B O N N E V I L L E   P O W E R   A D M I N I S T R A T I O N

BP-20 Rate Proceeding

Initial Proposal

Transmission Revenue Requirement Study Documentation

BP-20-E-BPA-09A

January 2019

TRANSMISSION REVENUE REQUIREMENT STUDY 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
CWIP	Construction Work in Progress
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
FERC	Federal Energy Regulatory Commission
FOIA	Freedom Of Information Act
FORS	Forced Outage Reserve Service
FPS	Firm Power and Surplus Products and Services
FPT	Formula Power Transmission
FRP	Financial Reserves Policy
F&W	Fish & Wildlife
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
LTF	Long-term Firm
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	**N**ational Marine Fisheries Service (NMFS) **F**ederal Columbia River Power System (FCRPS) **B**iological 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
NRU	Northwest Requirements Utilities
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
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
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
RDC	Reserves Distribution Clause
REC	Renewable Energy Certificate
Reclamation	U.S. Bureau of Reclamation
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 Service
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
VER	Variable Energy Resource
VERBS	Variable Energy Resource 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. TRANSMISSION REVENUE REQUIREMENTS

1.1 Introduction

Chapter 1 documents how the Bonneville Power Administration's (BPA) annual transmission revenue requirements are determined. Two tables are presented, each showing both years of the rate period (FY 2020 and FY 2021). On the first table, revenue requirements for FY 2020 and FY 2021 are projected in an income statement format. The second table, a statement of annual cash flows, determines the minimum required net revenues and presents the annual cash flows available for risk mitigation.

1.2 Income Statement

Below is a line-by-line description of each of the components in the Income Statement (Table 1-1).

Transmission operations (line 2). Transmission operations includes spending for technical operations; substation operations; control center support; power system dispatching; Transmission information technology (IT) costs, including corporate agency services IT costs that are allocated to Transmission Services (TS); and scheduling services (reservations, pre-scheduling, real-time and after-the-fact scheduling, and technical support). This category also includes spending for business strategy and assessment, billing, finance, contract management, and internal operations. *See* Ch. 3.

Transmission engineering (line 3). This category includes spending on asset management and planning, design of lines/towers/substations, construction planning, construction management, and real property services. *Id.*

Transmission maintenance (line 4). This category includes spending for all Transmission Services maintenance activities, such as ongoing maintenance of substations, lines, and protection control systems. This category also includes spending on environmental analysis and pollution prevention and abatement. *Id.*

Transmission acquisition & ancillary services (line 5). This category includes inter-business line expenses resulting from functional separation and costs of ancillary services products, including Power Services generation inputs to ancillary services. It also includes the costs of station service and remedial action schemes, Corps of Engineers (Corps) and Bureau of Reclamation (Reclamation) transmission facilities serving the Network and Utility Delivery segments, and payments to other utilities for stability reserves, settlements, and operating leases. *Id.*

BPA internal support (line 6). This category comprises spending on general and administrative programs that are allocated to BPA's two business units. These programs include legal services, finance, risk management, security and emergency management, human resources, and executive oversight and management. *Id.*

Other income, expenses & adjustments (line 7). Generally, this category includes items that do not fit in any other category.

Depreciation & amortization (line 8). Depreciation is the annual capital recovery expense associated with Federal Columbia River Transmission System (FCRTS) plant-in-service. BPA transmission and general plant are depreciated by the straight-line method, using the remaining life technique. Amortization refers to the annual capital recovery expense for deferred transmission assets (also known as regulatory assets). Amortization expense includes a new regulatory asset, the I-5 reinforcement project. *See* Ch. 3 & 4.

Total operating expenses (line 9). Total operating expenses is the sum of the above expenses (lines 2 through 8).

Federal appropriations (line 13). Federal appropriations consists of interest on the appropriations BPA received prior to full implementation of BPA's self-financing authority and is determined in the transmission repayment studies. *See* Ch. 3.

Capitalization adjustment (line 14). Implementation of the BPA Appropriations Refinancing Act (*see* Transmission Revenue Requirement Study, BP-20-E-BPA-09, § 1.2.1.2) entailed a change in capitalization on BPA's financial statements. Outstanding appropriations attributed to the transmission function were reduced by $470 million as a result of the refinancing. The reduction is recognized annually over the remaining repayment period of the refinanced appropriations. The annual recognition of this adjustment is based on the increase in annual interest expense resulting from implementation of the Act, as shown in repayment studies for the year of the refinancing transaction (1997). The capitalization adjustment is included on the income statement as a non-cash expense.

Long-term debt (line 15). Long-term debt includes interest on bonds that BPA issues to the U.S. Treasury to fund investments in transmission plant, environment, general plant supportive of transmission, and capital equipment. Such interest expense is determined in the transmission repayment studies. This line includes any payments of call premiums for bonds projected to be amortized. *See* Ch. 3.

Amortization of capitalized bond premiums (line 16). When a bond issued to the U.S. Treasury is refinanced, any call premium resulting from early retirement of the original bond is capitalized and included in the principal of the new bond. The capitalized call premium then is amortized over the term of the new bond. The annual amortization is a non-cash component of interest expense. *Id.*

Debt service reassignment interest (line 17). Debt service reassignment interest consists of the interest component of the debt service reassigned to TS through the Debt Optimization Program. *See* Ch. 3 & 8.

Non-Federal interest (line 18). Non-Federal interest consists of interest paid on BPA's lease purchase projects and other capital leases as well as interest paid on customer advance funding for generator interconnection agreements and for the California-Oregon Intertie (COI) upgrade. The customers' advanced funds accrue interest on the outstanding balances until they are returned to customers through credits for transmission service. *See* Transmission Revenue Requirement Study, BP-20-E-BPA-09, § 2.2.5.

Premiums/Discounts (line 19). Premiums and discounts are paid or received on federal bonds. *See* Transmission Revenue Requirement Study, BP-20-E-BPA-09, at § 2.3.

Allowance for funds used during construction (AFUDC) (line 20). AFUDC for U.S. Treasury-financed transmission projects is a credit against interest on long-term debt (line 15). This non-cash reduction to interest expense reflects an estimate of interest on the funds used during the construction period of facilities that are not yet in service. Also included is the interest accrued on large generator interconnection agreement (LGIA) funds during the construction period of the associated facilities. AFUDC is capitalized, added to other construction costs, and is recovered in rates once the facilities are placed in service. AFUDC is part of the depreciation expense that is recovered over the expected life of the plant. *See* Ch. 3.

Interest income (line 21). Interest income is computed on the projected year-end cash balances in the BPA Fund that are attributed to the transmission function and that carry over into the next year. It is credited against interest on long-term debt. Also included is an interest income credit calculated in the transmission repayment studies on funds to be collected during each year for payments of Federal interest and amortization at the end of the fiscal year. *See* Ch. 5.

Net interest expense (line 22). Net interest expense is computed as the sum of the interest on Federal appropriations (line 13), capitalization adjustment (line 14), long-term debt (line 15), amortization of capitalized bond premiums (line 16), debt service reassignment interest (line 17), non-Federal interest (line 18), premiums/discounts (line 19), AFUDC (line 20), and interest income (line 21).

Total expenses (line 24). Total expenses is the sum of total operating expenses (line 9) and net interest expense (line 22).

Minimum Required Net Revenues (line 26). Minimum required net revenues (MRNR), an input from line 2 of the Statement of Cash Flows (Table 1-2), may be necessary to cover cash requirements in excess of accrued expenses. An explanation of the method used for determining MRNR is included in section 1.3 below.

Planned Net Revenues for Risk (line 25). Planned net revenues for risk (PNRR) is the amount of net revenues, if any, to be included in rates for financial risk mitigation. There are no Planned Net Revenues for Risk included in the Initial Rate Proposal. Starting Transmission reserves in FY 2020 are projected to be sufficient to mitigate risk in FY 2020 and 2021. *See* Power and Transmission Risk Study, BP-20-E-BPA-05, § 5.2.2.2.

Total planned net revenues (line 28). Total planned net revenues is the sum of Minimum Required Net Revenues (line 26) and Planned Net Revenues for Risk (line 27).

Total revenue requirement (line 30). Total revenue requirement is the sum of total expenses (line 24) and total planned net revenues (line 28).

1.3 Statement of Cash Flows

Below is a line-by-line description of each of the components in the Statement of Cash Flows (Table 1-2).

Minimum Required Net Revenue (MRNR) (line 2). BPA determines whether MRNR is necessary by evaluating the annual cash inflows and outflows shown on the Statement of Cash Flows. MRNR may be necessary to ensure that the cash provided by current operations (line 11) will be sufficient to cover the planned amortization payments (the difference between lines 16 and 24) without causing the annual increase (decrease) in cash (line 26) to be negative. The MRNR determined in the Statement of Cash Flows is incorporated in the Income Statement (Table 1-1, line 26).

Cashflow (line 2a). This represents the cash flow generated after after LGIA iterations are completed. It is the sum of line 2b through line 10, line 16, and line 24. A negative value is an offset to line 2b, Revenue Financing Minimum Required Net Revenue.

Revenue Financing Minimum Required Net Revenue (line 2b). This represents the amount of revenue financing chosen for the implementation of the Leverage Policy or for any other purpose.

Depreciation & amortization (line 4). The depreciation amount is from the Income Statement (Table 1-1, line 8). It, like the following five lines, is added back to net revenues in computing cash provided by current operations (Table 1-2, line 11) because it is a non-cash expense.

Transmission credit projects net interest (line 5). Transmission credit projects net interest is the non-cash expenses from the Income Statement for generator interconnection and COI upgrade customers' interest on their credit balances for advance funding (included in Table 1-1, line 18) and the AFUDC on the projects under construction funded by those customers (included in Table 1-1, line 20).

Amortization of capitalized bond premiums (line 6). Amortization of capitalized bond premiums, from the Income Statement (Table 1-1, line 16), is a non-cash expense.

Capitalization adjustment (line 7). The capitalization adjustment, from the Income Statement (Table 1-1, line 14), is a negative non-cash expense.

LGIA (line 9). Revenue credits associated with customer-funded capital projects are recognized as non-cash revenues. Customers provide an up-front deposit for construction of transmission facilities which is returned to them through a transmission credit on their transmission service bill until the deposit is repaid.

AC Intertie/fiber (line 10). Accrual revenues are recognized here because these revenues provide no cash for cost recovery. BPA accounts for the AC Intertie non-Federal capacity ownership lump-sum payments received in FY 1995 as unearned revenues that are recognized annually over the estimated average service life of the associated transmission facilities. Similarly, some leases of fiber optic capacity have included up-front payments, which are being recognized over the life of the particular contract. The annual accrual revenues, which are part of the total revenues recovering the FCRTS revenue requirement, are included here as a non-cash adjustment to cash from current operations.

Cash provided by current operations (line 11). Cash provided by current operations, the sum of lines 2, 4, 5, 6, 7, 9, and 10, is available for the year to satisfy cash requirements.

Investment in utility plant (line 15). Investment in utility plant represents the annual increase in capital expenditures for additions and replacements to the transmission system funded by U.S. Treasury bonds or available cash reserves. *See* Ch. 7.

Cash used for capital investments (line 18). Cash used for capital investments is the sum of investments in utility plant.

Increase in long-term debt (line 19). Increase in long-term debt reflects the new bonds issued by BPA to the U.S. Treasury to fund the construction and environmental capital equipment programs. This amount also includes any notes issued to the U.S. Treasury. *See* Ch. 7.

Debt service reassignment principal (line 20). Debt service reassignment principal is the principal component of the debt service obligation reassigned to TS through the Debt Optimization Program. *See* Ch. 8.

Repayment of capital leases (line 21). Repayment of capital leases is BPA's payment of the principal component of certain capital leases.

Repayment of long-term debt (line 22). Repayment of long-term debt is BPA's planned repayment of outstanding bonds issued by BPA to the U.S. Treasury, as determined in the repayment studies. *See* Ch. 3.

Repayment of capital appropriations (line 23). Repayment of capital appropriations represents projected amortization of outstanding BPA appropriations (pre-self-financing) as determined in the repayment studies. *Id.*

Cash from treasury borrowing and appropriations (line 24). Cash from treasury borrowing and appropriations is the sum of lines 19 through 23. This is the net cash flow resulting from increases in cash from new long-term debt and decreases in cash from repayment of long-term debt and capital appropriations.

Annual increase (decrease) in cash (line 26). Annual increase (decrease) in cash, the sum of lines 11, 16, and 24, reflects the annual net cash flow from current operations, investing, and financing activities. Revenue requirements are set to meet all projected annual cash flow requirements, as included on the Statement of Cash Flows. A decrease shown in this line would indicate that annual revenues are insufficient to cover the year's cash requirements. In such cases, Minimum Required Net Revenues are included to offset such decrease. See above discussion of Minimum Required Net Revenues (line 2).

Planned net revenues for risk (line 28). Planned net revenues for risk reflects the amounts included in revenue requirements to meet BPA's risk mitigation objectives (from Table 1-1, line 27.)

Total annual increase (decrease) in cash (line 30). Total annual increase (decrease) in cash, the sum of Lines 26 and 28, is the total annual cash that is projected to be available to add to BPA's cash reserves.

TABLE 1-1
TRANSMISSION REVENUE REQUIREMENT INCOME STATEMENT
($000)

		A 2020	B 2021
1	OPERATING EXPENSES		
2	TRANSMISSION OPERATIONS	168,490	163,854
3	TRANSMISSION ENGINEERING	44,127	49,484
4	TRANSMISSION MAINTENANCE	173,074	173,283
5	TRANSMISSION ACQUISITION & ANCILLARY SERVICES	113,914	113,914
6	BPA INTERNAL SUPPORT	92,528	93,884
7	OTHER INCOME, EXPENSES & ADJUSTMENTS	(29,000)	(29,000)
8	DEPRECIATION & AMORTIZATION	345,584	352,560
9	TOTAL OPERATING EXPENSES	908,717	917,979
10	INTEREST EXPENSE		
11	INTEREST EXPENSE		
12	FEDERAL APPROPRIATIONS	-	-
13	CAPITALIZATION ADJUSTMENT	(18,968)	(18,968)
14	ON LONG-TERM DEBT	103,595	114,356
15	AMORTIZATION OF CAPITALIZED BOND PREMIUMS	559	559
16	DEBT SERVICE REASSIGNMENT INTEREST	4,880	3,943
17	NON-FEDERAL INTEREST	82,864	85,927
18	PREMIUMS/DISCOUNTS	-	-
19	AFUDC	(18,618)	(18,239)
20	INTEREST INCOME	(5,382)	(5,432)
21	NET INTEREST EXPENSE	148,929	162,145
22	TOTAL EXPENSES	1,057,646	1,080,125
23	MINIMUM REQUIRED NET REVENUE 1/	21,756	22,443
24	PLANNED NET REVENUES FOR RISK	-	-
25	TOTAL PLANNED NET REVENUE	21,756	22,443
26	**TOTAL REVENUE REQUIREMENT**	**1,079,401**	**1,102,567**

1/ SEE NOTE ON CASH FLOW TABLE.

TABLE 1-2
TRANSMISSION REVENUE REQUIREMENT STATEMENT OF CASH FLOWS
($000)

		A 2020	B 2021
1	CASH FROM CURRENT OPERATIONS:		
2	TOTAL MINIMUM REQUIRED NET REVENUE	21,756	22,443
	CASH FLOW	(1,244)	(557)
3	REVENUE FINANCING MINIMUM REQUIRED NET REVENUE	23,000	23,000
4	EXPENSES NOT REQUIRING CASH:		
5	DEPRECIATION & AMORTIZATION	345,584	352,560
6	TRANSMISSION CREDIT PROJECTS NET INTEREST	4,292	3,757
7	AMORTIZATION OF CAPITALIZED BOND PREMIUMS	559	559
8	CAPITALIZATION ADJUSTMENT	(18,968)	(18,968)
9	NON-CASH REVENUES/ACCRUAL REVENUES		
10	LGIA	(17,493)	(17,753)
11	AC INTERTIE CO/FIBER	(3,410)	(3,410)
12	CASH PROVIDED BY CURRENT OPERATIONS	332,319	339,187
13	CASH USED FOR CAPITAL INVESTMENTS:		
14	INVESTMENT IN:		
15	UTILITY PLANT	(461,128)	(466,452)
16	CASH USED FOR CAPITAL INVESTMENTS	(461,128)	(466,452)
17	CASH FROM TREASURY BORROWING AND APPROPRIATIONS:		
18	INCREASE IN LONG-TERM DEBT	438,128	443,452
19	DEBT SERVICE REASSIGNMENT PRINCIPAL	(19,592)	(20,571)
20	REPAYMENT OF CAPITAL LEASES	(79,361)	(79,543)
21	REPAYMENT OF LONG-TERM DEBT	(210,366)	(216,074)
22	REPAYMENT OF CAPITAL APPROPRIATIONS	-	-
23	CASH FROM TREASURY BORROWING AND APPROPRIATIONS	128,809	127,265
24	ANNUAL INCREASE (DECREASE) IN CASH 1/	-	-
25	PLANNED NET REVENUE FOR RISK	-	-
26	TOTAL ANNUAL INCREASE (DECREASE) IN CASH	-	-

1/ Line 24 must be greater than or equal to zero, otherwise net revenues will be added so that there are no negative cash flows for the year.

2. SEGMENTATION OF TRANSMISSION REVENUE REQUIREMENT

2.1 Introduction

The Transmission Revenue Requirement Study and this Documentation do not include a segmented revenue requirement because the proposed rates were agreed upon and set forth in the Partial Settlement Agreement. As a result, the segmented revenue requirement is not necessary

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3. TRANSMISSION EXPENSES

3.1 Introduction

This chapter compiles the expenses that are included in transmission revenue requirements for the rate period.

3.2 Expenses

Table 3-1 displays the forecast program spending levels that are the basis for the revenue requirement study. There are two types of expenses included in the program spending levels, O&M expenses and inter-business line expenses. O&M expenses came from the Integrated Program Review and Capital Investment Review (IPR/CIR) process. Inter-business line expenses, including the cost of redispatch, are composed of two sub-groups of costs. The first is the generation inputs for ancillary services. The second is the annual cost of Network segment facilities and Utility Delivery segment facilities of the Corps of Engineers and Bureau of Reclamation annual costs of those agencies

Depreciation and amortization expense is calculated using the straight-line method and remaining-life technique for lines, substations, and each of the FERC Accounts in the general plant category. *See* Ch. 4.

Interest expense is calculated in the transmission repayment study using the capital appropriations and BPA revenue bonds issued to the U.S. Treasury at individual interest rates. In addition, forecast lease purchase program capital will assume a 3-month LIBOR rate with a 60 basis point spread for the first seven years and then a taxable non-federal interest rate for the remainder of the time outstanding. See section 5 for calculation of the interest credit on cash reserves.

TABLE 3-1
TRANSMISSION PROGRAM SPENDING FORECAST
($000s)

	PROGRAM & OTHER OPERATING COSTS	A 2020	B 2021
1	**TRANSMISSION SYSTEM OPERATIONS**		
2	POWER SYSTEM DISPATCHING	16,130	16,130
3	INFORMATION TECHNOLOGY	10,881	10,963
4	CONTROL CENTER SUPPORT	26,877	26,877
5	TECHNICAL OPERATIONS	7,032	7,032
6	SUBSTATION OPERATIONS	26,521	26,521
7	OVERSUPPLY ADMIN - SPLIT FROM TECH. OPS	180	180
11	**SUB-TOTAL TRANSMISSION SYSTEM OPERATIONS**	**87,621**	**87,703**
12	**TRANSMISSION SCHEDULING**		
13	RESERVATIONS	1,253	1,253
14	PRE-SCHEDULING	267	267
15	REAL-TIME SCHEDULING	5,536	5,536
16	SCHEDULING TECHNICAL SUPPORT	3,899	3,899
17	SCHEDULING AFTER-THE-FACT	202	202
18	**SUB-TOTAL TRANSMISSION SCHEDULING**	**11,157**	**11,157**
19	**TRANSMISSION MARKETING**		
20	TRANSMISSION SALES	2,864	2,864
21	CONTRACT MANAGEMENT	3,711	3,793
22	TRANSMISSION BILLING	2,719	2,816
23	BUSINESS STRATEGY & ASSESSMENT	6,541	6,565
	STRATEGIC INTEGRATION *(Previously Energy Imbalance Market - EIM)*	2,735	2,786
24	**SUB-TOTAL TRANSMISSION MARKETING**	**18,569**	**18,823**
25	**TRANSMISSION BUSINESS SUPPORT**		
26	EXECUTIVE & ADMIN SERVICES	19,452	14,180
27	AIRCRAFT SERVICES	1,634	1,634
28	GENERAL ADMINISTRATIVE	11,913	11,913
29	LOGISTICS SERVICES	5,671	5,843
30	SECURITY ENHANCEMENTS EXPENSE	711	711
31	LEGAL SUPPORT - EXPENSE	3,166	3,294
34	**SUB-TOTAL TRANSMISSION BUSINESS SUPPORT**	**42,546**	**37,574**
35	**TRANSMISSION ENGINEERING**		
36	RESEARCH & DEVELOPMENT	2,838	2,857
37	TSD PLANNING & ANALYSIS	19,418	24,726
38	CAPITAL TO EXPENSE TRANSFER	3,328	3,328
39	NERC/WECC COMPLIANCE	14,973	14,973
40	ENVIRONMENTAL POLICY/PLANNING	1,639	1,668
41	ENG. LINE RATING	1,931	1,931
42	**SUB-TOTAL TRANSMISSION ENGINEERING**	**44,127**	**49,484**

TABLE 3-1
TRANSMISSION PROGRAM SPENDING FORECAST
($000s)

	PROGRAM & OTHER OPERATING COSTS	A 2020	B 2021
43	**TRANSMISSION SYSTEM MAINTENANCE**		
44	ENVIRONMENTAL ANALYSIS		
45	HEAVY MOBILE EQUIPMENT MAINTENANCE		
46	NON-ELECTRIC MAINTENANCE	28,968	29,053
47	SUBSTATION MAINTENANCE	33,201	33,201
48	TRANSMISSION LINE MAINTENANCE	29,249	29,249
49	SYSTEM PROTECTION CONTROL MAINTENANCE	16,477	16,477
50	POWER SYSTEM CONTROL MAINTENANCE	24,290	24,290
51	JOINT COST MAINTENANCE	1	1
52	SYSTEM MAINTENANCE MANAGEMENT	7,713	7,713
53	RIGHT OF WAY MAINTENANCE	7,052	7,052
54	POLLUTION PREVENTION & ABATEMENT	4,957	5,081
55	TECHNICAL TRAINING	2,669	2,669
56	VEGETATION MANAGEMENT	18,499	18,499
57	**SUB-TOTAL TRANSMISSION SYSTEM MAINTENANCE**	**173,074**	**173,283**
58	**SUB-TOTAL TRANSMISSION SYSTEM OPERATIONS & MAINTENANCE**	**377,093**	**378,024**
59	**NON-BETWEEN BUSINESS LINE ANCILLARY SERVICES**		
60	LEASED FACILITIES	5,220	5,220
61	SETTLEMENT AGREEMENTS	3	3
62	NON-BBL ANCILLARY SERVICES	97	97
63	RELIABILITY DEMAND RESPONSE/REDISPATCH (NonBBL)	5,156	5,156
64	**SUB-TOTAL NON-BETWEEN BUSINESS LINE ANCILLARY SERVICES**	**10,476**	**10,476**
65	**CORPORATE EXPENSES**		
66	UNFUNDED RETIREMENT BENEFITS	18,438	19,293
67	CORPORATE OVERHEAD DISTRIBUTIONS	74,090	74,591
68	**SUB-TOTAL CORPORATE CHARGES**	**92,528**	**93,884**
69	**OTHER INCOME AND ADJUSTMENTS**	**-**	**-**
70	**TOTAL TRANSMISSION IPR PROGRAM LEVELS**	**480,097**	**482,384**

TABLE 3-2
SUMMARY OF TRANSMISSION REPAYMENT STUDY DATA
($000s)

		A	B
		2020	**2021**
1	DSR INTEREST	4,880	3,943
2	NON-FEDERAL/CAPITAL LEASES INTEREST	82,855	85,906
3	APPROPRIATION INTEREST	-	-
4	BOND INTEREST	103,595	114,356
5	DISCOUNTS / PREMIUMS	-	-
6	**TOTAL GROSS INTEREST**	**191,330**	**204,205**
6	DSR PRINCIPAL	19,592	20,571
7	NON-FEDERAL/CAPITAL LEASE PRINCIPAL	79,361	79,543
8	APPROPRIATION PRINCIPAL	-	-
9	BOND PRINCIPAL	210,366	216,074
10	**TOTAL PRINCIPAL**	**309,319**	**316,188**

TABLE 3-3
ALLOWANCE FOR FUNDS USED DURING CONSTRUCTION
($000s)

		A	B
	PLANT FUNDED FROM BPA BORROWING		
		2020	**2021**
1	CAPITAL EXPENDITURES	433,930	439,633
2	PLANT-IN-SERVICE	443,714	454,701
3	SOY CWIP BALANCE	597,182	587,397
4	EOY CWIP BALANCE	587,397	572,329
5	AVERAGE CWIP BALANCE	592,289	579,863
6	AFUDC RATE	3.09%	3.09%
7	CORPORATE CAPITAL (65% OF TOTAL)	8,580	8,580
8	CORPORATE AFUDC	260	265
9	**TOTAL AFUDC FOR BPA BORROWING**	**18,562**	**18,183**
	PLANT FUNDED FROM REVENUES & BY THIRD PARTIES		
10	CAPITAL EXPENDITURES	53,001	46,884
11	PLANT-IN-SERVICE	53,001	46,884
12	SOY CWIP BALANCE	1,824	1,824
13	EOY CWIP BALANCE	1,824	1,824
14	AVERAGE CWIP BALANCE	1,824	1,824
15	AFUDC RATE	3.09%	3.09%
16	**AFUDC FOR NON-FEDERAL PROJECTS**	**56**	**56**
17	**TOTAL AFUDC**	**18,618**	**18,239**

TABLE 3-4
AMORTIZATION OF PREMIUMS OF BOND REFINANCINGS
($000s)

	A	B	C	D	E	F	G	H	I	J	K	L
	DATE OF REFINANCING	**PREMIUM**	**PRORATION**	**NO. OF MONTHS**	**MONTHLY AMORTIZATION**	**TYPE OF BOND**	**LAST MONTH TO AMORTIZE**	**CALCULATION OF ANNUAL AMOUNTS**				
								2015	**2016**	**2017**	**2018**	**2019**
1	5/31/1998	6,322		411	15	CONSTRUCTION	Aug-2032	184	184	184	184	184
2	8/31/1998	4,685		360	13	CONSTRUCTION	Aug-2028	156	156	156	156	156
3	8/31/1998	6,560		360	18	CONSTRUCTION	Aug-2028	219	219	219	219	219
4	**Total**	**17,567**			**47**			**559**	**559**	**559**	**559**	**559**

TABLE 3-5
BETWEEN BUSINESS LINE COSTS
($000s)

		A	B	C
		2020	**2021**	**AVERAGE**
1	ANCILLARY SERVICES	91,393	91,393	91,393
2	SYNCHRONOUS CONDENSING	831	831	831
3	GENERATION DROPPING	498	498	498
4	COE/RECLAMATION NETWORK/ DELIVERY FACILITIES SEGMENTATION	8,806	8,806	8,806
5	REDISPATCH	250	250	250
6	STATION SERVICE	1,660	1,660	1,660
7	**TOTAL**	**103,438**	**103,438**	**103,438**

TABLE 3-6
SUMMARY OF DEPRECIATION
($000s)

		A 2020	B 2021
1	**TRANSMISSION PLANT**		
2	LINES	107,364	110,217
3	SUBSTATION	102,374	106,791
4	STATION EQUIPMENT	3,415	3,926
5	GENERAL PLANT	85,110	86,923
6	ANCILLARY SERVICES (Excludes Station Equipment)	18,639	16,003
7	INTANGIBLE ASSETS	431	431
8	REGULATORY ASSET	28,251	28,269
9	**TOTAL**	**345,584**	**352,560**

TABLE 3-7
TRANSMISSION REGULATORY ASSETS
($000s)

		A 2020	B 2021
1	SPACER DAMPERS - 30 YR LIFE		
2	ADDITIONS	-	-
3	AMORTIZATION	956	956
4	SPACER DAMPERS - 25 YR LIFE		
5	ADDITIONS	926	-
6	AMORTIZATION	1,292	1,310
7	CAPITALIZED BOND PREMIUMS	561	561
8	I-5 REINFORCEMENT PROJECT	26,003	26,003

TABLE 3-8

TRANSMISSION DEBT TO ASSET RATIO

($000s)

		2018	2019	2020	2021
	DEBT				
1	Starting debt		5,579,226	5,778,084	5,909,896
2	Debt additions		447,916	438,128	443,452
3	Debt repayment		(249,058)	(306,317)	(310,872)
4	Ending debt	5,579,226	5,778,084	5,909,896	6,042,476
5					
6	**ASSETS**				
7	Starting gross assets		9,956,124	10,419,040	10,880,169
8	Plant additions		462,916	461,128	466,452
9	Ending gross assets		10,419,040	10,880,169	11,346,621
10					
11	Accumulated depreciation		(3,364,525)	(3,675,350)	(3,999,136)
12	Annual depreciation		(310,825)	(323,787)	(330,744)
13	Ending accumulated depreciation		(3,675,350)	(3,999,136)	(4,329,881)
14					
15	CWIP	606,590	606,590	606,590	606,590
16	Ending assets	7,197,189	7,350,281	7,487,622	7,623,330
17					
18	**Debt to Asset Ratio (Debt/Asset)**	77.52%	78.61%	78.93%	79.26%

4. FCRTS INVESTMENT BASE

4.1 Introduction

This chapter documents the development of the FCRTS investment for the rate period, which is the basis for annual depreciation expense calculations and the allocation of financing-related costs (net interest expense and planned net revenue) to the segments.

4.2 Methodology

The calculation of investment base for each year of the rate period starts with historical transmission plant investment. The general plant investment is identified according to FERC Account from BPA plant investment records. In addition, general plant investment for facilities required for Ancillary Services is separately identified and treated by FERC Account. The historical investment information includes plant investments associated with Projects Funded In Advance. Entities provide BPA with funding for exclusive use facilities and BPA retains ownership of the facilities. The facilities are excluded from general rate development, but depreciation of the facilities is included in BPA expenses. The depreciation calculated herein on these facilities is used for budgeting purposes, but neither the investment nor associated depreciation is incorporated into ratemaking.

Forecast plant additions, derived from capital budgets, are then added to the historical year investment. The additions are adjusted to take into account retirements by applying a ratio of retirements to additions, using an average of the past five years of actuals by FERC account. The application of the retirement ratio produces the gross investment for lines, substations, and general plant accounts for each year of the cost evaluation period.

The gross investment is then reduced by accumulated depreciation. Depreciation is calculated using the straight-line method, remaining-life technique. For general plant categories, annual depreciation rates are used unadjusted. For lines and substations, the annual depreciation rate has been weighted by the depreciation rates of each FERC account that composes these facilities. Depreciation is calculated on gross plant investment in each plant category according to the category's group rates. For each forecast year, depreciation expense is added to the prior year's accumulated depreciation to establish the forecast of accumulated depreciation.

Calculation of the investment base for each of the segments in each rate period year starts with the average net plant investment for that year (gross investment less accumulated depreciation). Various adjustments are made to the calculated investment base to reflect plant not included in the Transmission Segmentation Study and Documentation's analysis of historical investment and additions, and to remove plant that was funded in advance by customer deposits. First, net investment related to intangible plant (capacity rights acquired by BPA) is added to the Network and Southern Intertie segments. The regulatory asset net investment (spacer dampers) is added to the Network segment. Then, net investment in general plant categories is prorated to the segments based on the sum of net plant investment, net intangible plant, and net regulatory assets. Next the Network net plant investment is reduced by the net plant associated with LGIA/SGIA, and the Southern Intertie net plant investment is reduced by the net plant associated with the COI upgrade. The Southern Intertie net plant investment is also reduced to remove the balance of the unearned revenues associated with non-Federal capacity ownership on the AC Intertie. Finally, the unearned revenue balance associated with prepaid fiber optic leases is allocated to each segment pro rata based on the communications plant in each segment.

TABLE 4-1
BPA TRANSMISSION PLANT DEPRECIATION AND ACCUMULATED DEPRECIATION
($000s)

		A	B	C	D	E	F	G	H	I
		2019 PLANT INVEST	**2019 DEPR EXPENSE**	**2019 ACCUM DEPR**	**2020 PLANT INVEST**	**2020 DEPR EXPENSE**	**2020 ACCUM DEPR**	**2021 PLANT INVEST**	**2021 DEPR EXPENSE**	**2021 ACCUM DEPR**
1	**LINES**									
2	GENERATION-INTEGRATION	30,932	876	12,917	30,932	876	13,793	30,932	876	14,669
3	NETWORK	3,328,243	93,355	1,336,124	3,409,099	95,364	1,431,488	3,529,787	98,217	1,529,705
4	SOUTHERN INTERTIE	297,769	8,429	124,298	297,772	8,430	132,728	297,807	8,430	141,158
5	EASTERN INTERTIE	94,846	2,685	39,604	94,846	2,685	42,289	94,846	2,685	44,974
6	UTILITY DELIVERY	318	9	133	318	9	142	318	9	151
7	DSI DELIVERY	0	0	0	0	0	0	0	0	0
8	**TOTAL LINES**	**3,752,109**	**105,354**	**1,513,075**	**3,832,967**	**107,364**	**1,620,439**	**3,953,690**	**110,217**	**1,730,656**
9	PFIA (excluded)	54,679	1,548	22,832	54,679	1,548	24,380	54,679	1,548	25,928
10	**SUBSTATIONS**									
11	GENERATION-INTEGRATION	100,661	2,271	33,706	100,661	2,271	35,977	100,661	2,271	38,248
12	NETWORK	3,613,061	79,142	1,102,092	3,841,349	84,082	1,186,174	4,046,408	88,970	1,275,144
13	SOUTHERN INTERTIE	808,829	18,220	269,302	810,560	18,266	287,568	812,349	18,306	305,874
14	EASTERN INTERTIE	28,569	644	9,565	28,569	644	10,209	28,569	644	10,853
15	UTILITY DELIVERY	14,709	332	4,925	14,709	332	5,257	14,709	332	5,589
16	DSI DELIVERY	8,583	194	2,875	8,583	194	3,069	8,583	194	3,263
17	**TOTAL SUBSTATIONS**	**4,574,412**	**100,803**	**1,422,465**	**4,804,431**	**105,789**	**1,528,254**	**5,011,279**	**110,717**	**1,638,971**
18	PFIA (excluded)	94,136	2,124	31,521	94,136	2,124	33,645	94,136	2,124	35,769
19	INTANGIBLE PLANT	9,559	431	1,847	9,559	431	2,278	9,559	431	2,709
20	NETWORK	4,085	184	789	4,085	184	973	4,085	184	1,157
21	SOUTHERN INTERTIE	5,473	247	1,058	5,473	247	1,305	5,473	247	1,552

TRANSMISSION DEPRECIATION SUMMARY

			2019	**2020**	**2021**
1	TRANSMISSION PLANT				
2	LINES		105,354	107,364	110,217
3	SUBSTATION		100,803	105,789	110,717
4	GENERAL PLANT		80,193	85,110	86,923
5	ANCILLARY SERVICES		17,590	18,639	16,003
6	INTANGIBLE PLANT		431	431	431
7	REGULATORY ASSET		2,218	28,251	28,269
8		**TOTAL FOR TS RATES**	**306,589**	**345,584**	**352,560**

TABLE 4-2
INVESTMENT BASE
($000s)

		A	B	C	D	E	F
		BALANCE-AS-OF		**AVERAGE**	**BALANCE-AS-OF**		**AVERAGE**
		2019	**2020**	**2020**	**2020**	**2021**	**2021**
	COMPLETED PLANT						
1	GENERATION-INTEGRATION	131,594	131,594	131,594	131,594	131,594	131,594
2	NETWORK	6,941,305	7,250,448	7,095,876	7,250,448	7,576,195	7,413,322
3	SOUTHERN INTERTIE	1,106,598	1,108,332	1,107,465	1,108,332	1,110,156	1,109,244
4	EASTERN INERTIE	123,415	123,415	123,415	123,415	123,415	123,415
5	UTILITY DELIVERY	15,027	15,027	15,027	15,027	15,027	15,027
6	DSI DELIVERY	8,583	8,583	8,583	8,583	8,583	8,583
7	REGULATORY ASSET	60,521	191,461	125,991	191,461	191,461	191,461
8	INTANGIBLE PLANT	9,559	9,559	9,559	9,559	9,559	9,559
9	ANCILLARY SERVICES	271,803	297,915	284,859	297,915	324,254	311,085
10	GENERAL PLANT	1,380,245	1,481,593	1,430,919	1,481,593	1,574,155	1,527,874
11	**TOTAL COMPLETED PLANT**	**10,048,647**	**10,617,926**	**10,333,287**	**10,617,926**	**11,064,397**	**10,841,162**
	ACCUMULATED DEPRECIATION						
12	GENERATION-INTEGRATION	46,623	49,770	48,196	49,770	52,917	51,343
13	NETWORK	2,438,216	2,617,662	2,527,939	2,617,662	2,804,849	2,711,256
14	SOUTHERN INTERTIE	393,599	420,295	406,947	420,295	447,031	433,663
15	EASTERN INERTIE	49,169	52,498	50,834	52,498	55,827	54,163
16	UTILITY DELIVERY	5,058	5,399	5,229	5,399	5,740	5,570
17	DSI DELIVERY	2,875	3,069	2,972	3,069	3,263	3,166
18	REGULATORY ASSET	16,869	45,120	30,994	45,120	73,389	59,254
19	INTANGIBLE PLANT	1,847	2,278	2,063	2,278	2,709	2,494
20	ANCILLARY SERVICES	111,686	130,325	121,005	130,325	146,327	138,326
21	GENERAL PLANT	606,688	691,798	649,243	691,798	778,721	735,259
22	**TOTAL ACCUMULATED DEPRECIATION**	**3,672,629**	**4,018,213**	**3,845,421**	**4,018,213**	**4,370,773**	**4,194,493**
	NET PLANT INVESTMENT						
23	GENERATION-INTEGRATION	84,971	81,824	83,398	81,824	78,677	80,251
24	NETWORK	4,503,088	4,632,786	4,567,937	4,632,786	4,771,346	4,702,066
25	SOUTHERN INTERTIE	712,998	688,037	700,518	688,037	663,125	675,581
26	EASTERN INERTIE	74,246	70,917	72,581	70,917	67,588	69,252
27	UTILITY DELIVERY	9,968	9,627	9,798	9,627	9,286	9,457
28	DSI DELIVERY	5,708	5,514	5,611	5,514	5,320	5,417
29	REGULATORY ASSET	43,652	146,341	94,997	146,341	118,072	132,206
30	INTANGIBLE PLANT	7,711	7,280	7,496	7,280	6,849	7,065
31	ANCILLARY SERVICES	160,117	167,591	163,854	167,591	177,927	172,759
32	GENERAL PLANT	773,557	789,795	781,676	789,795	795,434	792,615
33	**TOTAL NET PLANT INVESTMENT**	**6,376,018**	**6,599,713**	**6,487,866**	**6,599,713**	**6,693,624**	**6,646,669**

TABLE 4-3
BPA PROJECTED TRANSMISSION PLANT INVESTMENT
($000s)

		A	B	C	D	E	F
		2019 ADDITIONS	**TOTAL 2019 INVEST**	**2020 ADDITIONS**	**TOTAL 2020 INVEST**	**2021 ADDITIONS**	**TOTAL 2021 INVEST**
1	GENERATION-INTEGRATION	0	131,594	0	131,594	0	131,594
2	NETWORK	267,940	6,941,305	297,876	7,239,181	318,063	7,557,244
3	SOUTHERN INTERTIE	2,961	1,106,598	2,121	1,108,719	2,225	1,110,943
4	EASTERN INTERTIE	0	123,415	0	123,415	0	123,415
5	UTILITY DELIVERY	0	15,027	0	15,027	0	15,027
6	DSI DELIVERY	0	8,583	0	8,583	0	8,583
7	REGULATORY ASSET	556	60,521	926	61,447	0	61,447
8	GENERAL PLANT	115,489	1,380,245	101,349	1,481,594	92,561	1,574,155
9	ANCILLARY SERVICES	37,722	271,803	26,113	297,916	26,339	324,255
10	INTANGIBLE - SPACER DAMPERS	0	9,559	0	9,559	0	9,559
11	**TOTAL BPA**	**424,668**	**10,048,647**	**428,385**	**10,477,032**	**439,188**	**10,916,221**

TABLE 4-4
INVESTMENT BASE BY SEGMENT
($000s)

		A	B	C	E	F	G	H	I
	FY 2020	**TOTAL**	**GENERATION INTEGRATION**	**NETWORK**	**SOUTHERN INTERTIE**	**EASTERN INTERTIE**	**UTILITY DELIVERY**	**DSI DELIVERY**	**ANCILLARY SERVICES**
1	NET TRANSMISSION PLANT	5,603,697	83,398	4,567,937	700,518	72,581	9,798	5,611	163,854
2	INTANGIBLE PLANT	7,496		3,204	4,292				
3	REGULATORY ASSET	94,997		94,997					
4	SUBTOTAL INVESTMENT	5,706,190	83,398	4,666,138	704,810	72,581	9,798	5,611	163,854
5	PERCENT	100%	1.46%	81.77%	12.35%	1.27%	0.17%	0.10%	2.87%
6	GENERAL PLANT	781,676	11,424	639,202	96,550	9,943	1,342	769	22,446
7	TRANSMISSION CREDIT PROJECTS (NET PLANT)	(355,298)		(355,298)					
8	ACC REV BAL ADJ - Fiber	-	-	-	-	-	-	-	-
9	ACC REV BAL ADJ - 3AC	(86,382)			(86,382)				
10	**INVESTMENT BASE**	**6,046,186**	**94,822**	**4,950,042**	**714,978**	**82,524**	**11,140**	**6,380**	**186,300**
	FY 2021								
11	NET TRANSMISSION PLANT	5,714,783	80,251	4,702,066	675,581	69,252	9,457	5,417	172,759
12	INTANGIBLE PLANT	7,065		3,020	4,045				
13	REGULATORY ASSET	132,206		132,206					
14	SUBTOTAL INVESTMENT	5,854,054	80,251	4,837,292	679,626	69,252	9,457	5,417	172,759
15	PERCENT	100%	1.37%	82.63%	11.61%	1.18%	0.16%	0.09%	2.95%
16	GENERAL PLANT	792,615	10,866	654,949	92,019	9,376	1,280	733	23,391
17	TRANSMISSION CREDIT PROJECTS (NET PLANT)	(394,701)		(394,701)					
18	ACC REV BAL ADJ - Fiber	-	-	-	-	-	-	-	-
19	ACC REV BAL ADJ - 3AC	(82,972)			(82,972)				
20	**INVESTMENT BASE**	**6,168,996**	**91,116**	**5,097,540**	**688,673**	**78,629**	**10,737**	**6,151**	**196,150**

TABLE 4-5
CALCULATION OF RETIREMENT RATIOS
($000s)

		A	B	C	D	E	F	G	H
	RETIREMENTS	**FERC Account**	**2013**	**2014**	**2015**	**2016**	**2017**	**Total**	**5-Year Average**
1	STRUCTURES/IMPROVEMENTS	352	289	329	519	2,786	381	4,303	861
2	STATION EQUIPMENT	353	12,295	12,439	17,666	200,196	8,579	251,174	50,235
3	TOWERS & FIXTURES	354	62	376	207	100	383	1,127	225
4	POLES & FIXTURES	355	701	5,395	1,702	1,809	1,084	10,691	2,138
5	OVERHEAD CONDUCTOR	356	457	3,512	1,871	436	5,745	12,022	2,404
6	UNDERGROUND CONDUCTOR	358	-	7	-	-	-	7	1
7	ROADS & TRAILS	359	6	-	6	0	-	12	2

		A	B	C	D	E	F	G	H	I	J	K	L
	ADDITIONS	**FERC Account**	**2013**	**2014**	**2015**	**2016**	**2017**	**Total**	**5-Year Average Additions**	**Additions Net of Retirements**	**Weighted**	**Ratio (I/H)**	**Weighted Ratio (JxK)**
8	STRUCTURES/IMPROVEMENTS	352	26,098	26,115	15,480	47,573	21,812	137,079	27,416	26,555	0.1185	0.9686	0.1148
9	STATION EQUIPMENT	353	169,468	147,182	188,754	549,341	183,888	1,238,633	247,727	197,492	0.8815	0.7972	0.7027
10	**STATION SUB-TOTAL (Lines 8+9)**		**195,565**	**173,297**	**204,234**	**596,914**	**205,700**	**1,375,711**	**275,142**	**224,047**	**1.0000**	**0.8143**	**0.8175**
11	TOWERS & FIXTURES	354	4,546	10,447	59,107	108,213	5,752	188,066	37,613	37,388	0.2616	0.9940	0.2601
12	POLES & FIXTURES	355	13,061	28,434	11,328	36,463	29,007	118,294	23,659	21,521	0.1506	0.9096	0.1370
13	OVERHEAD CONDUCTOR	356	7,035	15,061	40,571	106,929	99,102	268,698	53,740	51,335	0.3592	0.9553	0.3432
14	UNDERGROUND CONDUCTOR	358	49	-	52	0	-	102	20	19	0.0001	0.9280	0.0001
15	ROADS & TRAILS	359	24,632	11,234	9,550	73,898	43,871	163,185	32,637	32,635	0.2284	0.9999	0.2284
16	**LINES SUB-TOTAL (Lines 11+12+13+14+15)**		**49,324**	**65,177**	**120,609**	**325,504**	**177,731**	**738,344**	**147,669**	**142,897**	**1.0000**	**0.9677**	**0.9687**

	Ratios of Additions Net of Retirements	
17	Substations	**0.8175**
18	Lines	**0.9687**

TABLE 4-6
BPA TRANSMISSION PLANT INVESTMENT ADDITIONS
($000s)

		E	F	G	H	I	J	K	L	M	N	O	P
					TOTAL 2019				TOTAL 2020				TOTAL 2021
	GROSS INVESTMENTS	LINES	SUBS	OTHER	ADDITIONS	LINES	SUBS	OTHER	ADDITIONS	LINES	SUBS	OTHER	ADDITIONS
1	GENERATION-INTEGRATION	0	0	0	0	0	0	0	0	0	0	0	0
2	NETWORK	63,065	204,875	0	267,940	83,467	214,409	0	297,876	124,584	193,479	0	318,063
3	SOUTHERN INTERTIE	67	2,893	0	3	2,118	8,774	0	10,893	36	2,188	0	2,225
4	EASTERN INTERTIE	0	0	0	0	0	0	0	0	0	0	0	0
5	UTILITY DELIVERY	0	0	0	0	0	0	0	0	0	0	0	0
6	DSI DELIVERY	0	0	0	0	0	0	0	0	0	0	0	0
7	REGULATORY ASSET	0	0	556	556	0	0	926	926	0	0	0	0
8	GENERAL PLANT	0	0	115,489	115,489	0	0	101,349	101,349	0	0	92,561	92,561
9	**TOTAL BPA**	**63,133**	**207,768**	**116,045**	**383,987**	**85,585**	**223,184**	**102,275**	**411,043**	**124,620**	**195,668**	**92,561**	**412,850**
	INVESTMENTS NET OF RETIREMENTS												
10	GENERATION-INTEGRATION	0	0	0	0	0	0	0	0	0	0	0	0
11	NETWORK	61,093	167,491	0	228,584	80,856	175,286	0	256,142	120,687	158,175	0	278,863
12	SOUTHERN INTERTIE	65	2,365	0	2,431	3	1,732	0	1,734	35	1,789	0	1,824
13	EASTERN INTERTIE	0	0	0	0	0	0	0	0	0	0	0	0
14	UTILITY DELIVERY	0	0	0	0	0	0	0	0	0	0	0	0
15	DSI DELIVERY	0	0	0	0	0	0	0	0	0	0	0	0
16	REGULATORY ASSET	0	0	556	556	0	0	926	926	0	0	0	0
17	GENERAL PLANT	0	0	115,489	115,489	0	0	101,349	101,349	0	0	92,561	92,561
18	**TOTAL BPA**	**61,158**	**169,857**	**116,045**	**347,060**	**80,859**	**177,018**	**102,275**	**360,151**	**120,723**	**159,964**	**92,561**	**373,248**

TABLE 4-7
AMORTIZATION OF BPA TRANSMISSION OTHER DEFERRED ASSETS
($000s)

SPACER DAMPERS
30-YEAR SERVICE LIFE

		A	B	C	D	E	F	G	H	I	J
	FY	NVESTMEN	PARTIAL YEAR	FULL YEAR	ANNUAL	ACCUM AMORT	CUMULATIVE INVESTMENT	DEFERRED INVESTMENT	NET INVESTMENT	ORIGINAL INVESTMEN	RETIREMENT
1	2006	1,094	45	36		0	1,094	5,696		2,728	(1,634)
2	2007	1,123	46	37		0	2,216	5,200		2,800	(1,677)
3	2008	9,658	334	322		0	11,875		11,875	24,091	(14,433)
4	2009	1,119	37	37		0	12,993		12,993	2,790	(1,671)
5	2010	2,688	66	90		0	15,681		15,681	6,704	(4,016)
6	2011	7,802	130	260		1,630	23,483		21,853	39,113	(23,431)
7	2012	3,888	67	130	850	2,480	27,371		24,891		
8	2013	718	25	24	937	3,417	28,089		24,671		
9	2014	600	10	20	946	4,363	28,689		24,325		
10	2015	4	0	0	956	5,320	28,692		23,373		
11	2016	0	0	0	956	6,276	28,692		22,416		
12	2017	0	0	0	956	7,233	28,692		21,460		
13	2018	0	0	0	956	8,189	28,692		20,503		
14	2019	0	0	0	956	9,145	28,692		19,547		
15	2020	0	0	0	956	10,102	28,692		18,591		
16	2021	0	0	0	956	11,058	28,692		17,634		

FY 2008 investment = 9,617 plus total deferred investment from 2006 and 2007.
FY 2011: retirement of $23,431 of impaired assets

TABLE 4-7
AMORTIZATION OF BPA TRANSMISSION OTHER DEFERRED ASSETS
($000s)

SPACER DAMPERS
25-YEAR SERVICE LIFE

		A	B	C	D	E	F	G	H
	FY	NVESTMEN	PARTIAL YEAR	FULL YEAR	ANNUAL	ACCUM AMORT	CUMULATIVE INVESTMENT	DEFERRED INVESTMENT	NET INVESTMENT
17	2012	13,090	136	524	136	136	13,090	0	12,954
18	2013	9,592	132	384	656	792	22,682	0	21,890
19	2014	4,715	94	189	1,002	1,793	27,397	0	25,604
20	2015	399	8	16	1,104	2,897	27,796	0	24,899
21	2016	1,326	27	53	1,138	4,035	29,122	0	25,087
22	2017	587	12	23	1,177	5,212	29,710	0	24,497
23	2018	2,288	46	92	1,234	6,446	31,997	0	25,551
24	2019	556	11	22	1,262	7,724	31,829	0	24,105
25	2020	926	19	37	1,292	9,015	32,755	0	23,740
26	2021	0	0	0	1,310	10,325	32,755	0	22,430

I-5 REINFORCEMENT PROJECT
5 YEAR LIFE

		A	B	C	D	E	F	G	H
	FY	NVESTMEN	PARTIAL YEAR	FULL YEAR	ANNUAL	ACCUM AMORT	CUMULATIVE INVESTMENT	DEFERRED INVESTMENT	NET INVESTMENT
27	2017	130,013	0	0	0	0	0	0	0
28	2018	0	0	0	0	0	0	0	0
29	2019	0	0	0	0	0	0	0	0
30	2020	0	0	26,003	26,003	26,003	130,013	0	104,011
31	2021	0	0	26,003	26,003	52,005	130,013	0	78,008
32	2022	0	0	26,003	26,003	78,008	130,013	0	52,005
33	2023	0	0	26,003	26,003	104,011	130,013	0	26,003
34	2024	0	0	26,003	26,003	130,013	130,013	0	0

TABLE 4-8
DEPRECIATION OF LARGE GENERATOR INTERCONNECTION AGREEMENTS
($000s)

	A	B	C	D	E	F	G	H	I	J
						DEPRECIATION		ACCUMULATED DEPRECIATION		
	IN-SERVICE	CUMULATIVE INVESTMENT	TOTAL ANNUAL INVESTMENT	LINES	SUBSTATIONS	LINES	SUBSTATIONS	LINES	SUBSTATIONS	TOTAL
1	2006	6,980	6,980	768	6,212	8	77	8	77	85
2	2007	33,827	26,847	2,953	23,894	49	453	57	530	586
3	2008	56,641	22,814	2,510	20,304	108	1,004	164	1,534	1,698
4	2009	128,460	71,819	7,900	63,919	220	2,054	384	3,588	3,972
5	2010	136,700	8,240	1,086	7,154	317	2,940	702	6,528	7,230
6	2011	194,898	58,198	3,446	54,752	366	3,712	1,068	10,241	11,309
7	2012	216,898	22,000	3,300	18,700	439	4,628	1,507	14,869	16,376
8	2013	265,102	48,204	7,299	40,905	554	5,371	2,061	20,240	22,301
9	2014	341,286	76,184	11,428	64,757	756	6,689	2,818	26,929	29,746
10	2015	347,001	5,715	857	4,858	921	6,606	3,739	33,535	37,273
11	2016	354,933	7,931	1,190	6,742	944	6,732	4,683	40,267	44,950
12	2017	354,837	(96)	(14)	(82)	957	6,805	5,640	47,072	52,712
13	2018	364,837	10,000	1,500	8,500	974	6,897	6,614	53,969	60,582
14	2019	404,306	42,165	-	42,165	1,269	7,634	8,459	62,062	70,521
15	2020	457,308	53,001	-	53,001	1,269	8,708	9,727	70,770	80,497
16	2021	504,192	46,884	-	46,884	1,269	9,834	10,996	80,604	91,600

TABLE 4-9
BPA GENERAL PLANT CUMULATIVE INVESTMENT
($000s)

		A	B	C	D	E	F	G	H	I
		FERC ACCT	**DEPR ACCRL RATE**	**2019 TOTAL INVEST**	**2020 DEPR EXPENSE**	**2020 ACCUM DEPR**	**2020 TOTAL INVEST**	**2021 DEPR EXPENSE**	**2021 ACCUM DEPR**	**2021 TOTAL INVEST**
1	LAND & LAND RIGHTS	389	0.06840	27,227	2,086	4,011	33,778	2,556	6,567	40,960
2	STRUCTURES & IMPROVEMENTS	390	0.01950	361,417	7,609	88,483	418,999	8,667	97,150	469,888
3	OFFICE FURNITURE & FIXTURES	391.1	0.05030	1,730	87	1,474	1,730	87	1,561	1,730
4	DATA PROCESSING -EQUIPMENT	391.2	0.17550	10,912	1,915	10,146	10,912	767	10,912	10,912
5	DATA PROCESSING -SOFTWARE	391.3	0.15020	32,635	4,994	28,465	33,857	5,179	33,644	35,102
6	TRANSPORT EQUIPMENT	392.1	0.03670	70,275	2,637	31,451	73,415	2,759	34,210	76,949
7	HELICOPTERS	392.2	0.03080	9,234	284	4,452	9,234	284	4,736	9,234
8	AIRPLANES	392.3	0.07530	8,656	652	7,130	8,656	652	7,782	8,656
9	STORES EQUIPMENT	393	0.03430	3,809	131	878	3,809	131	1,009	3,809
10	TOOLS, SHOP & GARAGE EQUIPMENT	394	0.04110	18,024	766	6,648	19,253	817	7,465	20,506
11	LAB EQUIPMENT	395	0.07890	30,936	2,441	20,777	30,936	2,441	23,218	30,936
12	POWER OPERATED EQUIPMENT	396	0.02410	30,234	729	17,687	30,234	729	18,416	30,234
13	COMMUNICATIONS EQUIPMENT	397	0.06628	625,343	42,323	353,954	651,708	43,965	397,919	674,907
14	MISC EQUIPMENT	398	0.06670	48,971	3,266	32,761	48,971	3,266	36,027	48,971
15	**SUBTOTAL GENERAL PLANT**			**1,279,404**	**69,920**	**608,316**	**1,375,493**	**72,300**	**680,615**	**1,462,794**
	CORPORATE ASSIGNMENT									
18	OFFICE FURNITURE & FIXTURES	391.1	0.05270	1	0	1	1	0	1	1
19	DATA PROCESSING -EQUIPMENT	391.2	0.13270	57,384	10,384	48,903	60,952	11,010	59,913	64,519
20	DATA PROCESSING -SOFTWARE	391.3	0.17100	21,324	3,330	22,573	23,017	2,137	24,710	24,710
21	COMMUNICATIONS EQUIPMENT	397	0.05690	-	0	(14)	-	0	(14)	-
22	MISC EQUIPMENT	398	0.06700	22,131	1,476	12,019	22,131	1,476	13,495	22,131
23	**SUBTOTAL CORPORATE ASSIGNMENT**			**100,840**	**15,190**	**83,482**	**106,100**	**14,623**	**98,105**	**111,361**
24	**TOTAL GENERAL PLANT**			**1,380,245**	**85,110**	**691,798**	**1,481,593**	**86,923**	**778,721**	**1,574,155**

Removed Station Equipment (FERC 353) Line Item, now showing in Ancillary Services Table 4.11

TABLE 4-10
BPA TRANSMISSION GENERAL PLANT PROJECTED PLANT ADDITIONS
($000s)

		A	B	C	D
		FERC ACCT	**2019**	**2020**	**2021**
1	LAND & LAND RIGHTS	389	12,688	6,550	7,182
2	STRUCTURES & IMPROVEMENTS	390	63,440	59,319	52,423
3	OFFICE FURNITURE & FIXTURES	391.1	0	0	0
4	DATA PROCESSING -EQUIPMENT	391.2	0	0	0
5	DATA PROCESSING -SOFTWARE	391.3	7,444	4,709	4,796
6	TRANSPORT EQUIPMENT	392.1	8,869	5,963	6,710
7	HELICOPTERS	392.2	0	0	0
8	AIRPLANES	392.3	0	0	0
9	STORES EQUIPMENT	393	0	0	0
10	TOOLS, SHOP & GARAGE EQUIPMENT	394	1,601	1,236	1,260
11	LAB EQUIPMENT	395	0	0	0
12	POWER OPERATED EQUIPMENT	396	0	0	0
13	COMMUNICATIONS EQUIPMENT	397	40,731	38,316	33,717
14	METERING STATIONS	353.03	0	0	0
15	**SUBTOTAL GENERAL PLANT**		**134,774**	**116,094**	**106,088**
16	STATION EQUIPMENT	353	41,124	27,623	28,325
17	**TOTAL GENERAL PLANT**		**175,898**	**143,717**	**134,413**

		A	B	C	D
CORPORATE ASSIGNMENT					
18	OFFICE FURNITURE & FIXTURES	391.1	0	0	0
19	DATA PROCESSING -EQUIPMENT	391.2	4,620	5,200	5,200
20	DATA PROCESSING -SOFTWARE	391.3	3,649	3,380	3,380
21	COMMUNICATIONS EQUIPMENT	397	0	0	0
22	MISC EQUIPMENT	398	0	0	0
23	**TOTAL CORPORATE ASSIGNMENT**		**8,269**	**8,580**	**8,580**

TABLE 4-11
ANCILLARY SERVICES
SCHEDULING, SYSTEM CONTROL, AND DISPATCH SERVICES
($000s)

	PLANT ADDITIONS	A	B	C
	FERC ACCOUNT	2019	2020	2021
1	353	32,785	22,022	22,581
2	391.2	0	0	0
3	391.3	1,797	1,136	1,157
4	397	3,141	2,954	2,600
5	Total	37,722	26,113	26,339

		A	B	C	D	E	F	G	H
	FERC ACCOUNT	DEPR ACCRL RATE	2019 TOTAL INVEST	2020 DEPR EXP	2020 ACCUM DEPR	2020 TOTAL INVEST	2021 DEPR EXP	2021 ACCUM DEPR	2021 TOTAL INVEST
6	353	0.0229	138,119	3,415	33,264	160,141	3,926	37,190	182,722
7	391.2	0.1755	33,256	5,837	30,923	33,256	2,334	33,256	33,256
8	391.3	0.1502	30,352	4,644	26,473	31,488	4,816	31,289	32,646
9	397	0.0663	70,076	4,743	39,664	73,030	4,927	44,591	75,630
10	Total		271,803	18,639	130,325	297,915	16,003	146,327	324,254

		A	B	C	D	E	F
	FERC ACCOUNT PLANT INVESTMENT	2019	2020	AVERAGE 2020	2020	2021	AVERAGE 2021
11	353	138,119	160,141	149,130	160,141	182,722	171,431
12	391.2	33,256	33,256	33,256	33,256	33,256	33,256
13	391.3	30,352	31,488	30,920	31,488	32,646	32,067
14	397	70,076	73,030	71,553	73,030	75,630	74,330
15	Total	271,803	297,915	284,859	297,915	324,254	311,085
	ACCUMULATED DEPRECIATION						
16	353	28,455	33,264	30,860	33,264	35,227	34,246
17	391.2	22,167	30,923	26,545	30,923	32,090	31,506
18	391.3	19,617	26,473	23,045	26,473	28,881	27,677
19	397	32,651	39,664	36,158	39,664	42,128	40,896
20	Total	102,891	130,325	116,608	130,325	138,326	134,325
	NET PLANT INVESTMENT						
21	353	108,269	126,876	117,573	126,876	145,532	136,204
22	391.2	8,171	2,334	5,252	2,334	0	1,167
23	391.3	8,523	5,015	6,769	5,015	1,357	3,186
24	397	35,154	33,365	34,260	33,365	31,038	32,202
25	Total	160,117	167,591	163,854	167,591	177,927	172,759

5. PROJECTED CASH BALANCES/INTEREST CREDITS

5.1 Introduction

This chapter projects Transmission Services' cash balances for the rate period and estimates the interest income (credits) to be earned on BPA's projected cash balances and on annual funds to be returned to the U.S. Treasury.

5.2 Interest credits on BPA's projected cash balances

The beginning rate period cash balance was derived from BPA's business unit cash analysis for the end of FY 2018 and from current forecasts of transmission revenues, expenses, and cash flows for FY 2019. The annual incremental cash provided from forecast net revenues is added to the beginning cash balance for revenue requirements and the current and revised revenue tests. Using the existing interest earnings rate, annual interest income is calculated from projected average annual cash balances. The resulting interest income is applied as a credit against interest expense in the transmission revenue requirements and in the income statements of the current and revised revenue tests.

