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**Subject:** AF&PA Comments - 2012 LNG Export Study  
**Date:** Thursday, January 24, 2013 4:20:40 PM  
**Attachments:** [AFPA Comments on NERA LNG Export Study Final 1.24.13.pdf](#)  
[Interagency Analysis Final EITE resp 12-9-09.pdf](#)

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Dear Sir or Madam:

Please accept AF&PA's comments and accompanying attachment on the 2012 LNG Export Study.

Should you have any questions please contact Jerry Schwartz at 202-463-2581 or [jerry\\_schwartz@afandpa.org](mailto:jerry_schwartz@afandpa.org).

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**American  
Forest & Paper  
Association**

January 24, 2013

(via e mail: LNG Study@hq.doe.gov)

U.S. Department of Energy (FE-34)  
Office of Natural Gas Regulatory Activities,  
Office of Fossil Energy  
P.O. Box 44375  
Washington, D.C. 20026-4375

Re: AF&PA Comments on 2012 LNG Export Study (77 FR 73627, December 11, 2012)

Dear Sir or Madam:

The American Forest & Paper Association is the national trade association of the forest products industry, representing pulp, paper, packaging and wood products manufacturers, and forest landowners. Our companies make products essential for everyday life from renewable and recyclable resources that sustain the environment. The forest products industry – paper, wood products and logging – accounts for approximately 4.5 percent of the total U.S. manufacturing GDP. Industry companies produce about \$190 billion in products annually and employ nearly 900,000 men and women, exceeding employment levels in the automotive, chemicals and plastics industries. The industry meets a payroll of approximately \$50 billion annually and is among the top 10 manufacturing sector employers in 47 states. Fifteen percent of the paper and solid wood products manufactured in the U.S. are exported.

AF&PA's *Better Practices, Better Planet 2020* initiative is the next phase in the forest products industry's efforts to build on our legacy as a leader in sustainability. The initiative includes one of the most extensive set of quantifiable sustainability goals for a major U.S. manufacturing industry, with a commitment to transparently report progress towards achieving those goals. Earlier this year, AF&PA issued its first progress report, which included an over 8% improvement in members' purchased energy efficiency. Further, on average, approximately 65% of the on-site energy needed by members to produce paper products is derived from carbon-neutral biomass fuel.

While we have made substantial progress in improving efficiency and self-supplying needed energy, recently-released data by the Census Bureau indicate that in 2011 the primary pulp and paper industry spent \$3.8 billion on purchased fuels; natural gas is the largest component of those purchases. AF&PA members therefore have a significant interest in natural gas policy.

## **INTRODUCTION**

The 2012 LNG Export Study (Export Study) includes two separate studies: 1) “Effects of Increased Natural Gas Exports on Domestic Energy Markets, issued by the Energy Information Administration (EIA Study) in January 2012; and, 2) “Macroeconomic Impacts of Increased LNG Exports from the United States” issued by NERA in December 2012 (NERA Study). Our comments today focus primarily on the NERA Study.

Section 3 of the Natural Gas Act provides that exports of natural gas, including LNG, must be approved by the Department of Energy (DOE), and applications are granted unless the government finds that the proposed export “will not be consistent with the public interest.” This requirement is waived for exports to countries with which the U.S. has a Free Trade Agreement (FTA), in which case DOE’s export approval is deemed to be in the public interest and must be approved without modification or delay. DOE undertook the Export Study to inform its public interest finding for 15 pending applications to export natural gas to non-FTA countries (other applications also have been submitted).

DOE is considering the broad economic impacts of potential LNG exports, including the cumulative impacts of the pending applications. It is critical that DOE’s consideration be based on as robust and comprehensive an analysis as possible. AF&PA supports free and fair trade and the macroeconomic benefits that can be realized from increased global trade. Below we provide several comments, primarily on the NERA Study, that demonstrate the serious and fundamental flaws in the LNG Export Study.

## **DISCUSSION**

### **I. The 2012 LNG Export Study is Based On an Outdated EIA Annual Energy Outlook (AEO)**

Trends in energy supply and demand are very dynamic, with dramatic changes occurring in relatively short periods of time. Indeed, the pending applications demonstrate this point—while DOE now is considering 15 applications for *export*, only a few years ago the U.S. was preparing for major investment in LNG *import* facilities to close an impending supply gap. Therefore, it is imperative that DOE use the most recent data and analysis as possible to inform its determination.

