Testimony of Brett A. Vassey, President & CEO, Virginia Manufacturers Association

Legislative Hearing on S. 1733, Clean Energy Jobs and American Power Act

US Senate Committee on Environment and Public Works
9:30 a.m., October 28, 2009
Room 406, Dirksen Senate Office Building

Chairman Boxer, Senator Inhofe and members of the Senate Committee on Environment and Public Works, thank you for the opportunity to testify on S. 1733 – the Clean Energy Jobs and American Power Act.

I am the President & CEO of the Virginia Manufacturers Association. We have been the state trade association for manufacturers and industrial suppliers to manufacturers for 87 years in the Commonwealth of Virginia. Our members employ over 120,000 Virginians in all 19 manufacturing industries across Virginia – our members make everything from ships to chips.

Based on the last economic impact report[1] conducted by our state's economic development agency, the Virginia Economic Development Partnership, Virginia's manufacturing sector supports:

- 1,015,971 jobs
    - 303,829 direct jobs
    - 712,142 additional jobs
    - Direct and indirect jobs equate to 27% of total employment in Virginia
- $172.0 billion in annual economic output

[1] http://www.vamanufacturers.com/docs/publications/MfgImpactEconDriversPlan.pdf

- $85.8 billion direct output
- $86.2 billion additional output
- Direct and additional output equate to 49% of Virginia's Gross State Product

Further, Virginia's manufacturing sector, its supporting industries, and its employees generate:

- $6.3 billion in tax revenue
  - $3.5 billion in state tax revenue, including sales and income taxes
  - $2.8 billion in local tax revenue
- $2.4 billion in property taxes
- $400 million in sales taxes

My testimony today will specifically address the "cap and trade" provision of S. 1733 and the American Clean Energy and Security Act of 2009 (H.R. 2454). I will speak to four issues pertaining to "cap and trade" that are not regularly addressed in the context of climate change legislation. The four areas are as follows:

1. Federal Government Credit Allocation. This system allows elected political leaders to choose "winners and losers" in the economy. Waxman-Markey directs that every commercial user of energy would be given a certain number of carbon credits, permitting it to emit a specific amount of carbon each year. If a manufacturer exceeds its credits, it has to purchase extra credits from others who do not reach their cap. This system has too much risk for global manufacturers who are making decisions about their future capital investments today. Congress allocating credits is a critical decision because Virginia and

other states will lose opportunities to compete and create jobs in the future as long as the threat of this allocation system exists in the public debate.

2. Productive Capacity Confiscation. To avoid paying for emissions credits, only point sources such as manufacturers, that comprise only 3% of Virginia's total businesses, must involuntarily accept limits on their emissions. This limitation ignores the fact that Virginia's industrial sector emits less CO_2 today than it did in 1990 (see Appendix B). Additionally, in accepting lower allowable emission rates, the company will also be restricting each regulated facility to a correspondingly lower allowable production rate. This is productive capacity confiscation and there is no provision to compensate Virginia's affected businesses for the productive capacity confiscated by the government.
3. Leakage. Proponents of "cap & trade" believe immediate regulation will force industry to stop using traditional sources of energy. Unfortunately, this position demonstrates a fundamental misunderstanding of global manufacturing today. The truth is "cap & trade" is just another tax on businesses and consumers - regressively so on manufacturing - and it does nothing to stop "leakage" to nations with more favorable conditions. For example, even if Virginia limited all of its CO_2 emissions, China's CO_2 emissions growth alone would replace all of Virginia's CO_2 emissions in only 77 days. Virginia is .44% of the global GHG emissions.
    a. It is my opinion that Mr. Tom Mullikin, a senior environmental attorney with Moore & Van Allen in Charlotte, NC, is one of the most persuasive and well cited researchers in this policy area and should be invited to speak to this Committee. His documentary, *Climate Change: Global Problems, Global Solutions*, has had the most profound impact on industrial leaders across the US about how to look

differently at the political and economic solutions to climate change. For example, American manufacturers are three times more productive than Asian competitors and 33% of China's CO_2 emissions are from the production of goods for export. In essence, one of Mullikin's findings is that due to the productivity of the American manufacturer (and worker) and the efficiency of US manufacturing, our nation's carbon emissions from industry are only 11.5% of the country's overall carbon emissions, whereas, the EU's industrial equivalent is 16.2%, Japan's is 21.5% and China's is 28% (Source – World Resources Institute). In other words, the US is the largest manufacturing economy in the world and if it were to grow that industrial base, rather than limit it, we may grow GHG emissions domestically by a small percentage, but we could lower the overall global GHG emissions.