5.3 Interest credits on reserves not for risk

The projected interest earnings rate is multiplied by the reserves not for risk (RNFR) average cash balance for each year to determine the annual interest income. The resulting interest income is applied as a credit against interest expense in the transmission revenue requirement.

5.4 Interest income (repayment program calculation)

Separately, interest income rates listed in this chapter are calculated and used within the repayment program to calculate an interest credit based on the average cash necessary to pay the interest, bond call premiums, and amortization payments calculated by the study for return to the

U.S. Treasury in each study year. The repayment program assumes the cash accumulates at a uniform rate throughout the year, except for interest paid on bonds issued to the U.S. Treasury at mid-year. At the end of the year, the cash balance, together with the interest credit earned thereon, is used in the program for payment of interest expense, amortization of the Federal investment, and payment of bond premiums.

TABLE 5-1

INTEREST INCOME FROM PROJECTED CASH BALANCES

REVENUE REQUIREMENT DEVELOPMENT

($000s)

		A	B
		2020	**2021**
1	ANNUAL CASH SURPLUS/(DEFICIT)	-	-
2	ADJUSTMENTS TO CASH	-	-
3	SOY CASH BALANCE	457,000	457,000
4	EOY CASH BALANCE	457,000	457,000
5	AVERAGE CASH BALANCE	457,000	457,000
6	INTEREST INCOME RATE	0.75%	0.79%
7	INTEREST ON BPA FUND/INVESTMENTS (LN 5 X LN 6)	3,428	3,610
8	REPAYMENT STUDY INTEREST INCOME	1,042	1,119
INTEREST EARNED ON RESERVES NOT FOR RISK			
9	SOY CASH BALANCE	95,000	95,000
10	EOY CASH BALANCE	95,000	83,000
11	AVERAGE CASH BALANCE	95,000	89,000
12	INTEREST ON FUNDS HELD FOR OTHERS (LN 11 X LN 6)	713	703
13	TRUSTEE INTEREST INCOME	200	-
14	**TOTAL ANNUAL INTEREST INCOME (LN 7+8+12+13)**	**5,382**	**5,432**

TABLE 5-2

INTEREST INCOME FROM PROJECTED CASH BALANCES

REVENUES FROM CURRENT RATES

($000s)

		A	B
		2020	**2021**
1	ANNUAL CASH SURPLUS/(DEFICIT)	(28,809)	(25,993)
2	ADJUSTMENTS TO CASH	-	-
3	SOY CASH BALANCE	477,863	449,054
4	EOY CASH BALANCE	449,054	423,061
5	AVERAGE CASH BALANCE	463,459	436,058
6	INTEREST INCOME RATE	0.75%	0.79%
7	INTEREST ON BPA FUND/INVESTMENTS (LN 5 X LN 6)	3,476	3,445
8	REPAYMENT STUDY INTEREST INCOME	1,042	1,119
INTEREST EARNED ON RESERVES NOT FOR RISK			
9	SOY CASH BALANCE	95,000	95,000
10	EOY CASH BALANCE	95,000	83,000
11	AVERAGE CASH BALANCE	95,000	89,000
12	INTEREST INCOME (LN 11 X LN 6)	713	703
13	TRUSTEE INTEREST INCOME	200	-
14	**TOTAL ANNUAL INTEREST INCOME (LN 7+8+12+13)**	**5,431**	**5,267**

TABLE 5-3

INTEREST INCOME FROM PROJECTED CASH BALANCES

REVENUES FROM PROPOSED RATES

($000s)

		A **2020**	B **2021**
1	ANNUAL CASH SURPLUS/(DEFICIT)	(1,602)	(860)
2	ADJUSTMENTS TO CASH	-	-
3	SOY CASH BALANCE	477,863	476,311
4	EOY CASH BALANCE	476,261	475,401
5	AVERAGE CASH BALANCE	477,062	475,831
6	INTEREST INCOME RATE	0.75%	0.79%
7	INTEREST ON BPA FUND/INVESTMENTS (LN 5 X LN 6)	3,628	3,759
8	REPAYMENT STUDY INTEREST INCOME	1,023	1,137
INTEREST EARNED ON RESERVES NOT FOR RISK			
9	SOY CASH BALANCE	95,000	95,000
10	EOY CASH BALANCE	95,000	83,000
11	AVERAGE CASH BALANCE	95,000	89,000
12	INTEREST INCOME (LN 11 X LN 6)**	713	703
13	TRUSTEE INTEREST INCOME	200	-
14	**TOTAL ANNUAL INTEREST INCOME (LN 7+8+12+13)**	**5,564**	**5,599**

**Includes additional $200k for trustee interest income from lease financing

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6. INTEREST RATES AND PRICE DEFLATORS

6.1 Introduction

Interest rates on bonds issued by BPA to the U.S. Treasury are used in development of repayment studies and projections of Federal interest expense in revenue requirements.

6.2 Source of Forecasts

To project interest rates on bonds issued to the U.S. Treasury, BPA uses U.S. Treasury yield curve forecasts provided by the IHS Global Insights Group (GI). GI is also the source of price deflators that BPA treats as escalators for purposes of developing spending levels. GI develops the price deflators taking into account projections of Gross Domestic Product (GDP). The GDP consists of the sum of consumption, investment, government purchases, and net exports, excluding transfers to foreigners.

6.3 Interest Rate Projections

Projected interest rates for BPA bonds issued to the U.S. Treasury are based on GI's yield curve projections of U.S. Treasury market rates, plus an average markup of up to 56 basis points, depending on the length of time to maturity. The markup estimate reflects an interagency agreement that the U.S. Treasury will price BPA bonds at a level comparable to the price for securities (bonds) issued by U.S. government corporations. The markup estimate reflects the average basis point markup on recent intermediate and long-term bonds issued by BPA.

6.4 Deflators

The current and cumulative price deflators used to escalate midyear dollars are derived from the fiscal and calendar year price deflators provided by GI. They are calculated as follows:

$$[(FY_1/100) \times 0.5] + 1 = \text{Cumulative Price Deflator}_1$$

Thus, the fiscal year GDP price deflator for the current year is divided by one hundred and multiplied by one-half. The result, when added to one, yields the cumulative price deflator for the first year.

$$[1 + (FY_t/100)] \times \text{Cumulative Price Deflator}_{t-1} = \text{Cumulative Price Deflator}_t\text{, when } t > 1$$

Thus, the fiscal year GDP price deflator for a future year is divided by one hundred and added to one. The result, when multiplied by the cumulative price deflator from the previous year, yields the cumulative price deflator for each successive year.

When deflators are used in developing the FY 2020–2021 spending levels, they are based on the price deflators from the August 2016 GI Base Case forecast.

DOE F 1325.8e Electronic Form Approved by Forms Mgmt. 04/19/2006
(08-89)

United States Government **Department of Energy**

memorandum

Bonneville Power Administration

DATE: 10/31/2017

REPLY TO
ATTN OF: FTR-2

SUBJECT: FY 2018 Interest Rate and Inflation Forecast

TO: See Attached "cc:" List

Please see the attached BPA interest rate and inflation forecast for the period FY 2018 through 2047.

These forecasts provide an internally consistent basis for BPA decisions regarding debt management, budget formulation, financial analyses, capital budgeting, and strategic planning efforts. The FY 2017 forecast consisted of the following tables:

- Table 1: 30 Year Borrowing Rate Comparison
- Table 2: 15 Year Borrowing Rate Comparison
- Table 3: 5 Year Borrowing Rate Comparison
- Table 4: Appropriation Borrowing Rates
- Table 5: BPA Agency Borrowing Rates
- Table 6: Third-Party Taxable Borrowing Rates
- Table 7: Third-Party Tax-Exempt Borrowing Rates
- Table 8: FERC (Bank Prime) Borrowing Rates and
  3-Month London Interbank Offered (LIBOR) Borrowing Rates
- Table 9: Inflation Forecast and Comparison

Borrowing Rate Forecast Methodology

A table of US Treasury interest rates for calendar years (CY) 2017-2047 is established using:

- an average of all available data for CY 2017 from Bloomberg's Bi550 US Treasury BVAL curve and
- the 2018-2047 projections from the Global Insight's (GI) third-quarter August 2017 Long-Term Economic Outlook.

This table is then converted to BPA fiscal years (FY) by combining 75% of the current year's CY rate and 25% of the previous year's CY rate. For example, the value for BPA FY 2017 consists of 75% CY 2017 and 25% of CY 2016.

BPA's borrowing rate projections, tables 4 through 7, reflect a spread compared to the Treasury yield curve. The spread is calculated from historical data, not including any call features, and then applied to the BPA FY Treasury table.

The FERC and LIBOR rates, table 8, are established by using the CY projections from GI's third-quarter August 2017 Long-Term Economic Outlook and then converted into BPA FY.

Inflation Forecast Methodology

BPA inflation assumptions reflect projected changes in the U.S. GDP Price Deflator. The GDP Price Deflator is the broadest measure of inflation in the U.S. economy. GDP reflects the value of all goods and services produced by domestic and foreign capital and labor within the United States. Major components of GDP include: total consumption, investment, government purchases, and net exports. The real GDP calculations reflect both the changing mix of the components in GDP and the relative price changes in these components.

This index assumes a base year of 2009. The projected change in the GDP price deflator and comparison with the FY 2017 inflation forecast is summarized in Table 9. Column A shows the projected trend in GDP inflation rates between 2018-2047 on a CY basis and in column B by BPA FY. Column C provides the cumulative price index projections. The forecast expresses FY dollar values as mid-year dollar values. Columns D and E show last year's projections while columns F and G show a comparison between the two years worth of projections.

If you have questions concerning the FY 2018 Interest Rate and Inflation Forecasts please contact Bill Hendricks at (503) 230-5389.

Bill Hendricks
Financial Analyst
Revenue Requirement, Repayment, and Financial Strategy

Official File:
https://finance.bud.bpa.gov/FT/FTR/Common%20Agency%20Assumptions/Forms/AllItems.aspx

Table 1
30 Year Borrowing Rate Comparison

FY 2018 Forecast of Appropriation, BPA Agency, Third-Part Taxable,
and Third-Party Tax-Exempt Borrowing Rates

BPA Fiscal Years 2018-2047

Year	A Appropriation Rate	B BPA Agency Rate	C Third-Party Taxable Rate	D Third-Party Tax-Exempt Rate
2018	2.75	3.99	5.02	3.99
2019	3.89	4.68	5.67	4.64
2020	4.40	5.00	5.97	4.93
2021	4.66	5.07	6.01	4.97
2022	4.66	5.07	6.01	4.97
2023	4.66	5.07	6.01	4.97
2024	4.66	5.07	6.01	4.97
2025	4.66	5.07	6.01	4.97
2026	4.66	5.07	6.01	4.97
2027	4.66	5.07	6.01	4.97
2028	4.66	5.07	6.01	4.97
2029	4.66	5.07	6.01	4.97
2030	4.66	5.07	6.01	4.97
2031	4.66	5.07	6.01	4.97
2032	4.66	5.07	6.01	4.97
2033	4.66	5.07	6.01	4.97
2034	4.66	5.07	6.01	4.97
2035	4.66	5.07	6.01	4.97
2036	4.66	5.07	6.01	4.97
2037	4.66	5.07	6.01	4.97
2038	4.66	5.07	6.01	4.97
2039	4.66	5.07	6.01	4.97
2040	4.66	5.07	6.01	4.97
2041	4.66	5.07	6.01	4.97
2042	4.66	5.07	6.01	4.97
2043	4.66	5.07	6.01	4.97
2044	4.66	5.07	6.01	4.97
2045	4.66	5.07	6.01	4.97
2046	4.66	5.07	6.01	4.97
2047	4.66	5.07	6.01	4.97

1/ All values represent a Bonneville Fiscal Year (October 1 - September 30).

2/ FY 2018 Appropriation rates are determined in accordance with BPA Appropriations Refinancing Act, 16 U.S.C. 8381 enacted on April 26, 1996, and are independent of the Global Insight Treasury Yield forecasts.

Table 2

15 Year Borrowing Rate Comparison

FY 2018 Forecast of Appropriation, BPA Agency, Third-Part Taxable,
and Third-Party Tax-Exempt Borrowing Rates

BPA Fiscal Years 2018-2047

Year	A Appropriation Rate	B BPA Agency Rate	C Third-Party Taxable Rate	D Third-Party Tax-Exempt Rate
2018	2.38	3.40	4.19	3.15
2019	3.38	4.12	4.89	3.86
2020	3.95	4.47	5.22	4.21
2021	4.23	4.53	5.26	4.27
2022	4.23	4.53	5.26	4.27
2023	4.23	4.53	5.26	4.27
2024	4.23	4.53	5.26	4.27
2025	4.23	4.53	5.26	4.27
2026	4.23	4.53	5.26	4.27
2027	4.23	4.53	5.26	4.27
2028	4.23	4.53	5.26	4.27
2029	4.23	4.53	5.26	4.27
2030	4.23	4.53	5.26	4.27
2031	4.23	4.53	5.26	4.27
2032	4.23	4.53	5.26	4.27
2033	4.23	4.53	5.26	4.27
2034	4.23	4.53	5.26	4.27
2035	4.23	4.53	5.26	4.27
2036	4.23	4.53	5.26	4.27
2037	4.23	4.53	5.26	4.27
2038	4.23	4.53	5.26	4.27
2039	4.23	4.53	5.26	4.27
2040	4.23	4.53	5.26	4.27
2041	4.23	4.53	5.26	4.27
2042	4.23	4.53	5.26	4.27
2043	4.23	4.53	5.26	4.27
2044	4.23	4.53	5.26	4.27
2045	4.23	4.53	5.26	4.27
2046	4.23	4.53	5.26	4.27
2047	4.23	4.53	5.26	4.27

1/ All values represent a Bonneville Fiscal Year (October 1 - September 30).

2/ FY 2018 Appropriation rates are determined in accordance with BPA Appropriations Refinancing Act, 16 U.S.C. 8381 enacted on April 26, 1996, and are independent of the Global Insight Treasury Yield forecasts.

Table 3
5 Year Borrowing Rate Comparison

FY 2018 Forecast of Appropriation, BPA Agency, Third-Part Taxable,
and Third-Party Tax-Exempt Borrowing Rates

BPA Fiscal Years 2018-2047

Year	A Appropriation Rate	B BPA Agency Rate	C Third-Party Taxable Rate	D Third-Party Tax-Exempt Rate
2018	1.82	2.43	2.96	2.02
2019	2.72	3.19	3.67	2.76
2020	3.31	3.61	4.04	3.18
2021	3.58	3.71	4.09	3.26
2022	3.58	3.71	4.09	3.26
2023	3.58	3.71	4.09	3.26
2024	3.58	3.71	4.09	3.26
2025	3.58	3.71	4.09	3.26
2026	3.58	3.71	4.09	3.26
2027	3.58	3.71	4.09	3.26
2028	3.58	3.71	4.09	3.26
2029	3.58	3.71	4.09	3.26
2030	3.58	3.71	4.09	3.26
2031	3.58	3.71	4.09	3.26
2032	3.58	3.71	4.09	3.26
2033	3.58	3.71	4.09	3.26
2034	3.58	3.71	4.09	3.26
2035	3.58	3.71	4.09	3.26
2036	3.58	3.71	4.09	3.26
2037	3.58	3.71	4.09	3.26
2038	3.58	3.71	4.09	3.26
2039	3.58	3.71	4.09	3.26
2040	3.58	3.71	4.09	3.26
2041	3.58	3.71	4.09	3.26
2042	3.58	3.71	4.09	3.26
2043	3.58	3.71	4.09	3.26
2044	3.58	3.71	4.09	3.26
2045	3.58	3.71	4.09	3.26
2046	3.58	3.71	4.09	3.26
2047	3.58	3.71	4.09	3.26

1/ All values represent a Bonneville Fiscal Year (October 1 - September 30).

2/ FY 2018 Appropriation rates are determined in accordance with BPA Appropriations Refinancing Act, 16 U.S.C. 8381 enacted on April 26, 1996, and are independent of the Global Insight Treasury Yield forecasts.

Table 5
Appropriations Borrowing Rates

BPA Fiscal Years 2018-2047
(continued on next page)

Maturity

Year	1 Year	2 Year	3 Year	4 Year	5 Year	6 Year	7 Year	8 Year	9 Year	10 Year	11 Year	12 Year	13 Year	14 Year	15 Year
2018	1.28	1.41	1.54	1.68	1.82	1.95	2.03	2.13	2.13	2.20	2.25	2.25	2.25	2.32	2.38
2019	2.48	2.50	2.57	2.65	2.72	2.82	2.92	3.01	3.11	3.21	3.24	3.28	3.31	3.35	3.38
2020	3.00	3.02	3.12	3.21	3.31	3.41	3.51	3.60	3.70	3.79	3.82	3.86	3.89	3.92	3.95
2021	3.16	3.20	3.33	3.45	3.58	3.68	3.78	3.88	3.98	4.09	4.12	4.14	4.17	4.20	4.23
2022	3.16	3.20	3.33	3.45	3.58	3.68	3.78	3.88	3.98	4.09	4.12	4.14	4.17	4.20	4.23
2023	3.16	3.20	3.33	3.45	3.58	3.68	3.78	3.88	3.98	4.09	4.12	4.14	4.17	4.20	4.23
2024	3.16	3.20	3.33	3.45	3.58	3.68	3.78	3.88	3.98	4.09	4.12	4.14	4.17	4.20	4.23
2025	3.16	3.20	3.33	3.45	3.58	3.68	3.78	3.88	3.98	4.09	4.12	4.14	4.17	4.20	4.23
2026	3.16	3.20	3.33	3.45	3.58	3.68	3.78	3.88	3.98	4.09	4.12	4.14	4.17	4.20	4.23
2027	3.16	3.20	3.33	3.45	3.58	3.68	3.78	3.88	3.98	4.09	4.12	4.14	4.17	4.20	4.23
2028	3.16	3.20	3.33	3.45	3.58	3.68	3.78	3.88	3.98	4.09	4.12	4.14	4.17	4.20	4.23
2029	3.16	3.20	3.33	3.45	3.58	3.68	3.78	3.88	3.98	4.09	4.12	4.14	4.17	4.20	4.23
2030	3.16	3.20	3.33	3.45	3.58	3.68	3.78	3.88	3.98	4.09	4.12	4.14	4.17	4.20	4.23
2031	3.16	3.20	3.33	3.45	3.58	3.68	3.78	3.88	3.98	4.09	4.12	4.14	4.17	4.20	4.23
2032	3.16	3.20	3.33	3.45	3.58	3.68	3.78	3.88	3.98	4.09	4.12	4.14	4.17	4.20	4.23
2033	3.16	3.20	3.33	3.45	3.58	3.68	3.78	3.88	3.98	4.09	4.12	4.14	4.17	4.20	4.23
2034	3.16	3.20	3.33	3.45	3.58	3.68	3.78	3.88	3.98	4.09	4.12	4.14	4.17	4.20	4.23
2035	3.16	3.20	3.33	3.45	3.58	3.68	3.78	3.88	3.98	4.09	4.12	4.14	4.17	4.20	4.23
2036	3.16	3.20	3.33	3.45	3.58	3.68	3.78	3.88	3.98	4.09	4.12	4.14	4.17	4.20	4.23
2037	3.16	3.20	3.33	3.45	3.58	3.68	3.78	3.88	3.98	4.09	4.12	4.14	4.17	4.20	4.23
2038	3.16	3.20	3.33	3.45	3.58	3.68	3.78	3.88	3.98	4.09	4.12	4.14	4.17	4.20	4.23
2039	3.16	3.20	3.33	3.45	3.58	3.68	3.78	3.88	3.98	4.09	4.12	4.14	4.17	4.20	4.23
2040	3.16	3.20	3.33	3.45	3.58	3.68	3.78	3.88	3.98	4.09	4.12	4.14	4.17	4.20	4.23
2041	3.16	3.20	3.33	3.45	3.58	3.68	3.78	3.88	3.98	4.09	4.12	4.14	4.17	4.20	4.23
2042	3.16	3.20	3.33	3.45	3.58	3.68	3.78	3.88	3.98	4.09	4.12	4.14	4.17	4.20	4.23
2043	3.16	3.20	3.33	3.45	3.58	3.68	3.78	3.88	3.98	4.09	4.12	4.14	4.17	4.20	4.23
2044	3.16	3.20	3.33	3.45	3.58	3.68	3.78	3.88	3.98	4.09	4.12	4.14	4.17	4.20	4.23
2045	3.16	3.20	3.33	3.45	3.58	3.68	3.78	3.88	3.98	4.09	4.12	4.14	4.17	4.20	4.23
2046	3.16	3.20	3.33	3.45	3.58	3.68	3.78	3.88	3.98	4.09	4.12	4.14	4.17	4.20	4.23
2047	3.16	3.20	3.33	3.45	3.58	3.68	3.78	3.88	3.98	4.09	4.12	4.14	4.17	4.20	4.23

1/ All values represent a Bonneville Fiscal Year (October 1 - September 30).

2/ FY 2018 Appropriation rates are determined in accordance with BPA Appropriations Refinancing Act, 16 U.S.C. 8381 enacted on April 26, 1996, and are independent of the Global Insight Treasury Yield forecasts.

Table 5

Appropriations Borrowing Rates

BPA Fiscal Years 2018-2047

Maturity

16 Year	17 Year	18 Year	19 Year	20 Year	21 Year	22 Year	23 Year	24 Year	25 Year	26 Year	27 Year	28 Year	29 Year	30 Year	50 Year	Year
2.38	2.40	2.50	2.50	2.50	2.59	2.63	2.63	2.64	2.75	2.75	2.75	2.75	2.75	2.75	2.75	**2018**
3.41	3.45	3.48	3.51	3.55	3.58	3.62	3.65	3.68	3.72	3.75	3.78	3.82	3.85	3.89	3.89	**2019**
3.98	4.01	4.04	4.07	4.10	4.13	4.16	4.19	4.22	4.25	4.28	4.31	4.34	4.37	4.40	4.40	**2020**
4.26	4.29	4.32	4.34	4.37	4.40	4.43	4.46	4.49	4.52	4.55	4.57	4.60	4.63	4.66	4.66	**2021**
4.26	4.29	4.32	4.34	4.37	4.40	4.43	4.46	4.49	4.52	4.55	4.57	4.60	4.63	4.66	4.66	**2022**
4.26	4.29	4.32	4.34	4.37	4.40	4.43	4.46	4.49	4.52	4.55	4.57	4.60	4.63	4.66	4.66	**2023**
4.26	4.29	4.32	4.34	4.37	4.40	4.43	4.46	4.49	4.52	4.55	4.57	4.60	4.63	4.66	4.66	**2024**
4.26	4.29	4.32	4.34	4.37	4.40	4.43	4.46	4.49	4.52	4.55	4.57	4.60	4.63	4.66	4.66	**2025**
4.26	4.29	4.32	4.34	4.37	4.40	4.43	4.46	4.49	4.52	4.55	4.57	4.60	4.63	4.66	4.66	**2026**
4.26	4.29	4.32	4.34	4.37	4.40	4.43	4.46	4.49	4.52	4.55	4.57	4.60	4.63	4.66	4.66	**2027**
4.26	4.29	4.32	4.34	4.37	4.40	4.43	4.46	4.49	4.52	4.55	4.57	4.60	4.63	4.66	4.66	**2028**
4.26	4.29	4.32	4.34	4.37	4.40	4.43	4.46	4.49	4.52	4.55	4.57	4.60	4.63	4.66	4.66	**2029**
4.26	4.29	4.32	4.34	4.37	4.40	4.43	4.46	4.49	4.52	4.55	4.57	4.60	4.63	4.66	4.66	**2030**
4.26	4.29	4.32	4.34	4.37	4.40	4.43	4.46	4.49	4.52	4.55	4.57	4.60	4.63	4.66	4.66	**2031**
4.26	4.29	4.32	4.34	4.37	4.40	4.43	4.46	4.49	4.52	4.55	4.57	4.60	4.63	4.66	4.66	**2032**
4.26	4.29	4.32	4.34	4.37	4.40	4.43	4.46	4.49	4.52	4.55	4.57	4.60	4.63	4.66	4.66	**2033**
4.26	4.29	4.32	4.34	4.37	4.40	4.43	4.46	4.49	4.52	4.55	4.57	4.60	4.63	4.66	4.66	**2034**
4.26	4.29	4.32	4.34	4.37	4.40	4.43	4.46	4.49	4.52	4.55	4.57	4.60	4.63	4.66	4.66	**2035**
4.26	4.29	4.32	4.34	4.37	4.40	4.43	4.46	4.49	4.52	4.55	4.57	4.60	4.63	4.66	4.66	**2036**
4.26	4.29	4.32	4.34	4.37	4.40	4.43	4.46	4.49	4.52	4.55	4.57	4.60	4.63	4.66	4.66	**2037**
4.26	4.29	4.32	4.34	4.37	4.40	4.43	4.46	4.49	4.52	4.55	4.57	4.60	4.63	4.66	4.66	**2038**
4.26	4.29	4.32	4.34	4.37	4.40	4.43	4.46	4.49	4.52	4.55	4.57	4.60	4.63	4.66	4.66	**2039**
4.26	4.29	4.32	4.34	4.37	4.40	4.43	4.46	4.49	4.52	4.55	4.57	4.60	4.63	4.66	4.66	**2040**
4.26	4.29	4.32	4.34	4.37	4.40	4.43	4.46	4.49	4.52	4.55	4.57	4.60	4.63	4.66	4.66	**2041**
4.26	4.29	4.32	4.34	4.37	4.40	4.43	4.46	4.49	4.52	4.55	4.57	4.60	4.63	4.66	4.66	**2042**
4.26	4.29	4.32	4.34	4.37	4.40	4.43	4.46	4.49	4.52	4.55	4.57	4.60	4.63	4.66	4.66	**2043**
4.26	4.29	4.32	4.34	4.37	4.40	4.43	4.46	4.49	4.52	4.55	4.57	4.60	4.63	4.66	4.66	**2044**
4.26	4.29	4.32	4.34	4.37	4.40	4.43	4.46	4.49	4.52	4.55	4.57	4.60	4.63	4.66	4.66	**2045**
4.26	4.29	4.32	4.34	4.37	4.40	4.43	4.46	4.49	4.52	4.55	4.57	4.60	4.63	4.66	4.66	**2046**
4.26	4.29	4.32	4.34	4.37	4.40	4.43	4.46	4.49	4.52	4.55	4.57	4.60	4.63	4.66	4.66	**2047**

1/ All values represent a Bonneville Fiscal Year (October 1 - September 30).

2/ FY 2018 Appropriation rates are determined in accordance with BPA Appropriations Refinancing Act, 16 U.S.C. 8381 enacted on April 26, 1996, and are independent of the Global Insight Treasury Yield forecasts.

Table 5
BPA Agency Borrowing Rates

BPA Fiscal Years 2018-2047
(continued on next page)

Maturity

Year	1 Year	2 Year	3 Year	4 Year	5 Year	6 Year	7 Year	8 Year	9 Year	10 Year	11 Year	12 Year	13 Year	14 Year	15 Year
2018	1.84	1.99	2.14	2.29	2.43	2.59	2.74	2.90	3.05	3.20	3.24	3.28	3.32	3.36	3.40
2019	2.76	2.85	2.96	3.08	3.19	3.34	3.49	3.64	3.79	3.94	3.97	4.01	4.05	4.09	4.12
2020	3.20	3.26	3.38	3.50	3.61	3.75	3.89	4.02	4.16	4.29	4.33	4.36	4.40	4.43	4.47
2021	3.28	3.34	3.46	3.59	3.71	3.84	3.97	4.10	4.23	4.35	4.39	4.43	4.46	4.50	4.53
2022	3.28	3.34	3.46	3.59	3.71	3.84	3.97	4.10	4.23	4.35	4.39	4.43	4.46	4.50	4.53
2023	3.28	3.34	3.46	3.59	3.71	3.84	3.97	4.10	4.23	4.35	4.39	4.43	4.46	4.50	4.53
2024	3.28	3.34	3.46	3.59	3.71	3.84	3.97	4.10	4.23	4.35	4.39	4.43	4.46	4.50	4.53
2025	3.28	3.34	3.46	3.59	3.71	3.84	3.97	4.10	4.23	4.35	4.39	4.43	4.46	4.50	4.53
2026	3.28	3.34	3.46	3.59	3.71	3.84	3.97	4.10	4.23	4.35	4.39	4.43	4.46	4.50	4.53
2027	3.28	3.34	3.46	3.59	3.71	3.84	3.97	4.10	4.23	4.35	4.39	4.43	4.46	4.50	4.53
2028	3.28	3.34	3.46	3.59	3.71	3.84	3.97	4.10	4.23	4.35	4.39	4.43	4.46	4.50	4.53
2029	3.28	3.34	3.46	3.59	3.71	3.84	3.97	4.10	4.23	4.35	4.39	4.43	4.46	4.50	4.53
2030	3.28	3.34	3.46	3.59	3.71	3.84	3.97	4.10	4.23	4.35	4.39	4.43	4.46	4.50	4.53
2031	3.28	3.34	3.46	3.59	3.71	3.84	3.97	4.10	4.23	4.35	4.39	4.43	4.46	4.50	4.53
2032	3.28	3.34	3.46	3.59	3.71	3.84	3.97	4.10	4.23	4.35	4.39	4.43	4.46	4.50	4.53
2033	3.28	3.34	3.46	3.59	3.71	3.84	3.97	4.10	4.23	4.35	4.39	4.43	4.46	4.50	4.53
2034	3.28	3.34	3.46	3.59	3.71	3.84	3.97	4.10	4.23	4.35	4.39	4.43	4.46	4.50	4.53
2035	3.28	3.34	3.46	3.59	3.71	3.84	3.97	4.10	4.23	4.35	4.39	4.43	4.46	4.50	4.53
2036	3.28	3.34	3.46	3.59	3.71	3.84	3.97	4.10	4.23	4.35	4.39	4.43	4.46	4.50	4.53
2037	3.28	3.34	3.46	3.59	3.71	3.84	3.97	4.10	4.23	4.35	4.39	4.43	4.46	4.50	4.53
2038	3.28	3.34	3.46	3.59	3.71	3.84	3.97	4.10	4.23	4.35	4.39	4.43	4.46	4.50	4.53
2039	3.28	3.34	3.46	3.59	3.71	3.84	3.97	4.10	4.23	4.35	4.39	4.43	4.46	4.50	4.53
2040	3.28	3.34	3.46	3.59	3.71	3.84	3.97	4.10	4.23	4.35	4.39	4.43	4.46	4.50	4.53
2041	3.28	3.34	3.46	3.59	3.71	3.84	3.97	4.10	4.23	4.35	4.39	4.43	4.46	4.50	4.53
2042	3.28	3.34	3.46	3.59	3.71	3.84	3.97	4.10	4.23	4.35	4.39	4.43	4.46	4.50	4.53
2043	3.28	3.34	3.46	3.59	3.71	3.84	3.97	4.10	4.23	4.35	4.39	4.43	4.46	4.50	4.53
2044	3.28	3.34	3.46	3.59	3.71	3.84	3.97	4.10	4.23	4.35	4.39	4.43	4.46	4.50	4.53
2045	3.28	3.34	3.46	3.59	3.71	3.84	3.97	4.10	4.23	4.35	4.39	4.43	4.46	4.50	4.53
2046	3.28	3.34	3.46	3.59	3.71	3.84	3.97	4.10	4.23	4.35	4.39	4.43	4.46	4.50	4.53
2047	3.28	3.34	3.46	3.59	3.71	3.84	3.97	4.10	4.23	4.35	4.39	4.43	4.46	4.50	4.53

1/ All values represent a Bonneville Fiscal Year (October 1 - September 30).

Table 5
BPA Agency Borrowing Rates

BPA Fiscal Years 2018-2047

Maturity

16 Year	17 Year	18 Year	19 Year	20 Year	21 Year	22 Year	23 Year	24 Year	25 Year	26 Year	27 Year	28 Year	29 Year	30 Year	50 Year	Year
3.44	3.48	3.52	3.56	3.60	3.64	3.68	3.72	3.76	3.80	3.84	3.88	3.92	3.95	3.99	3.99	**2018**
4.16	4.20	4.23	4.27	4.31	4.34	4.38	4.42	4.45	4.49	4.53	4.57	4.60	4.64	4.68	4.68	**2019**
4.51	4.54	4.58	4.61	4.65	4.68	4.72	4.75	4.79	4.83	4.86	4.90	4.93	4.97	5.00	5.00	**2020**
4.57	4.61	4.64	4.68	4.71	4.75	4.79	4.82	4.86	4.89	4.93	4.97	5.00	5.04	5.07	5.07	**2021**
4.57	4.61	4.64	4.68	4.71	4.75	4.79	4.82	4.86	4.89	4.93	4.97	5.00	5.04	5.07	5.07	**2022**
4.57	4.61	4.64	4.68	4.71	4.75	4.79	4.82	4.86	4.89	4.93	4.97	5.00	5.04	5.07	5.07	**2023**
4.57	4.61	4.64	4.68	4.71	4.75	4.79	4.82	4.86	4.89	4.93	4.97	5.00	5.04	5.07	5.07	**2024**
4.57	4.61	4.64	4.68	4.71	4.75	4.79	4.82	4.86	4.89	4.93	4.97	5.00	5.04	5.07	5.07	**2025**
4.57	4.61	4.64	4.68	4.71	4.75	4.79	4.82	4.86	4.89	4.93	4.97	5.00	5.04	5.07	5.07	**2026**
4.57	4.61	4.64	4.68	4.71	4.75	4.79	4.82	4.86	4.89	4.93	4.97	5.00	5.04	5.07	5.07	**2027**
4.57	4.61	4.64	4.68	4.71	4.75	4.79	4.82	4.86	4.89	4.93	4.97	5.00	5.04	5.07	5.07	**2028**
4.57	4.61	4.64	4.68	4.71	4.75	4.79	4.82	4.86	4.89	4.93	4.97	5.00	5.04	5.07	5.07	**2029**
4.57	4.61	4.64	4.68	4.71	4.75	4.79	4.82	4.86	4.89	4.93	4.97	5.00	5.04	5.07	5.07	**2030**
4.57	4.61	4.64	4.68	4.71	4.75	4.79	4.82	4.86	4.89	4.93	4.97	5.00	5.04	5.07	5.07	**2031**
4.57	4.61	4.64	4.68	4.71	4.75	4.79	4.82	4.86	4.89	4.93	4.97	5.00	5.04	5.07	5.07	**2032**
4.57	4.61	4.64	4.68	4.71	4.75	4.79	4.82	4.86	4.89	4.93	4.97	5.00	5.04	5.07	5.07	**2033**
4.57	4.61	4.64	4.68	4.71	4.75	4.79	4.82	4.86	4.89	4.93	4.97	5.00	5.04	5.07	5.07	**2034**
4.57	4.61	4.64	4.68	4.71	4.75	4.79	4.82	4.86	4.89	4.93	4.97	5.00	5.04	5.07	5.07	**2035**
4.57	4.61	4.64	4.68	4.71	4.75	4.79	4.82	4.86	4.89	4.93	4.97	5.00	5.04	5.07	5.07	**2036**
4.57	4.61	4.64	4.68	4.71	4.75	4.79	4.82	4.86	4.89	4.93	4.97	5.00	5.04	5.07	5.07	**2037**
4.57	4.61	4.64	4.68	4.71	4.75	4.79	4.82	4.86	4.89	4.93	4.97	5.00	5.04	5.07	5.07	**2038**
4.57	4.61	4.64	4.68	4.71	4.75	4.79	4.82	4.86	4.89	4.93	4.97	5.00	5.04	5.07	5.07	**2039**
4.57	4.61	4.64	4.68	4.71	4.75	4.79	4.82	4.86	4.89	4.93	4.97	5.00	5.04	5.07	5.07	**2040**
4.57	4.61	4.64	4.68	4.71	4.75	4.79	4.82	4.86	4.89	4.93	4.97	5.00	5.04	5.07	5.07	**2041**
4.57	4.61	4.64	4.68	4.71	4.75	4.79	4.82	4.86	4.89	4.93	4.97	5.00	5.04	5.07	5.07	**2042**
4.57	4.61	4.64	4.68	4.71	4.75	4.79	4.82	4.86	4.89	4.93	4.97	5.00	5.04	5.07	5.07	**2043**
4.57	4.61	4.64	4.68	4.71	4.75	4.79	4.82	4.86	4.89	4.93	4.97	5.00	5.04	5.07	5.07	**2044**
4.57	4.61	4.64	4.68	4.71	4.75	4.79	4.82	4.86	4.89	4.93	4.97	5.00	5.04	5.07	5.07	**2045**
4.57	4.61	4.64	4.68	4.71	4.75	4.79	4.82	4.86	4.89	4.93	4.97	5.00	5.04	5.07	5.07	**2046**
4.57	4.61	4.64	4.68	4.71	4.75	4.79	4.82	4.86	4.89	4.93	4.97	5.00	5.04	5.07	5.07	**2047**

1/ All values represent a Bonneville Fiscal Year (October 1 - September 30).

Table 6
Third-Party Taxable Borrowing Rates

BPA Fiscal Years 2018-2047
(continued on next page)

Maturity

Year	1 Year	2 Year	3 Year	4 Year	5 Year	6 Year	7 Year	8 Year	9 Year	10 Year	11 Year	12 Year	13 Year	14 Year	15 Year
2018	2.15	2.35	2.55	2.76	2.96	3.15	3.34	3.53	3.72	3.91	3.97	4.02	4.08	4.13	4.19
2019	3.04	3.17	3.34	3.50	3.67	3.86	4.05	4.24	4.44	4.63	4.68	4.73	4.79	4.84	4.89
2020	3.46	3.54	3.71	3.88	4.04	4.23	4.41	4.60	4.78	4.97	5.02	5.07	5.12	5.17	5.22
2021	3.51	3.58	3.75	3.92	4.09	4.27	4.46	4.64	4.83	5.01	5.06	5.11	5.16	5.21	5.26
2022	3.51	3.58	3.75	3.92	4.09	4.27	4.46	4.64	4.83	5.01	5.06	5.11	5.16	5.21	5.26
2023	3.51	3.58	3.75	3.92	4.09	4.27	4.46	4.64	4.83	5.01	5.06	5.11	5.16	5.21	5.26
2024	3.51	3.58	3.75	3.92	4.09	4.27	4.46	4.64	4.83	5.01	5.06	5.11	5.16	5.21	5.26
2025	3.51	3.58	3.75	3.92	4.09	4.27	4.46	4.64	4.83	5.01	5.06	5.11	5.16	5.21	5.26
2026	3.51	3.58	3.75	3.92	4.09	4.27	4.46	4.64	4.83	5.01	5.06	5.11	5.16	5.21	5.26
2027	3.51	3.58	3.75	3.92	4.09	4.27	4.46	4.64	4.83	5.01	5.06	5.11	5.16	5.21	5.26
2028	3.51	3.58	3.75	3.92	4.09	4.27	4.46	4.64	4.83	5.01	5.06	5.11	5.16	5.21	5.26
2029	3.51	3.58	3.75	3.92	4.09	4.27	4.46	4.64	4.83	5.01	5.06	5.11	5.16	5.21	5.26
2030	3.51	3.58	3.75	3.92	4.09	4.27	4.46	4.64	4.83	5.01	5.06	5.11	5.16	5.21	5.26
2031	3.51	3.58	3.75	3.92	4.09	4.27	4.46	4.64	4.83	5.01	5.06	5.11	5.16	5.21	5.26
2032	3.51	3.58	3.75	3.92	4.09	4.27	4.46	4.64	4.83	5.01	5.06	5.11	5.16	5.21	5.26
2033	3.51	3.58	3.75	3.92	4.09	4.27	4.46	4.64	4.83	5.01	5.06	5.11	5.16	5.21	5.26
2034	3.51	3.58	3.75	3.92	4.09	4.27	4.46	4.64	4.83	5.01	5.06	5.11	5.16	5.21	5.26
2035	3.51	3.58	3.75	3.92	4.09	4.27	4.46	4.64	4.83	5.01	5.06	5.11	5.16	5.21	5.26
2036	3.51	3.58	3.75	3.92	4.09	4.27	4.46	4.64	4.83	5.01	5.06	5.11	5.16	5.21	5.26
2037	3.51	3.58	3.75	3.92	4.09	4.27	4.46	4.64	4.83	5.01	5.06	5.11	5.16	5.21	5.26
2038	3.51	3.58	3.75	3.92	4.09	4.27	4.46	4.64	4.83	5.01	5.06	5.11	5.16	5.21	5.26
2039	3.51	3.58	3.75	3.92	4.09	4.27	4.46	4.64	4.83	5.01	5.06	5.11	5.16	5.21	5.26
2040	3.51	3.58	3.75	3.92	4.09	4.27	4.46	4.64	4.83	5.01	5.06	5.11	5.16	5.21	5.26
2041	3.51	3.58	3.75	3.92	4.09	4.27	4.46	4.64	4.83	5.01	5.06	5.11	5.16	5.21	5.26
2042	3.51	3.58	3.75	3.92	4.09	4.27	4.46	4.64	4.83	5.01	5.06	5.11	5.16	5.21	5.26
2043	3.51	3.58	3.75	3.92	4.09	4.27	4.46	4.64	4.83	5.01	5.06	5.11	5.16	5.21	5.26
2044	3.51	3.58	3.75	3.92	4.09	4.27	4.46	4.64	4.83	5.01	5.06	5.11	5.16	5.21	5.26
2045	3.51	3.58	3.75	3.92	4.09	4.27	4.46	4.64	4.83	5.01	5.06	5.11	5.16	5.21	5.26
2046	3.51	3.58	3.75	3.92	4.09	4.27	4.46	4.64	4.83	5.01	5.06	5.11	5.16	5.21	5.26
2047	3.51	3.58	3.75	3.92	4.09	4.27	4.46	4.64	4.83	5.01	5.06	5.11	5.16	5.21	5.26

1/ All values represent a Bonneville Fiscal Year (October 1 - September 30).

Table 6

Third-Party Taxable Borrowing Rates

BPA Fiscal Years 2018-2047

Maturity

16 Year	17 Year	18 Year	19 Year	20 Year	21 Year	22 Year	23 Year	24 Year	25 Year	26 Year	27 Year	28 Year	29 Year	30 Year	50 Year	Year
4.24	4.30	4.35	4.41	4.46	4.52	4.58	4.63	4.69	4.74	4.80	4.85	4.91	4.96	5.02	5.02	**2018**
4.94	4.99	5.05	5.10	5.15	5.20	5.25	5.30	5.36	5.41	5.46	5.51	5.56	5.62	5.67	5.67	**2019**
5.27	5.32	5.37	5.42	5.47	5.52	5.57	5.62	5.67	5.72	5.77	5.82	5.87	5.92	5.97	5.97	**2020**
5.31	5.36	5.41	5.46	5.51	5.56	5.61	5.66	5.71	5.76	5.81	5.86	5.91	5.96	6.01	6.01	**2021**
5.31	5.36	5.41	5.46	5.51	5.56	5.61	5.66	5.71	5.76	5.81	5.86	5.91	5.96	6.01	6.01	**2022**
5.31	5.36	5.41	5.46	5.51	5.56	5.61	5.66	5.71	5.76	5.81	5.86	5.91	5.96	6.01	6.01	**2023**
5.31	5.36	5.41	5.46	5.51	5.56	5.61	5.66	5.71	5.76	5.81	5.86	5.91	5.96	6.01	6.01	**2024**
5.31	5.36	5.41	5.46	5.51	5.56	5.61	5.66	5.71	5.76	5.81	5.86	5.91	5.96	6.01	6.01	**2025**
5.31	5.36	5.41	5.46	5.51	5.56	5.61	5.66	5.71	5.76	5.81	5.86	5.91	5.96	6.01	6.01	**2026**
5.31	5.36	5.41	5.46	5.51	5.56	5.61	5.66	5.71	5.76	5.81	5.86	5.91	5.96	6.01	6.01	**2027**
5.31	5.36	5.41	5.46	5.51	5.56	5.61	5.66	5.71	5.76	5.81	5.86	5.91	5.96	6.01	6.01	**2028**
5.31	5.36	5.41	5.46	5.51	5.56	5.61	5.66	5.71	5.76	5.81	5.86	5.91	5.96	6.01	6.01	**2029**
5.31	5.36	5.41	5.46	5.51	5.56	5.61	5.66	5.71	5.76	5.81	5.86	5.91	5.96	6.01	6.01	**2030**
5.31	5.36	5.41	5.46	5.51	5.56	5.61	5.66	5.71	5.76	5.81	5.86	5.91	5.96	6.01	6.01	**2031**
5.31	5.36	5.41	5.46	5.51	5.56	5.61	5.66	5.71	5.76	5.81	5.86	5.91	5.96	6.01	6.01	**2032**
5.31	5.36	5.41	5.46	5.51	5.56	5.61	5.66	5.71	5.76	5.81	5.86	5.91	5.96	6.01	6.01	**2033**
5.31	5.36	5.41	5.46	5.51	5.56	5.61	5.66	5.71	5.76	5.81	5.86	5.91	5.96	6.01	6.01	**2034**
5.31	5.36	5.41	5.46	5.51	5.56	5.61	5.66	5.71	5.76	5.81	5.86	5.91	5.96	6.01	6.01	**2035**
5.31	5.36	5.41	5.46	5.51	5.56	5.61	5.66	5.71	5.76	5.81	5.86	5.91	5.96	6.01	6.01	**2036**
5.31	5.36	5.41	5.46	5.51	5.56	5.61	5.66	5.71	5.76	5.81	5.86	5.91	5.96	6.01	6.01	**2037**
5.31	5.36	5.41	5.46	5.51	5.56	5.61	5.66	5.71	5.76	5.81	5.86	5.91	5.96	6.01	6.01	**2038**
5.31	5.36	5.41	5.46	5.51	5.56	5.61	5.66	5.71	5.76	5.81	5.86	5.91	5.96	6.01	6.01	**2039**
5.31	5.36	5.41	5.46	5.51	5.56	5.61	5.66	5.71	5.76	5.81	5.86	5.91	5.96	6.01	6.01	**2040**
5.31	5.36	5.41	5.46	5.51	5.56	5.61	5.66	5.71	5.76	5.81	5.86	5.91	5.96	6.01	6.01	**2041**
5.31	5.36	5.41	5.46	5.51	5.56	5.61	5.66	5.71	5.76	5.81	5.86	5.91	5.96	6.01	6.01	**2042**
5.31	5.36	5.41	5.46	5.51	5.56	5.61	5.66	5.71	5.76	5.81	5.86	5.91	5.96	6.01	6.01	**2043**
5.31	5.36	5.41	5.46	5.51	5.56	5.61	5.66	5.71	5.76	5.81	5.86	5.91	5.96	6.01	6.01	**2044**
5.31	5.36	5.41	5.46	5.51	5.56	5.61	5.66	5.71	5.76	5.81	5.86	5.91	5.96	6.01	6.01	**2045**
5.31	5.36	5.41	5.46	5.51	5.56	5.61	5.66	5.71	5.76	5.81	5.86	5.91	5.96	6.01	6.01	**2046**
5.31	5.36	5.41	5.46	5.51	5.56	5.61	5.66	5.71	5.76	5.81	5.86	5.91	5.96	6.01	6.01	**2047**

1/ All values represent a Bonneville Fiscal Year (October 1 - September 30).

Table 7
Third-Party Tax-Exempt Borrowing Rates

BPA Fiscal Years 2018-2047
(continued on next page)

Maturity

Year	1 Year	2 Year	3 Year	4 Year	5 Year	6 Year	7 Year	8 Year	9 Year	10 Year	11 Year	12 Year	13 Year	14 Year	15 Year
2018	1.58	1.67	1.79	1.90	2.02	2.19	2.36	2.53	2.70	2.86	2.92	2.98	3.03	3.09	3.15
2019	2.50	2.53	2.61	2.69	2.76	2.93	3.10	3.27	3.44	3.60	3.66	3.71	3.76	3.81	3.86
2020	2.95	2.95	3.02	3.10	3.18	3.33	3.49	3.65	3.81	3.96	4.01	4.06	4.11	4.16	4.21
2021	3.04	3.02	3.10	3.18	3.26	3.42	3.57	3.73	3.88	4.03	4.08	4.13	4.17	4.22	4.27
2022	3.04	3.02	3.10	3.18	3.26	3.42	3.57	3.73	3.88	4.03	4.08	4.13	4.17	4.22	4.27
2023	3.04	3.02	3.10	3.18	3.26	3.42	3.57	3.73	3.88	4.03	4.08	4.13	4.17	4.22	4.27
2024	3.04	3.02	3.10	3.18	3.26	3.42	3.57	3.73	3.88	4.03	4.08	4.13	4.17	4.22	4.27
2025	3.04	3.02	3.10	3.18	3.26	3.42	3.57	3.73	3.88	4.03	4.08	4.13	4.17	4.22	4.27
2026	3.04	3.02	3.10	3.18	3.26	3.42	3.57	3.73	3.88	4.03	4.08	4.13	4.17	4.22	4.27
2027	3.04	3.02	3.10	3.18	3.26	3.42	3.57	3.73	3.88	4.03	4.08	4.13	4.17	4.22	4.27
2028	3.04	3.02	3.10	3.18	3.26	3.42	3.57	3.73	3.88	4.03	4.08	4.13	4.17	4.22	4.27
2029	3.04	3.02	3.10	3.18	3.26	3.42	3.57	3.73	3.88	4.03	4.08	4.13	4.17	4.22	4.27
2030	3.04	3.02	3.10	3.18	3.26	3.42	3.57	3.73	3.88	4.03	4.08	4.13	4.17	4.22	4.27
2031	3.04	3.02	3.10	3.18	3.26	3.42	3.57	3.73	3.88	4.03	4.08	4.13	4.17	4.22	4.27
2032	3.04	3.02	3.10	3.18	3.26	3.42	3.57	3.73	3.88	4.03	4.08	4.13	4.17	4.22	4.27
2033	3.04	3.02	3.10	3.18	3.26	3.42	3.57	3.73	3.88	4.03	4.08	4.13	4.17	4.22	4.27
2034	3.04	3.02	3.10	3.18	3.26	3.42	3.57	3.73	3.88	4.03	4.08	4.13	4.17	4.22	4.27
2035	3.04	3.02	3.10	3.18	3.26	3.42	3.57	3.73	3.88	4.03	4.08	4.13	4.17	4.22	4.27
2036	3.04	3.02	3.10	3.18	3.26	3.42	3.57	3.73	3.88	4.03	4.08	4.13	4.17	4.22	4.27
2037	3.04	3.02	3.10	3.18	3.26	3.42	3.57	3.73	3.88	4.03	4.08	4.13	4.17	4.22	4.27
2038	3.04	3.02	3.10	3.18	3.26	3.42	3.57	3.73	3.88	4.03	4.08	4.13	4.17	4.22	4.27
2039	3.04	3.02	3.10	3.18	3.26	3.42	3.57	3.73	3.88	4.03	4.08	4.13	4.17	4.22	4.27
2040	3.04	3.02	3.10	3.18	3.26	3.42	3.57	3.73	3.88	4.03	4.08	4.13	4.17	4.22	4.27
2041	3.04	3.02	3.10	3.18	3.26	3.42	3.57	3.73	3.88	4.03	4.08	4.13	4.17	4.22	4.27
2042	3.04	3.02	3.10	3.18	3.26	3.42	3.57	3.73	3.88	4.03	4.08	4.13	4.17	4.22	4.27
2043	3.04	3.02	3.10	3.18	3.26	3.42	3.57	3.73	3.88	4.03	4.08	4.13	4.17	4.22	4.27
2044	3.04	3.02	3.10	3.18	3.26	3.42	3.57	3.73	3.88	4.03	4.08	4.13	4.17	4.22	4.27
2045	3.04	3.02	3.10	3.18	3.26	3.42	3.57	3.73	3.88	4.03	4.08	4.13	4.17	4.22	4.27
2046	3.04	3.02	3.10	3.18	3.26	3.42	3.57	3.73	3.88	4.03	4.08	4.13	4.17	4.22	4.27
2047	3.04	3.02	3.10	3.18	3.26	3.42	3.57	3.73	3.88	4.03	4.08	4.13	4.17	4.22	4.27

1/ All values represent a Bonneville Fiscal Year (October 1 - September 30).

Table 7
Third-Party Tax-Exempt Borrowing Rates

BPA Fiscal Years 2018-2047

Maturity

16 Year	17 Year	18 Year	19 Year	20 Year	21 Year	22 Year	23 Year	24 Year	25 Year	26 Year	27 Year	28 Year	29 Year	30 Year	50 Year	Year
3.20	3.26	3.31	3.37	3.43	3.48	3.54	3.59	3.65	3.71	3.76	3.82	3.87	3.93	3.99	3.99	**2018**
3.91	3.97	4.02	4.07	4.12	4.17	4.22	4.28	4.33	4.38	4.43	4.48	4.53	4.58	4.64	4.64	**2019**
4.26	4.30	4.35	4.40	4.45	4.50	4.55	4.59	4.64	4.69	4.74	4.79	4.84	4.88	4.93	4.93	**2020**
4.31	4.36	4.41	4.46	4.50	4.55	4.60	4.64	4.69	4.74	4.78	4.83	4.88	4.92	4.97	4.97	**2021**
4.31	4.36	4.41	4.46	4.50	4.55	4.60	4.64	4.69	4.74	4.78	4.83	4.88	4.92	4.97	4.97	**2022**
4.31	4.36	4.41	4.46	4.50	4.55	4.60	4.64	4.69	4.74	4.78	4.83	4.88	4.92	4.97	4.97	**2023**
4.31	4.36	4.41	4.46	4.50	4.55	4.60	4.64	4.69	4.74	4.78	4.83	4.88	4.92	4.97	4.97	**2024**
4.31	4.36	4.41	4.46	4.50	4.55	4.60	4.64	4.69	4.74	4.78	4.83	4.88	4.92	4.97	4.97	**2025**
4.31	4.36	4.41	4.46	4.50	4.55	4.60	4.64	4.69	4.74	4.78	4.83	4.88	4.92	4.97	4.97	**2026**
4.31	4.36	4.41	4.46	4.50	4.55	4.60	4.64	4.69	4.74	4.78	4.83	4.88	4.92	4.97	4.97	**2027**
4.31	4.36	4.41	4.46	4.50	4.55	4.60	4.64	4.69	4.74	4.78	4.83	4.88	4.92	4.97	4.97	**2028**
4.31	4.36	4.41	4.46	4.50	4.55	4.60	4.64	4.69	4.74	4.78	4.83	4.88	4.92	4.97	4.97	**2029**
4.31	4.36	4.41	4.46	4.50	4.55	4.60	4.64	4.69	4.74	4.78	4.83	4.88	4.92	4.97	4.97	**2030**
4.31	4.36	4.41	4.46	4.50	4.55	4.60	4.64	4.69	4.74	4.78	4.83	4.88	4.92	4.97	4.97	**2031**
4.31	4.36	4.41	4.46	4.50	4.55	4.60	4.64	4.69	4.74	4.78	4.83	4.88	4.92	4.97	4.97	**2032**
4.31	4.36	4.41	4.46	4.50	4.55	4.60	4.64	4.69	4.74	4.78	4.83	4.88	4.92	4.97	4.97	**2033**
4.31	4.36	4.41	4.46	4.50	4.55	4.60	4.64	4.69	4.74	4.78	4.83	4.88	4.92	4.97	4.97	**2034**
4.31	4.36	4.41	4.46	4.50	4.55	4.60	4.64	4.69	4.74	4.78	4.83	4.88	4.92	4.97	4.97	**2035**
4.31	4.36	4.41	4.46	4.50	4.55	4.60	4.64	4.69	4.74	4.78	4.83	4.88	4.92	4.97	4.97	**2036**
4.31	4.36	4.41	4.46	4.50	4.55	4.60	4.64	4.69	4.74	4.78	4.83	4.88	4.92	4.97	4.97	**2037**
4.31	4.36	4.41	4.46	4.50	4.55	4.60	4.64	4.69	4.74	4.78	4.83	4.88	4.92	4.97	4.97	**2038**
4.31	4.36	4.41	4.46	4.50	4.55	4.60	4.64	4.69	4.74	4.78	4.83	4.88	4.92	4.97	4.97	**2039**
4.31	4.36	4.41	4.46	4.50	4.55	4.60	4.64	4.69	4.74	4.78	4.83	4.88	4.92	4.97	4.97	**2040**
4.31	4.36	4.41	4.46	4.50	4.55	4.60	4.64	4.69	4.74	4.78	4.83	4.88	4.92	4.97	4.97	**2041**
4.31	4.36	4.41	4.46	4.50	4.55	4.60	4.64	4.69	4.74	4.78	4.83	4.88	4.92	4.97	4.97	**2042**
4.31	4.36	4.41	4.46	4.50	4.55	4.60	4.64	4.69	4.74	4.78	4.83	4.88	4.92	4.97	4.97	**2043**
4.31	4.36	4.41	4.46	4.50	4.55	4.60	4.64	4.69	4.74	4.78	4.83	4.88	4.92	4.97	4.97	**2044**
4.31	4.36	4.41	4.46	4.50	4.55	4.60	4.64	4.69	4.74	4.78	4.83	4.88	4.92	4.97	4.97	**2045**
4.31	4.36	4.41	4.46	4.50	4.55	4.60	4.64	4.69	4.74	4.78	4.83	4.88	4.92	4.97	4.97	**2046**
4.31	4.36	4.41	4.46	4.50	4.55	4.60	4.64	4.69	4.74	4.78	4.83	4.88	4.92	4.97	4.97	**2047**

1/ All values represent a Bonneville Fiscal Year (October 1 - September 30).

Table 8

FERC (Bank Prime) and 3-Month LIBOR Borrowing Rates

BPA Fiscal Years 2018-2047

Year	A FERC Rate	B 3-Month LIBOR Rate
2018	4.57	1.80
2019	5.42	2.82
2020	5.92	3.34
2021	6.01	3.42
2022	6.01	3.42
2023	6.01	3.42
2024	6.01	3.42
2025	6.01	3.42
2026	6.01	3.42
2027	6.01	3.42
2028	6.01	3.42
2029	6.01	3.42
2030	6.01	3.42
2031	6.01	3.42
2032	6.01	3.42
2033	6.01	3.42
2034	6.01	3.42
2035	6.01	3.42
2036	6.01	3.42
2037	6.01	3.42
2038	6.01	3.42
2039	6.01	3.42
2040	6.01	3.42
2041	6.01	3.42
2042	6.01	3.42
2043	6.01	3.42
2044	6.01	3.42
2045	6.01	3.42
2046	6.01	3.42
2047	6.01	3.42

1/ All values represent a Bonneville Fiscal Year (October 1 - September 30).

Table 9

Inflation Forecast and Comparison

Calendar/Fiscal Year Forecasts 2017 vs. 2016

Calendar/Fiscal Years 2017-2046

YEAR	A 2018 Calendar Year GDP Price Deflator (%)	B 2018 Fiscal Year GDP Price Deflator (%)	C 2018 Fiscal Year Cumulative Price Deflator (Base Year 2017)	D 2017 Fiscal Year GDP Price Deflator (%)	E 2017 Fiscal Year Cumulative Price Deflator (Base Year 2016)	F Change in the GDP Price Deflator (B-D)	G Change in the Cumulative Price Deflator (C-E)
2018	2.16%	2.06%	1.010	2.10%	1.031	-0.04%	-0.021
2019	2.21%	2.20%	1.032	2.07%	1.052	0.13%	-0.020
2020	2.30%	2.28%	1.056	2.10%	1.074	0.18%	-0.018
2021	2.25%	2.26%	1.080	2.11%	1.097	0.15%	-0.017
2022	2.22%	2.22%	1.104	2.07%	1.120	0.16%	-0.016
2023	2.24%	2.23%	1.129	2.03%	1.143	0.20%	-0.014
2024	2.21%	2.22%	1.154	2.00%	1.165	0.22%	-0.012
2025	2.20%	2.20%	1.179	2.01%	1.189	0.19%	-0.010
2026	2.14%	2.15%	1.204	2.00%	1.213	0.15%	-0.008
2027	2.09%	2.10%	1.230	2.03%	1.237	0.07%	-0.008
2028	2.00%	2.03%	1.255	2.01%	1.262	0.01%	-0.008
2029	2.00%	2.00%	1.280	2.02%	1.288	-0.02%	-0.008
2030	2.02%	2.01%	1.305	2.05%	1.314	-0.04%	-0.009
2031	2.01%	2.01%	1.332	2.09%	1.342	-0.08%	-0.010
2032	2.01%	2.01%	1.358	2.11%	1.370	-0.09%	-0.011
2033	2.02%	2.02%	1.386	2.11%	1.399	-0.09%	-0.013
2034	2.05%	2.04%	1.414	2.11%	1.428	-0.07%	-0.014
2035	2.06%	2.06%	1.443	2.11%	1.458	-0.05%	-0.015
2036	2.07%	2.07%	1.473	2.11%	1.489	-0.04%	-0.016
2037	2.07%	2.07%	1.504	2.10%	1.520	-0.03%	-0.017
2038	2.06%	2.06%	1.535	2.11%	1.553	-0.05%	-0.018
2039	2.05%	2.05%	1.566	2.11%	1.585	-0.06%	-0.019
2040	2.06%	2.06%	1.598	2.11%	1.619	-0.05%	-0.020
2041	2.07%	2.07%	1.631	2.12%	1.653	-0.06%	-0.022
2042	2.09%	2.08%	1.665	2.13%	1.688	-0.05%	-0.023
2043	2.10%	2.10%	1.700	2.13%	1.724	-0.03%	-0.024
2044	2.12%	2.11%	1.736	2.13%	1.761	-0.01%	-0.025
2045	2.12%	2.12%	1.773	2.12%	1.799	0.00%	-0.025
2046	2.12%	2.12%	1.811	2.12%	1.837	0.00%	-0.026
2047	2.11%	2.11%	1.849				

1/ All values represent a Bonneville Fiscal Year (October 1 - September 30).
Except for Column A which represents a standard Calendar Year.

2/ Fiscal Year Cumulative Price Deflator escalates to midyear dollars. The first year, 2018, is determined as follows: 1.010={(2.06/100)*.5}+1.
An example of subsequent year cumulative growth, such as in 2019, is found as: 1.032={1+(2.20/100)}*1.010

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7. HISTORICAL AND PROJECTED NEW BONDS ISSUED TO TREASURY

7.1 Purpose

This chapter documents all the bonds that BPA has issued and those it projects it will issue to the U.S. Treasury to finance capital investments.

7.2 Method

New bonds projected to be issued for the cost evaluation period are based on IPR/CIR capital program outlays. Half of the capital program is assumed to be financed with Treasury bonds. The other half is assumed to be financed through the lease purchase program. *See* Ch. 8.

