costs of
17 \$132.514 million. Table 7, line 60. Dividing this amount by the NT billing factor of 6,395 MW
18 yields a unit cost of \$20,720/MW-year, which is then divided by 1,000 to derive a kW-year unit
19 cost of \$20.72/kW-year. *Id.*, lines 60-62. The kW-year unit cost is divided by 12 to yield the
20 rate for NT service, which is \$1.727/kW-month. *Id.*, line 63.

1 **4.3 Point-to-Point Rate (PTP-18)**

2 Point-to-Point transmission service provides for the transmission of energy on a firm, non-firm,
3 or conditional firm basis from specific points of receipt to specific points of delivery on BPA’s
4 Network. BPA provides this service according to the terms and conditions in Part II of its
5 OATT.

6
7 The PTP-18 rate schedule includes rates for long-term service; monthly, weekly, and daily
8 service; and hourly service. Transmission, Ancillary, and Control Area Service Rate Schedules,
9 BP-18-A-04-AP04, PTP-18, § II. A single rate applies to all long-term firm service and to
10 conditional firm service under the rate schedule. The rate schedule includes two rates for
11 monthly, weekly, and daily service: “Block 1” for the first five days of a reservation, and
12 “Block 2” for the remaining days of the reservation. One hourly rate applies to all hours of a
13 reservation for hourly service. *Id.*

14
15 The PTP-18 rate schedule incorporates a variety of adjustments, charges, notices, and other rate
16 provisions, including:

- 17 • a Short-Distance Discount for contract paths less than 75 circuit miles;
- 18 • a requirement to purchase Scheduling, System Control, and Dispatch Ancillary Service;
- 19 • the Delivery Charge;
- 20 • an Unauthorized Increase Charge;
- 21 • the Reservation Fee;
- 22 • the Failure to Comply Penalty Charge;
- 23 • a credit for interruption of non-firm service;

- 1 • notice that BPA will collect capital and related costs of a Direct Assignment Facility
- 2 under the Advance Funding rate or Use-of-Facilities rate;
- 3 • notice of BPA’s intent to charge incremental cost rates under specified conditions;
- 4 • allowance for a rate adjustment pursuant to a FERC order under Section 212 of the
- 5 Federal Power Act; and
- 6 • the Transmission Cost Recovery Adjustment Clause and Reserves Distribution Clause.

7 *Id.* § IV. See Section 7 for further discussion of the rate schedule provisions.

8

9 This Study calculates the rate for long-term firm PTP service by dividing the Network costs
10 allocated to PTP service, \$488.651 million, by the forecast average annual PTP sales of
11 27,682 MW, yielding a unit cost of \$17.65/MW-year. Table 7, lines 47-49. This amount is
12 then divided by 1,000 to derive a kW-year unit cost of \$17.65/kW-year. *Id.*, line 49. This
13 kW-year unit cost is divided by 12 to yield the monthly rate for long-term PTP service,
14 \$1.471/kW-month. *Id.*, line 50.

15

16 The rate for short-term and hourly PTP service is derived from the long-term rate. Short-term
17 sales allow the customer to purchase transmission that more closely matches the energy
18 required in a day-by-day or hour-by-hour timeframe. Typically, this means more short-term
19 transmission is purchased during weekdays than weekends and during heavy load hours (HLH)
20 than during light load hours (LLH).

21

22 In order to account for the greater amount of short-term capacity that is expected to be sold
23 during weekdays and heavy load hours, and to help ensure that the rate for sales during those

1 hours recovers the appropriate amount of costs, this Study sets short-term rates at a level higher
2 than a simple pro rata fraction of the long-term rate. It does so by establishing the Block 1 rate
3 for the first five days of short-term daily service based on the costs for a full seven days. This
4 Study calculates the Block 1 rate by multiplying the daily PTP unit cost (*i.e.*, the annual rate
5 divided by 365, the average number of days in each year of the rate period) by a factor of 7/5
6 (seven total days in the week divided by five weekdays). *Id.*, line 51. The resulting Block 1
7 rate is \$0.068/kW-day. *Id.* The daily PTP short-term Block 2 rate of \$0.048/kW-day is
8 calculated by dividing the unit cost by 365 days. *Id.*, line 52. The PTP daily, weekly, and
9 monthly services are all charged the same block rates.

10
11 This Study applies a similar factor in the calculation of the rate for hourly service. Since there
12 are 16 heavy load hours each weekday, the hourly rate is set by multiplying the PTP unit cost
13 by an LLH/HLH factor of 24/16 (24 hours per day divided by 16 heavy load hours) and then
14 by the 7/5 daily factor. *Id.*, line 53. The resulting hourly PTP rate of 4.23 mills/kWh applies to
15 both firm and non-firm hourly sales. *Id.*

16
17 In the calculation of the PTP unit cost, the forecast of short-term sales in the denominator is
18 adjusted upward by these same LLH/HLH factors for rate development purposes, to recognize
19 that the short-term rates will recover more revenue because the rates are increased by these
20 factors. The final short-term PTP sales forecasts after these adjustments are used in the
21 development of the rates and in the revenue forecasts.

1 **4.4 Integration of Resources Rate (IR-18)**

2 As described in Section 2, IR contracts integrate multiple resources and transmit non-Federal
3 power over BPA’s Network and Delivery facilities to multiple points of delivery on the
4 customer’s system. The rate that applies to service under IR agreements includes a single
5 “postage stamp” rate (a rate that does not vary by distance) that combines a monthly demand
6 charge calculated in the same manner as and equal to the sum of the demand charge for the PTP
7 rate and the SCD rate. Transmission, Ancillary, and Control Area Service Rate Schedules,
8 BP-18-A-04-AP04, IR-18, § II.A. The IR rate schedule also provides for a charge for GSR.

9
10 IR contracts include specified transmission demands at each point of integration, which are based
11 on the annual peak output of a generating resource or annual peak demand in a power purchase
12 agreement. The billing factor for the IR demand charge is the contractually specified
13 transmission demand or, if the contract contains multiple points of integration and transmission
14 demands, the total transmission demand, which is the sum of the multiple transmission demands
15 under the contract. Non-firm service in excess of the total transmission demand is billed at the
16 PTP rate.

17
18 The IR rate schedule includes an SDD for IR contracts, which decreases the IR rate by up to
19 40 percent for transmission that uses Network facilities for a distance of less than 75 circuit
20 miles. *Id.* § II.B. No IR contracts are expected to receive the SDD during the rate period.

1 The IR rate schedule also incorporates other rate provisions and potential adjustments:

- 2 • the Delivery Charge;
- 3 • the Failure to Comply Penalty Charge;
- 4 • provisions detailing the circumstances under which the ratchet demand may be waived or
- 5 reduced; and
- 6 • the Transmission Cost Recovery Adjustment Clause and Reserves Distribution Clause.

7 *Id.* § IV. Section 7 of this Study explains the rate provisions in detail.

8
9 This Study calculates the IR rate by dividing the Network costs allocated to IR service,
10 \$2.152 million, by the forecast average annual IR sales of 122 MW, yielding a unit cost of
11 \$17.65/MW-year. Table 7, lines 40-42. This amount is divided by 1,000 to derive a kW-year
12 unit cost of \$17.65/kW-year. *Id.*, line 42. This kW-year unit cost is divided by 12 to yield a
13 monthly unit cost of \$1.471/kW-month. *Id.*, line 43.

14
15 The costs of providing IR service include the Network transmission costs and the costs of SCD
16 and GSR services, which are the required ancillary services. The IR base rate is calculated by
17 combining the monthly IR service unit cost of \$1.471/kW-month with the SCD rate of
18 \$0.322/kW-month, for a total IR rate of \$1.793/kW-month. The IR-18 rate schedule provides for
19 adding the rate for GSR service to the IR base rate as well. As explained in Section 6, however,
20 the GSR rate has been set at zero, so it has no impact on the charges for IR service.

1 **4.5 Formula Power Transmission Rates (FPT-18.1 and FPT-18.3)**

2 The FPT rates are generally based on the types of transmission facilities used under a particular
3 FPT contract and the distance the energy is transmitted. Depending on the type of FPT contract
4 the customer has, the FPT rate may be adjusted annually under the FPT-18.1 rate schedule, or
5 adjusted once every three years under the FPT-18.3 rate schedule. The FPT-18.1 rate schedule
6 will take effect on the first day of the BP-18 rate period (October 1, 2017). The FPT-18.3 rates
7 will remain at the same level as they were during the BP-16 rate period until October 1, 2019,
8 which is three years after the rates were last adjusted.

9
10 Both the FPT-18.1 and FPT-18.3 rate schedules include charges for use of facilities that are part
11 of the main grid (that portion of the Network facilities with an operating voltage of 230 kV or
12 more) and for those that are part of the secondary system (that portion of the Network with an
13 operating voltage between 69 kV and 230 kV). Transmission, Ancillary, and Control Area
14 Service Rate Schedules, BP-18-A-04-AP04, FPT-18.1, § II and FPT-18.3, § II. Within the
15 category of facilities designated as “main grid” facilities, there are specific charges for use of
16 main grid interconnection terminals, main grid terminals, and main grid miscellaneous facilities.

17 The secondary system charges are divided into charges for use of secondary system
18 transformation, secondary system intermediate terminals, and secondary system interconnection
19 terminals. *Id.* The distance charge has two components: a charge for the distance energy is
20 transmitted over the main grid, and a charge for the distance energy is transmitted over the
21 secondary system. *Id.* Each FPT contract has a different overall rate per unit of transmission
22 demand based on the facilities used under the contract and the distance energy is transmitted.

1 The FPT rate also includes the costs associated with SCD and an adjustment for the GSR charge.
2 *Id.* The FPT rate schedules specify that all customers taking FPT service are subject to the
3 Failure to Comply Penalty Charge, and customers taking service under the FPT 18.1 rate
4 schedule are subject to the Transmission Cost Recovery Adjustment Clause and the
5 Transmission Reserves Distribution Clause. *Id.* at FPT-18.1, § IV.B-D and FPT-18.3, § IV.B.
6 Section 7 discusses these rate schedules.

7
8 Only four customers are expected to take FPT service during the rate period, and the sales under
9 the few remaining FPT contracts are forecast to constitute about two percent of BPA's Network
10 revenues. *See* Table 4. Given the relatively small effect of the FPT contracts on BPA's
11 revenues, this Study relies on certain simplifying assumptions in order to set the FPT-18 rates
12 instead of a detailed cost analysis of all the categories and subcategories of facilities in the FPT
13 rate schedule. This Study assumes that the increase in FPT costs will equal the increase in the
14 sum of the PTP service unit cost (determined in Section 4.3) and the rates for the associated
15 ancillary services. This Study also assumes that the costs for each of the various FPT rate
16 components (*e.g.*, Main Grid Distance, Main Grid Terminal) will maintain the same proportion
17 to each other as exists in the FPT-16 rates. The facilities used to provide FPT service and
18 associated ancillary services are the same type of facilities used to provide other services over
19 the Network segment. As a result, it is reasonable to assume that their costs accelerate at similar
20 rates and in relation to one another.

21
22 The FPT-18.3 rates are three year rates that were calculated in FY 2017 and will continue
23 through FY 2019. The FPT-18.1 rates use the following methodology: the forecast revenue

1 during BP-18 from the existing FPT contracts at FY 2016–2017 rates is \$18.382 million.
2 Table 6, line 5. Dividing the forecast revenue at FY 2016–2017 rates by the sales forecast for
3 FY 2018–2019 results in an average FPT rate of \$1.659/kW-month. A change in the unit cost is
4 calculated by dividing the Long-Term PTP plus the associated ancillary services BP-18 rates by
5 the Long-Term PTP plus the associated ancillary services at BP-16 rates. This unit cost increase
6 of 0.2% percent is applied to the current rates for the components of FPT and rounded to the
7 nearest three decimal places to develop the proposed rates. These FPT rate components will be
8 applied to each reservation based on the facilities utilized by the reservation which will result in
9 different charges to each FPT reservation. The estimated average rate applied to FPT
10 reservations is \$1.662/kW-month. *Id.*, line 12. The average FPT rate is the denominator for the
11 adjustment of the GSR rate.

12
13 Multiplying the sales forecast by the average FPT rates for BP-18 yields a revenue forecast of
14 \$18.413 million. The unit cost of the Network component of the rates is 82.0 percent of the sum
15 of the unit cost, the SCD rate, and the GSR rate. *Id.*, line 15. Applying this percentage to the
16 FPT revenue forecast produces \$15.106 million attributable to Network transmission service
17 excluding ancillary services. This amount of revenue is allocated to covering Network costs.
18 The remaining revenues of \$3.292 million are attributed to ancillary services and are allocated to
19 recover SCD costs. Table 10.1, line 15.

1 **5. INTERTIE TRANSMISSION SERVICES**

2
3 BPA provides Point-to-Point transmission service on the Southern Intertie and the Eastern
4 Intertie. As described below, this Study develops separate rates for service on these interties.

5
6 **5.1 Southern Intertie Point-to-Point Rate (IS-18)**

7 The IS-18 rate schedule applies to PTP service on the Southern Intertie. The IS rate schedule
8 includes rates for long-term firm service; monthly, weekly, and daily service; and hourly firm
9 service. A single rate applies to all long-term firm service. Like the PTP-18 rate schedule, the
10 IS-18 rate schedule provides for daily, weekly, and monthly transmission service at daily Block 1
11 and daily Block 2 rates. One hourly rate applies to all hours of a reservation for hourly service.

12 Transmission, Ancillary, and Control Area Service Rate Schedules, BP-18-A-04-AP04, IS-18,
13 § II.

14
15 The IS rate schedule also includes these provisions:

- 16 • the requirement to purchase certain ancillary services;
- 17 • a credit for interruption of non-firm service;
- 18 • the Reservation Fee;
- 19 • an Unauthorized Increase Charge;
- 20 • the Failure to Comply Penalty Charge;
- 21 • notice of BPA’s intent to charge incremental cost rates under specified conditions;
- 22 • allowance for a rate adjustment pursuant to a FERC order under Section 212 of the
23 Federal Power Act;

- notice regarding Direct Assignment Facility costs, which are to be collected under the Advance Funding rate or Use-of-Facilities rate; and
- the Transmission Cost Recovery Adjustment Clause and Reserves Distribution Clause.

Id. § IV. See Section 7 for further discussion of the rate schedule provisions.

To calculate the IS-18 rates, this Study first determines a unit cost for service on the Southern Intertie. The unit cost equals the net segmented revenue requirement for the Southern Intertie segment divided by the forecast sales for the segment. To determine the net segmented revenue requirement, this Study begins with the segmented revenue requirement determined in the Transmission Revenue Requirement Study. Revenue credits and other adjustments are then applied to the revenue requirement. *See* Table 1. Section 3 of this Study describes these revenue credits and adjustments.

The Southern Intertie was originally constructed in 1967 and was expanded in 1993 with the participation of non-Federal parties (the capacity owners). The capacity owners obtained a share of the capacity on these facilities and make payments to BPA for use of the capacity. This Study treats revenue from the payments by the capacity owners as a revenue credit allocated to the Southern Intertie, which reduces the segmented revenue requirement. *See* Tables 2 & 3.

After all revenue credits and adjustments are applied, the average net segmented revenue requirement for the Southern Intertie segment is \$81.152 million. Table 3, line 36. The projected sales on BPA's portion of the Southern Intertie equal 6,515 MW. Table 8, line 13.

1 Dividing dollars by megawatts yields an annual rate of \$12.46/kW-year. *Id.*, line 15. This
2 annual rate is divided by 12 to determine the IS long-term rate of \$1.038/kW-month. *Id.*, line 16.

3
4 The calculation of the daily IS-18 rates includes the same adjustment for short-term sales that the
5 Study makes for other daily PTP rates. Section 4.3 explains the adjustment. The daily IS short-
6 term Block 1 rate is calculated by dividing the annual rate, \$12.46/kW-year, by 365 days/year
7 and multiplying by 7/5 to recognize higher weekday demand, which yields \$0.048/kW-day.
8 *Id.*, line 17. The daily IS short-term Block 2 rate is calculated by dividing the annual rate by
9 365 days, yielding \$0.034/kW-day. *Id.*, line 18.

10
11 The calculation of the hourly IS-18 rates includes a similar adjustment that the Study makes for
12 other hourly PTP rates. Section 4.3 explains the adjustment. The IS hourly rate applies to both
13 firm and non-firm hourly sales. It is calculated by dividing the annual rate by 8,760 hours/year,
14 multiplying by 1,000 to convert to mills, and multiplying by 24/5 and 7/5 to recognize higher
15 demand during these weekday hours in California. *See Fredrickson et al.*, BP-18-E-BPA-12, § 3.
16 The result is a IS-18 hourly rate of 9.56 mills/kWh. Table 8, line 19.

17 18 **5.2 Eastern Intertie (Montana)**

19 The Broadview-to-Garrison intertie facilities, referred to as the Montana Intertie, were built to
20 transmit the output of the Colstrip generating facility, a coal plant in Montana, to the Pacific
21 Northwest. The arrangement for constructing transmission lines and providing transmission
22 service for Colstrip was set forth in the Montana Intertie Agreement. The Colstrip parties to the
23 Montana Intertie Agreement (Avista, NorthWestern Energy, PacifiCorp, Portland General

1 Electric, and Puget Sound Energy, or their predecessors) built transmission facilities between
2 Broadview and Townsend, Montana. BPA built the facilities between Townsend and Garrison,
3 which are called the Eastern Intertie. Under the Montana Intertie Agreement, BPA provides
4 transmission service on the Eastern Intertie to the Colstrip parties at the TGT rate. BPA has the
5 exclusive right to market any remaining transmission capacity in either direction on the Eastern
6 Intertie.

7
8 The costs associated with the Eastern Intertie segment are recovered primarily through the
9 Montana Intertie Agreement under the TGT rate, which is a formula rate specified in the
10 contract. BPA receives payments under the TGT rate from each Colstrip party for its share of
11 the costs of the Eastern Intertie capacity. These payments are applied to the Eastern Intertie
12 segment costs. Table 3, line 31. Non-firm service for the Colstrip parties is available over the
13 Eastern Intertie under either the IE or IM rate. A proportionate share of any revenue for
14 non-firm service received under the IE and IM rates is credited under the TGT rate to the
15 Colstrip parties. Any firm sales BPA makes on BPA's remaining capacity on the Eastern Intertie
16 are marketed at the IM rate.

17 18 **5.2.1 Montana Intertie Rate (IM-18)**

19 The IM-18 rate applies to service on BPA's capacity share of the Eastern Intertie facilities. The
20 IM rate schedule includes rates for long-term firm service; monthly, weekly, and daily service;
21 and hourly firm service. Like the PTP-18 rate schedule, the IM-18 rate schedule provides block
22 rates for monthly, weekly, and daily firm and non-firm service. One hourly rate applies to all

1 hours of a reservation for hourly service. *See* Transmission, Ancillary, and Control Area Service
2 Rate Schedules, BP-18-A-04-AP04, IM-18, § II.

3
4 The IM rate schedule also includes these provisions:

- 5 • the requirement to purchase certain ancillary services;
- 6 • a credit for interruption of non-firm service;
- 7 • the Reservation Fee;
- 8 • an Unauthorized Increase Charge;
- 9 • the Failure to Comply Penalty Charge;
- 10 • notice of BPA’s intent to charge incremental cost rates under specified conditions;
- 11 • allowance for a rate adjustment pursuant to a FERC order under Section 212 of the
12 Federal Power Act;
- 13 • notice regarding Direct Assignment Facility costs, which are to be collected under the
14 Advance Funding rate or Use-of-Facilities rate; and
- 15 • the Transmission Cost Recovery Adjustment Clause and Reserves Distribution Clause.

16 *Id.* § IV. *See* Section 7 for further discussion of the rate schedule provisions.

17
18 The IM-18 annual rate is based on the segmented revenue requirement for the Eastern Intertie.

19 The IM rate is calculated by dividing the Eastern Intertie Segmented Revenue Requirement,

20 Table 8, line 32, less revenue credits assigned to the Eastern Intertie, Table 8, line 33, by the total

21 sales on the Eastern Intertie (1,746 MW), which yields \$6.11/kW-year. *Id.*, line 38. The

22 monthly IM-18 rate is calculated by dividing the annual rate by 12 months, yielding

23 \$0.509/kW-month. *Id.*, line 39.

1 The calculation of the daily and hourly IM-18 rates includes the same adjustment for short-term
2 sales that this Study makes for Network PTP rates. Section 4.3 explains the adjustment. The
3 daily IM-18 short-term Block 1 rate is set by dividing the IM-18 annual rate by 365 days and
4 multiplying by the LLH/HLH factor of 7/5, which yields \$0.023/kW-day. *Id.*, line 40. The daily
5 IM short-term Block 2 rate is calculated by dividing the IM-18 annual rate by 365 days, yielding
6 \$0.017/kW-day. *Id.*, line 41.

7
8 The IM hourly rate, which applies to both firm and non-firm hourly sales, is calculated by
9 dividing the IM-18 annual rate by 8,760 hours/year, multiplying by 1,000 to convert to mills, and
10 multiplying by the LLH/HLH factors of 24/16 and 7/5. *Id.*, line 42. The result is an IM-18
11 hourly rate of 1.46 mills/kWh. *Id.*

12 13 **5.2.2 Townsend-Garrison Transmission Rate (TGT-18)**

14 As described above, BPA recovers the majority of the Eastern Intertie costs through the TGT
15 rate, which is a formula rate based on the Montana Intertie Agreement. The TGT rate schedule
16 is Exhibit E to the agreement and has been modified in minor respects in rate proceedings held
17 since execution of the agreement. The calculation of the TGT rate is demonstrated in Table 8,
18 lines 21-29. The TGT revenues are allocated as credits to the Eastern Intertie segment. Table 3,
19 line 31.

20 21 **5.2.3 Eastern Intertie Rate (IE-18)**

22 The IE rate is applicable to hourly non-firm service available to the parties to the Montana
23 Intertie Agreement on the Eastern Intertie. The IE-18 rate is based on the segmented revenue

1 requirement for the Eastern Intertie. The rate is calculated by dividing the Eastern Intertie
2 Segmented Revenue Requirement, Table 8, line 46, less revenue credits, Table 8, line 47, by the
3 total sales on the Eastern Intertie of 1,746 MW, Table 8, line 51. This is then divided by 8,760
4 hours/year, multiplied by 1,000 to convert to mills, and multiplied by the LLH/HLH factors of
5 24/16 and 7/5. *Id.*, line 52. The result is a rate of 1.46 mills/kWh. *Id.*

6
7 Under the TGT rate schedule, monthly revenues from any non-firm transactions under the IE-18
8 and IM-18 rates are deducted from the portion of the total annual costs to be recovered in that
9 month under the TGT rate. The Colstrip parties' portion of the monthly net cost is then allocated
10 to them in accordance with the formula in the TGT rate schedule.

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1 **6. ANCILLARY AND CONTROL AREA SERVICES**

2
3 BPA provides ancillary and control area services that are separate from transmission services.
4 This Study describes the development of the rates for (1) Scheduling, System Control, and
5 Dispatch Service, and (2) Generation Supplied Reactive Service. The Generation Inputs
6 settlement testimony, Fisher & Fredrickson, BP-18-E-BPA-18, discusses the development of
7 the rates for other ancillary and control area services BPA provides.

8
9 **6.1 Scheduling, System Control, and Dispatch Service**

10 Most customers purchasing transmission service from BPA are required to purchase SCD
11 service. Customers taking NT and PTP service (including PTP service over the Montana Intertie
12 or the Southern Intertie) purchase SCD separate from transmission service at the rates in the
13 SCD rate schedule. Customers taking IR or FPT service do not pay a separate SCD rate; the
14 SCD rate is included in the IR or FPT rate. *See* §§ 4.4 & 4.5.