b. These facts should embolden the Senate to explore the role of global industrial competition as a motivating factor for other countries.

c. Due to the global market implications of this legislation, it is also recommended that the Senate also explore the climate modeling by NASA (GISS) as it relates to challenges accurately predicting surface temperatures over the past decade, heat content of the ocean and the temperature of the atmosphere.

4. Market Interference. The U.S. manufacturing industry relies substantially on natural gas as a feedstock, for process requirements and for electric power, and traditional energy resources such as coal, nuclear, oil and biomass. The National Association of Manufacturers largely attributes the shutdown of businesses and loss of 3.7 million premium wage U.S. manufacturing Jobs from 2000 to 2008 to the quadrupling of natural

gas prices. This was driven by construction of over 100,000 megawatts of new natural gas based power plants early this decade. It was based on conclusions that production of US natural gas would increase substantially and that prices would remain low for a very lengthy period. Neither of these occurred. Given the language in section 181 of S. 1733 this quick build out of new natural gas plants could occur again and bring another substantial loss of U.S. manufacturing jobs. Further, cap and trade's effect of limiting traditional fuel sources will not serve to encourage energy independence for the U.S. because it ignores the technology challenges of carbon sequestration, affordability and reliability of wind and solar energy, biomass competition with food and forest products industries and the proven reserves of fossil fuels in the United States that exceed all other countries (see Appendix A).

Industrial businesses understand the importance of environmental stewardship, voluntarily spending millions on this effort each year. According to a Virginia Joint Legislative Audit & Review Commission (JLARC) report[2], Virginia manufacturers already spend between $606 million and $1.72 billion per year on environmental compliance. Therefore, we commend the efforts of this body to legitimately address this complex scientific issue while affording equal protections to the U.S. economy - ***these are not mutually exclusive principles***.

Furthermore, it is difficult for the American manufacturer to understand how adding new regulatory burdens with undefined indirect costs and increasing direct costs of everything from fuel to electricity will not harm domestic industry. You already know the studies published by organizations such as The Beacon Hill Institute, Heritage Foundation and the National

[2] http://jlarc.virginia.gov/reports/Rpt342.pdf

Association of Manufacturers. The Beacon Hill Institute report estimated that Waxman-Markey will cost Virginians in excess of $25 billion by 2050. The Heritage Foundation estimates that Virginians will pay $500 more per household for electricity, and gasoline prices will increase 64 cents per gallon. Finally, the National Association of Manufacturers projects that Virginians may pay as much as $159 per metric ton of CO_2 emitted annually, 64.3% more for natural gas and Virginia should brace for a loss of 56,400 jobs by 2030 (see Appendix C).

Contrast these costs with the fact that Virginia manufacturers have lost over 100,000 jobs in less than 20 years and Virginia has lost billions in economic activity during that same period and ask yourself if this protects domestic jobs and the environment?

On June 6, 2008, ten (10) US Senators, including Virginia's Senator Jim Webb co-signed a letter to you, Senator Boxer, and Senator Reid. In that letter, the Senators stated that one of their principles was to "Protect U.S. Manufacturing Jobs and Strengthen International Competitiveness." The Senators went on to state that, "The final bill must include enhanced safeguards to ensure a truly equitable and effective global effort that minimizes harm to the U.S. economy and protects American jobs." We agree[3].

In closing, the Virginia Manufacturers Association wants Congress to develop responsible policies that protect domestic jobs and the environment. We are concerned that these bills will "cap" industrial competitiveness and "trade" domestic manufacturing jobs abroad for an entirely undefined environmental benefit. We can do better and we must do better.

[3] Virginia Climate Change Council, Statement of Principles, 2008 - http://www.vamanufacturers.com/publications/climatechangestatementofprinciples.pdf.