New long-term debt consists of bonds issued by BPA to the U.S. Treasury reflecting projected outlays for BPA transmission, construction, and environmental programs during the cost evaluation period (FY 2019–2021). All bonds projected for issuance are entered into the projected portions of the repayment study.

TABLE 7-1
PROJECTED FEDERAL BORROWING
($000s)

	A	B	C	D	E
	FISCAL YEAR	**DESCRIPTION**	**INTEREST RATE**	**TERM**	**BORROWIN G**
1	**2018**	Construction	0.92%	23	52,000
2		Construction	0.92%	24	25,000
3		Construction (AS)	2.56%	6	7,800
4		Environment	0.92%	15	7,000
5		**Total**			**91,800**
6					
7	**2019**	Construction	1.38%	24	121,000
8		Construction	1.38%	25	118,000
9		Construction	1.38%	26	117,000
10		Construction (AS)	3.27%	6	12,350
11		Environment	1.38%	15	7,000
12		**Total**			**375,350**
13					
14	**2020**	Construction	1.60%	1	50,466
15		Construction	1.60%	26	83,534
16		Construction	1.60%	27	56,000
17		Construction	4.90%	27	78,000
18		Construction	4.93%	28	138,000
19		Construction (AS)	3.75%	6	11,700
20		Environment	4.47%	15	7,000
21		**Total**			**424,700**
22					
23	**2021**	Construction	1.64%	1	94,074
24		Construction	5.00%	28	78,926
25		Construction	5.04%	29	173,000
26		Construction	5.07%	30	346,000
27		Construction (AS)	3.71%	5	6,000
28		Construction (AS)	3.84%	6	20,800
29		Environment	4.54%	15	23,000
30		**Total**			**741,800**

TABLE 7-2
PROJECTED NON-FEDERAL BORROWING
($000s)

	A	B	C	D	E
	FISCAL YEAR	**DESCRIPTION**	**INTEREST RATE**	**TERM**	**TOTAL BORROWING**
1	**2019**	Master Lease	3.54%	22	26,072
2		Master Lease	3.54%	22	3,415
3		Master Lease	3.54%	22	18,901
4		**Total**			**48,389**
5					
6	**2020**	Master Lease	4.02%	21	21,602
7		Master Lease	4.02%	21	21,605
8		**Total**			**43,207**

TABLE 7-3
PROJECTED CAPITAL SPENDING
($000s)

		A	B	C	D
		2018	**2019**	**2020**	**2021**
1	Construction	368,322	447,493	445,407	450,668
2	Environment	8,191	6,914	6,881	6,939
3	Construction (AS)	7,361	8,509	8,840	8,845
4	**Total**	**383,874**	**462,916**	**461,128**	**466,452**

8. NON-FEDERAL PAYMENT OBLIGATIONS

8.1 Introduction

There are two forms of non-Federal payment obligations associated with transmission assets in this rate proposal. One is a lease-purchase arrangement for capitalized asset purchases. The other is the functional reassignment to transmission of debt service payment obligations associated with non-Federal, Energy Northwest (EN) bonds.

8.2 Capital Leases

BPA entered into a lease-purchase agreement with the Northwest Infrastructure Financing Corporation (NIFC) to provide for the construction of the 500-kV Schultz-Wautoma transmission line. Since the completion of that project, BPA has entered into additional lease-purchase agreements with other NIFC entities, the Port of Morrow, and the Idaho Energy Resources Authority for other capital projects. The resulting payment streams are treated as debt service in the repayment study. BPA also has several legacy capital leases such as those for the Teton-Swan Valley and the Goshen-Drummond lines. Table 8-1 displays the consolidated payment stream of actual capital leases.

BPA also projects that half of the projected capital investments in the 2020-2021 rate period will be financed through the lease purchase program. Projected lease purchase investments are financed for seven years using a line of credit assigned interest rates from forecast of 3-month LIBOR rates of BPA's official forecast. *See* Ch. 6. A 60 basis point adder is also included, reflecting the average cost of issuance of actual lease purchase agreements. At the end of seven years, the line of credit is refinanced using interest rates from the official forecast. *Id.*

8.3 Debt Service Reassignment

Debt Service Reassignment (DSR) is an accounting and ratemaking mechanism created to make full use of the Debt Optimization Program (DOP). It allows the use of cash flows generated by DOP actions for advanced amortization payments of transmission debt. In return, DSR ensures that Transmission revenues repay the full cost of the associated EN debt. DOP and DSR ended in FY 2009, but the associated financial obligations exist through FY 2024.

Under DOP, the proceeds from EN refinancing bonds are used to pay principal on the currently maturing EN bonds in a given fiscal year. Since BPA power rates were set to recover the originally expected EN principal payments on the maturing bonds, and the associated debt service requirement was expected to decrease the EN budget (when the principal was paid from the proceeds of the newly issued refinancing bonds), funds in the BPA Fund then became available for other purposes. The amount made available equals the principal of the amortized EN bonds. BPA uses these funds to amortize Federal obligations associated with generation and transmission assets ahead of schedule, thereby replenishing or creating future opportunities to replenish BPA's available U.S. Treasury borrowing authority.

DSR is applicable when BPA uses the funds made available from DOP to early-amortize Federal Transmission obligations. The stream of annual all-in costs from the DSR transaction is assigned to Transmission Services and recovered in transmission rates. The all-in costs include debt service on tax-exempt and taxable bonds and other costs associated with the DSR transaction, which are described later. Conversely, the costs attached to these EN refinancing bonds are no longer assigned for recovery from Power revenues.

Transmission's total DSR payment obligation and the related relief of Power's payment obligations are shown in Table 8-3. Transmission's total principal obligation can be higher or lower than the total principal relief for Power if premium or discount bonds are issued. The interest associated with outstanding obligations may change over time if DSR bonds are refinanced for interest savings.

TABLE 8-1
LEASE PURCHASE PAYMENT STREAM
($000s)

	A	B	C	D	E
	Fiscal Year	**Principal**	**Interest**	**Expenses**	**Total**
1	2018	1,899	62,172	(309)	63,762
2	2019	12,492	70,319	784	83,595
3	2020	79,361	81,423	590	161,374
4	2021	79,543	86,885	226	166,653
5	2022	73,390	86,421	23	159,833
6	2023	72,557	84,799	16	157,371
7	2024	99,398	82,878	(10)	182,266
8	2025	100,324	79,710	(2)	180,032
9	2026	97,116	76,202	5	173,323
10	2027	99,379	73,100	10	172,488
11	2028	100,435	69,494	(20)	169,909
12	2029	118,952	65,959	(43)	184,868
13	2030	119,364	60,394	(36)	179,723
14	2031	118,827	54,785	(27)	173,585
15	2032	127,133	48,580	(18)	175,695
16	2033	127,577	41,881	418	169,876
17	2034	103,003	31,804	917	135,724
18	2035	126,459	29,779	1,036	157,273
19	2036	126,548	25,956	1,000	153,503
20	2037	101,642	22,000	1,005	124,648
21	2038	89,956	15,471	1,010	106,437
22	2039	94,672	11,761	1,016	107,448
23	2040	93,559	7,027	1,022	101,608
24	2041	2,083	3,456	1,030	6,570
25	2042	86,952	3,079	1,024	91,054
26	2043	2,055	78	375	2,508
27	2044	313	2	39	353
28	2045	-	-	-	-
29	2046	-	-	-	-
30	2047	-	-	-	-
31	**Total**	**2,254,986**	**1,275,415**	**11,080**	**3,541,481**

TABLE 8-2
PROJECTED LEASE PURCHASE ISSUANCES
($000s)

	A	B	C	D	E	F	G
	Project	**In Service Date**	**Current Principal**	**Line of Credit Due Date**	**Line of Credit Rate**	**Bond Due Date**	**Bond Rate**
1	Lease Purchase	03/2019	26,072	03/2021	3.540%	09/2040	5.460%
2	Lease Purchase	03/2019	3,415	03/2021	3.540%	09/2040	5.460%
3	Lease Purchase	03/2019	18,901	03/2021	3.540%	09/2040	5.460%
4	Lease Purchase	01/2020	21,602	03/2021	4.020%	09/2040	5.460%
5	Lease Purchase	01/2020	21,605	03/2021	4.020%	09/2040	5.460%
	Totals:		**91,596**				

TABLE 8-3
RELIEF OF GENERATION & TRANSMISSION'S DSR OBLIGATION
($000s)

		A	B	C	D	E	F
		Relief of Generation Obligation			**Transmission DSR Payment Obligation**		
	BPA FY	**Principal**	**Interest**	**Total**	**Principal**	**Interest**	**Total**
1	2004	-	16,366	16,366	-	15,088	15,088
2	2005	-	27,505	27,505	-	25,240	25,240
3	2006	-	35,780	35,780	-	33,041	33,041
4	2007	674	45,812	46,486	716	42,809	43,524
5	2008	4,271	57,069	61,340	4,518	51,369	55,887
6	2009	9,950	61,506	71,456	10,432	56,154	66,586
7	2010	12	62,109	62,121	12	57,173	57,185
8	2011	147	61,999	62,146	154	57,327	57,480
9	2012	39,287	59,879	99,165	41,165	55,051	96,216
10	2013	157,982	57,078	215,060	165,827	51,887	217,714
11	2014	166,651	48,411	215,062	175,119	44,348	219,466
12	2015	4,959	36,010	40,969	185,160	34,324	219,484
13	2016	5,512	26,317	31,828	185,303	24,128	209,431
14	2017	3,506	18,368	21,874	199,991	14,406	214,397
15	2018	4,499	11,505	16,004	191,504	7,233	198,736
16	2019	210	3,911	4,121	4,838	4,536	9,373
17	2020	4,663	3,756	8,419	19,592	1,463	21,055
18	2021	16,329	3,196	19,525	20,571	(811)	19,760
19	2022	17,119	2,402	19,521	21,596	(1,797)	19,799
20	2023	17,965	1,564	19,528	22,678	(2,826)	19,853
21	2024	13,965	684	14,649	17,640	(2,721)	14,919
22	**Total**	**467,700**	**641,227**	**1,108,927**	**1,266,815**	**567,419**	**1,834,234**

9. REPAYMENT PERIOD REPLACEMENTS

9.1 Introduction

Consistent with the requirements of Department of Energy Order RA 6120.2, each repayment study includes funding for replacements to the transmission system during the repayment period. The purpose of these investments is to maintain the existing revenue-generating capability of the system. This schedule of replacements for the study year is assigned the interest rates of the projected long-term borrowing for the study year.

9.2 Transmission Replacements

BPA's Transmission replacements are based on BPA's plant in service forecast for the rate period. This forecast identifies spending on system replacements by year. The forecasts for lines substations, communications, and control equipment are summed by year. The result is considered the replacement investment for the year.

9.3 Replacement Credits

Replacement credits are calculated for two sets of customer-funded plant, the AC Intertie and facilities constructed for the dedicated use of a customer through the Projects Funded in Advance mechanism.

The cost evaluation period data for the AC Intertie is determined by multiplying the total replacements for each year by the average proportion of actual plant that is attributed to the AC Intertie. The result is then multiplied by 22 percent, the AC Intertie capacity owners' share of the Intertie. The results are the future replacements for the total AC.

BPA receives funds from customers for the construction of facilities that are dedicated to the use of those customers, known as Projects Funded in Advance (PFIA). Although the customer-financed facilities are BPA assets, the customer is responsible for the future cost of replacement of these facilities. As with the AC Intertie, BPA calculates the future replacement cost of customer-financed facilities. Because the customer will provide the up-front funding for the replacements, that funding is applied as a credit against future replacement costs in the repayment study. The replacement credit for these facilities is calculated as a percentage of the total replacement cost for each account based on the portion of plant in each account that has been funded through customer advances.

TABLE 9-1
FUTURE REPLACEMENTS FOR FY 2020
($000s)

	A	B	C	
	FY	**AMOUNT**	**RATE**	**DUE**
1	2021	179,705	5.070%	2056
2	2022	179,705	5.070%	2057
3	2023	179,705	5.070%	2058
4	2024	179,705	5.070%	2059
5	2025	179,705	5.070%	2060
6	2026	179,705	5.070%	2061
7	2027	179,705	5.070%	2062
8	2028	179,705	5.070%	2063
9	2029	179,705	5.070%	2064
10	2030	179,705	5.070%	2065
11	2031	179,705	5.070%	2066
12	2032	179,705	5.070%	2067
13	2033	179,705	5.070%	2068
14	2034	179,705	5.070%	2069
15	2035	179,705	5.070%	2070
16	2036	179,705	5.070%	2071
17	2037	179,705	5.070%	2072
18	2038	179,705	5.070%	2073
19	2039	179,705	5.070%	2074
20	2040	179,705	5.070%	2075
21	2041	179,705	5.070%	2076
22	2042	179,705	5.070%	2077
23	2043	179,705	5.070%	2078
24	2044	179,705	5.070%	2079
25	2045	179,705	5.070%	2080
26	2046	179,705	5.070%	2081
27	2047	179,705	5.070%	2082
28	2048	179,705	5.070%	2083
29	2049	179,705	5.070%	2084
30	2050	179,705	5.070%	2085
31	2051	179,705	5.070%	2086
32	2052	179,705	5.070%	2087
33	2053	179,705	5.070%	2088
34	2054	179,705	5.070%	2089
35	2055	179,705	5.070%	2090

TABLE 9-2
FUTURE REPLACEMENTS FOR FY 2021
($000s)

		A	B	C
	FY	**AMOUNT**	**RATE**	**DUE**
1	2022	165,909	5.070%	2057
2	2023	165,909	5.070%	2058
3	2024	165,909	5.070%	2059
4	2025	165,909	5.070%	2060
5	2026	165,909	5.070%	2061
6	2027	165,909	5.070%	2062
7	2028	165,909	5.070%	2063
8	2029	165,909	5.070%	2064
9	2030	165,909	5.070%	2065
10	2031	165,909	5.070%	2066
11	2032	165,909	5.070%	2067
12	2033	165,909	5.070%	2068
13	2034	165,909	5.070%	2069
14	2035	165,909	5.070%	2070
15	2036	165,909	5.070%	2071
16	2037	165,909	5.070%	2072
17	2038	165,909	5.070%	2073
18	2039	165,909	5.070%	2074
19	2040	165,909	5.070%	2075
20	2041	165,909	5.070%	2076
21	2042	165,909	5.070%	2077
22	2043	165,909	5.070%	2078
23	2044	165,909	5.070%	2079
24	2045	165,909	5.070%	2080
25	2046	165,909	5.070%	2081
26	2047	165,909	5.070%	2082
27	2048	165,909	5.070%	2083
28	2049	165,909	5.070%	2084
29	2050	165,909	5.070%	2085
30	2051	165,909	5.070%	2086
31	2052	165,909	5.070%	2087
32	2053	165,909	5.070%	2088
33	2054	165,909	5.070%	2089
34	2055	165,909	5.070%	2090
35	2056	165,909	5.070%	2091

TABLE 9-3
REPLACEMENT CREDITS
($000s)

		A	B	C	D	E	F
		AC INTERTIE		PFIA		TOTAL	
		2020 STUDY	2021 STUDY	2020 STUDY	2021 STUDY	2020 STUDY	2021 STUDY
1	2021	(2,807)	-	(4,672)	-	(7,479)	-
2	2022	(2,807)	(2,592)	(4,672)	(4,314)	(7,479)	(6,905)
3	2023	(2,807)	(2,592)	(4,672)	(4,314)	(7,479)	(6,905)
4	2024	(2,807)	(2,592)	(4,672)	(4,314)	(7,479)	(6,905)
5	2025	(2,807)	(2,592)	(4,672)	(4,314)	(7,479)	(6,905)
6	2026	(2,807)	(2,592)	(4,672)	(4,314)	(7,479)	(6,905)
7	2027	(2,807)	(2,592)	(4,672)	(4,314)	(7,479)	(6,905)
8	2028	(2,807)	(2,592)	(4,672)	(4,314)	(7,479)	(6,905)
9	2029	(2,807)	(2,592)	(4,672)	(4,314)	(7,479)	(6,905)
10	2030	(2,807)	(2,592)	(4,672)	(4,314)	(7,479)	(6,905)
11	2031	(2,807)	(2,592)	(4,672)	(4,314)	(7,479)	(6,905)
12	2032	(2,807)	(2,592)	(4,672)	(4,314)	(7,479)	(6,905)
13	2033	(2,807)	(2,592)	(4,672)	(4,314)	(7,479)	(6,905)
14	2034	(2,807)	(2,592)	(4,672)	(4,314)	(7,479)	(6,905)
15	2035	(2,807)	(2,592)	(4,672)	(4,314)	(7,479)	(6,905)
16	2036	(2,807)	(2,592)	(4,672)	(4,314)	(7,479)	(6,905)
17	2037	(2,807)	(2,592)	(4,672)	(4,314)	(7,479)	(6,905)
18	2038	(2,807)	(2,592)	(4,672)	(4,314)	(7,479)	(6,905)
19	2039	(2,807)	(2,592)	(4,672)	(4,314)	(7,479)	(6,905)
20	2040	(2,807)	(2,592)	(4,672)	(4,314)	(7,479)	(6,905)
21	2041	(2,807)	(2,592)	(4,672)	(4,314)	(7,479)	(6,905)
22	2042	(2,807)	(2,592)	(4,672)	(4,314)	(7,479)	(6,905)
23	2043	(2,807)	(2,592)	(4,672)	(4,314)	(7,479)	(6,905)
24	2044	(2,807)	(2,592)	(4,672)	(4,314)	(7,479)	(6,905)
25	2045	(2,807)	(2,592)	(4,672)	(4,314)	(7,479)	(6,905)
26	2046	(2,807)	(2,592)	(4,672)	(4,314)	(7,479)	(6,905)
27	2047	(2,807)	(2,592)	(4,672)	(4,314)	(7,479)	(6,905)
28	2048	(2,807)	(2,592)	(4,672)	(4,314)	(7,479)	(6,905)
29	2049	(2,807)	(2,592)	(4,672)	(4,314)	(7,479)	(6,905)
30	2050	(2,807)	(2,592)	(4,672)	(4,314)	(7,479)	(6,905)
31	2051	(2,807)	(2,592)	(4,672)	(4,314)	(7,479)	(6,905)
32	2052	(2,807)	(2,592)	(4,672)	(4,314)	(7,479)	(6,905)
33	2053	(2,807)	(2,592)	(4,672)	(4,314)	(7,479)	(6,905)
34	2054	(2,807)	(2,592)	(4,672)	(4,314)	(7,479)	(6,905)
35	2055	(2,807)	(2,592)	(4,672)	(4,314)	(7,479)	(6,905)
36	2056	-	(2,592)	-	(4,314)	-	(6,905)

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10. REPAYMENT STUDY INPUT DATA

TABLE 10-1
HISTORICAL INVESTMENTS
($000s)

	A	B	C	D	E	F	G	H
	PROJECT	**IN SERVICE DATE**	**DUE DATE**	**INTEREST RATE**	**ORIGINAL PRINCIPAL**	**CURRENT PRINCIPAL**	**Roll Maturity Date**	**Rollover Rate**
1	Bonneville Power Administration	09/1940	09/1985	2.500%	6,812	0		
2	Bonneville Power Administration	09/1941	09/1986	2.500%	18,906	0		
3	Bonneville Power Administration	09/1941	09/1986	2.500%	461	0		
4	Bonneville Power Administration	09/1942	09/1987	2.500%	8,446	0		
5	Bonneville Power Administration	09/1942	09/1987	2.500%	1,052	0		
6	Bonneville Power Administration	09/1943	09/1988	2.500%	16,083	0		
7	Bonneville Power Administration	09/1943	09/1988	2.500%	4,538	0		
8	Bonneville Power Administration	09/1944	09/1989	2.500%	583	0		
9	Bonneville Power Administration	09/1944	09/1989	2.500%	249	0		
10	Bonneville Power Administration	09/1945	09/1990	2.500%	1,306	0		
11	Bonneville Power Administration	09/1945	09/1990	2.500%	3,366	0		
12	Bonneville Power Administration	09/1946	09/1991	2.500%	2,488	0		
13	Bonneville Power Administration	09/1946	09/1991	2.500%	732	0		
14	Bonneville Power Administration	09/1947	09/1992	2.500%	1,330	0		
15	Bonneville Power Administration	09/1947	09/1992	2.500%	1,773	0		
16	Bonneville Power Administration	09/1948	09/1993	2.500%	7,468	0		
17	Bonneville Power Administration	09/1948	09/1993	2.500%	2,290	0		
18	Bonneville Power Administration	09/1949	09/1994	2.500%	6,809	0		
19	Bonneville Power Administration	09/1949	09/1994	2.500%	2,719	0		
20	Bonneville Power Administration	09/1950	09/1995	2.500%	24,111	0		
21	Bonneville Power Administration	09/1950	09/1995	2.500%	6,124	0		
22	Bonneville Power Administration	09/1951	09/1996	2.500%	7,040	0		
23	Bonneville Power Administration	09/1951	09/1996	2.500%	13,266	0		
24	Bonneville Power Administration	09/1952	09/1997	2.500%	18,610	0		
25	Bonneville Power Administration	09/1952	09/1997	2.500%	8,979	0		
26	Bonneville Power Administration	09/1953	09/1998	6.330%	11,605	0		
27	Bonneville Power Administration	09/1953	09/1998	6.330%	23,550	0		
28	Bonneville Power Administration	09/1954	09/1999	6.510%	23,614	0		
29	Bonneville Power Administration	09/1954	09/1999	6.510%	17,370	0		
30	Bonneville Power Administration	09/1955	09/2000	6.620%	11,827	0		
31	Bonneville Power Administration	09/1955	09/2000	6.620%	10,283	0		
32	Bonneville Power Administration	09/1956	09/2001	6.710%	14,573	0		
33	Bonneville Power Administration	09/1956	09/2001	6.710%	32,221	0		
34	Bonneville Power Administration	09/1957	09/2002	6.790%	7,933	0		
35	Bonneville Power Administration	09/1957	09/2002	6.790%	15,980	0		
36	Bonneville Power Administration	09/1958	09/2003	6.840%	15,593	0		
37	Bonneville Power Administration	09/1958	09/2003	6.840%	10,654	0		
38	Bonneville Power Administration	09/1959	09/2004	6.880%	8,157	0		
39	Bonneville Power Administration	09/1959	09/2004	6.880%	8,863	0		
40	Bonneville Power Administration	09/1960	09/2005	6.910%	3,598	0		
41	Bonneville Power Administration	09/1960	09/2005	6.910%	4,218	0		
42	Bonneville Power Administration	09/1961	09/2006	6.950%	4,468	0		
43	Bonneville Power Administration	09/1961	09/2006	6.950%	11,271	0		
44	Bonneville Power Administration	09/1962	09/2007	6.980%	19,597	0		
45	Bonneville Power Administration	09/1962	09/2007	6.980%	4,877	0		
46	Bonneville Power Administration	09/1963	09/2008	7.020%	4,876	0		
47	Bonneville Power Administration	09/1963	09/2008	7.020%	4,330	0		
48	Bonneville Power Administration	09/1963	09/2008	7.020%	904	0		
49	Bonneville Power Administration	09/1963	09/2008	7.020%	803	0		
50	Bonneville Power Administration	09/1964	09/2009	7.060%	4,151	0		
51	Bonneville Power Administration	09/1964	09/2009	7.060%	5,738	0		
52	Bonneville Power Administration	09/1965	09/2010	7.090%	3,706	0		

TABLE 10-1
HISTORICAL INVESTMENTS
($000s)

	A	B	C	D	E	F	G	H
	PROJECT	IN SERVICE DATE	DUE DATE	INTEREST RATE	ORIGINAL PRINCIPAL	CURRENT PRINCIPAL	Roll Maturity Date	Rollover Rate
53	Bonneville Power Administration	09/1965	09/2010	7.090%	7,248	0		
54	Bonneville Power Administration	09/1965	09/2010	7.090%	5,202	0		
55	Bonneville Power Administration	09/1965	09/2010	7.090%	10,171	0		
56	Bonneville Power Administration	09/1966	09/2011	7.130%	11,830	0		
57	Bonneville Power Administration	09/1966	09/2011	7.130%	3,049	0		
58	Bonneville Power Administration	09/1966	09/2011	7.130%	6,647	0		
59	Bonneville Power Administration	09/1966	09/2011	7.130%	1,714	0		
60	Bonneville Power Administration	09/1967	09/2012	7.160%	19,003	0		
61	Bonneville Power Administration	09/1967	09/2012	7.160%	4,566	0		
62	Bonneville Power Administration	09/1967	09/2012	7.160%	14,300	0		
63	Bonneville Power Administration	09/1967	09/2012	7.160%	3,436	0		
64	Bonneville Power Administration	09/1968	09/2013	7.200%	41,070	0		
65	Bonneville Power Administration	09/1968	09/2013	7.200%	8,076	0		
66	Bonneville Power Administration	09/1968	09/2013	7.200%	23,202	0		
67	Bonneville Power Administration	09/1968	09/2013	7.200%	4,562	0		
68	Bonneville Power Administration	09/1969	09/2014	7.230%	42,237	0		
69	Bonneville Power Administration	09/1969	09/2014	7.230%	22,537	0		
70	Bonneville Power Administration	09/1969	09/2014	7.230%	384	0		
71	Bonneville Power Administration	09/1969	09/2014	7.230%	205	0		
72	Bonneville Power Administration	09/1970	09/2015	7.270%	64,977	0		
73	Bonneville Power Administration	09/1970	09/2015	7.270%	7,995	0		
74	Bonneville Power Administration	09/1970	09/2015	7.270%	24,412	0		
75	Bonneville Power Administration	09/1970	09/2015	7.270%	3,003	0		
76	Bonneville Power Administration	09/1971	09/2016	7.290%	12,025	0		
77	Bonneville Power Administration	09/1971	09/2016	7.290%	17,766	0		
78	Bonneville Power Administration	09/1971	09/2016	7.290%	12,051	0		
79	Bonneville Power Administration	09/1971	09/2016	7.290%	17,805	0		
80	Bonneville Power Administration	09/1972	09/2017	7.290%	29,326	0		
81	Bonneville Power Administration	09/1972	09/2017	7.290%	21,170	0		
82	Bonneville Power Administration	09/1972	09/2017	7.290%	3,980	0		
83	Bonneville Power Administration	09/1972	09/2017	7.290%	2,873	0		
84	Bonneville Power Administration	09/1973	09/2018	7.280%	33,788	0		
85	Bonneville Power Administration	09/1973	09/2018	7.280%	21,656	0		
86	Bonneville Power Administration	09/1973	09/2018	7.280%	16,368	0		
87	Bonneville Power Administration	09/1973	09/2018	7.280%	10,491	0		
88	Bonneville Power Administration	09/1974	09/2019	7.270%	12,079	0		
89	Bonneville Power Administration	09/1974	09/2019	7.270%	20,984	0		
90	Bonneville Power Administration	09/1974	09/2019	7.270%	12,563	0		
91	Bonneville Power Administration	09/1974	09/2019	7.270%	21,826	0		
92	Bonneville Power Administration	09/1975	09/2020	7.250%	32,026	0		
93	Bonneville Power Administration	09/1975	09/2020	7.250%	21,916	0		
94	Bonneville Power Administration	09/1975	09/2020	7.250%	17,158	0		
95	Bonneville Power Administration	09/1975	09/2020	7.250%	11,742	0		
96	Bonneville Power Administration	09/1976	09/2021	7.230%	61,025	0		
97	Bonneville Power Administration	09/1976	09/2021	7.230%	2,212	0		
98	Bonneville Power Administration	09/1977	09/2022	7.210%	33,702	7,377		
99	Bonneville Power Administration	09/1977	09/2022	7.210%	3,948	0		
100	Bonneville Power Administration	09/1977	09/2022	7.210%	5,380	0		
101	Bonneville Power Administration	09/1977	09/2022	7.210%	4,981	0		
102	Construction	09/1978	09/2013	8.950%	17,770	0		
103	Construction	09/1978	09/2013	8.950%	24,222	0		
104	Construction	09/1978	09/2013	8.950%	3,389	0		

TABLE 10-1
HISTORICAL INVESTMENTS
($000s)

	A	B	C	D	E	F	G	H
	PROJECT	IN SERVICE DATE	DUE DATE	INTEREST RATE	ORIGINAL PRINCIPAL	CURRENT PRINCIPAL	Roll Maturity Date	Rollover Rate
105	Construction	09/1978	09/2013	8.950%	4,619	0		
106	Construction	06/1979	06/2014	9.450%	7,010	0		
107	Construction	06/1979	06/2014	9.450%	9,804	0		
108	Construction	06/1979	06/2014	9.450%	26,690	0		
109	Construction	06/1979	06/2014	9.450%	21,977	0		
110	Construction	06/1979	06/2014	9.450%	6,026	0		
111	Construction	06/1979	06/2014	9.450%	1,371	0		
112	Construction	06/1979	06/2014	9.450%	1,870	0		
113	Construction	06/1979	06/2014	9.450%	150	0		
114	Construction	06/1979	06/2014	9.450%	102	0		
115	Construction	09/1979	09/2014	9.900%	21,228	0		
116	Construction	09/1979	09/2014	9.900%	14,340	0		
117	Construction	09/1979	09/2014	9.900%	10,610	0		
118	Construction	09/1979	09/2014	9.900%	2,888	0		
119	Construction	09/1979	09/2014	9.900%	98	0		
120	Construction	09/1979	09/2014	9.900%	66	0		
121	Construction	09/1979	09/2014	9.900%	605	0		
122	Construction	09/1979	09/2014	9.900%	165	0		
123	Construction	09/1980	09/2015	13.000%	39,696	0		
124	Construction	09/1980	09/2015	13.000%	10,806	0		
125	Construction	09/1980	09/2015	13.000%	44,811	0		
126	Construction	09/1980	09/2015	13.000%	1,469	0		
127	Construction	09/1980	09/2015	13.000%	9,292	0		
128	Construction	09/1980	09/2015	13.000%	4,253	0		
129	Construction	09/1980	09/2015	13.000%	2,263	0		
130	Construction	09/1980	09/2015	13.000%	616	0		
131	Construction	09/1980	09/2015	13.000%	1,707	0		
132	Construction	09/1980	09/2015	13.000%	56	0		
133	Construction	09/1980	09/2015	13.000%	21	0		
134	Construction	09/1980	09/2015	13.000%	10	0		
135	Construction	09/1981	09/2016	16.600%	119,775	0		
136	Construction	09/1981	09/2016	16.600%	54,821	0		
137	Construction	09/1981	09/2016	16.600%	277	0		
138	Construction	09/1981	09/2016	16.600%	127	0		
139	Construction	12/1981	12/2016	14.400%	34,221	0		
140	Construction	12/1981	12/2016	14.400%	15,663	0		
141	Construction	12/1981	12/2016	14.400%	80	0		
142	Construction	12/1981	12/2016	14.400%	36	0		
143	Construction	04/1982	04/2017	14.400%	9,975	0		
144	Construction	04/1982	04/2017	14.400%	4,566	0		
145	Construction	04/1982	04/2017	14.400%	46,980	0		
146	Construction	04/1982	04/2017	14.400%	37,455	0		
147	Construction	04/1982	04/2017	14.400%	23	0		
148	Construction	04/1982	04/2017	14.400%	11	0		
149	Construction	04/1982	04/2017	14.400%	551	0		
150	Construction	04/1982	04/2017	14.400%	439	0		
151	Construction	07/1982	07/2017	14.150%	3,677	0		
152	Construction	07/1982	07/2017	14.150%	2,932	0		
153	Construction	07/1982	07/2017	14.150%	77,807	0		
154	Construction	07/1982	07/2017	14.150%	43	0		
155	Construction	07/1982	07/2017	14.150%	34	0		
156	Construction	07/1982	07/2017	14.150%	402	0		

TABLE 10-1
HISTORICAL INVESTMENTS
($000s)

	A	B	C	D	E	F	G	H
	PROJECT	**IN SERVICE DATE**	**DUE DATE**	**INTEREST RATE**	**ORIGINAL PRINCIPAL**	**CURRENT PRINCIPAL**	**Roll Maturity Date**	**Rollover Rate**
157	Construction	07/1982	07/2017	14.150%	105	0		
158	Construction	11/1982	11/2017	10.850%	205	0		
159	Construction	11/1982	11/2017	10.850%	54	0		
160	Construction	11/1982	11/2017	10.850%	39,741	0		
161	Construction	06/1983	06/2018	11.700%	154	0		
162	Construction	06/1983	06/2018	11.700%	29,806	0		
163	Construction	06/1983	06/2018	11.700%	40	0		
164	Construction	09/1983	09/2018	12.250%	814	0		
165	Construction	09/1983	09/2018	12.250%	37,235	0		
166	Construction	09/1983	09/2018	12.250%	6,708	0		
167	Construction	09/1983	09/2018	12.250%	4	0		
168	Construction	09/1983	09/2018	12.250%	1	0		
169	Construction	09/1983	09/2018	12.250%	203	0		
170	Construction	09/1983	09/2018	12.250%	35	0		
171	Construction	11/1983	11/2018	12.300%	25,283	0		
172	Construction	11/1983	11/2018	12.300%	4,555	0		
173	Construction	11/1983	11/2018	12.300%	138	0		
174	Construction	11/1983	11/2018	12.300%	24	0		
175	Construction	09/1984	09/2019	13.050%	50,567	0		
176	Construction	09/1984	09/2019	13.050%	9,109	0		
177	Construction	09/1984	09/2019	13.050%	276	0		
178	Construction	09/1984	09/2019	13.050%	48	0		
179	Construction	06/1985	06/2029	11.250%	15,182	0		
180	Construction	06/1985	06/2029	11.250%	460	0		
181	Construction	06/1985	06/2029	11.250%	80	0		
182	Construction	06/1985	06/2030	11.250%	84,278	0		
183	Construction	03/1986	03/1996	8.150%	870	0		
184	Construction	03/1986	03/1996	8.150%	157	0		
185	Construction	03/1986	03/1996	8.150%	30,161	0		
186	Construction	03/1986	03/1996	8.150%	68,194	0		
187	Construction	03/1986	03/1996	8.150%	5	0		
188	Construction	03/1986	03/1996	8.150%	1	0		
189	Construction	03/1986	03/1996	8.150%	443	0		
190	Construction	03/1986	03/1996	8.150%	169	0		
191	Construction	06/1986	06/2031	8.950%	5,161	0		
192	Construction	06/1986	06/2031	8.950%	11,668	0		
193	Construction	06/1986	06/2031	8.950%	180,054	0		
194	Construction	06/1986	06/2031	8.950%	3,117	0		
195	Construction	06/1986	06/2031	8.950%	40,000	0		
196	Construction	06/1986	06/2031	8.950%	57,354	0		
197	Construction	06/1986	06/2031	8.950%	76	0		
198	Construction	06/1986	06/2031	8.950%	29	0		
199	Construction	06/1986	06/2031	8.950%	1,819	0		
200	Construction	06/1986	06/2031	8.950%	722	0		
201	Construction	04/1987	04/2032	9.300%	43,236	0		
202	Construction	04/1987	04/2032	9.300%	54,409	0		
203	Construction	04/1987	04/2032	9.300%	111	0		
204	Construction	04/1987	04/2032	9.300%	281	0		
205	Construction	04/1987	04/2032	9.300%	554	0		
206	Construction	04/1987	04/2032	9.300%	1,409	0		
207	Construction	06/1987	06/1992	8.350%	96,519	0		
208	Construction	06/1987	06/1992	8.350%	2,498	0		

TABLE 10-1
HISTORICAL INVESTMENTS
($000s)

	A	B	C	D	E	F	G	H
	PROJECT	IN SERVICE DATE	DUE DATE	INTEREST RATE	ORIGINAL PRINCIPAL	CURRENT PRINCIPAL	Roll Maturity Date	Rollover Rate
209	Construction	06/1987	06/1992	8.350%	983	0		
210	Construction	07/1987	07/2017	9.550%	4,113	0		
211	Construction	07/1987	07/2017	9.550%	86,958	0		
212	Construction	07/1987	07/2017	9.550%	569	0		
213	Construction	07/1987	07/2017	9.550%	38	0		
214	Construction	07/1987	07/2017	9.550%	3,274	0		
215	Construction	07/1987	07/2017	9.550%	48	0		
216	Construction	07/1987	07/2032	9.550%	618	0		
217	Construction	07/1987	07/2032	9.550%	112	0		
218	Construction	07/1987	07/2032	9.550%	7,903	0		
219	Construction	07/1987	07/2032	9.550%	3,109	0		
220	Construction	07/1987	07/2032	9.550%	37,342	0		
221	Construction	07/1987	07/2032	9.550%	285	0		
222	Construction	07/1987	07/2032	9.550%	631	0		
223	Construction	02/1988	02/2018	9.500%	283	0		
224	Construction	02/1988	02/2018	9.500%	43,417	0		
225	Construction	02/1988	02/2033	9.500%	28,513	0		
226	Construction	02/1988	02/2033	9.500%	27,887	0		
227	Construction	02/1988	02/2033	9.500%	20,677	0		
228	Construction	02/1988	02/2033	9.500%	22,923	0		
229	Construction	02/1988	02/2033	9.500%	45,870	0		
230	Construction	02/1988	02/2033	9.500%	954	0		
231	Construction	02/1988	02/2033	9.500%	933	0		
232	Construction	02/1988	02/2033	9.500%	518	0		
233	Construction	02/1988	02/2033	9.500%	1,725	0		
234	Construction	06/1988	06/2033	9.900%	9,018	0		
235	Construction	06/1988	06/2033	9.900%	30,004	0		
236	Construction	06/1988	06/2033	9.900%	226	0		
237	Construction	06/1988	06/2033	9.900%	752	0		
238	Construction	05/1989	05/1999	8.950%	16,909	0		
239	Construction	05/1989	05/1999	8.950%	56,257	0		
240	Construction	05/1989	05/1999	8.950%	424	0		
241	Construction	05/1989	05/1999	8.950%	1,410	0		
242	Construction	01/1990	01/2030	9.250%	41,894	0		
243	Construction	01/1990	01/2030	9.250%	1,149	0		
244	Construction	01/1990	01/2030	9.250%	3,824	0		
245	Construction	01/1990	01/2030	9.250%	29	0		
246	Construction	01/1990	01/2030	9.250%	96	0		
247	Construction	01/1990	01/2030	9.250%	3,008	0		
248	Construction	02/1991	02/1995	7.550%	54,145	0		
249	Construction	02/1991	02/1995	7.550%	5,855	0		
250	Construction	04/1992	04/1995	6.200%	80,000	0		
251	Construction	04/1992	04/1997	7.000%	50,000	0		
252	Construction	04/1992	04/1997	7.000%	28,300	0		
253	Construction	04/1992	04/2032	8.800%	147,521	0		
254	Construction	04/1992	04/2032	8.800%	2,479	0		
255	Construction	07/1992	07/2032	8.130%	150,000	0		
256	Construction	08/1992	08/2000	6.600%	107,800	0		
257	Construction	08/1992	08/2007	7.250%	107,700	0		
258	Construction	10/1992	10/1997	6.050%	50,000	0		
259	Construction	02/1993	02/2033	7.800%	130,000	0		
260	Construction	04/1993	04/2033	7.500%	100,000	0		

TABLE 10-1
HISTORICAL INVESTMENTS
($000s)

	A	B	C	D	E	F	G	H
	PROJECT	IN SERVICE DATE	DUE DATE	INTEREST RATE	ORIGINAL PRINCIPAL	CURRENT PRINCIPAL	Roll Maturity Date	Rollover Rate
261	Construction	08/1993	08/2033	6.950%	110,000	0		
262	Construction	10/1993	10/2033	6.850%	50,000	0		
263	Construction	10/1993	10/2033	6.850%	108,400	0		
264	Construction	01/1994	01/2034	7.050%	50,000	0		
265	Construction	05/1994	05/1998	7.100%	43,155	0		
266	Construction	05/1994	05/1998	7.100%	49,489	0		
267	Construction	05/1994	05/1998	7.100%	4,456	0		
268	Construction	05/1994	05/2034	8.200%	50,000	0		
269	Construction	09/1994	09/1999	7.650%	55,000	0		
270	Construction	01/1995	01/2001	8.350%	55,000	0		
271	Construction	08/1995	08/2025	7.700%	65,000	0		
272	Construction	08/1996	08/2006	7.050%	70,000	0		
273	Construction	05/1997	05/2005	6.900%	80,000	0		
274	Construction	08/1997	08/2007	6.650%	111,254	0		
275	Construction	04/1998	04/2008	6.000%	75,300	0		
276	Construction	04/1998	04/2028	6.650%	50,000	0		
277	Construction	05/1998	05/2009	6.000%	72,700	0		
278	Construction	05/1998	05/2011	6.200%	40,000	0		
279	Construction	05/1998	05/2032	6.700%	98,900	0		
280	Construction	08/1998	08/2028	5.850%	106,500	106,500		
281	Construction	08/1998	08/2028	5.850%	112,300	112,300		
282	Construction	05/1999	05/2004	5.950%	26,200	0		
283	Construction	09/1999	09/2002	6.200%	40,000	0		
284	Construction	11/1999	11/2002	6.400%	40,000	0		
285	Construction	01/2000	01/2005	7.150%	53,500	0		
286	Construction	08/2000	08/2003	6.850%	15,300	0		
287	Construction	09/2000	09/2006	6.750%	40,000	0		
288	Construction	01/2001	01/2005	5.650%	20,000	0		
289	Construction	06/2001	06/2011	5.950%	25,000	0		
290	Construction	08/2001	08/2011	5.750%	50,000	0		
291	Construction	06/2002	06/2005	3.750%	60,000	0		
292	Construction	09/2002	09/2006	3.050%	100,000	0		
293	Construction	11/2002	11/2005	2.800%	40,000	0		
294	Construction	04/2003	04/2007	2.900%	40,000	0		
295	Construction	04/2003	04/2033	5.550%	40,000	0		
296	Construction	07/2003	07/2006	2.300%	75,000	0		
297	Construction	07/2003	07/2007	2.950%	25,000	0		
298	Construction	09/2003	09/2006	2.500%	20,000	0		
299	Construction	01/2004	01/2008	2.950%	65,000	0		
300	Construction	04/2004	04/2007	2.950%	65,000	0		
301	Construction	07/2004	07/2007	3.450%	50,000	0		
302	Construction	07/2004	07/2008	3.800%	25,000	0		
303	Construction	09/2004	09/2007	3.100%	30,000	0		
304	Construction	09/2004	09/2034	5.600%	40,000	0		
305	Construction	01/2005	01/2035	5.400%	40,000	0		
306	Construction	04/2005	04/2035	5.500%	40,000	0		
307	Construction	06/2005	06/2009	4.000%	40,000	0		
308	Construction	09/2005	09/2035	5.250%	45,000	0		
309	Construction	03/2006	03/2009	5.050%	20,000	0		
310	Construction	07/2006	07/2009	5.350%	70,000	0		
311	Construction	09/2006	09/2010	4.950%	20,000	0		
312	Construction	01/2007	01/2010	5.100%	25,000	0		

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HISTORICAL INVESTMENTS
($000s)

	A	B	C	D	E	F	G	H
	PROJECT	**IN SERVICE DATE**	**DUE DATE**	**INTEREST RATE**	**ORIGINAL PRINCIPAL**	**CURRENT PRINCIPAL**	**Roll Maturity Date**	**Rollover Rate**
313	Construction	03/2007	03/2012	4.850%	40,000	0		
314	Construction	06/2007	06/2037	6.400%	35,000	0		
315	Construction	07/2007	07/2010	5.200%	50,000	0		
316	Construction	05/2008	05/2011	3.358%	40,000	0		
317	Construction	07/2008	07/2012	3.913%	30,000	0		
318	Construction	09/2008	09/2011	3.151%	25,000	0		
319	Construction	01/2009	01/2020	3.830%	50,000	50,000		
320	Construction	01/2009	01/2022	4.200%	20,000	20,000		
321	Construction	04/2009	04/2022	4.253%	35,000	35,000		
322	Construction	06/2009	06/2039	5.192%	35,000	35,000		
323	Construction	07/2009	07/2019	4.026%	46,940	46,940	07/2028	3.788%
324	Construction	09/2009	09/2019	3.699%	35,000	35,000	09/2028	3.788%
325	Construction	10/2009	10/2018	3.719%	23,000	23,000		
326	Construction	10/2009	10/2019	3.842%	43,000	43,000		
327	Construction	11/2009	11/2018	3.533%	15,000	15,000		
328	Construction	12/2009	12/2018	4.069%	13,000	13,000		
329	Construction	01/2010	01/2019	3.714%	30,000	30,000	01/2028	3.788%
330	Construction	02/2010	02/2019	0.165%	10,000	0		
331	Construction	03/2010	03/2021	4.188%	15,000	15,000		
332	Construction	04/2010	04/2021	4.094%	22,000	22,000		
333	Construction	05/2010	05/2021	3.694%	22,000	22,000		
334	Construction	06/2010	06/2021	3.374%	22,000	22,000		
335	Construction	07/2010	07/2020	3.118%	50,000	50,000		
336	Construction	07/2010	07/2022	3.372%	30,000	30,000		
337	Construction	08/2010	08/2022	0.165%	5,000	0		
338	Construction	08/2010	08/2022	3.029%	20,000	20,000		
339	Construction	09/2010	09/2023	3.161%	46,000	46,000		
340	Construction	10/2010	10/2025	3.494%	45,000	45,000		
341	Construction	01/2011	01/2036	4.952%	50,000	50,000	01/2040	3.586%
342	Construction	02/2011	02/2038	4.935%	55,000	55,000		
343	Construction	04/2011	04/2039	4.794%	40,000	40,000		
344	Construction	05/2011	09/2011	0.076%	40,000	0		
345	Construction	05/2011	09/2011	0.076%	40,000	0		
346	Construction	06/2011	06/2036	4.629%	50,000	50,000	06/2040	3.586%
347	Construction	06/2011	06/2040	4.775%	25,000	25,000		
348	Construction	06/2011	09/2011	0.072%	25,000	0		
349	Construction	08/2011	08/2029	4.238%	50,000	50,000		
350	Construction	08/2011	08/2032	4.355%	98,900	98,900		
351	Construction	08/2011	08/2033	4.386%	40,000	40,000		
352	Construction	08/2011	08/2034	4.416%	40,000	40,000	08/2038	3.586%
353	Construction	08/2011	08/2035	4.446%	40,000	40,000		
354	Construction	08/2011	08/2035	4.446%	40,000	40,000		
355	Construction	08/2011	08/2035	4.446%	45,000	45,000	08/2039	3.586%
356	Construction	08/2011	08/2039	4.295%	50,000	0		
357	Construction	09/2011	09/2040	3.796%	35,000	0		
358	Construction	10/2011	10/2039	0.069%	45,000	0		
359	Construction	01/2012	01/2040	2.234%	30,000	30,000		
360	Construction	01/2012	09/2012	0.146%	30,000	0		
361	Construction	03/2012	09/2012	0.210%	40,000	0		
362	Construction	03/2012	03/2024	1.976%	45,000	45,000		
363	Construction	05/2012	05/2027	2.087%	17,000	17,000		
364	Construction	06/2012	09/2015	0.671%	26,000	0		

TABLE 10-1
HISTORICAL INVESTMENTS
($000s)

	A	B	C	D	E	F	G	H
	PROJECT	IN SERVICE DATE	DUE DATE	INTEREST RATE	ORIGINAL PRINCIPAL	CURRENT PRINCIPAL	Roll Maturity Date	Rollover Rate
365	Construction	06/2012	06/2037	3.503%	35,000	0		
366	Construction	08/2012	08/2015	0.589%	37,000	0		
367	Construction	09/2012	09/2017	0.891%	36,400	0		
368	Construction	09/2012	09/2039	3.627%	39,000	0		
369	Construction	11/2012	10/2042	5.687%	55,000	0		
370	Construction	01/2013	01/2043	6.194%	30,000	0		
371	Construction	02/2013	02/2043	5.993%	15,000	0		
372	Construction	03/2013	03/2043	5.958%	18,000	0		
373	Construction	04/2013	04/2043	5.633%	28,000	0		
374	Construction	05/2013	05/2043	6.192%	20,000	0		
375	Construction	06/2013	06/2043	6.938%	36,000	0		
376	Construction	08/2013	02/2014	0.090%	39,000	0		
377	Construction	08/2013	08/2034	7.413%	20,000	0		
378	Construction	09/2013	02/2014	0.021%	5,000	0		
379	Construction	09/2013	09/2034	4.214%	9,000	9,000		
380	Construction	10/2013	10/2035	4.222%	64,000	64,000		
381	Construction	11/2013	09/2014	0.140%	14,000	0		
382	Construction	11/2013	10/2029	4.093%	55,000	55,000		
383	Construction	11/2013	01/2031	4.162%	30,000	30,000		
384	Construction	11/2013	02/2031	4.166%	15,000	15,000		
385	Construction	11/2013	03/2031	4.171%	18,000	18,000		
386	Construction	11/2013	04/2034	4.311%	28,000	28,000		
387	Construction	11/2013	08/2034	4.324%	6,000	6,000		
388	Construction	11/2013	05/2035	4.354%	20,000	20,000		
389	Construction	11/2013	06/2036	4.397%	36,000	36,000		
390	Construction	11/2013	11/2035	4.365%	15,000	15,000		
391	Construction	12/2013	02/2014	0.052%	9,000	0		
392	Construction	12/2013	12/2035	4.472%	10,000	10,000		
393	Construction	01/2014	12/2018	1.943%	33,000	33,000		
394	Construction	01/2014	12/2018	1.943%	30,000	30,000		
395	Construction	01/2014	12/2018	1.943%	31,000	31,000		
396	Construction	01/2014	12/2018	1.943%	48,000	48,000		
397	Construction	01/2014	06/2014	0.083%	10,000	0		
398	Construction	01/2014	01/2043	4.380%	15,000	15,000		
399	Construction	02/2014	09/2014	0.077%	53,000	0		
400	Construction	04/2014	02/2034	1.877%	45,000	45,000		
401	Construction	04/2014	03/2034	1.976%	45,000	45,000		
402	Construction	04/2014	10/2039	2.075%	45,000	45,000		
403	Construction	05/2014	05/2036	2.087%	29,000	29,000		
404	Construction	06/2014	06/2015	0.303%	11,000	0		
405	Construction	06/2014	06/2015	0.303%	63,000	0		
406	Construction	06/2014	11/2032	2.087%	21,000	21,000		
407	Construction	07/2014	04/2032	2.075%	9,000	9,000		
408	Construction	08/2014	06/2015	0.262%	14,000	0		
409	Construction	08/2014	07/2035	2.234%	10,000	10,000		
410	Construction	08/2014	08/2035	1.877%	15,000	15,000		
411	Construction	09/2014	04/2028	2.075%	17,000	17,000		
412	Construction	09/2014	09/2028	3.094%	3,000	3,000		
413	Construction	10/2014	06/2015	0.180%	23,000	0		
414	Construction	10/2014	10/2023	2.521%	20,000	20,000		
415	Construction	11/2014	06/2015	0.168%	18,000	0		
416	Construction	11/2014	11/2023	2.361%	20,000	20,000		

TABLE 10-1
HISTORICAL INVESTMENTS
($000s)

	A	B	C	D	E	F	G	H
	PROJECT	IN SERVICE DATE	DUE DATE	INTEREST RATE	ORIGINAL PRINCIPAL	CURRENT PRINCIPAL	Roll Maturity Date	Rollover Rate
417	Construction	12/2014	12/2022	2.274%	16,000	16,000		
418	Construction	12/2014	12/2022	2.274%	4,000	4,000		
419	Construction	01/2015	06/2015	0.151%	35,000	0		
420	Construction	02/2015	06/2015	0.149%	30,000	0		
421	Construction	02/2015	02/2026	2.416%	19,000	19,000		
422	Construction	03/2015	03/2024	2.200%	17,000	17,000		
423	Construction	03/2015	03/2026	2.370%	15,000	15,000		
424	Construction	03/2015	03/2030	2.626%	3,000	3,000		
425	Construction	04/2015	06/2015	0.118%	20,000	0		
426	Construction	04/2015	04/2023	2.163%	3,000	3,000		
427	Construction	04/2015	04/2023	2.163%	12,000	12,000		
428	Construction	05/2015	05/2022	2.103%	11,000	11,000		
429	Construction	05/2015	05/2022	2.103%	14,000	14,000		
430	Construction	06/2015	02/2016	0.261%	11,000	0		
431	Construction	06/2015	02/2016	0.261%	63,000	0		
432	Construction	06/2015	02/2016	0.261%	14,000	0		
433	Construction	06/2015	02/2016	0.261%	23,000	0		
434	Construction	06/2015	02/2016	0.261%	18,000	0		
435	Construction	06/2015	02/2016	0.261%	35,000	0		
436	Construction	06/2015	02/2016	0.261%	30,000	0		
437	Construction	06/2015	02/2016	0.261%	20,000	0		
438	Construction	06/2015	06/2023	2.443%	11,000	11,000		
439	Construction	06/2015	06/2023	2.443%	8,000	8,000		
440	Construction	07/2015	02/2016	0.272%	25,000	0		
441	Construction	07/2015	07/2026	2.707%	18,000	18,000		
442	Construction	07/2015	07/2026	2.707%	10,000	10,000		
443	Construction	08/2015	02/2016	0.286%	13,000	0		
444	Construction	08/2015	08/2025	2.598%	14,000	14,000		
445	Construction	09/2015	09/2030	2.905%	15,000	15,000		
446	Construction	10/2015	02/2016	0.216%	12,000	0		
447	Construction	10/2015	06/2034	2.155%	21,000	21,000		
448	Construction	10/2015	08/2034	1.877%	19,000	19,000		
449	Construction	10/2015	10/2034	3.198%	2,000	2,000		
450	Construction	12/2015	12/2026	2.762%	9,000	9,000		
451	Construction	12/2015	12/2026	2.762%	29,000	29,000		
452	Construction	01/2016	01/2027	2.352%	13,000	13,000		
453	Construction	02/2016	04/2016	0.436%	25,000	0		
454	Construction	02/2016	04/2016	0.436%	14,000	0		
455	Construction	02/2016	04/2016	0.436%	250,000	0		
456	Construction	02/2016	02/2027	2.236%	13,000	13,000		
457	Construction	03/2016	03/2026	2.177%	6,000	6,000		
458	Construction	03/2016	03/2026	2.177%	12,000	12,000		
459	Construction	05/2016	05/2025	2.101%	20,000	20,000		
460	Construction	07/2016	07/2025	1.713%	48,000	48,000		
461	Construction	07/2017	07/2041	3.164%	19,000	19,000		
462	Construction	07/2017	07/2042	3.181%	14,000	14,000		
463	Construction	07/2017	07/2043	3.198%	23,000	23,000		
464	Construction	07/2017	07/2044	3.215%	17,000	17,000		
465	Construction	07/2017	07/2045	3.230%	27,000	27,000		
466	Construction	08/2017	08/2037	2.902%	30,000	30,000		
467	Construction	08/2017	08/2038	2.929%	7,000	7,000		
468	Construction	08/2017	08/2041	2.991%	13,000	13,000		

TABLE 10-1
HISTORICAL INVESTMENTS
($000s)

	A	B	C	D	E	F	G	H
	PROJECT	IN SERVICE DATE	DUE DATE	INTEREST RATE	ORIGINAL PRINCIPAL	CURRENT PRINCIPAL	Roll Maturity Date	Rollover Rate
469	Construction	08/2017	08/2043	3.024%	10,000	10,000		
470	Construction	08/2017	08/2046	3.066%	22,000	22,000		
471	Construction	08/2017	08/2047	3.076%	18,000	18,000		
472	Construction	09/2017	01/2018	1.181%	36,400	0		
473	Construction	09/2017	09/2041	3.156%	17,000	17,000		
474	Construction	09/2017	09/2043	3.193%	14,000	14,000		
475	Construction	09/2017	09/2044	3.209%	9,000	9,000		
476	Construction	09/2017	09/2047	3.247%	10,000	10,000		
477	Construction (AS)	10/1992	10/2032	8.350%	99,962	0		
478	Construction (AS)	07/1995	07/2025	7.700%	49,933	0		
479	Construction (AS)	01/1996	01/2003	5.900%	54,378	0		
480	Construction (AS)	01/1997	01/2004	6.800%	22,600	0		
481	Construction (AS)	08/1998	08/2008	5.750%	36,819	0		
482	Construction (AS)	02/1999	02/2014	5.900%	59,050	0		
483	Construction (AS)	07/2000	07/2004	7.000%	39,052	0		
484	Construction (AS)	01/2001	01/2010	6.050%	59,932	0		
485	Construction (AS)	03/2002	03/2005	4.600%	108,010	0		
486	Construction (AS)	10/2002	10/2005	3.000%	4,938	0		
487	Construction (AS)	01/2004	01/2007	2.500%	46,643	0		
488	Construction (AS)	11/2004	11/2008	3.750%	27,010	0		
489	Construction (AS)	09/2006	09/2010	4.950%	5,319	0		
490	Construction (AS)	01/2008	01/2012	3.200%	30,000	0		
491	Construction (AS)	09/2008	09/2012	3.444%	25,000	0		
492	Construction (AS)	09/2009	09/2014	2.746%	14,000	0		
493	Construction (AS)	02/2010	02/2015	0.165%	7,500	0		
494	Construction (AS)	08/2010	08/2015	1.619%	15,000	0		
495	Construction (AS)	06/2011	06/2016	1.957%	13,000	0		
496	Construction (AS)	08/2011	08/2016	1.423%	6,500	0		
497	Construction (AS)	06/2012	09/2015	0.671%	14,300	0		
498	Construction (AS)	11/2012	11/2018	1.109%	9,750	9,750		
499	Construction (AS)	04/2013	04/2017	0.622%	4,550	0		
500	Construction (AS)	06/2013	06/2019	1.962%	5,000	5,000		
501	Construction (AS)	08/2013	08/2019	2.279%	3,000	3,000		
502	Construction (AS)	10/2013	10/2019	2.039%	7,800	7,800		
503	Construction (AS)	01/2014	01/2020	2.183%	3,250	3,250		
504	Construction (AS)	02/2014	09/2014	0.117%	59,050	0		
505	Construction (AS)	04/2014	03/2020	1.976%	2,600	2,600		
506	Construction (AS)	05/2014	04/2020	2.075%	1,300	1,300		
507	Construction (AS)	07/2014	07/2020	2.234%	1,950	1,950		
508	Construction (AS)	11/2014	11/2020	1.809%	3,900	3,900		
509	Construction (AS)	12/2014	12/2020	1.922%	1,950	1,950		
510	Construction (AS)	02/2015	02/2021	1.761%	3,250	3,250		
511	Construction (AS)	05/2015	05/2021	1.898%	3,900	3,900		
512	Construction (AS)	08/2015	08/2025	2.598%	11,000	11,000		
513	Construction (AS)	10/2015	10/2021	1.942%	5,200	5,200		
514	Construction (AS)	02/2016	02/2022	1.631%	5,000	5,000		
515	Construction (AS)	06/2016	09/2016	0.436%	13,000	0		
516	Construction (AS)	04/2017	01/2018	1.051%	4,550	0		
517	Environment	11/1996	11/2011	6.950%	40,000	0		
518	Environment	01/2001	01/2010	6.050%	30,000	0		
519	Environment	09/2002	09/2006	3.050%	30,000	0		
520	Environment	03/2006	03/2009	5.050%	20,000	0		

TABLE 10-1
HISTORICAL INVESTMENTS
($000s)

	A	B	C	D	E	F	G	H
	PROJECT	**IN SERVICE DATE**	**DUE DATE**	**INTEREST RATE**	**ORIGINAL PRINCIPAL**	**CURRENT PRINCIPAL**	**Roll Maturity Date**	**Rollover Rate**
521	Environment	09/2008	09/2011	3.151%	10,000	0		
522	Environment	02/2010	02/2025	4.279%	10,000	10,000		
523	Environment	05/2012	05/2027	2.087%	13,000	13,000		
524	Environment	11/2012	11/2027	5.046%	5,000	0		
525	Environment	10/2013	10/2028	3.880%	6,000	6,000		
526	Environment	11/2013	11/2027	3.967%	5,000	5,000		
527	Environment	01/2014	01/2029	3.896%	3,000	3,000		
528	Environment	07/2014	07/2029	2.234%	3,000	3,000		
529	Environment	01/2015	01/2024	1.908%	4,000	4,000		
530	Environment	10/2015	09/2027	1.976%	5,000	5,000		
531	Environment	05/2016	05/2025	2.101%	5,000	5,000		
532	Technology (T)	02/2015	02/2021	1.761%	23,000	23,000		
533	Technology (T)	10/2015	09/2018	1.976%	5,000	5,000	09/2021	2.137%
534	**Totals:**				**12,738,508**	**3,034,867**		

TABLE 10-2
PROJECTED FEDERAL INVESTMENTS
($000s)

	A	B	C	D	F	E
	PROJECT	ORIGINAL PRINCIPAL	CURRENT PRINCIPAL	INTEREST RATE	IN SERVICE DATE	DUE DATE
1	Construction	52,000	52,000	0.920%	8/31/2018	8/31/2041
2	Construction	25,000	25,000	0.920%	9/30/2018	9/30/2042
3	Construction (AS)	7,800	7,800	2.560%	9/30/2018	9/30/2024
4	Environment	7,000	7,000	0.920%	9/30/2018	9/30/2033
5	**2018 TOTAL:**	**91,800**	**91,800**			
6	Construction	121,000	121,000	1.380%	7/31/2019	7/31/2043
7	Construction	118,000	118,000	1.380%	8/31/2019	8/31/2044
8	Construction	117,000	117,000	1.380%	9/30/2019	9/30/2045
9	Construction (AS)	12,350	12,350	3.270%	9/30/2019	9/30/2025
10	Environment	7,000	7,000	1.380%	9/30/2019	9/30/2034
11	**2019 TOTAL:**	**375,350**	**375,350**			
12	Construction	50,466	50,466	1.600%	7/31/2020	9/30/2020
13	Construction	83,534	83,534	1.600%	7/31/2020	7/31/2046
14	Construction	56,000	56,000	1.600%	8/31/2020	8/31/2047
15	Construction	78,000	78,000	4.900%	8/31/2020	8/31/2047
16	Construction	138,000	138,000	4.930%	9/30/2020	9/30/2048
17	Construction (AS)	11,700	11,700	3.750%	9/30/2020	9/30/2026
18	Environment	7,000	7,000	4.470%	9/30/2020	9/30/2035
19	**2020 TOTAL:**	**424,700**	**424,700**			
20	Construction	94,074	94,074	1.640%	7/31/2021	9/30/2021
21	Construction	78,926	78,926	5.000%	7/31/2021	7/31/2049
22	Construction	173,000	173,000	5.040%	8/31/2021	8/31/2050
23	Construction	346,000	346,000	5.070%	9/30/2021	9/30/2051
24	Construction (AS)	6,000	6,000	3.710%	9/30/2021	9/30/2026
25	Construction (AS)	20,800	20,800	3.840%	9/30/2021	9/30/2027
26	Environment	23,000	23,000	4.535%	9/30/2021	9/30/2036
27	**2021 TOTAL:**	**741,800**	**741,800**			