15
16 The SCD rate schedule includes rates for long-term service; monthly, weekly, and daily service;
17 and hourly service. Like the rate schedules for PTP service, the SCD rate schedule includes
18 “Block 1” and “Block 2” rates for service on a monthly, weekly, or daily basis. One hourly rate
19 applies to all hourly service.

20
21 SCD service applies to all transmission service, and the equipment that comprises the Ancillary
22 Services segment supports all transmission service. The calculation of the SCD rate starts with
23 the segmented revenue requirement attributable to Scheduling, System Control, and Dispatch,

1 which averages \$173.052 million annually over the rate period. Table 10.1, line 8. This Study
2 adjusts the SCD costs by applying revenue credits and other adjustments, including the portion
3 of the FPT revenues allocated to SCD. Table 10.1, lines 9-15; *see* Table 3; *see also* §§ 3 & 4.5.
4 The revenue credits and other adjustments reduce the overall SCD costs to an average of
5 \$161.352 million annually over the rate period. Table 10.1, line 16.
6

7 As it does with respect to the calculation of rates for NT, PTP, and IR service on the Network,
8 this Study calculates allocation percentages for SCD sales associated with NT (based on the non-
9 coincident peak load forecast), PTP (including PTP service on the Southern Intertie and Montana
10 Intertie), and IR service based on the ratio of the sales forecast for each service to the total
11 forecast average annual SCD sales associated with all three services, 41,800 MW. Table 10.1,
12 line 26. The allocation percentages for SCD sales associated with NT, PTP, and IR services are
13 18.23 percent, 81.48 percent, and 0.29 percent, respectively. *Id.*, lines 30, 33, 36. Multiplying
14 the total adjusted average annual SCD revenue requirement of \$161.352 million by the sales
15 percentage for each service yields an allocated cost of \$29.414 million for NT service,
16 \$131.467 million for PTP service, and \$0.47 million for IR service. *Id.*, lines 41, 48, 58. This
17 Study uses these allocated costs to calculate the rates for SCD service associated with NT, PTP,
18 and IR service.
19

20 To calculate the SCD rate for NT service, this Study divides the \$29.414 million of SCD costs
21 allocated to NT service by the NT billing factor of 6,518 MW (the average monthly NT
22 coincident peak load forecast for the rate period, not considering the Short Distance Discount).
23 This yields a unit cost of \$4,510/kw-year, which is then divided by 1,000 to derive a kW-year

1 unit cost of \$4.51/kW-year. The kW-year unit cost is divided by 12 to yield a monthly SCD
2 for NT service unit cost of \$0.376/kW-month. *Id.*, lines 58-61. This Study sets the SCD rate
3 for NT service equal to this monthly unit cost.

4
5 The same methodology is used to calculate the SCD rates for PTP, IR, Southern Intertie, and
6 Montana Intertie service. For the SCD rate for PTP service (including PTP service on the
7 Southern Intertie and Montana Intertie), the PTP share of total SCD sales (81.48 percent) is
8 multiplied by the total average annual SCD revenue requirement of \$161.352 million, yielding
9 a total PTP service class cost of \$131.467 million. This value is divided by forecast average
10 annual PTP sales (Long-Term and Short-Term combined, and not considering the Short
11 Distance Discount) of 34,034 MW, yielding a unit cost of \$3,862/MW-year, which is then
12 divided by 1,000 to derive a kW-year unit cost of \$3.86/kW-year. This kW-year unit cost is
13 divided by 12 to yield a monthly SCD for PTP service unit cost of \$0.322/kW-month. *Id.*,
14 lines 46-51.

15
16 For the SCD rate for IR service, the IR share of total SCD sales (0.29 percent) is multiplied by
17 the total average annual SCD revenue requirement of \$161.352 million, yielding a total IR
18 service class cost of \$0.47 million. This value is divided by forecast average annual IR sales of
19 122 MW, yielding a unit cost of \$3,862/MW-year, which is then divided by 1,000 to derive a
20 kW-year unit cost of \$3.86/kW-year. This kW-year unit cost is divided by 12 to yield a
21 monthly SCD for IR service unit cost of \$0.322/kW-month. *Id.*, lines 39-44.

1 The rates for Block 1 daily service and hourly SCD service include the adjustment for short-term
2 sales that this Study includes for the rates for every PTP service. Section 4.3 discusses this
3 adjustment. The short-term Block 1 rate of \$0.015/kW-day equals the SCD annual unit cost
4 divided by 365 days and multiplied by the LLH/HLH factor of 7/5 (seven days divided by five
5 HLH days). *Id.*, line 52. The Block 2 rate of \$0.011/kW-day equals the SCD annual unit cost
6 divided by 365 days. *Id.*, line 53. This Study calculates the hourly rate of 0.93 mills/kWh by
7 dividing the annual unit cost by 8,760 hours/year, multiplying by 1,000 to convert to mills, and
8 multiplying by the LLH/HLH factors of 24/16 (24 hours/day divided by 16 HLH/day) and 7/5.
9 *Id.*, line 54.

11 **6.2 Generation Supplied Reactive Service**

12 The GSR rate is set on a quarterly basis pursuant to a formula in the GSR rate schedule. *See*
13 Transmission, Ancillary, and Control Area Service Rate Schedules, BP-18-A-04-AP04, ACS-18,
14 § II.B. As of October 1, 2007, BPA Transmission Services no longer compensates BPA Power
15 Services for generation inputs associated with providing reactive supply and is not required to
16 pay independent power producers for reactive supply inside the deadband. *See Bonneville Power*
17 *Admin. v. Puget Sound Energy, Inc.*, 120 FERC ¶ 61,211 (2007), *reh'g denied*, 125 FERC
18 ¶ 61,273 (2008). Therefore, no costs exist for GSR inside the deadband. BPA is required to pay
19 generators for reactive supply that it requests outside the deadband, pursuant to the generator's
20 FERC-approved rate. BPA does not expect any costs for GSR outside the deadband during the
21 rate period. Therefore, the GSR rate is expected to be zero for the FY 2018–2019 rate period.

1 **7. OTHER SERVICES AND PROVISIONS**

2
3 **7.1 Western Electricity Coordinating Council (WECC) and Peak Reliability**
4 **(Peak) Rate**

5 The WECC and Peak rates recover costs associated with funding the reliability activities of the
6 North American Electric Reliability Corporation (NERC), the Western Electricity Coordinating
7 Council (WECC), and Peak Reliability (Peak). The WECC rate recovers costs associated with
8 the Electric Reliability Organization (ERO) responsibilities delegated to WECC by NERC. The
9 Peak rate recovers costs associated with the Reliability Coordinator and Interchange Authority
10 functions recently assumed from WECC. The WECC and Peak organizations assign costs to the
11 Balancing Authorities (BAs) they serve based on load in each BA’s service area (Balancing
12 Authority Area – BAA). The WECC and Peak costs collected through the WECC and Peak rates
13 are the share of WECC and Peak costs assessed to BPA due to customers’ loads in BPA’s BAA.
14 WECC and Peak costs assessed to BPA for unscheduled flow, station service and losses are
15 recovered through the SCD Rate.

16
17 Total WECC and Peak costs are estimated to average \$6.054 million per year for the FY 2018–
18 2019 rate period. These costs are directly assigned to the Ancillary Services Segmented
19 Revenue requirement shown on Table 1, column I. The forecast \$6.054 million per year in total
20 WECC and Peak costs are based on 2016 actuals, inflated by 1.6 percent, which is the inflation
21 rate BPA used in the IPR. Of the total forecast of \$6.054 million per year in WECC and Peak
22 costs, \$5.230 of those costs are related to customer served load in BPA’s BAA and will be
23 recovered through the WECC and Peak rates. The anticipated costs associated with customer

1 served load are forecast to be \$2.665 million for WECC and \$2.565 million for Peak. Table
2 10.2, lines 1, 7. The remaining \$0.824M per year in WECC and Peak costs is associated with
3 unscheduled flow, station service and losses and will be recovered through the SCD rate.
4

5 The rates are determined by first removing the WECC and Peak costs related to customer served
6 load in BPA's BAA from the Ancillary Services segment. Table 3, lines 28-29. BPA then
7 calculates the WECC and Peak rates by dividing the forecast annual average WECC and Peak
8 costs resulting from customers' loads in BPA's BAA by the forecast average annual load in the
9 BAA of 51,392,109 kWh. Table 10.2, lines 4, 10. This results in an hourly WECC rate of
10 \$0.05 mills/kWh and an hourly Peak rate of \$0.05 mills/kWh. *Id.* These rates will only be
11 charged to customers serving load in BPA's BAA.
12

13 **7.2 Oversupply Rate (OS-18)**

14 The Oversupply rate recovers the displacement costs that BPA pays under Attachment P of its
15 Tariff, also known as the Oversupply Management Protocol (OMP), for the FY 2018–2019 rate
16 period. Under the protocol, in order to moderate total dissolved gas levels in the Columbia River
17 BPA displaces generators located in BPA's BAA under a least-cost displacement cost curve.

18 The Oversupply rate allocates displacement costs to each generator based on the proportion that
19 that generator's scheduled generation for the hour bears to the total amount of scheduled
20 generation in the balancing authority area for the hour. For generation scheduled by BPA Power
21 Services, BPA will bill customers that purchase under the PF, IP, or NR rate schedules using
22 Modified Tier 1 Cost Allocators (TOCA). TOCAs are customer-specific power rate billing
23 determinants that are established under the Tiered Rate Methodology for PF customers. Each

1 power customer's billing determinant is a percentage of the sum of all power customers' billing
2 determinants. *See* Transmission, Ancillary, and Control Area Service Rate Schedules, BP-18-A-
3 04-AP04, GRSP II.K.

4 5 **7.3 Use-of-Facilities Transmission Rate (UFT-18)**

6 Use-of-Facilities Transmission (UFT) service is generally offered in a limited set of situations in
7 which PTP transmission service is not appropriate. Such situations include, for example, sales of
8 capacity over a specific set of facilities within a substation (*e.g.*, buswork or a transformer bank)
9 that do not negatively affect power flows on the rest of the transmission system.

10
11 The UFT rate schedule includes a formula monthly rate of one-twelfth of the sum of the annual
12 costs of the transmission facilities used by the UFT customer divided by the sum of the
13 transmission demand reserved by the UFT customer. If more than one customer uses given
14 facilities, the costs of the facilities are allocated between the customers based on usage.

15
16 BPA adjusts the costs of operating and maintaining the transmission facilities (the numerator in
17 the UFT formula rate) annually. Finally, the UFT rate schedule includes provisions for Ancillary
18 Services and Failure to Comply Penalties.

19 20 **7.4 Advance Funding Rate (AF-18)**

21 If a customer and BPA agree that the customer should advance fund BPA-owned transmission
22 facilities, the customer will pay BPA the cost of those facilities under the AF-18 rate schedule.
23 Such facilities may include for example, interconnection and resource integration facilities and

1 transmission system upgrades, reinforcements, and replacements. The Advance Funding rate
2 allows BPA to recover costs and prevent stranded costs for facilities that BPA builds under
3 agreements with individual customers. After commercial operation of the facilities, BPA
4 performs a true-up of estimated costs to actual costs and either bills the customer or issues a
5 refund for the difference between the advance payment and the actual costs.

7 **7.5 Rate Adjustment Due to FERC Order Under Section 212 of the Federal 8 Power Act**

9 This provision is included in the NT, PTP, IS, IM, and ACS rate schedules. After review by
10 FERC, these rate schedules may be modified to satisfy statutory standards for FERC-ordered
11 transmission service. For customers taking transmission service that has not been ordered by
12 FERC, any modifications would be effective only prospectively from the date of the FERC order
13 that grants final approval of the rate schedule for FERC-ordered transmission.

15 **7.6 Delivery Charges**

16 **7.6.1 Utility Delivery Charge**

17 The Utility Delivery Charge applies to utility customers that take delivery of power over
18 transmission facilities that are included in the Utility Delivery segment. Utility Delivery
19 customers are customers that serve retail load, including as investor-owned utilities, public utility
20 districts, cooperatives, and municipalities.

21
22 The annual average segmented revenue requirement for the Utility Delivery segment is
23 \$2.755 million. Table 1, line 27. As described in Section 3, this Study applies revenue credits

1 and adjustments to this amount to determine the net segmented revenue requirement. The
2 annual average net segmented revenue requirement for the Utility Delivery segment is
3 \$2.564 million. Table 3, line 36.

4
5 This Study determines an annual unit cost for Utility Delivery service by dividing the
6 \$2.564 million revenue requirement by the forecast annual average Utility Delivery sales of
7 166.5 MW. Table 9. This results in an annual unit cost of \$15.40/kW-year and a monthly unit
8 cost of \$1.283/kW-month. *Id.*

9 10 **7.6.2 DSI Delivery Charge**

11 The DSI Delivery Charge applies to direct-service industrial customers that take delivery of
12 power over transmission facilities that are included in the DSI Delivery segment. The DSI
13 Delivery Charge is a Use-of-Facility Charge and is determined under Sections III.A and B of the
14 UFT-18 rate schedule. See Section 7.3 for an explanation of the Use-of-Facility Charge.

15 16 **7.7 Failure to Comply Penalty Charge**

17 The Failure to Comply Penalty Charge applies when a party fails to comply with BPA's
18 dispatch, curtailment, redispatch, or load shedding orders necessary to maintain system
19 reliability. Transmission, Ancillary, and Control Area Service Rate Schedules, BP-18-A-04-
20 AP04, GRSP II.B. The charge is the greater of 500 mills/kWh or 150 percent of an hourly
21 energy index in the Pacific Northwest, measured by the number of kilowatthours a party fails to
22 curtail, redispatch, shed load, or change or limit generation in response to a BPA order.

1 **7.8 Unauthorized Increase Charge**

2 For firm transmission service under the PTP, IS, and IM rate schedules, BPA assesses an
3 Unauthorized Increase Charge (UIC) when a customer's transmission usage exceeds its capacity
4 reservations at any Point of Receipt (POR) or Point of Delivery (POD). *Id.* § II.F. The UIC rate
5 is the lesser of (i) 100 mills/kWh plus the price cap established by the Commission for spot
6 market sales of energy in the WECC, or (ii) 1000 mills/kWh. If the Commission eliminates the
7 WECC price cap, the rate will be 500 mills/kWh.

8
9 For each hour, BPA adds the amounts that exceed capacity reservations at all PODs and PORs.
10 The billing factor is the higher of the POR sum or the POD sum. BPA uses hourly
11 measurements based on a 10-minute moving average to calculate actual demands at PODs
12 associated with loads that are one-way dynamically scheduled and at PORs associated with
13 resources that are one-way dynamically scheduled. For two-way dynamic schedules, actual
14 demands are the instantaneous peak demand for the hour. The actual demands associated with
15 all other PORs and PODs are based on 60-minute integrated demands or transmission schedules.

16
17 BPA may waive or reduce a UIC based on the criteria in the GRSPs. Because the UIC is a
18 penalty rate, and BPA expects customers to limit their usage to the amount of reserved capacity,
19 BPA does not expect to assess this charge during the rate period.

20
21 **7.9 Reservation Fee**

22 The Reservation Fee is included in the PTP, IS, and IM rate schedules. The Reservation Fee
23 applies to PTP transmission customers that, pursuant to OATT Section 17.7, request an extension

1 (deferral) of the Service Commencement Date specified in the Service Agreement. The
2 Reservation Fee is a nonrefundable fee equal to one month's charge for each year or fraction of a
3 year which the customer extends extension of the service commencement date by the customer.
4

5 **7.10 IR Ratchet Demand**

6 The IR rate schedule includes a Ratchet Demand Relief provision that describes the
7 demonstration the customer must make to obtain a waiver or reduction of a Ratchet Demand.

8 A Ratchet Demand is the maximum demand established during a specified period.
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TABLES

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Table 1
Transmission Revenue Requirements

(\$000/yr)

(A)	(B)	(C)	(D)	(E)	(F)	(G)	(H)	(I)
	Total	Generation Integration	Network	Intertie Southern	Eastern	Utility	Delivery Industry	Ancillary Services/1
1 FY 2018:								
2 FCRTS Investment Base (Net Plant)	5,802,497	85,596	4,721,525	731,887	88,059	10,705	6,505	158,221
3 Percent of Total		1.5%	81.4%	12.6%	1.5%	0.2%	0.1%	2.7%
4 Operations & Maintenance	486,373	7,003	303,091	39,239	5,426	1,696	1,046	128,872
5 Transmission Acquisition & Ancillary Services	119,460	50	17,168	1,347	12	205	9	100,670
6 Depreciation	273,164	3,538	202,895	29,695	3,600	565	345	32,525
7 Net Interest Expense	148,225	2,123	121,401	18,167	2,184	265	161	3,924
8 Planned Net Revenues	8,626	57	5,854	2,541	58	7	4	105
9 Total Transmission Revenue Requirement	1,035,849	12,771	650,409	90,989	11,279	2,739	1,565	266,096
10 FY 2019:								
11 FCRTS Investment Base (Net Plant)	5,945,000	83,207	4,853,917	728,375	85,421	10,413	6,328	177,339
12 Percent of Total		1.4%	81.6%	12.3%	1.4%	0.2%	0.1%	3.0%
13 Operations & Maintenance	490,918	7,047	304,952	39,483	5,460	1,706	1,053	131,217
14 Transmission Acquisition & Ancillary Services	111,983	50	16,601	1,347	12	205	9	93,760
15 Depreciation	284,422	3,606	211,488	30,374	3,654	582	355	34,362
16 Net Interest Expense	164,167	2,240	134,792	19,610	2,300	280	170	4,774
17 Planned Net Revenues	348	(27)	984	(518)	(28)	(3)	(2)	(58)
18 Total Transmission Revenue Requirement	1,051,837	12,916	668,817	90,296	11,397	2,770	1,585	264,057
19 Annual Average for Rate Period								
20 FCRTS Investment Base (Net Plant)	5,873,749	84,402	4,787,721	730,131	86,740	10,559	6,416	167,780
21 Percent of Total		1.4%	81.5%	12.4%	1.5%	0.2%	0.1%	2.9%
22 Operations & Maintenance	488,645	7,025	304,021	39,361	5,443	1,701	1,049	130,045
23 Transmission Acquisition & Ancillary Services	115,722	50	16,884	1,347	12	205	9	97,215
24 Depreciation	278,793	3,572	207,192	30,034	3,627	573	350	33,444
25 Net Interest Expense	156,196	2,181	128,097	18,889	2,242	273	166	4,349
26 Planned Net Revenues	4,487	15	3,419	1,011	15	2	1	24
27 Total Transmission Revenue Requirement	1,043,843	12,843	659,613	90,642	11,338	2,755	1,575	265,076

/1 Ancillary Service costs include Scheduling, System Control, and Dispatch (SCD) and Gen Inputs costs.

Table 2
Revenue Credits

(A)	(B)	(C)	(D)	(E)	(F)	
Transmission Revenue Credit	FY 2017	FY 2018	FY 2019	Avg 18/19	Growth	
	(\$000)	(\$000)	(\$000)	(\$000/yr)		
1	IS Reservation Fee	-	-	-	-	
2	UFT Fixed Dollar Amount	4,848	4,841	4,682	4,762	-1.8%
3	UFT Variable Service Amt	259	242	242	242	-6.6%
4	O&M Non-Federal Facility	426	416	416	416	-2.3%
5	O&M Federal Facility	304	303	303	303	-0.3%
6	PTP Reservation Fee	2,114	1,861	1,340	1,601	-24.3%
7	CF Reservation Fee	-	-	-	-	N/A
8	Failure to Comply Penalty	-	-	-	-	N/A
9	SINT AC Non Federal O&M	1,905	1,905	1,905	1,905	0.0%
10	SINT AC Non Fed Replacements	-	-	-	-	N/A
11	TOP Service Charge	1,100	1,100	1,100	1,100	0.0%
12	DSI Delivery Charge	1,915	1,915	1,915	1,915	0.0%
13	PCS Wireless Leases	4,228	5,022	5,042	5,032	19.0%
14	PCS Construction	3,015	3,720	3,720	3,720	23.4%
15	PCS Operations & Maintenance	435	312	312	312	-28.3%
16	Fiber Leases	8,103	7,733	7,379	7,556	-6.8%
17	Fiber Operations & Maintenance	1,484	1,550	1,550	1,550	4.4%
18	Land Use/Lease/Sale	208	216	216	216	3.8%
19	Misc Leases	73	105	105	105	43.8%
20	Right-Of-Way Lease	79	79	79	79	0.0%
21	COE/BOR Project Revenue	-	-	-	-	N/A
21	3rd AC RAS Generation Dropping	27	27	27	27	0.0%
22	AC RAS Load Tripping	-	-	-	-	N/A
23	Transmission Share of IPP	246	246	246	246	0.0%
24	Use of Communication Equipmt	179	179	177	178	-0.6%
25	FPS Real Power Losses	-	-	-	-	N/A
26	Amort NonFed PNW AC Intertie	3,408	3,409	3,409	3,409	0.0%
27	Transmission Processing Fee	41	43	43	43	4.9%
28	Total	34,397	35,224	34,208	34,716	0.9%

Table 2
Revenue Credits

	(A)	(B)	(C)	(D)	(E)	(F)	(G)	(H)	(I)	(J)
	Credit Segmentation Factors	Basis	Total	Generation Integration	Network	Utility	Delivery Industrial	Intertie Southern	Eastern	Ancillary Services
29	IS Reservation Fee	direct	100.00%	-	-	-	-	100.00%	-	-
30	UFT Fixed Dollar Amount	direct	100.00%	0.30%	51.18%	3.15%	-	36.92%	8.45%	-
31	UFT Variable Service Amt	direct	100.00%	0.30%	51.18%	3.15%	-	36.92%	8.45%	-
32	O&M Non-Federal Facility	direct	100.00%	-	93.04%	-	1.32%	2.88%	2.01%	0.75%
33	O&M Federal Facility	direct	100.00%	-	93.04%	-	1.32%	2.88%	2.01%	0.75%
34	PTP Reservation Fee	network	100.00%	-	100.00%	-	-	-	-	-
35	CF Reservation Fee	network	100.00%	-	100.00%	-	-	-	-	-
36	Failure to Comply Penalty	network	100.00%	-	100.00%	-	-	-	-	-
37	SINT AC Non Federal O&M	southern	100.00%	-	-	-	-	100.00%	-	-
38	SINT AC Non Fed Replacements	southern	100.00%	-	-	-	-	100.00%	-	-
39	TOP Service Charge	network	100.00%	-	100.00%	-	-	-	-	-
40	DSI Delivery Charge	industry	100.00%	-	-	-	100.00%	-	-	-
41	PCS Wireless Leases	net plant	100.00%	1.23%	70.00%	0.15%	0.09%	10.67%	1.27%	16.58%
42	PCS Construction	net plant	100.00%	1.23%	70.00%	0.15%	0.09%	10.67%	1.27%	16.58%
43	PCS Operations & Maintenance	net plant	100.00%	1.23%	70.00%	0.15%	0.09%	10.67%	1.27%	16.58%
44	Fiber Leases	net plant	100.00%	1.23%	70.00%	0.15%	0.09%	10.67%	1.27%	16.58%
45	Fiber Operations & Maintenance	net plant	100.00%	1.23%	70.00%	0.15%	0.09%	10.67%	1.27%	16.58%
46	Land Use/Lease/Sale	net plant	100.00%	1.23%	70.00%	0.15%	0.09%	10.67%	1.27%	16.58%
47	Misc Leases	net plant	100.00%	1.23%	70.00%	0.15%	0.09%	10.67%	1.27%	16.58%
48	Right-Of-Way Lease	net plant	100.00%	1.23%	70.00%	0.15%	0.09%	10.67%	1.27%	16.58%
49	COE/BOR Project Revenue	direct	100.00%	-	97.85%	-	-	2.15%	-	-
50	3rd AC RAS Generation Dropping	southern	100.00%	-	-	-	-	100.00%	-	-
51	AC RAS Load Tripping	southern	100.00%	-	-	-	-	100.00%	-	-
52	Transmission Share of IPP	network	100.00%	-	100.00%	-	-	-	-	-
53	Use of Communication Equipmt	net plant	100.00%	1.23%	70.00%	0.15%	0.09%	10.67%	1.27%	16.58%
54	FPS Real Power Losses	network	100.00%	-	100.00%	-	-	-	-	-
55	Amort NonFed PNW AC Intertie	southern	100.00%	-	-	-	-	100.00%	-	-
56	Transmission Processing Fee	network	100.00%	-	100.00%	-	-	-	-	-

