From: Wardell, Carol A.
Sent: Friday, November 02, 2007 12:05 PM
To: Don and Jeanne Poirier
Cc: Riazzi, Rich; Board of Commissioners
Subject: Response to email dated October 25, 2007

Thank you for your questions and comments dated October 25, 2007.

District staff provides the attached memo in response to those questions.

We forwarded your email to Alcoa for responses to those issues related to their operations. Below is an email received from Bob Wilt of Alcoa and an attachment to that email in response to questions 5 and 6.

We plan to add this information to the website and have made hard copies for the notebooks as well.

-----Original Message-----
From: Wilt, Robert
Sent: Thursday, November 01, 2007 6:09 AM
To: Wardell, Carol A.
Subject: Responses to questions

Here are our responses to 5&6:

5. Q. In the summary proposal, page 14, item # 12 Load Shedding, it is stated that Chelan would be limited to curtailment to not more than twice per year. In the CRU evaluation report, page 2-4, it states the a 20% reduction for 4-6 hours per day about three times per week is feasible. Chelan needs to protect ourselves in the case of cold weather load shortages, we should not need to purchase power during a cold crisis if we can shed the Alcoa load and we should not be unreasonably limited to do so only twice a year based on the information given in the CRU report.

A. The most economical way to produce aluminum is to produce it at a steady rate 24 hours a day, 7 days per week, 365 days per year. Any variation increases the cost of production.

While it is physically possible to interrupt power supplies more often than the proposed term sheet requires, economics dictate that if more interruptions are required, a lower average power rate will be necessary to offset that additional cost. Like many other things in the proposed term sheet, the number of allowed interruptions was the result of compromise.

6. I would like an explanation of the 64% reduction of carbon dioxide emissions claimed by Alcoa for this plant. What was the carbon load per ton for the past twenty years? Using 1990 as our base, have they really achieved a 64% reduction? This is a very important issue and I'd like to know the numbers we have been given are accurate.

See attached slide which explains our methodology and results. We do not have the carbon load for the past 20 years.

Bob Wilt
Vice-President, Energy Development
Alcoa Primary Metals

M E M O R A N D U M

TO: Board of Commissioners

FROM: Alcoa Contract Negotiating Team

RE: Answers to Questions Posed by Don and Jeanne Poirier to Commissioner Janssen by E-mail dated October 25, 2007

DATE: November 2, 2007

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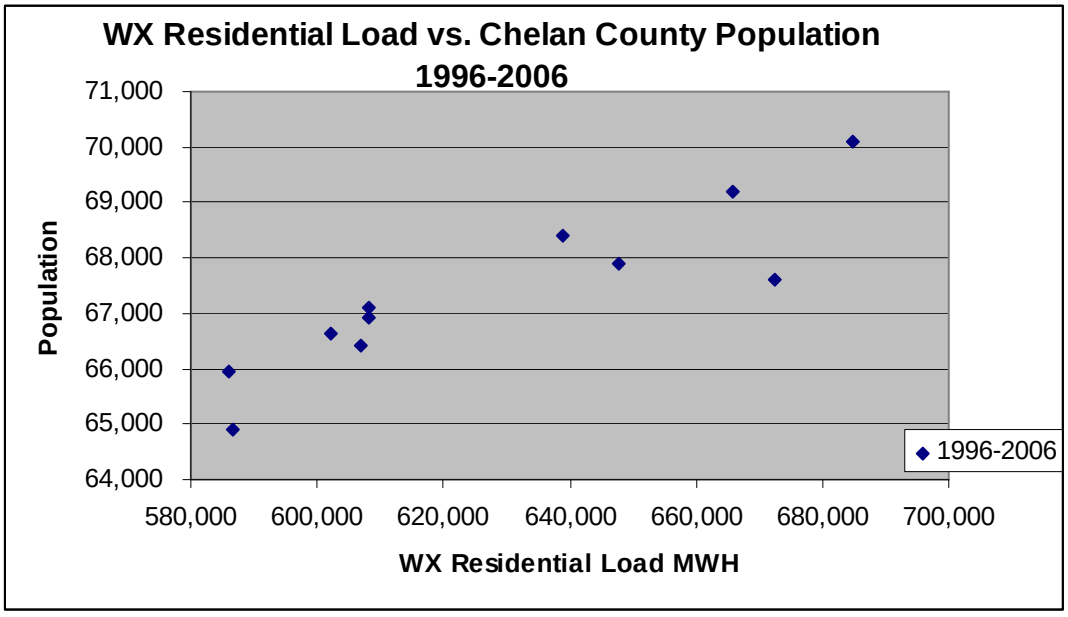
1. I'd like to see a graph of the trend of residential load to population for the last twenty years.