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11. REPAYMENT STUDY RESULTS

TABLE 11-1
SUMMARY OF INTEREST ($000S) (FY 2020)

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
1	**Obligation Type**	**General Project**	**Specific Project**	**2018**	**2019**	**2020**	**2021**	**2022**	**2023**	**2024**	**2025**	**2026**	**2027**	**2028**	**2029**	**2030**
2	**Appropriation**	**Bonneville Power Administration**	Bonneville Power Administration	532	30	-	-	-	-	-	-	-	-	-	-	-
3			**Bonneville Power Administration Subtotal:**	532	30	-	-	-	-	-	-	-	-	-	-	-
4		**Appropriation Subtotal:**		532	30	-	-	-	-	-	-	-	-	-	-	-
5	**Treasury**	**BPA Borrowing**	(Less Interest Income)	(282)	(1,029)	(1,042)	(1,041)	(1,065)	(1,072)	(993)	(1,053)	(1,079)	(1,077)	(1,080)	(1,022)	(1,043)
6			Construction	102,701	101,568	100,545	107,483	100,396	91,510	83,298	78,349	71,554	65,110	59,122	50,528	42,022
7			Interest Accrual	18,630	17,075	16,436	15,247	13,793	12,650	12,074	11,767	10,786	9,125	8,701	7,600	5,965
8			Interest Accrual Reversal	(18,590)	(18,630)	(17,075)	(16,436)	(15,247)	(13,793)	(12,650)	(12,074)	(11,767)	(10,786)	(9,125)	(8,701)	(7,600)
9			Construction (AS)	1,333	1,478	1,521	1,666	1,418	1,327	1,327	1,128	439	-	-	-	-
10			Interest Accrual	298	232	136	73	24	24	24	-	-	-	-	-	-
11			Interest Accrual Reversal	(298)	(298)	(232)	(136)	(73)	(24)	(24)	(24)	-	-	-	-	-
12			Environment	1,593	1,658	1,754	2,067	2,067	2,067	2,029	1,777	1,459	1,459	833	403	161
13			Interest Accrual	368	368	368	368	368	368	356	284	284	193	127	-	-
14			Interest Accrual Reversal	(368)	(368)	(368)	(368)	(368)	(368)	(368)	(356)	(284)	(284)	(193)	(127)	-
15			Technology (T)	503	511	511	308	-	-	-	-	-	-	-	-	-
16			Interest Accrual	34	34	34	-	-	-	-	-	-	-	-	-	-
17			Interest Accrual Reversal	(34)	(34)	(34)	(34)	-	-	-	-	-	-	-	-	-
18			**BPA Borrowing Subtotal:**	105,888	102,565	102,553	109,197	101,314	92,689	85,073	79,797	71,392	63,739	58,385	48,681	39,505
19		**Federal Transmission Replacement**	Replacements	-	-	-	4,493	13,478	22,463	31,448	40,434	49,419	58,404	67,389	76,375	85,360
20			**Federal Transmission Replacement Subtotal:**	-	-	-	4,493	13,478	22,463	31,448	40,434	49,419	58,404	67,389	76,375	85,360
21		**Treasury Subtotal:**		105,888	102,565	102,553	113,690	114,792	115,152	116,521	120,231	120,811	122,143	125,775	125,056	124,865
22	**Grand Total:**			**$106,420**	**$102,595**	**$102,553**	**$113,690**	**$114,792**	**$115,152**	**$116,521**	**$120,231**	**$120,811**	**$122,143**	**$125,775**	**$125,056**	**$124,865**

TABLE 11-1
SUMMARY OF INTEREST ($000S) (FY 2020)

	A	B	C	Q	R	S	T	U	V	W	X	Y	Z	AA	AB	AC
1	**Obligation Type**	**General Project**	**Specific Project**	**2031**	**2032**	**2033**	**2034**	**2035**	**2036**	**2037**	**2038**	**2039**	**2040**	**2041**	**2042**	**2043**
2	**Appropriation**	**Bonneville Power Administration**	Bonneville Power Administration	-	-	-	-	-	-	-	-	-	-	-	-	-
3			**Bonneville Power Administration Subtotal:**	-	-	-	-	-	-	-	-	-	-	-	-	-
4		**Appropriation Subtotal:**		-	-	-	-	-	-	-	-	-	-	-	-	-
5	**Treasury**	**BPA Borrowing**	(Less Interest Income)	(1,063)	(1,046)	(1,076)	(1,209)	(1,112)	(1,116)	(1,221)	(1,284)	(1,286)	(1,317)	(1,705)	(1,385)	(1,750)
6			Construction	34,984	24,608	17,019	12,105	7,527	3,847	1,208	-	-	-	-	-	-
7			Interest Accrual	3,952	2,545	1,780	1,058	398	49	-	-	-	-	-	-	-
8			Interest Accrual Reversal	(5,965)	(3,952)	(2,545)	(1,780)	(1,058)	(398)	(49)	-	-	-	-	-	-
9			Construction (AS)	-	-	-	-	-	-	-	-	-	-	-	-	-
10			Interest Accrual	-	-	-	-	-	-	-	-	-	-	-	-	-
11			Interest Accrual Reversal	-	-	-	-	-	-	-	-	-	-	-	-	-
12			Environment	161	161	161	97	-	-	-	-	-	-	-	-	-
13			Interest Accrual	-	-	-	-	-	-	-	-	-	-	-	-	-
14			Interest Accrual Reversal	-	-	-	-	-	-	-	-	-	-	-	-	-
15			Technology (T)	-	-	-	-	-	-	-	-	-	-	-	-	-
16			Interest Accrual	-	-	-	-	-	-	-	-	-	-	-	-	-
17			Interest Accrual Reversal	-	-	-	-	-	-	-	-	-	-	-	-	-
18			**BPA Borrowing Subtotal:**	32,069	22,317	15,339	10,270	5,756	2,381	(61)	(1,284)	(1,286)	(1,317)	(1,705)	(1,385)	(1,750)
19		**Federal Transmission Replacement**	Replacements	94,345	103,330	112,316	121,301	130,286	139,271	147,510	149,543	146,054	142,261	135,676	128,481	120,812
20			**Federal Transmission Replacement Subtotal:**	94,345	103,330	112,316	121,301	130,286	139,271	147,510	149,543	146,054	142,261	135,676	128,481	120,812
21		**Treasury Subtotal:**		126,414	125,648	127,655	131,571	136,042	141,653	147,449	148,259	144,767	140,944	133,971	127,096	119,062
22	**Grand Total:**			**$126,414**	**$125,648**	**$127,655**	**$131,571**	**$136,042**	**$141,653**	**$147,449**	**$148,259**	**$144,767**	**$140,944**	**$133,971**	**$127,096**	**$119,062**

TABLE 11-1
SUMMARY OF INTEREST ($000S) (FY 2020)

	A	B	C	AD	AE	AF	AG	AH	AI	AJ	AK	AL	AM	AN	AO	AP
1	**Obligation Type**	**General Project**	**Specific Project**	**2044**	**2045**	**2046**	**2047**	**2048**	**2049**	**2050**	**2051**	**2052**	**2053**	**2054**	**2055**	**Total**
2	**Appropriation**	**Bonneville Power Administration**	Bonneville Power Administration	-	-	-	-	-	-	-	-	-	-	-	-	562
3			**Bonneville Power Administration Subtotal:**	-	-	-	-	-	-	-	-	-	-	-	-	562
4		**Appropriation Subtotal:**		-	-	-	-	-	-	-	-	-	-	-	-	562
5	**Treasury**	**BPA Borrowing**	(Less Interest Income)	(1,779)	(1,802)	(1,824)	(1,848)	(1,873)	(1,899)	(1,927)	(1,956)	(1,986)	(1,994)	(1,994)	(1,994)	(52,322)
6			Construction	-	-	-	-	-	-	-	-	-	-	-	-	1,155,485
7			Interest Accrual	-	-	-	-	-	-	-	-	-	-	-	-	169,632
8			Interest Accrual Reversal	-	-	-	-	-	-	-	-	-	-	-	-	(188,222)
9			Construction (AS)	-	-	-	-	-	-	-	-	-	-	-	-	11,637
10			Interest Accrual	-	-	-	-	-	-	-	-	-	-	-	-	811
11			Interest Accrual Reversal	-	-	-	-	-	-	-	-	-	-	-	-	(1,109)
12			Environment	-	-	-	-	-	-	-	-	-	-	-	-	19,907
13			Interest Accrual	-	-	-	-	-	-	-	-	-	-	-	-	3,454
14			Interest Accrual Reversal	-	-	-	-	-	-	-	-	-	-	-	-	(3,822)
15			Technology (T)	-	-	-	-	-	-	-	-	-	-	-	-	1,832
16			Interest Accrual	-	-	-	-	-	-	-	-	-	-	-	-	103
17			Interest Accrual Reversal	-	-	-	-	-	-	-	-	-	-	-	-	(137)
18			**BPA Borrowing Subtotal:**	(1,779)	(1,802)	(1,824)	(1,848)	(1,873)	(1,899)	(1,927)	(1,956)	(1,986)	(1,994)	(1,994)	(1,994)	1,117,249
19		**Federal Transmission Replacement**	Replacements	110,414	99,417	87,846	75,680	62,889	49,441	35,302	20,436	10,901	8,985	8,985	8,985	2,699,733
20			**Federal Transmission Replacement Subtotal:**	110,414	99,417	87,846	75,680	62,889	49,441	35,302	20,436	10,901	8,985	8,985	8,985	2,699,733
21		**Treasury Subtotal:**		108,635	97,615	86,022	73,832	61,016	47,542	33,375	18,481	8,915	6,991	6,991	6,991	3,816,981
22	**Grand Total:**			**$108,635**	**$97,615**	**$86,022**	**$73,832**	**$61,016**	**$47,542**	**$33,375**	**$18,481**	**$8,915**	**$6,991**	**$6,991**	**$6,991**	**$3,817,543**

TABLE 11-2
INTEREST CALCULATION SUMMARY ($000S) (FY 2020)

	A	B	C	D	E	F	G	H	I
1	**Fiscal Year**	**Project**	**Type**	**Current Principal**	**Rate**	**Interest**	**Premium**	**Net Interest Accrual**	**Total**
2	2018	Bonneville Power Administration	Historical	7,377	7.210%	532	-	-	532
3	2018	Construction	Historical	2,876,640	3.570%	102,701	-	-	102,701
4	2018	Construction	New	52,000	-	-	-	40	40
5	2018	Construction (AS)	Historical	68,850	1.936%	1,333	-	-	1,333
6	2018	Environment	Historical	54,000	2.950%	1,593	-	-	1,593
7	2018	Technology (T)	Historical	28,000	1.795%	503	-	-	503
8	2018	Float	Historical	-	-	(282)	-	-	(282)
9	**FY 2018**	**Subtotal:**		**3,086,867**		**106,379**	**-**	**40**	**106,420**
10	2019	Bonneville Power Administration	Historical	421	7.210%	30	-	-	30
11	2019	Construction	Historical	2,953,640	3.439%	101,568	-	(1,968)	99,600
12	2019	Construction	New	239,000	-	-	-	413	413
13	2019	Construction (AS)	Historical	76,650	1.929%	1,478	-	(67)	1,412
14	2019	Environment	Historical	61,000	2.717%	1,658	-	-	1,658
15	2019	Technology (T)	Historical	28,000	1.824%	511	-	-	511
16	2019	Float	Historical	-	-	(1,029)	-	-	(1,029)
17	**FY 2019**	**Subtotal:**		**3,358,711**		**104,217**	**-**	**(1,621)**	**102,595**
18	2020	Construction	Historical	3,092,795	3.247%	100,410	-	(1,259)	99,151
19	2020	Construction	New	268,000	0.050%	135	-	619	754
20	2020	Construction (AS)	Historical	71,250	2.135%	1,521	-	(96)	1,425
21	2020	Environment	Historical	68,000	2.580%	1,754	-	-	1,754
22	2020	Technology (T)	Historical	28,000	1.824%	511	-	-	511
23	2020	Float	Historical	-	-	(1,042)	-	-	(1,042)
24	**FY 2020**	**Subtotal:**		**3,528,045**		**103,289**	**-**	**(736)**	**102,553**
25	2021	Construction	Historical	3,305,329	3.252%	107,483	-	(1,189)	106,294
26	2021	Construction (AS)	Historical	66,050	2.522%	1,666	-	(63)	1,603
27	2021	Environment	Historical	75,000	2.756%	2,067	-	-	2,067
28	2021	Replacements	New	179,705	2.500%	4,493	-	-	4,493
29	2021	Technology (T)	Historical	28,000	1.101%	308	-	(34)	274
30	2021	Float	Historical	-	-	(1,041)	-	-	(1,041)
31	**FY 2021**	**Subtotal:**		**3,654,084**		**114,976**	**-**	**(1,286)**	**113,690**

TABLE 11-2
INTEREST CALCULATION SUMMARY ($000S) (FY 2020)

	A	B	C	D	E	F	G	H	I
1	**Fiscal Year**	**Project**	**Type**	**Current Principal**	**Rate**	**Interest**	**Premium**	**Net Interest Accrual**	**Total**
32	2022	Construction	Historical	3,152,005	3.185%	100,396	-	(1,454)	98,943
33	2022	Construction (AS)	Historical	53,050	2.674%	1,418	-	(49)	1,369
34	2022	Environment	Historical	75,000	2.756%	2,067	-	-	2,067
35	2022	Replacements	Historical	179,705	5.000%	8,985	-	-	8,985
36	2022	Replacements	New	179,705	2.500%	4,493	-	-	4,493
37	2022	Float	Historical	-	-	(1,065)	-	-	(1,065)
38	**FY 2022**	**Subtotal:**		**3,639,465**		**116,294**	**-**	**(1,503)**	**114,792**
39	2023	Construction	Historical	2,960,707	3.091%	91,510	-	(1,143)	90,367
40	2023	Construction (AS)	Historical	42,850	3.097%	1,327	-	-	1,327
41	2023	Environment	Historical	75,000	2.756%	2,067	-	-	2,067
42	2023	Replacements	Historical	359,410	5.000%	17,971	-	-	17,971
43	2023	Replacements	New	179,705	2.500%	4,493	-	-	4,493
44	2023	Float	Historical	-	-	(1,072)	-	-	(1,072)
45	**FY 2023**	**Subtotal:**		**3,617,672**		**116,295**	**-**	**(1,143)**	**115,152**
46	2024	Construction	Historical	2,759,359	3.019%	83,298	-	(576)	82,722
47	2024	Construction (AS)	Historical	42,850	3.097%	1,327	-	-	1,327
48	2024	Environment	Historical	75,000	2.705%	2,029	-	(13)	2,016
49	2024	Replacements	Historical	539,115	5.000%	26,956	-	-	26,956
50	2024	Replacements	New	179,705	2.500%	4,493	-	-	4,493
51	2024	Float	Historical	-	-	(993)	-	-	(993)
52	**FY 2024**	**Subtotal:**		**3,596,030**		**117,110**	**-**	**(589)**	**116,521**
53	2025	Construction	Historical	2,584,139	3.032%	78,349	-	(307)	78,042
54	2025	Construction (AS)	Historical	35,050	3.217%	1,128	-	(24)	1,103
55	2025	Environment	Historical	71,000	2.503%	1,777	-	(71)	1,706
56	2025	Replacements	Historical	718,821	5.000%	35,941	-	-	35,941
57	2025	Replacements	New	179,705	2.500%	4,493	-	-	4,493
58	2025	Float	Historical	-	-	(1,053)	-	-	(1,053)
59	**FY 2025**	**Subtotal:**		**3,588,714**		**120,634**	**-**	**(403)**	**120,231**

TABLE 11-2
INTEREST CALCULATION SUMMARY ($000S) (FY 2020)

	A	B	C	D	E	F	G	H	I
1	Fiscal Year	Project	Type	Current Principal	Rate	Interest	Premium	Net Interest Accrual	Total
60	2026	Construction	Historical	2,419,805	2.957%	71,554	-	(981)	70,573
61	2026	Construction (AS)	Historical	11,700	3.750%	439	-	-	439
62	2026	Environment	Historical	56,000	2.605%	1,459	-	-	1,459
63	2026	Replacements	Historical	898,526	5.000%	44,926	-	-	44,926
64	2026	Replacements	New	179,705	2.500%	4,493	-	-	4,493
65	2026	Float	Historical	-	-	(1,079)	-	-	(1,079)
66	**FY 2026**	**Subtotal:**		**3,565,736**		**121,791**	**-**	**(981)**	**120,811**
67	2027	Construction	Historical	2,222,691	2.929%	65,110	-	(1,662)	63,449
68	2027	Environment	Historical	56,000	2.605%	1,459	-	(91)	1,368
69	2027	Replacements	Historical	1,078,231	5.000%	53,912	-	-	53,912
70	2027	Replacements	New	179,705	2.500%	4,493	-	-	4,493
71	2027	Float	Historical	-	-	(1,077)	-	-	(1,077)
72	**FY 2027**	**Subtotal:**		**3,536,627**		**123,896**	**-**	**(1,752)**	**122,143**
73	2028	Construction	Historical	2,034,623	2.906%	59,122	-	(424)	58,698
74	2028	Environment	Historical	38,000	2.193%	833	-	(66)	767
75	2028	Replacements	Historical	1,257,936	5.000%	62,897	-	-	62,897
76	2028	Replacements	New	179,705	2.500%	4,493	-	-	4,493
77	2028	Float	Historical	-	-	(1,080)	-	-	(1,080)
78	**FY 2028**	**Subtotal:**		**3,510,264**		**126,265**	**-**	**(490)**	**125,775**
79	2029	Construction	Historical	1,841,006	2.745%	50,528	-	(1,100)	49,427
80	2029	Environment	Historical	26,000	1.549%	403	-	(127)	276
81	2029	Replacements	Historical	1,437,641	5.000%	71,882	-	-	71,882
82	2029	Replacements	New	179,705	2.500%	4,493	-	-	4,493
83	2029	Float	Historical	-	-	(1,022)	-	-	(1,022)
84	**FY 2029**	**Subtotal:**		**3,484,352**		**126,283**	**-**	**(1,227)**	**125,056**
85	2030	Construction	Historical	1,663,407	2.526%	42,022	-	(1,635)	40,387
86	2030	Environment	Historical	14,000	1.150%	161	-	-	161
87	2030	Replacements	Historical	1,617,346	5.000%	80,867	-	-	80,867
88	2030	Replacements	New	179,705	2.500%	4,493	-	-	4,493
89	2030	Float	Historical	-	-	(1,043)	-	-	(1,043)
90	**FY 2030**	**Subtotal:**		**3,474,459**		**126,500**	**-**	**(1,635)**	**124,865**

TABLE 11-2
INTEREST CALCULATION SUMMARY ($000S) (FY 2020)

	A	B	C	D	E	F	G	H	I
1	**Fiscal Year**	**Project**	**Type**	**Current Principal**	**Rate**	**Interest**	**Premium**	**Net Interest Accrual**	**Total**
91	2031	Construction	Historical	1,468,102	2.383%	34,984	-	(2,014)	32,971
92	2031	Environment	Historical	14,000	1.150%	161	-	-	161
93	2031	Replacements	Historical	1,797,052	5.000%	89,853	-	-	89,853
94	2031	Replacements	New	179,705	2.500%	4,493	-	-	4,493
95	2031	Float	Historical	-	-	(1,063)	-	-	(1,063)
96	**FY 2031**	**Subtotal:**		**3,458,858**		**128,428**	**-**	**(2,014)**	**126,414**
97	2032	Construction	Historical	1,264,371	1.946%	24,608	-	(1,406)	23,202
98	2032	Environment	Historical	14,000	1.150%	161	-	-	161
99	2032	Replacements	Historical	1,976,757	5.000%	98,838	-	-	98,838
100	2032	Replacements	New	179,705	2.500%	4,493	-	-	4,493
101	2032	Float	Historical	-	-	(1,046)	-	-	(1,046)
102	**FY 2032**	**Subtotal:**		**3,434,833**		**127,054**	**-**	**(1,406)**	**125,648**
103	2033	Construction	Historical	1,052,143	1.618%	17,019	-	(765)	16,254
104	2033	Environment	Historical	14,000	1.150%	161	-	-	161
105	2033	Replacements	Historical	2,156,462	5.000%	107,823	-	-	107,823
106	2033	Replacements	New	179,705	2.500%	4,493	-	-	4,493
107	2033	Float	Historical	-	-	(1,076)	-	-	(1,076)
108	**FY 2033**	**Subtotal:**		**3,402,310**		**128,420**	**-**	**(765)**	**127,655**
109	2034	Construction	Historical	849,154	1.426%	12,105	-	(723)	11,382
110	2034	Environment	Historical	7,000	1.380%	97	-	-	97
111	2034	Replacements	Historical	2,336,167	5.000%	116,808	-	-	116,808
112	2034	Replacements	New	179,705	2.500%	4,493	-	-	4,493
113	2034	Float	Historical	-	-	(1,209)	-	-	(1,209)
114	**FY 2034**	**Subtotal:**		**3,372,026**		**132,294**	**-**	**(723)**	**131,571**
115	2035	Construction	Historical	618,416	1.217%	7,527	-	(659)	6,868
116	2035	Replacements	Historical	2,515,872	5.000%	125,794	-	-	125,794
117	2035	Replacements	New	179,705	2.500%	4,493	-	-	4,493
118	2035	Float	Historical	-	-	(1,112)	-	-	(1,112)
119	**FY 2035**	**Subtotal:**		**3,313,994**		**136,701**	**-**	**(659)**	**136,042**
120	2036	Construction	Historical	408,785	0.941%	3,847	-	(350)	3,498
121	2036	Replacements	Historical	2,695,577	5.000%	134,779	-	-	134,779
122	2036	Replacements	New	179,705	2.500%	4,493	-	-	4,493
123	2036	Float	Historical	-	-	(1,116)	-	-	(1,116)
124	**FY 2036**	**Subtotal:**		**3,284,067**		**142,003**	**-**	**(350)**	**141,653**

TABLE 11-2
INTEREST CALCULATION SUMMARY ($000S) (FY 2020)

	A	B	C	D	E	F	G	H	I
1	Fiscal Year	Project	Type	Current Principal	Rate	Interest	Premium	Net Interest Accrual	Total
125	2037	Construction	Historical	200,994	0.601%	1,208	-	(49)	1,160
126	2037	Replacements	Historical	2,875,282	4.974%	143,018	-	-	143,018
127	2037	Replacements	New	179,705	2.500%	4,493	-	-	4,493
128	2037	Float	Historical	-	-	(1,221)	-	-	(1,221)
129	**FY 2037**	**Subtotal:**		**3,255,982**		**147,498**	**-**	**(49)**	**147,449**
130	2038	Replacements	Historical	3,025,132	4.795%	145,050	-	-	145,050
131	2038	Replacements	New	179,705	2.500%	4,493	-	-	4,493
132	2038	Float	Historical	-	-	(1,284)	-	-	(1,284)
133	**FY 2038**	**Subtotal:**		**3,204,837**		**148,259**	**-**	**-**	**148,259**
134	2039	Replacements	Historical	2,956,587	4.788%	141,561	-	-	141,561
135	2039	Replacements	New	179,705	2.500%	4,493	-	-	4,493
136	2039	Float	Historical	-	-	(1,286)	-	-	(1,286)
137	**FY 2039**	**Subtotal:**		**3,136,292**		**144,767**	**-**	**-**	**144,767**
138	2040	Replacements	Historical	2,885,560	4.774%	137,768	-	-	137,768
139	2040	Replacements	New	179,705	2.500%	4,493	-	-	4,493
140	2040	Float	Historical	-	-	(1,317)	-	-	(1,317)
141	**FY 2040**	**Subtotal:**		**3,065,266**		**140,944**	**-**	**-**	**140,944**
142	2041	Replacements	Historical	2,804,871	4.677%	131,183	-	-	131,183
143	2041	Replacements	New	179,705	2.500%	4,493	-	-	4,493
144	2041	Float	Historical	-	-	(1,705)	-	-	(1,705)
145	**FY 2041**	**Subtotal:**		**2,984,576**		**133,971**	**-**	**-**	**133,971**
146	2042	Replacements	Historical	2,622,170	4.728%	123,989	-	-	123,989
147	2042	Replacements	New	179,705	2.500%	4,493	-	-	4,493
148	2042	Float	Historical	-	-	(1,385)	-	-	(1,385)
149	**FY 2042**	**Subtotal:**		**2,801,875**		**127,096**	**-**	**-**	**127,096**
150	2043	Replacements	Historical	2,517,078	4.621%	116,320	-	-	116,320
151	2043	Replacements	New	179,705	2.500%	4,493	-	-	4,493
152	2043	Float	Historical	-	-	(1,750)	-	-	(1,750)
153	**FY 2043**	**Subtotal:**		**2,696,783**		**119,062**	**-**	**-**	**119,062**
154	2044	Replacements	Historical	2,315,407	4.575%	105,921	-	-	105,921
155	2044	Replacements	New	179,705	2.500%	4,493	-	-	4,493
156	2044	Float	Historical	-	-	(1,779)	-	-	(1,779)
157	**FY 2044**	**Subtotal:**		**2,495,112**		**108,635**	**-**	**-**	**108,635**
158	2045	Replacements	Historical	2,101,153	4.518%	94,924	-	-	94,924
159	2045	Replacements	New	179,705	2.500%	4,493	-	-	4,493
160	2045	Float	Historical	-	-	(1,802)	-	-	(1,802)
161	**FY 2045**	**Subtotal:**		**2,280,858**		**97,615**	**-**	**-**	**97,615**

TABLE 11-2
INTEREST CALCULATION SUMMARY ($000S) (FY 2020)

	A	B	C	D	E	F	G	H	I
1	**Fiscal Year**	**Project**	**Type**	**Current Principal**	**Rate**	**Interest**	**Premium**	**Net Interest Accrual**	**Total**
162	2046	Replacements	Historical	1,875,527	4.444%	83,353	-	-	83,353
163	2046	Replacements	New	179,705	2.500%	4,493	-	-	4,493
164	2046	Float	Historical	-	-	(1,824)	-	-	(1,824)
165	**FY 2046**	**Subtotal:**		**2,055,232**		**86,022**	**-**	**-**	**86,022**
166	2047	Replacements	Historical	1,638,307	4.345%	71,187	-	-	71,187
167	2047	Replacements	New	179,705	2.500%	4,493	-	-	4,493
168	2047	Float	Historical	-	-	(1,848)	-	-	(1,848)
169	**FY 2047**	**Subtotal:**		**1,818,012**		**73,832**	**-**	**-**	**73,832**
170	2048	Replacements	Historical	1,388,897	4.205%	58,397	-	-	58,397
171	2048	Replacements	New	179,705	2.500%	4,493	-	-	4,493
172	2048	Float	Historical	-	-	(1,873)	-	-	(1,873)
173	**FY 2048**	**Subtotal:**		**1,568,602**		**61,016**	**-**	**-**	**61,016**
174	2049	Replacements	Historical	1,126,671	3.989%	44,948	-	-	44,948
175	2049	Replacements	New	179,705	2.500%	4,493	-	-	4,493
176	2049	Float	Historical	-	-	(1,899)	-	-	(1,899)
177	**FY 2049**	**Subtotal:**		**1,306,377**		**47,542**	**-**	**-**	**47,542**
178	2050	Replacements	Historical	850,972	3.620%	30,809	-	-	30,809
179	2050	Replacements	New	179,705	2.500%	4,493	-	-	4,493
180	2050	Float	Historical	-	-	(1,927)	-	-	(1,927)
181	**FY 2050**	**Subtotal:**		**1,030,677**		**33,375**	**-**	**-**	**33,375**
182	2051	Replacements	Historical	561,105	2.841%	15,944	-	-	15,944
183	2051	Replacements	New	179,705	2.500%	4,493	-	-	4,493
184	2051	Float	Historical	-	-	(1,956)	-	-	(1,956)
185	**FY 2051**	**Subtotal:**		**740,810**		**18,481**	**-**	**-**	**18,481**
186	2052	Replacements	Historical	256,344	2.500%	6,409	-	-	6,409
187	2052	Replacements	New	179,705	2.500%	4,493	-	-	4,493
188	2052	Float	Historical	-	-	(1,986)	-	-	(1,986)
189	**FY 2052**	**Subtotal:**		**436,049**		**8,915**	**-**	**-**	**8,915**
190	2053	Replacements	Historical	179,705	2.500%	4,493	-	-	4,493
191	2053	Replacements	New	179,705	2.500%	4,493	-	-	4,493
192	2053	Float	Historical	-	-	(1,994)	-	-	(1,994)
193	**FY 2053**	**Subtotal:**		**359,410**		**6,991**	**-**	**-**	**6,991**

TABLE 11-2
INTEREST CALCULATION SUMMARY ($000S) (FY 2020)

	A	B	C	D	E	F	G	H	I
1	Fiscal Year	Project	Type	Current Principal	Rate	Interest	Premium	Net Interest Accrual	Total
194	2054	Replacements	Historical	179,705	2.500%	4,493	-	-	4,493
195	2054	Replacements	New	179,705	2.500%	4,493	-	-	4,493
196	2054	Float	Historical	-	-	(1,994)	-	-	(1,994)
197	**FY 2054**	**Subtotal:**		**359,410**		**6,991**	**-**	**-**	**6,991**
198	2055	Replacements	Historical	179,705	2.500%	4,493	-	-	4,493
199	2055	Replacements	New	179,705	2.500%	4,493	-	-	4,493
200	2055	Float	Historical	-	-	(1,994)	-	-	(1,994)
201	**FY 2055**	**Subtotal:**		**359,410**		**6,991**	**-**	**-**	**6,991**
202	**Grand Total:**			**$101,862,686**		**$3,836,834**	**-**	**($19,291)**	**$3,817,543**

TABLE 11-3
SUMMARY OF AMORTIZATION ($000S) (FY 2020)

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R
1	**Obligation Type**	**General Project**	**Specific Project**	**2018**	**2019**	**2020**	**2021**	**2022**	**2023**	**2024**	**2025**	**2026**	**2027**	**2028**	**2029**	**2030**	**2031**	**2032**
2	**Appropriation**	**Bonneville Power Administration**	**Bonneville Power Administration**	6,956	421	-	-	-	-	-	-	-	-	-	-	-	-	-
3			**Bonneville Power Administration Subtotal:**	6,956	421	-	-	-	-	-	-	-	-	-	-	-	-	-
4		**Appropriation Subtotal:**		6,956	421	-	-	-	-	-	-	-	-	-	-	-	-	-
5	**Bond**	**BPA Borrowing**	**Construction**	-	216,845	193,466	153,324	191,298	201,348	175,221	164,334	197,114	188,068	193,432	177,598	195,306	199,615	195,224
6			Principal Accrual	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
7			Principal Accrual Reversal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
8			**Construction (AS)**	-	17,750	16,900	13,000	10,200	-	7,800	23,350	11,700	-	-	-	-	-	-
9			Principal Accrual	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
10			Principal Accrual Reversal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11			**Environment**	-	-	-	-	-	-	4,000	15,000	-	18,000	12,000	12,000	-	-	-
12			Principal Accrual	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
13			Principal Accrual Reversal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
14			**Technology (T)**	-	-	-	28,000	-	-	-	-	-	-	-	-	-	-	-
15			Principal Accrual	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
16			Principal Accrual Reversal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
17			**BPA Borrowing Subtotal:**	-	234,595	210,366	194,324	201,498	201,348	187,021	202,684	208,814	206,068	205,432	189,598	195,306	199,615	195,224
18		**Federal Transmission Replacement**	**Replacements**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
19			Principal Accrual	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
20			Principal Accrual Reversal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
21			**Federal Transmission Replacement Subtotal:**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
22		**Make Whole Call**	**Discounts**	-	-	-	-	-	-	-	-	-	-	-	(185)	-	-	(4,115)
23			**Premiums**	-	3,751	-	8,764	7,025	9,223	2,220	-	-	2,247	1,831	3,424	3,053	3,333	6,380
24			**Make Whole Call Subtotal:**	-	3,751	-	8,764	7,025	9,223	2,220	-	-	2,247	1,831	3,239	3,053	3,333	2,265
25		**Bond Subtotal:**		-	234,595	210,366	194,324	201,498	201,348	187,021	202,684	208,814	206,068	205,432	189,784	195,306	199,615	199,339
26	**Grand Total:**			$6,956	$235,016	$210,366	$194,324	$201,498	$201,348	$187,021	$202,684	$208,814	$206,068	$205,432	$189,784	$195,306	$199,615	$199,339

TABLE 11-3
SUMMARY OF AMORTIZATION ($000S) (FY 2020)

	A	B	C	S	T	U	V	W	X	Y	Z	AA	AB	AC	AD	AE	AF	AG	AH
1	**Obligation Type**	**General Project**	**Specific Project**	**2033**	**2034**	**2035**	**2036**	**2037**	**2038**	**2039**	**2040**	**2041**	**2042**	**2043**	**2044**	**2045**	**2046**	**2047**	**2048**
2		**Bonneville Power Administration**	**Bonneville Power Administration**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3	**Appropriation**		**Bonneville Power Administration Subtotal:**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4		**Appropriation Subtotal:**		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5			**Construction**	198,416	228,652	209,631	207,791	200,994	-	-	-	-	-	-	-	-	-	-	-
6			Principal Accrual	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
7			Principal Accrual Reversal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
8			**Construction (AS)**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9			Principal Accrual	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
10			Principal Accrual Reversal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11		**BPA Borrowing**	**Environment**	7,000	7,000	-	-	-	-	-	-	-	-	-	-	-	-	-	-
12			Principal Accrual	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
13			Principal Accrual Reversal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
14			**Technology (T)**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
15	**Bond**		Principal Accrual	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
16			Principal Accrual Reversal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
17			**BPA Borrowing Subtotal:**	205,416	235,652	209,631	207,791	200,994	-	-	-	-	-	-	-	-	-	-	-
18			**Replacements**	-	-	-	-	29,856	248,250	250,731	260,395	362,406	284,797	381,376	393,959	405,332	416,925	429,115	441,931
19		**Federal Transmission Replacement**	Principal Accrual	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
20			Principal Accrual Reversal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
21			**Federal Transmission Replacement Subtotal:**	-	-	-	-	29,856	248,250	250,731	260,395	362,406	284,797	381,376	393,959	405,332	416,925	429,115	441,931
22			**Discounts**	(17,003)	(4,573)	(2,086)	-	-	-	-	-	-	-	-	-	-	-	-	-
23		**Make Whole Call**	**Premiums**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
24			**Make Whole Call Subtotal:**	(17,003)	(4,573)	(2,086)	-	-	-	-	-	-	-	-	-	-	-	-	-
25		**Bond Subtotal:**		222,420	240,225	211,717	207,791	230,850	248,250	250,731	260,395	362,406	284,797	381,376	393,959	405,332	416,925	429,115	441,931
26	**Grand Total:**			$222,420	$240,225	$211,717	######	######	$248,250	$250,731	$260,395	######	$284,797	$381,376	######	$405,332	$416,925	$429,115	$441,931

TABLE 11-3
SUMMARY OF AMORTIZATION ($000S) (FY 2020)

	A	B	C	AI	AJ	AK	AL	AM	AN	AO	AP
1	**Obligation Type**	**General Project**	**Specific Project**	**2049**	**2050**	**2051**	**2052**	**2053**	**2054**	**2055**	**Total**
2	**Appropriation**	**Bonneville Power Administration**	**Bonneville Power Administration**	-	-	-	-	-	-	-	7,377
3			**Bonneville Power Administration Subtotal:**	-	-	-	-	-	-	-	7,377
4		**Appropriation Subtotal:**		-	-	-	-	-	-	-	7,377
5	**Bond**	**BPA Borrowing**	**Construction**	-	-	-	-	-	-	-	3,687,678
6			Principal Accrual	-	-	-	-	-	-	-	-
7			Principal Accrual Reversal	-	-	-	-	-	-	-	-
8			**Construction (AS)**	-	-	-	-	-	-	-	100,700
9			Principal Accrual	-	-	-	-	-	-	-	-
10			Principal Accrual Reversal	-	-	-	-	-	-	-	-
11			**Environment**	-	-	-	-	-	-	-	75,000
12			Principal Accrual	-	-	-	-	-	-	-	-
13			Principal Accrual Reversal	-	-	-	-	-	-	-	-
14			**Technology (T)**	-	-	-	-	-	-	-	28,000
15			Principal Accrual	-	-	-	-	-	-	-	-
16			Principal Accrual Reversal	-	-	-	-	-	-	-	-
17			**BPA Borrowing Subtotal:**	-	-	-	-	-	-	-	3,891,378
18		**Federal Transmission Replacement**	**Replacements**	455,405	469,572	484,466	256,344	179,705	179,705	179,705	6,109,975
19			Principal Accrual	-	-	-	-	-	-	-	-
20			Principal Accrual Reversal	-	-	-	-	-	-	-	-
21			**Federal Transmission Replacement Subtotal:**	455,405	469,572	484,466	256,344	179,705	179,705	179,705	6,109,975
22		**Make Whole Call**	**Discounts**	-	-	-	-	-	-	-	(27,962)
23			**Premiums**	-	-	-	-	-	-	-	51,250
24			**Make Whole Call Subtotal:**	-	-	-	-	-	-	-	23,288
25		**Bond Subtotal:**		455,405	469,572	484,466	256,344	179,705	179,705	179,705	10,029,315
26	**Grand Total:**			$455,405	$469,572	$484,466	$256,344	$179,705	$179,705	$179,705	#########

TABLE 11-4
APPLICATION OF AMORTIZATION ($000S) (FY 2020)

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R
	Fiscal Year	Project	Debt Type	In Service	Bond Due Date	Initial Principal	Current Principal	Original Rate	Effective Rate	Refinance Type	Refinanced Date	Rolled Maturity Date	Roll Rate	Principal Paid	Premium	Discount	Accrual	Reversal
1	2018	Bonneville Power Administration	Bonneville Power Administration	9/30/1977	9/30/2022	33,702	7,377	7.210%	7.210%					6,956				
2		**FY 2018 Subtotal:**	-	-	-	**33,702**	**7,377**	-						**6,956**				
3	2019	Construction	-	10/31/2009	10/31/2018	23,000	23,000	3.719%	3.719%					23,000				
4	2019	Construction	-	11/30/2009	11/30/2018	15,000	15,000	3.533%	3.533%					15,000				
5	2019	Construction (AS)	-	11/30/2012	11/30/2018	9,750	9,750	1.109%	1.109%					9,750				
6	2019	Construction	-	12/31/2009	12/31/2018	13,000	13,000	4.069%	4.069%					13,000				
7	2019	Construction	-	1/16/2014	12/31/2018	33,000	33,000	1.943%	1.943%					33,000				
8	2019	Construction	-	1/16/2014	12/31/2018	30,000	30,000	1.943%	1.943%					30,000				
9	2019	Construction	-	1/16/2014	12/31/2018	31,000	31,000	1.943%	1.943%					31,000				
10	2019	Construction	-	1/16/2014	12/31/2018	48,000	48,000	1.943%	1.943%					48,000				
11	2019	Construction (AS)	-	6/30/2013	6/30/2019	5,000	5,000	1.962%	1.962%					5,000				
12	2019	Construction (AS)	-	8/31/2013	8/31/2019	3,000	3,000	2.279%	2.279%					3,000				
13	2019	Bonneville Power Administration	Bonneville Power Administration	9/30/1977	9/30/2022	33,702	421	7.210%	7.210%					421				
14	2019	Construction	-	8/31/1998	8/31/2028	112,300	112,300	5.850%	5.850%					23,845	3,751			
15		**FY 2019 Subtotal:**	-	-	-	**356,752**	**323,471**	-						**235,016**	**3,751**			
16	2020	Construction (AS)	-	10/31/2013	10/31/2019	7,800	7,800	2.039%	2.039%					7,800				
17	2020	Construction	-	10/31/2009	10/31/2019	43,000	43,000	3.842%	3.842%					43,000				
18	2020	Construction (AS)	-	1/31/2014	1/31/2020	3,250	3,250	2.183%	2.183%					3,250				
19	2020	Construction	-	1/31/2009	1/31/2020	50,000	50,000	3.830%	3.830%					50,000				
20	2020	Construction (AS)	-	4/30/2014	3/31/2020	2,600	2,600	1.976%	1.976%					2,600				
21	2020	Construction (AS)	-	5/31/2014	4/30/2020	1,300	1,300	2.075%	2.075%					1,300				
22	2020	Construction	-	7/31/2010	7/31/2020	50,000	50,000	3.118%	3.118%					50,000				
23	2020	Construction (AS)	-	7/31/2014	7/31/2020	1,950	1,950	2.234%	2.234%					1,950				
24	2020	Construction	-	7/31/2020	9/30/2020	118,000	50,466	1.600%	1.600%					50,466				
25		**FY 2020 Subtotal:**	-	-	-	**277,900**	**210,366**	-						**210,366**				
26	2021	Technology (T)	-	10/31/2015	9/30/2018	5,000	5,000	1.976%	2.137%	Global	9/30/2018	9/30/2021	2.137%	5,000				
27	2021	Construction (AS)	-	11/30/2014	11/30/2020	3,900	3,900	1.809%	1.809%					3,900				
28	2021	Construction (AS)	-	12/31/2014	12/31/2020	1,950	1,950	1.922%	1.922%					1,950				
29	2021	Construction (AS)	-	2/28/2015	2/28/2021	3,250	3,250	1.761%	1.761%					3,250				
30	2021	Technology (T)	-	2/28/2015	2/28/2021	23,000	23,000	1.761%	1.761%					23,000				
31	2021	Construction	-	3/31/2010	3/31/2021	15,000	15,000	4.188%	4.188%					15,000				
32	2021	Construction	-	4/30/2010	4/30/2021	22,000	22,000	4.094%	4.094%					22,000				
33	2021	Construction	-	5/31/2010	5/31/2021	22,000	22,000	3.694%	3.694%					22,000				
34	2021	Construction (AS)	-	5/31/2015	5/31/2021	3,900	3,900	1.898%	1.898%					3,900				
35	2021	Construction	-	6/30/2010	6/30/2021	22,000	22,000	3.374%	3.374%					22,000				
36	2021	Construction	-	8/31/1998	8/31/2028	112,300	88,455	5.850%	5.850%					72,324	8,764			
37		**FY 2021 Subtotal:**	-	-	-	**234,300**	**210,455**	-						**194,324**	**8,764**			
38	2022	Construction (AS)	-	10/31/2015	10/31/2021	5,200	5,200	1.942%	1.942%					5,200				
39	2022	Construction	-	1/31/2009	1/31/2022	20,000	20,000	4.200%	4.200%					20,000				
40	2022	Construction (AS)	-	2/29/2016	2/28/2022	5,000	5,000	1.631%	1.631%					5,000				
41	2022	Construction	-	4/30/2009	4/30/2022	35,000	35,000	4.253%	4.253%					35,000				
42	2022	Construction	-	5/31/2015	5/31/2022	11,000	11,000	2.103%	2.103%					11,000				
43	2022	Construction	-	5/31/2015	5/31/2022	14,000	14,000	2.103%	2.103%					14,000				
44	2022	Construction	-	7/31/2010	7/31/2022	30,000	30,000	3.372%	3.372%					30,000				
45	2022	Construction	-	8/31/2010	8/31/2022	20,000	20,000	3.029%	3.029%					20,000				
46	2022	Construction	-	8/31/1998	8/31/2028	106,500	106,500	5.850%	5.850%					45,167	5,176			
47	2022	Construction	-	8/31/1998	8/31/2028	112,300	16,131	5.850%	5.850%					16,131	1,849			
48		**FY 2022 Subtotal:**	-	-	-	**359,000**	**262,831**	-						**201,498**	**7,025**			

TABLE 11-4
APPLICATION OF AMORTIZATION ($000S) (FY 2020)

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R
	Fiscal Year	Project	Debt Type	In Service	Bond Due Date	Initial Principal	Current Principal	Original Rate	Effective Rate	Refinance Type	Refinanced Date	Rolled Maturity Date	Roll Rate	Principal Paid	Premium	Discount	Accrual	Reversal
49	2023	Construction	-	12/31/2014	12/31/2022	16,000	16,000	2.274%	2.274%					16,000				
50	2023	Construction	-	12/31/2014	12/31/2022	4,000	4,000	2.274%	2.274%					4,000				
51	2023	Construction	-	4/30/2015	4/30/2023	3,000	3,000	2.163%	2.163%					3,000				
52	2023	Construction	-	4/30/2015	4/30/2023	12,000	12,000	2.163%	2.163%					12,000				
53	2023	Construction	-	6/30/2015	6/30/2023	11,000	11,000	2.443%	2.443%					11,000				
54	2023	Construction	-	6/30/2015	6/30/2023	8,000	8,000	2.443%	2.443%					8,000				
55	2023	Construction	-	9/30/2010	9/30/2023	46,000	46,000	3.161%	3.161%					46,000				
56	2023	Construction	-	8/31/1998	8/31/2028	106,500	61,333	5.850%	5.850%					61,333	6,459			
57	2023	Construction	-	2/28/2011	2/28/2038	55,000	55,000	4.935%	4.935%					5,015	214			
58	2023	Construction	-	6/30/2009	6/30/2039	35,000	35,000	5.192%	5.192%					35,000	2,550			
59		**FY 2023 Subtotal:**	**-**	**-**	**-**	**296,500**	**251,333**	**-**						**201,348**	**9,223**			
60	2024	Construction	-	10/31/2014	10/31/2023	20,000	20,000	2.521%	2.521%					20,000				
61	2024	Construction	-	11/30/2014	11/30/2023	20,000	20,000	2.361%	2.361%					20,000				
62	2024	Environment	-	1/31/2015	1/31/2024	4,000	4,000	1.908%	1.908%					4,000				
63	2024	Construction	-	3/31/2015	3/31/2024	17,000	17,000	2.200%	2.200%					17,000				
64	2024	Construction	-	3/31/2012	3/31/2024	45,000	45,000	1.976%	1.976%					45,000				
65	2024	Construction (AS)	-	9/30/2018	9/30/2024	10,400	7,800	2.560%	2.560%					7,800				
66	2024	Construction	-	2/28/2011	2/28/2038	55,000	49,985	4.935%	4.935%					49,985	2,220			
67	2024	Construction	-	9/30/2020	9/30/2048	123,000	138,000	4.930%	4.930%					23,235				
68		**FY 2024 Subtotal:**	**-**	**-**	**-**	**294,400**	**301,785**	**-**						**187,021**	**2,220**			
69	2025	Environment	-	2/28/2010	2/28/2025	10,000	10,000	4.279%	4.279%					10,000				
70	2025	Construction	-	5/31/2016	5/31/2025	20,000	20,000	2.101%	2.101%					20,000				
71	2025	Environment	-	5/31/2016	5/31/2025	5,000	5,000	2.101%	2.101%					5,000				
72	2025	Construction	-	7/31/2016	7/31/2025	48,000	48,000	1.713%	1.713%					48,000				
73	2025	Construction (AS)	-	8/31/2015	8/31/2025	11,000	11,000	2.598%	2.598%					11,000				
74	2025	Construction	-	8/31/2015	8/31/2025	14,000	14,000	2.598%	2.598%					14,000				
75	2025	Construction (AS)	-	9/30/2019	9/30/2025	11,050	12,350	3.270%	3.270%					12,350				
76	2025	Construction	-	9/30/2020	9/30/2048	123,000	114,765	4.930%	4.930%					82,334				
77		**FY 2025 Subtotal:**	**-**	**-**	**-**	**242,050**	**235,115**	**-**						**202,684**				
78	2026	Construction	-	10/31/2010	10/31/2025	45,000	45,000	3.494%	3.494%					45,000				
79	2026	Construction	-	2/28/2015	2/28/2026	19,000	19,000	2.416%	2.416%					19,000				
80	2026	Construction	-	3/31/2015	3/31/2026	15,000	15,000	2.370%	2.370%					15,000				
81	2026	Construction	-	3/31/2016	3/31/2026	6,000	6,000	2.177%	2.177%					6,000				
82	2026	Construction	-	3/31/2016	3/31/2026	12,000	12,000	2.177%	2.177%					12,000				
83	2026	Construction	-	7/31/2015	7/31/2026	18,000	18,000	2.707%	2.707%					18,000				
84	2026	Construction	-	7/31/2015	7/31/2026	10,000	10,000	2.707%	2.707%					10,000				
85	2026	Construction (AS)	-	9/30/2020	9/30/2026	7,150	11,700	3.750%	3.750%					11,700				
86	2026	Construction	-	8/31/2020	8/31/2047	118,000	78,000	4.900%	4.900%					39,683				
87	2026	Construction	-	9/30/2020	9/30/2048	123,000	32,431	4.930%	4.930%					32,431				
88		**FY 2026 Subtotal:**	**-**	**-**	**-**	**373,150**	**247,131**	**-**						**208,814**				
89	2027	Construction	-	12/31/2015	12/31/2026	9,000	9,000	2.762%	2.762%					9,000				
90	2027	Construction	-	12/31/2015	12/31/2026	29,000	29,000	2.762%	2.762%					29,000				
91	2027	Construction	-	1/31/2016	1/31/2027	13,000	13,000	2.352%	2.352%					13,000				
92	2027	Construction	-	2/29/2016	2/28/2027	13,000	13,000	2.236%	2.236%					13,000				
93	2027	Construction	-	5/3/2012	5/31/2027	17,000	17,000	2.087%	2.087%					17,000				
94	2027	Environment	-	5/3/2012	5/31/2027	13,000	13,000	2.087%	2.087%					13,000				
95	2027	Environment	-	10/31/2015	9/30/2027	5,000	5,000	1.976%	1.976%					5,000				
96	2027	Construction	-	12/31/2013	12/31/2035	10,000	10,000	4.472%	4.472%					3,751	70			
97	2027	Construction	-	4/30/2011	4/30/2039	40,000	40,000	4.794%	4.794%					40,000	1,378			
98	2027	Construction	-	6/22/2011	6/30/2040	25,000	25,000	4.775%	4.775%					25,000	799			
99	2027	Construction	-	8/31/2020	8/31/2047	118,000	38,317	4.900%	4.900%					38,317				
100		**FY 2027 Subtotal:**	**-**	**-**	**-**	**292,000**	**212,317**	**-**						**206,068**	**2,247**			

TABLE 11-4
APPLICATION OF AMORTIZATION ($000S) (FY 2020)

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R
	Fiscal Year	Project	Debt Type	In Service	Bond Due Date	Initial Principal	Current Principal	Original Rate	Effective Rate	Refinance Type	Refinanced Date	Rolled Maturity Date	Roll Rate	Principal Paid	Premium	Discount	Accrual	Reversal
101	2028	Construction	-	1/31/2010	1/31/2019	30,000	30,000	3.714%	3.788%	Global	1/31/2019	1/31/2028	3.788%	30,000				
102	2028	Construction	-	7/31/2009	7/31/2019	46,940	46,940	4.026%	3.788%	Global	7/31/2019	7/31/2028	3.788%	46,940				
103	2028	Construction	-	9/30/2009	9/30/2019	35,000	35,000	3.699%	3.788%	Global	9/30/2019	9/30/2028	3.788%	35,000				
104	2028	Environment	-	11/20/2013	11/30/2027	5,000	5,000	3.967%	3.967%					5,000				
105	2028	Construction	-	9/30/2014	4/30/2028	17,000	17,000	2.075%	2.075%					17,000				
106	2028	Construction	-	9/30/2014	9/30/2028	3,000	3,000	3.094%	3.094%					3,000				
107	2028	Construction	-	8/2/2011	8/31/2035	40,000	40,000	4.446%	4.446%					15,243	461			
108	2028	Construction	-	8/2/2011	8/31/2035	40,000	40,000	4.446%	4.446%					40,000	1,209			
109	2028	Environment	-	9/30/2020	9/30/2035	8,000	7,000	4.470%	4.470%					7,000				
110	2028	Construction	-	12/31/2013	12/31/2035	10,000	6,249	4.472%	4.472%					6,249	161			
111		**FY 2028 Subtotal:**	**-**	**-**	**-**	**234,940**	**230,189**	**-**						**205,432**	**1,831**			
112	2029	Environment	-	10/31/2013	10/31/2028	6,000	6,000	3.880%	3.880%					6,000				
113	2029	Environment	-	1/31/2014	1/31/2029	3,000	3,000	3.896%	3.896%					3,000				
114	2029	Environment	-	7/31/2014	7/31/2029	3,000	3,000	2.234%	2.234%					3,000				
115	2029	Construction	-	8/2/2011	8/31/2029	50,000	50,000	4.238%	4.238%					50,000				
116	2029	Construction	-	8/2/2011	8/31/2033	40,000	40,000	4.386%	4.386%					40,000	1,305			
117	2029	Construction	-	8/2/2011	8/31/2035	40,000	24,757	4.446%	4.446%					24,757	846			
118	2029	Construction	-	11/30/2013	11/30/2035	15,000	15,000	4.365%	4.365%					12,027	273			
119	2029	Construction	-	11/20/2013	6/30/2036	36,000	36,000	4.397%	4.397%					36,000	1,001			
120	2029	Construction	-	1/31/2014	1/31/2043	15,000	15,000	4.380%	4.380%					14,815		185		
121		**FY 2029 Subtotal:**	**-**	**-**	**-**	**208,000**	**192,757**	**-**						**189,598**	**3,424**	**185**		
122	2030	Construction	-	11/20/2013	10/31/2029	55,000	55,000	4.093%	4.093%					55,000				
123	2030	Construction	-	3/31/2015	3/31/2030	3,000	3,000	2.626%	2.626%					3,000				
124	2030	Construction	-	9/30/2015	9/30/2030	15,000	15,000	2.905%	2.905%					15,000				
125	2030	Construction	-	8/2/2011	8/31/2032	98,900	98,900	4.355%	4.355%					98,900	2,379			
126	2030	Construction	-	11/20/2013	8/31/2034	6,000	6,000	4.324%	4.324%					432	13			
127	2030	Construction	-	11/20/2013	5/31/2035	20,000	20,000	4.354%	4.354%					20,000	584			
128	2030	Construction	-	11/30/2013	11/30/2035	15,000	2,973	4.365%	4.365%					2,973	77			
129		**FY 2030 Subtotal:**	**-**	**-**	**-**	**212,900**	**200,873**	**-**						**195,306**	**3,053**			
130	2031	Construction	-	11/20/2013	1/31/2031	30,000	30,000	4.162%	4.162%					30,000				
131	2031	Construction	-	11/20/2013	2/28/2031	15,000	15,000	4.166%	4.166%					15,000				
132	2031	Construction	-	11/20/2013	3/31/2031	18,000	18,000	4.171%	4.171%					18,000				
133	2031	Construction	-	11/20/2013	4/30/2034	28,000	28,000	4.311%	4.311%					28,000	674			
134	2031	Construction	-	8/2/2011	8/31/2034	40,000	40,000	4.416%	4.416%					30,048	930			
135	2031	Construction	-	11/20/2013	8/31/2034	6,000	5,568	4.324%	4.324%					5,568	156			
136	2031	Construction	-	9/30/2013	9/30/2034	9,000	9,000	4.214%	4.214%					9,000	222			
137	2031	Construction	-	10/31/2013	10/31/2035	64,000	64,000	4.222%	4.222%					64,000	1,350			
138		**FY 2031 Subtotal:**	**-**	**-**	**-**	**210,000**	**209,568**	**-**						**199,615**	**3,333**			
139	2032	Construction	-	7/31/2014	4/30/2032	9,000	9,000	2.075%	2.075%					9,000				
140	2032	Construction	-	8/2/2011	8/31/2034	40,000	9,952	4.416%	4.416%					9,952	254			
141	2032	Construction	-	8/2/2011	8/31/2035	45,000	45,000	4.446%	4.446%					45,000	1,437			
142	2032	Construction	-	1/31/2011	1/31/2036	50,000	50,000	4.952%	4.952%					50,000	2,533			
143	2032	Construction	-	6/22/2011	6/30/2036	50,000	50,000	4.629%	4.629%					50,000	2,156			
144	2032	Construction	-	7/31/2017	7/31/2045	27,000	27,000	3.230%	3.230%					22,539		2,848		
145	2032	Construction	-	9/30/2017	9/30/2047	10,000	10,000	3.247%	3.247%					8,733		1,267		
146		**FY 2032 Subtotal:**	**-**	**-**	**-**	**231,000**	**200,952**	**-**						**195,224**	**6,380**	**4,115**		
147	2033	Construction	-	6/30/2014	11/30/2032	21,000	21,000	2.087%	2.087%					21,000				
148	2033	Environment	-	9/30/2018	9/30/2033	7,000	7,000	0.920%	0.920%					7,000				
149	2033	Construction	-	10/31/2015	10/31/2034	2,000	2,000	3.198%	3.198%					1,996		4		
150	2033	Construction	-	8/31/2017	8/31/2037	30,000	30,000	2.902%	2.902%					7,590		217		
151	2033	Construction	-	8/31/2017	8/31/2038	7,000	7,000	2.929%	2.929%					6,736		264		
152	2033	Construction	-	7/31/2017	7/31/2041	19,000	19,000	3.164%	3.164%					17,803		1,197		
153	2033	Construction	-	8/31/2017	8/31/2041	13,000	13,000	2.991%	2.991%					12,034		966		
154	2033	Construction	-	9/30/2017	9/30/2041	17,000	17,000	3.156%	3.156%					15,920		1,080		
155	2033	Construction	-	7/31/2017	7/31/2042	14,000	14,000	3.181%	3.181%					12,935		1,065		

TABLE 11-4
APPLICATION OF AMORTIZATION ($000S) (FY 2020)

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R
	Fiscal Year	**Project**	**Debt Type**	**In Service**	**Bond Due Date**	**Initial Principal**	**Current Principal**	**Original Rate**	**Effective Rate**	**Refinance Type**	**Refinanced Date**	**Rolled Maturity Date**	**Roll Rate**	**Principal Paid**	**Premium**	**Discount**	**Accrual**	**Reversal**
156	2033	Construction	-	7/31/2017	7/31/2043	23,000	23,000	3.198%	3.198%					20,937		2,063		
157	2033	Construction	-	8/31/2017	8/31/2043	10,000	10,000	3.024%	3.024%					8,976		1,024		
158	2033	Construction	-	9/30/2017	9/30/2043	14,000	14,000	3.193%	3.193%					12,739		1,261		
159	2033	Construction	-	7/31/2017	7/31/2044	17,000	17,000	3.215%	3.215%					15,353		1,647		
160	2033	Construction	-	9/30/2017	9/30/2044	9,000	9,000	3.209%	3.209%					8,124		876		
161	2033	Construction	-	7/31/2017	7/31/2045	27,000	1,613	3.230%	3.230%					1,445		168		
162	2033	Construction	-	8/31/2017	8/31/2046	22,000	22,000	3.066%	3.066%					19,231		2,769		
163	2033	Construction	-	8/31/2017	8/31/2047	18,000	18,000	3.076%	3.076%					15,596		2,404		
164		**FY 2033 Subtotal:**	**-**	**-**	**-**	**270,000**	**244,613**	**-**						**205,416**		**17,003**		
165	2034	Construction	-	4/30/2014	2/28/2034	45,000	45,000	1.877%	1.877%					45,000				
166	2034	Construction	-	4/30/2014	3/31/2034	45,000	45,000	1.976%	1.976%					45,000				
167	2034	Construction	-	10/31/2015	6/30/2034	21,000	21,000	2.155%	2.155%					21,000				
168	2034	Construction	-	10/31/2015	8/31/2034	19,000	19,000	1.877%	1.877%					19,000				
169	2034	Environment	-	9/30/2019	9/30/2034	7,000	7,000	1.380%	1.380%					7,000				
170	2034	Construction	-	8/31/2014	7/31/2035	10,000	10,000	2.234%	2.234%					9,851		149		
171	2034	Construction	-	5/31/2014	5/31/2036	29,000	29,000	2.087%	2.087%					28,321		679		
172	2034	Construction	-	8/31/2017	8/31/2037	30,000	22,193	2.902%	2.902%					21,790		403		
173	2034	Construction	-	4/30/2014	10/31/2039	45,000	45,000	2.075%	2.075%					11,065		966		
174	2034	Construction	-	1/27/2012	1/31/2040	30,000	30,000	2.234%	2.234%					27,624		2,376		
175	2034	Construction	-	8/31/2017	8/31/2041	13,000		2.991%	2.991%									
176		**FY 2034 Subtotal:**	**-**	**-**	**-**	**294,000**	**273,193**	**-**						**235,652**		**4,573**		
177	2035	Construction	-	8/31/2014	8/31/2035	15,000	15,000	1.877%	1.877%					15,000				
178	2035	Construction	-	4/30/2014	10/31/2039	45,000	32,968	2.075%	2.075%					30,882		2,086		
179	2035	Construction	-	7/31/2019	7/31/2043	82,000	121,000	1.380%	1.380%					24,215				
180	2035	Construction	-	7/31/2020	7/31/2046	118,000	83,534	1.600%	1.600%					83,534				
181	2035	Construction	-	8/31/2020	8/31/2047	118,000	56,000	1.600%	1.600%					56,000				
182		**FY 2035 Subtotal:**	**-**	**-**	**-**	**378,000**	**308,502**	**-**						**209,631**		**2,086**		
183	2036	Construction	-	7/31/2019	7/31/2043	82,000	96,785	1.380%	1.380%					96,785				
184	2036	Construction	-	8/31/2019	8/31/2044	81,000	118,000	1.380%	1.380%					111,006				
185		**FY 2036 Subtotal:**	**-**	**-**	**-**	**163,000**	**214,785**	**-**						**207,791**				
186	2037	Construction	-	8/31/2018	8/31/2041	160,000	52,000	0.920%	0.920%					52,000				
187	2037	Construction	-	9/30/2018	9/30/2042	76,000	25,000	0.920%	0.920%					25,000				
188	2037	Construction	-	8/31/2019	8/31/2044	81,000	6,994	1.380%	1.380%					6,994				
189	2037	Construction	-	9/30/2019	9/30/2045	81,000	117,000	1.380%	1.380%					117,000				
190	2037	Replacements	-	3/31/2021	3/31/2056	179,705	179,705	5.000%	5.000%					29,856				
191		**FY 2037 Subtotal:**	**-**	**-**	**-**	**577,705**	**380,699**	**-**						**230,850**				
192	2038	Replacements	-	3/31/2021	3/31/2056	179,705	149,849	5.000%	5.000%					149,849				
193	2038	Replacements	-	3/31/2022	3/31/2057	179,705	179,705	5.000%	5.000%					98,401				
194		**FY 2038 Subtotal:**	**-**	**-**	**-**	**359,410**	**329,554**	**-**						**248,250**				
195	2039	Replacements	-	3/31/2022	3/31/2057	179,705	81,304	5.000%	5.000%					81,304				
196	2039	Replacements	-	3/31/2023	3/31/2058	179,705	179,705	5.000%	5.000%					169,427				
197		**FY 2039 Subtotal:**	**-**	**-**	**-**	**359,410**	**261,009**	**-**						**250,731**				
198	2040	Replacements	-	3/31/2023	3/31/2058	179,705	10,278	5.000%	5.000%					10,278				
199	2040	Replacements	-	3/31/2024	3/31/2059	179,705	179,705	5.000%	5.000%					179,705				
200	2040	Replacements	-	3/31/2025	3/31/2060	179,705	179,705	5.000%	5.000%					70,411				
201		**FY 2040 Subtotal:**	**-**	**-**	**-**	**539,115**	**369,688**	**-**						**260,395**				
202	2041	Replacements	-	3/31/2025	3/31/2060	179,705	109,294	5.000%	5.000%					109,294				
203	2041	Replacements	-	3/31/2026	3/31/2061	179,705	179,705	5.000%	5.000%					179,705				
204	2041	Replacements	-	3/31/2027	3/31/2062	179,705	179,705	5.000%	5.000%					73,408				
205		**FY 2041 Subtotal:**	**-**	**-**	**-**	**539,115**	**468,704**	**-**						**362,406**				

