McCULLOUGH RESEARCH

ROBERT F. McCULLOUGH, JR.
PRINCIPAL

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To: McCullough Research Clients

From: Robert McCullough
Eric Shierman
Robby Gottesman

Subject: Privatizing BPA's Assets and Liabilities

Recent discussions concerning sale of the U.S. Government's Power Marketing Administrations have avoided a detailed discussion of the underlying economics and ratepayer impacts. The analysis below indicates that a market sale of the Bonneville Power Administration's direct and indirect assets would be valued by a potential buyer at around $10.1 billion. A sale at this price would require a write-down of $4.8 billion for the U.S. Treasury and lead to a range between 11% and 24% increase in required revenues from BPA's current rates.[1]

The single largest asset owned by BPA is its transmission system. The 2019 budget proposes to sell BPA's transmission at a significant discount:

> The Budget proposes to sell the transmission assets owned and operated by PMAs, including those of Southwestern Power Administration, Western Area Power Administration, and Bonneville Power Administration.[2]

The budget document proposes specific terms for the sale, including a payment schedule over the next decade. The proposal is so detailed that it is possible an actual negotiation with a real buyer is driving these numbers rather than a hypothetical valuation.

Sale on these terms would cost the U.S. Treasury $4.5 billion and raise transmission rates between 8% and 58% depending on the rate base adopted by regulators.[3]

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[1] The range reflects regulatory treatment of the assets once sold. Regulators will have the option to determine whether the resulting rate base should be reduced to its current market value. If so, the rate increase will be significantly mitigated.
[2] An American Budget, Office of Management and Budget, February 2018, page 48.
[3] Unlike BPA's generation assets, there is no competitive market alternative to value transmission since the owner of a transmission path is effectively a monopoly. Transmission prices are set by regulators on the basis of cost.

The Bonneville Power Administration is a complex business. Other than transmission, the agency has little in the way of hard concrete assets since electric generation from the dams and the Columbia Generating Station are owned by other entities.

BPA's primary generation assets, a series of dams along the Columbia River, are contracts with the Army Corps of Engineers and the Department of the Interior. In addition, BPA has a contract with Energy Northwest for the Columbia Generating Station. Congress has added subsidies and cross subsidies over the years to the Bonneville structure -- including conservation programs, subsidies to residential customers of the region's investor owned utilities, irrigators, and low-density utility customers. Federal courts have mandated significant fish and wildlife costs to the system as well.

BPA's most important asset is the set of power contracts signed by the region's public agencies in 2008. As bulk power prices have declined, the differential between the current contract price -- $35/MWh – and the market -- $20/MWh – has increased enormously.

Traditional assets such as the dams owned by the Corps of Engineers and the Bureau of Reclamation have simultaneously declined in value compared to alternative supplies. BPA's nuclear plant, the Columbia Generation Station (CGS), now has a negative value which will continue to its expected termination in 2026.[4]

Since this complex set of cross-subsidies is so deeply woven into BPA's marketing function, this report estimates the market value of all these assets being sold together as a whole enterprise, from the dams owned by federal agencies to CGS, whose complicated ownership includes public entities in the state of Washington. We have also considered the likely case where a buyer would choose not to purchase the Columbia Generating Station.

I. Critical Assumptions

Three primary assumptions are critical to this study: transaction structure, discount rate(s), and the long-term market price of energy at the Mid-Columbia Hub.

A) Transaction Structure

Depending on the structure of the sale, the impact on ratepayers may be very different. The basic structure – purchase of assets then used to serve ratepayers – is logical but alternatives

[4] McCullough, Gellman, Noble, Ng, and Sand. "Replacing the Columbia Generating Station with Renewable Energy" McCullough Research, February 15, 2017.

do exist. Traditionally, mergers are a preferred option when assets might be reduced in value for ratemaking purposes in an outright sale.

It is difficult to envisage a direct merger with BPA given its status as a federal agency. However, the situation might be different if the agency was transformed into a government owned corporation which would preserve book values for regulatory purposes. A merger of a government owned corporation with a potential buyer is not inconceivable.

Outright purchase of the assets and liabilities would expose the new owner to a potential devaluation of its rate base down to the market price. A merger might obviate this regulatory review, resulting in a much higher cost to ratepayers.

In the analysis below, rate impacts are calculated for both market value and original cost depreciated.