APPENDIX A

Table 6. Reserves of fossil fuels plus technically recoverable undiscovered oil and natural gas

	Total fossil fuel proved reserves	Estimated undiscovered oil & gas (Billion BOE, USGS[a])	TOTAL FOSSIL FUELS[b] (Billion BOE)
United States	**969.7**	**351.5**	**1321.3**
Russia	954.9	293.7	1248.6
Saudi Arabia	311.6	231.3	543.0
China	465.6	28.4	494.0
Iran	311.6	114.3	425.9
Canada	214.1	7.2	221.3
Kazakhstan	166.7	33.7	200.4
Iraq	134.8	68.4	203.3
Qatar	175.6	12.1	187.7
Venezuela	118.3	38.1	156.4
United Arab Emirates	135.8	16.2	152.0
Nigeria	69.5	63.4	133.0
Brazil	41.4	79.4	120.8
Kuwait	113.9	4.7	118.6
Libya	51.1	10.8	61.9

BOE means Barrels of Oil Equivalent

a. U.S. Geological Survey, World Petroleum Assessment, 2000, http://energy.cr.usgs.gov/WEcont/WEMap.pdf; mean values of estimates are used for foreign countries. U.S. number is taken from values in Table 3.

b. Total Fossil Fuels in this table include the technically recoverable reserves of oil, natural gas, and coal from Table 5, plus estimates of undiscovered oil and natural gas from the USGS World Petroleum Assessment. No global estimates of undiscovered coal exist.

Source: Congressional Research Service, http://epw.senate.gov/public/index.cfm?FuseAction=Files.View&FileStore_id=01feb68b-ef57-4748-8f5c-d88c0e7d6bd5