TABLE 11-4
APPLICATION OF AMORTIZATION ($000S) (FY 2020)

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R
	Fiscal Year	**Project**	**Debt Type**	**In Service**	**Bond Due Date**	**Initial Principal**	**Current Principal**	**Original Rate**	**Effective Rate**	**Refinance Type**	**Refinanced Date**	**Rolled Maturity Date**	**Roll Rate**	**Principal Paid**	**Premium**	**Discount**	**Accrual**	**Reversal**
206	2042	Replacements	-	3/31/2027	3/31/2062	179,705	106,298	5.000%	5.000%					106,298				
207	2042	Replacements	-	3/31/2028	3/31/2063	179,705	179,705	5.000%	5.000%					178,499				
208		**FY 2042 Subtotal:**	**-**	**-**	**-**	**359,410**	**286,003**	**-**						**284,797**				
209	2043	Replacements	-	3/31/2028	3/31/2063	179,705	1,206	5.000%	5.000%					1,206				
210	2043	Replacements	-	3/31/2029	3/31/2064	179,705	179,705	5.000%	5.000%					179,705				
211	2043	Replacements	-	3/31/2030	3/31/2065	179,705	179,705	5.000%	5.000%					179,705				
212	2043	Replacements	-	3/31/2031	3/31/2066	179,705	179,705	5.000%	5.000%					20,760				
213		**FY 2043 Subtotal:**	**-**	**-**	**-**	**718,821**	**540,322**	**-**						**381,376**				
214	2044	Replacements	-	3/31/2031	3/31/2066	179,705	158,945	5.000%	5.000%					158,945				
215	2044	Replacements	-	3/31/2032	3/31/2067	179,705	179,705	5.000%	5.000%					179,705				
216	2044	Replacements	-	3/31/2033	3/31/2068	179,705	179,705	5.000%	5.000%					55,308				
217		**FY 2044 Subtotal:**	**-**	**-**	**-**	**539,115**	**518,355**	**-**						**393,959**				
218	2045	Replacements	-	3/31/2033	3/31/2068	179,705	124,397	5.000%	5.000%					124,397				
219	2045	Replacements	-	3/31/2034	3/31/2069	179,705	179,705	5.000%	5.000%					179,705				
220	2045	Replacements	-	3/31/2035	3/31/2070	179,705	179,705	5.000%	5.000%					101,230				
221		**FY 2045 Subtotal:**	**-**	**-**	**-**	**539,115**	**483,807**	**-**						**405,332**				
222	2046	Replacements	-	3/31/2035	3/31/2070	179,705	78,475	5.000%	5.000%					78,475				
223	2046	Replacements	-	3/31/2036	3/31/2071	179,705	179,705	5.000%	5.000%					179,705				
224	2046	Replacements	-	3/31/2037	3/31/2072	179,705	179,705	5.000%	5.000%					158,745				
225		**FY 2046 Subtotal:**	**-**	**-**	**-**	**539,115**	**437,886**	**-**						**416,925**				
226	2047	Replacements	-	3/31/2037	3/31/2072	179,705	20,960	5.000%	5.000%					20,960				
227	2047	Replacements	-	3/31/2038	3/31/2073	179,705	179,705	5.000%	5.000%					179,705				
228	2047	Replacements	-	3/31/2039	3/31/2074	179,705	179,705	5.000%	5.000%					179,705				
229	2047	Replacements	-	3/31/2040	3/31/2075	179,705	179,705	5.000%	5.000%					48,744				
230		**FY 2047 Subtotal:**	**-**	**-**	**-**	**718,821**	**560,076**	**-**						**429,115**				
231	2048	Replacements	-	3/31/2040	3/31/2075	179,705	130,961	5.000%	5.000%					130,961				
232	2048	Replacements	-	3/31/2041	3/31/2076	179,705	179,705	5.000%	5.000%					179,705				
233	2048	Replacements	-	3/31/2042	3/31/2077	179,705	179,705	5.000%	5.000%					131,265				
234		**FY 2048 Subtotal:**	**-**	**-**	**-**	**539,115**	**490,371**	**-**						**441,931**				
235	2049	Replacements	-	3/31/2042	3/31/2077	179,705	48,441	5.000%	5.000%					48,441				
236	2049	Replacements	-	3/31/2043	3/31/2078	179,705	179,705	5.000%	5.000%					179,705				
237	2049	Replacements	-	3/31/2044	3/31/2079	179,705	179,705	5.000%	5.000%					179,705				
238	2049	Replacements	-	3/31/2045	3/31/2080	179,705	179,705	5.000%	5.000%					47,554				
239		**FY 2049 Subtotal:**	**-**	**-**	**-**	**718,821**	**587,556**	**-**						**455,405**				
240	2050	Replacements	-	3/31/2045	3/31/2080	179,705	132,151	5.000%	5.000%					132,151				
241	2050	Replacements	-	3/31/2046	3/31/2081	179,705	179,705	5.000%	5.000%					179,705				
242	2050	Replacements	-	3/31/2047	3/31/2082	179,705	179,705	5.000%	5.000%					157,716				
243		**FY 2050 Subtotal:**	**-**	**-**	**-**	**539,115**	**491,561**	**-**						**469,572**				
244	2051	Replacements	-	3/31/2047	3/31/2082	179,705	21,990	5.000%	5.000%					21,990				
245	2051	Replacements	-	3/31/2048	3/31/2083	179,705	179,705	5.000%	5.000%					179,705				
246	2051	Replacements	-	3/31/2049	3/31/2084	179,705	179,705	5.000%	5.000%					179,705				
247	2051	Replacements	-	3/31/2050	3/31/2085	179,705	179,705	5.000%	5.000%					103,067				
248		**FY 2051 Subtotal:**	**-**	**-**	**-**	**718,821**	**561,105**	**-**						**484,466**				
249	2052	Replacements	-	3/31/2050	3/31/2085	179,705	76,639	5.000%	5.000%					76,639				
250	2052	Replacements	-	3/31/2051	3/31/2086	179,705	179,705	5.000%	5.000%					179,705				
251		**FY 2052 Subtotal:**	**-**	**-**	**-**	**359,410**	**256,344**	**-**						**256,344**				
252	2053	Replacements	-	3/31/2052	3/31/2087	179,705	179,705	5.000%	5.000%					179,705				
253		**FY 2053 Subtotal:**	**-**	**-**	**-**	**179,705**	**179,705**	**-**						**179,705**				
254	2054	Replacements	-	3/31/2053	3/31/2088	179,705	179,705	5.000%	5.000%					179,705				
255		**FY 2054 Subtotal:**	**-**	**-**	**-**	**179,705**	**179,705**	**-**						**179,705**				
256	2055	Replacements	-	3/31/2054	3/31/2089	179,705	179,705	5.000%	5.000%					179,705				
257		**FY 2055 Subtotal:**	**-**	**-**	**-**	**179,705**	**179,705**	**-**						**179,705**				
258	**Grand Total**					**$14,165,146**	**$11,899,769**	**-**						**$10,008,730**	**$51,250**	**$27,962**		

TABLE 11-5
SUMMARY OF INTEREST ($000S) (FY 2021)

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q
1	**Obligation Type**	**General Project**	**Specific Project**	**2018**	**2019**	**2020**	**2021**	**2022**	**2023**	**2024**	**2025**	**2026**	**2027**	**2028**	**2029**	**2030**	**2031**
2		**Bonneville Power Administration**	Bonneville Power Administration	532	30	-	-	-	-	-	-	-	-	-	-	-	-
3	**Appropriation**		**Bonneville Power Administration Subtotal:**	532	30	-	-	-	-	-	-	-	-	-	-	-	-
4		**Appropriation Subtotal:**		532	30	-	-	-	-	-	-	-	-	-	-	-	-
5			(Less Interest Income)	(282)	(1,029)	(1,042)	(1,119)	(1,116)	(1,122)	(1,042)	(1,106)	(1,132)	(1,131)	(1,138)	(1,077)	(1,102)	(1,126)
6			Construction	102,701	101,568	100,545	109,855	135,005	126,433	118,349	113,546	107,146	100,511	95,716	86,203	76,649	67,259
7			Interest Accrual	18,630	17,075	16,436	16,992	15,574	14,750	13,949	13,385	12,568	12,201	12,055	11,704	10,247	9,096
8			Interest Accrual Reversal	(18,590)	(18,630)	(17,075)	(16,436)	(16,992)	(15,574)	(14,750)	(13,949)	(13,385)	(12,568)	(12,201)	(12,055)	(11,704)	(10,247)
9			Construction (AS)	1,333	1,478	1,521	1,666	2,440	2,349	2,349	2,149	1,460	799	-	-	-	-
10			Interest Accrual	298	232	136	73	24	24	24	-	-	-	-	-	-	-
11		**BPA Borrowing**	Interest Accrual Reversal	(298)	(298)	(232)	(136)	(73)	(24)	(24)	(24)	-	-	-	-	-	-
12			Environment	1,593	1,658	1,754	2,067	3,110	3,110	3,072	2,820	2,502	2,502	2,033	1,759	1,517	1,517
13	**Treasury**		Interest Accrual	368	368	368	368	368	368	356	284	284	193	127	-	-	-
14			Interest Accrual Reversal	(368)	(368)	(368)	(368)	(368)	(368)	(368)	(356)	(284)	(284)	(193)	(127)	-	-
15			Technology (T)	503	511	511	308	-	-	-	-	-	-	-	-	-	-
16			Interest Accrual	34	34	34	-	-	-	-	-	-	-	-	-	-	-
17			Interest Accrual Reversal	(34)	(34)	(34)	(34)	-	-	-	-	-	-	-	-	-	-
18			**BPA Borrowing Subtotal:**	105,888	102,565	102,553	113,238	137,972	129,946	121,914	116,749	109,160	102,223	96,397	86,407	75,607	66,498
19		**Federal Transmission Replacement**	Replacements	-	-	-	-	4,206	12,617	21,029	29,441	37,852	46,264	54,675	63,087	71,499	79,910
20			**Federal Transmission Replacement Subtotal:**	-	-	-	-	4,206	12,617	21,029	29,441	37,852	46,264	54,675	63,087	71,499	79,910
21		**Treasury Subtotal:**		105,888	102,565	102,553	113,238	142,178	142,563	142,943	146,190	147,012	148,487	151,073	149,494	147,106	146,408
22	**Grand Total:**			**$106,420**	**$102,595**	**$102,553**	**$113,238**	**$142,178**	**$142,563**	**$142,943**	**$146,190**	**$147,012**	**$148,487**	**$151,073**	**$149,494**	**$147,106**	**$146,408**

TABLE 11-5
SUMMARY OF INTEREST ($000S) (FY 2021)

	A	B	C	R	S	T	U	V	W	X	Y	Z	AA	AB	AC	AD	AE
1	**Obligation Type**	**General Project**	**Specific Project**	**2032**	**2033**	**2034**	**2035**	**2036**	**2037**	**2038**	**2039**	**2040**	**2041**	**2042**	**2043**	**2044**	**2045**
2		**Bonneville Power Administration**	Bonneville Power Administration	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3	**Appropriation**		**Bonneville Power Administration Subtotal:**	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4		**Appropriation Subtotal:**		-	-	-	-	-	-	-	-	-	-	-	-	-	-
5			(Less Interest Income)	(1,119)	(1,144)	(1,286)	(1,191)	(1,217)	(1,329)	(1,406)	(1,395)	(1,411)	(1,798)	(1,472)	(1,848)	(1,880)	(1,907)
6			Construction	60,338	50,146	43,441	36,074	25,894	16,015	9,037	3,799	983	-	-	-	-	-
7			Interest Accrual	8,624	7,917	6,068	4,672	1,923	1,406	455	40	-	-	-	-	-	-
8			Interest Accrual Reversal	(9,096)	(8,624)	(7,917)	(6,068)	(4,672)	(1,923)	(1,406)	(455)	(40)	-	-	-	-	-
9			Construction (AS)	-	-	-	-	-	-	-	-	-	-	-	-	-	-
10			Interest Accrual	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11		**BPA Borrowing**	Interest Accrual Reversal	-	-	-	-	-	-	-	-	-	-	-	-	-	-
12			Environment	1,517	1,517	1,453	834	-	-	-	-	-	-	-	-	-	-
13	**Treasury**		Interest Accrual	-	-	-	-	-	-	-	-	-	-	-	-	-	-
14			Interest Accrual Reversal	-	-	-	-	-	-	-	-	-	-	-	-	-	-
15			Technology (T)	-	-	-	-	-	-	-	-	-	-	-	-	-	-
16			Interest Accrual	-	-	-	-	-	-	-	-	-	-	-	-	-	-
17			Interest Accrual Reversal	-	-	-	-	-	-	-	-	-	-	-	-	-	-
18			**BPA Borrowing Subtotal:**	60,264	49,813	41,758	34,321	21,929	14,168	6,680	1,990	(468)	(1,798)	(1,472)	(1,848)	(1,880)	(1,907)
19		**Federal Transmission Replacement**	Replacements	88,322	96,733	105,145	113,556	121,968	130,380	138,791	147,203	153,083	149,633	141,323	132,474	120,795	108,441
20			**Federal Transmission Replacement Subtotal:**	88,322	96,733	105,145	113,556	121,968	130,380	138,791	147,203	153,083	149,633	141,323	132,474	120,795	108,441
21		**Treasury Subtotal:**		148,586	146,546	146,903	147,878	143,897	144,547	145,472	149,192	152,615	147,835	139,851	130,625	118,914	106,535
22	**Grand Total:**			**$148,586**	**$146,546**	**$146,903**	**$147,878**	**$143,897**	**$144,547**	**$145,472**	**$149,192**	**$152,615**	**$147,835**	**$139,851**	**$130,625**	**$118,914**	**$106,535**

TABLE 11-5
SUMMARY OF INTEREST ($000S) (FY 2021)

	A	B	C	AF	AG	AH	AI	AJ	AK	AL	AM	AN	AO	AP	AQ
1	**Obligation Type**	**General Project**	**Specific Project**	**2046**	**2047**	**2048**	**2049**	**2050**	**2051**	**2052**	**2053**	**2054**	**2055**	**2056**	**Total**
2		**Bonneville Power Administration**	Bonneville Power Administration	-	-	-	-	-	-	-	-	-	-	-	562
3	**Appropriation**		**Bonneville Power Administration Subtotal:**	-	-	-	-	-	-	-	-	-	-	-	562
4		**Appropriation Subtotal:**		-	-	-	-	-	-	-	-	-	-	-	562
5			(Less Interest Income)	(1,933)	(1,960)	(1,989)	(2,019)	(2,051)	(2,084)	(2,120)	(2,125)	(2,125)	(2,125)	(2,125)	(57,619)
6			Construction	-	-	-	-	-	-	-	-	-	-	-	1,687,213
7			Interest Accrual	-	-	-	-	-	-	-	-	-	-	-	225,768
8			Interest Accrual Reversal	-	-	-	-	-	-	-	-	-	-	-	(244,358)
9			Construction (AS)	-	-	-	-	-	-	-	-	-	-	-	17,543
10			Interest Accrual	-	-	-	-	-	-	-	-	-	-	-	811
11		**BPA Borrowing**	Interest Accrual Reversal	-	-	-	-	-	-	-	-	-	-	-	(1,109)
12			Environment	-	-	-	-	-	-	-	-	-	-	-	36,335
13	**Treasury**		Interest Accrual	-	-	-	-	-	-	-	-	-	-	-	3,454
14			Interest Accrual Reversal	-	-	-	-	-	-	-	-	-	-	-	(3,822)
15			Technology (T)	-	-	-	-	-	-	-	-	-	-	-	1,832
16			Interest Accrual	-	-	-	-	-	-	-	-	-	-	-	103
17			Interest Accrual Reversal	-	-	-	-	-	-	-	-	-	-	-	(137)
18			**BPA Borrowing Subtotal:**	(1,933)	(1,960)	(1,989)	(2,019)	(2,051)	(2,084)	(2,120)	(2,125)	(2,125)	(2,125)	(2,125)	1,666,014
19		**Federal Transmission Replacement**	Replacements	95,435	81,750	67,352	52,204	36,265	19,497	9,655	8,412	8,412	8,412	8,412	2,564,230
20			**Federal Transmission Replacement Subtotal:**	95,435	81,750	67,352	52,204	36,265	19,497	9,655	8,412	8,412	8,412	8,412	2,564,230
21		**Treasury Subtotal:**		93,502	79,790	65,363	50,185	34,215	17,412	7,536	6,287	6,287	6,287	6,287	4,230,244
22	**Grand Total:**			**$93,502**	**$79,790**	**$65,363**	**$50,185**	**$34,215**	**$17,412**	**$7,536**	**$6,287**	**$6,287**	**$6,287**	**$6,287**	**$4,230,806**

TABLE 11-6
INTEREST CALCULATION SUMMARY ($000S)
(FY 2021)

	A	B	C	D	E	F	G	H	I
	Fiscal Year	**Project**	**Type**	**Current Principal**	**Rate**	**Interest**	**Premium**	**Net Interest Accrual**	**Total**
1	2018	Bonneville Power Administration	Historical	7,377	7.210%	532	-	-	532
2	2018	Construction	Historical	2,876,640	3.570%	102,701	-	-	102,701
3	2018	Construction	New	52,000	-	-	-	40	40
4	2018	Construction (AS)	Historical	68,850	1.936%	1,333	-	-	1,333
5	2018	Environment	Historical	54,000	2.950%	1,593	-	-	1,593
6	2018	Technology (T)	Historical	28,000	1.795%	503	-	-	503
7	2018	Float	Historical	-	-	(282)	-	-	(282)
8	**FY 2018**	**Subtotal:**		**3,086,867**		**106,379**	**-**	**40**	**106,420**
9	2019	Bonneville Power Administration	Historical	421	7.210%	30	-	-	30
10	2019	Construction	Historical	2,953,640	3.439%	101,568	-	(1,968)	99,600
11	2019	Construction	New	239,000	-	-	-	413	413
12	2019	Construction (AS)	Historical	76,650	1.929%	1,478	-	(67)	1,412
13	2019	Environment	Historical	61,000	2.717%	1,658	-	-	1,658
14	2019	Technology (T)	Historical	28,000	1.824%	511	-	-	511
15	2019	Float	Historical	-	-	(1,029)	-	-	(1,029)
16	**FY 2019**	**Subtotal:**		**3,358,711**		**104,217**	**-**	**(1,621)**	**102,595**
17	2020	Construction	Historical	3,092,795	3.247%	100,410	-	(1,259)	99,151
18	2020	Construction	New	268,000	0.050%	135	-	619	754
19	2020	Construction (AS)	Historical	71,250	2.135%	1,521	-	(96)	1,425
20	2020	Environment	Historical	68,000	2.580%	1,754	-	-	1,754
21	2020	Technology (T)	Historical	28,000	1.824%	511	-	-	511
22	2020	Float	Historical	-	-	(1,042)	-	-	(1,042)
23	**FY 2020**	**Subtotal:**		**3,528,045**		**103,289**	**-**	**(736)**	**102,553**
24	2021	Construction	Historical	3,305,329	3.316%	109,598	-	(832)	108,767
25	2021	Construction	New	346,000	0.074%	257	-	1,388	1,645
26	2021	Construction (AS)	Historical	66,050	2.522%	1,666	-	(63)	1,603
27	2021	Environment	Historical	75,000	2.756%	2,067	-	-	2,067
28	2021	Technology (T)	Historical	28,000	1.101%	308	-	(34)	274
29	2021	Float	Historical	-	-	(1,119)	-	-	(1,119)
30	**FY 2021**	**Subtotal:**		**3,820,379**		**112,778**	**-**	**460**	**113,238**
31	2022	Construction	Historical	3,822,255	3.532%	135,005	-	(1,419)	133,587
32	2022	Construction (AS)	Historical	79,850	3.055%	2,440	-	(49)	2,391
33	2022	Environment	Historical	98,000	3.174%	3,110	-	-	3,110
34	2022	Replacements	New	165,909	2.535%	4,206	-	-	4,206
35	2022	Float	Historical	-	-	(1,116)	-	-	(1,116)
36	**FY 2022**	**Subtotal:**		**4,166,014**		**143,645**	**-**	**(1,468)**	**142,178**
37	2023	Construction	Historical	3,638,013	3.475%	126,433	-	(824)	125,609
38	2023	Construction (AS)	Historical	69,650	3.372%	2,349	-	-	2,349
39	2023	Environment	Historical	98,000	3.174%	3,110	-	-	3,110
40	2023	Replacements	Historical	165,909	5.070%	8,412	-	-	8,412
41	2023	Replacements	New	165,909	2.535%	4,206	-	-	4,206
42	2023	Float	Historical	-	-	(1,122)	-	-	(1,122)
43	**FY 2023**	**Subtotal:**		**4,137,481**		**143,387**	**-**	**(824)**	**142,563**
44	2024	Construction	Historical	3,445,115	3.435%	118,349	-	(801)	117,548
45	2024	Construction (AS)	Historical	69,650	3.372%	2,349	-	-	2,349
46	2024	Environment	Historical	98,000	3.135%	3,072	-	(13)	3,059
47	2024	Replacements	Historical	331,818	5.070%	16,823	-	-	16,823
48	2024	Replacements	New	165,909	2.535%	4,206	-	-	4,206
49	2024	Float	Historical	-	-	(1,042)	-	-	(1,042)
50	**FY 2024**	**Subtotal:**		**4,110,492**		**143,757**	**-**	**(813)**	**142,943**
51	2025	Construction	Historical	3,280,143	3.462%	113,546	-	(565)	112,981
52	2025	Construction (AS)	Historical	61,850	3.474%	2,149	-	(24)	2,125
53	2025	Environment	Historical	94,000	3.000%	2,820	-	(71)	2,749
54	2025	Replacements	Historical	497,727	5.070%	25,235	-	-	25,235
55	2025	Replacements	New	165,909	2.535%	4,206	-	-	4,206
56	2025	Float	Historical	-	-	(1,106)	-	-	(1,106)
57	**FY 2025**	**Subtotal:**		**4,099,629**		**146,850**	**-**	**(660)**	**146,190**
58	2026	Construction	Historical	3,123,727	3.430%	107,146	-	(816)	106,330
59	2026	Construction (AS)	Historical	38,500	3.792%	1,460	-	-	1,460
60	2026	Environment	Historical	79,000	3.167%	2,502	-	-	2,502
61	2026	Replacements	Historical	663,636	5.070%	33,646	-	-	33,646
62	2026	Replacements	New	165,909	2.535%	4,206	-	-	4,206
63	2026	Float	Historical	-	-	(1,132)	-	-	(1,132)
64	**FY 2026**	**Subtotal:**		**4,070,772**		**147,828**	**-**	**(816)**	**147,012**

TABLE 11-6
INTEREST CALCULATION SUMMARY ($000S)
(FY 2021)

	A	B	C	D	E	F	G	H	I
	Fiscal Year	**Project**	**Type**	**Current Principal**	**Rate**	**Interest**	**Premium**	**Net Interest Accrual**	**Total**
65	2027	Construction	Historical	2,939,293	3.420%	100,511	-	(367)	100,144
66	2027	Construction (AS)	Historical	20,800	3.840%	799	-	-	799
67	2027	Environment	Historical	79,000	3.167%	2,502	-	(91)	2,411
68	2027	Replacements	Historical	829,545	5.070%	42,058	-	-	42,058
69	2027	Replacements	New	165,909	2.535%	4,206	-	-	4,206
70	2027	Float	Historical	-	-	(1,131)	-	-	(1,131)
71	**FY 2027**	**Subtotal:**		**4,034,548**		**148,945**	**-**	**(458)**	**148,487**
72	2028	Construction	Historical	2,776,600	3.447%	95,716	-	(146)	95,569
73	2028	Environment	Historical	61,000	3.333%	2,033	-	(66)	1,966
74	2028	Replacements	Historical	995,455	5.070%	50,470	-	-	50,470
75	2028	Replacements	New	165,909	2.535%	4,206	-	-	4,206
76	2028	Float	Historical	-	-	(1,138)	-	-	(1,138)
77	**FY 2028**	**Subtotal:**		**3,998,963**		**151,286**	**-**	**(213)**	**151,073**
78	2029	Construction	Historical	2,580,113	3.341%	86,203	-	(351)	85,852
79	2029	Environment	Historical	56,000	3.141%	1,759	-	(127)	1,632
80	2029	Replacements	Historical	1,161,364	5.070%	58,881	-	-	58,881
81	2029	Replacements	New	165,909	2.535%	4,206	-	-	4,206
82	2029	Float	Historical	-	-	(1,077)	-	-	(1,077)
83	**FY 2029**	**Subtotal:**		**3,963,386**		**149,972**	**-**	**(478)**	**149,494**
84	2030	Construction	Historical	2,404,006	3.188%	76,649	-	(1,457)	75,192
85	2030	Environment	Historical	44,000	3.448%	1,517	-	-	1,517
86	2030	Replacements	Historical	1,327,273	5.070%	67,293	-	-	67,293
87	2030	Replacements	New	165,909	2.535%	4,206	-	-	4,206
88	2030	Float	Historical	-	-	(1,102)	-	-	(1,102)
89	**FY 2030**	**Subtotal:**		**3,941,188**		**148,563**	**-**	**(1,457)**	**147,106**
90	2031	Construction	Historical	2,208,366	3.046%	67,259	-	(1,152)	66,107
91	2031	Environment	Historical	44,000	3.448%	1,517	-	-	1,517
92	2031	Replacements	Historical	1,493,182	5.070%	75,704	-	-	75,704
93	2031	Replacements	New	165,909	2.535%	4,206	-	-	4,206
94	2031	Float	Historical	-	-	(1,126)	-	-	(1,126)
95	**FY 2031**	**Subtotal:**		**3,911,457**		**147,560**	**-**	**(1,152)**	**146,408**
96	2032	Construction	Historical	2,008,676	3.004%	60,338	-	(472)	59,866
97	2032	Environment	Historical	44,000	3.448%	1,517	-	-	1,517
98	2032	Replacements	Historical	1,659,091	5.070%	84,116	-	-	84,116
99	2032	Replacements	New	165,909	2.535%	4,206	-	-	4,206
100	2032	Float	Historical	-	-	(1,119)	-	-	(1,119)
101	**FY 2032**	**Subtotal:**		**3,877,676**		**149,058**	**-**	**(472)**	**148,586**
102	2033	Construction	Historical	1,810,907	2.769%	50,146	-	(707)	49,439
103	2033	Environment	Historical	44,000	3.448%	1,517	-	-	1,517
104	2033	Replacements	Historical	1,825,000	5.070%	92,527	-	-	92,527
105	2033	Replacements	New	165,909	2.535%	4,206	-	-	4,206
106	2033	Float	Historical	-	-	(1,144)	-	-	(1,144)
107	**FY 2033**	**Subtotal:**		**3,845,816**		**147,253**	**-**	**(707)**	**146,546**
108	2034	Construction	Historical	1,612,087	2.695%	43,441	-	(1,850)	41,591
109	2034	Environment	Historical	37,000	3.926%	1,453	-	-	1,453
110	2034	Replacements	Historical	1,990,909	5.070%	100,939	-	-	100,939
111	2034	Replacements	New	165,909	2.535%	4,206	-	-	4,206
112	2034	Float	Historical	-	-	(1,286)	-	-	(1,286)
113	**FY 2034**	**Subtotal:**		**3,805,906**		**148,752**	**-**	**(1,850)**	**146,903**
114	2035	Construction	Historical	1,382,097	2.610%	36,074	-	(1,396)	34,678
115	2035	Environment	Historical	30,000	2.781%	834	-	-	834
116	2035	Replacements	Historical	2,156,818	5.070%	109,351	-	-	109,351
117	2035	Replacements	New	165,909	2.535%	4,206	-	-	4,206
118	2035	Float	Historical	-	-	(1,191)	-	-	(1,191)
119	**FY 2035**	**Subtotal:**		**3,734,825**		**149,273**	**-**	**(1,396)**	**147,878**

TABLE 11-6
INTEREST CALCULATION SUMMARY ($000S)
(FY 2021)

	A	B	C	D	E	F	G	H	I
	Fiscal Year	**Project**	**Type**	**Current Principal**	**Rate**	**Interest**	**Premium**	**Net Interest Accrual**	**Total**
120	2036	Construction	Historical	1,192,744	2.171%	25,894	-	(2,748)	23,146
121	2036	Replacements	Historical	2,322,727	5.070%	117,762	-	-	117,762
122	2036	Replacements	New	165,909	2.535%	4,206	-	-	4,206
123	2036	Float	Historical	-	-	(1,217)	-	-	(1,217)
124	**FY 2036**	**Subtotal:**		**3,681,381**		**146,646**	**-**	**(2,748)**	**143,897**
125	2037	Construction	Historical	962,344	1.664%	16,015	-	(518)	15,497
126	2037	Replacements	Historical	2,488,636	5.070%	126,174	-	-	126,174
127	2037	Replacements	New	165,909	2.535%	4,206	-	-	4,206
128	2037	Float	Historical	-	-	(1,329)	-	-	(1,329)
129	**FY 2037**	**Subtotal:**		**3,616,890**		**145,065**	**-**	**(518)**	**144,547**
130	2038	Construction	Historical	704,779	1.282%	9,037	-	(950)	8,087
131	2038	Replacements	Historical	2,654,545	5.070%	134,585	-	-	134,585
132	2038	Replacements	New	165,909	2.535%	4,206	-	-	4,206
133	2038	Float	Historical	-	-	(1,406)	-	-	(1,406)
134	**FY 2038**	**Subtotal:**		**3,525,233**		**146,422**	**-**	**(950)**	**145,472**
135	2039	Construction	Historical	434,219	0.875%	3,799	-	(415)	3,384
136	2039	Replacements	Historical	2,820,455	5.070%	142,997	-	-	142,997
137	2039	Replacements	New	165,909	2.535%	4,206	-	-	4,206
138	2039	Float	Historical	-	-	(1,395)	-	-	(1,395)
139	**FY 2039**	**Subtotal:**		**3,420,583**		**149,607**	**-**	**(415)**	**149,192**
140	2040	Construction	Historical	168,391	0.584%	983	-	(40)	943
141	2040	Replacements	Historical	2,986,364	4.985%	148,877	-	-	148,877
142	2040	Replacements	New	165,909	2.535%	4,206	-	-	4,206
143	2040	Float	Historical	-	-	(1,411)	-	-	(1,411)
144	**FY 2040**	**Subtotal:**		**3,320,664**		**152,656**	**-**	**(40)**	**152,615**
145	2041	Replacements	Historical	3,052,419	4.764%	145,427	-	-	145,427
146	2041	Replacements	New	165,909	2.535%	4,206	-	-	4,206
147	2041	Float	Historical	-	-	(1,798)	-	-	(1,798)
148	**FY 2041**	**Subtotal:**		**3,218,328**		**147,835**	**-**	**-**	**147,835**
149	2042	Replacements	Historical	2,850,264	4.811%	137,117	-	-	137,117
150	2042	Replacements	New	165,909	2.535%	4,206	-	-	4,206
151	2042	Float	Historical	-	-	(1,472)	-	-	(1,472)
152	**FY 2042**	**Subtotal:**		**3,016,173**		**139,851**	**-**	**-**	**139,851**
153	2043	Replacements	Historical	2,724,609	4.708%	128,268	-	-	128,268
154	2043	Replacements	New	165,909	2.535%	4,206	-	-	4,206
155	2043	Float	Historical	-	-	(1,848)	-	-	(1,848)
156	**FY 2043**	**Subtotal:**		**2,890,519**		**130,625**	**-**	**-**	**130,625**
157	2044	Replacements	Historical	2,501,184	4.661%	116,589	-	-	116,589
158	2044	Replacements	New	165,909	2.535%	4,206	-	-	4,206
159	2044	Float	Historical	-	-	(1,880)	-	-	(1,880)
160	**FY 2044**	**Subtotal:**		**2,667,093**		**118,914**	**-**	**-**	**118,914**
161	2045	Replacements	Historical	2,263,891	4.604%	104,235	-	-	104,235
162	2045	Replacements	New	165,909	2.535%	4,206	-	-	4,206
163	2045	Float	Historical	-	-	(1,907)	-	-	(1,907)
164	**FY 2045**	**Subtotal:**		**2,429,800**		**106,535**	**-**	**-**	**106,535**
165	2046	Replacements	Historical	2,013,866	4.530%	91,229	-	-	91,229
166	2046	Replacements	New	165,909	2.535%	4,206	-	-	4,206
167	2046	Float	Historical	-	-	(1,933)	-	-	(1,933)
168	**FY 2046**	**Subtotal:**		**2,179,775**		**93,502**	**-**	**-**	**93,502**
169	2047	Replacements	Historical	1,750,809	4.429%	77,544	-	-	77,544
170	2047	Replacements	New	165,909	2.535%	4,206	-	-	4,206
171	2047	Float	Historical	-	-	(1,960)	-	-	(1,960)
172	**FY 2047**	**Subtotal:**		**1,916,718**		**79,790**	**-**	**-**	**79,790**
173	2048	Replacements	Historical	1,474,039	4.284%	63,146	-	-	63,146
174	2048	Replacements	New	165,909	2.535%	4,206	-	-	4,206
175	2048	Float	Historical	-	-	(1,989)	-	-	(1,989)
176	**FY 2048**	**Subtotal:**		**1,639,948**		**65,363**	**-**	**-**	**65,363**
177	2049	Replacements	Historical	1,182,843	4.058%	47,998	-	-	47,998
178	2049	Replacements	New	165,909	2.535%	4,206	-	-	4,206
179	2049	Float	Historical	-	-	(2,019)	-	-	(2,019)
180	**FY 2049**	**Subtotal:**		**1,348,752**		**50,185**	**-**	**-**	**50,185**

TABLE 11-6
INTEREST CALCULATION SUMMARY ($000S)
(FY 2021)

	A	B	C	D	E	F	G	H	I
	Fiscal Year	Project	Type	Current Principal	Rate	Interest	Premium	Net Interest Accrual	Total
181	2050	Replacements	Historical	876,468	3.658%	32,060	-	-	32,060
182	2050	Replacements	New	165,909	2.535%	4,206	-	-	4,206
183	2050	Float	Historical	-	-	(2,051)	-	-	(2,051)
184	**FY 2050**	**Subtotal:**		**1,042,377**		**34,215**	**-**	**-**	**34,215**
185	2051	Replacements	Historical	554,123	2.759%	15,291	-	-	15,291
186	2051	Replacements	New	165,909	2.535%	4,206	-	-	4,206
187	2051	Float	Historical	-	-	(2,084)	-	-	(2,084)
188	**FY 2051**	**Subtotal:**		**720,032**		**17,412**	**-**	**-**	**17,412**
189	2052	Replacements	Historical	214,976	2.535%	5,450	-	-	5,450
190	2052	Replacements	New	165,909	2.535%	4,206	-	-	4,206
191	2052	Float	Historical	-	-	(2,120)	-	-	(2,120)
192	**FY 2052**	**Subtotal:**		**380,885**		**7,536**	**-**	**-**	**7,536**
193	2053	Replacements	Historical	165,909	2.535%	4,206	-	-	4,206
194	2053	Replacements	New	165,909	2.535%	4,206	-	-	4,206
195	2053	Float	Historical	-	-	(2,125)	-	-	(2,125)
196	**FY 2053**	**Subtotal:**		**331,818**		**6,287**	**-**	**-**	**6,287**
197	2054	Replacements	Historical	165,909	2.535%	4,206	-	-	4,206
198	2054	Replacements	New	165,909	2.535%	4,206	-	-	4,206
199	2054	Float	Historical	-	-	(2,125)	-	-	(2,125)
200	**FY 2054**	**Subtotal:**		**331,818**		**6,287**	**-**	**-**	**6,287**
201	2055	Replacements	Historical	165,909	2.535%	4,206	-	-	4,206
202	2055	Replacements	New	165,909	2.535%	4,206	-	-	4,206
203	2055	Float	Historical	-	-	(2,125)	-	-	(2,125)
204	**FY 2055**	**Subtotal:**		**331,818**		**6,287**	**-**	**-**	**6,287**
205	2056	Replacements	Historical	165,909	2.535%	4,206	-	-	4,206
206	2056	Replacements	New	165,909	2.535%	4,206	-	-	4,206
207	2056	Float	Historical	-	-	(2,125)	-	-	(2,125)
208	**FY 2056**	**Subtotal:**		**331,818**		**6,287**	**-**	**-**	**6,287**
209	**Grand Total:**			**$111,834,577**		**$4,250,097**	**-**	**($19,291)**	**$4,230,806**

TABLE 11-7
SUMMARY OF AMORTIZATION ($000S) (FY 2021)

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q
1	**Obligation Type**	**General Project**	**Specific Project**	**2018**	**2019**	**2020**	**2021**	**2022**	**2023**	**2024**	**2025**	**2026**	**2027**	**2028**	**2029**	**2030**	**2031**
2		**Bonneville Power Administration**	**Bonneville Power Administration**	6,956	421	-	-	-	-	-	-	-	-	-	-	-	-
3	**Appropriation**		**Bonneville Power Administration Subtotal:**	6,956	421	-	-	-	-	-	-	-	-	-	-	-	-
4		**Appropriation Subtotal:**		6,956	421	-	-	-	-	-	-	-	-	-	-	-	-
5			**Construction**	-	216,845	193,466	175,074	184,242	192,898	164,972	156,416	184,434	162,693	196,487	176,106	195,640	199,691
6			Principal Accrual	-	-	-	-	-	-	-	-	-	-	-	-	-	-
7			Principal Accrual Reversal	-	-	-	-	-	-	-	-	-	-	-	-	-	-
8			**Construction (AS)**	-	17,750	16,900	13,000	10,200	-	7,800	23,350	17,700	20,800	-	-	-	-
9			Principal Accrual	-	-	-	-	-	-	-	-	-	-	-	-	-	-
10			Principal Accrual Reversal	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11		**BPA Borrowing**	**Environment**	-	-	-	-	-	-	4,000	15,000	-	18,000	5,000	12,000	-	-
12			Principal Accrual	-	-	-	-	-	-	-	-	-	-	-	-	-	-
13			Principal Accrual Reversal	-	-	-	-	-	-	-	-	-	-	-	-	-	-
14			**Technology (T)**	-	-	-	28,000	-	-	-	-	-	-	-	-	-	-
15	**Bond**		Principal Accrual	-	-	-	-	-	-	-	-	-	-	-	-	-	-
16			Principal Accrual Reversal	-	-	-	-	-	-	-	-	-	-	-	-	-	-
17			**BPA Borrowing Subtotal:**	-	234,595	210,366	216,074	194,442	192,898	176,772	194,766	202,134	201,493	201,487	188,106	195,640	199,691
18			**Replacements**	-	-	-	-	-	-	-	-	-	-	-	-	-	-
19		**Federal Transmission Replacement**	Principal Accrual	-	-	-	-	-	-	-	-	-	-	-	-	-	-
20			Principal Accrual Reversal	-	-	-	-	-	-	-	-	-	-	-	-	-	-
21			**Federal Transmission Replacement Subtotal:**	-	-	-	-	-	-	-	-	-	-	-	-	-	-
22			**Discounts**	-	-	-	-	-	-	-	-	-	-	-	-	-	-
23		**Make Whole Call**	**Premiums**	-	3,751	-	-	6,217	9,784	5,569	1,481	-	-	-	-	-	2,785
24			**Make Whole Call Subtotal:**	-	3,751	-	-	6,217	9,784	5,569	1,481	-	-	-	-	-	2,785
25		**Bond Subtotal:**		-	234,595	210,366	216,074	194,442	192,898	176,772	194,766	202,134	201,493	201,487	188,106	195,640	199,691
26	**Grand Total:**			$6,956	$235,016	$210,366	$216,074	$194,442	$192,898	$176,772	$194,766	$202,134	$201,493	$201,487	$188,106	$195,640	$199,691

TABLE 11-7
SUMMARY OF AMORTIZATION ($000S) (FY 2021)

	A	B	C	R	S	T	U	V	W	X	Y	Z	AA	AB	AC	AD	AE
1	**Obligation Type**	**General Project**	**Specific Project**	**2032**	**2033**	**2034**	**2035**	**2036**	**2037**	**2038**	**2039**	**2040**	**2041**	**2042**	**2043**	**2044**	**2045**
2		**Bonneville Power Administration**	**Bonneville Power Administration**	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3	**Appropriation**		**Bonneville Power Administration Subtotal:**	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4		**Appropriation Subtotal:**		-	-	-	-	-	-	-	-	-	-	-	-	-	-
5			**Construction**	197,769	198,820	229,944	186,250	225,068	253,274	270,560	265,828	168,391	-	-	-	-	-
6			Principal Accrual	-	-	-	-	-	-	-	-	-	-	-	-	-	-
7			Principal Accrual Reversal	-	-	-	-	-	-	-	-	-	-	-	-	-	-
8			**Construction (AS)**	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9			Principal Accrual	-	-	-	-	-	-	-	-	-	-	-	-	-	-
10			Principal Accrual Reversal	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11		**BPA Borrowing**	**Environment**	-	7,000	7,000	30,000	-	-	-	-	-	-	-	-	-	-
12			Principal Accrual	-	-	-	-	-	-	-	-	-	-	-	-	-	-
13			Principal Accrual Reversal	-	-	-	-	-	-	-	-	-	-	-	-	-	-
14			**Technology (T)**	-	-	-	-	-	-	-	-	-	-	-	-	-	-
15	**Bond**		Principal Accrual	-	-	-	-	-	-	-	-	-	-	-	-	-	-
16			Principal Accrual Reversal	-	-	-	-	-	-	-	-	-	-	-	-	-	-
17			**BPA Borrowing Subtotal:**	197,769	205,820	236,944	216,250	225,068	253,274	270,560	265,828	168,391	-	-	-	-	-
18			**Replacements**	-	-	-	-	-	-	-	-	99,854	368,064	291,564	389,335	403,201	415,934
19		**Federal Transmission Replacement**	Principal Accrual	-	-	-	-	-	-	-	-	-	-	-	-	-	-
20			Principal Accrual Reversal	-	-	-	-	-	-	-	-	-	-	-	-	-	-
21			**Federal Transmission Replacement Subtotal:**	-	-	-	-	-	-	-	-	99,854	368,064	291,564	389,335	403,201	415,934
22			**Discounts**	-	-	-	(47)	(3,103)	(5,332)	(4,292)	-	-	-	-	-	-	-
23		**Make Whole Call**	**Premiums**	419	227	2,898	1,067	-	-	-	-	-	-	-	-	-	-
24			**Make Whole Call Subtotal:**	419	227	2,898	1,021	(3,103)	(5,332)	(4,292)	-	-	-	-	-	-	-
25		**Bond Subtotal:**		197,769	205,820	236,944	216,297	228,171	258,605	274,852	265,828	268,245	368,064	291,564	389,335	403,201	415,934
26	**Grand Total:**			$197,769	$205,820	$236,944	$216,297	$228,171	$258,605	$274,852	$265,828	$268,245	$368,064	$291,564	$389,335	$403,201	$415,934

TABLE 11-7
SUMMARY OF AMORTIZATION ($000S) (FY 2021)

	A	B	C	AF	AG	AH	AI	AJ	AK	AL	AM	AN	AO	AP	AQ
1	**Obligation Type**	**General Project**	**Specific Project**	**2046**	**2047**	**2048**	**2049**	**2050**	**2051**	**2052**	**2053**	**2054**	**2055**	**2056**	**Total**
2		**Bonneville Power Administration**	**Bonneville Power Administration**	-	-	-	-	-	-	-	-	-	-	-	7,377
3	**Appropriation**		**Bonneville Power Administration Subtotal:**	-	-	-	-	-	-	-	-	-	-	-	7,377
4		**Appropriation Subtotal:**		-	-	-	-	-	-	-	-	-	-	-	7,377
5			**Construction**	-	-	-	-	-	-	-	-	-	-	-	4,394,867
6			Principal Accrual	-	-	-	-	-	-	-	-	-	-	-	-
7			Principal Accrual Reversal	-	-	-	-	-	-	-	-	-	-	-	-
8			**Construction (AS)**	-	-	-	-	-	-	-	-	-	-	-	127,500
9			Principal Accrual	-	-	-	-	-	-	-	-	-	-	-	-
10			Principal Accrual Reversal	-	-	-	-	-	-	-	-	-	-	-	-
11		**BPA Borrowing**	**Environment**	-	-	-	-	-	-	-	-	-	-	-	98,000
12			Principal Accrual	-	-	-	-	-	-	-	-	-	-	-	-
13			Principal Accrual Reversal	-	-	-	-	-	-	-	-	-	-	-	-
14			**Technology (T)**	-	-	-	-	-	-	-	-	-	-	-	28,000
15	**Bond**		Principal Accrual	-	-	-	-	-	-	-	-	-	-	-	-
16			Principal Accrual Reversal	-	-	-	-	-	-	-	-	-	-	-	-
17			**BPA Borrowing Subtotal:**	-	-	-	-	-	-	-	-	-	-	-	4,648,367
18			**Replacements**	428,967	442,679	457,105	472,284	488,254	505,056	214,976	165,909	165,909	165,909	165,909	5,640,909
19		**Federal Transmission Replacement**	Principal Accrual	-	-	-	-	-	-	-	-	-	-	-	-
20			Principal Accrual Reversal	-	-	-	-	-	-	-	-	-	-	-	-
21			**Federal Transmission Replacement Subtotal:**	428,967	442,679	457,105	472,284	488,254	505,056	214,976	165,909	165,909	165,909	165,909	5,640,909
22			**Discounts**	-	-	-	-	-	-	-	-	-	-	-	(12,773)
23		**Make Whole Call**	**Premiums**	-	-	-	-	-	-	-	-	-	-	-	34,197
24			**Make Whole Call Subtotal:**	-	-	-	-	-	-	-	-	-	-	-	21,424
25		**Bond Subtotal:**		428,967	442,679	457,105	472,284	488,254	505,056	214,976	165,909	165,909	165,909	165,909	10,302,049
26	**Grand Total:**			$428,967	$442,679	$457,105	$472,284	$488,254	$505,056	$214,976	$165,909	$165,909	$165,909	$165,909	$10,309,426

TABLE 11-8
APPLICATION OF AMORTIZATION ($000S) (FY 2021)

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R
	Fiscal Year	**Project**	**Debt Type**	**In Service**	**Bond Due Date**	**Initial Principal**	**Current Principal**	**Original Rate**	**Effective Rate**	**Refinance Type**	**Refinanced Date**	**Rolled Maturity Date**	**Roll Rate**	**Principal Paid**	**Premium**	**Discount**	**Accrual**	**Reversal**
1	2018	Bonneville Power Administration	Bonneville Power Administration	9/30/1977	9/30/2022	33,702	7,377	7.210%	7.210%					6,956				
2		**FY 2018 Subtotal:**	**-**	**-**	**-**	**33,702**	**7,377**	**-**						**6,956**				
3	2019	Construction	-	10/31/2009	10/31/2018	23,000	23,000	3.719%	3.719%					23,000				
4	2019	Construction	-	11/30/2009	11/30/2018	15,000	15,000	3.533%	3.533%					15,000				
5	2019	Construction (AS)	-	11/30/2012	11/30/2018	9,750	9,750	1.109%	1.109%					9,750				
6	2019	Construction	-	12/31/2009	12/31/2018	13,000	13,000	4.069%	4.069%					13,000				
7	2019	Construction	-	1/16/2014	12/31/2018	33,000	33,000	1.943%	1.943%					33,000				
8	2019	Construction	-	1/16/2014	12/31/2018	30,000	30,000	1.943%	1.943%					30,000				
9	2019	Construction	-	1/16/2014	12/31/2018	31,000	31,000	1.943%	1.943%					31,000				
10	2019	Construction	-	1/16/2014	12/31/2018	48,000	48,000	1.943%	1.943%					48,000				
11	2019	Construction (AS)	-	6/30/2013	6/30/2019	5,000	5,000	1.962%	1.962%					5,000				
12	2019	Construction (AS)	-	8/31/2013	8/31/2019	3,000	3,000	2.279%	2.279%					3,000				
13	2019	Bonneville Power Administration	Bonneville Power Administration	9/30/1977	9/30/2022	33,702	421	7.210%	7.210%					421				
14	2019	Construction	-	8/31/1998	8/31/2028	112,300	112,300	5.850%	5.850%					23,845	3,751			
15		**FY 2019 Subtotal:**	**-**	**-**	**-**	**356,752**	**323,471**	**-**						**235,016**	**3,751**			
16	2020	Construction (AS)	-	10/31/2013	10/31/2019	7,800	7,800	2.039%	2.039%					7,800				
17	2020	Construction	-	10/31/2009	10/31/2019	43,000	43,000	3.842%	3.842%					43,000				
18	2020	Construction (AS)	-	1/31/2014	1/31/2020	3,250	3,250	2.183%	2.183%					3,250				
19	2020	Construction	-	1/31/2009	1/31/2020	50,000	50,000	3.830%	3.830%					50,000				
20	2020	Construction (AS)	-	4/30/2014	3/31/2020	2,600	2,600	1.976%	1.976%					2,600				
21	2020	Construction (AS)	-	5/31/2014	4/30/2020	1,300	1,300	2.075%	2.075%					1,300				
22	2020	Construction	-	7/31/2010	7/31/2020	50,000	50,000	3.118%	3.118%					50,000				
23	2020	Construction (AS)	-	7/31/2014	7/31/2020	1,950	1,950	2.234%	2.234%					1,950				
24	2020	Construction	-	7/31/2020	9/30/2020	118,000	50,466	1.600%	1.600%					50,466				
25		**FY 2020 Subtotal:**	**-**	**-**	**-**	**277,900**	**210,366**	**-**						**210,366**				
26	2021	Technology (T)	-	10/31/2015	9/30/2018	5,000	5,000	1.976%	2.137%	Global	9/30/2018	9/30/2021	2.137%	5,000				
27	2021	Construction (AS)	-	11/30/2014	11/30/2020	3,900	3,900	1.809%	1.809%					3,900				
28	2021	Construction (AS)	-	12/31/2014	12/31/2020	1,950	1,950	1.922%	1.922%					1,950				
29	2021	Construction (AS)	-	2/28/2015	2/28/2021	3,250	3,250	1.761%	1.761%					3,250				
30	2021	Technology (T)	-	2/28/2015	2/28/2021	23,000	23,000	1.761%	1.761%					23,000				
31	2021	Construction	-	3/31/2010	3/31/2021	15,000	15,000	4.188%	4.188%					15,000				
32	2021	Construction	-	4/30/2010	4/30/2021	22,000	22,000	4.094%	4.094%					22,000				
33	2021	Construction	-	5/31/2010	5/31/2021	22,000	22,000	3.694%	3.694%					22,000				
34	2021	Construction (AS)	-	5/31/2015	5/31/2021	3,900	3,900	1.898%	1.898%					3,900				
35	2021	Construction	-	6/30/2010	6/30/2021	22,000	22,000	3.374%	3.374%					22,000				
36	2021	Construction	-	7/31/2021	9/30/2021	129,000	94,074	1.640%	1.640%					94,074				
37		**FY 2021 Subtotal:**	**-**	**-**	**-**	**251,000**	**216,074**	**-**						**216,074**				
38	2022	Construction (AS)	-	10/31/2015	10/31/2021	5,200	5,200	1.942%	1.942%					5,200				
39	2022	Construction	-	1/31/2009	1/31/2022	20,000	20,000	4.200%	4.200%					20,000				
40	2022	Construction (AS)	-	2/29/2016	2/28/2022	5,000	5,000	1.631%	1.631%					5,000				
41	2022	Construction	-	4/30/2009	4/30/2022	35,000	35,000	4.253%	4.253%					35,000				
42	2022	Construction	-	5/31/2015	5/31/2022	11,000	11,000	2.103%	2.103%					11,000				
43	2022	Construction	-	5/31/2015	5/31/2022	14,000	14,000	2.103%	2.103%					14,000				
44	2022	Construction	-	7/31/2010	7/31/2022	30,000	30,000	3.372%	3.372%					30,000				
45	2022	Construction	-	8/31/2010	8/31/2022	20,000	20,000	3.029%	3.029%					20,000				
46	2022	Construction	-	8/31/1998	8/31/2028	112,300	88,455	5.850%	5.850%					54,242	6,217			
47		**FY 2022 Subtotal:**	**-**	**-**	**-**	**252,500**	**228,655**	**-**						**194,442**	**6,217**			
48	2023	Construction	-	12/31/2014	12/31/2022	16,000	16,000	2.274%	2.274%					16,000				
49	2023	Construction	-	12/31/2014	12/31/2022	4,000	4,000	2.274%	2.274%					4,000				
50	2023	Construction	-	4/30/2015	4/30/2023	3,000	3,000	2.163%	2.163%					3,000				
51	2023	Construction	-	4/30/2015	4/30/2023	12,000	12,000	2.163%	2.163%					12,000				
52	2023	Construction	-	6/30/2015	6/30/2023	11,000	11,000	2.443%	2.443%					11,000				
53	2023	Construction	-	6/30/2015	6/30/2023	8,000	8,000	2.443%	2.443%					8,000				
54	2023	Construction	-	9/30/2010	9/30/2023	46,000	46,000	3.161%	3.161%					46,000				
55	2023	Construction	-	8/31/1998	8/31/2028	106,500	106,500	5.850%	5.850%					58,685	6,180			
56	2023	Construction	-	8/31/1998	8/31/2028	112,300	34,213	5.850%	5.850%					34,213	3,603			

TABLE 11-8
APPLICATION OF AMORTIZATION ($000S) (FY 2021)

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R
	Fiscal Year	**Project**	**Debt Type**	**In Service**	**Bond Due Date**	**Initial Principal**	**Current Principal**	**Original Rate**	**Effective Rate**	**Refinance Type**	**Refinanced Date**	**Rolled Maturity Date**	**Roll Rate**	**Principal Paid**	**Premium**	**Discount**	**Accrual**	**Reversal**
57		**FY 2023 Subtotal:**	**-**	**-**	**-**	**318,800**	**240,713**	**-**						**192,898**	**9,784**			
58	2024	Construction	-	10/31/2014	10/31/2023	20,000	20,000	2.521%	2.521%					20,000				
59	2024	Construction	-	11/30/2014	11/30/2023	20,000	20,000	2.361%	2.361%					20,000				
60	2024	Environment	-	1/31/2015	1/31/2024	4,000	4,000	1.908%	1.908%					4,000				
61	2024	Construction	-	3/31/2015	3/31/2024	17,000	17,000	2.200%	2.200%					17,000				
62	2024	Construction	-	3/31/2012	3/31/2024	45,000	45,000	1.976%	1.976%					45,000				
63	2024	Construction (AS)	-	9/30/2018	9/30/2024	10,400	7,800	2.560%	2.560%					7,800				
64	2024	Construction	-	8/31/1998	8/31/2028	106,500	47,815	5.850%	5.850%					47,815	4,447			
65	2024	Construction	-	6/30/2009	6/30/2039	35,000	35,000	5.192%	5.192%					15,157	1,122			
66		**FY 2024 Subtotal:**	**-**	**-**	**-**	**257,900**	**196,615**	**-**						**176,772**	**5,569**			
67	2025	Environment	-	2/28/2010	2/28/2025	10,000	10,000	4.279%	4.279%					10,000				
68	2025	Construction	-	5/31/2016	5/31/2025	20,000	20,000	2.101%	2.101%					20,000				
69	2025	Environment	-	5/31/2016	5/31/2025	5,000	5,000	2.101%	2.101%					5,000				
70	2025	Construction	-	7/31/2016	7/31/2025	48,000	48,000	1.713%	1.713%					48,000				
71	2025	Construction (AS)	-	8/31/2015	8/31/2025	11,000	11,000	2.598%	2.598%					11,000				
72	2025	Construction	-	8/31/2015	8/31/2025	14,000	14,000	2.598%	2.598%					14,000				
73	2025	Construction (AS)	-	9/30/2019	9/30/2025	11,050	12,350	3.270%	3.270%					12,350				
74	2025	Construction	-	6/30/2009	6/30/2039	35,000	19,843	5.192%	5.192%					19,843	1,481			
75	2025	Construction	-	9/30/2021	9/30/2051	259,000	346,000	5.070%	5.070%					54,573				
76		**FY 2025 Subtotal:**	**-**	**-**	**-**	**413,050**	**486,193**	**-**						**194,766**	**1,481**			
77	2026	Construction	-	10/31/2010	10/31/2025	45,000	45,000	3.494%	3.494%					45,000				
78	2026	Construction	-	2/28/2015	2/28/2026	19,000	19,000	2.416%	2.416%					19,000				
79	2026	Construction	-	3/31/2015	3/31/2026	15,000	15,000	2.370%	2.370%					15,000				
80	2026	Construction	-	3/31/2016	3/31/2026	6,000	6,000	2.177%	2.177%					6,000				
81	2026	Construction	-	3/31/2016	3/31/2026	12,000	12,000	2.177%	2.177%					12,000				
82	2026	Construction	-	7/31/2015	7/31/2026	18,000	18,000	2.707%	2.707%					18,000				
83	2026	Construction	-	7/31/2015	7/31/2026	10,000	10,000	2.707%	2.707%					10,000				
84	2026	Construction (AS)	-	9/30/2020	9/30/2026	7,150	11,700	3.750%	3.750%					11,700				
85	2026	Construction (AS)	-	9/30/2021	9/30/2026	20,300	6,000	3.710%	3.710%					6,000				
86	2026	Construction	-	9/30/2021	9/30/2051	259,000	291,427	5.070%	5.070%					59,434				
87		**FY 2026 Subtotal:**	**-**	**-**	**-**	**411,450**	**434,127**	**-**						**202,134**				
88	2027	Construction	-	12/31/2015	12/31/2026	9,000	9,000	2.762%	2.762%					9,000				
89	2027	Construction	-	12/31/2015	12/31/2026	29,000	29,000	2.762%	2.762%					29,000				
90	2027	Construction	-	1/31/2016	1/31/2027	13,000	13,000	2.352%	2.352%					13,000				
91	2027	Construction	-	2/29/2016	2/28/2027	13,000	13,000	2.236%	2.236%					13,000				
92	2027	Construction	-	5/3/2012	5/31/2027	17,000	17,000	2.087%	2.087%					17,000				
93	2027	Environment	-	5/3/2012	5/31/2027	13,000	13,000	2.087%	2.087%					13,000				
94	2027	Environment	-	10/31/2015	9/30/2027	5,000	5,000	1.976%	1.976%					5,000				
95	2027	Construction (AS)	-	9/30/2021	9/30/2027	20,300	20,800	3.840%	3.840%					20,800				
96	2027	Construction	-	9/30/2021	9/30/2051	259,000	231,993	5.070%	5.070%					81,693				
97		**FY 2027 Subtotal:**	**-**	**-**	**-**	**378,300**	**351,793**	**-**						**201,493**				
98	2028	Construction	-	1/31/2010	1/31/2019	30,000	30,000	3.714%	3.788%	Global	1/31/2019	1/31/2028	3.788%	30,000				
99	2028	Construction	-	7/31/2009	7/31/2019	46,940	46,940	4.026%	3.788%	Global	7/31/2019	7/31/2028	3.788%	46,940				
100	2028	Construction	-	9/30/2009	9/30/2019	35,000	35,000	3.699%	3.788%	Global	9/30/2019	9/30/2028	3.788%	35,000				
101	2028	Environment	-	11/20/2013	11/30/2027	5,000	5,000	3.967%	3.967%					5,000				
102	2028	Construction	-	9/30/2014	4/30/2028	17,000	17,000	2.075%	2.075%					17,000				
103	2028	Construction	-	9/30/2014	9/30/2028	3,000	3,000	3.094%	3.094%					3,000				
104	2028	Construction	-	9/30/2021	9/30/2051	259,000	150,300	5.070%	5.070%					64,547				
105		**FY 2028 Subtotal:**	**-**	**-**	**-**	**395,940**	**287,240**	**-**						**201,487**				
106	2029	Environment	-	10/31/2013	10/31/2028	6,000	6,000	3.880%	3.880%					6,000				
107	2029	Environment	-	1/31/2014	1/31/2029	3,000	3,000	3.896%	3.896%					3,000				
108	2029	Environment	-	7/31/2014	7/31/2029	3,000	3,000	2.234%	2.234%					3,000				
109	2029	Construction	-	8/2/2011	8/31/2029	50,000	50,000	4.238%	4.238%					50,000				
110	2029	Construction	-	8/31/2021	8/31/2050	129,000	173,000	5.040%	5.040%					40,354				
111	2029	Construction	-	9/30/2021	9/30/2051	259,000	85,753	5.070%	5.070%					85,753				
112		**FY 2029 Subtotal:**	**-**	**-**	**-**	**450,000**	**320,753**	**-**						**188,106**				

TABLE 11-8
APPLICATION OF AMORTIZATION ($000S) (FY 2021)

