

MEMORANDUM

TO: Board of Commissioners
FROM: Power Contract Negotiating Committee
RE: Proposed Alcoa Term Sheet – Economic Value of Alcoa to the Community
DATE: October 15, 2007

Plant Operating Information

- Output by potline
 - 2 lines #5 and #1 98,000 tonne/yr
 - 3 lines Add #2 142,000 (adds 43,000)
 - 4 lines Add #3 181,000 (adds 39,000 not modernized)

- Currently operating potlines # 5 and #1 (other two are ready to go)

- Power Loads
 - 2 lines #5 and #1 183 MW
 - 3 lines Add #2 267 MW (adds 84)
 - 4 lines Add #3 345 MW (adds 78)

- Employees
 - 2 lines 380 – 400
 - 3 lines 460 – 490
 - 4 lines 530 – 560

- Employee costs
 - 2 lines \$95,000 / EE
 - 3 lines \$93,000 / EE

Jobs and Employment Multiplier Used by Alcoa to show economic impact of the Wenatchee Works smelting operations

The issue briefly addressed in this memo is the number of jobs brought to the community by a three potline operation plus an estimate of the spin-off of those jobs. The job spin-off is typically included as an employment multiplier.

Employment Multiplier definition: "Employment multipliers are one means of standardizing the measurements of economic impacts for purposes of comparison. The employment multiplier for an industry is defined as the ratio of its total employment impact to its direct employment impact." Source: Washington State Aluminum Industry Economic Impact Study prepared for the Pacific Northwest Aluminum Industry, by Richard Conway, Jr. August 2000.

Labor dollars for a three pot line operation is estimated to be approximately: $(460 - 490 \times \$93,000/ee) = \$43M$ to $46M$ per year.

Alcoa has utilized an employment multiplier of 2.7. Based on the above definition for every job at Alcoa there would be 1.7 additional supporting jobs in the rest of the local economy. The 2.7 multiplier has been proposed by Mr. Conway as appropriate in the particular circumstance of the Wenatchee Works.

Applying Alcoa's 2.7 employment multiplier, a three potline operation of 460 to 490 direct Alcoa jobs would support 1,240 to 1,320 total local jobs.

Attached is an employment study done by Richard Conway in May 2006 titled "The Economic Impact of the Washington State Aluminum Industry." This study was done for Alcoa and a copy was provided to the District.

Other returns to the local community include local purchase of goods and services for the plant and taxes paid.

THE ECONOMIC IMPACT OF THE WASHINGTON STATE ALUMINUM INDUSTRY

1. INTRODUCTION

In recent years a large part of the aluminum industry in Washington state has been forced to shut down because of weak aluminum prices and high electricity costs. Of the seven major aluminum plants that were operating in 1998, only two are still in business, Alcoa Wenatchee Works (Malaga, Chelan County) and Intalco Works (Ferndale, Whatcom County).

The purpose of this study, which is a follow-up to a study conducted in 2000 (“The Washington State Aluminum Industry Economic Impact Study”), is to estimate the impact of these two aluminum plants on the state and county economies in 2005.

2. WASHINGTON STATE IMPACT

The two Alcoa plants employed 840 workers in 2005, down from 1,710 in 1998 because of curtailed operations. Overall, the aluminum industry in Washington has lost more than 6,000 jobs since 1998 and about 10,000 jobs since 1980.

Alcoa employees in the two facilities earned \$67.1 million in labor earnings (wages, salaries, and benefits). The average labor income was \$79,880, approximately 1.8 times the Washington annual average.

Taking into account the “multiplier effect,” Wenatchee Works and Intalco Works accounted for \$253.0 million of Washington Gross State Product (Table 1). Note that this impact analysis makes use of the implied state and county employment and income multipliers derived in the 2000 aluminum industry study. These multipliers have been adjusted for productivity changes and inflation.

The total economic impact of the two plants amounted to 3,310 jobs (wage and salary employment and proprietors) and \$209.9 million in personal income, representing 0.1 percent of Washington total employment and personal income. In 1998, the aluminum industry accounted for 0.9 percent of state jobs and income.

The employment multiplier for the aluminum industry is defined as the ratio of its total employment impact to its direct employment impact. Thus, with respect to the Washington economy, the estimated aluminum industry employment multiplier is 3.9 (=3,310/840). This means that each aluminum job indirectly supported the equivalent of 2.9 other jobs in the state economy. The wage and salary employment multiplier is 3.4 (=2,850/840).

The two Alcoa plants supported 5,150 people (workers and their dependents) living in Washington. This constituted 0.1 percent of the state population.

The total impact on state and local taxes amounted to \$18.6 million or 0.1 percent of Washington state and local taxes in 2005 (Table 2).