The NERA Study was based on the 2011 AEO. We understand that the 2013 AEO was not available at the commencement of the NERA Study. Nonetheless, the 2013 AEO provides a very different picture than the 2011 AEO, capturing some--but not all--of the dramatic changes in natural gas supply and demand that occurred and are projected to occur in the U.S.

Specifically, as indicated in the table below, the more recent 2013 AEO suggests that domestic natural gas consumption is likely to increase by nearly 21 percent between 2010 and 2035, with increased use by the industrial and electric power sectors being

the biggest drivers. That represents an almost doubling in consumption growth from the agency's 2011 reference case projections, which indicated an 11 percent increase in natural gas consumption between 2010 and 2035.

<b>Natural Gas Consumption By Sector</b>					
<b>(trillion cubic feet, unless otherwise noted)</b>					
					<b>% chg.</b>
<b>2013 EIA Reference Case Projections</b>	<b>2010</b>	<b>2020</b>	<b>2030</b>	<b>2035</b>	<b>2010-2013</b>
Residential	4.78	4.52	4.36	4.24	-11.3%
Commercial	3.10	3.32	3.42	3.51	13.2%
Industrial	6.52	7.68	7.79	7.84	20.2%
Electric Power	7.39	8.23	8.89	9.44	27.8%
Other	1.99	2.57	3.11	3.69	85.5%
<b>Total</b>	<b>23.78</b>	<b>26.32</b>	<b>27.57</b>	<b>28.71</b>	<b>20.8%</b>
					<b>% chg.</b>
<b>2011 EIA Reference Case Projections</b>	<b>2010</b>	<b>2020</b>	<b>2030</b>	<b>2035</b>	<b>2010-2013</b>
Residential	4.77	4.85	4.82	4.78	0.2%
Commercial	3.1	3.49	3.68	3.82	23.2%
Industrial	6.55	8.24	8.08	8.02	22.4%
Electric Power	7.44	6.84	7.34	7.88	5.9%
Other	1.97	1.92	1.98	2.05	4.1%
<b>Total</b>	<b>23.83</b>	<b>25.34</b>	<b>25.9</b>	<b>26.55</b>	<b>11.4%</b>

Lower natural gas prices and EPA regulations, such as the recently-issued final Boiler Maximum Achievable Control Technology (MACT) rule, also will hasten fuel switching by manufacturers, including in the pulp and paper industry. Further, while the 2011 AEO is clearly incorrect in that it projects a decrease in natural gas use in the electric power sector through at least 2030, the 2013 AEO may not be capturing the rapidly changing fuel mix in that sector. Finally, the earlier EIA Study, which provided the natural gas prices that NERA used in its analysis of macroeconomic impacts, also used the assumptions and projections from the same 2011 AEO discussed above that significantly underestimated natural gas demand.

## II. The NERA Study's Discussion of Energy Intensive Trade Exposed (EITE) Industry and the Value of Manufacturing Generally is Flawed

The NERA Study discussed the impact of higher natural gas prices on both Energy Intensive (EI) and EITE industries, including pulp and paper. For the former, the NERA Study projects minor impacts to industrial output and wage income under all scenarios analyzed. However, since, as discussed above, the model input assumptions underlying the study were based on inaccurate and low demand and price projections, DOE can not rely on these results as the basis for an impact assessment for EI industries.

For EITE industries, the NERA Study looked to previous analyses of potential impacts of the Waxman-Markey climate change bill (H.R. 2454), because the cap and trade provisions of the bill were projected to increase energy costs (albeit to a lesser extent than that projected by the NERA Study, which only considered natural gas price increases).

H.R. 2454 included an allowance allocation provision designed to ameliorate competitiveness impacts of the bill on EITE industries, which included four industries in the paper sector that were “presumptively eligible” for the allowances. The Administration performed an Interagency Analysis of the bill’s impact on EITE industries, and concluded that because of the allowance allocation provisions, the bill would have little or no impact on the EITE industries, or could even provide some overall benefit for some of them.