B) Discount Rate(s)

Every multi-period economic analysis lives and dies by its discount rate assumption. Since the primary assets in this analysis are the dams in the Federal Columbia River System, the same discount rate used in BPA's internal studies was used here.

Assumption	Value	Source	Comment
Discount rate	12.0 percent (Base Case) 8.0 percent (All Sensitivities)	BPA Finance BPA Generating Assets	10 percent real 6 percent real
Inflation rate	1.9 percent	BPA Finance	Average annual rate, 20-yr forecast

Table 1: BPA Discount Rates[5]

The discount rate is considerably higher than two other pivotal interest rates used in our study – the computed "rate of return" on BPA's assets used to make rates and the cost of capital for a possible purchaser. For these values, the study actually calculates the value from the most recent rate case and from filings by PacifiCorp, a likely buyer.[6,7]

The reason to keep the higher discount rate is based on two factors: first, BPA's discount rate matches high discount rates used in internal studies by large hydro-electric utilities

[5] BPA. "2017-2030 Hydro Asset Strategy" June 2016, page 65.
[6] PacifiCorp. "2017 Transmission Formula Rate Annual Update." FERC Docket ER11-3643. Submittal 20170515-5076. May 15, 2017. See line 126.
[7] BPA. "BP-18 Rate Proceeding: Transmission Revenue Requirement Study." November 2016. <https://www.bpa.gov/secure/Ratecase/openfile.aspx?fileName=BP-18-E-BPA-09+Transmission+Revenue+Requirement+Study.pdf&contentType=application%2fpdf>.

elsewhere; and second, allowed lower returns of existing utilities like PacifiCorp reflect a variety of embedded past investment decisions that now lack high degrees of risk.

Purchase of all or part of BPA is likely to be litigious and controversial. Equating its risk to that associated with an existing transmission line or generating plant that has long since passed regulatory review and environmental challenge would be, at best, optimistic and, at worst, misleading.

The discount rate used for transmission assets is especially challenging. This study uses the proposed payment stream published in the most recent budget as an indicator of market value.[8] Since there is no competitive market for transmission services, the value would be the payment stream discounted by the buyer's discount rate – assumed as mentioned above at PacifiCorp's cost of capital.[9]

C) Market Prices

Since 2008, market prices in electricity, natural gas, and oil have declined precipitously. Forward prices for FY 2019 remain approximately $20/MWh in real terms – roughly equivalent to BPA's low forecast in the most recent BPA Asset Strategy.[10]

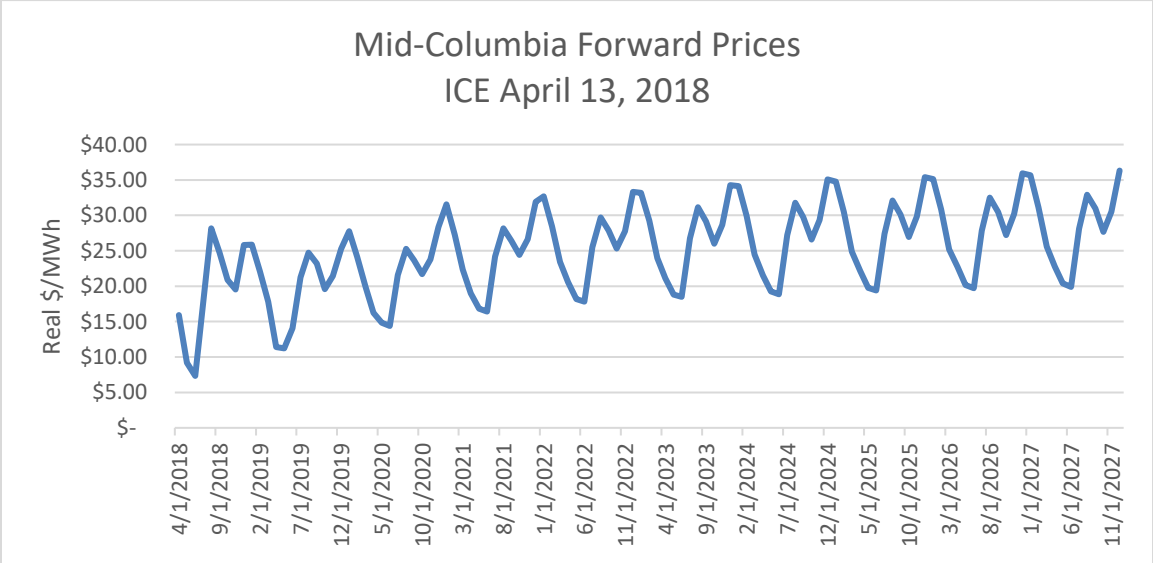

Figure 1: Forward Mid-C prices remain relatively flat[11]

[8] Office of Management and Budget. "An American Budget" February 2018, page 118.
[9] As mentioned in our previous report on the impacts of a sale of BPA's transmission assets, the detailed schedule of sale revenues in the budget might indicate that some negotiations have already taken place.
[10] BPA. "2017-2030 Hydro Asset Strategy" June 2016, page 121.
[11] MDC and OMC forward prices from ICE on April 13, 2018.