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R
	Fiscal Year	Project	Debt Type	In Service	Bond Due Date	Initial Principal	Current Principal	Original Rate	Effective Rate	Refinance Type	Refinanced Date	Rolled Maturity Date	Roll Rate	Principal Paid	Premium	Discount	Accrual	Reversal
113	2030	Construction	-	11/20/2013	10/31/2029	55,000	55,000	4.093%	4.093%					55,000				
114	2030	Construction	-	3/31/2015	3/31/2030	3,000	3,000	2.626%	2.626%					3,000				
115	2030	Construction	-	9/30/2015	9/30/2030	15,000	15,000	2.905%	2.905%					15,000				
116	2030	Construction	-	8/31/2021	8/31/2050	129,000	132,646	5.040%	5.040%					122,640				
117		**FY 2030 Subtotal:**	**-**	**-**	**-**	**202,000**	**205,646**	**-**						**195,640**				
118	2031	Construction	-	11/20/2013	1/31/2031	30,000	30,000	4.162%	4.162%					30,000				
119	2031	Construction	-	11/20/2013	2/28/2031	15,000	15,000	4.166%	4.166%					15,000				
120	2031	Construction	-	11/20/2013	3/31/2031	18,000	18,000	4.171%	4.171%					18,000				
121	2031	Construction	-	2/28/2011	2/28/2038	55,000	55,000	4.935%	4.935%					47,758	2,785			
122	2031	Construction	-	7/31/2021	7/31/2049	129,000	78,926	5.000%	5.000%					78,926				
123	2031	Construction	-	8/31/2021	8/31/2050	129,000	10,006	5.040%	5.040%					10,006				
124		**FY 2031 Subtotal:**	**-**	**-**	**-**	**376,000**	**206,932**	**-**						**199,691**	**2,785**			
125	2032	Construction	-	7/31/2014	4/30/2032	9,000	9,000	2.075%	2.075%					9,000				
126	2032	Construction	-	8/2/2011	8/31/2032	98,900	98,900	4.355%	4.355%					98,900				
127	2032	Construction	-	2/28/2011	2/28/2038	55,000	7,242	4.935%	4.935%					7,242	419			
128	2032	Construction	-	9/30/2020	9/30/2048	123,000	138,000	4.930%	4.930%					82,627				
129		**FY 2032 Subtotal:**	**-**	**-**	**-**	**285,900**	**253,142**	**-**						**197,769**	**419**			
130	2033	Construction	-	6/30/2014	11/30/2032	21,000	21,000	2.087%	2.087%					21,000				
131	2033	Construction	-	8/2/2011	8/31/2033	40,000	40,000	4.386%	4.386%					40,000				
132	2033	Environment	-	9/30/2018	9/30/2033	7,000	7,000	0.920%	0.920%					7,000				
133	2033	Construction	-	4/30/2011	4/30/2039	40,000	40,000	4.794%	4.794%					4,447	227			
134	2033	Construction	-	8/31/2020	8/31/2047	118,000	78,000	4.900%	4.900%					78,000				
135	2033	Construction	-	9/30/2020	9/30/2048	123,000	55,373	4.930%	4.930%					55,373				
136		**FY 2033 Subtotal:**	**-**	**-**	**-**	**349,000**	**241,373**	**-**						**205,820**	**227**			
137	2034	Construction	-	4/30/2014	2/28/2034	45,000	45,000	1.877%	1.877%					45,000				
138	2034	Construction	-	4/30/2014	3/31/2034	45,000	45,000	1.976%	1.976%					45,000				
139	2034	Construction	-	11/20/2013	4/30/2034	28,000	28,000	4.311%	4.311%					28,000				
140	2034	Construction	-	10/31/2015	6/30/2034	21,000	21,000	2.155%	2.155%					21,000				
141	2034	Construction	-	11/20/2013	8/31/2034	6,000	6,000	4.324%	4.324%					6,000				
142	2034	Construction	-	10/31/2015	8/31/2034	19,000	19,000	1.877%	1.877%					19,000				
143	2034	Construction	-	9/30/2013	9/30/2034	9,000	9,000	4.214%	4.214%					9,000				
144	2034	Environment	-	9/30/2019	9/30/2034	7,000	7,000	1.380%	1.380%					7,000				
145	2034	Construction	-	4/30/2011	4/30/2039	40,000	35,553	4.794%	4.794%					35,553	1,749			
146	2034	Construction	-	6/22/2011	6/30/2040	25,000	25,000	4.775%	4.775%					21,390	1,149			
147		**FY 2034 Subtotal:**	**-**	**-**	**-**	**245,000**	**240,553**	**-**						**236,944**	**2,898**			
148	2035	Construction	-	8/2/2011	8/31/2034	40,000	40,000	4.416%	3.586%	Global	8/31/2034	8/31/2038	3.586%	4,641		47		
149	2035	Construction	-	10/31/2015	10/31/2034	2,000	2,000	3.198%	3.198%					2,000				
150	2035	Construction	-	11/20/2013	5/31/2035	20,000	20,000	4.354%	4.354%					20,000				
151	2035	Construction	-	8/31/2014	7/31/2035	10,000	10,000	2.234%	2.234%					10,000				
152	2035	Construction	-	8/31/2014	8/31/2035	15,000	15,000	1.877%	1.877%					15,000				
153	2035	Construction	-	8/2/2011	8/31/2035	40,000	40,000	4.446%	4.446%					40,000				
154	2035	Construction	-	8/2/2011	8/31/2035	40,000	40,000	4.446%	4.446%					40,000				
155	2035	Environment	-	9/30/2020	9/30/2035	8,000	7,000	4.470%	4.470%					7,000				
156	2035	Construction	-	11/20/2013	6/30/2036	36,000	36,000	4.397%	4.397%					36,000	586			
157	2035	Environment	-	9/30/2021	9/30/2036	22,000	23,000	4.535%	4.535%					23,000				
158	2035	Construction	-	6/22/2011	6/30/2040	25,000	3,610	4.775%	4.775%					3,610	190			
159	2035	Construction	-	1/31/2014	1/31/2043	15,000	15,000	4.380%	4.380%					15,000	291			
160		**FY 2035 Subtotal:**	**-**	**-**	**-**	**273,000**	**251,610**	**-**						**216,250**	**1,067**	**47**		

TABLE 11-8
APPLICATION OF AMORTIZATION ($000S) (FY 2021)

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R
	Fiscal Year	**Project**	**Debt Type**	**In Service**	**Bond Due Date**	**Initial Principal**	**Current Principal**	**Original Rate**	**Effective Rate**	**Refinance Type**	**Refinanced Date**	**Rolled Maturity Date**	**Roll Rate**	**Principal Paid**	**Premium**	**Discount**	**Accrual**	**Reversal**
161	2036	Construction	-	8/2/2011	8/31/2034	40,000	35,313	4.416%	3.586%	Global	8/31/2034	8/31/2038	3.586%	35,047		266		
162	2036	Construction	-	8/2/2011	8/31/2035	45,000	45,000	4.446%	3.586%	Global	8/31/2035	8/31/2039	3.586%	44,553		447		
163	2036	Construction	-	10/31/2013	10/31/2035	64,000	64,000	4.222%	4.222%					64,000				
164	2036	Construction	-	11/30/2013	11/30/2035	15,000	15,000	4.365%	4.365%					15,000				
165	2036	Construction	-	12/31/2013	12/31/2035	10,000	10,000	4.472%	4.472%					10,000				
166	2036	Construction	-	5/31/2014	5/31/2036	29,000	29,000	2.087%	2.087%					29,000				
167	2036	Construction	-	7/31/2017	7/31/2045	27,000	27,000	3.230%	3.230%					18,413		1,445		
168	2036	Construction	-	9/30/2017	9/30/2047	10,000	10,000	3.247%	3.247%					9,055		945		
169		**FY 2036 Subtotal:**	**-**	**-**	**-**	**240,000**	**235,313**	**-**						**225,068**		**3,103**		
170	2037	Construction	-	1/31/2011	1/31/2036	50,000	50,000	4.952%	3.586%	Global	1/31/2036	1/31/2040	3.586%	49,648		352		
171	2037	Construction	-	6/22/2011	6/30/2036	50,000	50,000	4.629%	3.586%	Global	6/30/2036	6/30/2040	3.586%	49,794		206		
172	2037	Construction	-	8/31/2017	8/31/2037	30,000	30,000	2.902%	2.902%					30,000				
173	2037	Construction	-	7/31/2017	7/31/2041	19,000	19,000	3.164%	3.164%					18,674		326		
174	2037	Construction	-	9/30/2017	9/30/2041	17,000	17,000	3.156%	3.156%					16,703		297		
175	2037	Construction	-	7/31/2017	7/31/2042	14,000	14,000	3.181%	3.181%					13,642		358		
176	2037	Construction	-	7/31/2017	7/31/2043	23,000	23,000	3.198%	3.198%					22,182		818		
177	2037	Construction	-	9/30/2017	9/30/2043	14,000	14,000	3.193%	3.193%					13,498		502		
178	2037	Construction	-	7/31/2017	7/31/2044	17,000	17,000	3.215%	3.215%					16,206		794		
179	2037	Construction	-	9/30/2017	9/30/2044	9,000	9,000	3.209%	3.209%					8,577		423		
180	2037	Construction	-	7/31/2017	7/31/2045	27,000	7,142	3.230%	3.230%					6,722		420		
181	2037	Construction	-	8/31/2017	8/31/2047	18,000	18,000	3.076%	3.076%					7,627		836		
182		**FY 2037 Subtotal:**	**-**	**-**	**-**	**288,000**	**268,142**	**-**						**253,274**		**5,332**		
183	2038	Construction	-	8/31/2017	8/31/2038	7,000	7,000	2.929%	2.929%					7,000				
184	2038	Construction	-	4/30/2014	10/31/2039	45,000	45,000	2.075%	2.075%					44,192		808		
185	2038	Construction	-	1/27/2012	1/31/2040	30,000	30,000	2.234%	2.234%					29,379		621		
186	2038	Construction	-	8/31/2017	8/31/2041	13,000	13,000	2.991%	2.991%					12,800		200		
187	2038	Construction	-	8/31/2017	8/31/2043	10,000	10,000	3.024%	3.024%					9,667		333		
188	2038	Construction	-	7/31/2020	7/31/2046	118,000	83,534	1.600%	1.600%					83,534				
189	2038	Construction	-	8/31/2017	8/31/2046	22,000	22,000	3.066%	3.066%					20,468		1,532		
190	2038	Construction	-	8/31/2017	8/31/2047	18,000	9,537	3.076%	3.076%					8,739		798		
191	2038	Construction	-	8/31/2020	8/31/2047	118,000	56,000	1.600%	1.600%					54,781				
192		**FY 2038 Subtotal:**	**-**	**-**	**-**	**381,000**	**276,071**	**-**						**270,560**		**4,292**		
193	2039	Construction	-	1/27/2012	1/31/2040	30,000		2.234%	2.234%									
194	2039	Construction	-	7/31/2019	7/31/2043	82,000	121,000	1.380%	1.380%					121,000				
195	2039	Construction	-	8/31/2019	8/31/2044	81,000	118,000	1.380%	1.380%					118,000				
196	2039	Construction	-	9/30/2019	9/30/2045	81,000	117,000	1.380%	1.380%					25,609				
197	2039	Construction	-	8/31/2020	8/31/2047	118,000	1,219	1.600%	1.600%					1,219				
198		**FY 2039 Subtotal:**	**-**	**-**	**-**	**392,000**	**357,219**	**-**						**265,828**				
199	2040	Construction	-	8/31/2018	8/31/2041	160,000	52,000	0.920%	0.920%					52,000				
200	2040	Construction	-	9/30/2018	9/30/2042	76,000	25,000	0.920%	0.920%					25,000				
201	2040	Construction	-	9/30/2019	9/30/2045	81,000	91,391	1.380%	1.380%					91,391				
202	2040	Replacements	-	3/31/2022	3/31/2057	165,909	165,909	5.070%	5.070%					99,854				
203		**FY 2040 Subtotal:**	**-**	**-**	**-**	**482,909**	**334,300**	**-**						**268,245**				
204	2041	Replacements	-	3/31/2022	3/31/2057	165,909	66,055	5.070%	5.070%					66,055				
205	2041	Replacements	-	3/31/2023	3/31/2058	165,909	165,909	5.070%	5.070%					165,909				
206	2041	Replacements	-	3/31/2024	3/31/2059	165,909	165,909	5.070%	5.070%					136,100				
207		**FY 2041 Subtotal:**	**-**	**-**	**-**	**497,727**	**397,873**	**-**						**368,064**				
208	2042	Replacements	-	3/31/2024	3/31/2059	165,909	29,809	5.070%	5.070%					29,809				
209	2042	Replacements	-	3/31/2025	3/31/2060	165,909	165,909	5.070%	5.070%					165,909				
210	2042	Replacements	-	3/31/2026	3/31/2061	165,909	165,909	5.070%	5.070%					95,845				
211		**FY 2042 Subtotal:**	**-**	**-**	**-**	**497,727**	**361,628**	**-**						**291,564**				
212	2043	Replacements	-	3/31/2026	3/31/2061	165,909	70,064	5.070%	5.070%					70,064				
213	2043	Replacements	-	3/31/2027	3/31/2062	165,909	165,909	5.070%	5.070%					165,909				
214	2043	Replacements	-	3/31/2028	3/31/2063	165,909	165,909	5.070%	5.070%					153,362				
215		**FY 2043 Subtotal:**	**-**	**-**	**-**	**497,727**	**401,882**	**-**						**389,335**				

TABLE 11-8
APPLICATION OF AMORTIZATION ($000S) (FY 2021)

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R
	Fiscal Year	**Project**	**Debt Type**	**In Service**	**Bond Due Date**	**Initial Principal**	**Current Principal**	**Original Rate**	**Effective Rate**	**Refinance Type**	**Refinanced Date**	**Rolled Maturity Date**	**Roll Rate**	**Principal Paid**	**Premium**	**Discount**	**Accrual**	**Reversal**
216	2044	Replacements	-	3/31/2028	3/31/2063	165,909	12,547	5.070%	5.070%					12,547				
217	2044	Replacements	-	3/31/2029	3/31/2064	165,909	165,909	5.070%	5.070%					165,909				
218	2044	Replacements	-	3/31/2030	3/31/2065	165,909	165,909	5.070%	5.070%					165,909				
219	2044	Replacements	-	3/31/2031	3/31/2066	165,909	165,909	5.070%	5.070%					58,836				
220		**FY 2044 Subtotal:**	**-**	**-**	**-**	**663,636**	**510,275**	**-**						**403,201**				
221	2045	Replacements	-	3/31/2031	3/31/2066	165,909	107,073	5.070%	5.070%					107,073				
222	2045	Replacements	-	3/31/2032	3/31/2067	165,909	165,909	5.070%	5.070%					165,909				
223	2045	Replacements	-	3/31/2033	3/31/2068	165,909	165,909	5.070%	5.070%					142,952				
224		**FY 2045 Subtotal:**	**-**	**-**	**-**	**497,727**	**438,891**	**-**						**415,934**				
225	2046	Replacements	-	3/31/2033	3/31/2068	165,909	22,957	5.070%	5.070%					22,957				
226	2046	Replacements	-	3/31/2034	3/31/2069	165,909	165,909	5.070%	5.070%					165,909				
227	2046	Replacements	-	3/31/2035	3/31/2070	165,909	165,909	5.070%	5.070%					165,909				
228	2046	Replacements	-	3/31/2036	3/31/2071	165,909	165,909	5.070%	5.070%					74,191				
229		**FY 2046 Subtotal:**	**-**	**-**	**-**	**663,636**	**520,685**	**-**						**428,967**				
230	2047	Replacements	-	3/31/2036	3/31/2071	165,909	91,718	5.070%	5.070%					91,718				
231	2047	Replacements	-	3/31/2037	3/31/2072	165,909	165,909	5.070%	5.070%					165,909				
232	2047	Replacements	-	3/31/2038	3/31/2073	165,909	165,909	5.070%	5.070%					165,909				
233	2047	Replacements	-	3/31/2039	3/31/2074	165,909	165,909	5.070%	5.070%					19,143				
234		**FY 2047 Subtotal:**	**-**	**-**	**-**	**663,636**	**589,445**	**-**						**442,679**				
235	2048	Replacements	-	3/31/2039	3/31/2074	165,909	146,766	5.070%	5.070%					146,766				
236	2048	Replacements	-	3/31/2040	3/31/2075	165,909	165,909	5.070%	5.070%					165,909				
237	2048	Replacements	-	3/31/2041	3/31/2076	165,909	165,909	5.070%	5.070%					144,430				
238		**FY 2048 Subtotal:**	**-**	**-**	**-**	**497,727**	**478,585**	**-**						**457,105**				
239	2049	Replacements	-	3/31/2041	3/31/2076	165,909	21,479	5.070%	5.070%					21,479				
240	2049	Replacements	-	3/31/2042	3/31/2077	165,909	165,909	5.070%	5.070%					165,909				
241	2049	Replacements	-	3/31/2043	3/31/2078	165,909	165,909	5.070%	5.070%					165,909				
242	2049	Replacements	-	3/31/2044	3/31/2079	165,909	165,909	5.070%	5.070%					118,987				
243		**FY 2049 Subtotal:**	**-**	**-**	**-**	**663,636**	**519,206**	**-**						**472,284**				
244	2050	Replacements	-	3/31/2044	3/31/2079	165,909	46,922	5.070%	5.070%					46,922				
245	2050	Replacements	-	3/31/2045	3/31/2080	165,909	165,909	5.070%	5.070%					165,909				
246	2050	Replacements	-	3/31/2046	3/31/2081	165,909	165,909	5.070%	5.070%					165,909				
247	2050	Replacements	-	3/31/2047	3/31/2082	165,909	165,909	5.070%	5.070%					109,514				
248		**FY 2050 Subtotal:**	**-**	**-**	**-**	**663,636**	**544,650**	**-**						**488,254**				
249	2051	Replacements	-	3/31/2047	3/31/2082	165,909	56,396	5.070%	5.070%					56,396				
250	2051	Replacements	-	3/31/2048	3/31/2083	165,909	165,909	5.070%	5.070%					165,909				
251	2051	Replacements	-	3/31/2049	3/31/2084	165,909	165,909	5.070%	5.070%					165,909				
252	2051	Replacements	-	3/31/2050	3/31/2085	165,909	165,909	5.070%	5.070%					116,843				
253		**FY 2051 Subtotal:**	**-**	**-**	**-**	**663,636**	**554,123**	**-**						**505,056**				
254	2052	Replacements	-	3/31/2050	3/31/2085	165,909	49,067	5.070%	5.070%					49,067				
255	2052	Replacements	-	3/31/2051	3/31/2086	165,909	165,909	5.070%	5.070%					165,909				
256		**FY 2052 Subtotal:**	**-**	**-**	**-**	**331,818**	**214,976**	**-**						**214,976**				
257	2053	Replacements	-	3/31/2052	3/31/2087	165,909	165,909	5.070%	5.070%					165,909				
258		**FY 2053 Subtotal:**	**-**	**-**	**-**	**165,909**	**165,909**	**-**						**165,909**				
259	2054	Replacements	-	3/31/2053	3/31/2088	165,909	165,909	5.070%	5.070%					165,909				
260		**FY 2054 Subtotal:**	**-**	**-**	**-**	**165,909**	**165,909**	**-**						**165,909**				
261	2055	Replacements	-	3/31/2054	3/31/2089	165,909	165,909	5.070%	5.070%					165,909				
262		**FY 2055 Subtotal:**	**-**	**-**	**-**	**165,909**	**165,909**	**-**						**165,909**				
263	2056	Replacements	-	3/31/2055	3/31/2090	165,909	165,909	5.070%	5.070%					165,909				
264		**FY 2056 Subtotal:**	**-**	**-**	**-**	**165,909**	**165,909**	**-**						**165,909**				
265	**Grand Total**					**$14,778,012**	**$12,369,531**	**-**						**$10,296,653**	**$34,197**	**$12,773**		

12. REPAYMENT STUDY RESULTS – SHIFT STUDY

TABLE 12-1
SUMMARY OF INTEREST ($000S) (FY 2020)

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
1	**Obligation Type**	**General Project**	**Specific Project**	**2018**	**2019**	**2020**	**2021**	**2022**	**2023**	**2024**	**2025**	**2026**	**2027**	**2028**	**2029**
2		**Bonneville Power Administration**	Bonneville Power Administration	532	30	-	-	-	-	-	-	-	-	-	-
3	**Appropriation**		**Bonneville Power Administration Subtotal:**	532	30	-	-	-	-	-	-	-	-	-	-
4		**Appropriation Subtotal:**		532	30	-	-	-	-	-	-	-	-	-	-
5			(Less Interest Income)	(282)	(1,029)	(1,023)	(1,022)	(1,046)	(1,052)	(972)	(1,032)	(1,057)	(1,055)	(1,058)	(998)
6			Construction	102,701	101,568	100,531	107,669	100,848	92,208	84,254	79,601	73,108	66,680	61,369	52,504
7			Interest Accrual	18,630	17,075	16,447	15,280	13,849	12,805	12,087	11,780	10,937	9,677	8,884	7,994
8			Interest Accrual Reversal	(18,590)	(18,630)	(17,075)	(16,447)	(15,280)	(13,849)	(12,805)	(12,087)	(11,780)	(10,937)	(9,677)	(8,884)
9			Construction (AS)	1,333	1,478	1,521	1,666	1,418	1,327	1,327	1,128	439	-	-	-
10			Interest Accrual	298	232	136	73	24	24	24	-	-	-	-	-
11		**BPA Borrowing**	Interest Accrual Reversal	(298)	(298)	(232)	(136)	(73)	(24)	(24)	(24)	-	-	-	-
12			Environment	1,593	1,658	1,754	2,067	2,067	2,067	2,029	1,777	1,459	1,459	833	403
13	**Treasury**		Interest Accrual	368	368	368	368	368	368	356	284	284	193	127	-
14			Interest Accrual Reversal	(368)	(368)	(368)	(368)	(368)	(368)	(368)	(356)	(284)	(284)	(193)	(127)
15			Technology (T)	503	511	511	308	-	-	-	-	-	-	-	-
16			Interest Accrual	34	34	34	-	-	-	-	-	-	-	-	-
17			Interest Accrual Reversal	(34)	(34)	(34)	(34)	-	-	-	-	-	-	-	-
18			**BPA Borrowing Subtotal:**	105,888	102,565	102,570	109,424	101,809	93,506	85,908	81,071	73,105	65,733	60,285	50,892
19		**Federal Transmission Replacement**	Replacements	-	-	-	4,493	13,478	22,463	31,448	40,434	49,419	58,404	67,389	76,375
20			**Federal Transmission Replacement Subtotal:**	-	-	-	4,493	13,478	22,463	31,448	40,434	49,419	58,404	67,389	76,375
21		**Treasury Subtotal:**		105,888	102,565	102,570	113,917	115,286	115,969	117,357	121,505	122,524	124,138	127,674	127,266
22	**Grand Total:**			**$106,420**	**$102,595**	**$102,570**	**$113,917**	**$115,286**	**$115,969**	**$117,357**	**$121,505**	**$122,524**	**$124,138**	**$127,674**	**$127,266**

TABLE 12-1
SUMMARY OF INTEREST ($000S) (FY 2020)

	A	B	C	P	Q	R	S	T	U	V	W	X	Y	Z	AA
1	**Obligation Type**	**General Project**	**Specific Project**	**2030**	**2031**	**2032**	**2033**	**2034**	**2035**	**2036**	**2037**	**2038**	**2039**	**2040**	**2041**
2	**Appropriation**	**Bonneville Power Administration**	Bonneville Power Administration	-	-	-	-	-	-	-	-	-	-	-	-
3			**Bonneville Power Administration Subtotal:**	-	-	-	-	-	-	-	-	-	-	-	-
4		**Appropriation Subtotal:**		-	-	-	-	-	-	-	-	-	-	-	-
5	**Treasury**	**BPA Borrowing**	(Less Interest Income)	(1,020)	(1,039)	(1,021)	(1,049)	(1,184)	(1,090)	(1,093)	(1,199)	(1,260)	(1,255)	(1,284)	(1,671)
6			Construction	44,378	37,643	28,272	20,082	14,259	10,022	5,432	2,408	432	-	-	-
7			Interest Accrual	6,415	4,558	3,195	1,992	1,563	596	180	40	-	-	-	-
8			Interest Accrual Reversal	(7,994)	(6,415)	(4,558)	(3,195)	(1,992)	(1,563)	(596)	(180)	(40)	-	-	-
9			Construction (AS)	-	-	-	-	-	-	-	-	-	-	-	-
10			Interest Accrual	-	-	-	-	-	-	-	-	-	-	-	-
11			Interest Accrual Reversal	-	-	-	-	-	-	-	-	-	-	-	-
12			Environment	161	161	161	161	97	-	-	-	-	-	-	-
13			Interest Accrual	-	-	-	-	-	-	-	-	-	-	-	-
14			Interest Accrual Reversal	-	-	-	-	-	-	-	-	-	-	-	-
15			Technology (T)	-	-	-	-	-	-	-	-	-	-	-	-
16			Interest Accrual	-	-	-	-	-	-	-	-	-	-	-	-
17			Interest Accrual Reversal	-	-	-	-	-	-	-	-	-	-	-	-
18			**BPA Borrowing Subtotal:**	41,941	34,907	26,049	17,992	12,742	7,965	3,923	1,070	(868)	(1,255)	(1,284)	(1,671)
19		**Federal Transmission Replacement**	Replacements	85,360	94,345	103,330	112,316	121,301	130,286	139,271	148,257	153,474	152,709	149,502	143,533
20			**Federal Transmission Replacement Subtotal:**	85,360	94,345	103,330	112,316	121,301	130,286	139,271	148,257	153,474	152,709	149,502	143,533
21		**Treasury Subtotal:**		127,301	129,252	129,379	130,307	134,043	138,251	143,195	149,327	152,606	151,454	148,218	141,862
22	**Grand Total:**			**$127,301**	**$129,252**	**$129,379**	**$130,307**	**$134,043**	**$138,251**	**$143,195**	**$149,327**	**$152,606**	**$151,454**	**$148,218**	**$141,862**

TABLE 12-1
SUMMARY OF INTEREST ($000S) (FY 2020)

	A	B	C	AB	AC	AD	AE	AF	AG	AH	AI	AJ	AK	AL	AM
1	**Obligation Type**	**General Project**	**Specific Project**	**2042**	**2043**	**2044**	**2045**	**2046**	**2047**	**2048**	**2049**	**2050**	**2051**	**2052**	**2053**
2	**Appropriation**	**Bonneville Power Administration**	Bonneville Power Administration	-	-	-	-	-	-	-	-	-	-	-	-
3			**Bonneville Power Administration Subtotal:**	-	-	-	-	-	-	-	-	-	-	-	-
4		**Appropriation Subtotal:**		-	-	-	-	-	-	-	-	-	-	-	-
5	**Treasury**	**BPA Borrowing**	(Less Interest Income)	(1,350)	(1,713)	(1,741)	(1,762)	(1,783)	(1,805)	(1,829)	(1,853)	(1,879)	(1,906)	(1,934)	(1,964)
6			Construction	-	-	-	-	-	-	-	-	-	-	-	-
7			Interest Accrual	-	-	-	-	-	-	-	-	-	-	-	-
8			Interest Accrual Reversal	-	-	-	-	-	-	-	-	-	-	-	-
9			Construction (AS)	-	-	-	-	-	-	-	-	-	-	-	-
10			Interest Accrual	-	-	-	-	-	-	-	-	-	-	-	-
11			Interest Accrual Reversal	-	-	-	-	-	-	-	-	-	-	-	-
12			Environment	-	-	-	-	-	-	-	-	-	-	-	-
13			Interest Accrual	-	-	-	-	-	-	-	-	-	-	-	-
14			Interest Accrual Reversal	-	-	-	-	-	-	-	-	-	-	-	-
15			Technology (T)	-	-	-	-	-	-	-	-	-	-	-	-
16			Interest Accrual	-	-	-	-	-	-	-	-	-	-	-	-
17			Interest Accrual Reversal	-	-	-	-	-	-	-	-	-	-	-	-
18			**BPA Borrowing Subtotal:**	(1,350)	(1,713)	(1,741)	(1,762)	(1,783)	(1,805)	(1,829)	(1,853)	(1,879)	(1,906)	(1,934)	(1,964)
19		**Federal Transmission Replacement**	Replacements	136,986	129,997	120,315	110,070	99,290	87,956	76,040	63,511	50,339	36,490	21,929	11,726
20			**Federal Transmission Replacement Subtotal:**	136,986	129,997	120,315	110,070	99,290	87,956	76,040	63,511	50,339	36,490	21,929	11,726
21		**Treasury Subtotal:**		135,635	128,284	118,574	108,308	97,507	86,151	74,211	61,658	48,460	34,584	19,995	9,762
22	**Grand Total:**			**$135,635**	**$128,284**	**$118,574**	**$108,308**	**$97,507**	**$86,151**	**$74,211**	**$61,658**	**$48,460**	**$34,584**	**$19,995**	**$9,762**

TABLE 12-1
SUMMARY OF INTEREST ($000S) (FY 2020)

	A	B	C	AN	AO	AP
1	**Obligation Type**	**General Project**	**Specific Project**	**2054**	**2055**	**Total**
2	**Appropriation**	**Bonneville Power Administration**	Bonneville Power Administration	-	-	562
3			**Bonneville Power Administration Subtotal:**	-	-	562
4		**Appropriation Subtotal:**		-	-	562
5	**Treasury**	**BPA Borrowing**	(Less Interest Income)	(1,975)	(1,975)	(51,259)
6			Construction	-	-	1,185,971
7			Interest Accrual	-	-	173,986
8			Interest Accrual Reversal	-	-	(192,576)
9			Construction (AS)	-	-	11,637
10			Interest Accrual	-	-	811
11			Interest Accrual Reversal	-	-	(1,109)
12			Environment	-	-	19,907
13			Interest Accrual	-	-	3,454
14			Interest Accrual Reversal	-	-	(3,822)
15			Technology (T)	-	-	1,832
16			Interest Accrual	-	-	103
17			Interest Accrual Reversal	-	-	(137)
18			**BPA Borrowing Subtotal:**	(1,975)	(1,975)	1,148,798
19		**Federal Transmission Replacement**	Replacements	8,985	8,985	2,860,207
20			**Federal Transmission Replacement Subtotal:**	8,985	8,985	2,860,207
21		**Treasury Subtotal:**		7,010	7,010	4,009,005
22	**Grand Total:**			**$7,010**	**$7,010**	**$4,009,568**

TABLE 12-2
INTEREST CALCULATION SUMMARY ($000S)
(FY 2020)

	A	B	C	D	E	F	G	H	I
	Fiscal Year	Project	Type	Current Principal	Rate	Interest	Premium	Net Interest Accrual	Total
1	2018	Bonneville Power Administration	Historical	7,377	7.210%	532	-	-	532
2	2018	Construction	Historical	2,876,640	3.570%	102,701	-	-	102,701
3	2018	Construction	New	52,000	-	-	-	40	40
4	2018	Construction (AS)	Historical	68,850	1.936%	1,333	-	-	1,333
5	2018	Environment	Historical	54,000	2.950%	1,593	-	-	1,593
6	2018	Technology (T)	Historical	28,000	1.795%	503	-	-	503
7	2018	Float	Historical	-	-	(282)	-	-	(282)
8	**FY 2018**	**Subtotal:**		**3,086,867**		**106,379**	**-**	**40**	**106,420**
9	2019	Bonneville Power Administration	Historical	421	7.210%	30	-	-	30
10	2019	Construction	Historical	2,953,640	3.439%	101,568	-	(1,968)	99,600
11	2019	Construction	New	239,000	-	-	-	413	413
12	2019	Construction (AS)	Historical	76,650	1.929%	1,478	-	(67)	1,412
13	2019	Environment	Historical	61,000	2.717%	1,658	-	-	1,658
14	2019	Technology (T)	Historical	28,000	1.824%	511	-	-	511
15	2019	Float	Historical	-	-	(1,029)	-	-	(1,029)
16	**FY 2019**	**Subtotal:**		**3,358,711**		**104,217**	**-**	**(1,621)**	**102,595**
17	2020	Construction	Historical	3,092,795	3.247%	100,410	-	(1,261)	99,149
18	2020	Construction	New	268,000	0.045%	121	-	633	754
19	2020	Construction (AS)	Historical	71,250	2.135%	1,521	-	(96)	1,425
20	2020	Environment	Historical	68,000	2.580%	1,754	-	-	1,754
21	2020	Technology (T)	Historical	28,000	1.824%	511	-	-	511
22	2020	Float	Historical	-	-	(1,023)	-	-	(1,023)
23	**FY 2020**	**Subtotal:**		**3,528,045**		**103,294**	**-**	**(724)**	**102,570**
24	2021	Construction	Historical	3,309,929	3.253%	107,669	-	(1,167)	106,501
25	2021	Construction (AS)	Historical	66,050	2.522%	1,666	-	(63)	1,603
26	2021	Environment	Historical	75,000	2.756%	2,067	-	-	2,067
27	2021	Replacements	New	179,705	2.500%	4,493	-	-	4,493
28	2021	Technology (T)	Historical	28,000	1.101%	308	-	(34)	274
29	2021	Float	Historical	-	-	(1,022)	-	-	(1,022)
30	**FY 2021**	**Subtotal:**		**3,658,684**		**115,181**	**-**	**(1,264)**	**113,917**
31	2022	Construction	Historical	3,161,030	3.190%	100,848	-	(1,431)	99,418
32	2022	Construction (AS)	Historical	53,050	2.674%	1,418	-	(49)	1,369
33	2022	Environment	Historical	75,000	2.756%	2,067	-	-	2,067
34	2022	Replacements	Historical	179,705	5.000%	8,985	-	-	8,985
35	2022	Replacements	New	179,705	2.500%	4,493	-	-	4,493
36	2022	Float	Historical	-	-	(1,046)	-	-	(1,046)
37	**FY 2022**	**Subtotal:**		**3,648,490**		**116,766**	**-**	**(1,479)**	**115,286**
38	2023	Construction	Historical	2,974,423	3.100%	92,208	-	(1,045)	91,163
39	2023	Construction (AS)	Historical	42,850	3.097%	1,327	-	-	1,327
40	2023	Environment	Historical	75,000	2.756%	2,067	-	-	2,067
41	2023	Replacements	Historical	359,410	5.000%	17,971	-	-	17,971
42	2023	Replacements	New	179,705	2.500%	4,493	-	-	4,493
43	2023	Float	Historical	-	-	(1,052)	-	-	(1,052)
44	**FY 2023**	**Subtotal:**		**3,631,388**		**117,014**	**-**	**(1,045)**	**115,969**
45	2024	Construction	Historical	2,778,654	3.032%	84,254	-	(717)	83,537
46	2024	Construction (AS)	Historical	42,850	3.097%	1,327	-	-	1,327
47	2024	Environment	Historical	75,000	2.705%	2,029	-	(13)	2,016
48	2024	Replacements	Historical	539,115	5.000%	26,956	-	-	26,956
49	2024	Replacements	New	179,705	2.500%	4,493	-	-	4,493
50	2024	Float	Historical	-	-	(972)	-	-	(972)
51	**FY 2024**	**Subtotal:**		**3,615,324**		**118,087**	**-**	**(730)**	**117,357**
52	2025	Construction	Historical	2,609,912	3.050%	79,601	-	(307)	79,294
53	2025	Construction (AS)	Historical	35,050	3.217%	1,128	-	(24)	1,103
54	2025	Environment	Historical	71,000	2.503%	1,777	-	(71)	1,706
55	2025	Replacements	Historical	718,821	5.000%	35,941	-	-	35,941
56	2025	Replacements	New	179,705	2.500%	4,493	-	-	4,493
57	2025	Float	Historical	-	-	(1,032)	-	-	(1,032)
58	**FY 2025**	**Subtotal:**		**3,614,488**		**121,907**	**-**	**(403)**	**121,505**

TABLE 12-2
INTEREST CALCULATION SUMMARY ($000S)
(FY 2020)

	A	B	C	D	E	F	G	H	I
	Fiscal Year	Project	Type	Current Principal	Rate	Interest	Premium	Net Interest Accrual	Total
59	2026	Construction	Historical	2,451,585	2.982%	73,108	-	(843)	72,265
60	2026	Construction (AS)	Historical	11,700	3.750%	439	-	-	439
61	2026	Environment	Historical	56,000	2.605%	1,459	-	-	1,459
62	2026	Replacements	Historical	898,526	5.000%	44,926	-	-	44,926
63	2026	Replacements	New	179,705	2.500%	4,493	-	-	4,493
64	2026	Float	Historical	-	-	(1,057)	-	-	(1,057)
65	**FY 2026**	**Subtotal:**		**3,597,516**		**123,367**	**-**	**(843)**	**122,524**
66	2027	Construction	Historical	2,260,919	2.949%	66,680	-	(1,260)	65,420
67	2027	Environment	Historical	56,000	2.605%	1,459	-	(91)	1,368
68	2027	Replacements	Historical	1,078,231	5.000%	53,912	-	-	53,912
69	2027	Replacements	New	179,705	2.500%	4,493	-	-	4,493
70	2027	Float	Historical	-	-	(1,055)	-	-	(1,055)
71	**FY 2027**	**Subtotal:**		**3,574,855**		**125,489**	**-**	**(1,351)**	**124,138**
72	2028	Construction	Historical	2,078,366	2.953%	61,369	-	(793)	60,576
73	2028	Environment	Historical	38,000	2.193%	833	-	(66)	767
74	2028	Replacements	Historical	1,257,936	5.000%	62,897	-	-	62,897
75	2028	Replacements	New	179,705	2.500%	4,493	-	-	4,493
76	2028	Float	Historical	-	-	(1,058)	-	-	(1,058)
77	**FY 2028**	**Subtotal:**		**3,554,008**		**128,534**	**-**	**(859)**	**127,674**
78	2029	Construction	Historical	1,891,493	2.776%	52,504	-	(891)	51,614
79	2029	Environment	Historical	26,000	1.549%	403	-	(127)	276
80	2029	Replacements	Historical	1,437,641	5.000%	71,882	-	-	71,882
81	2029	Replacements	New	179,705	2.500%	4,493	-	-	4,493
82	2029	Float	Historical	-	-	(998)	-	-	(998)
83	**FY 2029**	**Subtotal:**		**3,534,839**		**128,284**	**-**	**(1,018)**	**127,266**
84	2030	Construction	Historical	1,721,147	2.578%	44,378	-	(1,578)	42,800
85	2030	Environment	Historical	14,000	1.150%	161	-	-	161
86	2030	Replacements	Historical	1,617,346	5.000%	80,867	-	-	80,867
87	2030	Replacements	New	179,705	2.500%	4,493	-	-	4,493
88	2030	Float	Historical	-	-	(1,020)	-	-	(1,020)
89	**FY 2030**	**Subtotal:**		**3,532,199**		**128,879**	**-**	**(1,578)**	**127,301**
90	2031	Construction	Historical	1,532,562	2.456%	37,643	-	(1,858)	35,785
91	2031	Environment	Historical	14,000	1.150%	161	-	-	161
92	2031	Replacements	Historical	1,797,052	5.000%	89,853	-	-	89,853
93	2031	Replacements	New	179,705	2.500%	4,493	-	-	4,493
94	2031	Float	Historical	-	-	(1,039)	-	-	(1,039)
95	**FY 2031**	**Subtotal:**		**3,523,319**		**131,110**	**-**	**(1,858)**	**129,252**
96	2032	Construction	Historical	1,339,975	2.110%	28,272	-	(1,362)	26,909
97	2032	Environment	Historical	14,000	1.150%	161	-	-	161
98	2032	Replacements	Historical	1,976,757	5.000%	98,838	-	-	98,838
99	2032	Replacements	New	179,705	2.500%	4,493	-	-	4,493
100	2032	Float	Historical	-	-	(1,021)	-	-	(1,021)
101	**FY 2032**	**Subtotal:**		**3,510,437**		**130,742**	**-**	**(1,362)**	**129,379**
102	2033	Construction	Historical	1,140,618	1.761%	20,082	-	(1,203)	18,879
103	2033	Environment	Historical	14,000	1.150%	161	-	-	161
104	2033	Replacements	Historical	2,156,462	5.000%	107,823	-	-	107,823
105	2033	Replacements	New	179,705	2.500%	4,493	-	-	4,493
106	2033	Float	Historical	-	-	(1,049)	-	-	(1,049)
107	**FY 2033**	**Subtotal:**		**3,490,785**		**131,510**	**-**	**(1,203)**	**130,307**
108	2034	Construction	Historical	943,578	1.511%	14,259	-	(430)	13,830
109	2034	Environment	Historical	7,000	1.380%	97	-	-	97
110	2034	Replacements	Historical	2,336,167	5.000%	116,808	-	-	116,808
111	2034	Replacements	New	179,705	2.500%	4,493	-	-	4,493
112	2034	Float	Historical	-	-	(1,184)	-	-	(1,184)
113	**FY 2034**	**Subtotal:**		**3,466,450**		**134,473**	**-**	**(430)**	**134,043**
114	2035	Construction	Historical	716,902	1.398%	10,022	-	(967)	9,055
115	2035	Replacements	Historical	2,515,872	5.000%	125,794	-	-	125,794
116	2035	Replacements	New	179,705	2.500%	4,493	-	-	4,493
117	2035	Float	Historical	-	-	(1,090)	-	-	(1,090)
118	**FY 2035**	**Subtotal:**		**3,412,479**		**139,218**	**-**	**(967)**	**138,251**

TABLE 12-2
INTEREST CALCULATION SUMMARY ($000S)
(FY 2020)

	A	B	C	D	E	F	G	H	I
	Fiscal Year	Project	Type	Current Principal	Rate	Interest	Premium	Net Interest Accrual	Total
119	2036	Construction	Historical	514,214	1.056%	5,432	-	(416)	5,016
120	2036	Replacements	Historical	2,695,577	5.000%	134,779	-	-	134,779
121	2036	Replacements	New	179,705	2.500%	4,493	-	-	4,493
122	2036	Float	Historical	-	-	(1,093)	-	-	(1,093)
123	**FY 2036**	**Subtotal:**		**3,389,496**		**143,611**	**-**	**(416)**	**143,195**
124	2037	Construction	Historical	312,699	0.770%	2,408	-	(139)	2,269
125	2037	Replacements	Historical	2,875,282	5.000%	143,764	-	-	143,764
126	2037	Replacements	New	179,705	2.500%	4,493	-	-	4,493
127	2037	Float	Historical	-	-	(1,199)	-	-	(1,199)
128	**FY 2037**	**Subtotal:**		**3,367,686**		**149,466**	**-**	**(139)**	**149,327**
129	2038	Construction	Historical	88,460	0.488%	432	-	(40)	392
130	2038	Replacements	Historical	3,054,988	4.877%	148,982	-	-	148,982
131	2038	Replacements	New	179,705	2.500%	4,493	-	-	4,493
132	2038	Float	Historical	-	-	(1,260)	-	-	(1,260)
133	**FY 2038**	**Subtotal:**		**3,323,153**		**152,646**	**-**	**(40)**	**152,606**
134	2039	Replacements	Historical	3,083,983	4.806%	148,216	-	-	148,216
135	2039	Replacements	New	179,705	2.500%	4,493	-	-	4,493
136	2039	Float	Historical	-	-	(1,255)	-	-	(1,255)
137	**FY 2039**	**Subtotal:**		**3,263,688**		**151,454**	**-**	**-**	**151,454**
138	2040	Replacements	Historical	3,024,378	4.795%	145,009	-	-	145,009
139	2040	Replacements	New	179,705	2.500%	4,493	-	-	4,493
140	2040	Float	Historical	-	-	(1,284)	-	-	(1,284)
141	**FY 2040**	**Subtotal:**		**3,204,083**		**148,218**	**-**	**-**	**148,218**
142	2041	Replacements	Historical	2,955,697	4.704%	139,040	-	-	139,040
143	2041	Replacements	New	179,705	2.500%	4,493	-	-	4,493
144	2041	Float	Historical	-	-	(1,671)	-	-	(1,671)
145	**FY 2041**	**Subtotal:**		**3,135,402**		**141,862**	**-**	**-**	**141,862**
146	2042	Replacements	Historical	2,785,620	4.756%	132,493	-	-	132,493
147	2042	Replacements	New	179,705	2.500%	4,493	-	-	4,493
148	2042	Float	Historical	-	-	(1,350)	-	-	(1,350)
149	**FY 2042**	**Subtotal:**		**2,965,325**		**135,635**	**-**	**-**	**135,635**
150	2043	Replacements	Historical	2,693,802	4.659%	125,505	-	-	125,505
151	2043	Replacements	New	179,705	2.500%	4,493	-	-	4,493
152	2043	Float	Historical	-	-	(1,713)	-	-	(1,713)
153	**FY 2043**	**Subtotal:**		**2,873,507**		**128,284**	**-**	**-**	**128,284**
154	2044	Replacements	Historical	2,506,087	4.622%	115,822	-	-	115,822
155	2044	Replacements	New	179,705	2.500%	4,493	-	-	4,493
156	2044	Float	Historical	-	-	(1,741)	-	-	(1,741)
157	**FY 2044**	**Subtotal:**		**2,685,792**		**118,574**	**-**	**-**	**118,574**
158	2045	Replacements	Historical	2,306,506	4.577%	105,578	-	-	105,578
159	2045	Replacements	New	179,705	2.500%	4,493	-	-	4,493
160	2045	Float	Historical	-	-	(1,762)	-	-	(1,762)
161	**FY 2045**	**Subtotal:**		**2,486,211**		**108,308**	**-**	**-**	**108,308**
162	2046	Replacements	Historical	2,096,306	4.522%	94,798	-	-	94,798
163	2046	Replacements	New	179,705	2.500%	4,493	-	-	4,493
164	2046	Float	Historical	-	-	(1,783)	-	-	(1,783)
165	**FY 2046**	**Subtotal:**		**2,276,011**		**97,507**	**-**	**-**	**97,507**
166	2047	Replacements	Historical	1,875,305	4.451%	83,464	-	-	83,464
167	2047	Replacements	New	179,705	2.500%	4,493	-	-	4,493
168	2047	Float	Historical	-	-	(1,805)	-	-	(1,805)
169	**FY 2047**	**Subtotal:**		**2,055,010**		**86,151**	**-**	**-**	**86,151**
170	2048	Replacements	Historical	1,642,949	4.355%	71,547	-	-	71,547
171	2048	Replacements	New	179,705	2.500%	4,493	-	-	4,493
172	2048	Float	Historical	-	-	(1,829)	-	-	(1,829)
173	**FY 2048**	**Subtotal:**		**1,822,654**		**74,211**	**-**	**-**	**74,211**
174	2049	Replacements	Historical	1,398,652	4.220%	59,019	-	-	59,019
175	2049	Replacements	New	179,705	2.500%	4,493	-	-	4,493
176	2049	Float	Historical	-	-	(1,853)	-	-	(1,853)
177	**FY 2049**	**Subtotal:**		**1,578,357**		**61,658**	**-**	**-**	**61,658**

TABLE 12-2
INTEREST CALCULATION SUMMARY ($000S)
(FY 2020)

	A	B	C	D	E	F	G	H	I
	Fiscal Year	Project	Type	Current Principal	Rate	Interest	Premium	Net Interest Accrual	Total
178	2050	Replacements	Historical	1,141,803	4.015%	45,846	-	-	45,846
179	2050	Replacements	New	179,705	2.500%	4,493	-	-	4,493
180	2050	Float	Historical	-	-	(1,879)	-	-	(1,879)
181	**FY 2050**	**Subtotal:**		**1,321,508**		**48,460**	**-**	**-**	**48,460**
182	2051	Replacements	Historical	871,755	3.670%	31,997	-	-	31,997
183	2051	Replacements	New	179,705	2.500%	4,493	-	-	4,493
184	2051	Float	Historical	-	-	(1,906)	-	-	(1,906)
185	**FY 2051**	**Subtotal:**		**1,051,460**		**34,584**	**-**	**-**	**34,584**
186	2052	Replacements	Historical	587,831	2.966%	17,436	-	-	17,436
187	2052	Replacements	New	179,705	2.500%	4,493	-	-	4,493
188	2052	Float	Historical	-	-	(1,934)	-	-	(1,934)
189	**FY 2052**	**Subtotal:**		**767,536**		**19,995**	**-**	**-**	**19,995**
190	2053	Replacements	Historical	289,318	2.500%	7,233	-	-	7,233
191	2053	Replacements	New	179,705	2.500%	4,493	-	-	4,493
192	2053	Float	Historical	-	-	(1,964)	-	-	(1,964)
193	**FY 2053**	**Subtotal:**		**469,023**		**9,762**	**-**	**-**	**9,762**
194	2054	Replacements	Historical	179,705	2.500%	4,493	-	-	4,493
195	2054	Replacements	New	179,705	2.500%	4,493	-	-	4,493
196	2054	Float	Historical	-	-	(1,975)	-	-	(1,975)
197	**FY 2054**	**Subtotal:**		**359,410**		**7,010**	**-**	**-**	**7,010**
198	2055	Replacements	Historical	179,705	2.500%	4,493	-	-	4,493
199	2055	Replacements	New	179,705	2.500%	4,493	-	-	4,493
200	2055	Float	Historical	-	-	(1,975)	-	-	(1,975)
201	**FY 2055**	**Subtotal:**		**359,410**		**7,010**	**-**	**-**	**7,010**
202	**Grand Total:**			**$106,093,610**		**$4,028,858**	**-**	**($19,291)**	**$4,009,568**

TABLE 12-3:
SUMMARY OF AMORTIZATION ($000S) (FY 2020)

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q
1	**Obligation Type**	**General Project**	**Specific Project**	**2018**	**2019**	**2020**	**2021**	**2022**	**2023**	**2024**	**2025**	**2026**	**2027**	**2028**	**2029**	**2030**	**2031**
2	**Appropriation**	**Bonneville Power Administration**	**Bonneville Power Administration**	6,956	421	-	-	-	-	-	-	-	-	-	-	-	-
3			**Bonneville Power Administration Subtotal:**	6,956	421	-	-	-	-	-	-	-	-	-	-	-	-
4		**Appropriation Subtotal:**		6,956	421	-	-	-	-	-	-	-	-	-	-	-	-
5	**Bond**	**BPA Borrowing**	**Construction**	-	216,845	188,866	148,899	186,607	195,769	168,742	158,327	190,666	182,553	186,874	170,222	188,585	192,587
6			Principal Accrual	-	-	-	-	-	-	-	-	-	-	-	-	-	-
7			Principal Accrual Reversal	-	-	-	-	-	-	-	-	-	-	-	-	-	-
8			**Construction (AS)**	-	17,750	16,900	13,000	10,200	-	7,800	23,350	11,700	-	-	-	-	-
9			Principal Accrual	-	-	-	-	-	-	-	-	-	-	-	-	-	-
10			Principal Accrual Reversal	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11			**Environment**	-	-	-	-	-	-	4,000	15,000	-	18,000	12,000	12,000	-	-
12			Principal Accrual	-	-	-	-	-	-	-	-	-	-	-	-	-	-
13			Principal Accrual Reversal	-	-	-	-	-	-	-	-	-	-	-	-	-	-
14			**Technology (T)**	-	-	-	28,000	-	-	-	-	-	-	-	-	-	-
15			Principal Accrual	-	-	-	-	-	-	-	-	-	-	-	-	-	-
16			Principal Accrual Reversal	-	-	-	-	-	-	-	-	-	-	-	-	-	-
17			**BPA Borrowing Subtotal:**	-	234,595	205,766	189,899	196,807	195,769	180,542	196,677	202,366	200,553	198,874	182,222	188,585	192,587
18		**Federal Transmission Replacement**	**Replacements**	-	-	-	-	-	-	-	-	-	-	-	-	-	-
19			Principal Accrual	-	-	-	-	-	-	-	-	-	-	-	-	-	-
20			Principal Accrual Reversal	-	-	-	-	-	-	-	-	-	-	-	-	-	-
21			**Federal Transmission Replacement Subtotal:**	-	-	-	-	-	-	-	-	-	-	-	-	-	-
22		**Make Whole Call**	**Discounts**	-	-	-	-	-	-	-	-	-	-	-	-	(123)	-
23			**Premiums**	-	3,751	50	8,228	6,488	9,251	3,129	-	-	1,034	1,756	3,856	2,604	2,789
24			**Make Whole Call Subtotal:**	-	3,751	50	8,228	6,488	9,251	3,129	-	-	1,034	1,756	3,856	2,481	2,789
25		**Bond Subtotal:**		-	234,595	205,766	189,899	196,807	195,769	180,542	196,677	202,366	200,553	198,874	182,222	188,708	192,587
26	**Grand Total:**			$6,956	$235,016	$205,766	$189,899	$196,807	$195,769	$180,542	$196,677	$202,366	$200,553	$198,874	$182,222	$188,708	$192,587

TABLE 12-3:
SUMMARY OF AMORTIZATION ($000S) (FY 2020)

	A	B	C	R	S	T	U	V	W	X	Y	Z	AA	AB	AC	AD	AE
1	**Obligation Type**	**General Project**	**Specific Project**	**2032**	**2033**	**2034**	**2035**	**2036**	**2037**	**2038**	**2039**	**2040**	**2041**	**2042**	**2043**	**2044**	**2045**
2	**Appropriation**	**Bonneville Power Administration**	**Bonneville Power Administration**	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3			**Bonneville Power Administration Subtotal:**	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4		**Appropriation Subtotal:**		-	-	-	-	-	-	-	-	-	-	-	-	-	-
5	**Bond**	**BPA Borrowing**	**Construction**	187,102	189,370	221,446	202,688	201,515	224,239	88,460	-	-	-	-	-	-	-
6			Principal Accrual	-	-	-	-	-	-	-	-	-	-	-	-	-	-
7			Principal Accrual Reversal	-	-	-	-	-	-	-	-	-	-	-	-	-	-
8			**Construction (AS)**	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9			Principal Accrual	-	-	-	-	-	-	-	-	-	-	-	-	-	-
10			Principal Accrual Reversal	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11			**Environment**	-	7,000	7,000	-	-	-	-	-	-	-	-	-	-	-
12			Principal Accrual	-	-	-	-	-	-	-	-	-	-	-	-	-	-
13			Principal Accrual Reversal	-	-	-	-	-	-	-	-	-	-	-	-	-	-
14			**Technology (T)**	-	-	-	-	-	-	-	-	-	-	-	-	-	-
15			Principal Accrual	-	-	-	-	-	-	-	-	-	-	-	-	-	-
16			Principal Accrual Reversal	-	-	-	-	-	-	-	-	-	-	-	-	-	-
17			**BPA Borrowing Subtotal:**	187,102	196,370	228,446	202,688	201,515	224,239	88,460	-	-	-	-	-	-	-
18		**Federal Transmission Replacement**	**Replacements**	-	-	-	-	-	-	150,709	239,310	248,387	349,782	271,523	367,421	379,286	389,905
19			Principal Accrual	-	-	-	-	-	-	-	-	-	-	-	-	-	-
20			Principal Accrual Reversal	-	-	-	-	-	-	-	-	-	-	-	-	-	-
21			**Federal Transmission Replacement Subtotal:**	-	-	-	-	-	-	150,709	239,310	248,387	349,782	271,523	367,421	379,286	389,905
22		**Make Whole Call**	**Discounts**	-	(12,255)	(7,670)	(5,230)	-	-	-	-	-	-	-	-	-	-
23			**Premiums**	6,037	1,659	-	-	-	-	-	-	-	-	-	-	-	-
24			**Make Whole Call Subtotal:**	6,037	(10,596)	(7,670)	(5,230)	-	-	-	-	-	-	-	-	-	-
25		**Bond Subtotal:**		187,102	208,625	236,116	207,918	201,515	224,239	239,170	239,310	248,387	349,782	271,523	367,421	379,286	389,905
26	**Grand Total:**			$187,102	$208,625	$236,116	$207,918	$201,515	$224,239	$239,170	$239,310	$248,387	$349,782	$271,523	$367,421	$379,286	$389,905

TABLE 12-3:
SUMMARY OF AMORTIZATION ($000S) (FY 2020)

	A	B	C	AF	AG	AH	AI	AJ	AK	AL	AM	AN	AO	AP
1	**Obligation Type**	**General Project**	**Specific Project**	**2046**	**2047**	**2048**	**2049**	**2050**	**2051**	**2052**	**2053**	**2054**	**2055**	**Total**
2	**Appropriation**	**Bonneville Power Administration**	**Bonneville Power Administration**	-	-	-	-	-	-	-	-	-	-	7,377
3			**Bonneville Power Administration Subtotal:**	-	-	-	-	-	-	-	-	-	-	7,377
4		**Appropriation Subtotal:**		-	-	-	-	-	-	-	-	-	-	7,377
5	**Bond**	**BPA Borrowing**	**Construction**	-	-	-	-	-	-	-	-	-	-	3,690,362
6			Principal Accrual	-	-	-	-	-	-	-	-	-	-	-
7			Principal Accrual Reversal	-	-	-	-	-	-	-	-	-	-	-
8			**Construction (AS)**	-	-	-	-	-	-	-	-	-	-	100,700
9			Principal Accrual	-	-	-	-	-	-	-	-	-	-	-
10			Principal Accrual Reversal	-	-	-	-	-	-	-	-	-	-	-
11			**Environment**	-	-	-	-	-	-	-	-	-	-	75,000
12			Principal Accrual	-	-	-	-	-	-	-	-	-	-	-
13			Principal Accrual Reversal	-	-	-	-	-	-	-	-	-	-	-
14			**Technology (T)**	-	-	-	-	-	-	-	-	-	-	28,000
15			Principal Accrual	-	-	-	-	-	-	-	-	-	-	-
16			Principal Accrual Reversal	-	-	-	-	-	-	-	-	-	-	-
17			**BPA Borrowing Subtotal:**	-	-	-	-	-	-	-	-	-	-	3,894,062
18		**Federal Transmission Replacement**	**Replacements**	400,706	412,062	424,002	436,555	449,753	463,629	478,218	289,318	179,705	179,705	6,109,975
19			Principal Accrual	-	-	-	-	-	-	-	-	-	-	-
20			Principal Accrual Reversal	-	-	-	-	-	-	-	-	-	-	-
21			**Federal Transmission Replacement Subtotal:**	400,706	412,062	424,002	436,555	449,753	463,629	478,218	289,318	179,705	179,705	6,109,975
22		**Make Whole Call**	**Discounts**	-	-	-	-	-	-	-	-	-	-	(25,278)
23			**Premiums**	-	-	-	-	-	-	-	-	-	-	50,631
24			**Make Whole Call Subtotal:**	-	-	-	-	-	-	-	-	-	-	25,353
25		**Bond Subtotal:**		400,706	412,062	424,002	436,555	449,753	463,629	478,218	289,318	179,705	179,705	10,029,315
26	**Grand Total:**			$400,706	$412,062	$424,002	$436,555	$449,753	$463,629	$478,218	$289,318	$179,705	$179,705	#########

TABLE 12-4
APPLICATION OF AMORTIZATION ($000S) (FY 2020)

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R
	Fiscal Year	Project	Debt Type	In Service	Bond Due Date	Initial Principal	Current Principal	Original Rate	Effective Rate	Refinance Type	Refinanced Date	Rolled Maturity Date	Roll Rate	Principal Paid	Premium	Discount	Accrual	Reversal
1	2018	Bonneville Power Administration	Bonneville Power Administration	9/30/1977	9/30/2022	33,702	7,377	7.210%	7.210%					6,956				
2		**FY 2018 Subtotal:**	**-**	**-**	**-**	**33,702**	**7,377**	**-**						**6,956**				
3	2019	Construction	-	10/31/2009	10/31/2018	23,000	23,000	3.719%	3.719%					23,000				
4	2019	Construction	-	11/30/2009	11/30/2018	15,000	15,000	3.533%	3.533%					15,000				
5	2019	Construction (AS)	-	11/30/2012	11/30/2018	9,750	9,750	1.109%	1.109%					9,750				
6	2019	Construction	-	12/31/2009	12/31/2018	13,000	13,000	4.069%	4.069%					13,000				
7	2019	Construction	-	1/16/2014	12/31/2018	33,000	33,000	1.943%	1.943%					33,000				
8	2019	Construction	-	1/16/2014	12/31/2018	30,000	30,000	1.943%	1.943%					30,000				
9	2019	Construction	-	1/16/2014	12/31/2018	31,000	31,000	1.943%	1.943%					31,000				
10	2019	Construction	-	1/16/2014	12/31/2018	48,000	48,000	1.943%	1.943%					48,000				
11	2019	Construction (AS)	-	6/30/2013	6/30/2019	5,000	5,000	1.962%	1.962%					5,000				
12	2019	Construction (AS)	-	8/31/2013	8/31/2019	3,000	3,000	2.279%	2.279%					3,000				
13	2019	Bonneville Power Administration	Bonneville Power Administration	9/30/1977	9/30/2022	33,702	421	7.210%	7.210%					421				
14	2019	Construction	-	8/31/1998	8/31/2028	112,300	112,300	5.850%	5.850%					23,845	3,751			
15		**FY 2019 Subtotal:**	**-**	**-**	**-**	**356,752**	**323,471**	**-**						**235,016**	**3,751**			
16	2020	Construction (AS)	-	10/31/2013	10/31/2019	7,800	7,800	2.039%	2.039%					7,800				
17	2020	Construction	-	10/31/2009	10/31/2019	43,000	43,000	3.842%	3.842%					43,000				
18	2020	Construction (AS)	-	1/31/2014	1/31/2020	3,250	3,250	2.183%	2.183%					3,250				
19	2020	Construction	-	1/31/2009	1/31/2020	50,000	50,000	3.830%	3.830%					50,000				
20	2020	Construction (AS)	-	4/30/2014	3/31/2020	2,600	2,600	1.976%	1.976%					2,600				
21	2020	Construction (AS)	-	5/31/2014	4/30/2020	1,300	1,300	2.075%	2.075%					1,300				
22	2020	Construction	-	7/31/2010	7/31/2020	50,000	50,000	3.118%	3.118%					50,000				
23	2020	Construction (AS)	-	7/31/2014	7/31/2020	1,950	1,950	2.234%	2.234%					1,950				
24	2020	Construction	-	7/31/2020	9/30/2020	118,000	45,466	1.600%	1.600%					45,466				
25	2020	Construction	-	8/31/1998	8/31/2028	112,300	88,455	5.850%	5.850%					400	50			
26		**FY 2020 Subtotal:**	**-**	**-**	**-**	**390,200**	**293,821**	**-**						**205,766**	**50**			
27	2021	Technology (T)	-	10/31/2015	9/30/2018	5,000	5,000	1.976%	2.137%	Global	9/30/2018	9/30/2021	2.137%	5,000				
28	2021	Construction (AS)	-	11/30/2014	11/30/2020	3,900	3,900	1.809%	1.809%					3,900				
29	2021	Construction (AS)	-	12/31/2014	12/31/2020	1,950	1,950	1.922%	1.922%					1,950				
30	2021	Construction (AS)	-	2/28/2015	2/28/2021	3,250	3,250	1.761%	1.761%					3,250				
31	2021	Technology (T)	-	2/28/2015	2/28/2021	23,000	23,000	1.761%	1.761%					23,000				
32	2021	Construction	-	3/31/2010	3/31/2021	15,000	15,000	4.188%	4.188%					15,000				
33	2021	Construction	-	4/30/2010	4/30/2021	22,000	22,000	4.094%	4.094%					22,000				
34	2021	Construction	-	5/31/2010	5/31/2021	22,000	22,000	3.694%	3.694%					22,000				
35	2021	Construction (AS)	-	5/31/2015	5/31/2021	3,900	3,900	1.898%	1.898%					3,900				
36	2021	Construction	-	6/30/2010	6/30/2021	22,000	22,000	3.374%	3.374%					22,000				
37	2021	Construction	-	8/31/1998	8/31/2028	112,300	88,055	5.850%	5.850%					67,899	8,228			
38		**FY 2021 Subtotal:**	**-**	**-**	**-**	**234,300**	**210,055**	**-**						**189,899**	**8,228**			
39	2022	Construction (AS)	-	10/31/2015	10/31/2021	5,200	5,200	1.942%	1.942%					5,200				
40	2022	Construction	-	1/31/2009	1/31/2022	20,000	20,000	4.200%	4.200%					20,000				
41	2022	Construction (AS)	-	2/29/2016	2/28/2022	5,000	5,000	1.631%	1.631%					5,000				
42	2022	Construction	-	4/30/2009	4/30/2022	35,000	35,000	4.253%	4.253%					35,000				
43	2022	Construction	-	5/31/2015	5/31/2022	11,000	11,000	2.103%	2.103%					11,000				
44	2022	Construction	-	5/31/2015	5/31/2022	14,000	14,000	2.103%	2.103%					14,000				
45	2022	Construction	-	7/31/2010	7/31/2022	30,000	30,000	3.372%	3.372%					30,000				
46	2022	Construction	-	8/31/2010	8/31/2022	20,000	20,000	3.029%	3.029%					20,000				
47	2022	Construction	-	8/31/1998	8/31/2028	106,500	106,500	5.850%	5.850%					36,451	4,178			
48	2022	Construction	-	8/31/1998	8/31/2028	112,300	20,156	5.850%	5.850%					20,156	2,310			
49		**FY 2022 Subtotal:**	**-**	**-**	**-**	**359,000**	**266,856**	**-**						**196,807**	**6,488**			