As discussed in more detail in the attached, AF&PA and other EITE industries in the American Materials Manufacturing Alliance challenged those conclusions, for several reasons, including that: 1) the allowances would not cover all costs associated with the bill (allowances only covered direct emissions); 2) the Analysis assumed unrealistic future industry energy efficiency improvements that were projected to reduce energy use and therefore energy costs; and, 3) the Analysis did not recognize an allowance cut required to meet CBO scoring rules. In addition, even if the allowance allocation provisions were able to adequately mitigate negative impacts on EITE industries (which they were not), there is no such mitigation mechanism for natural gas exports. The Analysis, therefore, is not useful to assess the impacts on EITE industries of price increases resulting from LNG exports.

The NERA Study also concludes that industries vulnerable to natural gas price increases from LNG exports are not “high value-added industries.” This is simply incorrect for the pulp, paper and converting industry, which makes significant contributions to the U.S. economy by employing approximately 385,000 people. According to data compiled by the Bureau of Labor Statistics, earnings of pulp and paper mill workers exceed the average for all U.S. private sector workers by about 50 percent. Moreover, value added as a percentage of the dollar value of product shipments was higher for the paper and converting industry in 2011 (48 percent) than for all manufacturing industries (44 percent), according to U.S. Census Bureau data.

The industry’s contributions extend beyond the paper industry to other sectors of the U.S. economy. Multipliers compiled by the Economic Policy Institute indicate that 100 jobs in the paper industry support an additional 325 jobs outside the industry (supplier industries, government entities and schools, and local communities where paper industry employees spend their wages).

The use of fuels to produce manufactured goods typically supports more jobs than using the same fuel to generate energy without any associated manufacturing production. For instance, a study by RISI, a well-known consulting firm that focuses on the forest products industry, found that for a given amount of wood consumption, the forest products industry sustains five times as many direct jobs in mills and converting plants and nine times as many total jobs as the energy sector.

Similarly, manufacturing overall also has a significant multiplier effect for the U.S. economy. According to the National Association of Manufacturers (NAM), manufacturing has the highest multiplier of all sectors when considering how much additional output is generated by a dollar's worth of demand for manufactured products. For every \$1.00 spent in manufacturing, another \$1.48 is added to the economy.<sup>1</sup>

## **CONCLUSION**

We commend DOE for undertaking the 2012 LNG Export Study and attempting to discern the cumulative economic impact of the LNG export applications, and for using such a study to inform the public interest finding it is required to make. We support fair and open trade.

Admittedly, the economic impact analysis is extremely complicated, as are the models NERA used to perform the analysis. However, as is always the case with models, the outputs and results are heavily dependent on their inputs and assumptions. In this case, the projections inherent in the 2011 AEO are outdated and do not reflect the dynamic changes that have already occurred in natural gas supply and demand. The more recent 2013 AEO better accounts for these changes, but may not be fully capturing them. Thus, the NERA Study modeling results do not provide an adequate basis to inform the DOE public interest determination. We recommend that DOE re-run its models using the 2013 AEO, adjusted to reflect the updated demand trends in the 3 sectors.

If you have any questions about this request, please contact me at 202/463-2581 or [jerry\\_schwartz@afandpa.org](mailto:jerry_schwartz@afandpa.org).

Sincerely,



Jerry Schwartz  
Senior Director, Energy and Environmental  
Policy

Enclosure: Interagency Analysis Final EITE response

cc: John Anderson, DOE  
Edward Myers, DOE

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1. See [www.nam.org/Statistics-And-Data/Facts-About-Manufacturing/Landing.aspx](http://www.nam.org/Statistics-And-Data/Facts-About-Manufacturing/Landing.aspx)

## AMERICAN MATERIALS MANUFACTURING ALLIANCE

The Honorable Evan Bayh  
The Honorable Arlen Specter  
The Honorable Sherrod Brown  
The Honorable Claire McCaskill  
The Honorable Debbie Stabenow  
United States Senate  
Washington, DC 20510

Dear Senators:

*The Effects of HR2454 on International Competitiveness and Emission Leakage in Energy-Intensive Trade-Exposed Industries* [the “Interagency Analysis”] can be read in a positive light if one focuses on the statement “we consider this report to be a first step in the Administration’s engagement with stakeholders...” as this signals the beginning of a process leading to getting climate policy right for energy-intensive, trade-exposed industries [EITEs]. On the other hand, if one focuses on the statement “the modeling also finds that the allocations to LDCs and “trade-vulnerable” industries can eliminate almost all—and, in some cases, more than all—of those cost impacts...” and concludes the competitiveness issue is solved by the measures in Waxman-Markey, there can only be negative consequences for both climate policy and energy-intensive, trade-exposed industries.