Recent RFPs in Alberta and Colorado indicate that even these prices may be high, making our long-term price estimates conservative.

Traditionally, electric generation costs have increased as less expensive options are exhausted. Hydro-electric sites, for example, are limited. Additional sites tend to climb steeply once the best sites have been developed. Wind and solar, however, are available in huge quantities – as evidenced by the 101,073 megawatts of renewables offered to Xcel in Colorado in December:

RFP Responses by Technology

Generation Technology	# of Bids	Bid MW	# of Projects	Project MW	Median Bid Price or Equivalent	Pricing Units
Combustion Turbine/IC Engines	30	7,141	13	2,466	$ 4.80	$/kW-mo
Combustion Turbine with Battery Storage	7	804	3	476	6.20	$/kW-mo
Gas-Fired Combined Cycles	2	451	2	451	6.70	$/kW-mo
Stand-alone Battery Storage	28	2,143	21	1,614	11.30	$/kW-mo
Compressed Air Energy Storage	1	317	1	317	14.60	$/kW-mo
Wind	96	42,278	42	17,380	$ 18.10	$/MWh
Wind and Solar	5	2,612	4	2,162	19.90	$/MWh
Wind with Battery Storage	11	5,700	8	5,097	21.00	$/MWh
Solar (PV)	152	29,710	75	13,435	29.50	$/MWh
Wind and Solar and Battery Storage	7	4,048	7	4,048	30.60	$/MWh
Solar (PV) with Battery Storage	87	16,725	59	10,813	36.00	$/MWh
IC Engine with Solar	1	5	1	5	50.00	$/MWh
Waste Heat	2	21	1	11	55.40	$/MWh
Biomass	1	9	1	9	387.50	$/MWh
Total	430	111,963	238	58,283		

Table 2: Utilities will start getting used to lower priced RFP bids[12]

Overall, an estimate of flat $20/MWh prices at Mid-Columbia seems reasonable. If that were the price of BPA's power sales today, its gross revenue from power sales would be only 61% of its current top-line sales.[13] This study assumes a $20/MWh price for BPA's sales in the years after 2028 when BPA's current contracts with public utilities will expire.

II. Valuation by Component

To value BPA's power business, this study analyzes the sale of the BPA transmission system as well as eight specific components of the BPA generation business. The following diagram maps how these components interact.

[12] 2016 Electric Resource Plan 2017 All Source Solicitation 30-Day Report (Public Version) (CPUC Proceeding No. 16A-0396E), Xcel, December 28, 2017, page 9.
[13] This is because BPA's contracted sales make up 85% of its power sales.

Cash flows right to left – from customers to uses. Not all of the components of BPA are "profitable". Major subsidies are not profitable, of course, but not all sources of generation are either. In this diagram, components with positive market values are shown in green. Those with negative market values are shown in red.