Table 2
Revenue Credits

	(A)	(B)	(C)	(D)	(E)	(F)	(G)	(H)
	FY 2018 Revenue	Generation Integration	Network	Delivery Utility	Industrial	Southern	Intertie Eastern	Ancillary Services
		(\$000)	(\$000)	(\$000)	(\$000)	(\$000)	(\$000)	(\$000)
57	IS Reservation Fee	0	0	0	0	0	0	0
58	UFT Fixed Dollar Amount	14	2,477	153	0	1,787	409	0
59	UFT Variable Service Amt	1	124	8	0	89	20	0
60	O&M Non-Federal Facility	0	387	0	5	12	8	3
61	O&M Federal Facility	0	282	0	4	9	6	2
62	PTP Reservation Fee	0	1,861	0	0	0	0	0
63	CF Reservation Fee	0	0	0	0	0	0	0
64	Failure to Comply Penalty	0	0	0	0	0	0	0
65	SINT AC Non Federal O&M	0	0	0	0	1,905	0	0
66	SINT AC Non Fed Replacements	0	0	0	0	0	0	0
67	TOP Service Charge	0	1,100	0	0	0	0	0
68	DSI Delivery Charge	0	0	0	1,915	0	0	0
69	PCS Wireless Leases	62	3,515	8	5	536	64	833
70	PCS Construction	46	2,604	6	3	397	47	617
71	PCS Operations & Maintenance	4	218	0	0	33	4	52
72	Fiber Leases	95	5,413	12	7	825	98	1,282
73	Fiber Operations & Maintenance	19	1,085	2	1	165	20	257
74	Land Use/Lease/Sale	3	151	0	0	23	3	36
75	Misc Leases	1	73	0	0	11	1	17
76	Right-Of-Way Lease	1	55	0	0	8	1	13
77	COE/BOR Project Revenue	0	0	0	0	0	0	0
78	3rd AC RAS Generation Dropping	0	0	0	0	27	0	0
79	AC RAS Load Tripping	0	0	0	0	0	0	0
80	Transmission Share of IPP	0	246	0	0	0	0	0
81	Use of Communication Equipmt	2	125	0	0	19	2	30
82	FPS Real Power Losses	0	0	0	0	0	0	0
83	Amort NonFed PNW AC Intertie	0	0	0	0	3,409	0	0
84	Transmission Processing Fee	0	43	0	0	0	0	0
85	Subtotal FY 2018	249	19,761	189	1,942	9,258	684	3,141

Table 2
Revenue Credits

(A) FY 2019 Revenue	(B)	(C)	(D)	(E)	(F)	(G)	(H)
	Generation Integration (\$000)	Network (\$000)	Utility (\$000)	Delivery Industrial (\$000)	Southern (\$000)	Intertie Eastern (\$000)	Ancillary Services (\$000)
86 IS Reservation Fee	0	0	0	0	0	0	0
87 UFT Fixed Dollar Amount	14	2,396	148	0	1,729	396	0
88 UFT Variable Service Amt	1	124	8	0	89	20	0
89 O&M Non-Federal Facility	0	387	0	5	12	8	3
90 O&M Federal Facility	0	282	0	4	9	6	2
91 PTP Reservation Fee	0	1,340	0	0	0	0	0
92 CF Reservation Fee	0	0	0	0	0	0	0
93 Failure to Comply Penalty	0	0	0	0	0	0	0
94 SINT AC Non Federal O&M	0	0	0	0	1,905	0	0
95 SINT AC Non Fed Replacements	0	0	0	0	0	0	0
96 TOP Service Charge	0	1,100	0	0	0	0	0
97 DSI Delivery Charge	0	0	0	1,915	0	0	0
98 PCS Wireless Leases	62	3,529	8	5	538	64	836
99 PCS Construction	46	2,604	6	3	397	47	617
100 PCS Operations & Maintenance	4	218	0	0	33	4	52
101 Fiber Leases	91	5,165	11	7	788	94	1,223
102 Fiber Operations & Maintenance	19	1,085	2	1	165	20	257
103 Land Use/Lease/Sale	3	151	0	0	23	3	36
104 Misc Leases	1	73	0	0	11	1	17
105 Right-Of-Way Lease	1	55	0	0	8	1	13
106 COE/BOR Project Revenue	0	0	0	0	0	0	0
107 3rd AC RAS Generation Dropping	0	0	0	0	27	0	0
108 AC RAS Load Tripping	0	0	0	0	0	0	0
109 Transmission Share of IPP	0	246	0	0	0	0	0
110 Use of Communication Equipmt	2	124	0	0	19	2	29
111 FPS Real Power Losses	0	0	0	0	0	0	0
112 Amort NonFed PNW AC Intertie	0	0	0	0	3,409	0	0
113 Transmission Processing Fee	0	43	0	0	0	0	0
114 Subtotal FY 2019	244	18,923	184	1,942	9,163	666	3,086

Table 3
Segmented Revenue Requirement Adjustments
(\$000/yr)

(A)	(B)	(C)	(D)	(E)	(F)	(G)	(H)
	Generation Integration	Network	Intertie Southern	Eastern	Delivery Utility	Industry	Ancillary Services
1 FY 2018							
2 Unadjusted Costs (Table 1).....	12,771	650,410	90,989	11,279	2,739	1,565	266,096
3 Revenue Credits (Table 2).....	-249	-19,761	-9,258	-684	-189	-1,942	-3,141
4 WECC Costs 1/.....	0	0	0	0	0	0	-2,650
5 Peak Costs 1/	0	0	0	0	0	0	-2,550
6 IM Tx Revenues.....	0	0	0	-98	0	0	0
7 TGT Revenues.....	0	0	0	-12,414	0	0	0
8 NT Federal Redispatch Credit 1/.....	0	-160	0	0	0	0	0
9 NT Nonfederal Redispatch Credit 1/.....	0	0	0	0	0	0	0
10 Eastern Intertie Adjustment 2/.....	-29	-1,584	-246	1,917	-4	-2	-53
11 Industry Delivery Adjustment 2/.....	-6	-313	-49	0	-1	379	-11
12 Total	12,488	628,592	81,437	0	2,545	0	257,691
13 FY 2019							
14 Unadjusted Costs (Table 1).....	12,916	668,817	90,296	11,397	2,770	1,585	264,057
15 Revenue Credits (Table 2).....	-244	-18,923	-9,163	-666	-184	-1,942	-3,086
16 WECC Costs 1/.....	0	0	0	0	0	0	-2,680
17 Peak Costs 1/	0	0	0	0	0	0	-2,580
18 IM Tx Revenues.....	0	0	0	-98	0	0	0
19 TGT Revenues.....	0	0	0	-12,414	0	0	0
20 NT Firm Redispatch Credit 1/.....	0	-160	0	0	0	0	0
21 NT Nonfederal Redispatch Credit 1/.....	0	0	0	0	0	0	0
22 Eastern Intertie Adjustment 2/.....	-25	-1,475	-221	1,781	-3	-2	-54
23 Industry Delivery Adjustment 2/.....	-5	-298	-45	0	-1	359	-11
24 Total	12,642	647,960	80,866	0	2,583	0	255,646

Table 3
Segmented Revenue Requirement Adjustments
(\$000/yr)

(A)	(B)	(C)	(D)	(E)	(F)	(G)	(H)	
	Generation Integration	Network	Intertie Southern Eastern		Delivery Utility Industry		Ancillary Services	
25	Average FY 2018 and FY 2019							
26	Unadjusted Costs (Table 1).....	12,843	659,613	90,642	11,338	2,755	1,575	265,076
27	Revenue Credits (Table 2).....	-246	-19,342	-9,210	-675	-187	-1,942	-3,113
28	WECC Costs 1/.....	0	0	0	0	0	0	-2,665
29	Peak Costs 1/	0	0	0	0	0	0	-2,565
30	IM Tx Revenues.....	0	0	0	-98	0	0	0
31	TGT Revenues.....	0	0	0	-12,414	0	0	0
32	NT Firm Redispatch Credit 1/.....	0	-160	0	0	0	0	0
33	NT Nonfederal Redispatch Credit 1/.....	0	0	0	0	0	0	0
34	Eastern Intertie Adjustment 2/.....	-27	-1,530	-233	1,849	-3	-2	-53
35	Industry Delivery Adjustment 2/.....	-5	-306	-47	0	-1	369	-11
36	Total	12,565	638,276	81,152	0	2,564	0	256,669

1/ NT Redispatch Credit adjustments are for NT Redispatch costs that are 100% assignable to NT Service.
2/ Eastern Intertie, Industry Delivery, and Utility Delivery adjustments (cost - revenue) segmented on Table 1 net plant percentages.

Table 4
Long-term Transmission Sales
(MegaWatts)

	(A)	(B)	(C)	(D)	(E)	(F)	(G)	(H)	(I)	(J)	(K)	(L)	(M)	(N)	(O)
Transmission Rate Schedule	MWs	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Annual	
1 Network															
2 FY 2018															
3 Formula Power Transmission -- 1 Year	m_cd	885	885	885	885	885	885	885	885	885	885	885	885	885	885
4 Formula Power Transmission -- 3 Year		58	68	77	73	66	66	60	56	50	56	56	55	62	
5 Integration of Resources (IR)	m_cd	266	266	266	266	266	266	266	266	266	266	266	0	244	
6 PTP	m_cd	25,796	25,684	25,696	25,796	25,816	25,816	25,816	25,916	25,916	25,916	26,116	26,116	25,867	
7 PTP SDD	m_cd	-260	-260	-260	-260	-260	-260	-260	-260	-260	-260	-260	-260	-260	
8 Point to Point (PTP)	m_cd	25,536	25,424	25,436	25,536	25,556	25,556	25,556	25,656	25,656	25,656	25,856	25,856	25,607	
9 Point to Point (PTP) w/o SDD	m_cd	25,796	25,684	25,696	25,796	25,816	25,816	25,816	25,916	25,916	25,916	26,116	26,116	25,867	
10 PTP to Which SCD Charges Do Not Apply	m_cd	-73	-73	-73	-73	-73	-73	-73	-73	-73	-73	-73	-73	-73	
11 NT SDD EXPECTATION	m_cp	-132	-144	-144	-146	-114	-102	-151	-64	-88	-122	-126	-133	-122	
12 NT Coincident with Transmission Peak (CP):															
13 Network Load Service	m_cp	5,755	6,964	7,867	7,590	7,226	6,529	5,935	5,521	5,904	6,363	6,317	5,702	6,473	
14 Network Transmission (NT) (Including SDD)	m_cp	5,623	6,820	7,722	7,444	7,112	6,428	5,784	5,457	5,816	6,241	6,191	5,569	6,351	
15 Annual peak	a_cp													7,722	
16 NT Coincident with Customer Peak (NCP):															
17 Network Load Service	m_ncp	7,019	8,062	9,001	8,971	8,584	7,869	7,448	6,731	6,639	7,113	7,013	6,612	7,588	
18 Network Transmission (NT) (Including SDD)	m_ncp	6,887	7,918	8,856	8,825	8,470	7,767	7,297	6,667	6,551	6,991	6,887	6,479	7,466	
19 Annual peak	a_ncp													8,856	
20 Subtotal FY 2018		32,500	33,607	34,531	34,350	33,999	33,302	32,703	32,384	32,761	33,226	33,380	32,498	33,270	

Table 4
Long-term Transmission Sales
(MegaWatts)

	(A)	(B)	(C)	(D)	(E)	(F)	(G)	(H)	(I)	(J)	(K)	(L)	(M)	(N)	(O)
Transmission Rate Schedule	MWs	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Annual	
1 Network															
21 FY 2019															
22 Formula Power Transmission -- 1 Year	m_cd	885	885	885	835	835	835	835	835	835	802	802	802	839	
23 Formula Power Transmission -- 3 Year		58	68	77	73	66	66	60	56	50	56	56	55	62	
24 Integration of Resources (IR)	m_cd	0	0	0	0	0	0	0	0	0	0	0	0	0	
25 PTP	m_cd	26,116	26,116	26,127	26,527	26,557	26,557	26,557	26,567	26,627	26,627	26,727	26,727	26,486	
26 PTP SDD	m_cd	-260	-260	-260	-260	-260	-260	-260	-260	-260	-260	-260	-260	-260	
27 Point to Point (PTP)	m_cd	25,856	25,856	25,867	26,267	26,297	26,297	26,297	26,307	26,367	26,367	26,467	26,467	26,226	
28 Point to Point (PTP) w/o SDD	m_cd	26,116	26,116	26,127	26,527	26,557	26,557	26,557	26,567	26,627	26,627	26,727	26,727	26,486	
29 PTP to Which SCD Charges Do Not Apply	m_cd	-73	-73	-73	-73	-73	-73	-73	-73	-73	-73	-73	-73	-73	
30 NT SDD EXPECTATION	m_cp	-132	-144	-144	-146	-114	-102	-151	-64	-88	-122	-126	-133	-122	
31 NT Coincident with Transmission Peak (CP):															
32 Network Load Service	m_cp	5,861	7,092	8,011	7,673	7,321	6,612	5,987	5,576	5,994	6,459	6,400	5,768	6,563	
33 Network Transmission (NT) (Including SDD)	m_cp	5,729	6,947	7,866	7,527	7,207	6,510	5,835	5,512	5,906	6,337	6,274	5,636	6,440	
34 Annual peak	a_cp													7,866	
35 NT Coincident with Customer Peak (NCP):															
36 Network Load Service	m_ncp	7,138	8,190	9,127	9,011	8,627	7,898	7,484	6,781	6,701	7,159	7,059	6,647	7,652	
37 Network Transmission (NT) (Including SDD)	m_ncp	7,006	8,045	8,983	8,864	8,513	7,796	7,332	6,717	6,613	7,037	6,933	6,514	7,529	
38 Annual peak	a_ncp													8,983	
39 Subtotal FY 2018		32,659	33,900	34,839	34,848	34,519	33,810	33,178	32,774	33,246	33,685	33,725	33,093	33,690	

Table 4
Long-term Transmission Sales
(MegaWatts)

(A)	(B)	(C)	(D)	(E)	(F)	(G)	(H)	(I)	(J)	(K)	(L)	(M)	(N)	(O)
Transmission Rate Schedule	MWs	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Annual
1 Network														
40 Network Average for Rate Period														
41 Formula Power Transmission -- 1 Year	m_cd	885	885	885	860	860	860	860	860	860	843	843	843	862
42 Formula Power Transmission -- 3 Year		58	68	77	73	66	66	60	56	50	56	56	55	62
43 Integration of Resources (IR)	m_cd	133	133	133	133	133	133	133	133	133	133	133	0	122
44 Point to Point (PTP) with SDD	m_cd	25,696	25,640	25,652	25,902	25,927	25,927	25,927	25,982	26,012	26,012	26,162	26,162	25,917
45 Point to Point (PTP) w/o SDD	m_cd	25,956	25,900	25,912	26,162	26,187	26,187	26,187	26,242	26,272	26,272	26,422	26,422	26,177
46 PTP to Which SCD Charges Do Not Apply	m_cd	-73	-73	-73	-73	-73	-73	-73	-73	-73	-73	-73	-73	-73
47 NT Coincident with Transmission Peak (CP):														
48 Network Load Service	m_cp	5,808	7,028	7,939	7,632	7,274	6,571	5,961	5,548	5,949	6,411	6,358	5,735	6,518
49 Network Transmission (NT) (Including SDD)	m_cp	5,682	6,883	7,794	7,485	7,159	6,469	5,810	5,484	5,861	6,289	6,232	5,603	6,395
50 Annual peak														7,794
51 NT Coincident with Customer Peak (NCP):														
52 Network Load Service	m_ncp	7,079	8,126	9,064	8,991	8,606	7,883	7,466	6,756	6,670	7,136	7,036	6,629	7,620
53 Network Transmission (NT) (Including SDD)	m_ncp	6,953	7,982	8,919	8,844	8,491	7,782	7,314	6,692	6,582	7,014	6,910	6,496	7,498
54 Annual peak	a_ncp													8,919
55 Subtotal Network		32,580	33,754	34,685	34,599	34,259	33,556	32,940	32,579	33,003	33,455	33,552	32,796	33,480
56 Southern Intertie														
57 FY 2018														
58 IS CONFIRMED	m_cd	6,022	6,022	6,022	6,002	6,002	6,002	6,002	6,002	6,002	6,002	6,002	6,002	6,007
59 IS EXPECTATION	m_cd	0	0	0	0	0	0	0	0	0	0	0	0	0
60 Subtotal FY 2018	m_cd	6,022	6,022	6,022	6,002	6,002	6,002	6,002	6,002	6,002	6,002	6,002	6,002	6,007
61 FY 2019														
62 IS CONFIRMED	m_cd	6,002	6,002	6,002	6,002	6,002	6,002	6,002	6,002	6,002	6,002	6,002	6,002	6,002
63 IS EXPECTATION	m_cd	0	0	0	0	0	0	0	0	0	0	0	0	0
64 Subtotal FY 2019	m_cd	6,002	6,002	6,002	6,002	6,002	6,002	6,002	6,002	6,002	6,002	6,002	6,002	6,002
65 Southern Intertie Average for Rate Period														
66 Subtotal Southern Intertie (IS)	m_cd	6,012	6,012	6,012	6,002	6,002	6,002	6,002	6,002	6,002	6,002	6,002	6,002	6,005
67 Montana Intertie														
68 FY 2018														
69 Montana Intertie (IM)	m_cd	16	16	16	16	16	16	16	16	16	16	16	16	16
70 FY 2019														
71 Montana Intertie (IM)	m_cd	16	16	16	16	16	16	16	16	16	16	16	16	16
72 Montana Intertie Average for Rate Period	m_cd	16	16	16	16	16	16	16	16	16	16	16	16	16

m_cd = Monthly Contract Demand; m_cp = Monthly Coincidental Peak; a_cp = Annual Coincidental Peak; m_ncp = Monthly Non-Coincidental Peak; a_ncp = Annual Non-Coincidental Peak

Table 5
Short-term Transmission Sales

	(A)	(B)	(C)	(D)	(E)	(F)	(G)	(H)	(I)	(J)	(K)	(L)	(M)	(N)	(O)
	Short-term Product	Units	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Annual
1	Days in Month		31	30	31	31	28	31	30	31	30	31	31	30	
2	Network (PTP only short-term)														
3	FY 2018 1/														
4	Monthly/Weekly/Daily Block1	MW-days	240	250	3,020	4,235	5,490	7,430	11,380	18,470	25,830	17,185	2,120	305	95,955
5	Monthly/Weekly/Daily Block2	MW-days	2,640	2,435	7,105	10,195	10,950	13,565	25,175	52,875	55,050	26,725	11,820	2,695	221,230
6	Hourly	MWh	111,384	167,520	221,352	248,856	172,344	257,952	332,688	451,896	483,384	594,216	195,912	135,240	3,372,744
7	Monthly/Weekly/Daily Block1	m_cd	8	8	97	137	196	240	379	596	861	554	68	10	263
8	Monthly/Weekly/Daily Block2	m_cd	85	81	229	329	391	438	839	1,706	1,835	862	381	90	606
9	Hourly	m_cd	150	233	298	334	256	347	462	607	671	799	263	188	384
10	Subtotal FY 2018	m_cd	243	322	624	800	844	1,024	1,681	2,909	3,367	2,215	713	288	1,252
11	FY 2019 1/														
12	Monthly/Weekly/Daily Block1	MW-days	235	245	2,965	4,190	5,455	7,370	11,325	18,215	24,940	17,185	2,105	300	94,530
13	Monthly/Weekly/Daily Block2	MW-days	2,585	2,400	6,975	10,065	10,800	13,435	25,040	52,485	54,080	26,715	11,750	2,690	219,020
14	Hourly	MWh	109,536	165,576	216,336	243,984	167,784	253,680	327,864	434,328	455,280	594,168	194,064	134,520	3,297,120
15	Monthly/Weekly/Daily Block1	m_cd	8	8	96	135	195	238	378	588	831	554	68	10	259
16	Monthly/Weekly/Daily Block2	m_cd	83	80	225	325	386	433	835	1,693	1,803	862	379	90	599
17	Hourly	m_cd	147	230	291	328	250	341	455	584	632	799	261	187	375
18	Subtotal FY 2019	m_cd	238	318	611	788	830	1,012	1,668	2,864	3,266	2,215	708	287	1,234
19	Rate Period														
20	Monthly/Weekly/Daily Block1	m_cd	8	8	97	136	195	239	378	592	846	554	68	10	261
21	Monthly/Weekly/Daily Block2	m_cd	84	81	227	327	388	435	837	1,699	1,819	862	380	90	602
22	Hourly	m_cd	148	231	294	331	253	344	459	596	652	799	262	187	380
23	Subtotal Rate Period	m_cd	240	320	618	794	837	1018	1674	2887	3317	2215	710	287	1243

Table 5
Short-term Transmission Sales

	(A)	(B)	(C)	(D)	(E)	(F)	(G)	(H)	(I)	(J)	(K)	(L)	(M)	(N)	(O)
Short-term Product	Units	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Annual	
24 Southern Intertie															
25 FY 2018 1/															
26 Monthly/Weekly/Daily Block1	MW-days	0	0	205	375	480	375	0	0	305	160	0	0	1,900	
27 Monthly/Weekly/Daily Block2	MW-days	0	0	245	460	590	455	0	0	375	195	0	0	2,320	
28 Hourly	MWh	37,593	34,668	38,576	46,152	36,442	45,985	51,475	91,322	113,307	76,961	58,452	41,573	672,506	
29 Monthly/Weekly/Daily Block1	m_cd	0	0	7	12	17	12	0	0	10	5	0	0	5	
30 Monthly/Weekly/Daily Block2	m_cd	0	0	8	15	21	15	0	0	13	6	0	0	6	
31 Hourly	m_cd	51	48	52	62	54	62	71	123	157	103	79	58	77	
32 Subtotal FY 2018	m_cd	51	48	66	89	92	89	71	123	180	115	79	58	88	
33 FY 2019 1/															
34 Monthly/Weekly/Daily Block1	MW-days	0	0	205	375	480	375	0	0	305	160	0	0	1,900	
35 Monthly/Weekly/Daily Block2	MW-days	0	0	245	460	590	455	0	0	375	195	0	0	2,320	
36 Hourly	MWh	34,836	33,062	35,819	42,748	33,829	42,892	48,454	80,149	97,100	77,824	56,534	40,758	624,004	
37 Monthly/Weekly/Daily Block1	m_cd	0	0	7	12	17	12	0	0	10	5	0	0	5	
38 Monthly/Weekly/Daily Block2	m_cd	0	0	8	15	21	15	0	0	13	6	0	0	6	
39 Hourly	m_cd	47	46	48	57	50	58	67	108	135	105	76	57	71	
40 Subtotal FY 2019	m_cd	47	46	63	84	89	84	67	108	158	116	76	57	83	
41 Rate Period															
42 Monthly/Weekly/Daily Block1	m_cd	0	0	7	12	17	12	0	0	10	5	0	0	5	
43 Monthly/Weekly/Daily Block2	m_cd	0	0	8	15	21	15	0	0	13	6	0	0	6	
44 Hourly	m_cd	49	47	50	60	52	60	69	115	146	104	77	57	74	
45 Subtotal Rate Period	m_cd	49	47	65	87	90	87	69	115	169	115	77	57	86	