The Interagency Analysis concludes, on a theoretical basis, HR2454 can effectively eliminate the competitiveness impacts of US climate legislation on energy-intensive, trade-vulnerable manufacturers. To achieve that desired outcome all the variables and moving parts built into the design of the Waxman-Markey program have to work exactly right. Design mistakes can have enormous consequences for manufacturers and the millions of Americans whose jobs depend on a competitive and healthy domestic manufacturing sector. For example:

- From the EPA analysis [by state] and the Minnesota Power analysis [by utility company; both attached], we know that coal-intensive utilities, typical of those operating in Michigan, Indiana, Ohio, Pennsylvania and Missouri, will be severely under-allocated. These are generally states where EITEs operate. This means they will have to buy allowances just to meet their *direct emissions* obligations. This also means there will be no allowances left over to use to offset the cost of replacing coal capacity with gas or wind [which includes new transmission infrastructure for wind and solar]. All of these substantial costs will be passed on to EITEs as much higher energy prices. Any program to regulate greenhouse gases must mitigate against the impact of these uncompensated energy costs or EITEs will become uncompetitive and leakage is certain.
- The suggestion EITEs can lower energy intensity 20-45% by 2020 is a key assumption leading to the conclusion the EITE allowances are sufficient. This

assumption is false. EITEs have reduced energy use substantially from 1990-2007 and most are on the flat part of the curve (e.g., steel energy intensity is down 33% from 1990 levels, chemicals absolute emissions are down 16% vs. 1990; aluminum CO2 equivalent emissions are down 50% from 1990; paper's energy intensity is down 11% from 1990-2006). Explanatory charts are attached.

- The Interagency Report does not recognize the 15% allowance cut required to meet CBO scoring rules, further reducing LDC and EITE allowance sufficiency.

The idea LDC and EITE allowances are sufficient is the foundation of the conclusion of the Interagency Analysis, i.e., "... that the allocations to LDCs and "trade-vulnerable" can eliminate almost all—and, in some cases, more than all—of those cost impacts..."

The Interagency Analysis recognizes the challenges of implementing such a complex emissions trading program have not been "fully considered." An example is the enormous amount of work still needed to devise an allowance distribution system that does not unfairly penalize competitive manufacturers and result in production migration within and outside of the US. The potential for a system to unfairly create "winners and losers" in the marketplace must be avoided at all cost. Similarly, we would like to delve deeper into the assumptions leading to a \$20/t carbon price to determine their feasibility in comparison to modeling that has yielded higher carbon cost.

The Waxman-Markey measures for EITEs are inadequate. The absence of consideration of all of the costs that EITEs will confront in a carbon capped economy and the absence of a fair allowance distribution system call into question the ability to properly design an economy-wide cap and trade mechanism. Further, a poorly designed program will impact more than just our direct employees [the employment levels used in the Interagency Analysis] as the men and women whose businesses depend on healthy EITE sectors number in the millions.

More work, the Interagency Analysis says, will need to be done to improve assessments of competitiveness impacts and to address various implementation challenges presented by output-base allocations. We agree. An analysis of cost and job impacts on EITEs using proper and practical assumptions regarding LDC allowances, EITE efficiency and other parameters will tell the true story... a story that could lead to a climate policy construct that lowers CO2 emissions while growing manufacturing jobs and encouraging the development of transformational industrial processes.

EITEs look forward to the next steps with the Administration to build on our long record of developing policy solutions that help create jobs and reduce emissions.

Aluminum Association  
American Chemistry Council  
American Forest and Paper Association  
American Iron and Steel Institute  
The Fertilizer Institute

## **Attachment I**

**EPA was asked to provide technical assistance on the following questions. EPA's responses are provided below the questions.**

*Do you have any analysis of the effects of distributing allowances to utilities based on W-M formula vs. based 100% on emissions vs. 100% load (any regional/state break-down; any calculations of %age of emissions covered)? I understand EEI might have some of this too. I believe this is what my boss discussed with the Administrator, and is the issue my boss is hearing a lot about from the state. And what is the Agency's read on often over-looked insertion before House floor vote that appears to prevent a utility from receiving more allowances than its emissions? Does EPA agree that this language trumps the formula and would in fact prevent windfalls for major energy producers of low-carbon emitting sources (e.g., nuclear)? There seems to be a split interpretation of this restriction.*

### **EPA RESPONSES:**

#### **Allocation Estimates**

Estimates for state allocations are included in Table 1. Note that these are rough estimations based on the best currently available data, described in more detail below. Actual allocations will be different, since the owner or operator of each LDC has the ability to define their baseline as a period of any 3 consecutive years from 1999-2008. Furthermore, this analysis does not consider the impact of new coal generation built prior to 2013.