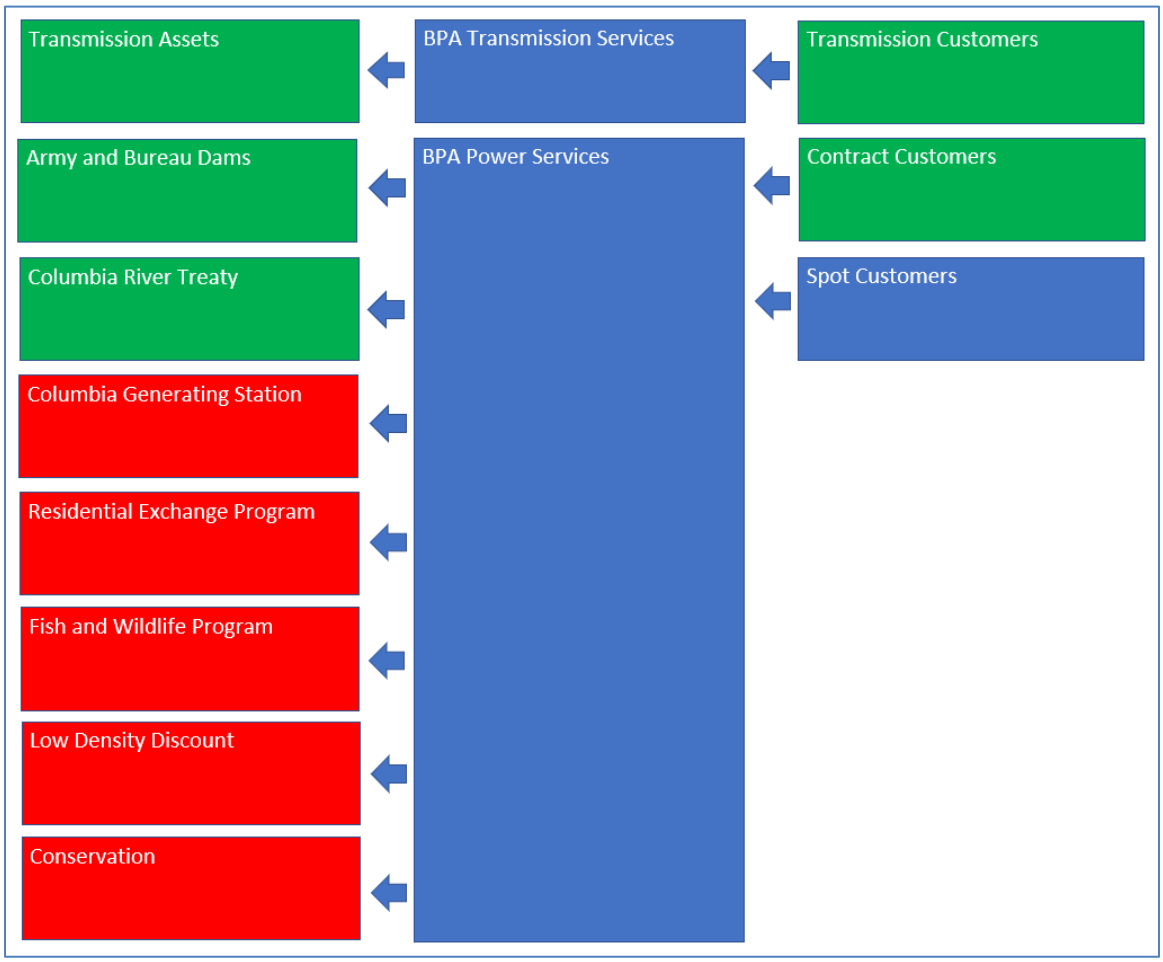

Figure 2: BPA's convoluted flow of cash

The following table compares the accounting value (original cost depreciated) with the likely sale prices. The dams are displayed with and without subsidy obligations.

Component	Market Value	Original Cost Depreciated
Dams	$5,866,517,880.35	$6,321,300,000.00
Transmission	$3,462,851,759.99[14]	$6,996,500,000.00
Columbia Generating Station	($1,015,487,401.70)	$1,599,245,000.00
Sales Contracts	$4,880,761,547.17	
Columbia River Treaty	$471,987,407.97	
Residential Exchange	($2,042,084,588.02)	
Fish and Wildlife	($431,437,886.59)	
Low Density Discount	($316,243,970.87)	
Conservation	($764,837,858.13)	
Total	$10,112,026,890.16	$14,917,045,000.00

Table 3: Market Values and Original Cost Depreciated

The sale of BPA and the generation assets it markets would require that the U.S. Government take a $4.8 billion dollar write down. This is not simply an accounting adjustment. The payment for BPA is $4.8 billion dollars less than BPA's expected net revenues discounted at their cost of capital. Put more simply, the Treasury will lose $4.8 billion in future expected revenues from BPA power and transmission sales if the agency is sold.

A) BPA's Transmission System

The Trump administration's FY 2019 budget represents a dramatic shift from the preceding administration. Included in the budget is a plan to divest assets from three Power Marketing Administrations (PMA), including BPA. BPA serves the greater Pacific Northwest region, encompassing 300,000 square miles and over 13.5 million people.[15] It is wholly funded by the revenues it generates by operating roughly 75 percent of the Pacific

[14] As noted above, this is the present value of the payment stream proposed in the 2019 budget.
[15] Bonneville Power Administration (BPA). "BPA FY 2016 Facts." April 2017. <https://www.bpa.gov/news/pubs/GeneralPublications/gi-BPA-Facts.pdf>. See page 3.