1/ Values based on market and streamflow estimates combined with historical trends

m_cd = Monthly Contract Demand (average), i.e. MW-days divided by days in month, MWh divided by hours in month

Table 6
Calculation of Formula Power Transmission Rates

(A)	(B) Source	(C) Sales MegaWatts (MW)	(D) Revenues \$000/yr	(E) Percent	(F) Network Rates \$/kW-mo
1	Transmission revenues from current rates				
2	Formula Power Transmission (FPT) sales	Table 4, Line 41 (O)	924		
3	FY18 FPT Revenues /1	Revenue forecast	18,647		
4	FY19 FPT Revenues /1	Revenue forecast	18,117		
5	Average FPT revenues	(Line 3 + line 4) / 2	18,382		
6	Current unit cost	Line 2 / line 5			1.659
7	Current PTP/IR rate plus Ancillary Services	Table 11, lines 26, 56 and 61 (D)			1.790
8	Transmission revenues:				
9	Assuming FPT3 rate stays constant				
10	FY 2018-2019 PTP/IR rate plus Ancillary Services	Table 11, lines 26, 56 and 61 (E)			1.793
11	Rate increase (PTP/IR rate + Ancillary)	(Line 10 - line 7) / line 7		0.2%	
12	Unit cost	Line 6 * (1 + line 11)			1.662
13	FPT revenues	Line 2 * line 12 * 12	18,413		
14	PTP/IR rate	Table 11, line 26 (E)			1.471
15	Transmission percent of total	Line 14 / line 10		82.0%	
16	Network transmission	Line 15 * line13	15,106		
17	Ancillary service percent of total	100% - line 15		18.0%	
18	FPT portion of Scheduling Control & Dispatch	Line 13 - line 16	3,307		
19	FPT portion of Generation Supplied Reactive		0		
20	BP-16 Transmission percent of FY2018 FPT3 Revenues	BP-14 Rates Model, Table 9, line 14		83.2%	
21	FPT1 Revenues, FY2018	Table 4, Line 3 (O) * Line12 * 12	17,636		
22	FPT3 Revenues, FY2018	Table 4, Line 4 (O) * Line6 * 12	1,229		
23	Total FY2018 Revenues	Line 21 + line 22	18,865		
24	FPT1 Revenues, FY2019	Table 4, Line 22 (O) * Line12 * 12	16,728		
25	FPT3 Revenues, FY2019	Table 4, Line 23 (O) * Line6 * 12	1,229		
26	Total FY2019 Revenues	Line 24 + line 25	17,957		

Table 6
Calculation of Formula Power Transmission Rates

(A)	(B) Source	(C) Sales	(D) Revenues	(E) Percent	(F) Network Rates
27	Network transmission portion of FY2018 FPT1 Revenue	Line 15 * line 21	14,469		
28	Network transmission portion of FY2018 FPT3 Revenue	Line 20 * line 22	1,022		
29	Total Network Transmission portion of FY2018 FPT Revenue	Line 27 + line 28	<u>15,491</u>		
30	Network transmission portion of FY2019 FPT1 Revenue	Line 15 * line 24	13,724		
31	Network transmission portion of FY2019 FPT3 Revenue	Line 20 * line 25	1,022		
32	Total Network Transmission portion of FY2019 FPT Revenue	Line 30 + line 31	<u>14,746</u>		
33	Average Annual Network Transmission Revenues	(Line 29 + line 32) / 2	15,119		
34	SCD Portion of of FY2018 FPT1 revenue	Line 21 - line 27	3,167		
35	SCD Portion of of FY2018 FPT3 revenue	Line 22 - line 28	207		
36	Total SCD Portion of FY2018 FPT Revenue	Line 34 + line 35	<u>3,374</u>		
37	SCD Portion of of FY2019 FPT1 revenue	Line 24 - line 30	3,004		
38	SCD Portion of of FY2019 FPT3 revenue	Line 25 - line 31	207		
39	Total SCD Portion of FY2019 FPT Revenue	Line 37 + line 38	<u>3,211</u>		
40	Average Annual SCD Revenues	(Line 36 + line 39) / 2	3,292		

/1 Based on revenue forecast of FPT contracts active in the FY2018-19 time frame

Table 7
Calculation of PTP, IR, and NT Rates

	(A)	(B)	(C)	(D)	(E)	(F)
	FY 2018/2019	Source	Costs	Sales	Percentage	Rates
1	Network costs		\$000/Yr	aMW		
2	Segmented Network costs	Table 3, line 36 (C)	638,276			
3	Less: FPT transmission revenues	Table 6, line 33 (D)	15,119			
4	Net costs	Line 2 - line 3	<u>623,157</u>			
5	Network sales (IR, PTP, NT)					
6	Integration of Resources (IR)	Table 4, line 43 (O)		122		
7	Point to point (PTP) w/o SDD	Table 4, line 45 (O)		26,177		
8	Point to point (PTP) with SDD	Table 4, line 44 (O)		25,917		
9	Network Integration w/o SDD (12 CP average peak)	Table 4, line 48 (O)		6,518		
10	Network Integration with SDD (12CP average peak)	Table 4, line 49 (O)		6,395		
11	Annual peak (1 CP)	Table 4, line 50 (O)		7,794		
12	Network Integration w/o SDD (12 NCP Average peak)	Table 4, line 58 (O)		7,620		
13	Network Integration with SDD (12 NCP Average peak)	Table 4, line 53 (O)		7,498		
14	Annual Noncoincidental Peak (1NCP)	Table 4, line 54 (O)		8,919		
15	Daily block 1 (day 1 through 5)	Table 5, line 20 (O)		261		
16	Daily block 2 (day 6 and beyond)	Table 5, line 21 (O)		602		
17	Hourly	Table 5, line 22 (O)		380		
18	Sales used for cost allocation					
19	IR Contracts	Line 6		122		
20	NT load (12NCP average peak)	Line 13		7,498		
21	PTP Contracts (with SDD)	Line 7		25,917		
22	Daily block 1 (day 1 through 5)	Line 15 x (7/5)		365		
23	Daily block 2 (day 6 and beyond)	Line 16		602		
24	Hourly	Line 17 x (7/5) x (24/16)		797		
25	Total cost allocation sales -- Reserved capacity contracts	Sum of lines 19 through 24		<u>35,301</u>		

**Table 7
Calculation of PTP, IR, and NT Rates**

	(A)	(B)	(C)	(D)	(E)	(F)
	FY 2018/2019	Source	Costs	Sales	Percentage	Rates
26	Sales allocation percentages:					
27	IR contract demand	Line 6		122		
28	Total cost allocation sales	Line 25		<u>35,301</u>		
29	IR Percentage	Line 27 / line 28			0.35%	
30	PTP contract demand	Line 8 + lines 22 through 24		27,682		
31	Total cost allocation sales	Line 25		<u>35,301</u>		
32	PTP Percentage	Line 30 / line 31			78.42%	
33	NT Load	Line 13		7,498		
34	Total cost allocation sales	Line 25		<u>35,301</u>		
35	NT Percentage	Line 33 / line 34			21.24%	
36	Application of Revenue Requirements to Products:					
37	IR rate calculation:					
38	Total segment costs	Line 4	623,157			
39	IR cost allocation percentage	Line 29			0.35%	
40	Allocated IR costs	Line 38 x line 39	2,152			
41	IR Billing Factor (= IR contract demand)	Line 27		122		
42	IR annual rate (\$/kW-yr)	Line 40 / line 41				17.65
43	Monthly (\$/kW-mo)	Line 42 / 12				1.471
44	PTP rate calculation:					
45	Total segment costs	Line 4	623,157			
46	PTP cost allocation percentage	Line 32			78.42%	
47	Allocated PTP costs	Line 45 x line 46	488,651			
48	PTP Billing factor (= PTP contract demand)	Line 30		27,682		
49	PTP annual rate (\$/kW-yr)	Line 47 / line 48				17.65
50	Monthly (\$/kW-mo)	Line 49 / 12				1.471
51	Daily block1 (\$/kW-day)	Line 49 / (365) x (7/5)				0.068
52	Daily block2 (\$/kW-day)	Line 49 / (365)				0.048
53	Hourly (mills/kWh)	Line 49 / (8.76) x (7/5) x (24/16)				4.23

Table 7
Calculation of PTP, IR, and NT Rates

	(A)	(B)	(C)	(D)	(E)	(F)
	FY 2018/2019	Source	Costs	Sales	Percentage	Rates
54	NT rate calculation:					
55	Total segment costs	Line 4	623,157			
56	NT cost allocation percentage	Line 35			21.24%	
57	Allocated NT costs	Line 55 x line 56	132,354			
58	NT federal redispatch costs	Table 3, line 32 (C)	160			
59	NT non-federal redispatch costs	Table 3, line 33 (C)	-			
60	Total NT costs	Sum of lines 57 through 59	132,514			
61	NT Billing Factor (= NT 12 CP Average Peak load)	Line 10		6,395		
62	NT annual rate (\$/kW-yr)	Line 60 / line 61				20.72
63	Monthly (\$/kW-mo)	Line 62 / 12				1.727
64	Short distance discount forecast					
65	NT reduction (credit) from SDD	(Line 9 - line 10) x line 62	2,534			
66	PTP reduction (credit) from SDD	(Line 7 - line 8) x line 49	4,589			
67	Total SDD credit	Line 65 + line 66	7,122			

Table 8
Calculation of Intertie Rates

(A)	(B)	(C)	(D)	(E)
FY 2018/2019	Source	Costs	Sales	Rates
		\$000/Yr	aMW	
1 Intertie Costs				
2 Rate Development Costs	Table 3, line 36 (D)	81,152		
3 Southern Intertie Sales				
4 Long-term agreements	Table 4, line 66 (O)		6,005	
5 Short-term daily block 1	Table 5, line 42 (O)		5	
6 Short-term daily block 2	Table 5, line 43 (O)		6	
7 Hourly	Table 5, line 44 (O)		74	
8 Sales used for cost allocation				
9 Long-term agreements	Line 4		6,005	
10 Daily block 1 (day 1 through 5)	Line 5 x (7/5)		7	
11 Daily block 2 (day 6 and beyond)	Line 6		6	
12 Hourly	Line 7 x (7/5) x (24/5)		497	
13 Total cost allocation sales	Sum of lines 9 through 12		6,515	
14 IS rate calculation				
15 Annual (\$/kW-yr)	Line 2 / line 13			12.46
16 Monthly (\$/kW-mo)	Line 15 / (12)			1.038
17 Daily block1 (\$/kW-day)	Line 15 / (365) x (7/5)			0.048
18 Daily block2 (\$/kW-day)	Line 15 / (365)			0.034
19 Hourly (mills/kWh)	Line 15 / (8.76) x (7/5) x (24/5)			9.56

Table 8
Calculation of Intertie Rates

(A)	(B)	(C)	(D)	(E)
FY 2018/2019	Source	Costs	Sales	Rates
		\$000/Yr	aMW	
20				
21	TGT Rate Calculation			
22	Eastern Intertie Costs	Montana Intertie Agreement	12,536	
23	IM Sales	Table 4, line 71 (O)		16
24	TGT Sales	Montana Intertie Agreement	<u>1,730</u>	
25	Total Sales	Line 23 + line 24	1,746	
26				
27	BPA Annual Share of Costs	Line 22 x (line 23 / line 25)	115	
28	Annual (\$/kW-yr)	Line 27 / line 23		7.18
29	Monthly (\$/kW-mo)	Line 28 / (12)		0.598
30				
31	IM rate calculation			
32	Segmented Eastern Intertie Costs	Table 1, line 27 (F)	11,338	
33	Eastern Intertie Revenue Credits	Table 2, average lines 85(G) and 114(G)	<u>(675)</u>	
34	Adjusted Segmented Eastern Intertie Costs	Line 32 + line 33	10,663	
35	IM Sales	Table 4, line 71 (O)		16
36	TGT Sales	Montana Intertie Agreement	<u>1,730</u>	
37	Total Sales	Line 35 + line 36	1,746	
38	Annual (\$/kW-yr)	Line 34 / line 37		6.11
39	Monthly (\$/kW-mo)	Line 38 / (12)		0.509
40	Daily block1 (\$/kW-day)	Line 38 / (365) x (7/5)		0.023
41	Daily block2 (\$/kW-day)	Line 38 / (365)		0.017
42	Hourly (mills/kWh)	Line 38 / (8.76) x (7/5) x (24/16)		1.46
43	IM Revenue	Line 35 x line 38	98	

Table 8
Calculation of Intertie Rates

(A)	(B)	(C)	(D)	(E)
FY 2018/2019	Source	Costs	Sales	Rates
44				
45	IE Rate Calculation			
46	Segmented Eastern Intertie Costs	Table 1, line 27 (F)	11,338	
47	Eastern Intertie Revenue Credits	Table 2, average lines 85(G) and 114(G)	<u>(675)</u>	
48	Adjusted Segmented Eastern Intertie Costs	Line 46 + line 47	10,663	
49	IM Sales	Table 4, line 71 (O)		16
50	TGT Sales	Montana Intertie Agreement	<u>1,730</u>	
51	Total Sales	Line 49 + line 50	1,746	
52	Hourly rate (mills/kWh)	Line 46 / line 51 / (8.76) x (7/5) x (24/16)		1.46

Table 9
Calculation of Utility Delivery Rate

(A)	(B)	(C)	(D)	(E)	(F)
FY 2018/2019	Units	Source	Costs	Sales	Rates
Utility Delivery Charge (Full Recovery)					
1 Annual Costs	\$000/Yr	Table 3, line 36 (F)	2,564		
2 FY18 Billing Factor	m_cp	Sales Forecast		166	
3 FY19 Billing Factor	m_cp	Sales Forecast		167	
4 Average over Rate Period	m_cp	(Line 2 + line 3) / 2		<u>166.5</u>	
5 Annual Rate	\$/kW-yr	Line 1 / line 4			15.40
6 Monthly Rate	\$/kW-mo	Line 5 / 12			1.283

Table 10.1
Calculation of Ancillary Service Rates

	(A)	(B)	(C)	(D)	(E)	(F)	(G)	(H)	(I)
	FY 2018/2019	Source	FY18	FY19	FY18/19	Sales	Percentage	Rates	Units
			\$000/Yr	\$000/Yr	\$000/Yr	(MW)			
1	Scheduling, System Control & Dispatch								
2	Direct O&M	Rev Rqmt	75,070	76,663	75,867				
3	Overheads	Rev Rqmt	58,993	59,745	59,369				
4	Total O&M		134,063	136,408	135,235				
5	Depreciation	Rev Rqmt	32,525	34,362	33,444				
6	Financing costs	Rev Rqmt	3,924	4,774	4,349				
7	Planned net revenue	Rev Rqmt	105	-58	24				
8	Total segmented SCD		170,616	175,487	173,052				
9	Revenue Credits	Table 3, lines 3 (H) & 15 (H)	-3,141	-3,086	-3,113				
10	WECC Costs	Table 3, lines 4 (H) & 16 (H)	-2,650	-2,680	-2,665				
11	Peak Costs	Table 3, lines 5 (H) & 17 (H)	-2,550	-2,580	-2,565				
12	Eastern Intertie Adjustment	Table 3, lines 10 (H) & 22 (H)	-53	-54	-53				
13	Industry Delivery Adjustment	Table 3, lines 11 (H) & 23 (H)	-11	-11	-11				
14	Subtotal SCD Costs	Sum of lines 8 through 13	162,212	167,077	164,644				
15	FPT revenue for SCD	Table 6, line 40 (D)			3,292				
16	Net SCD Costs	Line 14 - line 15			161,352				
17	Sales Used for Cost Allocation								
18	IR contract demand	Table 4, line 43 (O)				122			
19	PTP contract demand w/o SDD	Table 4, line 45 (O)				26,104			
20	Network Load Service	Table 4, line 52 (O)				7,620			
21	Southern Intertie	Table 4, line 66 (O)				6,005			
22	Montana Intertie	Table 4, line 72 (O)				16			
23	Network Short-term	Table 7, line 22 & line 23 & line 24				1,765			
24	Intertie Daily (Blocks 1 & 2)	Table 8, line 10 & line 11				14			
25	Intertie Hourly	Table 8, line 7 * 7/5 * 24/16				155			
26	Total Sales, SCD	Sum of lines 18 through 25				41,800			
27	Sales allocation percentages:								
28	IR sales	Line 18				122			
29	Total cost allocation sales	Line 26				41,800			
30	IR percentage	Line 28 / line 29					0.29%		
31	PTP (Network + Interties) sales	Sum of lines 19, 21, 22, 23, 24 and 25				34,058			
32	Total cost allocation sales	Line 26				41,800			
33	PTP percentage	Line 31 / line 32					81.48%		
34	NT sales	Line 20				7,620			
35	Total cost allocation sales	Line 26				41,800			
36	NT percentage	Line 34 / line 35					18.23%		

Table 10.1
Calculation of Ancillary Service Rates

	(A)	(B)	(C)	(D)	(E)	(F)	(G)	(H)	(I)
	FY 2018/2019	Source	FY18	FY19	FY18/19	Sales	Percentage	Rates	Units
37	Application of Revenue Requirements to Sales Products:								
38	IR rate calculation:								
39	Net SCD Costs	Line 16			161,352				
40	IR cost allocation percentage	Line 30					0.29%		
41	Allocated IR costs	Line 39 x line 40			471				
42	IR Billing factor	Line 28				122			
43	IR annual rate (\$/kW-year)	Line 41 / line 42						3.86	
44	IR monthly rate (\$/kW-month)	Line 43 / 12						0.322	
45	PTP (Network + Interties) rate calculation:								
46	Net SCD Costs	Line 16			161,352				
47	PTP cost allocation percentage	Line 33					81.48%		
48	Allocated PTP costs	Line 46 x line 47			131,467				
49	PTP Billing factor	Line 31				34,058			
50	PTP annual rate (\$/kW-year)	Line 48 / line 49						3.86	
51	PTP monthly rate (\$/kW-month)	Line 50 / 12						0.322	
52	Daily block 1	Line 50 / (365) x (7/5)						0.015	
53	Daily block 2	Line 50 / (365)						0.011	
54	Hourly	Line 50 / (8.76) x (7/5) x (24/16)						0.93	
55	NT rate calculation:								
56	Net SCD Costs	Line 16			161,352				
57	NT cost allocation percentage	Line 36					18.23%		
58	Allocated NT costs	Line 56 x line 57			29,414				
59	NT Billing factor	Line 20				6,518			
60	NT annual rate (\$/kW-year)	Line 58 / line 59						4.51	
61	NT monthly rate (\$/kW-month)	Line 60 / 12						0.376	

Table 10.1
Calculation of Ancillary Service Rates

	(A)	(B)	(C)	(D)	(E)	(F)	(G)	(H)	(I)
	FY 2018/2019	Source	FY18	FY19	FY18/19	Sales	Percentage	Rates	Units
62	Rates								
63	For NT customers:								
64	Monthly	Line 61						0.376	\$/kW-mo
65	For PTP customers								
66	Annual	Line 50						3.86	\$/kW-yr
67	Monthly	Line 51						0.322	\$/kW-mo
68	Daily Block1 (day 1 through 5)	Line 52						0.015	\$/kW-day
69	Daily Block2 (day 6 and beyond)	Line 53						0.011	\$/kW-day
70	Hourly	Line 54						0.93	mills/kWh
71	Generation Supplied Reactive	No Rqmt		0	0	0		0	\$/kW-day

/1 See Generation Inputs Study for details about rates associated with Generation Inputs

Table 10.2
Calculation of WECC/Peak Charge

(A)	(B)	(C)	(D)	(E)	(F)
FY 2018/2019	Units	Source	Costs	Sales	Rates
WECC Charge					
1 Annual Costs	\$000/Yr	Table 3, line 28 (H)	2,665		
2 FY18 Billing Factor	MWh	Sales Forecast		51,012,068	
3 FY19 Billing Factor	MWh	Sales Forecast		51,772,150	
4 Average over Rate Period	MWh	(Line 2 + line 3) / 2		51,392,109	
5 Hourly Rate	Mills per kilowatthour	Line 1 / line 4			0.05
6 Peak Charge					
7 Annual Costs	\$000/Yr	Forecast	2,565		
8 FY18 Billing Factor	MWh	Sales Forecast		51,012,068	
9 FY19 Billing Factor	MWh	Sales Forecast		51,772,150	
10 Average over Rate Period	MWh	(Line 8 + line 9) / 2		51,392,109	
11 Hourly Rate	Mills per kilowatthour	Line 7 / line 10			0.05

Table 10.3

Summary of Current and Proposed Generation Inputs Rates

	(A)	(B)	(C) FY 2016-2017 Rates	(D) FY 2018-2019 Rates	(E) Percent Change
Rate		Units			
1	RFR-18				
2	Regulation and Frequency Response	mills/kWh	0.12	0.13	8.3%
3	VERBS-18				
4	Rate For Wind Committed to 30/60 Scheduling:				
5	Regulation	\$/kW-mo	0.08		
6	Following	\$/kW-mo	0.32		
7	Imbalance	\$/kW-mo	0.80		
8	Total VERBS 30/60	\$/kW-mo	1.20	1.01	-15.8%
9	Rate For Wind Committed to 40/15 Scheduling:				
10	Regulation	\$/kW-mo	0.08		
11	Following	\$/kW-mo	0.32		
12	Imbalance	\$/kW-mo	0.54		
13	Total VERBS 40/15	\$/kW-mo	0.94	N/A	
14	Rate For Wind Committed to 30/15 Scheduling:				
15	Regulation	\$/kW-mo	0.08		
16	Following	\$/kW-mo	0.32		
17	Imbalance	\$/kW-mo	0.33		
18	Total VERBS 30/15	\$/kW-mo	0.73	0.71	-2.7%
19	Rate For Wind Committed to Self-Supply (CSGI):				
20	Total VERBS CSGI	\$/kW-mo	0.40	0.49	22.5%
21	Rate For Wind With Uncommitted Scheduling:				
22	Regulation	\$/kW-mo	0.08		
23	Following	\$/kW-mo	0.32		
24	Imbalance	\$/kW-mo	1.08		
25	Total VERBS Uncommitted	\$/kW-mo	1.48	1.22	-17.6%
26	Rate For Solar:				
27	Regulation	\$/kW-mo	0.04		
28	Following	\$/kW-mo	0.17		
29	Imbalance	\$/kW-mo	0.00		
30	Total VERBS Solar Hourly	\$/kW-mo	0.21	0.28	33.3%
31	Total VERBS Solar 15-minute	\$/kW-mo		0.21	
32	DERBS-18				
33	Hourly rate <i>inc</i>	mills/kW-mo	18.15	20.42	12.5%
34	Hourly rate <i>dec</i>	mills/kW-mo	3.94	3.43	-12.9%
35	OR-18				
36	Spinning reserves	mills/kWh	11.40	11.82	3.7%
37	Default rate	mills/kWh	13.11	13.59	3.7%
38	Supplemental reserves	mills/kWh	10.45	9.76	-6.6%
39	Default rate	mills/kWh	12.02	11.22	-6.7%