Response of District staff:

Staff has utilized 11 years of population data in its planning process. The source of the population data is the State's Office of Financial Management. The use of 11 years of population data in combination with necessary load data is sufficient for the Districts internal econometric load work.



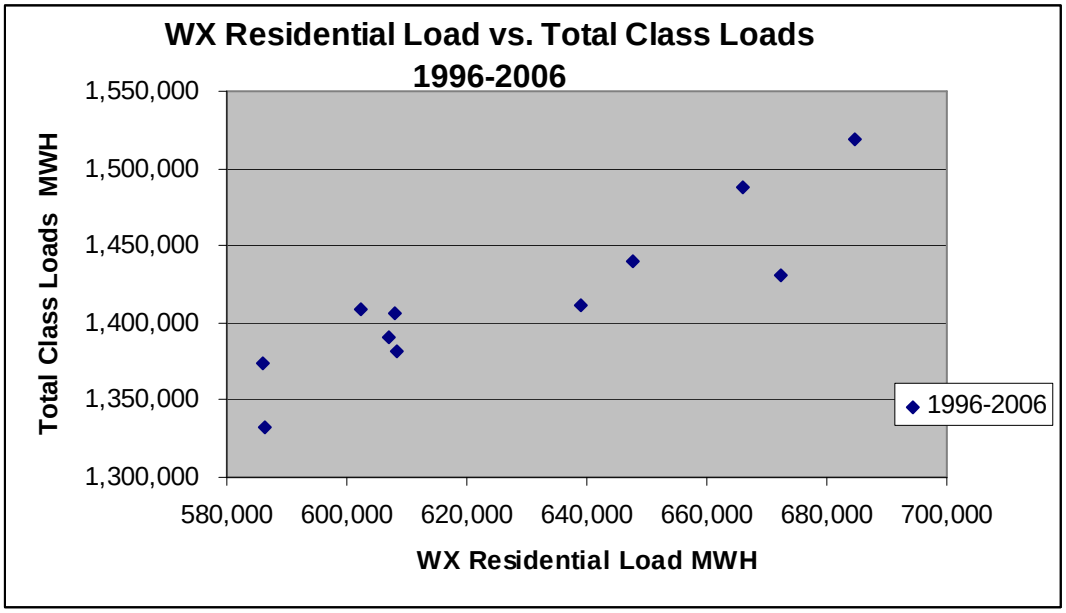
** Chelan County population data obtained from the Washington State Office of Financial Management

*** System losses are not included in the weather normalized (WX) Residential Load

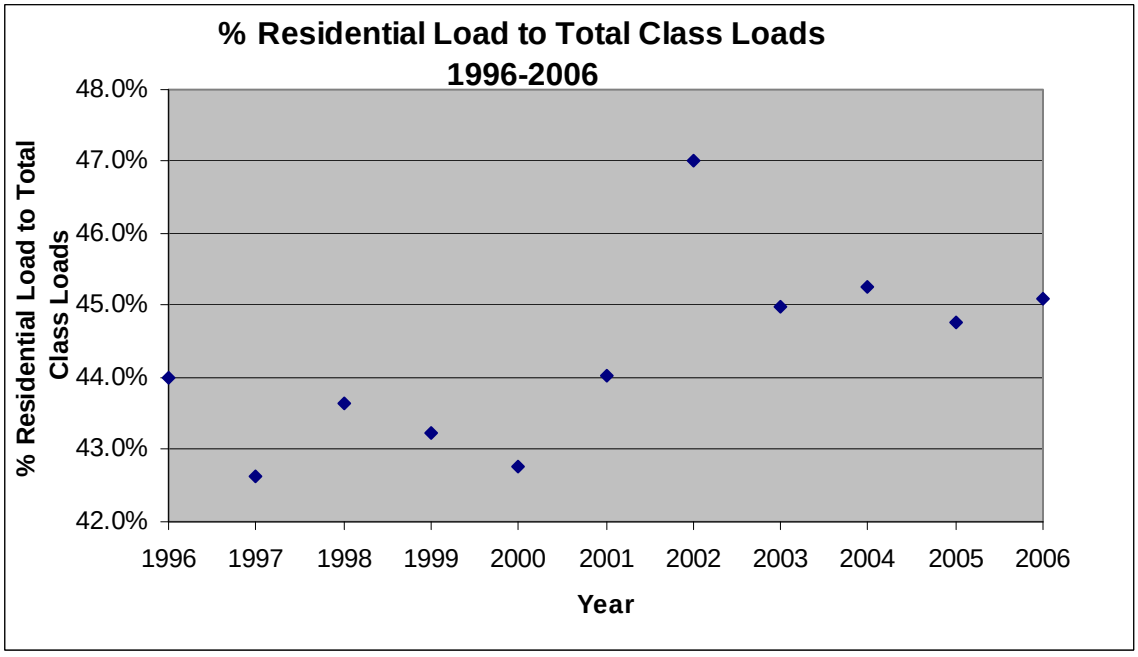
2. I'd like to see a graph of residential load to total load for the last twenty years.