Table 1**ALUMINUM INDUSTRY IMPACT ON
WASHINGTON STATE ECONOMY, 2005**

	Aluminum Industry Impact	Percent of Washington State
DIRECT IMPACT		
Employment	840	---
Labor earnings (mils. \$)	67.1	---
TOTAL IMPACT		
Gross State Product (mils. \$)	253.0	0.1
Employment	3,310	0.1
Proprietors	460	0.1
Wage and salary employment	2,850	0.1
Personal income (mils. \$)	209.9	0.1
Labor earnings	162.1	0.1
Other income	47.8	0.1
Per capita income (\$)	5	0.0
Population	5,150	0.1

Table 2**ALUMINUM INDUSTRY IMPACT ON WASHINGTON
STATE AND LOCAL TAXES, 2005**

	Aluminum Industry Taxes (mils. \$)	Total Tax Impact (mils. \$)	Percent of Washington State
Sales and use tax	0.9	6.7	0.1
Business and occupations tax	0.0 ¹	1.5	0.1
Property tax	2.0	6.6	0.1
Other taxes	0.0	3.8	0.1
Total state and local taxes	2.9	18.6	0.1

¹Temporary business and occupation tax exemption.

Table 3

**ALUMINUM INDUSTRY IMPACT ON CHELAN COUNTY
AND WHATCOM COUNTY ECONOMIES, 2005**

	Chelan County	Whatcom County
DIRECT IMPACT		
Employment	380	460
Labor earnings (mils. \$)	31.7	35.4
TOTAL IMPACT		
Employment	1,040	1,570
Proprietors	140	260
Wage and salary employment	900	1,310
Personal income (mils. \$)	39.2	77.8
Per capita income (\$)	115	42
Population	1,040	2,400
PERCENT OF COUNTY		
Employment	2.0	1.5
Proprietors	1.3	1.2
Wage and salary employment	2.1	1.5
Personal income	1.9	1.3
Per capita income	0.4	0.1
Population	1.5	1.3

Table 4

**ALUMINUM INDUSTRY IMPACT ON CHELAN COUNTY
AND WHATCOM COUNTY LOCAL TAXES, 2005**

	Aluminum Industry Taxes (mils. \$)	Total Tax Impact (mils. \$)	Percent of County
Chelan County	0.7	1.8	2.3
Whatcom County	1.1	3.3	1.6

3. COUNTY IMPACT

In 2005, Wenatchee Works employed 380 people in rural Chelan County (Table 3). Annual labor earnings of these employees amounted to \$31.7 million. Including the indirect economic impact, the Alcoa plant supported a total of 1,040 jobs, \$39.2 million in personal income, and \$1.8 million in local taxes in Chelan County. Local taxes included taxes paid to county and city governments as well as to special tax districts, such as school districts and ports (Table 4). The aluminum facility accounted for 2.0 percent of employment, 1.9 percent of personal income, and 2.3 percent of local taxes. It raised county per capita income by an estimated \$115. One out of every 51 jobs in Chelan County was tied directly or indirectly to the Wenatchee aluminum plant. This was down from one out of every 29 jobs in 1998.

Note that the local impact on Chelan County would have been higher were it not for the fact that a significant number of people working in Chelan County, including Alcoa employees, lived and spent their money in other counties, principally Douglas County. In other words, part of the indirect job and income impact from the Wenatchee aluminum plant spilled over into Douglas County. The economic impact on Douglas County is not reported here due to the difficulty of estimating it.

In 2005, the Alcoa plant in Whatcom County employed 460 people, who earned \$35.4 million in labor income. Including the indirect impact, Intalco Works supported 1,570 jobs or 1.5 percent of total county employment in 2005. Alcoa accounted for \$77.8 million in personal income (1.3 percent of the county personal income) and \$3.3 million in local taxes (1.6 percent of county local taxes). Because of its high wages, the aluminum plant raised county per capita income by \$42.

Table 5

**ECONOMIC CHARACTERISTICS OF WASHINGTON STATE,
CHELAN COUNTY, AND WHATCOM COUNTY, 2005**

	Washington State	Chelan County	Whatcom County
Gross State Product (mils. \$)	276,782.3	---	---
Employment	3,725,410	53,130	107,920
Proprietors	681,630	11,010	22,200
Wage and salary employment	3,043,780	42,120	85,720
Personal income (mils. \$)	222,642.3	2,099.3	5,366.7
Labor earnings	177,112.5	1,771.1	3,941.3
Other income	45,529.8	328.2	1,425.4
Per capita income (\$)	35,409	30,080	29,251
Population	6,287,760	69,790	183,470

While estimating the spillover effects for individual counties, like Douglas County, is difficult, one can easily measure the aluminum industry's overall impact on the rest of Washington's counties. It is simply the difference between the state impact (Table 1) and the two county impacts (Table 3). Thus, the two aluminum plants supported an estimated 700 (=3,310-1,040-1,570) jobs in Washington counties other than Chelan and Whatcom.

4. POTENTIAL IMPACT

It is possible that given favorable aluminum prices and electrical energy rates the Alcoa aluminum plants in Chelan and Whatcom counties will return to full production. In that case Wenatchee Works would employ 600 workers, while Intalco Works would employ 830, according to company calculations.