Table 11
Summary of FY 2016-2017 and FY 2018-2019 Rates

	(A)	(B)	(C)	(D)	(E)	(F)
	Rate	Units	Source for FY 2014-2015 rates	FY 2016-2017 Rates	FY 2018-2019 Rates	Percent Change
1	FPT.1-18					
2	M-G Distance	\$/kW-mi-yr	Current Rate * Table 6, line 11	0.0700	0.0701	0.1%
3	M-G Miscellaneous Facilities	\$/kW-yr	Current Rate * Table 6, line 11	3.99	4.00	0.3%
4	M-G Terminal	\$/kW-yr	Current Rate * Table 6, line 11	0.81	0.81	0.0%
5	M-G Interconnection Terminal	\$/kW-yr	Current Rate * Table 6, line 11	0.73	0.73	0.0%
6	S-S Transformation	\$/kW-yr	Current Rate * Table 6, line 11	7.53	7.54	0.1%
7	S-S Interconnection Terminal	\$/kW-yr	Current Rate * Table 6, line 11	2.06	2.06	0.0%
8	S-S Intermediate Terminal	\$/kW-yr	Current Rate * Table 6, line 11	2.91	2.91	0.0%
9	S-S Distance	\$/kW-mi-yr	Current Rate * Table 6, line 11	0.6884	0.6896	0.2%
10	Average FPT Rate (Revenue/Sales)	\$/kW-mo	Table 6, line 12	1.634	1.662	1.7%
11	FPT.3-18					
12	M-G Distance	\$/kW-mi-yr	Current Rate	0.0700	0.0700	0.0%
13	M-G Miscellaneous Facilities	\$/kW-yr	Current Rate	3.99	3.99	0.0%
14	M-G Terminal	\$/kW-yr	Current Rate	0.81	0.81	0.0%
15	M-G Interconnection Terminal	\$/kW-yr	Current Rate	0.73	0.73	0.0%
16	S-S Transformation	\$/kW-yr	Current Rate	7.53	7.53	0.0%
17	S-S Interconnection Terminal	\$/kW-yr	Current Rate	2.06	2.06	0.0%
18	S-S Intermediate Terminal	\$/kW-yr	Current Rate	2.91	2.91	0.0%
19	S-S Distance	\$/kW-mi-yr	Current Rate	0.6884	0.6884	0.0%
20	Average FPT Rate (Revenue/Sales)	\$/kW-mo	Current Rate	1.634	1.634	0.0%
21	IR-18					
22	Demand	\$/kW-mo	Table 7, line 1 + Table 10, lines 67 & 71	1.790	1.793	0.2%
23	NT-18					
24	Demand	\$/kW-mo	Table 7, line 63	1.735	1.727	-0.5%
25	PTP-18					
26	Demand	\$/kW-mo	Table 7, line 50	1.489	1.471	-1.2%
27	Daily Block 1 (day 1 thru 5)	\$/kW-day	Table 7, line 51	0.068	0.068	0.0%
28	Daily Block 2 (day 6 and beyond)	\$/kW-day	Table 7, line 52	0.049	0.048	-2.0%
29	Hourly	mills/kWh	Table 7, line 53	4.28	4.23	-1.2%
30	IS-18					
31	Demand	\$/kW-mo	Table 8, line 16	1.230	1.038	-15.6%
32	Daily Block 1 (day 1 thru 5)	\$/kW-day	Table 8, line 17	0.057	0.048	-15.8%
33	Daily Block 2 (day 6 and beyond)	\$/kW-day	Table 8, line 18	0.040	0.034	-15.0%
34	Hourly	mills/kWh	Table 8, line 19	3.53	9.56	170.8%

Table 11
Summary of FY 2016-2017 and FY 2018-2019 Rates

(A) Rate	(B) Units	(C) Source for FY 2014-2015 rates	(D) FY 2016- 2017 Rates	(E) FY 2018- 2019 Rates	(F) Percent Change	
35	IM-18					
36	Demand	\$/kW-mo	Table 8, line 39	0.598	0.509	-14.9%
37	Daily Block 1 (day 1 thru 5)	\$/kW-day	Table 8, line 40	0.028	0.023	-17.9%
38	Daily Block 2 (day 6 and beyond)	\$/kW-day	Table 8, line 41	0.020	0.017	-15.0%
39	Hourly	mills/kWh	Table 8, line 42	1.72	1.46	-15.1%
40	TGT-18					
41	Townsend to Garrison	\$/kW-mo	Table 8, line 29	0.598	0.60	0.0%
42	IE-18					
43	Eastern Intertie	mills/kWh	Table 8, line 52	1.48	1.46	-1.4%
44	UD-18					
45	Demand	\$/kW-mo	Table 9, line 6	1.285	1.283	-0.2%
46	Power Factor Penalty Charge					
47	Demand -- Lagging	\$/kVAr-mo	Rate eliminated	0.00	0.00	0.0%
48	Demand -- Leading	\$/kVAr-mo	Rate eliminated	0.00	0.00	0.0%
49	WECC Charge - 16					
50	Demand	mills/kWh	Table 10.2, line 5	0.05	0.05	0.0%
51	Peak Charge - 16					
52	Demand	mills/kWh	Table 10.2, line 11	0.05	0.05	0.0%
53	SCD-18					
54	For NT customers	\$/kW-mo	Table 10, line 67	0.350	0.376	7.4%
55	For PTP customers:					
56	Demand	\$/kW-mo	Table 10, line 67	0.301	0.322	7.0%
57	Daily Block 1 (day 1 thru 5)	\$/kW-day	Table 10, line 68	0.014	0.015	7.1%
58	Daily Block 2 (day 6 and beyond)	\$/kW-day	Table 10, line 69	0.010	0.011	10.0%
59	Hourly	mills/kWh	Table 10, line 70	0.87	0.93	6.9%
60	GSR-18					
61	Demand	\$/kW-mo	Table 10.1, line 71	0.000	0.000	0.0%
62	Daily Block 1 (day 1 thru 5)	\$/kW-day	Table 10.1, line 71	0.000	0.000	0.0%
63	Daily Block 2 (day 6 and beyond)	\$/kW-day	Table 10.1, line 71	0.000	0.000	0.0%
64	Hourly	mills/kWh	Table 10.1, line 71	0.00	0.00	0.0%

Table 12
Revenue at FY 2016-2017 and FY 2018-2019 Rates

(A) Service	(B) Current FY 2016-2017 Rates		(C) Average FYs 18&19	(E) Proposed FY 2018-2019 Rates		(G) Average FYs 18&19	(H) Percent Change
	FY 2018	FY 2019		FY 2018	FY 2019		
	1 Network Sales Revenues						
2 FPT 1	17,431	16,875	17,153	17,636	16,728	17,182	0.2%
3 FPT 3	1,217	1,242	1,229	1,211	1,211	1,211	-1.5%
4 IR	5,238	-	2,619	5,246	-	2,623	0.2%
5 BP-18 Transmission Ratio from table 6	82.0%						
6 BP-16 Transmission Ratio from table 6	83.2%						
7 FPT 1&3 Transmission Portion	15,512	15,071	15,291	15,476	14,731	15,103	-1.2%
8 IR Transmission Portion	4,357	-	2,178	4,304	-	2,152	-1.2%
9 NT_Base	132,218	134,091	133,154	131,608	133,472	132,540	-0.5%
10 NT Ancillary Revenues	27,186	27,564	27,375	29,205	29,611	29,408	7.4%
11 Subtotal NT Sale Revenues	159,404	161,654	160,529	160,814	163,083	161,948	0.9%
12 PTP, Long-term	457,548	468,607	463,078	452,017	462,942	457,480	-1.2%
13 PTP LT Ancillary Revenues	93,168	95,404	94,286	99,668	102,060	100,864	7.0%
14 PTP, Short-term	31,801	31,272	31,536	31,411	30,888	31,149	-1.2%
15 PTP ST Ancillary Revenues	6,490	6,382	6,436	7,010	6,893	6,951	8.0%
16 Subtotal PTP Sale Revenues	589,007	601,665	595,336	590,106	602,783	596,444	0.2%
17 Subtotal Network Transmission Revenues	641,435	649,040	645,238	634,816	642,033	638,425	-1.1%
18 Percent of total			83.1%			81.9%	
19 Subtotal Network Ancillary Revenues	130,860	132,396	131,628	140,196	141,772	140,984	7.1%
20 Percent of total			16.9%			18.1%	
21 Total Network Sale Revenues	772,295	781,436	776,866	775,012	783,805	779,409	0.3%
22 Intertie Sale Revenues							
23 IM, Long-term	115	115	115	98	98	98	-14.9%
24 IM LT Ancillary Revenues	58	58	58	62	62	62	7.0%
25 IS, Long-term	88,663	88,590	88,626	74,823	74,761	74,792	-15.6%
26 IS LT Ancillary Revenues	21,697	21,679	21,688	23,211	23,192	23,201	7.0%
27 IS, Short-term	2,575	2,404	2,489	6,599	6,136	6,367	155.8%
28 IS ST Ancillary Revenues	635	593	614	679	634	657	7.0%
29 Subtotal IS Sale Revenues	113,571	113,265	113,418	105,313	104,723	105,018	-7.4%
30 Subtotal Intertie Transmission Revenues	91,353	91,108	91,231	81,520	80,994	81,257	-10.9%
31 Subtotal Intertie Ancillary Revenues	22,390	22,330	22,360	23,952	23,888	23,920	7.0%
32 Total Intertie Sale Revenues	113,743	113,438	113,591	105,472	104,882	105,177	-7.4%

Table 12
Revenue at FY 2016-2017 and FY 2018-2019 Rates

(A) Service	(B) Current FY 2016-2017 Rates		(C) Average FYs 18&19	(E) Proposed FY 2018-2019 Rates		(G) Average FYs 18&19	(H) Percent Change
	FY 2018	FY 2019		FY 2018	FY 2019		
33 Ancillary Revenues							
34 Long-term Scheduling, Control and Dispatch	114,923	117,141	116,032	122,941	125,313	124,127	7.0%
35 Short-term Scheduling, Control and Dispatch	7,125	6,975	7,050	7,689	7,528	7,608	7.9%
36 NT Scheduling, Control and Dispatch	27,186	27,564	27,375	29,205	29,611	29,408	7.4%
37 Subtotal SCD Rate	149,234	151,679	150,457	159,835	162,452	161,144	7.1%
38 FPT & IR SCD	4,016	3,047	3,531	4,327	3,222	3,774	6.9%
39 Total SCD Revenue	153,250	154,726	153,988	164,162	165,674	164,918	7.1%
40 Regulation and Frequency Response	6,167	6,167	6,167	6,681	6,681	6,681	8.3%
41 Balancing Reseves (VERBS Wind, VERBS Solar, DERBS)	55,596	55,596	55,596	47,503	47,503	47,503	-14.6%
42 VERBS (Wind -- 30/60 Scheduling)	19,568	19,568	19,568	16,470	16,470	16,470	-15.8%
43 VERBS (Wind -- 30/15 Scheduling)	1,196	1,196	1,196	1,163	1,163	1,163	-2.7%
44 VERBS (Wind -- Uncommitted Scheduling)	31,497	31,497	31,497	25,964	25,964	25,964	-17.6%
45 VERBS (Wind -- CSGI)	2,080	2,080	2,080	2,548	2,548	2,548	22.5%
46 VERBS (Solar)	38	38	38	50	50	50	33.3%
47 DERBS (Inc)	976	976	976	1,099	1,099	1,099	12.5%
48 DERBS (Dec)	240	240	240	209	209	209	-12.9%
49 Operating Reserves - Spinning	22,682	22,682	22,682	23,517	23,517	23,517	3.7%
50 Operating Reserves - Supplemental	20,791	20,791	20,791	19,419	19,419	19,419	-6.6%
51 Energy Imbalance	-	-	-	-	-	-	N/A
52 Generation Imbalance	-	-	-	-	-	-	N/A
53 Total Ancillary Revenues	258,486	259,962	259,224	261,282	262,794	262,038	1.1%
54 Subtotal less SCD	105,236	105,236	105,236	97,120	97,120	97,120	-7.7%
55 Delivery							
56 Utility Delivery	2,560	2,575	2,567	2,556	2,571	2,563	-0.2%
57 WECC							
58 WECC Rate	2,551	2,589	2,570	2,551	2,589	2,570	0.0%
59 Peak							
60 Peak Rate	2,551	2,589	2,570	2,551	2,589	2,570	0.0%
61 General Transmission Rates Subtotal	998,936	1,007,862	1,003,399	985,262	993,556	989,409	-1.4%
62 Subtotal less Generation Input Ancillaries	893,700	902,626	898,163	888,142	896,436	892,289	-0.7%

Table 12
Revenue at FY 2016-2017 and FY 2018-2019 Rates

(A) Service	(B) Current FY 2016-2017 Rates		(C) Average FYs 18&19	(E) Proposed FY 2018-2019 Rates		(G) Average FYs 18&19	(H) Percent Change
	FY 2018	FY 2019		FY 2018	FY 2019		
	63 Other Revenues						
64 IS Reservation Fee	-	-	-	-	-	-	
65 UFT Fixed Dollar Amount	4,841	4,682	4,762	4,841	4,682	4,762	0.0%
66 UFT Variable Service Amt	242	242	242	242	242	242	0.0%
67 O&M Non-Federal Facility	416	416	416	416	416	416	0.0%
68 O&M Federal Facility	303	303	303	303	303	303	0.0%
69 PTP Reservation Fee	1,861	1,340	1,601	1,861	1,340	1,601	0.0%
70 CF Reservation Fee	-	-	-	-	-	-	
71 Failure to Comply Penalty	-	-	-	-	-	-	
72 SINT AC Non Federal O&M	1,905	1,905	1,905	1,905	1,905	1,905	0.0%
73 SINT AC Non Fed Replacements	-	-	-	-	-	-	N/A
74 TOP Service Charge	1,100	1,100	1,100	1,100	1,100	1,100	0.0%
75 DSI Delivery Charge	1,915	1,915	1,915	1,915	1,915	1,915	0.0%
76 PCS Wireless Leases	5,022	5,042	5,032	5,022	5,042	5,032	0.0%
77 PCS Construction	3,720	3,720	3,720	3,720	3,720	3,720	0.0%
78 PCS Operations & Maintenance	312	312	312	312	312	312	0.0%
79 Fiber Leases	7,733	7,379	7,556	7,733	7,379	7,556	0.0%
80 Fiber Operations & Maintenance	1,550	1,550	1,550	1,550	1,550	1,550	0.0%
81 Land Use/Lease/Sale	216	216	216	216	216	216	0.0%
82 Misc Leases	105	105	105	105	105	105	0.0%
83 Right-Of-Way Lease	79	79	79	79	79	79	0.0%
84 COE/BOR Project Revenue	-	-	-	-	-	-	N/A
85 3rd AC RAS Generation Dropping	27	27	27	27	27	27	0.0%
86 AC RAS Load Tripping	-	-	-	-	-	-	0.0%
87 Transmission Share of IPP	246	246	246	246	246	246	0.0%
88 Use of Communication Equipmt	179	177	178	179	177	178	0.0%
89 FPS Real Power Losses	-	-	-	-	-	-	
90 Amort NonFed PNW AC Intertie	3,409	3,409	3,409	3,409	3,409	3,409	0.0%
91 Transmission Processing Fee	43	43	43	43	43	43	0.0%
92 Generation Integration BBL	12,488	12,642	12,565	12,488	12,642	12,565	0.0%
93 TGT Revenues	12,414	12,414	12,414	12,414	12,414	12,414	0.0%
94 Other Revenues Subtotal	60,126	59,264	59,695	60,126	59,264	59,695	0.0%
95 Total Revenue	1,059,062	1,067,126	1,063,094	1,045,388	1,052,820	1,049,104	-1.3%

Table 13.1
2018 Long-Term Transmission Demand
(MegaWatts)

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T
1	REVENUE PRODUCT	COMPANY	CUST ID	CONTRACT	AREF	PRODUCT GROUP	TYPE	Oct-17	Nov-17	Dec-17	Jan-18	Feb-18	Mar-18	Apr-18	May-18	Jun-18	Jul-18	Aug-18	Sep-18
559					1800870	PTP CONFIRMED	ORIGINAL	10	10	10	10	10	10	10	10	10	10	10	10
560					1800871	PTP CONFIRMED	ORIGINAL	18	18	18	18	18	18	18	18	18	18	18	18
561					1800872	PTP CONFIRMED	ORIGINAL	20	20	20	20	20	20	20	20	20	20	20	20
562					1800873	PTP CONFIRMED	ORIGINAL	21	21	21	21	21	21	21	21	21	21	21	21
563					1800874	PTP CONFIRMED	ORIGINAL	26	26	26	26	26	26	26	26	26	26	26	26
564					1800875	PTP CONFIRMED	ORIGINAL	33	33	33	33	33	33	33	33	33	33	33	33
565					1800876	PTP CONFIRMED	ORIGINAL	39	39	39	39	39	39	39	39	39	39	39	39
566					1800877	PTP CONFIRMED	ORIGINAL	62	62	62	62	62	62	62	62	62	62	62	62
567					1801266	PTP CONFIRMED	ORIGINAL	15	15	15	15	15	15	15	15	15	15	15	15
568					1801468	PTP CONFIRMED	ORIGINAL	6	6	6	6	6	6	6	6	6	6	6	6
569					71316632	PTP CONFIRMED	REDIRECT	8	8	8	8	8	8	8	8	8	8	8	8
570					72080322	PTP CONFIRMED	REDIRECT	2	2	2	2	2	2	2	2	2	2	2	2
571					72080765	PTP CONFIRMED	REDIRECT	2	2	2	2	2	2	2	2	2	2	2	2
572					Grays Harbor Total			284	284	284	284	284	284	284	284	284	284	284	284
573					Hermiston Power	10199	98TX-10154	1801330	PTP CONFIRMED	ORIGINAL	228	228	228	228	228	228	228	228	228
574								1801331	PTP CONFIRMED	ORIGINAL	308	308	308	308	308	308	308	308	308
575					Hermiston Power Total			536	536	536	536	536	536	536	536	536	536	536	536
576					Idaho Power Company	10205	12TX-15618	77108132	PTP No SCD CONFIRMED	ORIGINAL	3	3	3	3	3	3	3	3	3
577								77108133	PTP No SCD CONFIRMED	ORIGINAL	4	4	4	4	4	4	4	4	4
578								81816284	PTP CONFIRMED	ORIGINAL	53	53	53	53	53	53	53	53	53
579								81816309	PTP CONFIRMED	ORIGINAL	7	7	7	7	7	7	7	7	7
580								77443011	PTP CONFIRMED	ORIGINAL	50	0	0	0	0	0	0	0	0
581								77443034	PTP CONFIRMED	ORIGINAL	25	0	0	0	0	0	0	0	0
582								77443090	PTP CONFIRMED	ORIGINAL	37	0	0	0	0	0	0	0	0
583					Idaho Power Company Total			179	67	67	67	67	67	67	67	67	67	67	67
584					JC-B	13140	13TX-15809	78685544	PTP CONFIRMED	ORIGINAL	1	1	1	1	1	1	1	1	1
585								81319697	PTP CONFIRMED	ORIGINAL	1	1	1	1	1	1	1	1	1
586					JC-B Total			2	2	2	2	2	2	2	2	2	2	2	2
587					Kaiser Alum WA	12077	11TX-15371	77478544	PTP CONFIRMED	ORIGINAL	45	45	45	0	0	0	0	0	0
588								81418510	PTP CONFIRMED	RENEWAL	5	5	5	5	5	5	5	5	5
589								83051799	PTP CONFIRMED	ORIGINAL	5	0	0	0	0	0	0	0	0
590								83150116	PTP CONFIRMED	RENEWAL	0	0	0	45	45	45	45	45	45
591																			

Table 13.1
2018 Long-Term Transmission Demand
(MegaWatts)

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T
		REVENUE PRODUCT	COMPANY	CUST ID	CONTRACT	AREF	PRODUCT GROUP	TYPE	Oct-17	Nov-17	Dec-17	Jan-18	Feb-18	Mar-18	Apr-18	May-18	Jun-18	Jul-18	Aug-18	Sep-18
819						79484622	PTP CONFIRMED	ORIGINAL	5	5	5	5	5	5	5	5	5	5	5	5
820							PTP SPECULATION	RENEWAL	0	0	0	0	0	0	0	0	0	0	0	0
821																				
822																				
823						80207119	PTP CONFIRMED	RENEWAL	85	85	85	85	85	85	85	85	85	85	85	85
824																				
825																				
826						80207131	PTP CONFIRMED	RENEWAL	144	144	144	144	144	144	144	144	144	144	144	144
827																				
828						80207146	PTP CONFIRMED	RENEWAL	6	6	6	6	6	6	6	6	6	6	6	6
829																				
830						80320003	PTP CONFIRMED	REDIRECT	70	70	70	70	70	70	70	70	70	70	70	70
831																				
832						80320010	PTP CONFIRMED	REDIRECT	420	420	420	420	420	420	420	420	420	420	420	420
833																				
834						80544404	PTP CONFIRMED	RENEWAL	70	70	70	70	70	70	70	70	70	70	70	70
835																				
836						81157446	PTP CONFIRMED	RENEWAL	222	222	222	222	222	222	222	222	222	222	222	222
837																				
838						81157458	PTP CONFIRMED	RENEWAL	18	18	18	18	18	18	18	18	18	18	18	18
839																				
840						81500823	PTP CONFIRMED	ORIGINAL	8	8	8	8	8	8	8	8	8	8	8	8
841																				
842							PTP SPECULATION	RENEWAL	0	0	0	0	0	0	0	0	0	0	0	0
843																				
844						81539749	PTP CONFIRMED	RENEWAL	8	8	8	8	8	8	8	8	8	8	8	8
845																				
846						81544421	PTP CONFIRMED	ORIGINAL	1	1	1	1	1	1	1	1	1	1	1	1
847																				
848						81749553	PTP CONFIRMED	RECALL	-8	-8	-8	-8	-8	-8	-8	-8	-8	-8	-8	-8
849																				
850						81775769	PTP CONFIRMED	RENEWAL	40	40	40	40	40	40	40	40	40	40	40	40
851																				
852						81829747	PTP CONFIRMED	ORIGINAL	0	0	0	0	0	0	0	0	0	0	0	0
853																				
854							PTP SPECULATION	RENEWAL	0	0	0	0	0	0	0	0	0	0	0	0
855																				
856						81840100	PTP CONFIRMED	RENEWAL	21	21	21	21	21	21	21	21	21	21	21	21
857																				
858						81990216	PTP CONFIRMED	RENEWAL	137	137	137	137	137	137	137	137	137	137	137	137
859																				
860						82278198	PTP CONFIRMED	RENEWAL	38	38	38	38	38	38	38	38	38	38	38	38
861																				
862						82471481	PTP CONFIRMED	RENEWAL	75	75	75	75	75	75	75	75	75	75	75	75
863																				
864						82862773	PTP CONFIRMED	RENEWAL	1	1	1	1	1	1	1	1	1	1	1	1
865																				
866						82862793	PTP CONFIRMED	RENEWAL	1	1	1	1	1	1	1	1	1	1	1	1
867																				
868						82863350	PTP CONFIRMED	RENEWAL	4	4	4	4	4	4	4	4	4	4	4	4
869																				
870						82883466	PTP CONFIRMED	ORIGINAL	56	56	56	56	56	56	56	56	56	56	56	56
871																				
872							PTP SPECULATION	RENEWAL	0	0	0	0	0	0	0	0	0	0	0	0
873																				
874						82890603	PTP CONFIRMED	RECALL	-56	-56	-56	-56	-56	-56	-56	-56	-56	-56	-56	-56
875																				
876							PTP SPECULATION	RENEWAL	0	0	0	0	0	0	0	0	0	0	0	0
877																				
878						83128930	PTP CONFIRMED	ORIGINAL	2	2	2	2	2	2	2	2	2	2	2	2
879																				
880						83128996	PTP CONFIRMED	ORIGINAL	10	10	10	10	10	10	10	10	10	10	10	10
881																				
882						83547085	PTP CONFIRMED	RENEWAL	0	56	56	56	56	56	56	56	56	56	56	56
883																				

