

United States Economic Impact from the Lieberman-Warner Proposed Legislation to Reduce Greenhouse Gas Emissions

Understanding the economic impacts of the Lieberman-Warner Climate Security Act¹ (L/W bill) can help guide choices on climate change policy.² In this study, the L/W bill was analyzed under low and high cost cases with respect to a baseline that projects the future in the absence of the bill. The L/W bill would enforce a nationwide cap and trade program for the emissions of greenhouse gases (GHGs) and would reduce GHG emissions covered by the bill to 4,992 Million Metric Tons of CO₂ (MMTCO₂) by 2020 and 3,856 MMTCO₂ by 2030 (Figure 1). L/W sets targets that would reduce GHG emissions to 15% below 2005 levels by 2020; 30% below 2005 levels by 2030; and 70% below 2005 levels by 2050. Covered emissions are assumed to include everything from combustion of fossil fuels in the United States, plus non-CO₂ GHG emissions included in the L/W cap. The price of carbon permits (what companies must pay to emit CO₂) could reach between \$55 and \$64 per metric ton of CO₂ (MT) by 2020 and could increase to between \$227/MT and \$271/MT by 2030.³

Impact on Jobs

Under L/W, the United States would lose between 1.2 and 1.8 million jobs in 2020 and between 3 and 4 million jobs in 2030. The primary cause of job losses would be lower industrial output due to higher energy prices, the high cost of complying with required emissions cuts, and greater competition from overseas manufacturers with lower energy costs.

Impact on Disposable Household Income

Higher energy prices would have ripple impacts on prices throughout the economy and would impose a financial cost of \$739 to \$2,927 per year by 2020 on national households, rising to \$4,022 to \$6,752 by 2030 (Figure 3).

L/W's Impact on Energy Prices

Most energy prices would rise under L/W, particularly, coal, oil, and natural gas. The price of gasoline would increase between 60% and 144% by 2030, while electricity prices would increase by 77% to 129%. Table 1 shows the increase in gasoline and electricity prices faced by US households. US consumers would pay between 84% and 146% more for their natural gas by 2030.

Figure 1. US CO₂ Emissions and S. 2191 Targets

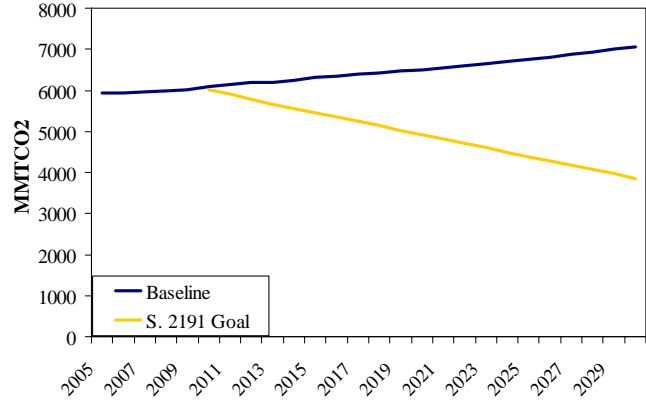


Figure 2: Loss in Employment Relative to Baseline (Millions of Jobs)

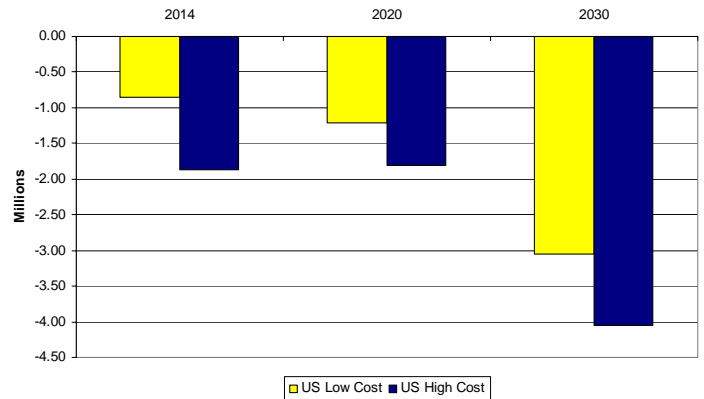
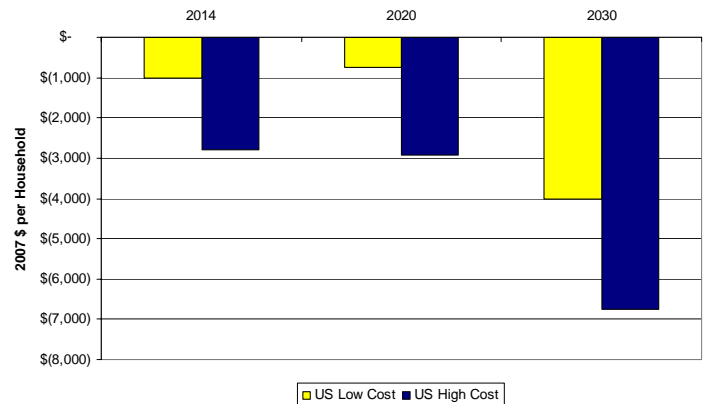