TABLE 12-4
APPLICATION OF AMORTIZATION ($000S) (FY 2020)

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R
	Fiscal Year	Project	Debt Type	In Service	Bond Due Date	Initial Principal	Current Principal	Original Rate	Effective Rate	Refinance Type	Refinanced Date	Rolled Maturity Date	Roll Rate	Principal Paid	Premium	Discount	Accrual	Reversal
50	2023	Construction	-	12/31/2014	12/31/2022	16,000	16,000	2.274%	2.274%					16,000				
51	2023	Construction	-	12/31/2014	12/31/2022	4,000	4,000	2.274%	2.274%					4,000				
52	2023	Construction	-	4/30/2015	4/30/2023	3,000	3,000	2.163%	2.163%					3,000				
53	2023	Construction	-	4/30/2015	4/30/2023	12,000	12,000	2.163%	2.163%					12,000				
54	2023	Construction	-	6/30/2015	6/30/2023	11,000	11,000	2.443%	2.443%					11,000				
55	2023	Construction	-	6/30/2015	6/30/2023	8,000	8,000	2.443%	2.443%					8,000				
56	2023	Construction	-	9/30/2010	9/30/2023	46,000	46,000	3.161%	3.161%					46,000				
57	2023	Construction	-	8/31/1998	8/31/2028	106,500	70,049	5.850%	5.850%					70,049	7,377			
58	2023	Construction	-	6/30/2009	6/30/2039	35,000	35,000	5.192%	5.192%					25,720	1,874			
59		**FY 2023 Subtotal:**	**-**	**-**	**-**	**241,500**	**205,049**	**-**						**195,769**	**9,251**			
60	2024	Construction	-	10/31/2014	10/31/2023	20,000	20,000	2.521%	2.521%					20,000				
61	2024	Construction	-	11/30/2014	11/30/2023	20,000	20,000	2.361%	2.361%					20,000				
62	2024	Environment	-	1/31/2015	1/31/2024	4,000	4,000	1.908%	1.908%					4,000				
63	2024	Construction	-	3/31/2015	3/31/2024	17,000	17,000	2.200%	2.200%					17,000				
64	2024	Construction	-	3/31/2012	3/31/2024	45,000	45,000	1.976%	1.976%					45,000				
65	2024	Construction (AS)	-	9/30/2018	9/30/2024	10,400	7,800	2.560%	2.560%					7,800				
66	2024	Construction	-	2/28/2011	2/28/2038	55,000	55,000	4.935%	4.935%					55,000	2,442			
67	2024	Construction	-	6/30/2009	6/30/2039	35,000	9,280	5.192%	5.192%					9,280	687			
68	2024	Construction	-	9/30/2020	9/30/2048	123,000	138,000	4.930%	4.930%					2,462				
69		**FY 2024 Subtotal:**	**-**	**-**	**-**	**329,400**	**316,080**	**-**						**180,542**	**3,129**			
70	2025	Environment	-	2/28/2010	2/28/2025	10,000	10,000	4.279%	4.279%					10,000				
71	2025	Construction	-	5/31/2016	5/31/2025	20,000	20,000	2.101%	2.101%					20,000				
72	2025	Environment	-	5/31/2016	5/31/2025	5,000	5,000	2.101%	2.101%					5,000				
73	2025	Construction	-	7/31/2016	7/31/2025	48,000	48,000	1.713%	1.713%					48,000				
74	2025	Construction (AS)	-	8/31/2015	8/31/2025	11,000	11,000	2.598%	2.598%					11,000				
75	2025	Construction	-	8/31/2015	8/31/2025	14,000	14,000	2.598%	2.598%					14,000				
76	2025	Construction (AS)	-	9/30/2019	9/30/2025	11,050	12,350	3.270%	3.270%					12,350				
77	2025	Construction	-	9/30/2020	9/30/2048	123,000	135,538	4.930%	4.930%					76,327				
78		**FY 2025 Subtotal:**	**-**	**-**	**-**	**242,050**	**255,888**	**-**						**196,677**				
79	2026	Construction	-	10/31/2010	10/31/2025	45,000	45,000	3.494%	3.494%					45,000				
80	2026	Construction	-	2/28/2015	2/28/2026	19,000	19,000	2.416%	2.416%					19,000				
81	2026	Construction	-	3/31/2015	3/31/2026	15,000	15,000	2.370%	2.370%					15,000				
82	2026	Construction	-	3/31/2016	3/31/2026	6,000	6,000	2.177%	2.177%					6,000				
83	2026	Construction	-	3/31/2016	3/31/2026	12,000	12,000	2.177%	2.177%					12,000				
84	2026	Construction	-	7/31/2015	7/31/2026	18,000	18,000	2.707%	2.707%					18,000				
85	2026	Construction	-	7/31/2015	7/31/2026	10,000	10,000	2.707%	2.707%					10,000				
86	2026	Construction (AS)	-	9/30/2020	9/30/2026	7,150	11,700	3.750%	3.750%					11,700				
87	2026	Construction	-	8/31/2020	8/31/2047	118,000	78,000	4.900%	4.900%					6,455				
88	2026	Construction	-	9/30/2020	9/30/2048	123,000	59,211	4.930%	4.930%					59,211				
89		**FY 2026 Subtotal:**	**-**	**-**	**-**	**373,150**	**273,911**	**-**						**202,366**				
90	2027	Construction	-	12/31/2015	12/31/2026	9,000	9,000	2.762%	2.762%					9,000				
91	2027	Construction	-	12/31/2015	12/31/2026	29,000	29,000	2.762%	2.762%					29,000				
92	2027	Construction	-	1/31/2016	1/31/2027	13,000	13,000	2.352%	2.352%					13,000				
93	2027	Construction	-	2/29/2016	2/28/2027	13,000	13,000	2.236%	2.236%					13,000				
94	2027	Construction	-	5/3/2012	5/31/2027	17,000	17,000	2.087%	2.087%					17,000				
95	2027	Environment	-	5/3/2012	5/31/2027	13,000	13,000	2.087%	2.087%					13,000				
96	2027	Environment	-	10/31/2015	9/30/2027	5,000	5,000	1.976%	1.976%					5,000				
97	2027	Construction	-	4/30/2011	4/30/2039	40,000	40,000	4.794%	4.794%					30,008	1,034			
98	2027	Construction	-	8/31/2020	8/31/2047	118,000	71,545	4.900%	4.900%					71,545				
99		**FY 2027 Subtotal:**	**-**	**-**	**-**	**257,000**	**210,545**	**-**						**200,553**	**1,034**			

TABLE 12-4
APPLICATION OF AMORTIZATION ($000S) (FY 2020)

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R
	Fiscal Year	**Project**	**Debt Type**	**In Service**	**Bond Due Date**	**Initial Principal**	**Current Principal**	**Original Rate**	**Effective Rate**	**Refinance Type**	**Refinanced Date**	**Rolled Maturity Date**	**Roll Rate**	**Principal Paid**	**Premium**	**Discount**	**Accrual**	**Reversal**
100	2028	Construction	-	1/31/2010	1/31/2019	30,000	30,000	3.714%	3.788%	Global	1/31/2019	1/31/2028	3.788%	30,000				
101	2028	Construction	-	7/31/2009	7/31/2019	46,940	46,940	4.026%	3.788%	Global	7/31/2019	7/31/2028	3.788%	46,940				
102	2028	Construction	-	9/30/2009	9/30/2019	35,000	35,000	3.699%	3.788%	Global	9/30/2019	9/30/2028	3.788%	35,000				
103	2028	Environment	-	11/20/2013	11/30/2027	5,000	5,000	3.967%	3.967%					5,000				
104	2028	Construction	-	9/30/2014	4/30/2028	17,000	17,000	2.075%	2.075%					17,000				
105	2028	Construction	-	9/30/2014	9/30/2028	3,000	3,000	3.094%	3.094%					3,000				
106	2028	Construction	-	8/2/2011	8/31/2035	40,000	40,000	4.446%	4.446%					9,941	301			
107	2028	Environment	-	9/30/2020	9/30/2035	8,000	7,000	4.470%	4.470%					7,000				
108	2028	Construction	-	12/31/2013	12/31/2035	10,000	10,000	4.472%	4.472%					10,000	257			
109	2028	Construction	-	4/30/2011	4/30/2039	40,000	9,992	4.794%	4.794%					9,992	354			
110	2028	Construction	-	6/22/2011	6/30/2040	25,000	25,000	4.775%	4.775%					25,000	844			
111		**FY 2028 Subtotal:**	**-**	**-**	**-**	**259,940**	**228,932**	**-**						**198,874**	**1,756**			
112	2029	Environment	-	10/31/2013	10/31/2028	6,000	6,000	3.880%	3.880%					6,000				
113	2029	Environment	-	1/31/2014	1/31/2029	3,000	3,000	3.896%	3.896%					3,000				
114	2029	Environment	-	7/31/2014	7/31/2029	3,000	3,000	2.234%	2.234%					3,000				
115	2029	Construction	-	8/2/2011	8/31/2029	50,000	50,000	4.238%	4.238%					50,000				
116	2029	Construction	-	8/2/2011	8/31/2033	40,000	40,000	4.386%	4.386%					14,164	462			
117	2029	Construction	-	8/2/2011	8/31/2035	40,000	40,000	4.446%	4.446%					40,000	1,366			
118	2029	Construction	-	8/2/2011	8/31/2035	40,000	30,059	4.446%	4.446%					30,059	1,027			
119	2029	Construction	-	11/20/2013	6/30/2036	36,000	36,000	4.397%	4.397%					36,000	1,001			
120		**FY 2029 Subtotal:**	**-**	**-**	**-**	**218,000**	**208,059**	**-**						**182,222**	**3,856**			
121	2030	Construction	-	11/20/2013	10/31/2029	55,000	55,000	4.093%	4.093%					55,000				
122	2030	Construction	-	3/31/2015	3/31/2030	3,000	3,000	2.626%	2.626%					3,000				
123	2030	Construction	-	9/30/2015	9/30/2030	15,000	15,000	2.905%	2.905%					15,000				
124	2030	Construction	-	8/2/2011	8/31/2032	98,900	98,900	4.355%	4.355%					59,872	1,440			
125	2030	Construction	-	8/2/2011	8/31/2033	40,000	25,836	4.386%	4.386%					25,836	775			
126	2030	Construction	-	11/30/2013	11/30/2035	15,000	15,000	4.365%	4.365%					15,000	390			
127	2030	Construction	-	1/31/2014	1/31/2043	15,000	15,000	4.380%	4.380%					14,877		123		
128		**FY 2030 Subtotal:**	**-**	**-**	**-**	**241,900**	**227,736**	**-**						**188,585**	**2,604**	**123**		
129	2031	Construction	-	11/20/2013	1/31/2031	30,000	30,000	4.162%	4.162%					30,000				
130	2031	Construction	-	11/20/2013	2/28/2031	15,000	15,000	4.166%	4.166%					15,000				
131	2031	Construction	-	11/20/2013	3/31/2031	18,000	18,000	4.171%	4.171%					18,000				
132	2031	Construction	-	8/2/2011	8/31/2032	98,900	39,028	4.355%	4.355%					39,028	607			
133	2031	Construction	-	11/20/2013	4/30/2034	28,000	28,000	4.311%	4.311%					28,000	674			
134	2031	Construction	-	11/20/2013	8/31/2034	6,000	6,000	4.324%	4.324%					6,000	168			
135	2031	Construction	-	11/20/2013	5/31/2035	20,000	20,000	4.354%	4.354%					20,000	569			
136	2031	Construction	-	10/31/2013	10/31/2035	64,000	64,000	4.222%	4.222%					36,559	771			
137		**FY 2031 Subtotal:**	**-**	**-**	**-**	**279,900**	**220,028**	**-**						**192,587**	**2,789**			
138	2032	Construction	-	7/31/2014	4/30/2032	9,000	9,000	2.075%	2.075%					9,000				
139	2032	Construction	-	8/2/2011	8/31/2034	40,000	40,000	4.416%	4.416%					40,000	1,020			
140	2032	Construction	-	9/30/2013	9/30/2034	9,000	9,000	4.214%	4.214%					9,000	188			
141	2032	Construction	-	8/2/2011	8/31/2035	45,000	45,000	4.446%	4.446%					45,000	1,437			
142	2032	Construction	-	10/31/2013	10/31/2035	64,000	27,441	4.222%	4.222%					27,441	571			
143	2032	Construction	-	1/31/2011	1/31/2036	50,000	50,000	4.952%	4.952%					50,000	2,533			
144	2032	Construction	-	6/22/2011	6/30/2036	50,000	50,000	4.629%	4.629%					6,661	287			
145		**FY 2032 Subtotal:**	**-**	**-**	**-**	**267,000**	**230,441**	**-**						**187,102**	**6,037**			

TABLE 12-4
APPLICATION OF AMORTIZATION ($000S) (FY 2020)

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R
	Fiscal Year	Project	Debt Type	In Service	Bond Due Date	Initial Principal	Current Principal	Original Rate	Effective Rate	Refinance Type	Refinanced Date	Rolled Maturity Date	Roll Rate	Principal Paid	Premium	Discount	Accrual	Reversal
146	2033	Construction	-	6/30/2014	11/30/2032	21,000	21,000	2.087%	2.087%					21,000				
147	2033	Environment	-	9/30/2018	9/30/2033	7,000	7,000	0.920%	0.920%					7,000				
148	2033	Construction	-	10/31/2015	10/31/2034	2,000	2,000	3.198%	3.198%					1,996		4		
149	2033	Construction	-	6/22/2011	6/30/2036	50,000	43,339	4.629%	4.629%					43,339	1,659			
150	2033	Construction	-	7/31/2017	7/31/2041	19,000	19,000	3.164%	3.164%					17,803		1,197		
151	2033	Construction	-	9/30/2017	9/30/2041	17,000	17,000	3.156%	3.156%					2,141		145		
152	2033	Construction	-	7/31/2017	7/31/2042	14,000	14,000	3.181%	3.181%					12,935		1,065		
153	2033	Construction	-	7/31/2017	7/31/2043	23,000	23,000	3.198%	3.198%					20,937		2,063		
154	2033	Construction	-	9/30/2017	9/30/2043	14,000	14,000	3.193%	3.193%					12,739		1,261		
155	2033	Construction	-	7/31/2017	7/31/2044	17,000	17,000	3.215%	3.215%					15,353		1,647		
156	2033	Construction	-	9/30/2017	9/30/2044	9,000	9,000	3.209%	3.209%					8,124		876		
157	2033	Construction	-	7/31/2017	7/31/2045	27,000	27,000	3.230%	3.230%					24,191		2,809		
158	2033	Construction	-	9/30/2017	9/30/2047	10,000	10,000	3.247%	3.247%					8,812		1,188		
159		**FY 2033 Subtotal:**	**-**	**-**	**-**	**230,000**	**223,339**	**-**						**196,370**	**1,659**	**12,255**		
160	2034	Construction	-	4/30/2014	2/28/2034	45,000	45,000	1.877%	1.877%					45,000				
161	2034	Construction	-	4/30/2014	3/31/2034	45,000	45,000	1.976%	1.976%					45,000				
162	2034	Construction	-	10/31/2015	6/30/2034	21,000	21,000	2.155%	2.155%					21,000				
163	2034	Construction	-	10/31/2015	8/31/2034	19,000	19,000	1.877%	1.877%					19,000				
164	2034	Environment	-	9/30/2019	9/30/2034	7,000	7,000	1.380%	1.380%					7,000				
165	2034	Construction	-	8/31/2017	8/31/2037	30,000	30,000	2.902%	2.902%					14,141		262		
166	2034	Construction	-	8/31/2017	8/31/2038	7,000	7,000	2.929%	2.929%					6,813		187		
167	2034	Construction	-	8/31/2017	8/31/2041	13,000	13,000	2.991%	2.991%					12,218		782		
168	2034	Construction	-	9/30/2017	9/30/2041	17,000	14,714	3.156%	3.156%					13,976		738		
169	2034	Construction	-	8/31/2017	8/31/2043	10,000	10,000	3.024%	3.024%					9,130		870		
170	2034	Construction	-	8/31/2017	8/31/2046	22,000	22,000	3.066%	3.066%					19,421		2,579		
171	2034	Construction	-	8/31/2017	8/31/2047	18,000	18,000	3.076%	3.076%					15,748		2,252		
172		**FY 2034 Subtotal:**	**-**	**-**	**-**	**254,000**	**251,714**	**-**						**228,446**		**7,670**		
173	2035	Construction	-	8/31/2014	7/31/2035	10,000	10,000	2.234%	2.234%					10,000				
174	2035	Construction	-	8/31/2014	8/31/2035	15,000	15,000	1.877%	1.877%					15,000				
175	2035	Construction	-	5/31/2014	5/31/2036	29,000	29,000	2.087%	2.087%					28,667		333		
176	2035	Construction	-	8/31/2017	8/31/2037	30,000	15,598	2.902%	2.902%					15,436		161		
177	2035	Construction	-	4/30/2014	10/31/2039	45,000	45,000	2.075%	2.075%					42,153		2,847		
178	2035	Construction	-	1/27/2012	1/31/2040	30,000	30,000	2.234%	2.234%					28,111		1,889		
179	2035	Construction	-	8/31/2017	8/31/2043	10,000		3.024%	3.024%									
180	2035	Construction	-	7/31/2020	7/31/2046	118,000	88,534	1.600%	1.600%					63,320				
181		**FY 2035 Subtotal:**	**-**	**-**	**-**	**287,000**	**233,132**	**-**						**202,688**		**5,230**		
182	2036	Construction	-	7/31/2019	7/31/2043	82,000	121,000	1.380%	1.380%					120,301				
183	2036	Construction	-	7/31/2020	7/31/2046	118,000	25,214	1.600%	1.600%					25,214				
184	2036	Construction	-	8/31/2020	8/31/2047	118,000	56,000	1.600%	1.600%					56,000				
185		**FY 2036 Subtotal:**	**-**	**-**	**-**	**318,000**	**202,214**	**-**						**201,515**				
186	2037	Construction	-	7/31/2019	7/31/2043	82,000	699	1.380%	1.380%					699				
187	2037	Construction	-	8/31/2019	8/31/2044	81,000	118,000	1.380%	1.380%					118,000				
188	2037	Construction	-	9/30/2019	9/30/2045	81,000	117,000	1.380%	1.380%					105,540				
189		**FY 2037 Subtotal:**	**-**	**-**	**-**	**244,000**	**235,699**	**-**						**224,239**				
190	2038	Construction	-	8/31/2018	8/31/2041	160,000	52,000	0.920%	0.920%					52,000				
191	2038	Construction	-	9/30/2018	9/30/2042	76,000	25,000	0.920%	0.920%					25,000				
192	2038	Construction	-	9/30/2019	9/30/2045	81,000	11,460	1.380%	1.380%					11,460				
193	2038	Replacements	-	3/31/2021	3/31/2056	179,705	179,705	5.000%	5.000%					150,709				
194		**FY 2038 Subtotal:**	**-**	**-**	**-**	**496,705**	**268,165**	**-**						**239,170**				
195	2039	Replacements	-	3/31/2021	3/31/2056	179,705	28,996	5.000%	5.000%					28,996				
196	2039	Replacements	-	3/31/2022	3/31/2057	179,705	179,705	5.000%	5.000%					179,705				
197	2039	Replacements	-	3/31/2023	3/31/2058	179,705	179,705	5.000%	5.000%					30,609				
198		**FY 2039 Subtotal:**	**-**	**-**	**-**	**539,115**	**388,406**	**-**						**239,310**				
199	2040	Replacements	-	3/31/2023	3/31/2058	179,705	149,096	5.000%	5.000%					149,096				
200	2040	Replacements	-	3/31/2024	3/31/2059	179,705	179,705	5.000%	5.000%					99,291				
201		**FY 2040 Subtotal:**	**-**	**-**	**-**	**359,410**	**328,801**	**-**						**248,387**				

TABLE 12-4
APPLICATION OF AMORTIZATION ($000S) (FY 2020)

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R
	Fiscal Year	Project	Debt Type	In Service	Bond Due Date	Initial Principal	Current Principal	Original Rate	Effective Rate	Refinance Type	Refinanced Date	Rolled Maturity Date	Roll Rate	Principal Paid	Premium	Discount	Accrual	Reversal
202	2041	Replacements	-	3/31/2024	3/31/2059	179,705	80,414	5.000%	5.000%					80,414				
203	2041	Replacements	-	3/31/2025	3/31/2060	179,705	179,705	5.000%	5.000%					179,705				
204	2041	Replacements	-	3/31/2026	3/31/2061	179,705	179,705	5.000%	5.000%					89,662				
205		**FY 2041 Subtotal:**	**-**	**-**	**-**	**539,115**	**439,824**	**-**						**349,782**				
206	2042	Replacements	-	3/31/2026	3/31/2061	179,705	90,043	5.000%	5.000%					90,043				
207	2042	Replacements	-	3/31/2027	3/31/2062	179,705	179,705	5.000%	5.000%					179,705				
208	2042	Replacements	-	3/31/2028	3/31/2063	179,705	179,705	5.000%	5.000%					1,775				
209		**FY 2042 Subtotal:**	**-**	**-**	**-**	**539,115**	**449,453**	**-**						**271,523**				
210	2043	Replacements	-	3/31/2028	3/31/2063	179,705	177,930	5.000%	5.000%					177,930				
211	2043	Replacements	-	3/31/2029	3/31/2064	179,705	179,705	5.000%	5.000%					179,705				
212	2043	Replacements	-	3/31/2030	3/31/2065	179,705	179,705	5.000%	5.000%					9,785				
213		**FY 2043 Subtotal:**	**-**	**-**	**-**	**539,115**	**537,340**	**-**						**367,421**				
214	2044	Replacements	-	3/31/2030	3/31/2065	179,705	169,920	5.000%	5.000%					169,920				
215	2044	Replacements	-	3/31/2031	3/31/2066	179,705	179,705	5.000%	5.000%					179,705				
216	2044	Replacements	-	3/31/2032	3/31/2067	179,705	179,705	5.000%	5.000%					29,661				
217		**FY 2044 Subtotal:**	**-**	**-**	**-**	**539,115**	**529,330**	**-**						**379,286**				
218	2045	Replacements	-	3/31/2032	3/31/2067	179,705	150,044	5.000%	5.000%					150,044				
219	2045	Replacements	-	3/31/2033	3/31/2068	179,705	179,705	5.000%	5.000%					179,705				
220	2045	Replacements	-	3/31/2034	3/31/2069	179,705	179,705	5.000%	5.000%					60,156				
221		**FY 2045 Subtotal:**	**-**	**-**	**-**	**539,115**	**509,454**	**-**						**389,905**				
222	2046	Replacements	-	3/31/2034	3/31/2069	179,705	119,549	5.000%	5.000%					119,549				
223	2046	Replacements	-	3/31/2035	3/31/2070	179,705	179,705	5.000%	5.000%					179,705				
224	2046	Replacements	-	3/31/2036	3/31/2071	179,705	179,705	5.000%	5.000%					101,451				
225		**FY 2046 Subtotal:**	**-**	**-**	**-**	**539,115**	**478,960**	**-**						**400,706**				
226	2047	Replacements	-	3/31/2036	3/31/2071	179,705	78,254	5.000%	5.000%					78,254				
227	2047	Replacements	-	3/31/2037	3/31/2072	179,705	179,705	5.000%	5.000%					179,705				
228	2047	Replacements	-	3/31/2038	3/31/2073	179,705	179,705	5.000%	5.000%					154,103				
229		**FY 2047 Subtotal:**	**-**	**-**	**-**	**539,115**	**437,664**	**-**						**412,062**				
230	2048	Replacements	-	3/31/2038	3/31/2073	179,705	25,602	5.000%	5.000%					25,602				
231	2048	Replacements	-	3/31/2039	3/31/2074	179,705	179,705	5.000%	5.000%					179,705				
232	2048	Replacements	-	3/31/2040	3/31/2075	179,705	179,705	5.000%	5.000%					179,705				
233	2048	Replacements	-	3/31/2041	3/31/2076	179,705	179,705	5.000%	5.000%					38,989				
234		**FY 2048 Subtotal:**	**-**	**-**	**-**	**718,821**	**564,718**	**-**						**424,002**				
235	2049	Replacements	-	3/31/2041	3/31/2076	179,705	140,716	5.000%	5.000%					140,716				
236	2049	Replacements	-	3/31/2042	3/31/2077	179,705	179,705	5.000%	5.000%					179,705				
237	2049	Replacements	-	3/31/2043	3/31/2078	179,705	179,705	5.000%	5.000%					116,133				
238		**FY 2049 Subtotal:**	**-**	**-**	**-**	**539,115**	**500,126**	**-**						**436,555**				
239	2050	Replacements	-	3/31/2043	3/31/2078	179,705	63,572	5.000%	5.000%					63,572				
240	2050	Replacements	-	3/31/2044	3/31/2079	179,705	179,705	5.000%	5.000%					179,705				
241	2050	Replacements	-	3/31/2045	3/31/2080	179,705	179,705	5.000%	5.000%					179,705				
242	2050	Replacements	-	3/31/2046	3/31/2081	179,705	179,705	5.000%	5.000%					26,771				
243		**FY 2050 Subtotal:**	**-**	**-**	**-**	**718,821**	**602,687**	**-**						**449,753**				
244	2051	Replacements	-	3/31/2046	3/31/2081	179,705	152,934	5.000%	5.000%					152,934				
245	2051	Replacements	-	3/31/2047	3/31/2082	179,705	179,705	5.000%	5.000%					179,705				
246	2051	Replacements	-	3/31/2048	3/31/2083	179,705	179,705	5.000%	5.000%					130,989				
247		**FY 2051 Subtotal:**	**-**	**-**	**-**	**539,115**	**512,345**	**-**						**463,629**				

TABLE 12-4
APPLICATION OF AMORTIZATION ($000S) (FY 2020)

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R
	Fiscal Year	Project	Debt Type	In Service	Bond Due Date	Initial Principal	Current Principal	Original Rate	Effective Rate	Refinance Type	Refinanced Date	Rolled Maturity Date	Roll Rate	Principal Paid	Premium	Discount	Accrual	Reversal
248	2052	Replacements	-	3/31/2048	3/31/2083	179,705	48,716	5.000%	5.000%					48,716				
249	2052	Replacements	-	3/31/2049	3/31/2084	179,705	179,705	5.000%	5.000%					179,705				
250	2052	Replacements	-	3/31/2050	3/31/2085	179,705	179,705	5.000%	5.000%					179,705				
251	2052	Replacements	-	3/31/2051	3/31/2086	179,705	179,705	5.000%	5.000%					70,092				
252		**FY 2052 Subtotal:**	**-**	**-**	**-**	**718,821**	**587,831**	**-**						**478,218**				
253	2053	Replacements	-	3/31/2051	3/31/2086	179,705	109,613	5.000%	5.000%					109,613				
254	2053	Replacements	-	3/31/2052	3/31/2087	179,705	179,705	5.000%	5.000%					179,705				
255		**FY 2053 Subtotal:**	**-**	**-**	**-**	**359,410**	**289,318**	**-**						**289,318**				
256	2054	Replacements	-	3/31/2053	3/31/2088	179,705	179,705	5.000%	5.000%					179,705				
257		**FY 2054 Subtotal:**	**-**	**-**	**-**	**179,705**	**179,705**	**-**						**179,705**				
258	2055	Replacements	-	3/31/2054	3/31/2089	179,705	179,705	5.000%	5.000%					179,705				
259		**FY 2055 Subtotal:**	**-**	**-**	**-**	**179,705**	**179,705**	**-**						**179,705**				
260	**Grand Total**					**$14,539,346**	**$12,408,182**	**-**						**$10,011,414**	**$50,631**	**$25,278**		

TABLE 12-5
SUMMARY OF INTEREST ($000S) (FY 2021)

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S
1	**Obligation Type**	**General Project**	**Specific Project**	**2018**	**2019**	**2020**	**2021**	**2022**	**2023**	**2024**	**2025**	**2026**	**2027**	**2028**	**2029**	**2030**	**2031**	**2032**	**2033**
2	**Appropriation**	**Bonneville Power Administration**	Bonneville Power Administration	532	30	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3			**Bonneville Power Administration Subtotal:**	532	30	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4		**Appropriation Subtotal:**		532	30	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5	**Treasury**	**BPA Borrowing**	(Less Interest Income)	(282)	(1,029)	(1,023)	(1,137)	(1,135)	(1,142)	(1,062)	(1,126)	(1,154)	(1,153)	(1,161)	(1,100)	(1,126)	(1,151)	(1,144)	(1,170)
6			Construction	102,701	101,568	100,531	109,923	134,697	125,858	117,530	112,460	105,748	98,799	93,675	83,817	73,913	64,190	56,915	47,777
7			Interest Accrual	18,630	17,075	16,447	16,968	15,527	14,680	13,728	13,365	12,548	12,182	12,035	11,478	9,805	9,079	8,554	6,925
8			Interest Accrual Reversal	(18,590)	(18,630)	(17,075)	(16,447)	(16,968)	(15,527)	(14,680)	(13,728)	(13,365)	(12,548)	(12,182)	(12,035)	(11,478)	(9,805)	(9,079)	(8,554)
9			Construction (AS)	1,333	1,478	1,521	1,666	2,440	2,349	2,349	2,149	1,460	799	-	-	-	-	-	-
10			Interest Accrual	298	232	136	73	24	24	24	-	-	-	-	-	-	-	-	-
11			Interest Accrual Reversal	(298)	(298)	(232)	(136)	(73)	(24)	(24)	(24)	-	-	-	-	-	-	-	-
12			Environment	1,593	1,658	1,754	2,067	3,110	3,110	3,072	2,820	2,502	2,502	2,033	1,759	1,517	1,517	1,517	1,062
13			Interest Accrual	368	368	368	368	368	368	356	284	284	193	127	-	-	-	-	-
14			Interest Accrual Reversal	(368)	(368)	(368)	(368)	(368)	(368)	(368)	(356)	(284)	(284)	(193)	(127)	-	-	-	-
15			Technology (T)	503	511	511	308	-	-	-	-	-	-	-	-	-	-	-	-
16			Interest Accrual	34	34	34	-	-	-	-	-	-	-	-	-	-	-	-	-
17			Interest Accrual Reversal	(34)	(34)	(34)	(34)	-	-	-	-	-	-	-	-	-	-	-	-
18			**BPA Borrowing Subtotal:**	105,888	102,565	102,570	113,251	137,623	129,327	120,923	115,844	107,740	100,489	94,334	83,792	72,631	63,829	56,764	46,039
19		**Federal Transmission Replacement**	Replacements	-	-	-	-	4,206	12,617	21,029	29,441	37,852	46,264	54,675	63,087	71,499	79,910	88,322	96,733
20			**Federal Transmission Replacement Subtotal:**	-	-	-	-	4,206	12,617	21,029	29,441	37,852	46,264	54,675	63,087	71,499	79,910	88,322	96,733
21		**Treasury Subtotal:**		105,888	102,565	102,570	113,251	141,828	141,944	141,952	145,284	145,592	146,753	149,009	146,878	144,130	143,739	145,085	142,773
22	**Grand Total:**			**$106,420**	**$102,595**	**$102,570**	**$113,251**	**$141,828**	**$141,944**	**$141,952**	**$145,284**	**$145,592**	**$146,753**	**$149,009**	**$146,878**	**$144,130**	**$143,739**	**$145,085**	**$142,773**

TABLE 12-5
SUMMARY OF INTEREST ($000S) (FY 2021)

	A	B	C	T	U	V	W	X	Y	Z	AA	AB	AC	AD	AE	AF	AG	AH	AI
1	**Obligation Type**	**General Project**	**Specific Project**	**2034**	**2035**	**2036**	**2037**	**2038**	**2039**	**2040**	**2041**	**2042**	**2043**	**2044**	**2045**	**2046**	**2047**	**2048**	**2049**
2	**Appropriation**	**Bonneville Power Administration**	Bonneville Power Administration	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3			**Bonneville Power Administration Subtotal:**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4		**Appropriation Subtotal:**		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5	**Treasury**	**BPA Borrowing**	(Less Interest Income)	(1,309)	(1,221)	(1,244)	(1,357)	(1,430)	(1,418)	(1,433)	(1,831)	(1,507)	(1,884)	(1,917)	(1,945)	(1,972)	(2,001)	(2,032)	(2,064)
6			Construction	39,852	31,507	21,452	12,913	6,208	2,161	187	-	-	-	-	-	-	-	-	-
7			Interest Accrual	5,747	4,098	1,687	875	179	12	-	-	-	-	-	-	-	-	-	-
8			Interest Accrual Reversal	(6,925)	(5,747)	(4,098)	(1,687)	(875)	(179)	(12)	-	-	-	-	-	-	-	-	-
9			Construction (AS)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
10			Interest Accrual	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11			Interest Accrual Reversal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
12			Environment	319	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
13			Interest Accrual	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
14			Interest Accrual Reversal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
15			Technology (T)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
16			Interest Accrual	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
17			Interest Accrual Reversal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
18			**BPA Borrowing Subtotal:**	37,685	28,636	17,797	10,744	4,082	575	(1,258)	(1,831)	(1,507)	(1,884)	(1,917)	(1,945)	(1,972)	(2,001)	(2,032)	(2,064)
19		**Federal Transmission Replacement**	Replacements	105,145	113,556	121,968	130,380	138,791	147,203	149,622	142,410	133,483	123,985	111,623	98,551	84,789	70,309	55,075	39,046
20			**Federal Transmission Replacement Subtotal:**	105,145	113,556	121,968	130,380	138,791	147,203	149,622	142,410	133,483	123,985	111,623	98,551	84,789	70,309	55,075	39,046
21		**Treasury Subtotal:**		142,830	142,193	139,765	141,124	142,873	147,778	148,363	140,579	131,976	122,101	109,706	96,606	82,817	68,308	53,043	36,982
22	**Grand Total:**			**$142,830**	**$142,193**	**$139,765**	**$141,124**	**$142,873**	**$147,778**	**$148,363**	**$140,579**	**$131,976**	**$122,101**	**$109,706**	**$96,606**	**$82,817**	**$68,308**	**$53,043**	**$36,982**

TABLE 12-5
SUMMARY OF INTEREST ($000S) (FY 2021)

	A	B	C	AJ	AK	AL	AM	AN	AO	AP	AQ
1	Obligation Type	General Project	Specific Project	2050	2051	2052	2053	2054	2055	2056	Total
2	Appropriation	Bonneville Power Administration	Bonneville Power Administration	-	-	-	-	-	-	-	562
3			**Bonneville Power Administration Subtotal:**	-	-	-	-	-	-	-	562
4		**Appropriation Subtotal:**		-	-	-	-	-	-	-	562
5	Treasury	BPA Borrowing	(Less Interest Income)	(2,098)	(2,133)	(2,143)	(2,143)	(2,143)	(2,143)	(2,143)	(58,610)
6			Construction	-	-	-	-	-	-	-	1,644,381
7			Interest Accrual	-	-	-	-	-	-	-	221,624
8			Interest Accrual Reversal	-	-	-	-	-	-	-	(240,214)
9			Construction (AS)	-	-	-	-	-	-	-	17,543
10			Interest Accrual	-	-	-	-	-	-	-	811
11			Interest Accrual Reversal	-	-	-	-	-	-	-	(1,109)
12			Environment	-	-	-	-	-	-	-	33,912
13			Interest Accrual	-	-	-	-	-	-	-	3,454
14			Interest Accrual Reversal	-	-	-	-	-	-	-	(3,822)
15			Technology (T)	-	-	-	-	-	-	-	1,832
16			Interest Accrual	-	-	-	-	-	-	-	103
17			Interest Accrual Reversal	-	-	-	-	-	-	-	(137)
18			**BPA Borrowing Subtotal:**	(2,098)	(2,133)	(2,143)	(2,143)	(2,143)	(2,143)	(2,143)	1,619,769
19		Federal Transmission Replacement	Replacements	22,182	10,974	8,412	8,412	8,412	8,412	8,412	2,446,786
20			**Federal Transmission Replacement Subtotal:**	22,182	10,974	8,412	8,412	8,412	8,412	8,412	2,446,786
21		**Treasury Subtotal:**		20,085	8,841	6,268	6,268	6,268	6,268	6,268	4,066,554
22	**Grand Total:**			**$20,085**	**$8,841**	**$6,268**	**$6,268**	**$6,268**	**$6,268**	**$6,268**	**$4,067,116**

TABLE 12-6
INTEREST CALCULATION SUMMARY ($000S) (FY 2021)

	A	B	C	D	E	F	G	H	I
1	Fiscal Year	Project	Type	Current Principal	Rate	Interest	Premium	Net Interest Accrual	Total
2	2018	Bonneville Power Administration	Historical	7,377	7.210%	532	-	-	532
3	2018	Construction	Historical	2,876,640	3.570%	102,701	-	-	102,701
4	2018	Construction	New	52,000	-	-	-	40	40
5	2018	Construction (AS)	Historical	68,850	1.936%	1,333	-	-	1,333
6	2018	Environment	Historical	54,000	2.950%	1,593	-	-	1,593
7	2018	Technology (T)	Historical	28,000	1.795%	503	-	-	503
8	2018	Float	Historical	-	-	(282)	-	-	(282)
9	**FY 2018**	**Subtotal:**		**3,086,867**		**106,379**	**-**	**40**	**106,420**
10	2019	Bonneville Power Administration	Historical	421	7.210%	30	-	-	30
11	2019	Construction	Historical	2,953,640	3.439%	101,568	-	(1,968)	99,600
12	2019	Construction	New	239,000	-	-	-	413	413
13	2019	Construction (AS)	Historical	76,650	1.929%	1,478	-	(67)	1,412
14	2019	Environment	Historical	61,000	2.717%	1,658	-	-	1,658
15	2019	Technology (T)	Historical	28,000	1.824%	511	-	-	511
16	2019	Float	Historical	-	-	(1,029)	-	-	(1,029)
17	**FY 2019**	**Subtotal:**		**3,358,711**		**104,217**	**-**	**(1,621)**	**102,595**
18	2020	Construction	Historical	3,092,795	3.247%	100,410	-	(1,261)	99,149
19	2020	Construction	New	268,000	0.045%	121	-	633	754
20	2020	Construction (AS)	Historical	71,250	2.135%	1,521	-	(96)	1,425
21	2020	Environment	Historical	68,000	2.580%	1,754	-	-	1,754
22	2020	Technology (T)	Historical	28,000	1.824%	511	-	-	511
23	2020	Float	Historical	-	-	(1,023)	-	-	(1,023)
24	**FY 2020**	**Subtotal:**		**3,528,045**		**103,294**	**-**	**(724)**	**102,570**
25	2021	Construction	Historical	3,309,929	3.313%	109,655	-	(835)	108,820
26	2021	Construction	New	346,000	0.077%	268	-	1,355	1,623
27	2021	Construction (AS)	Historical	66,050	2.522%	1,666	-	(63)	1,603
28	2021	Environment	Historical	75,000	2.756%	2,067	-	-	2,067
29	2021	Technology (T)	Historical	28,000	1.101%	308	-	(34)	274
30	2021	Float	Historical	-	-	(1,137)	-	-	(1,137)
31	**FY 2021**	**Subtotal:**		**3,824,979**		**112,827**	**-**	**424**	**113,251**
32	2022	Construction	Historical	3,822,255	3.524%	134,697	-	(1,441)	133,256
33	2022	Construction (AS)	Historical	79,850	3.055%	2,440	-	(49)	2,391
34	2022	Environment	Historical	98,000	3.174%	3,110	-	-	3,110
35	2022	Replacements	New	165,909	2.535%	4,206	-	-	4,206
36	2022	Float	Historical	-	-	(1,135)	-	-	(1,135)
37	**FY 2022**	**Subtotal:**		**4,166,014**		**143,318**	**-**	**(1,490)**	**141,828**
38	2023	Construction	Historical	3,633,574	3.464%	125,858	-	(847)	125,010
39	2023	Construction (AS)	Historical	69,650	3.372%	2,349	-	-	2,349
40	2023	Environment	Historical	98,000	3.174%	3,110	-	-	3,110
41	2023	Replacements	Historical	165,909	5.070%	8,412	-	-	8,412
42	2023	Replacements	New	165,909	2.535%	4,206	-	-	4,206
43	2023	Float	Historical	-	-	(1,142)	-	-	(1,142)
44	**FY 2023**	**Subtotal:**		**4,133,042**		**142,792**	**-**	**(847)**	**141,944**
45	2024	Construction	Historical	3,435,955	3.421%	117,530	-	(952)	116,578
46	2024	Construction (AS)	Historical	69,650	3.372%	2,349	-	-	2,349
47	2024	Environment	Historical	98,000	3.135%	3,072	-	(13)	3,059
48	2024	Replacements	Historical	331,818	5.070%	16,823	-	-	16,823
49	2024	Replacements	New	165,909	2.535%	4,206	-	-	4,206
50	2024	Float	Historical	-	-	(1,062)	-	-	(1,062)
51	**FY 2024**	**Subtotal:**		**4,101,332**		**142,917**	**-**	**(965)**	**141,952**

TABLE 12-6
INTEREST CALCULATION SUMMARY ($000S) (FY 2021)

	A	B	C	D	E	F	G	H	I
1	Fiscal Year	Project	Type	Current Principal	Rate	Interest	Premium	Net Interest Accrual	Total
52	2025	Construction	Historical	3,265,599	3.444%	112,460	-	(363)	112,097
53	2025	Construction (AS)	Historical	61,850	3.474%	2,149	-	(24)	2,125
54	2025	Environment	Historical	94,000	3.000%	2,820	-	(71)	2,749
55	2025	Replacements	Historical	497,727	5.070%	25,235	-	-	25,235
56	2025	Replacements	New	165,909	2.535%	4,206	-	-	4,206
57	2025	Float	Historical	-	-	(1,126)	-	-	(1,126)
58	**FY 2025**	**Subtotal:**		**4,085,085**		**145,743**	**-**	**(458)**	**145,284**
59	2026	Construction	Historical	3,102,518	3.408%	105,748	-	(816)	104,932
60	2026	Construction (AS)	Historical	38,500	3.792%	1,460	-	-	1,460
61	2026	Environment	Historical	79,000	3.167%	2,502	-	-	2,502
62	2026	Replacements	Historical	663,636	5.070%	33,646	-	-	33,646
63	2026	Replacements	New	165,909	2.535%	4,206	-	-	4,206
64	2026	Float	Historical	-	-	(1,154)	-	-	(1,154)
65	**FY 2026**	**Subtotal:**		**4,049,564**		**146,409**	**-**	**(816)**	**145,592**
66	2027	Construction	Historical	2,912,066	3.393%	98,799	-	(367)	98,433
67	2027	Construction (AS)	Historical	20,800	3.840%	799	-	-	799
68	2027	Environment	Historical	79,000	3.167%	2,502	-	(91)	2,411
69	2027	Replacements	Historical	829,545	5.070%	42,058	-	-	42,058
70	2027	Replacements	New	165,909	2.535%	4,206	-	-	4,206
71	2027	Float	Historical	-	-	(1,153)	-	-	(1,153)
72	**FY 2027**	**Subtotal:**		**4,007,320**		**147,211**	**-**	**(458)**	**146,753**
73	2028	Construction	Historical	2,743,040	3.415%	93,675	-	(146)	93,528
74	2028	Environment	Historical	61,000	3.333%	2,033	-	(66)	1,966
75	2028	Replacements	Historical	995,455	5.070%	50,470	-	-	50,470
76	2028	Replacements	New	165,909	2.535%	4,206	-	-	4,206
77	2028	Float	Historical	-	-	(1,161)	-	-	(1,161)
78	**FY 2028**	**Subtotal:**		**3,965,403**		**149,222**	**-**	**(213)**	**149,009**
79	2029	Construction	Historical	2,539,890	3.300%	83,817	-	(557)	83,260
80	2029	Environment	Historical	56,000	3.141%	1,759	-	(127)	1,632
81	2029	Replacements	Historical	1,161,364	5.070%	58,881	-	-	58,881
82	2029	Replacements	New	165,909	2.535%	4,206	-	-	4,206
83	2029	Float	Historical	-	-	(1,100)	-	-	(1,100)
84	**FY 2029**	**Subtotal:**		**3,923,163**		**147,563**	**-**	**(684)**	**146,878**
85	2030	Construction	Historical	2,356,569	3.136%	73,913	-	(1,673)	72,240
86	2030	Environment	Historical	44,000	3.448%	1,517	-	-	1,517
87	2030	Replacements	Historical	1,327,273	5.070%	67,293	-	-	67,293
88	2030	Replacements	New	165,909	2.535%	4,206	-	-	4,206
89	2030	Float	Historical	-	-	(1,126)	-	-	(1,126)
90	**FY 2030**	**Subtotal:**		**3,893,751**		**145,802**	**-**	**(1,673)**	**144,130**
91	2031	Construction	Historical	2,153,354	2.981%	64,190	-	(727)	63,463
92	2031	Environment	Historical	44,000	3.448%	1,517	-	-	1,517
93	2031	Replacements	Historical	1,493,182	5.070%	75,704	-	-	75,704
94	2031	Replacements	New	165,909	2.535%	4,206	-	-	4,206
95	2031	Float	Historical	-	-	(1,151)	-	-	(1,151)
96	**FY 2031**	**Subtotal:**		**3,856,445**		**144,466**	**-**	**(727)**	**143,739**
97	2032	Construction	Historical	1,946,818	2.924%	56,915	-	(524)	56,391
98	2032	Environment	Historical	44,000	3.448%	1,517	-	-	1,517
99	2032	Replacements	Historical	1,659,091	5.070%	84,116	-	-	84,116
100	2032	Replacements	New	165,909	2.535%	4,206	-	-	4,206
101	2032	Float	Historical	-	-	(1,144)	-	-	(1,144)
102	**FY 2032**	**Subtotal:**		**3,815,818**		**145,610**	**-**	**(524)**	**145,085**

TABLE 12-6
INTEREST CALCULATION SUMMARY ($000S) (FY 2021)

	A	B	C	D	E	F	G	H	I
1	Fiscal Year	Project	Type	Current Principal	Rate	Interest	Premium	Net Interest Accrual	Total
103	2033	Construction	Historical	1,740,531	2.745%	47,777	-	(1,630)	46,147
104	2033	Environment	Historical	44,000	2.413%	1,062	-	-	1,062
105	2033	Replacements	Historical	1,825,000	5.070%	92,527	-	-	92,527
106	2033	Replacements	New	165,909	2.535%	4,206	-	-	4,206
107	2033	Float	Historical	-	-	(1,170)	-	-	(1,170)
108	**FY 2033**	**Subtotal:**		**3,775,440**		**144,402**	**-**	**(1,630)**	**142,773**
109	2034	Construction	Historical	1,556,534	2.560%	39,852	-	(1,177)	38,675
110	2034	Environment	Historical	16,926	1.887%	319	-	-	319
111	2034	Replacements	Historical	1,990,909	5.070%	100,939	-	-	100,939
112	2034	Replacements	New	165,909	2.535%	4,206	-	-	4,206
113	2034	Float	Historical	-	-	(1,309)	-	-	(1,309)
114	**FY 2034**	**Subtotal:**		**3,730,279**		**144,008**	**-**	**(1,177)**	**142,830**
115	2035	Construction	Historical	1,325,571	2.377%	31,507	-	(1,649)	29,858
116	2035	Replacements	Historical	2,156,818	5.070%	109,351	-	-	109,351
117	2035	Replacements	New	165,909	2.535%	4,206	-	-	4,206
118	2035	Float	Historical	-	-	(1,221)	-	-	(1,221)
119	**FY 2035**	**Subtotal:**		**3,648,298**		**143,842**	**-**	**(1,649)**	**142,193**
120	2036	Construction	Historical	1,093,726	1.961%	21,452	-	(2,411)	19,041
121	2036	Replacements	Historical	2,322,727	5.070%	117,762	-	-	117,762
122	2036	Replacements	New	165,909	2.535%	4,206	-	-	4,206
123	2036	Float	Historical	-	-	(1,244)	-	-	(1,244)
124	**FY 2036**	**Subtotal:**		**3,582,363**		**142,176**	**-**	**(2,411)**	**139,765**
125	2037	Construction	Historical	851,829	1.516%	12,913	-	(812)	12,101
126	2037	Replacements	Historical	2,488,636	5.070%	126,174	-	-	126,174
127	2037	Replacements	New	165,909	2.535%	4,206	-	-	4,206
128	2037	Float	Historical	-	-	(1,357)	-	-	(1,357)
129	**FY 2037**	**Subtotal:**		**3,506,374**		**141,936**	**-**	**(812)**	**141,124**
130	2038	Construction	Historical	590,299	1.052%	6,208	-	(696)	5,512
131	2038	Replacements	Historical	2,654,545	5.070%	134,585	-	-	134,585
132	2038	Replacements	New	165,909	2.535%	4,206	-	-	4,206
133	2038	Float	Historical	-	-	(1,430)	-	-	(1,430)
134	**FY 2038**	**Subtotal:**		**3,410,754**		**143,569**	**-**	**(696)**	**142,873**
135	2039	Construction	Historical	312,542	0.691%	2,161	-	(167)	1,994
136	2039	Replacements	Historical	2,820,455	5.070%	142,997	-	-	142,997
137	2039	Replacements	New	165,909	2.535%	4,206	-	-	4,206
138	2039	Float	Historical	-	-	(1,418)	-	-	(1,418)
139	**FY 2039**	**Subtotal:**		**3,298,906**		**147,945**	**-**	**(167)**	**147,778**
140	2040	Construction	Historical	40,701	0.459%	187	-	(12)	175
141	2040	Replacements	Historical	2,986,364	4.869%	145,416	-	-	145,416
142	2040	Replacements	New	165,909	2.535%	4,206	-	-	4,206
143	2040	Float	Historical	-	-	(1,433)	-	-	(1,433)
144	**FY 2040**	**Subtotal:**		**3,192,974**		**148,376**	**-**	**(12)**	**148,363**
145	2041	Replacements	Historical	2,915,878	4.740%	138,204	-	-	138,204
146	2041	Replacements	New	165,909	2.535%	4,206	-	-	4,206
147	2041	Float	Historical	-	-	(1,831)	-	-	(1,831)
148	**FY 2041**	**Subtotal:**		**3,081,787**		**140,579**	**-**	**-**	**140,579**
149	2042	Replacements	Historical	2,701,868	4.785%	129,277	-	-	129,277
150	2042	Replacements	New	165,909	2.535%	4,206	-	-	4,206
151	2042	Float	Historical	-	-	(1,507)	-	-	(1,507)
152	**FY 2042**	**Subtotal:**		**2,867,777**		**131,976**	**-**	**-**	**131,976**
153	2043	Replacements	Historical	2,563,740	4.672%	119,779	-	-	119,779
154	2043	Replacements	New	165,909	2.535%	4,206	-	-	4,206
155	2043	Float	Historical	-	-	(1,884)	-	-	(1,884)
156	**FY 2043**	**Subtotal:**		**2,729,649**		**122,101**	**-**	**-**	**122,101**

TABLE 12-6
INTEREST CALCULATION SUMMARY ($000S) (FY 2021)

	A	B	C	D	E	F	G	H	I
1	Fiscal Year	Project	Type	Current Principal	Rate	Interest	Premium	Net Interest Accrual	Total
157	2044	Replacements	Historical	2,327,191	4.616%	107,417	-	-	107,417
158	2044	Replacements	New	165,909	2.535%	4,206	-	-	4,206
159	2044	Float	Historical	-	-	(1,917)	-	-	(1,917)
160	**FY 2044**	**Subtotal:**		**2,493,100**		**109,706**	**-**	**-**	**109,706**
161	2045	Replacements	Historical	2,076,091	4.544%	94,346	-	-	94,346
162	2045	Replacements	New	165,909	2.535%	4,206	-	-	4,206
163	2045	Float	Historical	-	-	(1,945)	-	-	(1,945)
164	**FY 2045**	**Subtotal:**		**2,242,001**		**96,606**	**-**	**-**	**96,606**
165	2046	Replacements	Historical	1,811,539	4.448%	80,583	-	-	80,583
166	2046	Replacements	New	165,909	2.535%	4,206	-	-	4,206
167	2046	Float	Historical	-	-	(1,972)	-	-	(1,972)
168	**FY 2046**	**Subtotal:**		**1,977,449**		**82,817**	**-**	**-**	**82,817**
169	2047	Replacements	Historical	1,533,198	4.311%	66,104	-	-	66,104
170	2047	Replacements	New	165,909	2.535%	4,206	-	-	4,206
171	2047	Float	Historical	-	-	(2,001)	-	-	(2,001)
172	**FY 2047**	**Subtotal:**		**1,699,107**		**68,308**	**-**	**-**	**68,308**
173	2048	Replacements	Historical	1,240,347	4.101%	50,869	-	-	50,869
174	2048	Replacements	New	165,909	2.535%	4,206	-	-	4,206
175	2048	Float	Historical	-	-	(2,032)	-	-	(2,032)
176	**FY 2048**	**Subtotal:**		**1,406,256**		**53,043**	**-**	**-**	**53,043**
177	2049	Replacements	Historical	932,232	3.737%	34,840	-	-	34,840
178	2049	Replacements	New	165,909	2.535%	4,206	-	-	4,206
179	2049	Float	Historical	-	-	(2,064)	-	-	(2,064)
180	**FY 2049**	**Subtotal:**		**1,098,141**		**36,982**	**-**	**-**	**36,982**
181	2050	Replacements	Historical	608,055	2.956%	17,976	-	-	17,976
182	2050	Replacements	New	165,909	2.535%	4,206	-	-	4,206
183	2050	Float	Historical	-	-	(2,098)	-	-	(2,098)
184	**FY 2050**	**Subtotal:**		**773,965**		**20,085**	**-**	**-**	**20,085**
185	2051	Replacements	Historical	266,982	2.535%	6,768	-	-	6,768
186	2051	Replacements	New	165,909	2.535%	4,206	-	-	4,206
187	2051	Float	Historical	-	-	(2,133)	-	-	(2,133)
188	**FY 2051**	**Subtotal:**		**432,891**		**8,841**	**-**	**-**	**8,841**
189	2052	Replacements	Historical	165,909	2.535%	4,206	-	-	4,206
190	2052	Replacements	New	165,909	2.535%	4,206	-	-	4,206
191	2052	Float	Historical	-	-	(2,143)	-	-	(2,143)
192	**FY 2052**	**Subtotal:**		**331,818**		**6,268**	**-**	**-**	**6,268**
193	2053	Replacements	Historical	165,909	2.535%	4,206	-	-	4,206
194	2053	Replacements	New	165,909	2.535%	4,206	-	-	4,206
195	2053	Float	Historical	-	-	(2,143)	-	-	(2,143)
196	**FY 2053**	**Subtotal:**		**331,818**		**6,268**	**-**	**-**	**6,268**
197	2054	Replacements	Historical	165,909	2.535%	4,206	-	-	4,206
198	2054	Replacements	New	165,909	2.535%	4,206	-	-	4,206
199	2054	Float	Historical	-	-	(2,143)	-	-	(2,143)
200	**FY 2054**	**Subtotal:**		**331,818**		**6,268**	**-**	**-**	**6,268**
201	2055	Replacements	Historical	165,909	2.535%	4,206	-	-	4,206
202	2055	Replacements	New	165,909	2.535%	4,206	-	-	4,206
203	2055	Float	Historical	-	-	(2,143)	-	-	(2,143)
204	**FY 2055**	**Subtotal:**		**331,818**		**6,268**	**-**	**-**	**6,268**
205	2056	Replacements	Historical	165,909	2.535%	4,206	-	-	4,206
206	2056	Replacements	New	165,909	2.535%	4,206	-	-	4,206
207	2056	Float	Historical	-	-	(2,143)	-	-	(2,143)
208	**FY 2056**	**Subtotal:**		**331,818**		**6,268**	**-**	**-**	**6,268**
209	**Grand Total:**			**$108,402,137**		**$4,086,407**	**-**	**($19,291)**	**$4,067,116**

TABLE 12-7
SUMMARY OF AMORTIZATION ($000S) (FY 2021)

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R
1	**Obligation Type**	**General Project**	**Specific Project**	**2018**	**2019**	**2020**	**2021**	**2022**	**2023**	**2024**	**2025**	**2026**	**2027**	**2028**	**2029**	**2030**	**2031**	**2032**
2	**Appropriation**	**Bonneville Power Administration**	**Bonneville Power Administration**	6,956	421	-	-	-	-	-	-	-	-	-	-	-	-	-
3			**Bonneville Power Administration Subtotal:**	6,956	421	-	-	-	-	-	-	-	-	-	-	-	-	-
4		**Appropriation Subtotal:**		6,956	421	-	-	-	-	-	-	-	-	-	-	-	-	-
5	**Bond**	**BPA Borrowing**	**Construction**	-	216,845	188,866	179,674	188,682	197,619	170,356	163,081	190,453	169,026	203,149	183,321	203,215	206,536	206,287
6			Principal Accrual	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
7			Principal Accrual Reversal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
8			**Construction (AS)**	-	17,750	16,900	13,000	10,200	-	7,800	23,350	17,700	20,800	-	-	-	-	-
9			Principal Accrual	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
10			Principal Accrual Reversal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11			**Environment**	-	-	-	-	-	-	4,000	15,000	-	18,000	5,000	12,000	-	-	-
12			Principal Accrual	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
13			Principal Accrual Reversal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
14			**Technology (T)**	-	-	-	28,000	-	-	-	-	-	-	-	-	-	-	-
15			Principal Accrual	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
16			Principal Accrual Reversal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
17			**BPA Borrowing Subtotal:**	-	234,595	205,766	220,674	198,882	197,619	182,156	201,431	208,153	207,826	208,149	195,321	203,215	206,536	206,287
18		**Federal Transmission Replacement**	**Replacements**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
19			Principal Accrual	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
20			Principal Accrual Reversal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
21			**Federal Transmission Replacement Subtotal:**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
22		**Make Whole Call**	**Discounts**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
23			**Premiums**	-	3,751	50	68	6,725	10,281	5,774	321	-	-	-	-	-	3,208	-
24			**Make Whole Call Subtotal:**	-	3,751	50	68	6,725	10,281	5,774	321	-	-	-	-	-	3,208	-
25		**Bond Subtotal:**		-	234,595	205,766	220,674	198,882	197,619	182,156	201,431	208,153	207,826	208,149	195,321	203,215	206,536	206,287
26	**Grand Total:**			$6,956	$235,016	$205,766	$220,674	$198,882	$197,619	$182,156	$201,431	$208,153	$207,826	$208,149	$195,321	$203,215	$206,536	$206,287

TABLE 12-7
SUMMARY OF AMORTIZATION ($000S) (FY 2021)

	A	B	C	S	T	U	V	W	X	Y	Z	AA	AB	AC	AD	AE	AF	AG	AH
1	**Obligation Type**	**General Project**	**Specific Project**	**2033**	**2034**	**2035**	**2036**	**2037**	**2038**	**2039**	**2040**	**2041**	**2042**	**2043**	**2044**	**2045**	**2046**	**2047**	**2048**
2	**Appropriation**	**Bonneville Power Administration**	**Bonneville Power Administration**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3			**Bonneville Power Administration Subtotal:**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4		**Appropriation Subtotal:**		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5	**Bond**	**BPA Borrowing**	**Construction**	183,997	230,566	225,793	233,800	261,296	277,757	271,841	40,701	-	-	-	-	-	-	-	-
6			Principal Accrual	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
7			Principal Accrual Reversal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
8			**Construction (AS)**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9			Principal Accrual	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
10			Principal Accrual Reversal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11			**Environment**	27,074	16,926	-	-	-	-	-	-	-	-	-	-	-	-	-	-
12			Principal Accrual	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
13			Principal Accrual Reversal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
14			**Technology (T)**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
15			Principal Accrual	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
16			Principal Accrual Reversal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
17			**BPA Borrowing Subtotal:**	211,070	247,493	225,793	233,800	261,296	277,757	271,841	40,701	-	-	-	-	-	-	-	-
18		**Federal Transmission Replacement**	**Replacements**	-	-	-	-	-	-	-	236,395	379,919	304,037	402,458	417,009	430,461	444,251	458,760	474,025
19			Principal Accrual	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
20			Principal Accrual Reversal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
21			**Federal Transmission Replacement Subtotal:**	-	-	-	-	-	-	-	236,395	379,919	304,037	402,458	417,009	430,461	444,251	458,760	474,025
22		**Make Whole Call**	**Discounts**	-	-	(397)	(6,051)	(8,098)	(234)	-	-	-	-	-	-	-	-	-	-
23			**Premiums**	3,349	1,021	1,808	-	-	-	-	-	-	-	-	-	-	-	-	-
24			**Make Whole Call Subtotal:**	3,349	1,021	1,411	(6,051)	(8,098)	(234)	-	-	-	-	-	-	-	-	-	-
25		**Bond Subtotal:**		211,070	247,493	226,190	239,851	269,394	277,991	271,841	277,096	379,919	304,037	402,458	417,009	430,461	444,251	458,760	474,025
26	**Grand Total:**			$211,070	$247,493	$226,190	$239,851	$269,394	$277,991	$271,841	$277,096	$379,919	$304,037	$402,458	$417,009	$430,461	$444,251	$458,760	$474,025