Table 13.1
2018 Long-Term Transmission Demand
(MegaWatts)

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	
	1	REVENUE PRODUCT	COMPANY	CUST ID	CONTRACT	AREF	PRODUCT GROUP	TYPE	Oct-17	Nov-17	Dec-17	Jan-18	Feb-18	Mar-18	Apr-18	May-18	Jun-18	Jul-18	Aug-18	Sep-18	
884						83547195	PTP CONFIRMED	RENEWAL	0	5	5	5	5	5	5	5	5	5	5	5	
885																					
886						84225058	PTP CONFIRMED	RENEWAL	0	0	0	0	0	35	35	35	35	35	35	35	
887																					
888									3,267	3,267	3,267	3,267	3,267	3,267	3,267	3,267	3,267	3,267	3,267	3,267	
889																					
890																					
891																					
892																					
893									10	10	10	10	10	10	10	10	10	10	10	10	
894																					
895																					
896									8	8	8	8	8	8	8	8	8	8	8	8	
897																					
898																					
899																					
900									45	45	45	45	45	45	45	45	45	45	45	45	
901																					
902									100	100	100	100	100	100	100	100	100	100	100	100	
903																					
904									250	250	250	250	250	250	250	250	250	250	250	250	
905																					
906									270	270	270	270	270	270	270	270	270	270	270	270	
907																					
908									270	270	270	270	270	270	270	270	270	270	270	270	
909																					
910									531	531	531	531	531	531	531	531	531	531	531	531	
911																					
912									150	150	150	150	150	150	150	150	150	150	150	150	
913																					
914									50	50	50	50	50	50	50	50	50	50	50	50	
915																					
916									250	250	250	250	250	250	250	250	250	250	250	250	
917																					
918									160	160	160	160	160	160	160	160	160	160	160	160	
919																					
920									27	27	27	27	27	27	27	27	27	27	27	27	
921																					
922									161	161	161	161	161	161	161	161	161	161	161	161	
923																					
924									169	169	169	169	169	169	169	169	169	169	169	169	
925																					
926									279	279	279	279	279	279	279	279	279	279	279	279	
927																					
928									131	131	131	131	131	131	131	131	131	131	131	131	
929																					
930									5	5	5	5	5	5	5	5	5	5	5	5	
931																					
932									5	5	5	5	5	5	5	5	5	5	5	5	
933																					
934									5	5	5	5	5	5	5	5	5	5	5	5	
935																					
936									300	300	300	300	300	300	300	300	300	300	300	300	
937																					
938									50	50	50	50	50	50	50	50	50	50	50	50	
939																					
940									7	7	7	7	7	7	7	7	7	7	7	7	
941																					
942									10	10	10	10	10	10	10	10	10	10	10	10	
943																					
944									25	25	25	25	25	25	25	25	25	25	25	25	
945																					
946									25	25	25	25	25	25	25	25	25	25	25	25	
947																					
948									50	50	50	50	50	50	50	50	50	50	50	50	

**Table 13.1
2018 Long-Term Transmission Demand
(MegaWatts)**

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T
1	REVENUE PRODUCT	COMPANY	CUST ID	CONTRACT	AREF	PRODUCT GROUP	TYPE	Oct-17	Nov-17	Dec-17	Jan-18	Feb-18	Mar-18	Apr-18	May-18	Jun-18	Jul-18	Aug-18	Sep-18
1339					1801084	PTP CONFIRMED	ORIGINAL	85	85	85	85	85	85	85	85	85	85	85	85
1340					1801085	PTP CONFIRMED	ORIGINAL	102	102	102	102	102	102	102	102	102	102	102	102
1341					1801086	PTP CONFIRMED	ORIGINAL	156	156	156	156	156	156	156	156	156	156	156	156
1342					1801087	PTP CONFIRMED	ORIGINAL	247	247	247	247	247	247	247	247	247	247	247	247
1343					1801163	PTP CONFIRMED	ORIGINAL	100	100	100	100	100	100	100	100	100	100	100	100
1344					1801362	PTP CONFIRMED	ORIGINAL	100	100	100	100	100	100	100	100	100	100	100	100
1345					1801500	PTP CONFIRMED	ORIGINAL	100	100	100	100	100	100	100	100	100	100	100	100
1346					1801823	PTP CONFIRMED	ORIGINAL	131	131	131	131	131	131	131	131	131	131	131	131
1347					72150853	PTP CONFIRMED	ORIGINAL	50	50	50	50	50	50	50	50	50	50	50	50
1348					72150855	PTP CONFIRMED	ORIGINAL	50	50	50	50	50	50	50	50	50	50	50	50
1349					72150858	PTP CONFIRMED	ORIGINAL	50	50	50	50	50	50	50	50	50	50	50	50
1350					72150862	PTP CONFIRMED	ORIGINAL	50	50	50	50	50	50	50	50	50	50	50	50
1351					72150867	PTP CONFIRMED	ORIGINAL	25	25	25	25	25	25	25	25	25	25	25	25
1352					72150874	PTP CONFIRMED	ORIGINAL	0	0	0	0	0	0	0	25	25	25	25	25
1353					72150881	PTP CONFIRMED	ORIGINAL	0	0	0	0	0	0	50	50	50	50	50	50
1354					72436399	PTP CONFIRMED	ORIGINAL	25	25	25	25	25	25	25	25	25	25	25	25
1355					72436437	PTP CONFIRMED	ORIGINAL	0	0	0	0	0	0	0	25	25	25	25	25
1356					72566153	PTP CONFIRMED	ORIGINAL	100	100	100	100	100	100	100	100	100	100	100	100
1357					72566175	PTP CONFIRMED	ORIGINAL	25	25	25	25	25	25	25	25	25	25	25	25
1358					72566200	PTP CONFIRMED	ORIGINAL	50	50	50	50	50	50	50	50	50	50	50	50
1359					72673396	PTP CONFIRMED	RECALL	-75	-75	-75	-75	-75	-75	-75	-75	-75	-75	-75	-75
1360					73240347	PTP CONFIRMED	ORIGINAL	50	50	50	50	50	50	50	50	50	50	50	50
1361					73240353	PTP CONFIRMED	ORIGINAL	51	51	51	51	51	51	51	51	51	51	51	51
1362		Snohomish Total						1,969	1,969	1,969	1,969	1,969	1,969	1,969	2,069	2,069	2,069	2,069	2,069
1363	Tacoma Power		10370	98TX-10103	1472937	PTP CONFIRMED	ORIGINAL	2	2	2	2	2	2	2	2	2	2	2	2
1364					1800542	PTP CONFIRMED	ORIGINAL	19	19	19	19	19	19	19	19	19	19	19	19
1365					1800543	PTP CONFIRMED	ORIGINAL	23	23	23	23	23	23	23	23	23	23	23	23
1366					1800544	PTP CONFIRMED	ORIGINAL	24	24	24	24	24	24	24	24	24	24	24	24
1367					1800545	PTP CONFIRMED	ORIGINAL	25	25	25	25	25	25	25	25	25	25	25	25
1368					1800546	PTP CONFIRMED	ORIGINAL	44	44	44	44	44	44	44	44	44	44	44	44
1369					1800547	PTP CONFIRMED	ORIGINAL	52	52	52	52	52	52	52	52	52	52	52	52
1370					1800548	PTP CONFIRMED	ORIGINAL	54	54	54	54	54	54	54	54	54	54	54	54

Table 13.1
2018 Long-Term Transmission Demand
(MegaWatts)

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T
	1	REVENUE PRODUCT	COMPANY	CUST ID	CONTRACT	AREF	PRODUCT GROUP	TYPE	Oct-17	Nov-17	Dec-17	Jan-18	Feb-18	Mar-18	Apr-18	May-18	Jun-18	Jul-18	Aug-18	Sep-18
1469																				
1470			UAMPS	10427	11TX-15512	77309382	PTP No SCD SPECULATION	RENEWAL	53	53	53	53	53	53	53	53	53	53	53	53
1471																				
1472			UAMPS Total						53	53	53	53	53	53	53	53	53	53	53	53
1473																				
1474			Unk	0	UNKNOWN	82879096	PTP SPECULATION	ORIGINAL	0	0	0	0	0	0	0	0	0	0	0	0
1475																				
1476						82879370	PTP SPECULATION	ORIGINAL	0	0	0	0	0	0	0	0	0	0	0	0
1477																				
1478						82879379	PTP SPECULATION	ORIGINAL	0	0	0	0	0	0	0	0	0	0	0	0
1479																				
1480						82879391	PTP SPECULATION	ORIGINAL	0	0	0	0	0	0	0	0	0	0	0	0
1481																				
1482						82879403	PTP SPECULATION	ORIGINAL	0	0	0	0	0	0	0	0	0	0	0	0
1483																				
1484						82879484	PTP SPECULATION	ORIGINAL	0	0	0	0	0	0	0	0	0	0	0	0
1485																				
1486						82879501	PTP SPECULATION	ORIGINAL	0	0	0	0	0	0	0	0	0	0	0	0
1487																				
1488						82879715	PTP SPECULATION	ORIGINAL	0	0	0	0	0	0	0	0	0	0	0	0
1489																				
1490						82879728	PTP SPECULATION	ORIGINAL	0	0	0	0	0	0	0	0	0	0	0	0
1491																				
1492						82879804	PTP SPECULATION	ORIGINAL	0	0	0	0	0	0	0	0	0	0	0	0
1493																				
1494						UNKNOWN	PTP SPECULATION	ORIGINAL	0	0	8	8	8	8	8	8	8	8	8	8
1495																				
1496									0	0	0	0	0	0	0	0	0	0	0	0
1497									0	0	0	0	0	0	0	0	0	0	0	0
1498									0	0	0	0	0	0	0	0	0	0	0	0
1499									0	0	8	8	8	8	8	8	8	8	8	8
1500			Unk Total						0	0	8	8	8	8	8	8	8	8	8	8
1501																				
1502			Wheat Field Wind	11868	08TX-13610	72458260	PTP CONFIRMED	ORIGINAL	97	97	97	97	97	97	97	97	97	97	97	97
1503																				
1504			Wheat Field Wind Total						97	97	97	97	97	97	97	97	97	97	97	97
1505																				
1506			PTP Network Total						25,796	25,684	25,696	25,796	25,816	25,816	25,816	25,916	25,916	25,916	26,116	26,116

Table 13.2
2019 Long-Term Transmission Demand
(MegaWatts)

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	
	1	REVENUE PRODUCT	COMPANY	CUST ID	CONTRACT	AREF	PRODUCT GROUP	TYPE	Oct-18	Nov-18	Dec-18	Jan-19	Feb-19	Mar-19	Apr-19	May-19	Jun-19	Jul-19	Aug-19	Sep-19	
376						1800333	PTP CONFIRMED	ORIGINAL	15	15	15	15	15	15	15	15	15	15	15	15	
377																					
378						1800338	PTP CONFIRMED	ORIGINAL	16	16	16	16	16	16	16	16	16	16	16	16	
379																					
380						1800343	PTP CONFIRMED	ORIGINAL	16	16	16	16	16	16	16	16	16	16	16	16	
381																					
382						1800354	PTP CONFIRMED	ORIGINAL	29	29	29	29	29	29	29	29	29	29	29	29	
383																					
384						1800364	PTP CONFIRMED	ORIGINAL	34	34	34	34	34	34	34	34	34	34	34	34	
385																					
386						1800366	PTP CONFIRMED	ORIGINAL	35	35	35	35	35	35	35	35	35	35	35	35	
387																					
388						1800373	PTP CONFIRMED	ORIGINAL	42	42	42	42	42	42	42	42	42	42	42	42	
389																					
390						1800375	PTP CONFIRMED	ORIGINAL	54	54	54	54	54	54	54	54	54	54	54	54	
391																					
392						1800377	PTP CONFIRMED	ORIGINAL	64	64	64	64	64	64	64	64	64	64	64	64	
393																					
394						1800379	PTP CONFIRMED	ORIGINAL	102	102	102	102	102	102	102	102	102	102	102	102	
395																					
396						1801385	PTP CONFIRMED	ORIGINAL	1	1	1	1	1	1	1	1	1	1	1	1	
397																					
398						1801465	PTP CONFIRMED	ORIGINAL	3	3	3	3	3	3	3	3	3	3	3	3	
399																					
400						71821291	PTP CONFIRMED	REDIRECT	6	6	6	6	6	6	6	6	6	6	6	6	
401																					
402						71821795	PTP CONFIRMED	REDIRECT	6	6	6	6	6	6	6	6	6	6	6	6	
403																					
404																					
405																					
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436																					
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438																					
439																					
440																					
441																					
442																					
						79497143	PTP CONFIRMED	RENEWAL	116	116	116	116	116	116	116	116	116	116	116	116	

Table 13.2
2019 Long-Term Transmission Demand
(MegaWatts)

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	
	1	REVENUE PRODUCT	COMPANY	CUST ID	CONTRACT	AREF	PRODUCT GROUP	TYPE	Oct-18	Nov-18	Dec-18	Jan-19	Feb-19	Mar-19	Apr-19	May-19	Jun-19	Jul-19	Aug-19	Sep-19	
578						1801468	PTP CONFIRMED	ORIGINAL	6	6	6	6	6	6	6	6	6	6	6	6	
579																					
580						71316632	PTP CONFIRMED	REDIRECT	8	8	8	8	8	8	8	8	8	8	8	8	
581																					
582						72080322	PTP CONFIRMED	REDIRECT	2	2	2	2	2	2	2	2	2	2	2	2	
583																					
584						72080765	PTP CONFIRMED	REDIRECT	2	2	2	2	2	2	2	2	2	2	2	2	
585																					
586									284	284	284	284	284	284	284	284	284	284	284	284	
587																					
588																					
589																					
590						1801330	PTP CONFIRMED	ORIGINAL	228	228	228	228	228	228	228	228	228	228	228	228	
591																					
592						1801331	PTP CONFIRMED	ORIGINAL	308	308	308	308	308	308	308	308	308	308	308	308	
593																					
594									536	536	536	536	536	536	536	536	536	536	536	536	
595																					
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608									67	67	67	67	67	67	67	67	67	67	67	67	
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614									2	2	2	2	2	2	2	2	2	2	2	2	
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626									55	55	55	55	55	55	55	55	55	55	55	55	
627																					
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631																					
632									11	11	11	11	11	11	11	11	11	11	11	11	
633																					
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Table 13.2
2019 Long-Term Transmission Demand
(MegaWatts)

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	
	1	REVENUE PRODUCT	COMPANY	CUST ID	CONTRACT	AREF	PRODUCT GROUP	TYPE	Oct-18	Nov-18	Dec-18	Jan-19	Feb-19	Mar-19	Apr-19	May-19	Jun-19	Jul-19	Aug-19	Sep-19	
646						78459768	PTP CONFIRMED	RENEWAL	50	50	50	50	50	50	50	50	50	50	0	0	
647																					
648							PTP SPECULATION	RENEWAL	0	0	0	0	0	0	0	0	0	0	50	50	
649																					
650						78459775	PTP CONFIRMED	RENEWAL	50	50	50	50	50	50	50	50	50	50	0	0	
651																					
652							PTP SPECULATION	RENEWAL	0	0	0	0	0	0	0	0	0	0	50	50	
653																					
654						78459780	PTP CONFIRMED	RENEWAL	50	50	50	50	50	50	50	50	50	50	0	0	
655																					
656							PTP SPECULATION	RENEWAL	0	0	0	0	0	0	0	0	0	0	50	50	
657																					
658						80133002	PTP CONFIRMED	RENEWAL	20	20	20	20	20	20	20	20	20	20	20	20	
659																					
660						80751162	PTP CONFIRMED	ORIGINAL	20	20	20	20	20	20	20	20	20	20	20	20	
661																					
662						81406924	PTP CONFIRMED	ORIGINAL	24	24	24	24	24	24	24	24	24	24	24	24	
663																					
664						81406968	PTP CONFIRMED	ORIGINAL	3	3	3	3	3	3	3	3	3	3	3	3	
665																					
666						81657606	PTP CONFIRMED	ORIGINAL	72	72	72	72	72	72	72	72	72	72	72	72	
667																					
668						82360420	PTP CONFIRMED	ORIGINAL	50	50	50	50	50	50	50	50	50	50	50	50	
669																					
670							LADWP Total		489	489	489	489	489	489	489	489	489	489	489	489	
671																					
672						1466103	PTP CONFIRMED	ORIGINAL	1	1	1	1	1	1	1	1	1	1	1	1	
673																					
674						1469988	PTP CONFIRMED	ORIGINAL	3	3	3	3	3	3	3	3	3	3	3	3	
675																					
676							Middle Fork Total		4	4	4	4	4	4	4	4	4	4	4	4	
677																					
678						79710722	PTP CONFIRMED	ORIGINAL	6	6	6	6	6	6	6	6	6	6	6	6	
679																					
680							Northern Wasco Total		6	6	6	6	6	6	6	6	6	6	6	6	
681																					
682						81631205	PTP CONFIRMED	RENEWAL	4	4	4	4	4	4	4	4	4	4	4	4	
683																					
684						81631211	PTP CONFIRMED	RENEWAL	10	10	10	10	10	10	10	10	10	10	10	10	
685																					
686						81631214	PTP CONFIRMED	RENEWAL	13	13	13	13	13	13	13	13	13	13	13	13	
687																					
688						81631218	PTP CONFIRMED	RENEWAL	6	6	6	6	6	6	6	6	6	6	6	6	
689																					
690						81631223	PTP CONFIRMED	RENEWAL	2	2	2	2	2	2	2	2	2	2	2	2	
691																					
692						81631231	PTP CONFIRMED	RENEWAL	7	7	7	7	7	7	7	7	7	7	7	7	
693																					
694						81631238	PTP CONFIRMED	RENEWAL	2	2	2	2	2	2	2	2	2	2	2	2	
695																					
696						81631243	PTP CONFIRMED	RENEWAL	2	2	2	2	2	2	2	2	2	2	2	2	
697																					
698						81631249	PTP CONFIRMED	RENEWAL	2	2	2	2	2	2	2	2	2	2	2	2	
699																					
700						81631259	PTP CONFIRMED	RENEWAL	5	5	5	5	5	5	5	5	5	5	5	5	
701																					
702						81631272	PTP CONFIRMED	RENEWAL	4	4	4	4	4	4	4	4	4	4	4	4	
703																					
704						81631276	PTP CONFIRMED	RENEWAL	8	8	8	8	8	8	8	8	8	8	8	8	
705																					
706						81631279	PTP CONFIRMED	RENEWAL	3	3	3	3	3	3	3	3	3	3	3	3	
707																					
708						81631286	PTP CONFIRMED	RENEWAL	7	7	7	7	7	7	7	7	7	7	7	7	
709																					
710						81631295	PTP CONFIRMED	RENEWAL	11	11	11	11	11	11	11	11	11	11	11	11	
711																					
712						81631297	PTP CONFIRMED	RENEWAL	4	4	4	4	4	4	4	4	4	4	4	4	

Table 13.2
2019 Long-Term Transmission Demand
(MegaWatts)

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T
	1	REVENUE PRODUCT	COMPANY	CUST ID	CONTRACT	AREF	PRODUCT GROUP	TYPE	Oct-18	Nov-18	Dec-18	Jan-19	Feb-19	Mar-19	Apr-19	May-19	Jun-19	Jul-19	Aug-19	Sep-19
713						81631303	PTP CONFIRMED	RENEWAL	1	1	1	1	1	1	1	1	1	1	1	1
714						81631311	PTP CONFIRMED	RENEWAL	6	6	6	6	6	6	6	6	6	6	6	6
715						81631313	PTP CONFIRMED	RENEWAL	1	1	1	1	1	1	1	1	1	1	1	1
716						81631317	PTP CONFIRMED	RENEWAL	1	1	1	1	1	1	1	1	1	1	1	1
717						81631330	PTP CONFIRMED	RENEWAL	1	1	1	1	1	1	1	1	1	1	1	1
718						81631333	PTP CONFIRMED	RENEWAL	4	4	4	4	4	4	4	4	4	4	4	4
719						81631334	PTP CONFIRMED	RENEWAL	4	4	4	4	4	4	4	4	4	4	4	4
720						81631338	PTP CONFIRMED	RENEWAL	7	7	7	7	7	7	7	7	7	7	7	7
721																				
722																				
723																				
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730									115	115	115	115	115	115	115	115	115	115	115	115
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2019 Long-Term Transmission Demand
(MegaWatts)

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	
	1	REVENUE PRODUCT	COMPANY	CUST ID	CONTRACT	AREF	PRODUCT GROUP	TYPE	Oct-18	Nov-18	Dec-18	Jan-19	Feb-19	Mar-19	Apr-19	May-19	Jun-19	Jul-19	Aug-19	Sep-19	
847																					
848						81749553	PTP CONFIRMED	RECALL	-8	-8	-8	0	0	0	0	0	0	0	0	0	0
849																					
850						81775769	PTP CONFIRMED	RENEWAL	40	40	40	40	40	40	40	40	40	40	40	40	40
851																					
852						81829747	PTP CONFIRMED	ORIGINAL	0	0	0	0	0	0	0	0	0	0	1	0	0
853																					
854							PTP SPECULATION	RENEWAL	0	0	0	0	0	0	0	0	0	0	0	0	1
855																					
856						81840100	PTP CONFIRMED	RENEWAL	21	21	21	21	21	21	21	21	21	21	21	21	21
857																					
858						81990216	PTP CONFIRMED	RENEWAL	137	137	137	137	137	137	137	137	137	137	137	137	137
859																					
860						82278198	PTP CONFIRMED	RENEWAL	38	38	38	38	38	38	38	38	38	38	38	38	38
861																					
862						82471481	PTP CONFIRMED	RENEWAL	75	75	75	75	75	75	75	75	75	75	75	75	75
863																					
864						82862773	PTP CONFIRMED	RENEWAL	1	1	1	1	1	1	1	1	1	1	1	1	1
865																					
866						82862793	PTP CONFIRMED	RENEWAL	1	1	1	1	1	1	1	1	1	1	1	1	1
867																					
868						82863350	PTP CONFIRMED	RENEWAL	4	4	4	4	4	4	4	4	4	4	4	4	4
869																					
870						82883466	PTP CONFIRMED	ORIGINAL	0	0	0	0	0	0	0	0	0	0	0	0	0
871																					
872							PTP SPECULATION	RENEWAL	56	56	56	56	56	56	56	56	56	56	56	56	56
873																					
874						82890603	PTP CONFIRMED	RECALL	0	0	0	0	0	0	0	0	0	0	0	0	0
875																					
876							PTP SPECULATION	RENEWAL	20	20	20	20	20	20	20	20	20	20	20	20	20
877																					
878						83128930	PTP CONFIRMED	ORIGINAL	2	2	2	2	2	2	2	2	2	2	2	2	2
879																					
880						83128996	PTP CONFIRMED	ORIGINAL	10	10	10	10	10	10	10	10	10	10	10	10	10
881																					
882						83547085	PTP CONFIRMED	RENEWAL	56	56	56	56	56	56	56	56	56	56	56	56	56
883																					
884						83547195	PTP CONFIRMED	RENEWAL	5	5	5	5	5	5	5	5	5	5	5	5	5
885																					
886						84225058	PTP CONFIRMED	RENEWAL	35	35	35	35	35	35	35	35	35	35	35	35	35
887																					
888						PAC Total			3,267	3,267	3,267	3,267	3,267	3,267	3,267	3,267	3,267	3,267	3,267	3,267	3,267
889																					
890						Patu Wind Farm	11875	08TX-13657	74128031	PTP CONFIRMED	REDIRECT	10	10	10	10	10	10	10	10	10	10
891																					
892						Patu Wind Farm Total			10	10	10	10	10	10	10	10	10	10	10	10	10
893																					
894						Pend Oreille	10306	02TX-10875	82150954	PTP CONFIRMED	ORIGINAL	8	8	8	8	8	8	8	8	8	8
895																					
896						Pend Oreille Total			8	8	8	8	8	8	8	8	8	8	8	8	8
897																					
898						PGE	10314	09TX-14507	78857909	PTP CONFIRMED	DEFERRAL	45	45	45	45	45	45	45	45	45	45
899																					
900																					
901																					
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Table 13.2
2019 Long-Term Transmission Demand
(MegaWatts)

