

McCULLOUGH RESEARCH

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Subject: Privatization of Bonneville Power Administration's Transmission Assets

On May 23, 2017, the White House Fiscal Year 2018 budget included a cryptic entry for the sale of the Bonneville Power Administration's (BPA) transmission assets. The proposed revenues from the sale are only 80% of the value of the assets being sold. This raises the question of why these valuable assets would be sold at a discount – and who would get the benefit of the discounted price. If the sale goes through, this will also raise novel regulatory issues.

Basic Economics:

Overall, the proposed sale will increase transmission rates by 44% under the most likely scenario. Under a less likely scenario, the Federal Energy Regulatory Commission (FERC) might be convinced to reduce the regulatory value, or rate base, to the proposed price. This would still result in a transmission rate increase of 26%. Rate impacts are likely to be \$475 million in 2019.

The Trump administration's FY 2018 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.¹ It is a self-funded organization operating roughly 75 percent of the region's transmission lines, delivering power at-cost to the Northwest.² Under the Trump budget, BPA's transmission infrastructure assets

¹ Bonneville Power Administration (BPA). "BPA FY 2016 Facts." April 2017.

<<https://www.bpa.gov/news/pubs/GeneralPublications/gi-BPA-Facts.pdf>>. See page 3.

² 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>>.

would be sold or leased to investor-owned utilities.³ The FY 2018 budget projects \$4.9 billion in revenue from the sale between 2018 and 2027, with \$1.8 billion coming in 2019.⁴

The proposed revenues from the sale of BPA are only 80% of the value of the assets being sold. BPA's 2016 Annual Report cites the system's original cost at roughly \$9.1 billion, with an accumulated depreciation of nearly \$3.0 billion, putting its depreciated value at \$6.1 billion.⁵ It is unclear how this will impact the regulatory value of the transmission assets. FERC may reduce the rate base of the transmission assets from \$6.1 billion to the proposed sale price of \$4.9 billion. In either case, privatization will increase transmission rates. If the rate base were maintained at \$6.1 billion, the sale of BPA would increase transmission rates by 44%, with a FY 2019 rate impact of \$475 million. If the rate base were reduced to \$4.9 billion, privatization would increase transmission rates by 26%.

The White House has proposed selling off PMAs twice, under presidents Reagan and Clinton. In the mid-1990s the Republican-led House of Representatives proposed the same policy.⁶ Each attempt was unsuccessful, as BPA is popular across the political aisle in the area it serves. Although the push to privatize BPA is not new, it has provoked swift condemnation from a number of organizations and politicians, including Oregon Senator Ron Wyden, Portland-based Public Power Council, and Seattle-based NW Energy Coalition.^{7,8,9}

BPA's transmission assets are paid for directly by the rates it charges its customers, thus its sale would constitute a wealth transfer from Northwest citizens to the U.S. Treasury. Further concerns include the possibility that private enterprises would not give rural areas the level of maintenance and low rates they currently receive from BPA. This is the case with other industries that benefit the public good; John B. Goodman and Gary W. Loveman write in the

³ 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>.

⁴ Office of Management and Budget. "Budget of the U.S. Government: A New Foundation For American Greatness, Fiscal Year 2018."

<<https://www.whitehouse.gov/sites/whitehouse.gov/files/omb/budget/fy2018/budget.pdfhtml>>. See page 34.

⁵ BPA. "2016 Annual Report." 2016. <<https://www.bpa.gov/Finance/FinancialInformation/AnnualReports/Documents/AR2016.pdf>>.

⁶ Russell, Sam Radtke. "No Easy Task to Shift the Balance of Power." CQ Weekly. May 26, 2012. <<http://public.cq.com/docs/weeklyreport/weeklyreport-000004095161.html>>.

⁷ Senator Ron Wyden. "Wyden: Administration's Budget Proposal 'A Cynical Assault on American Ideas.'" Press Releases. May 23, 2017. <https://www.wyden.senate.gov/news/press-releases/wyden-administrations-budget-proposal-a-cynical-assault-on-american-ideas_>.

⁸ The Public Power Council. "Proposal to Divest Transmission of Power Marketing Administrations". May 23, 2017. <<http://www.ppcpdx.org/wp-content/uploads/05-23-2017.pdf>>.

⁹ NW Energy Coalition. "NWECC condemns BPA divestiture proposal." May 23, 2017. <<http://www.nwenergy.org/uncategorized/nwec-condemns-bpa-divestiture-proposal/>>.

Harvard Business Review, "A profit-seeking operation may not, for example, choose to provide health care to the indigent or extend education to poor or learning-disabled children."¹⁰

Most importantly, privatization of BPA would increase costs for consumers. BPA currently sells and delivers its power at cost; under a private regime, an investor-owned utility would likely charge a higher rate of return.