Response of District staff:

Staff utilizes 11 years of population because, in staff's opinion, 20 years of data would not add additional insight to the analysis. Staff is confident that the 11 years of population data in combination with the District's load data is sufficient for the District's internal econometric load analysis.



An alternate view:



**Total Class Loads includes residential, commercial and Cashmere loads that have been weather normalized (WX). Industrial load and all other loads are also included. (Other loads totals approximately 4-5% of Total Class Loads and includes street lights, irrigation, frost protection and District use.)

***System losses are not included in either the weather normalized (WX) Residential Load or Total Class Loads.

3. I'd like to see the county's anticipated population growth for the next twenty years and a correlation of this with the information from the above graphs. Are we being conservative enough for our future residential requirements?

Response of District Staff:

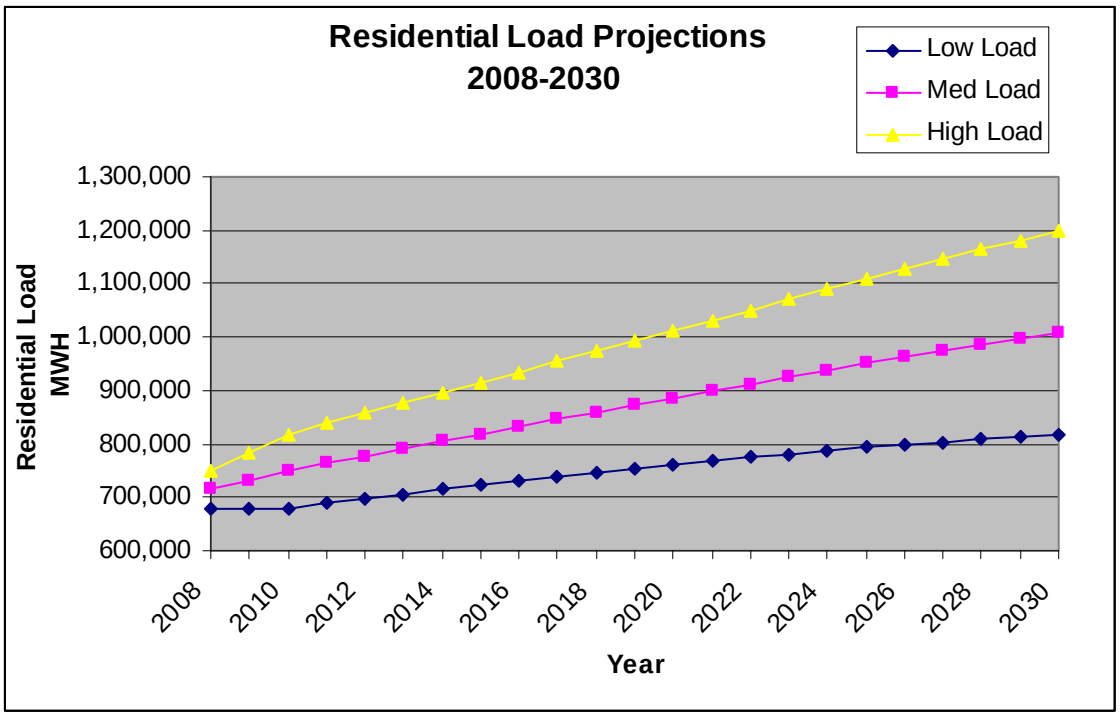
Staff uses the Washington State Office of Financial Management (OFM) to obtain population projections http://www.ofm.wa.gov/. OFM produces a low, medium and high county growth management population projection every five years. A new projection is expected to be published later this year. Based on the currently available projections from 2002 that have been updated with the estimated actual population through 2006, staff has developed the table below.