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T
	1	REVENUE PRODUCT	COMPANY	CUST ID	CONTRACT	AREF	PRODUCT GROUP	TYPE	Oct-18	Nov-18	Dec-18	Jan-19	Feb-19	Mar-19	Apr-19	May-19	Jun-19	Jul-19	Aug-19	Sep-19
981						81800056	PTP CONFIRMED	RECALL	-10	-10	-10	-10	-10	-10	-10	-10	-10	-10	-10	-10
982						81809488	PTP CONFIRMED	RECALL	-100	-100	-100	-100	-100	-100	-100	-100	-100	-100	-100	-100
983						81809605	PTP CONFIRMED	RECALL	-7	-7	-7	-7	-7	-7	-7	-7	-7	-7	-7	-7
984						81809609	PTP CONFIRMED	RECALL	-50	-50	-50	-50	-50	-50	-50	-50	-50	-50	-50	-50
985						81809611	PTP CONFIRMED	RECALL	-50	-50	-50	-50	-50	-50	-50	-50	-50	-50	-50	-50
986						81809614	PTP CONFIRMED	RECALL	-25	-25	-25	-25	-25	-25	-25	-25	-25	-25	-25	-25
987						81809615	PTP CONFIRMED	RECALL	-25	-25	-25	-25	-25	-25	-25	-25	-25	-25	-25	-25
988						81827800	PTP CONFIRMED	DEFERRAL	50	50	50	50	50	50	50	50	50	50	50	50
989						81827802	PTP CONFIRMED	DEFERRAL	50	50	50	50	50	50	50	50	50	50	50	50
990						81827805	PTP CONFIRMED	DEFERRAL	50	50	50	50	50	50	50	50	50	50	50	50
991						81827807	PTP CONFIRMED	DEFERRAL	50	50	50	50	50	50	50	50	50	50	50	50
992						81827809	PTP CONFIRMED	DEFERRAL	50	50	50	50	50	50	50	50	50	50	50	50
993						81827810	PTP CONFIRMED	DEFERRAL	50	50	50	50	50	50	50	50	50	50	50	50
994						81916989	PTP CONFIRMED	DEFERRAL	50	50	50	50	50	50	50	50	50	50	50	50
995						82427900	PTP CONFIRMED	DEFERRAL	100	100	100	100	100	100	100	100	100	100	100	100
996						82428263	PTP CONFIRMED	DEFERRAL	100	100	100	100	100	100	100	100	100	100	100	100
997						82428277	PTP CONFIRMED	DEFERRAL	50	50	50	50	50	50	50	50	50	50	50	50
998						83662087	PTP CONFIRMED	DEFERRAL	100	100	100	100	100	100	100	100	100	100	100	100
999						83691646	PTP CONFIRMED	ORIGINAL	50	50	50	50	50	50	50	50	50	50	50	50
1000									3,960	3,960	3,960	3,960	3,960	3,960	3,960	3,960	3,960	3,960	3,960	3,960
1001																				
1002																				
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Table 13.2
2019 Long-Term Transmission Demand
(MegaWatts)

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T
1	REVENUE PRODUCT	COMPANY	CUST ID	CONTRACT	AREF	PRODUCT GROUP	TYPE	Oct-18	Nov-18	Dec-18	Jan-19	Feb-19	Mar-19	Apr-19	May-19	Jun-19	Jul-19	Aug-19	Sep-19
1048					81283440	PTP CONFIRMED	ORIGINAL	9	9	9	9	9	9	9	9	9	9	9	9
1049																			
1050					81535746	PTP CONFIRMED	ORIGINAL	100	100	100	100	100	100	100	100	100	100	100	100
1051																			
1052					81704974	PTP CONFIRMED	RENEWAL	193	193	193	193	193	193	193	193	193	193	193	193
1053																			
1054					81954831	PTP CONFIRMED	ORIGINAL	0	0	0	0	0	0	0	0	0	0	0	0
1055																			
1056					82154503	PTP SPECULATION	RENEWAL	41	41	41	41	41	41	41	41	41	41	41	41
1057																			
1058					83427363	PTP CONFIRMED	RENEWAL	102	102	102	102	102	102	102	102	102	102	102	102
1059																			
1060					83824486	PTP CONFIRMED	RENEWAL	80	80	80	80	80	80	80	80	80	80	80	80
1061																			
1062		Powerex Total						1,315	1,315	1,315	1,315	1,315	1,315	1,315	1,315	1,315	1,315	1,315	1,315
1063																			
1064		Puget	10325	06TX-12195	1471793	PTP CONFIRMED	REDIRECT	25	25	25	25	25	25	25	25	25	25	25	25
1065																			
1066					1471795	PTP CONFIRMED	REDIRECT	25	25	25	25	25	25	25	25	25	25	25	25
1067																			
1068					1471797	PTP CONFIRMED	REDIRECT	25	25	25	25	25	25	25	25	25	25	25	25
1069																			
1070					1471799	PTP CONFIRMED	REDIRECT	25	25	25	25	25	25	25	25	25	25	25	25
1071																			
1072					1471801	PTP CONFIRMED	REDIRECT	25	25	25	25	25	25	25	25	25	25	25	25
1073																			
1074					1471803	PTP CONFIRMED	REDIRECT	25	25	25	25	25	25	25	25	25	25	25	25
1075																			
1076					1473142	PTP CONFIRMED	REDIRECT	250	250	250	250	250	250	250	250	250	250	250	250
1077																			
1078					71365495	PTP CONFIRMED	RENEWAL	400	400	400	400	400	400	400	400	400	400	400	400
1079																			
1080					71984715	PTP CONFIRMED	REDIRECT	5	5	5	5	5	5	5	5	5	5	5	5
1081																			
1082					72706601	PTP CONFIRMED	ORIGINAL	100	100	100	100	100	100	100	100	100	100	100	100
1083																			
1084					72706605	PTP CONFIRMED	ORIGINAL	100	100	100	100	100	100	100	100	100	100	100	100
1085																			
1086					72706606	PTP CONFIRMED	ORIGINAL	50	50	50	50	50	50	50	50	50	50	50	50
1087																			
1088					72706608	PTP CONFIRMED	ORIGINAL	43	43	43	43	43	43	43	43	43	43	43	43
1089																			
1090					72813104	PTP CONFIRMED	ORIGINAL	7	7	7	7	7	7	7	7	7	7	7	7
1091																			
1092					73395728	PTP CONFIRMED	ORIGINAL	50	50	50	50	50	50	50	50	50	50	50	50
1093																			
1094					76213391	PTP CONFIRMED	REDIRECT	50	50	50	50	50	50	50	50	50	50	50	50
1095																			
1096					76213396	PTP CONFIRMED	REDIRECT	50	50	50	50	50	50	50	50	50	50	50	50
1097																			
1098					76213399	PTP CONFIRMED	REDIRECT	50	50	50	50	50	50	50	50	50	50	50	50
1099																			
1100					76213403	PTP CONFIRMED	REDIRECT	25	25	25	25	25	25	25	25	25	25	25	25
1101																			
1102					76213405	PTP CONFIRMED	REDIRECT	25	25	25	25	25	25	25	25	25	25	25	25
1103																			
1104					76213407	PTP CONFIRMED	REDIRECT	50	50	50	50	50	50	50	50	50	50	50	50
1105																			
1106					77286223	PTP CONFIRMED	RENEWAL	0	0	0	0	0	0	0	0	0	0	0	0
1107																			
1108					77286231	PTP CONFIRMED	RENEWAL	0	0	0	0	0	0	0	0	0	0	0	0
1109																			
1110					77286242	PTP CONFIRMED	RENEWAL	0	0	0	0	0	0	0	0	0	0	0	0
1111																			
1112					77286250	PTP CONFIRMED	RENEWAL	0	0	0	0	0	0	0	0	0	0	0	0
1113																			
1114					77565922	PTP CONFIRMED	ORIGINAL	50	50	50	50	50	50	50	50	50	50	50	50

Table 13.2
2019 Long-Term Transmission Demand
(MegaWatts)

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	
	1	REVENUE PRODUCT	COMPANY	CUST ID	CONTRACT	AREF	PRODUCT GROUP	TYPE	Oct-18	Nov-18	Dec-18	Jan-19	Feb-19	Mar-19	Apr-19	May-19	Jun-19	Jul-19	Aug-19	Sep-19	
1316						79132005	PTP CONFIRMED	DEFERRAL	30	30	30	30	30	30	30	30	30	30	30	30	
1317																					
1318						80652459	PTP CONFIRMED	RECALL	-10	-10	-10	-10	-10	-10	-10	-10	-10	-10	-10	-10	
1319																					
1320						81832205	PTP CONFIRMED	DEFERRAL	10	10	10	10	10	10	10	10	10	10	10	10	
1321																					
1322									60	60	60	60	60	60	60	60	60	60	60	60	
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1381																					
1382																					
						73240347	PTP CONFIRMED	ORIGINAL	50	50	50	50	50	50	50	50	50	50	50	50	

Table 14.1
NT Load Forecast at Transmission System Peak

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
3	COMPANY	CUST ID	PRODUCT	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	
199																
200			Okanogan Coop	NT Billing Factor	7.808	12.339	14.671	15.014	12.074	9.303	7.36	6.358	6.329	7.218	7.165	5.951
201																
202			Raft River	NT Billing Factor	15.684	19.030	21.438	22.011	19.984	18.646	26.82	54.179	68.536	73.471	63.411	53.300
203																
204			UEC	NT Billing Factor	143.001	173.182	185.570	168.398	165.955	167.306	180.10	210.782	294.351	319.350	303.574	269.865
205																
206			West Oregon	NT Billing Factor	11.029	12.578	13.728	13.054	13.025	12.558	10.84	8.265	6.933	7.823	7.756	6.871
207																
208	Port	10706		NT Billing Factor	16.283	16.619	16.903	20.334	20.600	20.674	19.52	19.233	22.427	22.748	23.166	21.426
209																
210	Port Angeles	10087		NT Billing Factor	35.251	48.460	51.309	50.580	55.405	39.120	30.05	29.559	27.024	21.132	19.076	19.715
211																
212	Port Townsend Paper	10312		NT Billing Factor	20.617	18.431	18.796	16.834	16.469	15.466	16.65	17.896	18.315	16.003	18.916	15.279
213																
214	Ravalli County	10333		NT Billing Factor	15.987	24.096	27.107	27.247	22.679	17.916	16.60	18.788	21.873	20.849	21.382	15.287
215																
216	Richland	10089		NT Billing Factor	120.316	142.196	155.001	172.347	158.952	127.785	109.16	125.562	157.369	179.174	177.646	153.593
217																
218	Riverside Electric	10338		NT Billing Factor	2.494	3.532	4.004	3.277	3.507	3.081	2.31	2.258	3.736	4.108	3.255	2.641
219																
220	Rupert	10091		NT Billing Factor	9.883	13.843	15.094	15.206	14.668	12.302	11.37	9.439	10.455	11.341	10.612	9.541
221																
222	Salem	10342		NT Billing Factor	47.750	55.869	62.684	56.892	51.969	49.292	42.87	43.406	46.574	59.611	61.286	52.719
223																
224	Salmon River	10343		NT Billing Factor	9.381	12.375	15.701	15.743	12.909	11.319	8.71	8.739	11.168	10.336	11.623	10.041
225																
226	Skamania	10352		NT Billing Factor	20.791	25.449	28.008	30.517	23.980	25.888	21.91	16.412	16.753	16.298	16.305	16.851
227																
228	Soda Springs	10094		NT Billing Factor	3.635	4.312	4.789	4.516	4.343	3.925	3.70	3.119	3.353	3.460	3.472	3.248
229																
230	South Side	10360		NT Billing Factor	5.463	5.342	6.212	6.470	6.215	5.153	6.53	9.319	15.342	14.434	11.337	8.924
231																
232	Steilacoom	10379		NT Billing Factor	6.669	8.923	9.626	8.984	8.757	7.457	5.66	4.891	3.898	4.381	4.544	4.439
233																
234	SUB	10363		NT Billing Factor	110.887	138.180	151.029	142.727	145.629	122.162	108.87	91.373	98.096	111.568	115.042	106.177
235																
236	Sumas	10095		NT Billing Factor	3.859	4.479	4.869	4.084	4.900	4.734	4.37	3.997	3.916	4.203	4.172	3.863
237																
238	Surprise Valley	10369		NT Billing Factor	14.098	14.035	16.334	16.413	14.970	13.552	19.67	25.982	32.545	34.998	31.903	25.346
239																
240	Tanner	10371		NT Billing Factor	13.260	17.947	19.622	18.419	17.620	16.881	12.24	10.689	10.961	12.939	11.667	10.693
241																
242	Tillamook	10376		NT Billing Factor	70.443	81.735	89.614	84.168	79.039	75.673	70.11	49.897	42.934	42.805	43.097	44.953
243																
244	Troy	10097		NT Billing Factor	2.151	2.819	3.420	3.093	3.336	2.817	2.34	1.766	1.444	1.675	1.685	1.441
245																
246	UIUC	10482		NT Billing Factor	4.878	5.854	5.455	5.123	5.747	5.456	4.91	5.483	5.364	5.246	5.629	5.413
247																
248	United Electric	10391		NT Billing Factor	21.827	29.327	33.775	32.034	30.865	25.839	26.77	31.820	42.212	44.808	36.627	28.872
249																
250	USN Bangor	10409		NT Billing Factor	19.496	23.605	26.665	23.790	23.394	21.634	19.59	18.785	17.753	17.786	18.074	18.184
251																
252	USN Bremerton	10326		NT Billing Factor	31.714	32.596	39.554	33.572	29.810	30.344	28.94	25.803	28.337	30.294	28.740	30.748
253																
254	USN Everett	10408		NT Billing Factor	1.435	1.660	1.788	1.806	1.674	1.574	1.53	1.488	1.103	0.993	1.047	1.207
255																
256	Vera	10434		NT Billing Factor	34.671	42.927	46.048	42.687	44.289	38.093	32.25	28.883	35.594	42.642	41.715	36.601
257																
258	Vigilante	10436		NT Billing Factor	17.949	21.795	25.726	25.106	22.724	17.552	18.05	29.919	37.142	40.036	33.053	24.663
259																
260	Wahkiakum	10440		NT Billing Factor	3.323	4.340	4.532	5.493	4.255	3.761	3.04	2.589	1.826	2.089	2.183	2.777
261																
262	Wasco	10442		NT Billing Factor	10.569	15.832	18.498	17.431	16.370	12.201	10.61	11.487	15.191	16.593	14.873	11.437
263																

**Table 14.1
NT Load Forecast at Transmission System Peak**

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
264	COMPANY	CUST ID	PRODUCT	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	
265	Weiser	11680	NT Billing Factor	6.701	8.230	8.901	9.151	8.920	7.526	6.53	6.678	8.580	9.848	10.308	8.392	
266	Whatcom	10451	NT Billing Factor	27.384	27.623	27.665	27.543	27.695	28.136	27.14	26.265	27.184	26.925	27.307	27.105	
267	WREC	10446	NT Billing Factor	90.033	100.647	103.566	105.575	103.069	96.300	85.28	71.700	96.770	90.132	96.838	93.548	
269	Yakama	10502	NT Billing Factor	6.554	6.391	6.158	6.329	6.596	6.408	6.04	5.679	6.642	7.512	7.888	7.264	
273	NT Billing Factor			5,755.407	6,964.052	7,866.900	7,590.298	7,226.068	6,529.383	5,935.476	5,520.820	5,903.653	6,362.583	6,316.886	5,702.144	
274	Short Distance Discount			-132.088	-144.319	-144.435	-146.456	-114.347	-101.865	-151.478	-63.989	-87.753	-121.972	-125.920	-132.748	
275																
276																
277																
278	Fiscal Year	2019														
279																
280	COMPANY	CUST ID	PRODUCT	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	
281									FISCAL YEAR 2019							
282	Albion	10055	NT Billing Factor	0.433	0.600	0.825	0.791	0.674	0.563	0.47	0.327	0.370	0.390	0.363	0.329	
283	Alder	10005	NT Billing Factor	0.703	0.991	0.955	1.045	0.989	0.851	0.64	0.490	0.414	0.418	0.415	0.412	
285	Ashland	10057	NT Billing Factor	15.658	19.649	22.386	20.454	21.163	18.807	15.97	14.502	19.282	24.056	22.704	18.451	
287	Asotin PUD	10015	NT Billing Factor	0.504	0.009	0.185	0.566	0.015	0.011	0.16	0.433	0.619	1.013	0.830	0.055	
288	Avista	10016	NT Billing Factor	58.426	76.122	82.609	69.173	68.043	64.136	57.28	61.941	80.032	81.236	65.866	48.884	
289	Bandon	10059	NT Billing Factor	8.930	10.448	11.446	13.465	12.337	11.673	9.50	6.718	6.162	6.282	6.445	6.306	
291	Benton REA	10025	NT Billing Factor	69.697	70.278	82.107	84.529	77.980	95.944	98.41	104.583	107.128	99.760	93.751	79.862	
292	Big Bend	10027	NT Billing Factor	51.479	46.245	52.049	48.087	42.200	37.465	63.73	93.102	124.364	130.014	118.335	97.104	
293	Blaine	10061	NT Billing Factor	10.399	12.175	12.321	12.714	12.519	10.885	9.70	8.557	8.567	9.048	8.985	8.832	
294	Bonnets Ferry	10062	NT Billing Factor	9.939	12.431	14.040	12.253	11.956	11.183	9.47	8.286	8.693	9.326	9.428	9.138	
295			Short Distance Discount	-0.815	-1.152	-1.325	-1.285	-1.317	-1.568	-1.68	-1.673	-1.692	-1.249	-0.705	-0.649	
296	Burley	10064	NT Billing Factor	14.598	17.827	19.485	19.484	19.011	17.010	14.94	14.036	16.881	19.059	18.107	15.810	
297	Canby	10044	NT Billing Factor	29.900	37.046	39.486	39.610	37.769	34.397	32.08	30.440	31.750	37.469	38.107	34.189	
298	Cascade Locks	10065	NT Billing Factor	2.720	3.539	4.047	3.782	3.626	3.193	2.79	2.190	2.263	2.340	2.479	2.320	
299	Central Lincoln	10047	NT Billing Factor	181.273	200.147	227.011	217.540	219.797	186.587	176.48	148.945	140.739	139.258	144.383	147.956	
300	Centralia	10066	NT Billing Factor	33.363	40.968	43.834	42.390	44.056	34.708	30.94	25.576	25.083	28.448	31.780	29.218	
301			Short Distance Discount	-2.780	-3.440	-3.363	-3.358	-3.381	-3.374	-3.37	-3.050	-2.702	-2.095	-0.546	-1.414	
302	Cheney	10067	NT Billing Factor	20.726	24.737	24.589	27.590	26.168	21.693	21.13	19.054	19.713	22.180	20.830	19.905	
303	Chewelah	10068	NT Billing Factor	3.067	3.733	4.037	4.026	3.806	3.295	3.05	2.442	2.587	3.472	3.040	2.446	
304	Clallam	10101	NT Billing Factor	98.897	125.476	145.477	135.688	129.165	134.851	98.30	73.182	58.012	63.122	66.456	61.010	
305	Clark	10103	NT Billing Factor	582.371	747.028	861.089	851.578	790.624	684.144	607.13	569.217	584.195	640.084	698.193	600.387	
306			Short Distance Discount	-91.951	-93.027	-88.657	-92.362	-59.648	-44.147	-94.01	-10.346	-36.258	-75.900	-84.925	-90.880	
307	Columbia Basin	10109	NT Billing Factor	13.370	13.463	13.312	12.457	14.546	11.873	14.98	16.759	17.673	18.326	15.710	15.627	
308	Columbia Power	10111	NT Billing Factor	3.066	3.900	4.716	4.348	3.976	3.447	3.12	3.467	4.329	4.700	4.432	3.874	
309	Columbia REA	10113	NT Billing Factor	37.323	35.095	33.917	30.417	31.893	30.342	32.98	51.831	74.459	83.912	79.136	59.569	

