

Summary of BPA’s Use of the Regional Economic Study to Contemplate the Draft Contract

This document summarizes BPA’s use of the 2006 *Regional Employment and Economic Study* to contemplate the 7-year draft power sale contract that proposes to make available physical service at the IP rate for up to 2-potlines at each of the remaining aluminum smelter DSIs and why we believe that it remains an indicator that moving forward with this draft contract should yield a small, positive economic benefit to the region.

The study evaluated four alternatives representing different delivery mechanisms and levels of benefits for the two aluminum smelters:

Alternative 1 – No benefits; meaning that BPA would not offer power sales to the DSIs

Alternative 2 – Financial benefits based on up to 560 average megawatts (aMW) capped at \$59 million of net annual benefits.

Alternative 3b – Up to 560 aMW at BPA’s industrial preference (IP) rate

Alternative 4 – Up to 560 aMW at BPA’s priority firm (PF) rate.

Alternative 1 has no adverse impact on BPA’s other customers. Alternative 2 capped the rate impact on BPA’s other customers at \$59 million – the equivalent of a \$1.00 per MWh change in the PF power rate. Under this alternative, the regional economic study indicated a long-term net gain in employment between 95 and 1,232 jobs, considering a loss of up to 1,110 jobs in non-DSI related sectors, and a gain of up to 2,342 jobs at the smelters and in related sectors.¹ Alternatives 3b and 4 were both evaluated using a BPA power rate of \$31.50 per MWh.² Both of these alternatives represented power sales of up to 560 aMW. As illustrated in Table 18-A attached here for reference, a range of uncapped, market-priced purchases to support these power sales was then used to calculate BPA’s cost for providing this power to the DSIs:³

TABLE 18-A - Market Prices and BPA Exposure

Market Price (\$ / MWh)	40	45	50	55	60	70
BPA Exposure (\$ millions)	40	64	88	111	135	182

The study then concluded that the short-term “positive economic impact of DSI service is significantly reduced as market prices go up” for Alternatives 3b and 4, and illustrated

¹ Regional Employment and Economic Study, William B. Beyers, Lloyd O’Carroll, Paul Sorensen, August 14, 2006, page 2.

² Regional Employment and Economic Study, William B. Beyers, Lloyd O’Carroll, Paul Sorensen, August 14, 2006, page 20.

³ Regional Employment and Economic Study, William B. Beyers, Lloyd O’Carroll, Paul Sorensen, August 14, 2006, page 20. While the study indicated “not all of the 560 MW would be used”, the BPA Exposure in Table 18-A is substantially equal to the difference of the Market Price less \$31.50 per MWh, multiplied by 560 MW times 8,760 hours in a year (ie. \$41.7 million = (40-31.5) * 560 * 8760).

how this exposure adversely affected non-DSI employment in Table 19.⁴ Importantly, the authors then contemplated the long-term employment impact of Alternative 2 in Table 21. The indirect non-DSI employment impacts were constant as the price of electricity changed because of the capped nature of the exposure from DSI benefits under Alternative 2 on BPA's other customers.

It's important to understand that the value of the study to BPA was, and is, as an estimate of the potential regional employment impact if it were to offer new contracts to the DSIs. The economic assumptions were not intended to be absolutely predictive. However, the estimates continue to be instructive and will help BPA make the decision to proceed or not proceed with a contract offer to the DSIs.

Specifically, we determined that we should shorten the length of the contract term while continuing to consider contracts that limit the net costs to BPA's ratepayers. This draft contract does that by reducing the term from 17-years to 7-years and by establishing cost caps for the purchase of power to supply the DSIs. This draft contract also limits the amount of power BPA would supply to the DSIs to no more than 460 aMW. These mechanisms – taken together – are designed to limit the exposure of BPA's other customers to no more than \$86 million per year in the last 5 years – proportionately reflecting the \$50 million reduction in Alcoa's cost cap to \$300 million in the last 5 years of the draft contract.⁵

These limits on the exposure of BPA's other customers are in contrast to the \$182 million exposure of Alternatives 3b and 4 at a \$70 per MWh market price described in Table 18-A included above, and are more comparable to the capped nature of Alternative 2, but do so under a physical power sale. To further consider the potential regional economic impacts of such limits in a possible contract offer, BPA revised Table 21 by updating four inputs to be consistent with this draft contract and reflect more contemporary economic analysis. First, the indirect non-DSI job loss was increased from 1,110 to 1,316 – proportional to the increase from the \$59 million capped cost in Alternative 2 to Alcoa's \$300 million cost limit for the Subsequent 5-year Period in this draft contract, respectively.⁶ Second, the effective power rate in this draft contract is the IP rate which is now forecast to escalate from the \$34.60 per MWh in fiscal year 2010 at 2.5% each year thereafter, as opposed to the market price of power purchases minus the \$12 per MWh financial benefit contemplated in Alternative 2.⁷ This updated IP rate forecast reflects the IP rate adopted in the WP-10 rate proceeding and results in a \$2 per MWh reduction in the cost cap. Third, direct smelter employment was reduced to 528 jobs – or

⁴ Regional Employment and Economic Study, William B. Beyers, Lloyd O'Carroll, Paul Sorensen, August 14, 2006, page 21.