	Population Projections			**Percentage Growth**		
	Low	Med	High	Low	Med	High
2006**	70,100	70,100	70,100			
2007	70,119	71,348	72,588	0.03%	1.78%	3.55%
2008	70,137	72,597	75,075	0.03%	1.75%	3.43%
2009	70,156	73,845	77,563	0.03%	1.72%	3.31%
2010	70,174	75,093	80,050	0.03%	1.69%	3.21%
2011	70,781	76,081	81,423	0.86%	1.32%	1.71%
2012	71,388	77,068	82,796	0.86%	1.30%	1.69%
2013	71,994	78,056	84,168	0.85%	1.28%	1.66%
2014	72,601	79,043	85,541	0.84%	1.27%	1.63%
2015	73,208	80,031	86,914	0.84%	1.25%	1.60%
2016	73,751	80,991	88,296	0.74%	1.20%	1.59%
2017	74,295	81,952	89,679	0.74%	1.19%	1.57%
2018	74,838	82,912	91,061	0.73%	1.17%	1.54%
2019	75,382	83,873	92,444	0.73%	1.16%	1.52%
2020	75,925	84,833	93,826	0.72%	1.15%	1.50%
2021	76,394	85,752	95,200	0.62%	1.08%	1.46%
2022	76,864	86,671	96,574	0.61%	1.07%	1.44%
2023	77,333	87,590	97,948	0.61%	1.06%	1.42%
2024	77,803	88,509	99,322	0.61%	1.05%	1.40%
2025	78,272	89,428	100,696	0.60%	1.04%	1.38%
2026	78,619	90,247	101,992	0.44%	0.92%	1.29%
2027	78,967	91,066	103,288	0.44%	0.91%	1.27%
2028	79,314	91,885	104,585	0.44%	0.90%	1.25%
2029	79,662	92,704	105,881	0.44%	0.89%	1.24%
2030	80,009	93,523	107,177	0.44%	0.88%	1.22%

**2006 population is the estimated actual population

*** Source: Washington State Office of Financial Management for low, medium and high projections beginning in 2010 and every fifth year thereafter. The projections for other years have been developed by interpolating between OFM's every fifth year forecast.

The tightest correlations are between customer count and population for the residential load class (in part due to the imperfect nature of weather normalizing calculations). Based on this correlation and population predictions, projected future customer counts can be calculated and coupled with use per customer estimates, residential load can be projected. Based on these calculations and using the above population projections, a low, medium and high residential load forecast is set forth below.



This District is continually working on the econometric modeling for projecting load growth. It should be noted through the work done to date, staff has concluded there is a tight historical correlations between county population and the number of customers for both residential and commercial classes.

The primary uncertainty associated with Chelan County PUD's load mix is the industrial class. Econometric modeling does not generally fit well for modeling industrial load in the electric industry, and it is no exception for the District. History has shown that it is very difficult to predict with any accuracy what industrial load growth will look like in the future. Chelan County PUD has a 5 megawatt cap for large industrial loads. If the usage is higher than 5 average megawatts on an annual basis, the customer would pay market prices for their entire usage. Currently, the District does not have any retail industrial customers larger than 5 megawatts. As has been well publicized, Central Washington has seen growth in the last few years for what are known as "server farms" in the technology industry. Server farms are very high energy users.

All of this information is why District staff continually updates load projections. The presentation to the Board on October 22, 2007 provided several "stress" cases regarding potential load growth to account for potential changes. This work is included in Tab No. 9 in the Alcoa Proposed Term Sheet notebook. A copy of the PowerPoint presentation is available upon request or can be found at the District's web site at http://www.chelanpud.org/4843.html.

4. Are the county commissioners involved in this negotiation?

Response of District Staff:

No, they are not. Public Utility District No. 1 of Chelan County is a separate legal entity from the County. The District has the duties and responsibilities associated with serving electric load in Chelan County. The District owns and operates the hydroelectric facilities. Chelan County is not involved in those operations or decisions.