Table 14.1
NT Load Forecast at Transmission System Peak

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
3	COMPANY	CUST ID	PRODUCT	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	
459																
460			Clearwater	NT Billing Factor	29.587	39.984	43.212	39.954	37.927	33.599	30.26	23.441	23.201	25.383	25.196	22.398
461																
462			Consumers	NT Billing Factor	38.399	44.344	52.545	54.073	49.897	42.815	40.19	30.542	27.111	36.208	38.875	32.488
463																
464			Coos-Curry	NT Billing Factor	45.630	54.427	62.304	61.993	58.167	56.470	48.31	40.768	35.699	37.223	39.719	41.161
465																
466			Douglas Elec	NT Billing Factor	22.368	27.061	31.752	31.912	30.096	27.711	24.86	18.137	18.209	22.167	23.352	19.174
467																
468			Fall River	NT Billing Factor	32.777	44.522	57.908	53.604	49.388	40.726	31.86	31.843	52.978	62.915	40.516	31.110
469																
470			Lane Electric	NT Billing Factor	45.167	55.860	61.721	65.588	63.925	52.786	48.70	32.419	28.885	34.478	34.873	31.118
471				Short Distance Discount	-0.857	-1.062	-1.367	-1.199	-1.678	-2.468	-3.33	-3.795	-3.332	-2.718	-1.538	-1.008
472																
473			Lincoln	NT Billing Factor	14.380	22.106	24.833	19.364	19.180	19.120	12.52	11.667	10.118	11.587	11.487	10.390
474																
475			Northern Lights	NT Billing Factor	44.288	58.886	71.219	58.421	50.126	52.769	40.10	34.108	33.391	37.316	38.344	35.648
476																
477			Okanogan Coop	NT Billing Factor	7.909	12.444	14.774	15.121	12.180	9.402	7.46	6.449	6.439	7.329	7.279	6.050
478																
479			Raft River	NT Billing Factor	15.684	19.030	21.438	22.011	19.984	18.646	26.82	54.179	68.536	73.471	63.411	53.300
480																
481			UEC	NT Billing Factor	179.016	219.776	235.258	214.338	212.545	216.974	229.05	261.452	355.734	384.700	358.898	331.490
482																
483			West Oregon	NT Billing Factor	11.029	12.578	13.728	13.054	13.025	12.558	10.84	8.265	6.933	7.823	7.756	6.871
484																
485	Port	10706		NT Billing Factor	19.629	20.373	20.608	20.334	20.600	20.674	19.52	19.233	22.427	22.748	23.166	21.426
486																
487	Port Angeles	10087		NT Billing Factor	35.321	48.560	51.408	50.681	55.515	39.197	30.05	29.559	27.024	21.132	19.076	19.715
488																
489	Port Townsend Paper	10312		NT Billing Factor	20.617	18.431	18.796	16.834	16.469	15.466	16.65	17.896	18.315	16.003	18.916	15.279
490																
491	Ravalli County	10333		NT Billing Factor	16.087	24.247	27.274	27.419	23.636	18.028	16.70	18.902	22.007	20.979	21.514	15.382
492																
493	Richland	10089		NT Billing Factor	121.443	143.547	156.466	173.987	160.444	129.009	110.19	126.749	158.851	180.874	179.356	155.034
494																
495	Riverside Electric	10338		NT Billing Factor	2.513	3.554	4.029	3.301	3.531	3.101	2.33	2.281	3.765	4.136	3.280	2.662
496																
497	Rupert	10091		NT Billing Factor	9.898	14.145	15.437	15.863	14.750	12.374	11.45	9.304	10.603	11.517	10.729	9.568
498																
499	Salem	10342		NT Billing Factor	47.869	56.007	62.839	57.034	52.097	49.414	42.97	43.514	46.690	59.759	61.439	52.849
500																
501	Salmon River	10343		NT Billing Factor	9.381	12.375	15.701	15.743	12.909	11.319	8.71	8.739	11.168	10.336	11.623	10.041
502																
503	Skamania	10352		NT Billing Factor	20.838	25.508	28.074	30.588	24.036	25.947	21.96	16.450	16.791	16.336	16.344	16.890
504																
505	Soda Springs	10094		NT Billing Factor	3.616	4.291	4.769	4.496	4.324	3.906	3.68	3.101	3.331	3.440	3.452	3.227
506																
507	South Side	10360		NT Billing Factor	5.459	5.359	6.230	6.489	6.234	5.168	6.55	9.348	15.389	14.478	11.372	8.952
508																
509	Steilacoom	10379		NT Billing Factor	6.707	8.963	9.668	9.022	8.795	7.496	5.69	4.924	3.929	4.416	4.580	4.473
510																
511	SUB	10363		NT Billing Factor	111.174	138.537	151.417	143.094	146.004	122.478	109.15	91.612	98.353	111.859	115.342	106.454
512																
513	Sumas	10095		NT Billing Factor	3.866	4.486	4.869	4.091	4.900	4.734	4.37	3.997	3.916	4.203	4.172	3.871
514																
515	Surprise Valley	10369		NT Billing Factor	14.098	14.035	16.334	16.413	14.970	13.552	19.67	25.982	32.545	34.998	31.903	25.346
516																
517	Tanner	10371		NT Billing Factor	13.442	18.156	19.828	18.621	17.830	17.094	12.41	10.856	11.140	13.146	11.850	10.857
518																
519	Tillamook	10376		NT Billing Factor	70.716	82.045	89.941	39.043	35.944	33.088	28.24	20.072	16.475	17.865	16.870	16.810
520																
521	Troy	10097		NT Billing Factor	2.157	2.826	3.428	3.100	3.344	2.824	2.35	1.770	1.447	1.679	1.690	1.445
522																
523	UIUC	10482		NT Billing Factor	4.878	5.854	5.455	5.123	5.747	5.456	4.91	5.483	5.364	5.246	5.629	5.413

**Table 14.1
NT Load Forecast at Transmission System Peak**

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
3	COMPANY	CUST ID		PRODUCT	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
524	United Electric	10391		NT Billing Factor	22.186	29.704	34.171	32.411	31.258	26.201	27.13	32.189	42.601	45.211	37.031	29.264
525																
526	USN Bangor	10409		NT Billing Factor	19.496	23.605	26.665	23.790	23.394	21.634	19.59	18.785	17.753	17.786	18.074	18.184
527																
528	USN Bremerton	10326		NT Billing Factor	31.747	32.629	39.586	33.602	29.834	30.368	28.97	25.826	28.360	30.318	28.763	30.773
529																
530	USN Everett	10408		NT Billing Factor	1.435	1.660	1.788	1.806	1.674	1.574	1.53	1.488	1.103	0.993	1.047	1.207
531																
532	Vera	10434		NT Billing Factor	34.993	43.326	46.484	43.087	44.706	38.447	32.54	29.152	35.925	43.049	42.116	36.941
533																
534	Vigilante	10436		NT Billing Factor	18.649	22.491	26.543	25.483	23.895	17.822	18.35	30.452	37.803	40.785	33.651	25.094
535																
536	Wahkiakum	10440		NT Billing Factor	3.323	4.340	4.532	5.493	4.255	3.761	3.04	2.589	1.826	2.089	2.183	2.777
537																
538	Wasco	10442		NT Billing Factor	10.569	15.833	18.498	17.428	16.369	12.201	10.60	11.487	15.191	16.594	14.875	11.436
539																
540	Weiser	11680		NT Billing Factor	6.735	8.272	8.946	9.197	8.965	7.564	6.56	6.711	8.623	9.898	10.360	8.434
541																
542	Whatcom	10451		NT Billing Factor	27.384	27.623	27.665	27.543	27.695	28.136	27.14	26.265	27.184	26.925	27.307	27.105
543																
544	WREC	10446		NT Billing Factor	90.183	100.832	103.716	105.769	103.251	96.474	85.43	71.856	96.963	90.327	97.034	93.727
545																
546	Yakama	10502		NT Billing Factor	7.429	7.432	6.961	7.227	7.683	7.247	6.91	6.487	7.577	8.536	8.887	8.135
547																
548																
549	NT Billing Factor				5,860.740	7,091.576	8,010.591	7,673.149	7,320.980	6,612.071	5,986.537	5,576.049	5,993.958	6,459.174	6,399.643	5,768.497
550	Short Distance Discount				-132.088	-144.319	-144.435	-146.456	-114.347	-101.865	-151.478	-63.989	-87.753	-121.972	-125.920	-132.748

Table 14.2
NT Load Forecast at Customer Peak

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
	COMPANY	CUST ID		PRODUCT	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
					FISCAL YEAR 2018											
3	Albion	10055		Customer Peak Load	0.616	0.799	1.039	1.013	0.839	0.753	0.668	0.513	0.430	0.463	0.444	0.410
4	Asotin PUD	10015		Customer Peak Load	1.186	0.784	0.819	0.903	0.704	0.999	1.480	1.674	2.212	2.336	2.371	1.743
5	Bandon	10059		Customer Peak Load	11.814	13.684	14.792	16.525	14.873	15.604	13.581	8.700	8.098	7.969	8.122	8.397
6	Benton REA	10025		Customer Peak Load	79.539	80.580	94.773	97.408	89.849	105.810	109.236	116.626	120.474	115.086	107.816	91.566
7	Big Bend	10027		Customer Peak Load	75.578	50.664	56.759	55.093	51.401	49.336	83.419	115.448	131.730	134.060	125.102	108.879
8	Blaine	10061		Customer Peak Load	11.302	13.152	13.942	13.847	13.384	12.172	11.182	9.592	9.452	9.602	9.602	9.795
9	Bonniers Ferry	10062		Customer Peak Load	12.034	14.311	15.419	15.117	14.070	13.156	12.098	10.955	10.838	11.261	10.843	10.856
10	Burley	10064		Customer Peak Load	16.843	19.634	22.031	21.988	20.881	19.292	17.260	16.281	18.635	20.623	19.874	17.450
11	Canby	10044		Customer Peak Load	34.102	40.583	44.466	45.915	42.911	39.301	36.532	32.931	34.401	38.344	39.561	35.637
12	Cascade Locks	10065		Customer Peak Load	3.074	3.732	4.274	4.484	4.161	3.629	3.096	2.597	2.457	2.686	2.724	2.458
13	Central Lincoln	10047		Customer Peak Load	201.705	227.537	250.039	247.679	241.085	228.845	213.385	170.513	157.839	153.350	154.434	160.655
14	Centralia	10066		Customer Peak Load	39.469	48.292	51.726	50.198	50.015	44.134	40.048	30.686	28.912	29.930	32.641	30.577
15	Cheney	10067		Customer Peak Load	22.012	26.051	27.047	29.637	25.943	24.908	23.614	21.479	21.504	23.408	22.878	21.751
16	Chewelah	10068		Customer Peak Load	3.513	4.093	4.456	4.576	4.285	3.811	3.416	2.808	2.839	3.628	3.281	2.663
17	Clallam	10101		Customer Peak Load	137.392	160.711	179.454	187.160	179.516	162.581	142.919	102.929	83.629	75.713	77.904	93.437
18	Columbia Basin	10109		Customer Peak Load	13.437	13.544	15.890	14.020	14.755	13.373	16.127	17.598	18.417	18.838	17.450	16.309
19	Columbia Power	10111		Customer Peak Load	3.855	4.887	6.009	5.611	5.147	4.428	4.475	4.161	4.455	5.316	5.228	4.257
20	Columbia REA	10113		Customer Peak Load	41.575	39.393	37.342	34.063	34.012	41.651	43.461	65.927	80.454	85.487	80.094	60.029
21	Consolidated	10116		Customer Peak Load	0.617	0.322	0.449	0.463	0.426	0.536	1.131	0.885	0.775	0.744	0.688	0.589
22	Declo	10070		Customer Peak Load	0.553	0.642	0.737	0.732	0.703	0.603	0.565	0.535	0.479	0.523	0.541	0.512
23	DOE-RL	10426		Customer Peak Load	18.927	31.167	30.516	33.152	30.935	26.066	19.643	16.293	19.289	22.530	21.830	18.451
24	Drain	10071		Customer Peak Load	2.822	3.048	3.803	3.782	3.508	3.329	2.996	2.397	2.158	2.291	2.298	2.249
25	East End	10142		Customer Peak Load	3.827	4.061	4.579	4.384	4.096	3.654	4.158	4.970	6.311	6.355	5.364	4.439
26	Eatonville	10144		Customer Peak Load	5.455	6.981	8.049	8.218	7.225	6.398	5.160	4.207	3.388	3.228	3.386	3.448
27	Ellensburg	10072		Customer Peak Load	34.584	35.478	33.999	36.166	34.098	32.938	30.109	24.611	28.685	32.836	29.519	31.440
28	Emerald	10157		Customer Peak Load	109.588	115.766	130.151	127.227	124.846	115.996	113.465	86.577	84.000	96.312	95.451	85.794
29	Energy Northwest	10158		Customer Peak Load	2.930	3.568	3.613	3.864	3.859	3.532	3.278	3.050	2.939	2.799	3.128	2.590
30	EWEB	10170		Customer Peak Load	339.580	378.484	420.454	429.268	409.770	371.227	336.437	275.980	276.463	310.858	314.990	285.266
31	Fairchild	10172		Customer Peak Load	6.890	7.298	7.868	7.968	7.805	7.044	7.105	7.829	8.102	8.449	8.396	7.713
32	Farmers	10174		Customer Peak Load	0.701	0.877	1.096	1.095	0.938	0.840	0.737	0.623	0.648	0.667	0.624	0.561
33	Ferry	10177		Customer Peak Load	14.800	17.346	19.569	18.031	16.699	14.804	13.534	11.854	9.788	9.754	9.480	10.813
34	Flathead	10179		Customer Peak Load	250.651	291.324	316.647	324.158	301.002	270.566	261.513	214.378	204.737	235.164	227.085	218.253
35	Forest Grove	10074		Customer Peak Load	41.788	50.105	56.306	56.697	54.563	48.104	46.522	38.174	38.610	44.417	43.661	42.003
36	Grant	10190		Customer Peak Load	6.990	11.956	13.850	13.191	10.745	9.059	7.881	6.306	6.121	7.145	7.089	5.740
37	Harney	10197		Customer Peak Load	22.221	12.900	15.790	14.930	12.930	14.600	43.677	58.219	62.360	62.610	57.239	49.760

**Table 14.2
NT Load Forecast at Customer Peak**

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
3	COMPANY	CUST ID		PRODUCT	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
494	Kootenai	10234		Customer Peak Load	69.293	88.940	99.361	95.283	82.872	78.382	69.469	63.067	67.460	75.949	76.004	64.697
495																
496	Lakeview	10235		Customer Peak Load	42.236	51.129	54.257	56.233	51.993	47.484	43.398	33.713	34.749	37.172	36.572	34.130
497																
498	Monmouth	10083		Customer Peak Load	11.877	14.579	15.774	16.136	15.375	13.888	12.918	9.483	9.485	11.020	11.087	10.294
499																
500	NETL	10406		Customer Peak Load	0.844	1.059	1.251	1.235	1.156	1.092	0.915	0.730	0.590	0.512	0.555	0.591
501																
502	Ohop	10284		Customer Peak Load	16.950	20.461	23.666	23.439	22.404	20.347	18.247	11.578	9.307	10.244	10.202	10.233
503																
504	OPALCO	10288		Customer Peak Load	36.048	45.044	55.348	52.579	48.581	44.282	40.271	26.728	23.969	25.614	24.607	25.946
505																
506	PAC	10300		Customer Peak Load	298.873	323.463	358.836	353.710	343.262	324.846	333.253	271.675	234.359	264.412	246.222	251.700
507																
508	Parkland	10304		Customer Peak Load	17.474	24.172	27.431	27.969	25.387	21.448	17.861	15.365	13.816	14.001	14.251	15.110
509																
510	Peninsula	10307		Customer Peak Load	105.979	126.073	149.268	148.592	135.592	124.172	104.870	84.648	76.396	79.420	79.477	80.371
511																
512	Riverside Electric	10338		Customer Peak Load	3.000	3.679	4.124	4.094	4.030	3.450	3.349	3.887	5.030	4.669	4.185	3.573
513																
514	Salmon River	10343		Customer Peak Load	12.892	16.255	18.789	18.714	17.354	16.107	13.583	15.672	15.954	15.367	15.322	13.577
515																
516	Steilacoom	10379		Customer Peak Load	7.670	9.527	10.231	10.509	10.041	8.257	7.079	6.318	5.371	5.471	5.483	5.756
517																
518	Troy	10097		Customer Peak Load	2.825	3.436	3.849	4.112	4.083	3.583	3.080	2.462	1.971	1.858	1.828	2.141
519																
520	Vera	10434		Customer Peak Load	38.343	46.462	49.117	47.627	48.330	44.903	38.221	34.683	38.978	46.871	45.680	40.008
521																
522	Unk	0		Customer Peak Load	64.593	29.445	106.159	57.251	109.983	59.643	59.571	16.492	12.605	41.837	64.316	64.326
523																
524	Customer Peak Load				7,138.074	8,189.717	9,126.959	9,010.521	8,627.358	7,897.936	7,483.536	6,780.992	6,700.716	7,158.888	7,059.242	6,646.573

Table 15
Utility Delivery Forecast (Annual Average of Monthly Peak MegaWatts)

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
4	COMPANY	CUST ID		DELIVERY POINT	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
193			West Oregon	Necanicum 12.5 kV	0.418	0.491	0.481	0.506	0.515	0.512	0.444	0.257	0.199	0.198	0.191	0.201
194																
195	Steilacoom	10379		Steilacoom 12.5 kV	6.707	8.963	9.668	9.022	8.795	7.496	5.688	4.924	3.929	4.416	4.580	4.473
196																
197	Surprise Valley	10369		Davis Creek 12.5 kV	0.597	0.600	0.698	0.616	0.492	0.356	0.647	1.079	1.666	1.821	1.748	1.377
198																
199	Tacoma Power	10370		Ketron Island	0.064	0.076	0.084	0.094	0.077	0.074	0.070	0.035	0.021	0.027	0.024	0.023
200																
201	Troy	10097		Troy 13.8-Troy	2.157	2.826	3.428	3.100	3.344	2.824	2.349	1.770	1.447	1.679	1.690	1.445
202																
203	Unk	0		UNKNOWN	2.200	2.200	2.200	2.200	2.200	2.200	2.200	2.200	2.200	2.200	2.200	2.200
204																
205	Utility Delivery Load				149.085	181.357	215.408	198.297	187.753	171.352	153.613	136.073	143.035	161.847	163.466	142.641

Table 16.1
Transmission Credit Projects, Credits, and Interest at Current Rates, FY 2017-FY2019

#	A	B	C	D	E	F	G
	Request	Forecasted Transmission Credit			Forecasted Interest		
	FY 2017	FY 2018	FY 2019	FY 2017	FY 2018	FY 2019	
1							
2	GI Request 1	\$ 507	\$ -	\$ -	\$ 16	\$ -	\$ -
3	GI Request 2	\$ 1,108	\$ 792	\$ -	\$ 66	\$ 15	\$ -
4	GI Request 3	\$ 670	\$ 669	\$ 669	\$ 568	\$ 482	\$ 475
5	GI Request 4	\$ 893	\$ 893	\$ 893	\$ 193	\$ 136	\$ 106
6	GI Request 5	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
7	GI Request 6	\$ 843	\$ -	\$ -	\$ 8	\$ -	\$ -
8	GI Request 7	\$ 990	\$ 990	\$ 990	\$ 203	\$ 182	\$ 136
9	GI Request 8	\$ 4,142	\$ 2,761	\$ 2,761	\$ 2,885	\$ 2,351	\$ 2,217
10	GI Request 9	\$ 3,253	\$ 2,169	\$ 2,169	\$ 686	\$ 436	\$ 279
11	GI Request 10	\$ 443	\$ 327	\$ -	\$ 21	\$ -	\$ -
12	GI Request 11	\$ 443	\$ 327	\$ -	\$ 21	\$ -	\$ -
13	GI Request 12	\$ 34	\$ 25	\$ -	\$ 2	\$ -	\$ -
14	GI Request 13	\$ 759	\$ 605	\$ -	\$ 37	\$ -	\$ -
15	GI Request 14	\$ -	\$ 179	\$ 1,191	\$ 49	\$ 34	\$ 50
16	GI Request 15	\$ -	\$ -	\$ -	\$ 2	\$ 2	\$ 2
17	GI Request 16	\$ -	\$ -	\$ 89	\$ 25	\$ 347	\$ 502
18	GI Request 17	\$ -	\$ -	\$ -	\$ 45	\$ 40	\$ 42
19	GI Request 18	\$ 112	\$ 268	\$ 268	\$ 59	\$ 43	\$ 34
20	GI Request 19	\$ -	\$ -	\$ -	\$ 33	\$ 43	\$ 47
21	GI Request 20	\$ -	\$ -	\$ -	\$ 83	\$ 107	\$ 117
22	GI Request 21	\$ -	\$ -	\$ -	\$ 3	\$ 3	\$ 4
23	GI Request 22	\$ -	\$ -	\$ -	\$ 35	\$ 44	\$ 48
24	COI Request 1	\$ 45	\$ 17	\$ -	\$ 48	\$ -	\$ -
25	COI Request 2	\$ 503	\$ 535	\$ -	\$ 48	\$ -	\$ -
26	COI Request 3	\$ 503	\$ 535	\$ -	\$ 26	\$ 1	\$ -
27	COI Request 4	\$ 151	\$ 161	\$ -	\$ 67	\$ 4	\$ -
28	COI Request 5	\$ 121	\$ 128	\$ -	\$ 50	\$ 3	\$ -
29	COI Request 6	\$ 576	\$ 221	\$ -	\$ 2	\$ -	\$ -
30	COI Request 7	\$ 1,006	\$ 1,050	\$ -	\$ 34	\$ 2	\$ -
31	COI Request 8	\$ 745	\$ 777	\$ -	\$ 34	\$ 2	\$ -
32	COI Request 9	\$ 1,006	\$ 667	\$ -	\$ 10	\$ 1	\$ -
33	COI Request 10	\$ 1,006	\$ 667	\$ -	\$ 8	\$ -	\$ -
34	Total Network	\$ 14,197	\$ 10,005	\$ 9,031	\$ 5,040	\$ 4,265	\$ 4,059
35	Total COI	\$ 5,662	\$ 4,758	\$ -	\$ 327	\$ 13	\$ -
36	Total	\$ 19,859	\$ 14,763	\$ 9,031	\$ 5,367	\$ 4,278	\$ 4,059

Table 16.2
Transmission Credit Projects, Credits, and Interest at Proposed Final Rates, FY 2017-FY2019

	A	B	C	D	E	F	G
#	Request	Forecasted Transmission Credit			Forecasted Interest		
1		FY 2017	FY 2018	FY 2019	FY 2017	FY 2018	FY 2019
2	GI Request 1	\$ 507	\$ -	\$ -	\$ 16	\$ -	\$ -
3	GI Request 2	\$ 1,108	\$ 792	\$ -	\$ 66	\$ 15	\$ -
4	GI Request 3	\$ 670	\$ 661	\$ 661	\$ 568	\$ 482	\$ 476
5	GI Request 4	\$ 893	\$ 883	\$ 883	\$ 193	\$ 136	\$ 107
6	GI Request 5	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
7	GI Request 6	\$ 843	\$ -	\$ -	\$ 8	\$ -	\$ -
8	GI Request 7	\$ 990	\$ 978	\$ 978	\$ 203	\$ 182	\$ 137
9	GI Request 8	\$ 4,142	\$ 2,728	\$ 2,728	\$ 2,885	\$ 2,353	\$ 2,221
10	GI Request 9	\$ 3,253	\$ 2,142	\$ 2,142	\$ 686	\$ 437	\$ 283
11	GI Request 10	\$ 443	\$ 327	\$ -	\$ 21	\$ -	\$ -
12	GI Request 11	\$ 443	\$ 327	\$ -	\$ 21	\$ -	\$ -
13	GI Request 12	\$ 34	\$ 25	\$ -	\$ 2	\$ -	\$ -
14	GI Request 13	\$ 759	\$ 605	\$ -	\$ 37	\$ -	\$ -
15	GI Request 14	\$ -	\$ 177	\$ 1,177	\$ 49	\$ 134	\$ 153
16	GI Request 15	\$ -	\$ -	\$ -	\$ 2	\$ 2	\$ 2
17	GI Request 16	\$ -	\$ -	\$ 88	\$ 25	\$ 347	\$ 502
18	GI Request 17	\$ -	\$ -	\$ -	\$ 45	\$ 40	\$ 42
19	GI Request 18	\$ 112	\$ 265	\$ 265	\$ 59	\$ 43	\$ 35
20	GI Request 19	\$ -	\$ -	\$ -	\$ 33	\$ 43	\$ 47
21	GI Request 20	\$ -	\$ -	\$ -	\$ 83	\$ 107	\$ 117
22	GI Request 21	\$ -	\$ -	\$ -	\$ 3	\$ 3	\$ 4
23	GI Request 22	\$ -	\$ -	\$ -	\$ 35	\$ 44	\$ 48
24	COI Request 1	\$ 45	\$ 17	\$ -	\$ 55	\$ -	\$ -
25	COI Request 2	\$ 503	\$ 540	\$ -	\$ 55	\$ -	\$ -
26	COI Request 3	\$ 503	\$ 540	\$ -	\$ 26	\$ 2	\$ -
27	COI Request 4	\$ 151	\$ 162	\$ -	\$ 74	\$ 20	\$ -
28	COI Request 5	\$ 121	\$ 130	\$ -	\$ 55	\$ 15	\$ -
29	COI Request 6	\$ 576	\$ 221	\$ -	\$ 2	\$ -	\$ -
30	COI Request 7	\$ 1,006	\$ 1,060	\$ -	\$ 38	\$ 10	\$ -
31	COI Request 8	\$ 745	\$ 784	\$ -	\$ 38	\$ 10	\$ -
32	COI Request 9	\$ 1,006	\$ 667	\$ -	\$ 11	\$ 3	\$ -
33	COI Request 10	\$ 1,006	\$ 667	\$ -	\$ 9	\$ 3	\$ -
34	Total Network	\$ 14,197	\$ 9,910	\$ 8,922	\$ 5,040	\$ 4,368	\$ 4,174
35	Total COI	\$ 5,662	\$ 4,788	\$ -	\$ 363	\$ 63	\$ -
36	Total	\$ 19,859	\$ 14,698	\$ 8,922	\$ 5,403	\$ 4,431	\$ 4,174

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