The rate of return is set in a rate case and is a component of a firm's revenue requirement. The revenue requirement is set by a simple formula, a version of which is published in Charles Phillips' classic monograph *The Regulation of Public Utilities: Theory and Practice*.¹¹ The formula is as follows:

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

where R is the total revenue required,
 O is the operating costs,
 V is the gross value of the tangible and intangible property,
 D is the accrued depreciation of the tangible and reproducible property (as distinct from depreciation as an operating expense),
and r is the allowed rate of return.

This formula and its components allow for comparison of utilities' operations. Consider the rates of return r for BPA and another Northwest transmission operator, PacifiCorp. Based on its 2016 Annual Report and 2018 Transmission Revenue Requirement Study, BPA will have a rate of return of 3.03% in FY 2019.^{12,13,14} PacifiCorp, a private entity, has a rate explicitly set at 7.53%.¹⁵ This is over twice the rate of return on transmission that BPA earns – even

¹⁰ Goodman, John B. and Loveman, Gary M. "Does Privatization Serve the Public Interest?" Harvard Business Review. November-December 1991. <<https://hbr.org/1991/11/does-privatization-serve-the-public-interest>>.

¹¹ Phillips, Charles F. "The Regulation of Public Utilities: Theory and Practice." Public Utilities Reports. 1988. <<https://www.fortnightly.com/regulation-public-utilities>>. See page 169.

¹² BPA. "2016 Annual Report." 2016. <<https://www.bpa.gov/Finance/FinancialInformation/AnnualReports/Documents/AR2016.pdf>>.

¹³ 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>>.

¹⁴ BPA's rate of return covers interest expense and a small net revenue. To compute 3.03%, BPA's FY 2019 Net Interest Expense of \$157.689 million is taken from the Transmission Revenue Requirement Income Statement, which is found on page 30 of the Revenue Requirement Study. Added to that is the net revenue of \$28.130 million. This number is divided into the difference between the BPA transmission system's original value and its accumulated depreciation, taken from page 61 of the annual report; (\$157.689 million + \$28.130 million) divided by (\$9,088.9 million – \$2,963.5 million) yields 3.03%.

¹⁵ PacifiCorp. "2017 Transmission Formula Rate Annual Update." FERC Docket ER11-3643. Submittal 20170515-5076. May 15, 2017. See line 126.

before considering income taxes. As a government entity, BPA does not pay income taxes, and thus the costs are not passed through to Northwest consumers.

Notably, the Trump administration’s proposed sale price of \$4.9 billion is below the current depreciated value of the transmission assets. The 2016 Annual Report cites the system’s original cost at roughly \$9.1 billion, with an accumulated depreciation of nearly \$3.0 billion, putting its depreciated value at \$6.1 billion.¹⁶ In regulatory terms, \$6.1 billion represents the rate base, or $(V - D)$. Since the proposed sale price is less than the original cost depreciated, a primary question is whether FERC would reduce the allowed rate base to the sale price of \$4.9 billion.

Excerpt of the FY 2018 Trump budget

	2017	2018	2019	2020	2021	2022	2023
Divest Southwestern Power Administration transmission assets	-13
Divest WAPA transmission assets	-580
Divest Bonneville Power Administration transmission assets	-1,821	-396	-386	-386	-386

It is possible to estimate the effect of privatization on transmission rates using BPA’s operating costs and an allowed rate of return similar to a private utility’s. Assume that a privatized BPA would adopt a rate of return r at a value similar to PacifiCorp’s 7.53%. In addition, the rate r would include an adder for taxes; as a government entity, BPA does not currently pay federal taxes, but a private entity would. Income taxes are estimated to add approximately 3.27% to the required rate of return r , giving an effective rate of 10.79%.^{17,18} Applying the revenue requirement equation, we have $R = O + (V - D)r$, where $O = \$883.386$ million, $(V - D)$ is

¹⁶ BPA. “2016 Annual Report.” 2016. <<https://www.bpa.gov/Finance/FinancialInformation/AnnualReports/Documents/AR2016.pdf>>. See page 61.

¹⁷ PacifiCorp. “2017 Transmission Formula Rate Annual Update.” FERC Docket ER11-3643. Submittal 20170515-5076. May 15, 2017. See line 126.

¹⁸ State and federal income taxes are assumed at 40% in the BPA transmission area. To calculate the rate of return r for taxes, we collect $1 / (1 - \text{Tax Rate})$ to arrive at the required rate of return. PacifiCorp’s return on equity (ROE) of 9.8% is taken from its 2017 Transmission Formula Rate Annual Update; taxes are only paid on equity. The company would collect $(0.098) / (1 - 0.4) = 16.33\%$ to earn the 9.8% it requires. The tax component is thus $16.33\% - 9.8\% = 6.53\%$; this figure is reduced by half because equity is approximately half of the capital structure, yielding 3.27%. Passing income taxes on to consumers is one of the adverse effects of privatization.