TABLE 12-7
SUMMARY OF AMORTIZATION ($000S) (FY 2021)

	A	B	C	AI	AJ	AK	AL	AM	AN	AO	AP	AQ
1	Obligation Type	General Project	Specific Project	2049	2050	2051	2052	2053	2054	2055	2056	Total
2	Appropriation	Bonneville Power Administration	Bonneville Power Administration	-	-	-	-	-	-	-	-	7,377
3			Bonneville Power Administration Subtotal:	-	-	-	-	-	-	-	-	7,377
4		Appropriation Subtotal:		-	-	-	-	-	-	-	-	7,377
5	Bond	BPA Borrowing	Construction	-	-	-	-	-	-	-	-	4,392,861
6			Principal Accrual	-	-	-	-	-	-	-	-	-
7			Principal Accrual Reversal	-	-	-	-	-	-	-	-	-
8			Construction (AS)	-	-	-	-	-	-	-	-	127,500
9			Principal Accrual	-	-	-	-	-	-	-	-	-
10			Principal Accrual Reversal	-	-	-	-	-	-	-	-	-
11			Environment	-	-	-	-	-	-	-	-	98,000
12			Principal Accrual	-	-	-	-	-	-	-	-	-
13			Principal Accrual Reversal	-	-	-	-	-	-	-	-	-
14			Technology (T)	-	-	-	-	-	-	-	-	28,000
15			Principal Accrual	-	-	-	-	-	-	-	-	-
16			Principal Accrual Reversal	-	-	-	-	-	-	-	-	-
17			BPA Borrowing Subtotal:	-	-	-	-	-	-	-	-	4,646,361
18		Federal Transmission Replacement	Replacements	490,085	506,983	266,982	165,909	165,909	165,909	165,909	165,909	5,640,909
19			Principal Accrual	-	-	-	-	-	-	-	-	-
20			Principal Accrual Reversal	-	-	-	-	-	-	-	-	-
21			Federal Transmission Replacement Subtotal:	490,085	506,983	266,982	165,909	165,909	165,909	165,909	165,909	5,640,909
22		Make Whole Call	Discounts	-	-	-	-	-	-	-	-	(14,779)
23			Premiums	-	-	-	-	-	-	-	-	36,354
24			Make Whole Call Subtotal:	-	-	-	-	-	-	-	-	21,575
25		Bond Subtotal:		490,085	506,983	266,982	165,909	165,909	165,909	165,909	165,909	10,302,049
26	Grand Total:			$490,085	$506,983	$266,982	$165,909	$165,909	$165,909	$165,909	$165,909	$10,309,426

TABLE 12-8
APPLICATION OF AMORTIZATION ($000S) (FY 2021)

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R
	Fiscal Year	Project	Debt Type	In Service	Bond Due Date	Initial Principal	Current Principal	Original Rate	Effective Rate	Refinance Type	Refinanced Date	Rolled Maturity Date	Roll Rate	Principal Paid	Premium	Discount	Accrual	Reversal
1	2018	Bonneville Power Administration	Bonneville Power Administration	9/30/1977	9/30/2022	33,702	7,377	7.210%	7.210%					6,956				
2		**FY 2018 Subtotal:**	**-**	**-**	**-**	**33,702**	**7,377**	**-**						**6,956**				
3	2019	Construction	-	10/31/2009	10/31/2018	23,000	23,000	3.719%	3.719%					23,000				
4	2019	Construction	-	11/30/2009	11/30/2018	15,000	15,000	3.533%	3.533%					15,000				
5	2019	Construction (AS)	-	11/30/2012	11/30/2018	9,750	9,750	1.109%	1.109%					9,750				
6	2019	Construction	-	12/31/2009	12/31/2018	13,000	13,000	4.069%	4.069%					13,000				
7	2019	Construction	-	1/16/2014	12/31/2018	33,000	33,000	1.943%	1.943%					33,000				
8	2019	Construction	-	1/16/2014	12/31/2018	30,000	30,000	1.943%	1.943%					30,000				
9	2019	Construction	-	1/16/2014	12/31/2018	31,000	31,000	1.943%	1.943%					31,000				
10	2019	Construction	-	1/16/2014	12/31/2018	48,000	48,000	1.943%	1.943%					48,000				
11	2019	Construction (AS)	-	6/30/2013	6/30/2019	5,000	5,000	1.962%	1.962%					5,000				
12	2019	Construction (AS)	-	8/31/2013	8/31/2019	3,000	3,000	2.279%	2.279%					3,000				
13	2019	Bonneville Power Administration	Bonneville Power Administration	9/30/1977	9/30/2022	33,702	421	7.210%	7.210%					421				
14	2019	Construction	-	8/31/1998	8/31/2028	112,300	112,300	5.850%	5.850%					23,845	3,751			
15		**FY 2019 Subtotal:**	**-**	**-**	**-**	**356,752**	**323,471**	**-**						**235,016**	**3,751**			
16	2020	Construction (AS)	-	10/31/2013	10/31/2019	7,800	7,800	2.039%	2.039%					7,800				
17	2020	Construction	-	10/31/2009	10/31/2019	43,000	43,000	3.842%	3.842%					43,000				
18	2020	Construction (AS)	-	1/31/2014	1/31/2020	3,250	3,250	2.183%	2.183%					3,250				
19	2020	Construction	-	1/31/2009	1/31/2020	50,000	50,000	3.830%	3.830%					50,000				
20	2020	Construction (AS)	-	4/30/2014	3/31/2020	2,600	2,600	1.976%	1.976%					2,600				
21	2020	Construction (AS)	-	5/31/2014	4/30/2020	1,300	1,300	2.075%	2.075%					1,300				
22	2020	Construction	-	7/31/2010	7/31/2020	50,000	50,000	3.118%	3.118%					50,000				
23	2020	Construction (AS)	-	7/31/2014	7/31/2020	1,950	1,950	2.234%	2.234%					1,950				
24	2020	Construction	-	7/31/2020	9/30/2020	118,000	45,466	1.600%	1.600%					45,466				
25	2020	Construction	-	8/31/1998	8/31/2028	112,300	88,455	5.850%	5.850%					400	50			
26		**FY 2020 Subtotal:**	**-**	**-**	**-**	**390,200**	**293,821**	**-**						**205,766**	**50**			
27	2021	Technology (T)	-	10/31/2015	9/30/2018	5,000	5,000	1.976%	2.137%	Global	9/30/2018	9/30/2021	2.137%	5,000				
28	2021	Construction (AS)	-	11/30/2014	11/30/2020	3,900	3,900	1.809%	1.809%					3,900				
29	2021	Construction (AS)	-	12/31/2014	12/31/2020	1,950	1,950	1.922%	1.922%					1,950				
30	2021	Construction (AS)	-	2/28/2015	2/28/2021	3,250	3,250	1.761%	1.761%					3,250				
31	2021	Technology (T)	-	2/28/2015	2/28/2021	23,000	23,000	1.761%	1.761%					23,000				
32	2021	Construction	-	3/31/2010	3/31/2021	15,000	15,000	4.188%	4.188%					15,000				
33	2021	Construction	-	4/30/2010	4/30/2021	22,000	22,000	4.094%	4.094%					22,000				
34	2021	Construction	-	5/31/2010	5/31/2021	22,000	22,000	3.694%	3.694%					22,000				
35	2021	Construction (AS)	-	5/31/2015	5/31/2021	3,900	3,900	1.898%	1.898%					3,900				
36	2021	Construction	-	6/30/2010	6/30/2021	22,000	22,000	3.374%	3.374%					22,000				
37	2021	Construction	-	7/31/2021	9/30/2021	129,000	98,074	1.640%	1.640%					98,074				
38	2021	Construction	-	8/31/1998	8/31/2028	112,300	88,055	5.850%	5.850%					600	68			
39		**FY 2021 Subtotal:**	**-**	**-**	**-**	**363,300**	**308,129**	**-**						**220,674**	**68**			
40	2022	Construction (AS)	-	10/31/2015	10/31/2021	5,200	5,200	1.942%	1.942%					5,200				
41	2022	Construction	-	1/31/2009	1/31/2022	20,000	20,000	4.200%	4.200%					20,000				
42	2022	Construction (AS)	-	2/29/2016	2/28/2022	5,000	5,000	1.631%	1.631%					5,000				
43	2022	Construction	-	4/30/2009	4/30/2022	35,000	35,000	4.253%	4.253%					35,000				
44	2022	Construction	-	5/31/2015	5/31/2022	11,000	11,000	2.103%	2.103%					11,000				
45	2022	Construction	-	5/31/2015	5/31/2022	14,000	14,000	2.103%	2.103%					14,000				
46	2022	Construction	-	7/31/2010	7/31/2022	30,000	30,000	3.372%	3.372%					30,000				
47	2022	Construction	-	8/31/2010	8/31/2022	20,000	20,000	3.029%	3.029%					20,000				
48	2022	Construction	-	8/31/1998	8/31/2028	112,300	87,455	5.850%	5.850%					58,682	6,725			
49		**FY 2022 Subtotal:**	**-**	**-**	**-**	**252,500**	**227,655**	**-**						**198,882**	**6,725**			

TABLE 12-8
APPLICATION OF AMORTIZATION ($000S) (FY 2021)

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R
	Fiscal Year	**Project**	**Debt Type**	**In Service**	**Bond Due Date**	**Initial Principal**	**Current Principal**	**Original Rate**	**Effective Rate**	**Refinance Type**	**Refinanced Date**	**Rolled Maturity Date**	**Roll Rate**	**Principal Paid**	**Premium**	**Discount**	**Accrual**	**Reversal**
50	2023	Construction	-	12/31/2014	12/31/2022	16,000	16,000	2.274%	2.274%					16,000				
51	2023	Construction	-	12/31/2014	12/31/2022	4,000	4,000	2.274%	2.274%					4,000				
52	2023	Construction	-	4/30/2015	4/30/2023	3,000	3,000	2.163%	2.163%					3,000				
53	2023	Construction	-	4/30/2015	4/30/2023	12,000	12,000	2.163%	2.163%					12,000				
54	2023	Construction	-	6/30/2015	6/30/2023	11,000	11,000	2.443%	2.443%					11,000				
55	2023	Construction	-	6/30/2015	6/30/2023	8,000	8,000	2.443%	2.443%					8,000				
56	2023	Construction	-	9/30/2010	9/30/2023	46,000	46,000	3.161%	3.161%					46,000				
57	2023	Construction	-	8/31/1998	8/31/2028	106,500	106,500	5.850%	5.850%					68,845	7,250			
58	2023	Construction	-	8/31/1998	8/31/2028	112,300	28,774	5.850%	5.850%					28,774	3,030			
59		**FY 2023 Subtotal:**	**-**	**-**	**-**	**318,800**	**235,274**	**-**						**197,619**	**10,281**			
60	2024	Construction	-	10/31/2014	10/31/2023	20,000	20,000	2.521%	2.521%					20,000				
61	2024	Construction	-	11/30/2014	11/30/2023	20,000	20,000	2.361%	2.361%					20,000				
62	2024	Environment	-	1/31/2015	1/31/2024	4,000	4,000	1.908%	1.908%					4,000				
63	2024	Construction	-	3/31/2015	3/31/2024	17,000	17,000	2.200%	2.200%					17,000				
64	2024	Construction	-	3/31/2012	3/31/2024	45,000	45,000	1.976%	1.976%					45,000				
65	2024	Construction (AS)	-	9/30/2018	9/30/2024	10,400	7,800	2.560%	2.560%					7,800				
66	2024	Construction	-	8/31/1998	8/31/2028	106,500	37,655	5.850%	5.850%					37,655	3,502			
67	2024	Construction	-	6/30/2009	6/30/2039	35,000	35,000	5.192%	5.192%					30,701	2,272			
68		**FY 2024 Subtotal:**	**-**	**-**	**-**	**257,900**	**186,455**	**-**						**182,156**	**5,774**			
69	2025	Environment	-	2/28/2010	2/28/2025	10,000	10,000	4.279%	4.279%					10,000				
70	2025	Construction	-	5/31/2016	5/31/2025	20,000	20,000	2.101%	2.101%					20,000				
71	2025	Environment	-	5/31/2016	5/31/2025	5,000	5,000	2.101%	2.101%					5,000				
72	2025	Construction	-	7/31/2016	7/31/2025	48,000	48,000	1.713%	1.713%					48,000				
73	2025	Construction (AS)	-	8/31/2015	8/31/2025	11,000	11,000	2.598%	2.598%					11,000				
74	2025	Construction	-	8/31/2015	8/31/2025	14,000	14,000	2.598%	2.598%					14,000				
75	2025	Construction (AS)	-	9/30/2019	9/30/2025	11,050	12,350	3.270%	3.270%					12,350				
76	2025	Construction	-	6/30/2009	6/30/2039	35,000	4,299	5.192%	5.192%					4,299	321			
77	2025	Construction	-	9/30/2021	9/30/2051	259,000	346,000	5.070%	5.070%					76,782				
78		**FY 2025 Subtotal:**	**-**	**-**	**-**	**413,050**	**470,649**	**-**						**201,431**	**321**			
79	2026	Construction	-	10/31/2010	10/31/2025	45,000	45,000	3.494%	3.494%					45,000				
80	2026	Construction	-	2/28/2015	2/28/2026	19,000	19,000	2.416%	2.416%					19,000				
81	2026	Construction	-	3/31/2015	3/31/2026	15,000	15,000	2.370%	2.370%					15,000				
82	2026	Construction	-	3/31/2016	3/31/2026	6,000	6,000	2.177%	2.177%					6,000				
83	2026	Construction	-	3/31/2016	3/31/2026	12,000	12,000	2.177%	2.177%					12,000				
84	2026	Construction	-	7/31/2015	7/31/2026	18,000	18,000	2.707%	2.707%					18,000				
85	2026	Construction	-	7/31/2015	7/31/2026	10,000	10,000	2.707%	2.707%					10,000				
86	2026	Construction (AS)	-	9/30/2020	9/30/2026	7,150	11,700	3.750%	3.750%					11,700				
87	2026	Construction (AS)	-	9/30/2021	9/30/2026	20,300	6,000	3.710%	3.710%					6,000				
88	2026	Construction	-	9/30/2021	9/30/2051	259,000	269,218	5.070%	5.070%					65,453				
89		**FY 2026 Subtotal:**	**-**	**-**	**-**	**411,450**	**411,918**	**-**						**208,153**				
90	2027	Construction	-	12/31/2015	12/31/2026	9,000	9,000	2.762%	2.762%					9,000				
91	2027	Construction	-	12/31/2015	12/31/2026	29,000	29,000	2.762%	2.762%					29,000				
92	2027	Construction	-	1/31/2016	1/31/2027	13,000	13,000	2.352%	2.352%					13,000				
93	2027	Construction	-	2/29/2016	2/28/2027	13,000	13,000	2.236%	2.236%					13,000				
94	2027	Construction	-	5/3/2012	5/31/2027	17,000	17,000	2.087%	2.087%					17,000				
95	2027	Environment	-	5/3/2012	5/31/2027	13,000	13,000	2.087%	2.087%					13,000				
96	2027	Environment	-	10/31/2015	9/30/2027	5,000	5,000	1.976%	1.976%					5,000				
97	2027	Construction (AS)	-	9/30/2021	9/30/2027	20,300	20,800	3.840%	3.840%					20,800				
98	2027	Construction	-	9/30/2021	9/30/2051	259,000	203,766	5.070%	5.070%					88,026				
99		**FY 2027 Subtotal:**	**-**	**-**	**-**	**378,300**	**323,566**	**-**						**207,826**				

TABLE 12-8
APPLICATION OF AMORTIZATION ($000S) (FY 2021)

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R
	Fiscal Year	Project	Debt Type	In Service	Bond Due Date	Initial Principal	Current Principal	Original Rate	Effective Rate	Refinance Type	Refinanced Date	Rolled Maturity Date	Roll Rate	Principal Paid	Premium	Discount	Accrual	Reversal
100	2028	Construction	-	1/31/2010	1/31/2019	30,000	30,000	3.714%	3.788%	Global	1/31/2019	1/31/2028	3.788%	30,000				
101	2028	Construction	-	7/31/2009	7/31/2019	46,940	46,940	4.026%	3.788%	Global	7/31/2019	7/31/2028	3.788%	46,940				
102	2028	Construction	-	9/30/2009	9/30/2019	35,000	35,000	3.699%	3.788%	Global	9/30/2019	9/30/2028	3.788%	35,000				
103	2028	Environment	-	11/20/2013	11/30/2027	5,000	5,000	3.967%	3.967%					5,000				
104	2028	Construction	-	9/30/2014	4/30/2028	17,000	17,000	2.075%	2.075%					17,000				
105	2028	Construction	-	9/30/2014	9/30/2028	3,000	3,000	3.094%	3.094%					3,000				
106	2028	Construction	-	9/30/2021	9/30/2051	259,000	115,740	5.070%	5.070%					71,209				
107		**FY 2028 Subtotal:**	-	-	-	**395,940**	**252,680**	-						**208,149**				
108	2029	Environment	-	10/31/2013	10/31/2028	6,000	6,000	3.880%	3.880%					6,000				
109	2029	Environment	-	1/31/2014	1/31/2029	3,000	3,000	3.896%	3.896%					3,000				
110	2029	Environment	-	7/31/2014	7/31/2029	3,000	3,000	2.234%	2.234%					3,000				
111	2029	Construction	-	8/2/2011	8/31/2029	50,000	50,000	4.238%	4.238%					50,000				
112	2029	Construction	-	8/31/2021	8/31/2050	129,000	173,000	5.040%	5.040%					88,791				
113	2029	Construction	-	9/30/2021	9/30/2051	259,000	44,530	5.070%	5.070%					44,530				
114		**FY 2029 Subtotal:**	-	-	-	**450,000**	**279,530**	-						**195,321**				
115	2030	Construction	-	11/20/2013	10/31/2029	55,000	55,000	4.093%	4.093%					55,000				
116	2030	Construction	-	3/31/2015	3/31/2030	3,000	3,000	2.626%	2.626%					3,000				
117	2030	Construction	-	9/30/2015	9/30/2030	15,000	15,000	2.905%	2.905%					15,000				
118	2030	Construction	-	7/31/2021	7/31/2049	129,000	74,926	5.000%	5.000%					46,006				
119	2030	Construction	-	8/31/2021	8/31/2050	129,000	84,209	5.040%	5.040%					84,209				
120		**FY 2030 Subtotal:**	-	-	-	**331,000**	**232,135**	-						**203,215**				
121	2031	Construction	-	11/20/2013	1/31/2031	30,000	30,000	4.162%	4.162%					30,000				
122	2031	Construction	-	11/20/2013	2/28/2031	15,000	15,000	4.166%	4.166%					15,000				
123	2031	Construction	-	11/20/2013	3/31/2031	18,000	18,000	4.171%	4.171%					18,000				
124	2031	Construction	-	2/28/2011	2/28/2038	55,000	55,000	4.935%	4.935%					55,000	3,208			
125	2031	Construction	-	9/30/2020	9/30/2048	123,000	138,000	4.930%	4.930%					59,616				
126	2031	Construction	-	7/31/2021	7/31/2049	129,000	28,920	5.000%	5.000%					28,920				
127		**FY 2031 Subtotal:**	-	-	-	**370,000**	**284,920**	-						**206,536**	**3,208**			
128	2032	Construction	-	7/31/2014	4/30/2032	9,000	9,000	2.075%	2.075%					9,000				
129	2032	Construction	-	8/2/2011	8/31/2032	98,900	98,900	4.355%	4.355%					98,900				
130	2032	Construction	-	8/31/2020	8/31/2047	118,000	78,000	4.900%	4.900%					20,003				
131	2032	Construction	-	9/30/2020	9/30/2048	123,000	78,384	4.930%	4.930%					78,384				
132		**FY 2032 Subtotal:**	-	-	-	**348,900**	**264,284**	-						**206,287**				
133	2033	Construction	-	6/30/2014	11/30/2032	21,000	21,000	2.087%	2.087%					21,000				
134	2033	Construction	-	8/2/2011	8/31/2033	40,000	40,000	4.386%	4.386%					40,000				
135	2033	Environment	-	9/30/2018	9/30/2033	7,000	7,000	0.920%	0.920%					7,000				
136	2033	Environment	-	9/30/2021	9/30/2036	22,000	23,000	4.535%	4.535%					20,074				
137	2033	Construction	-	4/30/2011	4/30/2039	40,000	40,000	4.794%	4.794%					40,000	2,040			
138	2033	Construction	-	6/22/2011	6/30/2040	25,000	25,000	4.775%	4.775%					25,000	1,309			
139	2033	Construction	-	8/31/2020	8/31/2047	118,000	57,997	4.900%	4.900%					57,997				
140		**FY 2033 Subtotal:**	-	-	-	**273,000**	**213,997**	-						**211,070**	**3,349**			
141	2034	Construction	-	4/30/2014	2/28/2034	45,000	45,000	1.877%	1.877%					45,000				
142	2034	Construction	-	4/30/2014	3/31/2034	45,000	45,000	1.976%	1.976%					45,000				
143	2034	Construction	-	11/20/2013	4/30/2034	28,000	28,000	4.311%	4.311%					28,000				
144	2034	Construction	-	10/31/2015	6/30/2034	21,000	21,000	2.155%	2.155%					21,000				
145	2034	Construction	-	11/20/2013	8/31/2034	6,000	6,000	4.324%	4.324%					6,000				
146	2034	Construction	-	10/31/2015	8/31/2034	19,000	19,000	1.877%	1.877%					19,000				
147	2034	Construction	-	9/30/2013	9/30/2034	9,000	9,000	4.214%	4.214%					9,000				

TABLE 12-8
APPLICATION OF AMORTIZATION ($000S) (FY 2021)

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R
	Fiscal Year	**Project**	**Debt Type**	**In Service**	**Bond Due Date**	**Initial Principal**	**Current Principal**	**Original Rate**	**Effective Rate**	**Refinance Type**	**Refinanced Date**	**Rolled Maturity Date**	**Roll Rate**	**Principal Paid**	**Premium**	**Discount**	**Accrual**	**Reversal**
148	2034	Environment	-	9/30/2019	9/30/2034	7,000	7,000	1.380%	1.380%					7,000				
149	2034	Construction	-	8/2/2011	8/31/2035	40,000	40,000	4.446%	4.446%					7,566	128			
150	2034	Construction	-	8/2/2011	8/31/2035	40,000	40,000	4.446%	4.446%					40,000	675			
151	2034	Environment	-	9/30/2020	9/30/2035	8,000	7,000	4.470%	4.470%					7,000				
152	2034	Construction	-	12/31/2013	12/31/2035	10,000	10,000	4.472%	4.472%					10,000	218			
153	2034	Environment	-	9/30/2021	9/30/2036	22,000	2,926	4.535%	4.535%					2,926				
154		**FY 2034 Subtotal:**	**-**	**-**	**-**	**300,000**	**279,926**	**-**						**247,493**	**1,021**			
155	2035	Construction	-	8/2/2011	8/31/2034	40,000	40,000	4.416%	3.586%	Global	8/31/2034	8/31/2038	3.586%	39,603		397		
156	2035	Construction	-	10/31/2015	10/31/2034	2,000	2,000	3.198%	3.198%					2,000				
157	2035	Construction	-	11/20/2013	5/31/2035	20,000	20,000	4.354%	4.354%					20,000				
158	2035	Construction	-	8/31/2014	7/31/2035	10,000	10,000	2.234%	2.234%					10,000				
159	2035	Construction	-	8/31/2014	8/31/2035	15,000	15,000	1.877%	1.877%					15,000				
160	2035	Construction	-	8/2/2011	8/31/2035	40,000	32,434	4.446%	4.446%					32,434				
161	2035	Construction	-	1/31/2011	1/31/2036	50,000	50,000	4.952%	4.952%					50,000	818			
162	2035	Construction	-	6/22/2011	6/30/2036	50,000	50,000	4.629%	4.629%	Global	6/30/2036	6/30/2040	3.586%	5,757	113			
163	2035	Construction	-	11/20/2013	6/30/2036	36,000	36,000	4.397%	4.397%					36,000	586			
164	2035	Construction	-	1/31/2014	1/31/2043	15,000	15,000	4.380%	4.380%					15,000	291			
165		**FY 2035 Subtotal:**	**-**	**-**	**-**	**278,000**	**270,434**	**-**						**225,793**	**1,808**	**397**		
166	2036	Construction	-	8/2/2011	8/31/2035	45,000	45,000	4.446%	3.586%	Global	8/31/2035	8/31/2039	3.586%	44,553		447		
167	2036	Construction	-	10/31/2013	10/31/2035	64,000	64,000	4.222%	4.222%					64,000				
168	2036	Construction	-	11/30/2013	11/30/2035	15,000	15,000	4.365%	4.365%					15,000				
169	2036	Construction	-	5/31/2014	5/31/2036	29,000	29,000	2.087%	2.087%					29,000				
170	2036	Construction	-	7/31/2017	7/31/2043	23,000	23,000	3.198%	3.198%					21,903		1,097		
171	2036	Construction	-	9/30/2017	9/30/2043	14,000	14,000	3.193%	3.193%					810		41		
172	2036	Construction	-	7/31/2017	7/31/2044	17,000	17,000	3.215%	3.215%					15,984		1,016		
173	2036	Construction	-	9/30/2017	9/30/2044	9,000	9,000	3.209%	3.209%					8,459		541		
174	2036	Construction	-	7/31/2017	7/31/2045	27,000	27,000	3.230%	3.230%					25,035		1,965		
175	2036	Construction	-	9/30/2017	9/30/2047	10,000	10,000	3.247%	3.247%					9,055		945		
176		**FY 2036 Subtotal:**	**-**	**-**	**-**	**253,000**	**253,000**	**-**						**233,800**		**6,051**		
177	2037	Construction	-	6/22/2011	6/30/2036	50,000	44,243	4.629%	3.586%	Global	6/30/2036	6/30/2040	3.586%	44,061		183		
178	2037	Construction	-	8/31/2017	8/31/2037	30,000	30,000	2.902%	2.902%					30,000				
179	2037	Construction	-	8/31/2017	8/31/2038	7,000	7,000	2.929%	2.929%					6,964		36		
180	2037	Construction	-	4/30/2014	10/31/2039	45,000	45,000	2.075%	2.075%					30,981		1,021		
181	2037	Construction	-	1/27/2012	1/31/2040	30,000	30,000	2.234%	2.234%					28,994		1,006		
182	2037	Construction	-	7/31/2017	7/31/2041	19,000	19,000	3.164%	3.164%					18,674		326		
183	2037	Construction	-	8/31/2017	8/31/2041	13,000	13,000	2.991%	2.991%					12,684		316		
184	2037	Construction	-	9/30/2017	9/30/2041	17,000	17,000	3.156%	3.156%					16,703		297		
185	2037	Construction	-	7/31/2017	7/31/2042	14,000	14,000	3.181%	3.181%					13,642		358		
186	2037	Construction	-	8/31/2017	8/31/2043	10,000	10,000	3.024%	3.024%					9,548		452		
187	2037	Construction	-	9/30/2017	9/30/2043	14,000	13,149	3.193%	3.193%					12,678		471		
188	2037	Construction	-	8/31/2017	8/31/2046	22,000	22,000	3.066%	3.066%					20,146		1,854		
189	2037	Construction	-	8/31/2017	8/31/2047	18,000	18,000	3.076%	3.076%					16,222		1,778		
190		**FY 2037 Subtotal:**	**-**	**-**	**-**	**289,000**	**282,393**	**-**						**261,296**		**8,098**		
191	2038	Construction	-	4/30/2014	10/31/2039	45,000	12,999	2.075%	2.075%					12,765		234		
192	2038	Construction	-	7/31/2019	7/31/2043	82,000	121,000	1.380%	1.380%					120,458				
193	2038	Construction	-	7/31/2020	7/31/2046	118,000	88,534	1.600%	1.600%					88,534				
194	2038	Construction	-	8/31/2020	8/31/2047	118,000	56,000	1.600%	1.600%					56,000				
195		**FY 2038 Subtotal:**	**-**	**-**	**-**	**363,000**	**278,533**	**-**						**277,757**		**234**		
196	2039	Construction	-	8/31/2018	8/31/2041	160,000	52,000	0.920%	0.920%					36,299				
197	2039	Construction	-	7/31/2019	7/31/2043	82,000	542	1.380%	1.380%					542				
198	2039	Construction	-	8/31/2019	8/31/2044	81,000	118,000	1.380%	1.380%					118,000				
199	2039	Construction	-	9/30/2019	9/30/2045	81,000	117,000	1.380%	1.380%					117,000				
200		**FY 2039 Subtotal:**	**-**	**-**	**-**	**404,000**	**287,542**	**-**						**271,841**				

TABLE 12-8
APPLICATION OF AMORTIZATION ($000S) (FY 2021)

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R
	Fiscal Year	**Project**	**Debt Type**	**In Service**	**Bond Due Date**	**Initial Principal**	**Current Principal**	**Original Rate**	**Effective Rate**	**Refinance Type**	**Refinanced Date**	**Rolled Maturity Date**	**Roll Rate**	**Principal Paid**	**Premium**	**Discount**	**Accrual**	**Reversal**
201	2040	Construction	-	8/31/2018	8/31/2041	160,000	15,701	0.920%	0.920%					15,701				
202	2040	Construction	-	9/30/2018	9/30/2042	76,000	25,000	0.920%	0.920%					25,000				
203	2040	Replacements	-	3/31/2022	3/31/2057	165,909	165,909	5.070%	5.070%					165,909				
204	2040	Replacements	-	3/31/2023	3/31/2058	165,909	165,909	5.070%	5.070%					70,486				
205		**FY 2040 Subtotal:**	-	-	-	**567,818**	**372,519**	-						**277,096**				
206	2041	Replacements	-	3/31/2023	3/31/2058	165,909	95,423	5.070%	5.070%					95,423				
207	2041	Replacements	-	3/31/2024	3/31/2059	165,909	165,909	5.070%	5.070%					165,909				
208	2041	Replacements	-	3/31/2025	3/31/2060	165,909	165,909	5.070%	5.070%					118,587				
209		**FY 2041 Subtotal:**	-	-	-	**497,727**	**427,241**	-						**379,919**				
210	2042	Replacements	-	3/31/2025	3/31/2060	165,909	47,322	5.070%	5.070%					47,322				
211	2042	Replacements	-	3/31/2026	3/31/2061	165,909	165,909	5.070%	5.070%					165,909				
212	2042	Replacements	-	3/31/2027	3/31/2062	165,909	165,909	5.070%	5.070%					90,805				
213		**FY 2042 Subtotal:**	-	-	-	**497,727**	**379,140**	-						**304,037**				
214	2043	Replacements	-	3/31/2027	3/31/2062	165,909	75,104	5.070%	5.070%					75,104				
215	2043	Replacements	-	3/31/2028	3/31/2063	165,909	165,909	5.070%	5.070%					165,909				
216	2043	Replacements	-	3/31/2029	3/31/2064	165,909	165,909	5.070%	5.070%					161,445				
217		**FY 2043 Subtotal:**	-	-	-	**497,727**	**406,922**	-						**402,458**				
218	2044	Replacements	-	3/31/2029	3/31/2064	165,909	4,464	5.070%	5.070%					4,464				
219	2044	Replacements	-	3/31/2030	3/31/2065	165,909	165,909	5.070%	5.070%					165,909				
220	2044	Replacements	-	3/31/2031	3/31/2066	165,909	165,909	5.070%	5.070%					165,909				
221	2044	Replacements	-	3/31/2032	3/31/2067	165,909	165,909	5.070%	5.070%					80,727				
222		**FY 2044 Subtotal:**	-	-	-	**663,636**	**502,191**	-						**417,009**				
223	2045	Replacements	-	3/31/2032	3/31/2067	165,909	85,182	5.070%	5.070%					85,182				
224	2045	Replacements	-	3/31/2033	3/31/2068	165,909	165,909	5.070%	5.070%					165,909				
225	2045	Replacements	-	3/31/2034	3/31/2069	165,909	165,909	5.070%	5.070%					165,909				
226	2045	Replacements	-	3/31/2035	3/31/2070	165,909	165,909	5.070%	5.070%					13,461				
227		**FY 2045 Subtotal:**	-	-	-	**663,636**	**582,910**	-						**430,461**				
228	2046	Replacements	-	3/31/2035	3/31/2070	165,909	152,449	5.070%	5.070%					152,449				
229	2046	Replacements	-	3/31/2036	3/31/2071	165,909	165,909	5.070%	5.070%					165,909				
230	2046	Replacements	-	3/31/2037	3/31/2072	165,909	165,909	5.070%	5.070%					125,893				
231		**FY 2046 Subtotal:**	-	-	-	**497,727**	**484,267**	-	5.070%					**444,251**				
232	2047	Replacements	-	3/31/2037	3/31/2072	165,909	40,016	5.070%	5.070%					40,016				
233	2047	Replacements	-	3/31/2038	3/31/2073	165,909	165,909	5.070%	5.070%					165,909				
234	2047	Replacements	-	3/31/2039	3/31/2074	165,909	165,909	5.070%	5.070%					165,909				
235	2047	Replacements	-	3/31/2040	3/31/2075	165,909	165,909	5.070%	5.070%					86,926				
236		**FY 2047 Subtotal:**	-	-	-	**663,636**	**537,743**	-	5.070%					**458,760**				
237	2048	Replacements	-	3/31/2040	3/31/2075	165,909	78,983	5.070%	5.070%					78,983				
238	2048	Replacements	-	3/31/2041	3/31/2076	165,909	165,909	5.070%	5.070%					165,909				
239	2048	Replacements	-	3/31/2042	3/31/2077	165,909	165,909	5.070%	5.070%					165,909				
240	2048	Replacements	-	3/31/2043	3/31/2078	165,909	165,909	5.070%	5.070%					63,223				
241		**FY 2048 Subtotal:**	-	-	-	**663,636**	**576,711**	-	5.070%					**474,025**				
242	2049	Replacements	-	3/31/2043	3/31/2078	165,909	102,686	5.070%	5.070%					102,686				
243	2049	Replacements	-	3/31/2044	3/31/2079	165,909	165,909	5.070%	5.070%					165,909				
244	2049	Replacements	-	3/31/2045	3/31/2080	165,909	165,909	5.070%	5.070%					165,909				
245	2049	Replacements	-	3/31/2046	3/31/2081	165,909	165,909	5.070%	5.070%					55,581				
246		**FY 2049 Subtotal:**	-	-	-	**663,636**	**600,413**	-	5.070%					**490,085**				
247	2050	Replacements	-	3/31/2046	3/31/2081	165,909	110,328	5.070%	5.070%					110,328				
248	2050	Replacements	-	3/31/2047	3/31/2082	165,909	165,909	5.070%	5.070%					165,909				
249	2050	Replacements	-	3/31/2048	3/31/2083	165,909	165,909	5.070%	5.070%					165,909				
250	2050	Replacements	-	3/31/2049	3/31/2084	165,909	165,909	5.070%	5.070%					64,837				
251		**FY 2050 Subtotal:**	-	-	-	**663,636**	**608,055**	-	5.070%					**506,983**				

TABLE 12-8
APPLICATION OF AMORTIZATION ($000S) (FY 2021)

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R
	Fiscal Year	**Project**	**Debt Type**	**In Service**	**Bond Due Date**	**Initial Principal**	**Current Principal**	**Original Rate**	**Effective Rate**	**Refinance Type**	**Refinanced Date**	**Rolled Maturity Date**	**Roll Rate**	**Principal Paid**	**Premium**	**Discount**	**Accrual**	**Reversal**
252	2051	Replacements	-	3/31/2049	3/31/2084	165,909	101,072	5.070%	5.070%					101,072				
253	2051	Replacements	-	3/31/2050	3/31/2085	165,909	165,909	5.070%	5.070%					165,909				
254		**FY 2051 Subtotal:**	**-**	**-**	**-**	**331,818**	**266,982**	**-**	5.070%					**266,982**				
255	2052	Replacements	-	3/31/2051	3/31/2086	165,909	165,909	5.070%	5.070%					165,909				
256		**FY 2052 Subtotal:**	**-**	**-**	**-**	**165,909**	**165,909**	**-**						**165,909**				
257	2053	Replacements	-	3/31/2052	3/31/2087	165,909	165,909	5.070%	5.070%					165,909				
258		**FY 2053 Subtotal:**	**-**	**-**	**-**	**165,909**	**165,909**	**-**						**165,909**				
259	2054	Replacements	-	3/31/2053	3/31/2088	165,909	165,909	5.070%	5.070%					165,909				
260		**FY 2054 Subtotal:**	**-**	**-**	**-**	**165,909**	**165,909**	**-**						**165,909**				
261	2055	Replacements	-	3/31/2054	3/31/2089	165,909	165,909	5.070%	5.070%					165,909				
262		**FY 2055 Subtotal:**	**-**	**-**	**-**	**165,909**	**165,909**	**-**						**165,909**				
263	2056	Replacements	-	3/31/2055	3/31/2090	165,909	165,909	5.070%	5.070%					165,909				
264		**FY 2056 Subtotal:**	**-**	**-**	**-**	**165,909**	**165,909**	**-**						**165,909**				
265	**Grand Total**					**$14,933,703**	**$12,542,328**	**-**						**$10,294,647**	**$36,354**	**$14,779**		

13. SALES AND REVENUE FORECASTS

Table 13-1:
Transmission Revenues, Current Rates FY 2019 - FY 2021
($000s)

	A		B		C		D
			FY 2019		**FY 2020**		**FY 2021**
	Network Sales Revenues						
1	FPT 1	$	15,974	$	15,853	$	15,853
2	FPT 3	$	1,506	$	1,530	$	1,530
3	**FPT 1&3 Transmission Portion**	**$**	**14,370**	**$**	**14,261**	**$**	**14,261**
4	NT_Base	$	134,232	$	135,343	$	136,131
5	NT Ancillary Revenues	$	28,732	$	30,052	$	30,226
6	**Subtotal NT Sale Revenues**	**$**	**162,964**	**$**	**165,395**	**$**	**166,357**
7	PTP, Long-term	$	457,402	$	465,479	$	490,167
8	PTP LT Ancillary Revenues	$	100,505	$	102,723	$	108,128
9	PTP, Short-term	$	28,318	$	29,221	$	28,442
10	**PTP ST Ancillary Revenues**	**$**	**6,162**	**$**	**6,551**	**$**	**6,376**
11	**Subtotal PTP Sale Revenues**	**$**	**592,387**	**$**	**603,974**	**$**	**633,112**
12	**Subtotal Network Transmission Revenues**	**$**	**634,322**	**$**	**644,303**	**$**	**669,001**
13	**Subtotal Network Ancillary Revenues**	**$**	**135,399**	**$**	**142,448**	**$**	**147,852**
14	Total Network Sale Revenues	**$**	**769,721**	**$**	**786,751**	**$**	**816,852**
	Intertie Sale Revenues						
15	IM, Long-term	$	98	$	98	$	98
16	IS, Long-term	$	75,359	$	75,047	$	75,047
17	**IS LT Ancillary Revenues**	**$**	**23,377**	**$**	**23,281**	**$**	**23,281**
18	IS, Short-term	$	4,567	$	4,560	$	4,595
19	IS ST Ancillary Revenues	$	434	$	453	$	457
20	Subtotal IS Sale Revenues	$	103,737	$	103,341	$	103,379
21	Subtotal Intertie Transmission Revenues	$	80,024	$	79,705	$	79,740
22	**Subtotal Intertie Ancillary Revenues**	**$**	**23,811**	**$**	**23,734**	**$**	**23,737**
23	**Total Intertie Sale Revenues**	**$**	**103,835**	**$**	**103,439**	**$**	**103,477**
	Ancillary Revenues						
24	Long-term Scheduling, Control and Dispatch	$	122,699	$	126,004	$	131,408
25	Short-term Scheduling, Control and Dispatch	$	6,596	$	7,004	$	6,833
26	NT Scheduling, Control and Dispatch	$	28,732	$	30,052	$	30,226
27	Subtotal SCD Rate	$	158,027	$	163,060	$	168,467
28	FPT & IR SCD	$	2,976	$	3,122	$	3,122
29	Total SCD Revenue	$	161,003	$	166,182	$	171,589
30	Regulation and Frequency Response	$	6,595	$	6,706	$	6,706
31	Balancing Reseves (VERBS Wind, VERBS Solai	$	38,052	$	32,746	$	32,746
32	VERBS	$	36,833	$	31,572	$	31,572
33	DERBS	$	1,219	$	1,174	$	1,174
34	Operating Reserves - Spinning	$	24,097	$	23,477	$	23,477
35	Operating Reserves - Supplemental	$	19,953	$	19,440	$	19,440
36	Energy Imbalance	$	-	**$**	**-**	**$**	**-**
37	Generation Imbalance	$	-	**$**	**-**	**$**	**-**
38	**Total Ancillary Revenues**	**$**	**249,700**	**$**	**248,550**	**$**	**253,958**
39	**Subtotal less SCD**	**$**	**88,697**	**$**	**82,369**	**$**	**82,369**
40	Utility Delivery	$	2,492	$	2,502	$	2,513
41	Regional Compliance Enforcement Rate	$	2,578	$	2,565	$	2,586
42	Regional Coordinator Rate	$	2,097	$	2,565	$	2,586
43	**General Transmission Rates Subtotal**	**$**	**969,420**	**$**	**980,191**	**$**	**1,010,384**
44	**Subtotal less Generation Input Ancillaries**	**$**	**880,723**	**$**	**897,822**	**$**	**928,015**

Table 13-1:
Transmission Revenues, Current Rates FY 2019 - FY 2021
($000s)

	A	B	C	D
		FY 2019	**FY 2020**	**FY 2021**
	Other Revenues			
45	IS Reservation Fee		$ -	$ -
46	UFT Fixed Dollar Amount	$ 4,682	$ 4,676	$ 4,676
47	UFT Variable Service Amt	$ 242	$ 242	$ 242
48	O&M Non-Federal Facility	$ 377	$ 377	$ 377
49	O&M Federal Facility	$ 281	$ 281	$ 281
50	PTP Reservation Fee	$ 2,464	$ 1,802	$ 257
51	CF Reservation Fee	$ -	$ -	$ -
52	Failure to Comply Penalty	$ -	$ -	$ -
53	SINT AC Non Federal O&M	$ 2,000	$ 2,000	$ 2,000
54	SINT AC Non Fed Replacements	$ -	$ -	$ -
55	TOP Service Charge	$ 1,100	$ 673	$ 673
56	DSI Delivery Charge	$ 1,915	$ 1,915	$ 1,915
57	PCS Wireless Leases	$ 5,966	$ 5,966	$ 5,966
58	PCS Construction	$ 3,720	$ 3,720	$ 3,720
59	PCS Operations & Maintenance	$ 312	$ 312	$ 312
60	Fiber Leases	$ 6,961	$ 9,088	$ 11,950
61	Fiber Operations & Maintenance	$ 1,533	$ 1,578	$ 1,583
62	Land Use/Lease/Sale	$ 216	$ 216	$ 216
63	Misc Leases	$ 105	$ 105	$ 105
64	Right-Of-Way Lease	$ 79	$ 79	$ 79
65	3rd AC RAS Generation Dropping	$ 56	$ 56	$ 56
66	AC RAS Load Tripping	$ -	$ -	$ -
67	Transmission Share of IPP	$ 246	$ 246	$ 246
68	Use of Communication Equipmt	$ 179	$ 179	$ 179
69	FPS Real Power Losses	$ -	$ -	$ -
70	Amort NonFed PNW AC Intertie	$ 2,301	$ 2,301	$ 2,301
71	Transmission Processing Fee	$ 40	$ 40	$ 40
72	Generation Integration BBL	$ 12,642	$ 13,138	$ 13,233
73	TGT Revenues	$ 12,421	$ 12,456	$ 12,456
74	**Other Revenues Subtotal**	**$ 59,838**	**$ 61,447**	**$ 62,863**
75	**Total Revenue**	**$ 1,029,258**	**$ 1,041,638**	**$ 1,073,247**

Table 13-2:
Transmission Revenues, Proposed Rates FY 2020 - FY 2021
($000s)

	A	B	C
	Service	**FY 2020**	**FY 2021**
1	**Network Sales Revenues**		
2	FPT 1	$ 16,348	$ 16,348
3	FPT 3	$ 1,578	$ 1,578
4	IR	$ -	$ -
5	FPT 1&3 Transmission Portion	$ 14,839	$ 14,839
6	IR Transmission Portion	$ -	$ -
7	NT_Base	$ 138,713	$ 139,521
8	NT Ancillary Revenues	$ 29,172	$ 29,342
9	Subtotal NT Sale Revenues	$ 167,885	$ 168,862
10	PTP, Long-term	$ 484,781	$ 510,493
11	PTP LT Ancillary Revenues	$ 101,128	$ 106,449
12	PTP, Short-term	$ 30,338	$ 29,530
13	PTP ST Ancillary Revenues	$ 6,236	$ 6,070
14	Subtotal PTP Sale Revenues	$ 622,484	$ 652,541
15	**Subtotal Network Transmission Revenues**	**$ 668,672**	**$ 694,383**
16	**Subtotal Network Ancillary Revenues**	**$ 139,623**	**$ 144,946**
17	**Total Network Sale Revenues**	**$ 808,295**	**$ 839,329**
18	**Intertie Sale Revenues**		
19	IM, Long-term	$ 97	$ 97
20	IS, Long-term	$ 78,373	$ 78,373
21	IS LT Ancillary Revenues	$ 22,919	$ 22,919
22	IS, Short-term	$ 4,761	$ 4,797
23	IS ST Ancillary Revenues	$ 443	$ 446
24	Subtotal IS Sale Revenues	$ 106,496	$ 106,536
25	Subtotal Intertie Transmission Revenues	$ 83,231	$ 83,267
26	Subtotal Intertie Ancillary Revenues	$ 23,362	$ 23,365
27	Total Intertie Sale Revenues	$ 106,593	$ 106,633
28	Ancillary Revenues		
29	Long-term Scheduling, Control and Dispatch	$ 124,047	$ 129,368
30	Short-term Scheduling, Control and Dispatch	$ 6,679	$ 6,516
31	NT Scheduling, Control and Dispatch	$ 29,172	$ 29,342
32	Subtotal SCD Rate	$ 159,899	$ 165,226
33	FPT & IR SCD	$ 3,073	$ 3,073
34	Total SCD Revenue	$ 162,972	$ 168,299
35	Regulation and Frequency Response	$ 24,760	$ 24,760
36	Balancing Reseves (VERBS Wind, VERBS Sola	$ 31,449	$ 31,449
37	VERBS	$ 30,623	$ 30,623
38	DERBS	$ 826	$ 826
39	Operating Reserves - Spinning	$ 18,676	$ 18,676
40	Operating Reserves - Supplemental	$ 16,304	$ 16,304
41	Energy Imbalance	$ -	$ -
42	Generation Imbalance	$ -	$ -
43	**Total Ancillary Revenues**	**$ 254,161**	**$ 259,488**
44	**Subtotal less SCD**	**$ 91,189**	**$ 91,189**

Table 13-2:
Transmission Revenues, Proposed Rates FY 2020 - FY 2021
($000s)

	A	B	C
	Service	**FY 2020**	**FY 2021**
45	Delivery		
46	Utility Delivery	$ 2,575	$ 2,585
47	Regional Compliance Enforcement		
48	Regional Compliance Enforcement Rate	$ 2,565	$ 2,586
49	Regional Coordinator		
50	Regional Coordinator Rate	$ 2,052	$ 2,069
51	**General Transmission Rates Subtotal**	**$ 1,013,269**	**$ 1,044,392**
52	**Subtotal less Generation Input Ancillaries**	**$ 922,079**	**$ 953,202**
53	Other Revenues		
54	IS Reservation Fee	$ -	$ -
55	UFT Fixed Dollar Amount	$ 4,676	$ 4,676
56	UFT Variable Service Amt	$ 242	$ 242
57	O&M Non-Federal Facility	$ 377	$ 377
58	O&M Federal Facility	$ 281	$ 281
59	PTP Reservation Fee	$ 1,802	$ 257
60	CF Reservation Fee	$ -	$ -
61	Failure to Comply Penalty	$ -	$ -
62	SINT AC Non Federal O&M	$ 2,000	$ 2,000
63	SINT AC Non Fed Replacements	$ -	$ -
64	TOP Service Charge	$ 673	$ 673
65	DSI Delivery Charge	$ 1,915	$ 1,915
66	PCS Wireless Leases	$ 5,966	$ 5,966
67	PCS Construction	$ 3,720	$ 3,720
68	PCS Operations & Maintenance	$ 312	$ 312
69	Fiber Leases	$ 9,088	$ 11,950
70	Fiber Operations & Maintenance	$ 1,578	$ 1,583
71	Land Use/Lease/Sale	$ 216	$ 216
72	Misc Leases	$ 105	$ 105
73	Right-Of-Way Lease	$ 79	$ 79
74	COE/BOR Project Revenue	$ -	$ -
75	3rd AC RAS Generation Dropping	$ 56	$ 56
76	AC RAS Load Tripping	$ -	$ -
77	Transmission Share of IPP	$ 246	$ 246
78	Use of Communication Equipmt	$ 179	$ 179
79	FPS Real Power Losses	$ -	$ -
80	Amort NonFed PNW AC Intertie	$ 2,301	$ 2,301
81	Transmission Processing Fee	$ 40	$ 40
82	Generation Integration BBL	$ 13,138	$ 13,233
83	TGT Revenues	$ 12,414	$ 12,414
84	**Other Revenues Subtotal**	**$ 61,405**	**$ 62,822**
85	**Total Revenue**	**$ 1,074,674**	**$ 1,107,214**

Table 13-3:
LGIA Transmission Credits and Interest at Current Rates
($000s)

	A	B	C	D	E	F	G
#	Request	**Forecasted Transmission Credit**			**Forecasted Interest**		
1		**FY 2019**	**FY 2020**	**FY 2021**	**FY 2019**	**FY 2020**	**FY 2021**
2	GI Request 1	$ 4,663	$ 4,663	$ 1,420	$ 283	$ 124	$ 6
3	GI Request 2	$ 728	$ 728	$ 728	$ 471	$ 462	$ 451
4	GI Request 3	$ 873	$ 873	$ 873	$ 107	$ 77	$ 46
5	GI Request 4	$ 958	$ 958	$ 937	$ 134	$ 82	$ 25
6	GI Request 5	$ 5,938	$ 5,938	$ 5,938	$ 2,221	$ 2,087	$ 1,947
7	GI Request 6	$ 353	$ 1,294	$ 2,001	$ 434	$ 420	$ 381
8	GI Request 7	$ -	$ 471	$ 1,883	$ 466	$ 543	$ 515
9	GI Request 8	$ -	$ 147	$ 925	$ 24	$ 34	$ 15
10	GI Request 9	$ -	$ -	$ 1,080	$ 195	$ 234	$ 222
11	GI Request 10	$ 111	$ 97	$ -	$ 5	$ 1	$ -
12	GI Request 11	$ 9	$ 118	$ 143	$ 9	$ 7	$ 2
13	GI Request 12	$ 9	$ 118	$ 138	$ 5	$ 6	$ 2
14	GI Request 13	$ 9	$ 118	$ 188	$ 86	$ 138	$ 137
15	GI Request 14	$ -	$ 118	$ 188	$ 8	$ 11	$ 6
16	GI Request 15	$ -	$ 118	$ 188	$ 33	$ 51	$ 48
17	GI Request 16	$ 9	$ 118	$ 188	$ 6	$ 8	$ 3
18	GI Request 17	$ -	$ 29	$ 188	$ 3	$ 7	$ 5
19	GI Request 18	$ 318	$ 318	$ 160	$ 23	$ 12	$ 1
20	GI Request 19	$ 265	$ 265	$ 17	$ 24	$ 8	$ -
21	GI Request 20	$ 281	$ 281	$ 281	$ 65	$ 52	$ 37
22	**Total Network**	**$ 14,523**	**$ 16,768**	**$ 17,465**	**$ 4,602**	**$ 4,363**	**$ 3,849**

Table 13-4:
LGIA Transmission Credits and Interest at Proposed Rates
($000s)

	A	B	C	D	E	F	G
#	Request	**Forecasted Transmission Credit**			**Forecasted Interest**		
1		**FY 2019**	**FY 2020**	**FY 2021**	**FY 2019**	**FY 2020**	**FY 2021**
2	GI Request 1	$ 4,663	$ 4,866	$ 1,211	$ 283	$ 120	$ 4
3	GI Request 2	$ 728	$ 759	$ 759	$ 471	$ 461	$ 450
4	GI Request 3	$ 873	$ 911	$ 911	$ 107	$ 76	$ 44
5	GI Request 4	$ 958	$ 999	$ 890	$ 134	$ 80	$ 22
6	GI Request 5	$ 5,938	$ 6,197	$ 6,197	$ 2,221	$ 2,082	$ 1,933
7	GI Request 6	$ 353	$ 1,351	$ 2,088	$ 434	$ 419	$ 378
8	GI Request 7	$ -	$ 491	$ 1,965	$ 466	$ 542	$ 513
9	GI Request 8	$ -	$ 154	$ 919	$ 24	$ 34	$ 14
10	GI Request 9	$ -	$ -	$ 1,127	$ 195	$ 234	$ 221
11	GI Request 10	$ 111	$ 97	$ -	$ 5	$ 1	$ -
12	GI Request 11	$ 9	$ 123	$ 137	$ 9	$ 7	$ 2
13	GI Request 12	$ 9	$ 123	$ 133	$ 5	$ 6	$ 1
14	GI Request 13	$ 9	$ 123	$ 196	$ 86	$ 138	$ 137
15	GI Request 14	$ -	$ 123	$ 196	$ 8	$ 11	$ 6
16	GI Request 15	$ -	$ 123	$ 196	$ 33	$ 51	$ 47
17	GI Request 16	$ 9	$ 123	$ 187	$ 6	$ 8	$ 3
18	GI Request 17	$ -	$ 31	$ 196	$ 3	$ 7	$ 4
19	GI Request 18	$ 318	$ 332	$ 146	$ 23	$ 11	$ 1
20	GI Request 19	$ 265	$ 276	$ 5	$ 24	$ 8	$ -
21	GI Request 20	$ 281	$ 293	$ 293	$ 65	$ 51	$ 36
22	**Total Network**	**$ 14,523**	**$ 17,493**	**$ 17,753**	**$ 4,602**	**$ 4,349**	**$ 3,814**

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14. REPAYMENT THEORY OF OPERATION

14.1 Introduction

BPA is required to collect revenues sufficient to meet BPA's annual transmission expenses and cover the long-term obligations of the Federal Columbia River Transmission System.

The repayment program is used to determine whether a given set of annual revenues is sufficient to meet a given set of annual expenses and cover a given set of long-term obligations when applied in accordance with the requirements of Department of Energy Order RA 6120.2. The program is also used to determine the minimum factor by which future revenues can be multiplied to obtain a new set of revenues that will be sufficient to recover amortization costs.

The revenues and the expenses of the cost evaluation year will be assigned to all future years, in effect assigning the net operating revenue of the cost evaluation year to all future years and levelizing the long-term obligations over all future years.

14.2 Repayment Program Logic

The diagrams on the following pages show the flow of logic in BPA's repayment program. The first diagram shows the logic of the binary search used to locate minimum sufficient revenues. A necessary part of this search is the test for sufficiency. The logic of the test for sufficiency is shown on the remaining two diagrams.

The equations referred to are:

Revenue Equation: Net revenues of each year are expended on interest and payments on the principals.

Investment equation: The payments on each investment are less than or equal to the principal of that investment (and equal to the principal of that investment after the investment is due).

Predictor equation: For each future year, the accumulated revenues less the accumulated interest less the accumulated investments due is equal to the accumulated payments on high interest rate investments which are not due.

FIGURES

Figure 14-1 Repayment Program (Test for Sufficiency)

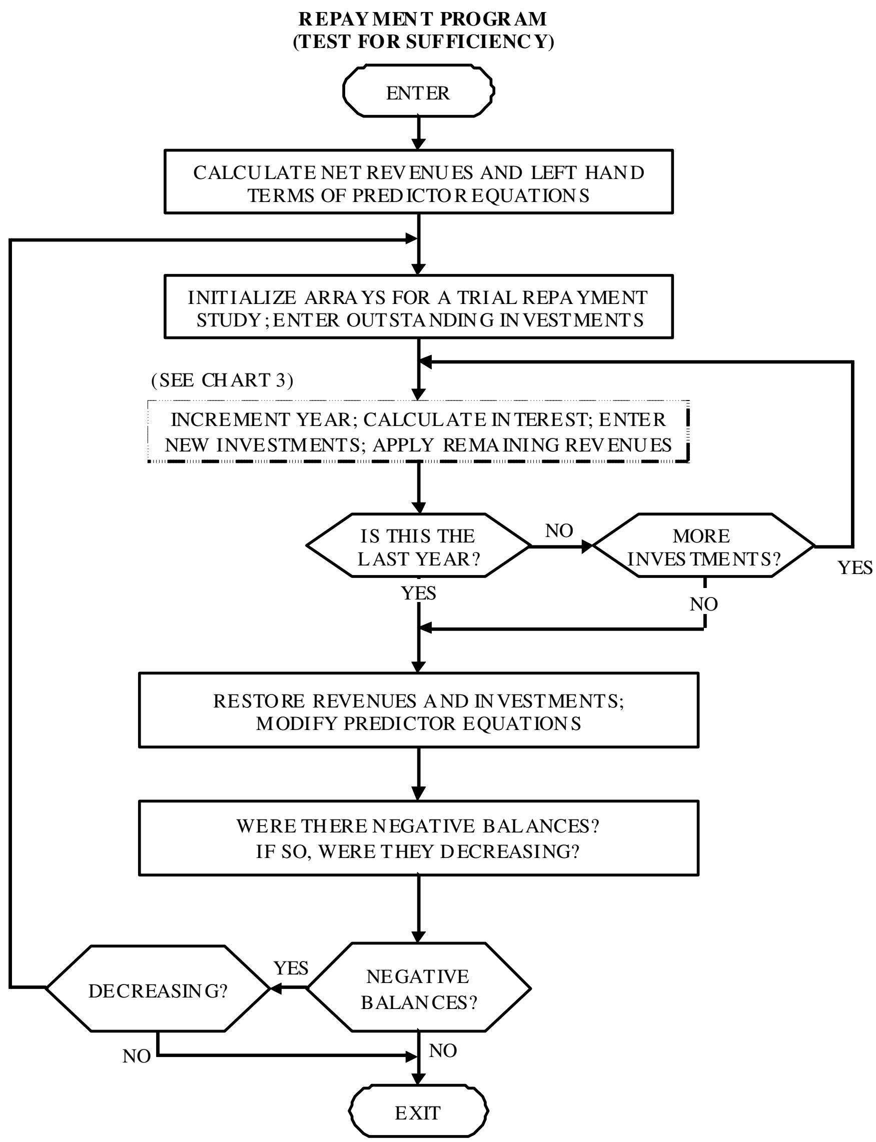
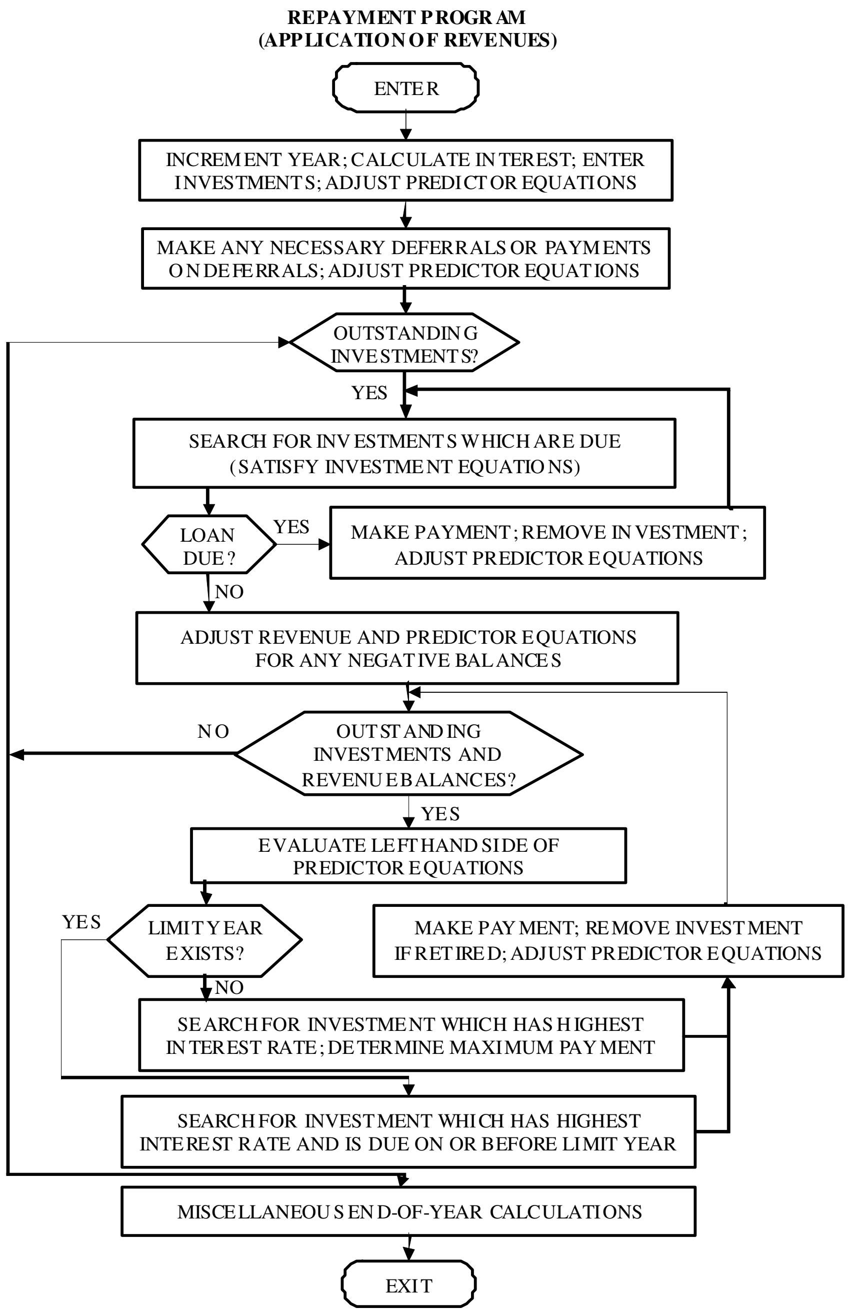


Figure 14-2 Repayment Program (Application of Revenues)



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