5. In the summary proposal, page 14, item # 12 Load Shedding, it is stated that Chelan would be limited to curtailment to not more than twice per year. In the CRU evaluation report, page 2-4, it states the a 20% reduction for 4-6 hours per day about three times per week is feasible. Chelan needs to protect ourselves in the case of cold weather load shortages, we should not need to purchase power during a cold crisis if we can shed the Alcoa load and we should not be unreasonably limited to do so only twice a year based on the information given in the CRU report.

Response of District Staff:

The District has the obligation and responsibility to do load/resource planning and retain enough energy to meet in County loads. The District performs this type of load/resource planning looking out 20 years for both average energy and peaks. Several load scenarios have been run for future load growth and are described in cases A – D in the Distribution Load Resource Balance Projections to 2032 under Tab 9 of the Alcoa Proposed Term sheet notebook, which is available on request or at the District's website at http://www.chelanpud.org/4843.html. Under stressed conditions, on the coldest day, there would be an hour or two for which the District could not meet the peak. The District does have other tools that can be used to get additional energy to meet peaks such as hourly purchases, exchanges, and load shedding with industrial customers. Section 12 of the proposed term sheet does allow two load shedding events. This provision does not preclude any further voluntary load shedding. What the CRU report did not cover is the stability of the smelting process and the negative production quality and quantity effects because of the curtailment.

For the last several years, we have had a "voluntary" load shedding understanding with Alcoa. They have been eager to help whenever we have requested. The Wenatchee Works personnel also understand that on occasion, load in the Northwest needs to be shed for the whole west-wide electric system reliability. They know that it is in their best interest to do everything they can in order to keep the whole electric system reliable and possibly prevent low voltage events that could trigger a cascading blackout across the region. We have been able to protect ourselves with these options as demonstrated during the 2000/2001 energy crisis.

6. I would like an explanation of the 64% reduction of carbon dioxide emissions claimed by Alcoa for this plant. What was the carbon load per ton for the past twenty years? Using 1990 as our base, have they really achieved a 64% reduction? This is a very important issue and I'd like to know the numbers we have been given are accurate.

The Response of District Staff:

This question should be addressed to Alcoa. The District staff has no further information to provide on this issue. We have forwarded this question to Bob Wilt of Alcoa.

7. I'd like to see the number of kilowatt hours associated per Alcoa job created with this contract. This will be a high number because smelting is very power intensive, there are many other industries that could provide jobs with much less power.

Response of District Staff:

The proposed term sheet calls for Alcoa receiving a 25/26% share of the Output of Rocky Reach and Rock Island hydroelectric projects. That share of output will vary with time, water conditions and operation of the units. Assuming average water and normal operations, approximately 250 aMW would be available (but not guaranteed) to Alcoa. Alcoa has stated that a three-pot line operation will employ 460-490 direct Alcoa jobs.

8. The benefit to the community numbers we were given in meeting #3 are encouraging, however I would like to offer a different perspective. We are in fact selling $110 million worth of power for $48 million, therefore you are subsidizing Alcoa by $62 million per year. This is offset by the jobs provided but those jobs are for a very small portion of our population and are at a very high pay compared with the average income for Chelan (I am assuming this and would like to know what is the average Chelan income?). Is this fair to the other rate payers? Would the $62 million be better spent on the PUD debt? Is it reasonable to give such a large share of our power and it's value to one company and it's employees?

Response of District Staff:

The Comparative Economic Indicators, BEA data, Washington Regional Economic Analysis Project, www.pnreap.org/Washington/selected-indicators.php, the average earnings/job in Chelan County was $32,694 in 2005. The remainder of the questions appear to be comments/questions addressed to the Board.

9. Have we considered the future value of hydro power in a green market? Inevitably our nation's coal generation plants must be modernized to lessen the CO2 emissions which will not only raise the cost of the power they produce but also add value to power that is produced carbon free. This will make our power much more valuable in the future.

Response of District Staff:

District staff did consider carbon emission issues, renewable portfolio standards and other impacts that could potentially impact the market value of the District's hydro-generated power. We also considered risks associated with reliance upon the market, water and other factors associated with hydroelectric production. Some of those risks and how the proposed term sheet addresses them are included in the memorandum located at Tab No. 11 of the Alcoa Proposed Term Sheet notebook, available upon request or which can be located at http://www.chelanpud.org/4843.html.