⁵ Draft Power Sales Agreement with Alcoa, Bonneville Power Administration, August 19, 2009, page 3 of Exhibit B.

⁶ Regional Employment and Economic Study, William B. Beyers, Lloyd O'Carroll, Paul Sorensen, August 14, 2006, page 2; Draft Power Sales Agreement with Alcoa, Bonneville Power Administration, August 19, 2009, page 3 of Exhibit B.

⁷ Draft Power Sales Agreement with Alcoa, Bonneville Power Administration, August 19, 2009, page 3 of Exhibit B; and Regional Employment and Economic Study, William B. Beyers, Lloyd O'Carroll, Paul Sorensen, August 14, 2006, page 2.

2,640 job-years – to reflect minimum employment commitments during periods of 2-potline smelter operation contemplated in this draft contract for Alcoa.⁸ Lastly, BPA employed the Primary Metals multiplier of 2.782 released by the State of Washington in May 2008 which is lower than 3.2 – the simple average of the high and low indirect employment multipliers (3.9 and 2.5, respectively) utilized in the regional economic study.⁹ The combined effect of updating these assumptions to be consistent with this draft contract for Alcoa is illustrated by this revised Table 21:

TABLE 21 - Long Term Employment and Income Impact Alternative 2 [REVISED]

Price of Electricity \$/MWh (IP rate)	40	45	50	55	60	70
Employment (job-years)						
Direct DSI	2,640	2,640	2,640			
Alcoa	2,640	2,640	2,640			
CFAC	-	-	-			
Indirect DSI	4,704	4,704	4,704			
Indirect non-DSI	(5,640)	(5,640)	(5,640)			
Total	1,704	1,704	1,704			

**5 - YEAR
JOBS ASSESSMENT

NO CURTAILMENT**

As this revised Table 21 continues to indicate, BPA believes there is a small, genuine economic benefit to our region in the form of a net employment gain of up to 1,704 job-years – or 312 jobs – as a result of this draft contract. This is an increase relative to the net employment gain of up to 764 job-years – or 152 jobs – reflected in the jobs assessment released with the term sheet and is the result of the lower cost cap the draft contract contains.

In addition, the draft contract reduced the cumulative length of curtailment in the last 5-years of the contract term from 24-months to 18-months and added Alcoa’s commitment to provide at least 120 jobs over the duration of each curtailment. When combined with the lower cost cap, BPA’s revision to Table 21 below indicates that net jobs would at least remain neutral to slightly positive under the assumption that Alcoa were to curtail its maximum amount for 18-months during the last 5-years of the proposed contract:

TABLE 21 - Long Term Employment and Income Impact Alternative 2 [REVISED]

Price of Electricity \$/MWh (IP rate)	40	45	50	55	60	70
Employment (job-years)						
Direct DSI	2,028	2,028	2,028			
Alcoa	2,028	2,028	2,028			
CFAC	-	-	-			
Indirect DSI	3,613	3,613	3,613			
Indirect non-DSI	(5,640)	(5,640)	(5,640)			
Total	1	1	1			

**5 - YEAR
JOBS ASSESSMENT
1.5 - YEAR CURTAILMENT
120 jobs during curtailment**

There is also potential for the net gain in regional employment to approach 1,500 jobs – or 7,000 job-years – if BPA and Columbia Falls Aluminum Company come to agreement on principles for a long-term power sales contract, Alcoa returns to its October 2008 employment level of 660 workers at Intalco and BPA is able to purchase power at today’s \$52 per MWh forward price, which is \$6 per MWh below the reduced per unit cost caps in this draft contract, thereby reducing the costs borne by its other customers by \$25

⁸ Draft Power Sales Agreement with Alcoa, Bonneville Power Administration, August 19, 2009, page 1 of Exhibit G.

⁹ “2002 Washington State Input-Output (I-O) Study”, State of Washington, Office of Financial Management, May 2008, page 15; and Regional Employment and Economic Study, William B. Beyers, Lloyd O’Carroll, Paul Sorensen, August 14, 2006, page 13.

million per year and mitigating the Indirect non-DSI employment impact. The combined effect of these events is illustrated in BPA's revision to Table 21 below:

TABLE 21 - Long Term Employment and Income Impact Alternative 2 [REVISED]

Price of Electricity \$/MWh (IP rate)	40	45	50	55	60	70
Employment (job-years)						
Direct DSI	4,455	4,455	3,300			
Alcoa	3,300	3,300	3,300			
CFAC	1,155	1,155	-			
Indirect DSI	7,938	7,938	5,880			
Indirect non-DSI	(5,640)	(5,640)	(3,948)			
Total	6,753	6,753	5,232			