Figure 3: Household Impact Relative to Baseline (Annual Dollars Lost per Household)



¹ S. 2191

² The study used the National Energy Modeling System (NEMS) and assumptions provided by ACCF and NAM for this analysis. NEMS is used by the US Energy Information Administration for energy forecasting and policy analysis. "Low" refers to the Low Cost Case, which assumes higher nuclear capacity, less constraint on new generating technologies, etc. Both cases use higher capital costs than the baseline. "High" refers to the High Cost Case, which assumes low nuclear additions, constrained new generation technologies, high oil prices etc. (See the full report for all assumptions)

³ All dollar figures in this summary are reported in constant 2007 dollars.

Factors Contributing to Higher Electricity Prices

L/W would reduce GHG emissions from all sectors of the economy (transportation, residential, commercial, and industry); however, as the largest emitter of GHGs, the primary impact would fall on the electric sector. L/W would result in the electric industry shutting down most carbon-based generation and/or using expensive, as yet unproven technology, to capture and store CO₂. To meet the stringent goals of L/W, the electric industry would also have to substitute high cost technologies, such as biomass and wind, for conventional generation.

Impact on Economic Growth

High energy prices, fewer jobs, and loss of industrial output are estimated to reduce gross domestic product (GDP) by between \$151 billion and \$210 billion per year by 2020 and \$631 billion and \$669 billion by 2030 (Figure 4).

Impact on Industry

Some major economic sectors will be adversely hit by emission caps (Figure 5). By 2020, primary metals output would be reduced by between 15% and 19%; stone, glass, and clay products would be reduced by between 10% and 12%; motor vehicle manufacturing would be reduced by between 6% and 14%; and paper products would be reduced by between 5% and 7%. In addition the general shift away from coal would result in a 35% reduction in coal production and electricity production would fall around 12%. These losses would be significantly higher by 2030 and would have a lasting impact on the economic base of the US.

Impact on Low Income Families

The impacts of L/W will be felt especially by the poor, who spend more of their income on energy and other goods than other income brackets. By 2020, higher energy prices mean that low income families (with average incomes less than \$18,500) will spend between 19% and 22% of their income on energy under L/W compared to a projected 17% without L/W. Others on fixed incomes, such as the elderly will also suffer disproportionately.

Table 1: Percentage Energy Price Increase Relative to Baseline

Sector	Year	US	
		Low	High
Electricity (Residential)	2014	13%	14%
	2020	28%	33%
	2030	101%	129%
Gasoline	2014	13%	50%
	2020	20%	69%
	2030	77%	145%
Natural Gas (Residential)	2014	18%	21%
	2020	26%	36%
	2030	108%	146%

Figure 4: Annual Impact of GDP Relative to Baseline (Billion 2007\$)

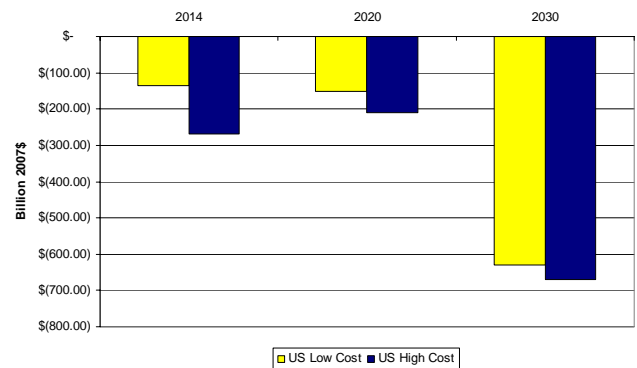


Figure 5: Impact on Industrial Value of Shipments Percentage Change from Baseline in 2020

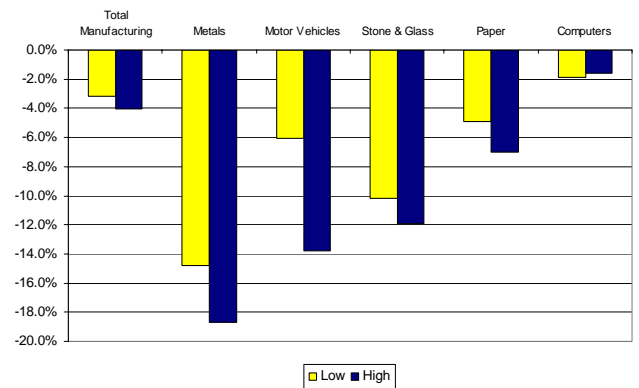


Figure 6: Impact on Production Percentage Change from Baseline in 2020