APPENDIX B

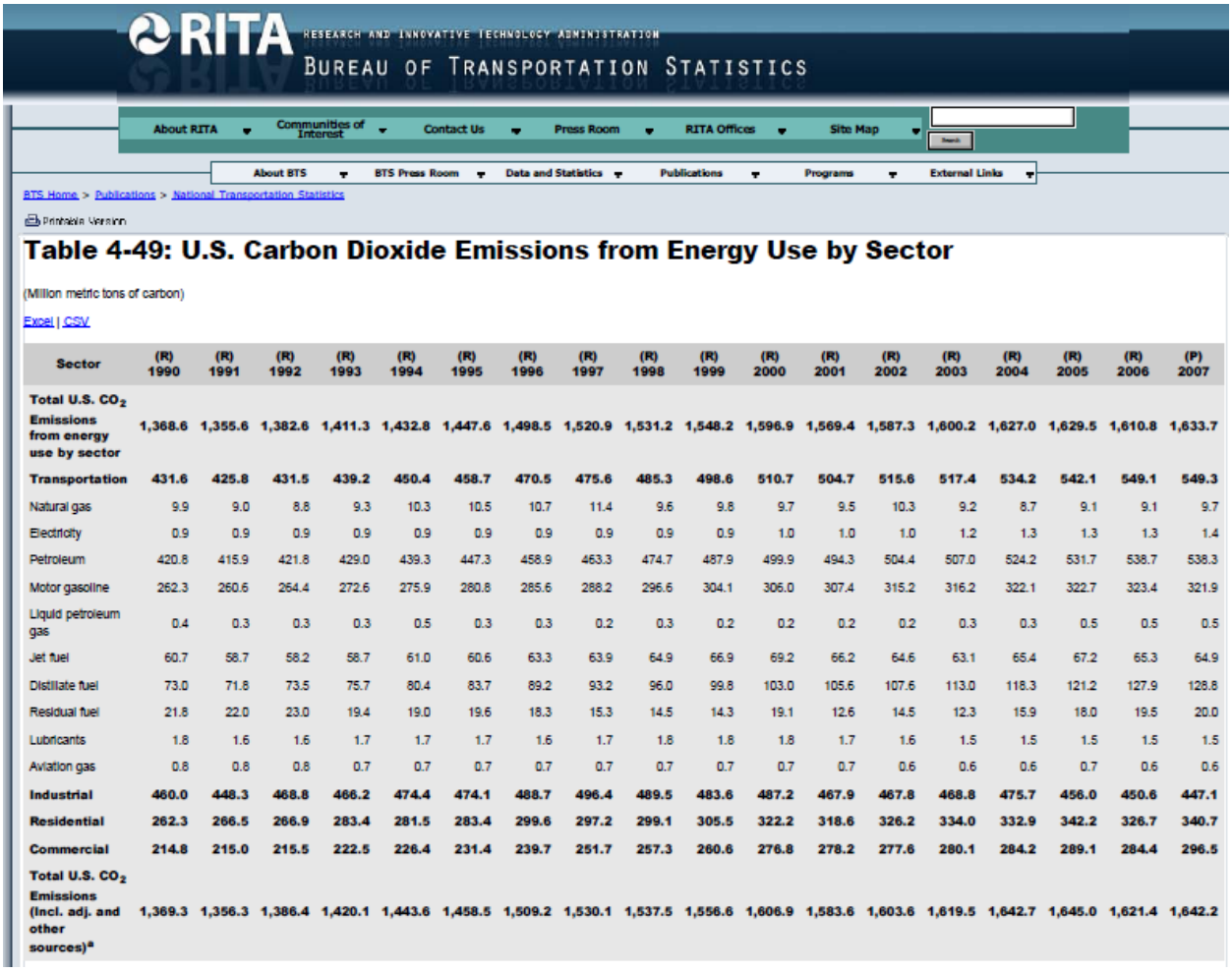

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Table 4-49: U.S. Carbon Dioxide Emissions from Energy Use by Sector

(Million metric tons of carbon)

Excel | CSV

Sector	(R) 1990	(R) 1991	(R) 1992	(R) 1993	(R) 1994	(R) 1995	(R) 1996	(R) 1997	(R) 1998	(R) 1999	(R) 2000	(R) 2001	(R) 2002	(R) 2003	(R) 2004	(R) 2005	(R) 2006	(P) 2007
Total U.S. CO_2 Emissions from energy use by sector	**1,368.6**	**1,355.6**	**1,382.6**	**1,411.3**	**1,432.8**	**1,447.6**	**1,498.5**	**1,520.9**	**1,531.2**	**1,548.2**	**1,596.9**	**1,569.4**	**1,587.3**	**1,600.2**	**1,627.0**	**1,629.5**	**1,610.8**	**1,633.7**
Transportation	**431.6**	**425.8**	**431.5**	**439.2**	**450.4**	**458.7**	**470.5**	**475.6**	**485.3**	**498.6**	**510.7**	**504.7**	**515.6**	**517.4**	**534.2**	**542.1**	**549.1**	**549.3**
Natural gas	9.9	9.0	8.8	9.3	10.3	10.5	10.7	11.4	9.6	9.8	9.7	9.5	10.3	9.2	8.7	9.1	9.1	9.7
Electricity	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	1.0	1.0	1.0	1.2	1.3	1.3	1.3	1.4
Petroleum	420.8	415.9	421.8	429.0	439.3	447.3	458.9	463.3	474.7	487.9	499.9	494.3	504.4	507.0	524.2	531.7	538.7	538.3
Motor gasoline	262.3	260.6	264.4	272.6	275.9	280.8	285.6	288.2	296.6	304.1	306.0	307.4	315.2	316.2	322.1	322.7	323.4	321.9
Liquid petroleum gas	0.4	0.3	0.3	0.3	0.5	0.3	0.3	0.2	0.3	0.2	0.2	0.2	0.2	0.3	0.3	0.5	0.5	0.5
Jet fuel	60.7	58.7	58.2	58.7	61.0	60.6	63.3	63.9	64.9	66.9	69.2	66.2	64.6	63.1	65.4	67.2	65.3	64.9
Distillate fuel	73.0	71.8	73.5	75.7	80.4	83.7	89.2	93.2	96.0	99.8	103.0	105.6	107.6	113.0	118.3	121.2	127.9	128.8
Residual fuel	21.8	22.0	23.0	19.4	19.0	19.6	18.3	15.3	14.5	14.3	19.1	12.6	14.5	12.3	15.9	18.0	19.5	20.0
Lubricants	1.8	1.6	1.6	1.7	1.7	1.7	1.6	1.7	1.8	1.8	1.8	1.7	1.6	1.5	1.5	1.5	1.5	1.5
Aviation gas	0.8	0.8	0.8	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.6	0.6	0.6	0.7	0.6	0.6
Industrial	**460.0**	**448.3**	**468.8**	**466.2**	**474.4**	**474.1**	**488.7**	**496.4**	**489.5**	**483.6**	**487.2**	**467.9**	**467.8**	**468.8**	**475.7**	**456.0**	**450.6**	**447.1**
Residential	**262.3**	**266.5**	**266.9**	**283.4**	**281.5**	**283.4**	**299.6**	**297.2**	**299.1**	**305.5**	**322.2**	**318.6**	**326.2**	**334.0**	**332.9**	**342.2**	**326.7**	**340.7**
Commercial	**214.8**	**215.0**	**215.5**	**222.5**	**226.4**	**231.4**	**239.7**	**251.7**	**257.3**	**260.6**	**276.8**	**278.2**	**277.6**	**280.1**	**284.2**	**289.1**	**284.4**	**296.5**
Total U.S. CO_2 Emissions (Incl. adj. and other sources)[a]	**1,369.3**	**1,356.3**	**1,386.4**	**1,420.1**	**1,443.6**	**1,458.5**	**1,509.2**	**1,530.1**	**1,537.5**	**1,556.6**	**1,606.9**	**1,583.6**	**1,603.6**	**1,619.5**	**1,642.7**	**1,645.0**	**1,621.4**	**1,642.2**