\$6.125 billion, and r is 10.79%.^{19,20} We arrive at a revenue requirement R of approximately \$1.544 billion, which is 44% higher than BPA's projected FY 2019 revenue requirement of \$1.069 billion.²¹ If we instead assume a rate base $(V - D)$ at the sale price of \$4.9 billion, we arrive at a revenue requirement of \$1.348 billion, which is 26% higher than BPA's projected FY 2019 revenue requirement. This translates directly to transmission rates.

Market Power:

The very nature of electric transmission makes it ill-suited for privatization. Transmission and distribution constitute a natural monopoly, since they are most efficiently performed by a single transmission line or network of lines in a given area.^{22,23} In general, efficiency gains from privatization are only realized when there is market competition. Selling BPA's transmission assets would create smaller private monopolies in its footprint, and thus not yield efficiency gains. Fragmentation of transmission ownership in the region could lead to disruptions in the Northwest transmission system as a whole.

Already, Northwest utilities have been judged as exercising market power. In June 2016, FERC ruled that PacifiCorp wielded horizontal market power and required it to revise its rates.²⁴ Given past and current FERC interventions, there is strong potential that privatization of BPA's transmission system would allow for further anti-competitive behavior among transmission operators.

The sale of the region's backbone transmission system would pose unique challenges in the area of market power. FERC Order 888 set strong rules intended to curtail market power for the nation's transmission owners.²⁵

¹⁹ BPA. "2016 Annual Report." 2016. <<https://www.bpa.gov/Finance/FinancialInformation/AnnualReports/Documents/AR2016.pdf>>. See page 61; the depreciated value of BPA's transmission assets is \$9.0889 billion - \$2.9635 billion.

²⁰ 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>>. See Table 3, line 9 for FY 2019 operating expenses of \$883.386 million.

²¹ Ibid. See Table 3, line 25 for total revenue requirement.

²² Michaels, Robert J. "Vertical Integration: The Economics that Electricity Forgot." *The Electricity Journal* 17(10). <<http://www.sciencedirect.com/science/article/pii/S1040619004001368>>. See page 12.

²³ Tomain, Joseph P. "The Persistence of Natural Monopoly." *Natural Resources & Environment* 16(4). Spring 2002. <<http://www.jstor.org/stable/40924211>>. See page 242.

²⁴ Federal Energy Regulatory Commission (FERC). "Order on Response to Show Cause Order." 155 FERC ¶ 61,249. June 9, 2016. <<https://www.ferc.gov/CalendarFiles/20160609175136-ER10-2475-006.pdf>>.

²⁵ FERC. "Promoting Wholesale Competition Through Open Access Non-discriminatory Transmission Services by Public Utilities; Recovery of Stranded Costs by Public Utilities and Transmitting Utilities." 75 FERC ¶ 61,000. April 24, 1996. <<https://www.ferc.gov/legal/maj-ord-reg/land-docs/order888.asp>>.

Since the nation's largest electric market hub lies within the BPA transmission system, the temptation for the new owner to profit from transmission schedule information or by restricting transmission is enormous. While Order 888 has been generally successful, transmission violations of the market power rules have been frequent. During the California Energy Crisis, many of Enron's most successful exploits involved congesting critical pathways in Oregon, Arizona, and California. Similar schemes have also been present in Texas, New York, and a variety of other states.

FERC surveillance and enforcement has been more effective in recent years, but surveillance of such a complex system as BPA's is likely to be problematic. Even if the rules in Order 888 are followed, a number of issues would have to be addressed:

1. **Transparency:** BPA currently is significantly more transparent than almost any other transmission provider in the United States. Under new ownership, information necessary to the smooth operation of the Mid-Columbia market hub might be curtailed.
2. **Market Share:** Access to transmission might significantly reduce the number of participants in the Mid-Columbia market.
3. **Efficiency:** BPA is a signatory to the coordination agreement, and a number of other contracts and treaties might be disrupted by turning transmission access over to a third party.

These issues go beyond the structure of FERC market surveillance and would require a massive change in current regulations.

Conclusion:

Privatizing the Pacific Northwest's largest transmission system, and selling it at a loss, would be detrimental to ratepayers across the region. Transmission rates would increase by an estimated 26% to 44%, which would be passed directly to both industrial and residential consumers. Selling BPA's transmission assets would also result in market power, anti-competitive behavior, and poor service to rural locations. Politicians, industry groups, and ratepayers are correct to criticize this proposal.