Northwest's transmission lines.[16] Under the Trump budget, BPA's transmission infrastructure assets would be sold to unidentified investors.[17]

Earlier this year, McCullough Research conducted a detailed analysis of the President's FY 2019 budget proposal to sell BPA's transmission assets.[18] For the purpose of that study, the Trump administration's valuation was used. This study does the same but discounts the stream of payments to present value using PacifiCorp's cost of capital and updates BPA's financial data to the most recent values.

Table S–6. Mandatory and Receipt Proposals—Continued

(Deficit increases (+) or decreases (–) in millions of dollars)

	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	Totals 2019–2023	Totals 2019–2028
Reallocate mandatory Pell funding to support short-term programs	.....	–7	–27	–34	–40	–46	–48	–49	–49	–50	–51	–154	–401
Total, Education	.....	–6,305	–11,565	–16,124	–19,267	–21,729	–23,770	–24,879	–25,922	–26,670	–27,213	–74,990	–203,444
Energy:													
Repeal borrowing authority for Western Area Power Administration (WAPA)	.....	–450	–875	–75	575	275	110	–50	–50	–50	–50	–550	–640
Divest WAPA transmission assets	.....	.....	–580	.....	.....	.....	.....	.....	.....	.....	.....	–580	–580
Divest Southwestern Power Administration transmission assets	.....	.....	–15	.....	.....	.....	.....	.....	.....	.....	.....	–15	–15
Divest Bonneville Power Administration transmission assets	.....	.....	–1,733	–488	–483	–493	–452	–386	–386	–386	–386	–3,197	–5,193
Reform the laws governing how Power Marketing Administrations establish power rates	.....	–162	–169	–173	–182	–188	–192	–199	–206	–211	–217	–874	–1,899
Restart Nuclear Waste Fund Fee in 2021	.....	.....	.....	–359	–359	–364	–367	–364	–360	–360	–360	–1,082	–2,893
Total, Energy	.....	–612	–3,372	–1,095	–449	–770	–901	–999	–1,002	–1,007	–1,013	–6,298	–11,220

Figure 3: Trump administrations FY19 Budget Proposal[19]

In Figure 3 (document Table S-6) above, the Trump administration displays a series of installment payments for BPA's transmission assets. Using a likely buyer as a proxy, we discount these instalment payments to present value using 7.53%, the regulated cost of PacifiCorp's capital.[20] Its present value is $3.5 billion.

Since ownership of transmission confers monopoly power over access to the asset, transmission is regulated at the state and federal level. BPA's transmission system is interstate, so the Federal Energy Regulatory Commission would have jurisdiction.

[16] The Public Power Council. "Proposal to Divest Transmission of Power Marketing Administrations." May 2017. <http://www.ppcpdx.org/wp-content/uploads/05-23-2017.pdf>.
[17] The White House. "Fact Sheet, 2018 Budget: Infrastructure Initiative." See page 3. <https://www.whitehouse.gov/sites/whitehouse.gov/files/omb/budget/fy2018/fact_sheets/2018%20Budget%20Fact%20Sheet_Infrastructure%20Initiative.pdf>.
[18] McCullough, Gottesman, and Shierman. "FY 2019 Update: Privatization of Bonneville Power Administration's Transmission Assets" McCullough Research, February 14, 2018.
[19] Office of Management and Budget. "An American Budget" February 2018, page 118.
[20] PacifiCorp. "2017 Transmission Formula Rate Annual Update" FERC Docket ER11-3643. Submittal 20170515-5076, May 15,2017, see line 126.

FERC's determination of the rate base of the transmission system could range from the original cost net of depreciation which would increase transmission rates 58% at a likely buyer's cost of capital. Alternatively, the rate increase could be as low as 8% if FERC ruled that the rate base would equal the present value of the payment stream set out in the proposed federal budget.

B) Corps and Bureau Dams:

BPA does not own the dams on the Columbia River and its tributaries that it markets. The dams are owned by the Department of Defense and the Department of the Interior. These assets were valued by calculating the gross revenue from their total energy output if sold at the market price of $20/MWh. From this, O&M and equipment replacement costs from the most recent BPA rate case Revenue Requirement Study were subtracted. The present value of these net earnings is $5.9 billion.