Only 2012 allocations are presented, as the following years will change proportionately (absent updating based on number of customers). In 2012, LDC allocations are equal to 43.75% of the total allowance pool after 1% of allowances are withheld for strategic reserve auctions. We assume the maximum allocation to merchant coal generators (10% of LDC allocations, phasing out over time), and withhold that value from these estimates.

Delivery estimates are based on sales reported in EIA 861, taking the average of 2006 and 2007 total retail sales by distribution company.

Emissions were estimated using the average of 2006 and 2007 EIA 861 retail sales by delivery state and applying EPA eGRID regional emission factors. These emission values are rough estimates, since the emission factors are based on large geographic regions (see figure 1), and were calculated using available 2005 emission and generation data.

#### **Prohibition against excess distributions in Sec. 783(b)(4)**

The language prohibiting distribution of more allowances than "necessary to offset any increased electricity costs to [the electric distribution company's] retail ratepayers, including increased costs attributable to purchased power costs, due to enactment of this title" does take precedence over, and sets a limitation on each electric distribution company's [LDC's] annual distribution of allowances under, the language establishing an allowance distribution methodology based on LDC emissions and deliveries. This is because the prohibition language states that the prohibition applies "notwithstanding" the distribution methodology language.

However, the prohibition provision would be very difficult to implement because it would require a great deal of speculation. First, the Administrator would need to determine (either through projection before the year for which allowances are distributed or through actual data after the year for which allowances are distributed) the total cost of the electricity distributed to its customers each year starting with 2012. Second, the Administrator would need to estimate (again either up front or after the year of the allowance distribution) what each LDC's total cost of electricity would be each year in the absence of the ACES GHG cap and trade program. Total electricity costs would depend on a number of factors that would have to be projected, including the sources and amounts of purchased power, the mix of generation of purchased and LDC generated power, fuel costs, technology advancements (e.g., in generation), transmission constraints, and electricity demand. Any attempt to remove the impact of the cap and trade program on these factors and thus on total electricity costs would be speculative at best. The Administrator might also have to consider the ability of each LDC to pass through these costs to its customers. The difference between these two total cost figures for a given year, divided by the market value of an allowance for that year, would be the limitation on the amount of allowances that an LDC could be distributed for that year. The limitation could be implemented by limiting up front the distribution or by requiring the LDC to return later to the Administrator any amount of allowances in excess of the limitation. The excess allowances would be redistributed to other LDCs, but an iterative process would be required to ensure that the redistribution of excess allowances would not increase any LDC's total allowance distribution above that LDC's limitation. EPA notes that the prohibition provision could reward higher costs to LDC retail ratepayers in that the higher the level of an LDC's costs, the higher the limitation on the LDC's allowance distribution.

Table 1. Allocation Estimates by Delivery State

		2012 Allocation (Million Tons)					2012 Allocation (Million Tons)		
Delivery State	Annual Emissions Estimate (Million Tons)*	HR 2454 Formula (50/50 Emission /Load)	100% Emissions-Based	100% Load-Based	Delivery State	Annual Emissions Estimate (Million Tons)*	HR 2454 Formula (50/50 Emission /Load)	100% Emissions-Based	100% Load-Based
AK	3	3	3	3	MT	6	6	5	7
AL	62	47	50	44	NC	67	58	54	62
AR	26	22	21	23	ND	10	7	8	6
AS	0	0	0	0	NE	23	16	19	13
AZ	45	36	36	36	NH	5	5	4	5
CA	87	99	70	127	NJ	41	36	33	39
CO	43	30	35	24	NM	14	11	11	11
CT	14	14	11	16	NV	19	16	15	17
DC	6	5	5	6	NY	57	58	46	69
DE	6	5	5	6	OH	110	82	89	76
FL	138	111	112	111	OK	41	30	33	27
GA	92	70	74	66	OR	20	20	16	23
GU	1	1	1	1	PA	84	70	68	72
HI	8	6	7	5	PR	14	11	11	10
IA	36	25	29	21	RI	3	3	3	4
ID	10	9	8	11	SC	42	37	34	39
IL	107	78	87	70	SD	9	6	7	5
IN	75	56	61	52	TN	72	54	58	51
KS	35	24	29	19	TX	205	165	166	164
KY	62	47	50	44	UT	11	11	9	13
LA	42	36	34	38	VA	61	51	49	53
MA	24	23	19	27	VI	1	0	0	0
MD	35	29	28	31	VT	2	2	2	3
ME	5	5	4	6	WA	35	35	28	41
MI	77	57	62	52	WI	55	39	44	34
MN	56	39	45	33	WV	23	17	19	16
MO	70	49	57	40	WY	8	7	7	7
MS	29	23	24	23	Total	2,234	1,802	1,802	1,802