Table 6

**ALUMINUM INDUSTRY POTENTIAL IMPACT ON WASHINGTON STATE,
CHELAN COUNTY, AND WHATCOM COUNTY ECONOMIES, 2005**

	Washington State	Chelan County	Whatcom County
DIRECT IMPACT			
Employment	1,430	600	830
Labor earnings (mils. \$)	114.3	49.8	64.5
Taxes (mils. \$)	6.9 ¹	0.7	1.1
TOTAL IMPACT			
Gross State Product (mils. \$)	430.7	---	---
Employment	5,630	1,630	2,850
Personal income (mils. \$)	357.3	61.6	141.6
Population	8,770	1,630	4,370
Taxes (mils. \$)	33.5	2.4	5.3
PERCENT OF STATE AND COUNTY			
Gross State Product	0.2	---	---
Employment	0.2	3.1	2.6
Personal income	0.2	2.9	2.6
Population	0.1	2.3	2.4
Taxes	0.2	3.2	2.6

¹No business and occupations tax exemption.

A reasonable measure of what this might mean to the state and county economies in the future would be the estimated impact of the aluminum plants in 2005 assuming full production (Table

6). In that case, the direct and indirect impact on the Washington economy would amount to \$430.7 million in Gross State Product (0.2 percent of the state total), 5,630 jobs (0.2 percent), \$357.3 million in personal income (0.2 percent), and \$33.5 million in state and local taxes (0.2 percent). In other words, if a rise in aluminum prices coupled with a decline in electricity costs were to permit operation of the Alcoa facilities at full capacity in 2011, for example, the aluminum industry would support about 0.2 percent of the state's economic activity.

The economic impact of full production on Chelan County would amount to 1,630 jobs (3.1 percent of the county total), \$61.6 million in personal income (2.9 percent), and \$2.4 million in local taxes (3.2 percent). The impact on Whatcom County would total 2,850 jobs (2.6 percent), \$141.6 million in personal income (2.6 percent), and \$5.3 million in local taxes (2.6 percent).

5. IMPACT OF A PLANT CLOSURE

Historically, the aluminum industry has played a vital role in Washington rural economies, such as Klickitat County, the home of the Goldendale aluminum smelter. Unfortunately, the conjecture in the 2000 study regarding the disastrous economic consequences that a shut down of the Goldendale plant would have on Klickitat County has become a reality. Recognizing that there would be no replacement for the aluminum industry, which employed 700 workers in 1998, we concluded that "Klickitat County would stand to lose one-tenth of its economy."

As aluminum operations were phased out, the local unemployment rate climbed from an average of 7.5 percent in 2000 to 12.0 percent in 2003, when the plant finally closed its doors. Between 2000 and 2004, Klickitat County lost, on net, 610 wage and salary jobs, representing 11.3 percent of total wage and salary employment (Table 7).

Table 7

IMPACT OF ALUMINUM PLANT CLOSURE ON KlickITAT COUNTY EMPLOYMENT¹

	1990	2000	2004	Annual Percent Change	
				1990-00	2000-04
Klickitat County	4,850	5,410	4,800	1.1	-2.9
Rest of Washington ²	776,500	989,500	1,026,800	2.5	0.9

¹Nonagricultural wage and salary employment.

²Washington state excluding Puget Sound region.

Income data tell an interesting story about how Klickitat County coped with the plant closure. Despite the loss of high-paying aluminum jobs, county personal income managed to increase from \$433.3 million in 2000 to \$490.5 million in 2004, a 13.2 percent gain, according to the U.S. Bureau of Economic Analysis. But the \$57.2 million increase in income hardly reflected a healthy economy, since it emanated from three non-wage sources: a \$25.4 million increase in transfer payments, which primarily represented higher payments for unemployment compensation and various kinds of public assistance; a \$17.3 million increase in nonfarm proprietors income, as many previously employed wage-earners had to turn to self-employment to make ends meet; and

a \$20.5 million increase in the so-called residence adjustment (the income earned by Klickitat County residents working in other counties), which indicated that an estimated 300-400 people still living in Klickitat County were forced to find jobs in other counties after the aluminum plant closed down. The rest of personal income, most of which was earned by Klickitat County residents who remained employed in their home county, declined from \$295.6 million to \$289.6 million. Adjusted for inflation, this income fell 9.5 percent between 2000 and 2004, in line with the 11.3 percent drop in wage and salary employment, as predicted in the 2000 study.

The personal suffering of the Goldendale aluminum plant shutdown was well documented in a *Seattle Times* article by Ron Judd.

6. REFERENCES

Conway, Richard S., Jr. "The Washington State Aluminum Industry Economic Impact Study," The Pacific Northwest Aluminum Industry, June 2000.

Judd, Ron. "As war occupies a nation, a small town quietly dies," *Seattle Times*, April 6, 2003)

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