As discussed below, the value of the existing hydro-electric system is significantly increased by a partnership with Canada implemented through the Columbia River Treaty. The benefits of the treaty are estimated annually by the Canadian and U.S. Entities. For the purpose of this analysis, we have relied upon the Annual Report of the Columbia River Treaty from August 1, 2016 through September 30, 2017.[21]

C) Columbia Generating Station:

This nuclear power plant is the last of its kind on the west coast.[22] Its high costs have been a constant drain on BPA's finances. Last year, McCullough Research estimated its potential lifetime as having nine more years, with an expected termination in 2026.[23]

Energy Northwest estimates the FY 2018 operating cost for CGS is $357 million for the 9,969 GWh of power produced. At $36.50 per MWh in Fiscal Year 2018 and $48.20 per MWh in Fiscal Year 2019, this CGS costs are more than twice the market price of power. Not surprisingly, the market price of the plant over the next eight years is negative. A buyer of the entire BPA system would probably close the unit. Its net present value is

[21] Annual Report of The Columbia River Treaty, Canada and United States Entities, 01 August 2016 through 30 September 2017, page vii.
[22] The Diablo Canyon Plant in Southern California is currently operational but is scheduled to be decommissioned starting in 2024.
[23] This paper applied a life expectancy method, finding a strong predictive correlation between the timing of nuclear plant shut downs and their age: McCullough, Gellman, Noble, Ng, and Sand. "Replacing the Columbia Generating Station with Renewable Energy" McCullough Research, February 15, 2017.

negative, requiring the seller to pay the buyer $1 billion to transfer ownership of this uncompetitive asset.

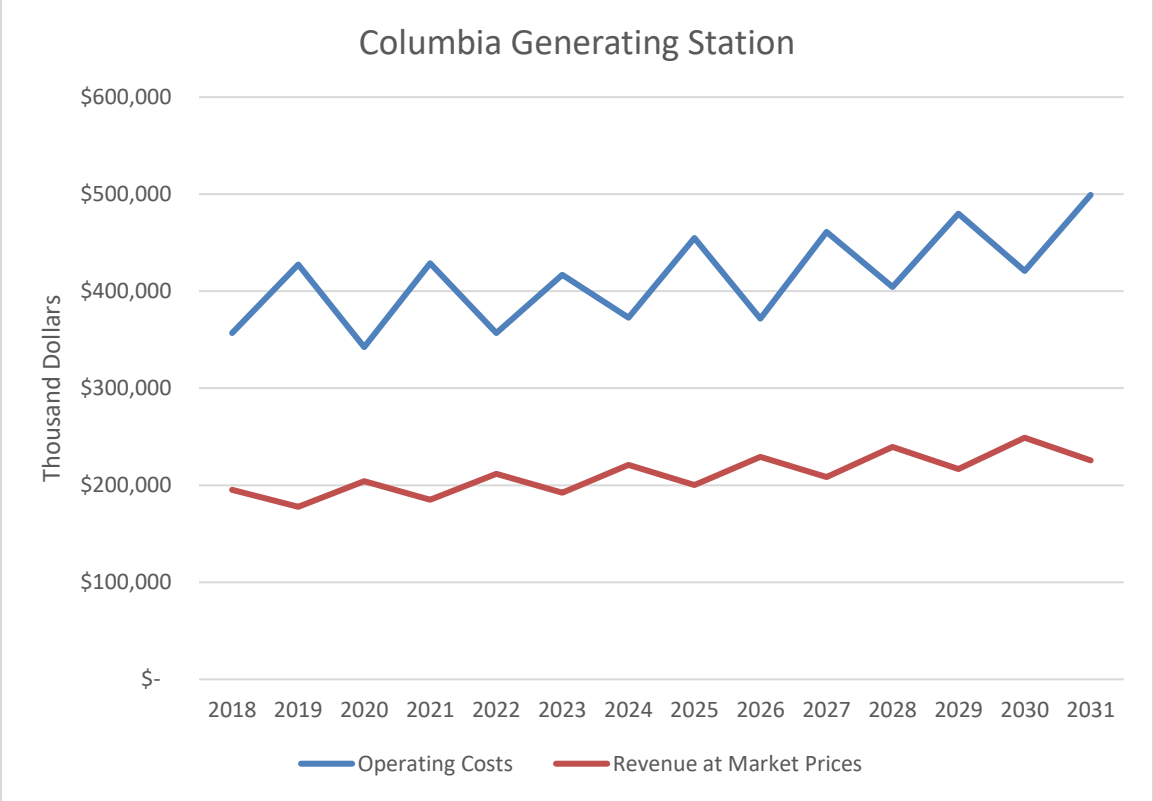

Figure 4: CGS Costs and Revenues

While BPA and Energy Northwest predict a long life for the aging unit, the rate of closure for older nuclear stations in the United States has accelerated in recent years. Based on the pattern of aging and closure rates, CGS is likely to close by 2026. If the plant continues in operation past 2026, it will decrease the economic value of BPA even further.