\* Estimate calculated using 2006-2007 retail sales and eGRID emission factors

Figure 1. eGRID Emission Factor Regions



## Sampling of Utilities for Waxman Markey Impact Comparison

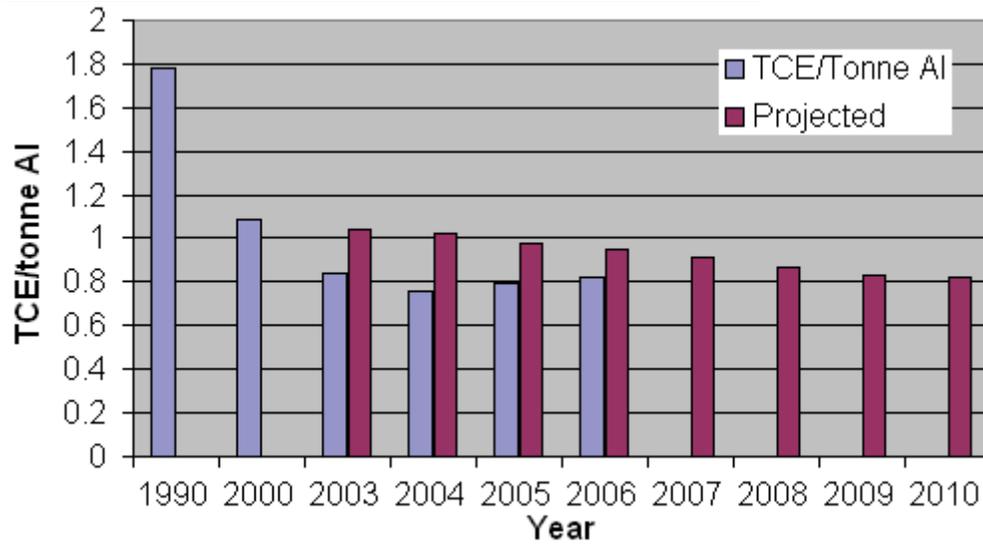
Utility (Sampling)	2006 Tonnes CO <sub>2</sub> per MWH	2006 Reported Emissions (1000s of tonnes CO <sub>2</sub> ) Purchased Energy Not Included	2012 Estimated Free Allowance Allocations (1000s) Merchant Power Not Included	Percent coverage of 2006 historic emissions	2012 Market Value of First Year Surplus or (Shortfall) \$ Millions at \$15 per tonne	2012 Benefit or (Shortfall) \$/MWH
PG&E	0.013	430	7,384	1717%	\$ 104	\$3.13
Exelon	0.068	10,386	36,971	356%	\$ 398	\$2.61
Entergy	0.264	30,457	36,024	118%	\$ 84	\$0.73
Florida P&L	0.332	46,978	47,086	100%	\$ 2	\$0.01
Constellation	0.346	16,948	16,765	99%	(\$ 3)	(\$0.06)
PSEG	0.360	22,583	21,795	97%	(\$ 12)	(\$0.19)
Dominion	0.500	51,693	41,151	80%	(\$ 158)	(\$1.53)
Westar	0.708	18,422	12,303	67%	(\$ 92)	(\$3.54)
Wisconsin Energy	0.722	20,921	13,841	66%	(\$ 106)	(\$3.66)
Southern	0.740	149,238	97,704	65%	(\$ 773)	(\$3.83)
Xcel	0.768	61,402	39,512	64%	(\$ 328)	(\$4.11)
DTE Energy	0.785	33,663	21,456	64%	(\$ 183)	(\$4.27)
AEP	0.826	154,561	96,419	62%	(\$ 872)	(\$4.66)
MidAmerican	0.860	65,438	40,126	61%	(\$ 380)	(\$5.00)
ALLETE (Purchased Power Included)	0.986	10,647	6,185	58%	(\$ 67)	(\$6.21)
Great Plains	0.995	20,412	11,817	58%	(\$ 129)	(\$6.29)
ALLETE (unadjusted)	1.036	6,278	3,580	57%	(\$ 40)	(\$6.60)
Basin Electric Coop	1.101	18,102	10,100	56%	(\$ 120)	(\$7.32)
Great River Energy	1.130	11,714	6,475	55%	(\$ 79)	(\$7.62)