APPENDIX C

Analysis of the Waxman-Markey Bill "The American Clean Energy and Security Act of 2009" (H.R. 2454) Using the National Energy Modeling System (NEMS/ACCF-NAM 2)

EXECUTIVE SUMMARY

Introduction:

The American Council for Capital Formation (ACCF)[1] and the National Association of Manufacturers (NAM)[2] contracted with Science Applications International Corporation (SAIC)[3] to analyze the Waxman-Markey bill, the American Clean Energy and Security Act of 2009 (H.R. 2454) to substantially reduce U.S. greenhouse gas (GHG) emissions over the 2012-2050 period. This study uses the NEMS/ACCF-NAM 2[4], the version used in this project of the National Energy Modeling System (NEMS) model, the model used by the U.S. Energy Information Administration (EIA) for its energy forecasting and policy analysis when asked by Congress and other federal agencies to analyze new energy and environmental policy initiatives. NEMS provides a common analytical tool for gaining valuable insights into the likely implications of alternative GHG reduction policy options. Using the model relied on by Congress also ensures that the discussion will focus on the merits of assumptions and policy choices rather than methodology. In the end, the use of the ACCF-NAM version of NEMS in this study supports and supplements congressional consideration of alternatives and enhances opportunities to identify commonalities, strengthen the legislation, and find solution paths. This study was performed by SAIC, independent of EIA.[5]

The ACCF and NAM believe it important to fully and realistically examine the potential costs that enactment of Waxman-Markey bill)[6] would impose on the U.S. economy. The Waxman-Markey bill requires an 83 percent reduction in CO2e compared to 2005 levels by the year 2050. It is well recognized that the cost to U.S. consumers and employers of implementing greenhouse gas (GHG) emission reductions is highly dependent on the market penetration achieved by key technologies and the availability of carbon offsets by 2030. Understanding the potential economic impacts at the national, state and individual household levels can help guide choices on climate change policy to minimize the impacts on economic growth and maximize the benefits to the environment. Greenhouse gas reduction policies need to include consideration of impacts on energy security, economic growth, and U.S. competitiveness. This project is designed to assist in this effort.

The ACCF-NAM analysis of the Waxman-Markey bill uses the most recent version of the EIA Annual Energy Outlook, the April AEO2009. This is the third version of the AEO released by EIA for 2009. The April AEO2009 includes the Stimulus Law enacted in February 2009, the American Recovery and Reinvestment Act of 2009 (ARRA), as well as the original Stimulus Law enacted in October 2008, the Energy Improvement and Extension Act of 2008. It also includes a new macroeconomic outlook that took into account the impact of the significant worsening of the ongoing recession that was not included in the earlier versions of the AEO2009.