This is one asset where the structure of a deal to sell BPA makes a significant difference. While the market value of CGS is negative, spinning out BPA as an Amtrak-like government owned corporation (which could then merge with an investor owned utility) might preserve its value as a regulatory asset.

D) Columbia River Treaty:

Under the treaty signed in 1964, the United States receives half the proceeds of the benefits from the coordination between the U.S. and Canada that optimizes Columbia River

operations. The generation owned by the Army Corps of Engineers and the Bureau of Reclamation currently get 67% of this benefit.[24]

The geography of the Northwest Power Pool includes massive hydroelectric potential provided by the U.S. and Canadian Rocky Mountains. The headwaters of the Columbia River start in Canada, enter the United States, and extend into British Columbia. The river crosses Washington State before emptying into the Pacific near Astoria, Oregon. The Columbia Gorge provides many excellent locations for hydroelectric dams since the river passes through relatively narrow canyons. Although this is excellent for dams and generators, it is not ideal for storage. The best storage opportunities are on the Canadian side of the border.

The Columbia River Treaty is currently in the early stages of renegotiation. Few understand its complex mechanics and financial implications and it is logical to expect that any changes will require both time and considerable effort.

This paper's valuation of the Corps and Bureau dams is made without the additional market value the treaty provides. The net present value of this benefit to BPA is $472 million based on existing treaty calculations.[25]

E) Existing Public Agency Contracts:

Most of BPA's sales are made above the market price for firm power to its contracted customers. These contracts' net present value is $4.9 billion and will expire in 2028.

Ten years ago, utilities entered into these contracts when the price of oil and natural gas was spiking, the current abundance of natural gas was just speculation, and the benefits of sustained investments in renewable energy was still being debated. When these contracts are renegotiated in ten years, the high energy prices of 2008 will be ancient history, and BPA will not be able to command prices like that going forward. For the purpose of this study, all sales are assumed to be at the market price after 2028.

[24] Not all Columbia River dams are federally owned. Other utilities and corporations also benefit from the coordination of Canadian storage with U.S. generation.
[25] Annual Report of The Columbia River Treaty, Canada and United States Entities, 01 August 2016 through 30 September 2017, page vii.

F) BPA's Subsidy Programs:

BPA has been tasked with a number of additional missions by law and the courts since its inauguration in 1937. The net present value of each of these programs becomes a liability if a private sector buyer were to be required to continue funding them. The primary programs are the Residential Exchange, the Low-Density Discount, Fish and Wildlife, and various conservation programs.

i) Residential Exchange Program:

BPA provides residential and farm customers of regional utilities a form of direct access to its power through a system of purchasing power from the utilities' average system cost and then sells it at a set exchange rate. This "exchange" constitutes a major subsidy, the net present value of which is $2 billion.

ii) Low Density Discount:

For select utilities that serve residential customers, this discount program modifies BPA's tiered rates. The net present value of this cost is $0.3 billion.

iii) Fish and Wildlife:

BPA is task with funding fish and wildlife restoration efforts. Chief among them are projects to restore salmon and steelhead runs. The net present value of this cost is $0.4 billion.

iv) Conservation:

BPA funds programs that educate rate payers and incentivize them toward improving their energy efficiency. The net present value of this cost is $0.8 billion.

III. Pricing the Bonneville Power Administration

Combining these assets and liabilities together, the value of BPA as an entire enterprise is $10.1 billion. If CGS were not included in the sale, the price would be $11.1 billion.