Reference: Data derived from PSEG/NRDC/CE RES Top 100 Utility Emissions 2006. Cost of WM renewables and power purchase emissions not included.

Att't II  
MN Power Analysis

**Attachment III**

**DOE's Climate VISION program – Primary Aluminum**

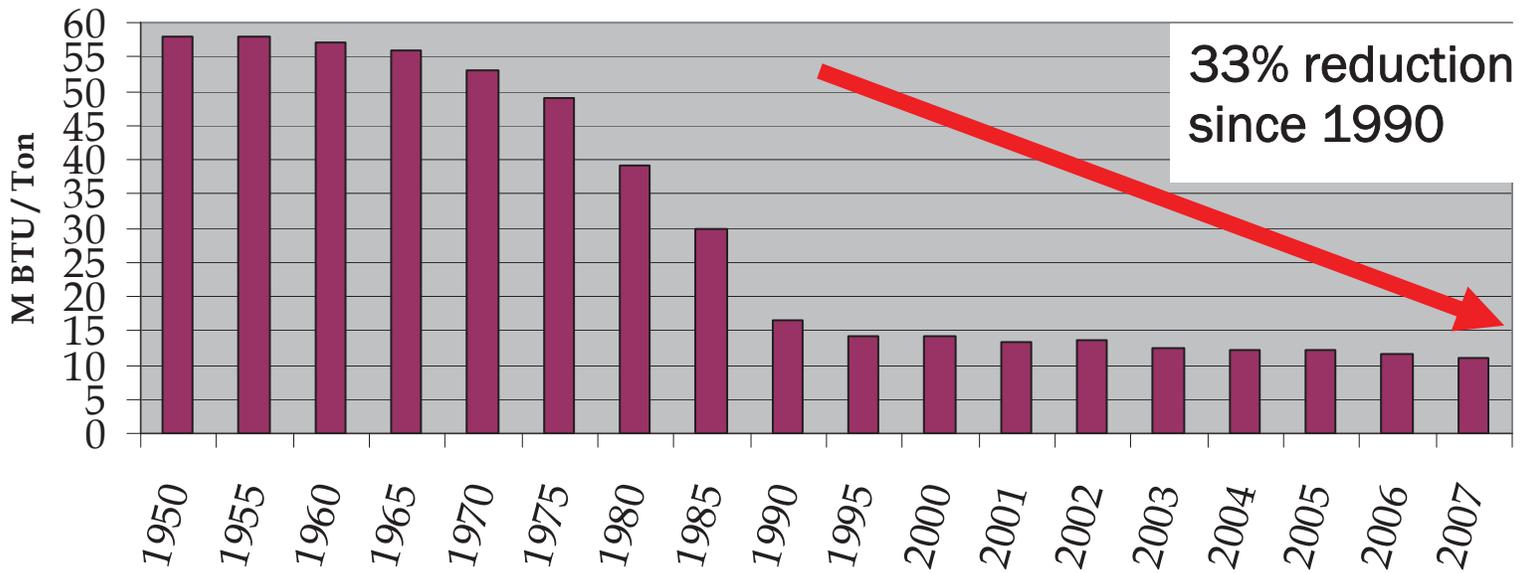


TCE/tonne Al = Tonne of Carbon Equivalent per tonne Al

Note the flattening of the actual data and the projection. Source—Climate VISION Website

Attachment IV  
Steel Industry Energy Efficiency Improvement

## Energy consumption per ton of steel shipped in the U.S. steel industry



Note the flattening of the curve during the 2000's as performance approaches physical limits.

Source: AISI Statistics