In the near term, ARRA is projected to decrease the magnitude and duration of the current recession. Further out in the projection period, however, ARRA adversely affects macroeconomic performance as the larger budget deficits that result from the additional spending embedded in the stimulus package cause interest rates to be higher and GDP growth to be lower. NEMS model changes reflect the following programs of ARRA 2009: weatherization, assisted housing, energy efficiency, and conservation block grants; State energy programs; Plug in hybrid and electric vehicle tax credits; tax credits for renewables; Loan guarantees for renewables, biofuels and transmission projects; support for CCS; and, smart grid expenditures.[7]

ACCF and NAM applied input assumptions under two scenarios (high cost and low cost) investigating the sensitivity of assumptions that have proven in the past to significantly impact the cost of limiting CO2 emissions from energy. The ACCF-NAM input assumptions embody judgment on the likely cost and availability of new technologies in the early decades of a long-term effort to reduce greenhouse gas emissions as well as energy efficiency and renewable electricity standards. These assumptions include the availability of nuclear power technology for electric generation, the availability of carbon capture and storage for more efficient coal and natural gas-based power generation technologies, the availability of wind and biomass technologies. The ACCF-NAM input assumptions also included assumptions regarding the likely availability of domestic and international offsets - - key factors influencing analysis of the cost of limiting greenhouse gas emissions (see Appendix a for assumptions).

Results of the ACCF-NAM Analysis of the Waxman-Markey Bill (H.R. 2454)

The NEMS/ACCF-NAM 2 model study's findings indicate substantial and growing impacts to consumers and the economy of meeting the increasingly stringent emission targets through 2030 established by H.R.2454. Among the NEMS/ACCF-NAM 2 study's general findings are:

• U.S. economic growth slows:
U.S. economic growth slows under the Waxman Markey bill (H.R. 2454), especially in the post 2020 period as the free emission allowances are phased out for both energy producers and energy consumers. In 2030, the inflation adjusted, annual GDP level is reduced by 1.8% (or $419 billion) under the low cost scenario and by 2.4% (or $571 billion) under the high cost scenario, compared to the baseline forecast (See Table 1 for results and baseline forecasts). To put these GDP losses in perspective, in 2008 the Federal government spent $612 billion on social security payments to retirees. Looked at another way, if GDP levels are reduced by $571 billion in 2030, Federal and State tax receipts will be approximately $170 billion lower that year since Federal and State governments take approximately 30 cents out of every dollar of GDP. Thus, government budgets will be harder to meet.

Over the entire 18 year period (2012-2030) covered by ACCF/NAM analysis, cumulative GDP losses are substantial, ranging from $2.2 trillion dollars under the low cost case to $3.1 trillion under the high cost case. Again, the hit to Federal and State budgets is large, cumulative tax receipts will be reduced by between $670 billion and $930 billion compared to the baseline forecast. Given the size of projected Federal deficits and State budget receipt shortfalls, policymakers may want to think carefully before imposing the Waxman Markey bill on the already struggling U.S. economy.

• Industrial production begins to decline:
Industrial production (manufacturing, mining and electric utilities) begins to decline immediately in 2012, relative to the baseline forecast, under the Waxman Markey bill. In 2030, U.S. industrial output levels are reduced by between 5.3 % and 6.5 % under the low and high cost scenarios. A hallmark of economic downturns and recessions is a slowdown in the growth rate or an absolute decline in the level of industrial output. Clearly, the negative impact on industrial output of the Waxman Markey bill would make it harder to keep the U.S. economy out of recession or sluggish growth insufficient to restore job growth.

• Employment is negatively impacted:
Employment is negatively impacted by Waxman Markey, even when additional "green" jobs are factored in. Over the 2012-2030 period, total U.S. employment averages between 420,000 and 610,000 fewer jobs each year under the low and high cost scenarios than under the baseline forecast. By 2030, there are between 1,790,000 and 2,440,000 fewer jobs in the overall economy. Manufacturing employment is hard hit: in 2030 there are between 580,000 and 740,000 fewer jobs, or between a 6 and 7 percent reduction in total manufacturing employment in the U.S compared to the baseline forecast. On average, over the 2012-2030 period, the manufacturing sector absorbs 59 to 66 percent of the overall job losses caused by the Waxman Markey bill.