Component	Value
Dams	$5,866,517,880.35
Transmission	$3,462,851,759.99
Columbia Generating Station	($1,015,487,401.70)
Contracted Sales	$4,880,761,547.17
Columbia River Treaty	$471,987,407.97
Residential Exchange	($2,042,084,588.02)
Fish and Wildlife	($431,437,886.59)
Low Density Discount	($316,243,970.87)
Conservation	($764,837,858.13)
Total	$10,112,026,890.16
Total without CGS	$11,127,514,291.86

Table 4: Market Values

A) Ratepayer Impact

Rates are determined by the standard formula from Charles Phillips' classic monograph *The Regulation of Public Utilities: Theory and Practice*.[26] Let R be the revenue required of the regulated utility that would replace BPA. Let O be the operating costs, V be the value of the sold assets, D be the depreciation, and r be the allowed rate of return.

Required revenue is then:

$$R = O + (V-D) \times r$$

The new required revenue of a fully privatized BPA is found by plugging in the following values.

The initial V-D is the sale price of $10.1 billion. The best proxy for a private sector rate of return is the documented regulated rate of PacifiCorp's 7.53%.[27] An additional return of 3.27% must be added to cover income taxes.[28] Thus r = 10.79%. The operating expense comes from the last rate case's income statements for both power and transmission adjusted for depreciation and amortization.[29,30] Thus O = $3.3 billion.

[26] Phillips, Charles F. *The Regulation of Public Utilities: Theory and Practice*. Public Utilities Reports, 1988, page 169.
[27] PacificCorp. "2017 Transmission Formula Rate Annual Update" FERC Docket ER11-3643, Submittal 20170515-5076, May 15, 2017, line 126.
[28] McCullough, Shierman, and Gottesman. "FY 2019 Update: Privatization of Bonneville Power Administration's Transmission Assets" McCullough Research, February 14, 2018, page 5.
[29] BPA. "Power Revenue Requirement Study BP-18-FS-BPA-02" July 2017, page 32.
[30] BPA "Transmission Revenue Requirement Study BP-18-FS-BPA-09" July 2017, page 32.

In the best case, the new revenue requirement of a fully privatized BPA and all the assets that produce the products it markets is then derived as $4.5 billion:

$$\$4,417,727,513.01 = \$3,326,639,811.56 + \$10,112,026,890 \times 10.79\%.$$

The current revenue requirement of BPA is $3,981,768,000.[31] This implies an 11% increase in rates at this sale price of $10.1 billion.[32]

The current revenue requirement of BPA without CGS would be $3,624,775,000.00. The revenue requirement of a private entity that does not have to buy CGS would be $4,204,619,266.70, triggering an even higher rate increase of 16% due to the higher sale price.

In the worst case, BPA assets would pay the higher after-tax rate of return on their full original cost net of depreciation. In this case, there would be no incentive to close CGS since its original cost net of depreciation would add to rate base and earnings.

The calculation assumes that the V-D would be $14,917,045,000.00:

$$\$4,936,188,967.06 = \$3,326,639,811.56 + \$14,917,045,000 \times 10.79\%.$$

The resulting rate increase would be 24%.

The rate impact of the sale of BPA's transmission assets uses the same regulatory formula. In the best case, FERC would reduce the allowed rate base of the transmission system to the present value of the payment stream set out in the most recent budget:

$$\$1,114,674,653.19 = \$741,032,948.28 + \$3,462,851,759.99 \times 10.79\%.$$

This would require an 8% rate increase over existing BPA transmission tariffs.

The buyer would argue for a more attractive estimate of the value of the assets – equal to original cost minus depreciation:

$$\$1,633,919,350.00 = \$878,997,000.00 + \$6,996,500,000.00 \times 10.79\%.$$

This would increase transmission rates by 58%.

[31] This is the sum of both Power and Transmission revenue requirements.
[32] BPA. "Power Revenue Requirement Study BP-18-FS-BPA-02" July 2017, page 32

IV. Conclusion

BPA's assets are valuable – especially the existing contracts with public utilities, the Corps and Bureau Dams, and its extensive transmission system. With the dramatic fall in market prices, the sale price of BPA – including its existing commitments for fish and wildlife, conservation, the residential exchange, and other programs – is likely to be significantly less than its existing book value.

BPA's existing rates will recover the book value net of accumulated depreciation over time. Writing off $4.8 billion of federal assets will decrease revenues paid over time to the Treasury by $4.8 billion.

At the same time, rates will go up since the new owner will not enjoy BPA's beneficial cost of capital. Assuming private sector values for cost of capital and income taxes will require a one-time 11% to 24% rate increase – in addition to any rate increases normally expected in years to come. For the Trump administration's current proposal to sell only the transmission assets, the same assumptions imply this would lead to a 8% to 58% increase in transmission rates.