The negotiating team did address the issue of environmental impacts with Alcoa. Section 30 of the proposed term sheet. That section provides in part as follows:

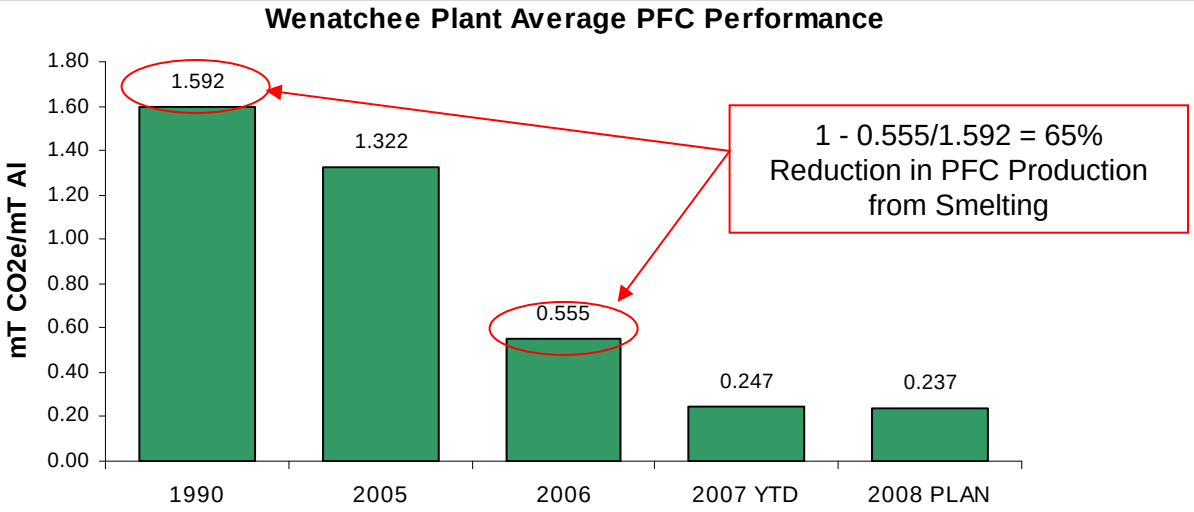
Although the amount of Output to which Purchaser is entitled hereunder, and the cost thereof, will be determined in reference to the Chelan Power System [Rocky Reach and Rock Island Projects], the District may source the Output from any source within that System. The District retains for its own use and benefit any environmental attributes (as those terms may be defined under any applicable federal or state law, rule or regulation or by any market or otherwise) generated as part of the Output of the Chelan Power system.

10. The contract duration concerns me as it seems a long term commitment for Chelan considering the environmental climate changes that are now occurring and their impact on our nation. The CRU report states that a three to five year period is needed. Alcoa already has the capitol invested in the plant which is in good condition so despite the warning of abandonment it seems unlikely they would close down the facility if we were to reduce the contract duration. This would leave our options open in a rapidly changing world.

Response of District Staff:

A 17-year term was negotiated with Alcoa. Alcoa spoke to this issue from their perspective on October 23, 2007. As explained by the District staff on October 15, this proposed term sheet is just one part of the District's future portfolio. Please refer to Tab 3 of the Alcoa proposed term sheet notebook, available upon request or which can be located at http://www.chelanpud.org/4843.html.

PFC Emissions



	PFC Based CO_2e MT CO_2 / MT-Al	Stoichiometric CO_2 MT CO_2 / MT-Al	TOTAL CO_2 MT CO_2 / MT-Al
1990	1.592	1.22	2.812
Prior year data does not exist			
2005	1.322	1.22	2.542
2006	0.555	1.22	1.775
2007	0.247	1.22	1.467
2008	0.237	1.22	1.457

PFC Based CO_2e = Equivalent CO2 units from production of CF4 & C2F6 as a result of side reaction during anode effects. This is outlined in a Voluntary Aluminum Industrial Partnership MOU between Alcoa Inc. and the EPA in February 2001.

Stoichiometric CO_2 = The CO2 produced by reducing alumina to aluminum via the use of carbon anodes and molten cryolitic bath solution (aluminum smelting process).

TOTAL CO_2 = The sum of the first two figures equals the CO2 footprint of Wenatchee Works.