• Energy prices rise:

Energy prices rise over the 2012-2030 period, due to the various features of the Waxman Markey bill including prices for carbon permits which gradually rise to between $123 and $159 dollars per ton of CO2 by 2030 as well as the renewable portfolio standards, low carbon fuel standards, and energy efficiency standards. Over the past decade, each 1 percent increase in GDP in the U.S. has been accompanied by a 0.3 percent increase in energy use, thus higher energy prices will make it harder to recover from the current recession and to reduce the current high rate of unemployment. The ACCF/NAM study shows that residential electricity prices are 5 to 8 percent higher by 2020, by 2030 electricity prices are between 31 to 50 percent higher. Gasoline prices are also higher. By 2030 prices are up to 20 to 26 % higher than under the baseline forecast.

• Household income drops:

Household income drops under the Waxman Markey bill, even after accounting for rebates to consumers mandated in the bill. In 2030, the decline in annual household income ranges from $730 in the low cost case to about $1248 in the high cost case. However the impacts on household income in individual states, especially in the Midwest are more than 40 percent higher than the national average. For example, household income in Illinois is $1,096 lower in 2030 under the low cost case and $1,782 lower under the high cost case. Other Midwestern states, like Michigan, Indiana and Kansas show a similar pattern, income losses are much higher than the national average.

CONCLUSIONS

The ACCF/NAM analysis of the Waxman Markey bill shows that there are significant economic costs in terms of slower growth in jobs, household income and GDP from meeting the bill's GHG reduction targets. Given the wide recognition that without strong emission cuts in developing countries like China and India, U.S. emission reductions would have only negligible environmental benefits, policymakers should proceed cautiously as they develop climate change policies.

1. The American Council for Capital Formation (ACCF) (www.accf.org) is a nonprofit, nonpartisan organization dedicated to the advocacy of tax and environmental policies that encourage saving and investment. The ACCF was founded in 1973 and is supported by the voluntary contributions of corporations, associations, foundations, and individuals. The mission of the ACCF is to promote economic growth through sound tax, environmental, and trade policies.

2. The National Association of Manufacturers (NAM) is the nation's largest industrial trade association, representing small and large manufacturers in every industrial sector and in all 50 states. Headquartered in Washington, D.C., the NAM has 11 additional offices across the country. Visit the NAM's award-winning web site at www.nam.org for more information about manufacturing and the economy.

3. SAIC is a FORTUNE 500® scientific, engineering and technology applications company that uses its deep domain knowledge to solve problems of vital importance to the nation and the world, in national security, energy and the environment, critical infrastructure, and health.

4. As noted, the term "NEMS/ACCF-NAM 2" is used in this report to distinguish NEMS runs conducted in this project from NEMS runs conducted by EIA, and from those conducted for ACCF and NAM last year in analyzing the Lieberman-Warner bill (S. 2191).

5. SAIC is a policy-neutral organization. SAIC executed the NEMS/ACCF-NAM 2 model in this project using SAIC's and ACCF/NAM's interpretation of the bill, and input assumptions provided by ACCF/NAM. The modeling was performed independent of EIA. Analysis provided in this report is based on the output from the NEMS/ACCF-NAM 2 model as a result of the ACCF/NAM input assumptions. The input assumptions, opinions and recommendations in this report are those of ACCF and NAM, and do not necessarily represent the views of SAIC.

6. The House of Representatives passed the H.R. 2454 on June 26, 2009 by a vote of 219-212.

7. The details of the implementation are described in, "An Updated Annual Energy Outlook 2009 Reference Case Revisions Reflecting Provisions of the American Recovery and Reinvestment Act and Recent Changes in Economic Outlook," April 2009, Energy Information administration.

Table 1: Economic Impact of the Waxman-Markey Bill (H.R.2454) on the U.S. Economy

	Baseline (ACCF-Ref)			Low Cost Case (W/M)			High Cost Case (W/M)		
	2020	2025	2030	2020	2025	2030	2020	2025	2030
GDP (Billion 2007$)	$ 18,443	$ 21,016	$ 23,802	$ 18,403	$ 20,905	$ 23,384	$ 18,374	$ 20,853	$ 23,231
Loss in GDP (Billion 2007$)				$ 40	$ 112	$ 419	$ 68	$ 164	$ 571
% Loss				0.2%	0.5%	1.8%	0.4%	0.8%	2.4%
Employment (Millions)	157.2	160.7	165.8	157.2	160.4	164.0	157.1	160.2	163.4
Job Loss (Millions)				-0.01	0.33	1.79	0.08	0.52	2.44
% Loss				0.0%	0.2%	1.1%	0.0%	0.3%	1.5%
Industrial Output (Billion 2007$)	$ 7,962	$ 8,570	$ 8,839	$ 7,817	$ 8,305	$ 8,368	$ 7,790	$ 8,254	$ 8,263
Loss in Industrial Output (Billion 2007$)				$ 144	$ 265	$ 471	$ 172	$ 316	$ 575
% Loss				1.8%	3.1%	5.3%	2.2%	3.7%	6.5%
Coal Mining Output (Billion 2007$)	$ 27.4	$ 28.6	$ 29.2	$ 17.6	$ 12.9	$ 7.5	$ 17.0	$ 12.8	$ 7.0
Loss in Coal Mining Output (Billion 2007$)				$ 9.8	$ 15.7	$ 21.7	$ 10.4	$ 15.8	$ 22.2
% Loss				36%	55%	74%	38%	55%	76%
Primary Metals (Billion 2007$)	$ 188	$ 187	$ 164	$ 176	$ 166	$ 127	$ 171	$ 158	$ 116
Loss in Primary Metals Output (Billion 2007$)				$ 12	$ 21	$ 37	$ 17	$ 29	$ 48
% Loss				6%	11%	23%	9%	15%	29%
Carbon Allowance Price (2007$ / Ton CO2)				$ 47.50	$ 76.50	$ 123.21	$ 61.24	$ 98.63	$ 158.85
Average Household Income (2007$)	$ 98,929	$ 110,009	$ 121,731	$ 98,811	$ 109,670	$ 121,001	$ 98,679	$ 109,445	$ 120,483
Loss (2007$)				(118)	(339)	(730)	(250)	(564)	(1,248)
% Change				-0.1%	-0.3%	-0.6%	-0.3%	-0.5%	-1.0%
Energy Expenditures (Billion 2007$)	$ 1,480	$ 1,549	$ 1,682	$ 1,538	$ 1,652	$ 1,996	$ 1,584	$ 1,728	$ 2,136
Increase(2007$)				$ 57	$ 103	$ 313	$ 104	$ 179	$ 454
% change				3.9%	6.7%	18.6%	7.0%	11.6%	27.0%
Retail gasoline prices (2007 $/gallon)	$ 3.61	$ 3.69	$ 3.85	$ 3.92	$ 4.13	$ 4.62	$ 4.01	$ 4.28	$ 4.86
% Change				8.4%	12.1%	20.0%	11.1%	16.1%	26.1%
Residential Electricity Price (2007$ Cents/Kwh)	$ 11.10	$ 11.22	$ 11.69	$ 11.66	$ 11.77	$ 15.36	$ 11.98	$ 12.51	$ 17.54
% change				5.0%	4.9%	31.4%	7.9%	11.5%	50.0%
Industrial Electricity Prices (2007 Cents/Kwh	$ 6.45	$ 6.57	$ 6.91	$ 7.26	$ 7.78	$ 10.30	$ 7.84	$ 8.68	$ 12.17
% change				12.5%	18.4%	48.9%	21.5%	32.0%	76.0%
Residential Natural Gas Prices (2007$/Mcf)	$ 12.88	$ 12.93	$ 14.27	$ 12.46	$ 13.55	$ 22.31	$ 12.90	$ 14.24	$ 24.75
% change				-3.3%	4.8%	56.3%	0.1%	10.1%	73.5%
Industrial Natural Gas Prices (2007 $/Mcf)	$ 7.65	$ 7.62	$ 8.85	$ 10.19	$ 12.26	$ 16.55	$ 11.56	$ 14.19	$ 18.89
% change				33.3%	61.0%	87.1%	51.1%	86.3%	113.5%
Electric Utility Coal Prices (2007 $/Ton)	$ 38	$ 39	$ 40	$ 124	$ 180	$ 269	$ 151	$ 224	$ 345
% change				224%	359%	565%	295%	472%	755%
Manufacturing Employment (Millions)	12.0	11.6	10.1	11.8	11.2	9.5	11.7	11.1	9.4
Job Loss (Millions)				0.21	0.38	0.58	0.28	0.49	0.74
% Loss				1.8%	3.3%	5.8%	2.3%	4.2%	7.3%