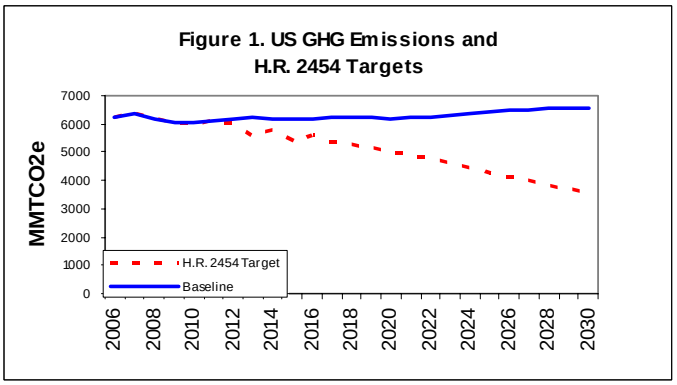
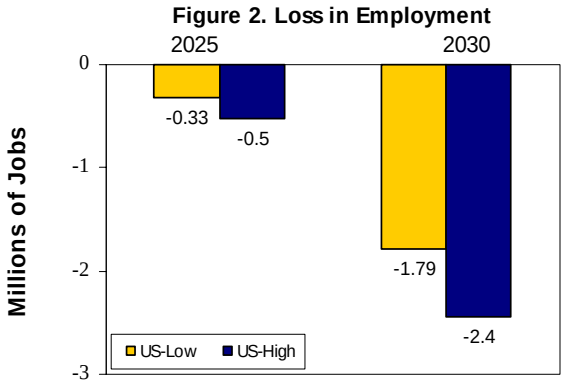
United States
Economic Impact of the Waxman-Markey Bill, H.R. 2454
Proposed Legislation to Reduce Greenhouse Gas Emissions

This study analyzes the Waxman-Markey bill under low and high cost cases with respect to a baseline that projects the future in the absence of the bill.[1,2] W/M sets targets that would reduce GHG emissions to 17% below 2005 levels by 2020; 42% below 2005 levels by 2030; and 83% below 2005 levels by 2050 (Figure 1). The price of carbon permits (what companies must pay to emit CO_2) could reach between $48 and $61 per metric ton of CO_2 (MT) by 2020 and could increase to between $123/MT and $159/MT by 2030.[3]



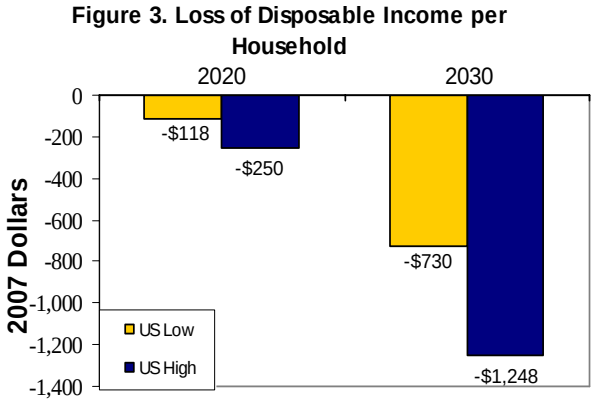
Impact on Jobs

The jobs impact of W/M is delayed by the free allocation of permits and generous carbon offsets. By 2030, as emission reduction targets tighten and other W/M provisions phase out, U.S. jobs decline by 1.8 million under the low cost case and by 2.4 million under the high cost case (Figure 2). The primary cause of job losses is 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.



Decrease in Disposable Household Income

Higher energy prices would have ripple impacts on prices throughout the economy and would impose a financial cost on households of $118 to $250 by 2020 and $730 to $1,248 by 2030 (Figure 3).



W/M's Impact on Energy Prices

Most energy prices would rise under W/M, particularly coal, oil and natural gas. By 2020 gasoline would increase between 8.4% and 11.1%, electricity between 5% and 7.9%. By 2030, gasoline prices increase between 20% and 26.1%, natural gas by 56.3% and 73.5% while electricity prices increase by up to 50%. Table 1 shows the increase in energy prices faced by a typical household compared over the 2020-2030 period.

Factors Contributing to Higher Electricity Prices

W/M 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. W/M would result in the electric industry shutting down most carbon-based generation and/or using expensive, as yet unproven technology, to capture and store CO_2. To meet the stringent goals of W/M, the electric industry would also have to substitute high cost technologies, such as biomass and wind, for conventional generation.

[1]The study used NEMS/ACCF-NAM 2, the version of the National Energy Modeling System (NEMS) used in this project, and assumptions provided by ACCF and NAM for this analysis. It was performed independent of EIA which uses the NEMS model for energy forecasting and policy analysis. (See the full report for all assumptions).

Impact on Economic Growth

High energy prices, fewer jobs, and loss of industrial output are estimated to reduce U.S. Gross Domestic Product (GDP) by between $419 billion and $571 billion by 2030 (Figure 4). GDP falls by 1.8% under the low cost case and by 2.4% under the high cost case in 2030. Cumulative GDP losses range between $2.2 trillion and $3.1 trillion dollars over the 2012-2030 period.

Impact on Industry

Several major economic sectors will be affected by W/M's provisions (Figure 5). By 2030 manufacturing output decreases by 5.3% to 6.5%, primary metals output falls by 23% to 29% and stone and glass decrease by 14% to 17%. Other industries experiencing significant declines are motor vehicles, computer and paper. In addition, the general shift away from coal would result in a 76% reduction in coal production and electricity production would fall by 13.7% to 16.9% by 2030 (Figure 6). These losses will have a lasting effect on the economic base of the United States.

Impact on Low Income Families[4]

The impacts of W/M will be felt especially by the poor, who spend a greater share of their income on energy and other goods than other income brackets. By 2030, higher energy prices mean that low income families (with average incomes of $18,500 will spend between 16% and 17% of their income on energy under W/M compared to a projected 14% without W/M. Others on fixed incomes, such as the elderly will also suffer disproportionately.

Table 1: Change in Energy Prices at Household Level

(% change from baseline)

Sector	Year	US Low	US High
Electricity (Residential)	2020	**5.0%**	**7.9%**
	2025	**4.9%**	**11.5%**
	2030	**31.4%**	**50.0%**
Gasoline	2020	**8.4%**	**11.1%**
	2025	**12.1%**	**16.1%**
	2030	**20.0%**	**26.1%**
Natural Gas (Residential)	2020	**-3.3%**	**0.1%**
	2025	**4.8%**	**10.1%**
	2030	**56.3%**	**73.5%**

Figure 4. Loss in Gross Domestic Product

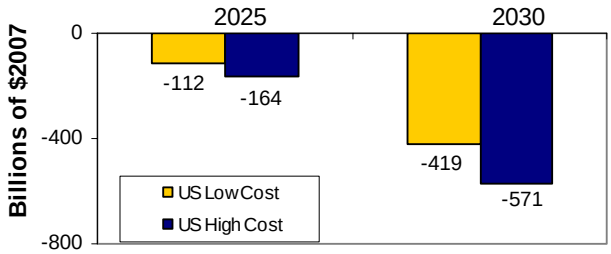


Figure 5. Percent Change in Output by Industry in 2030

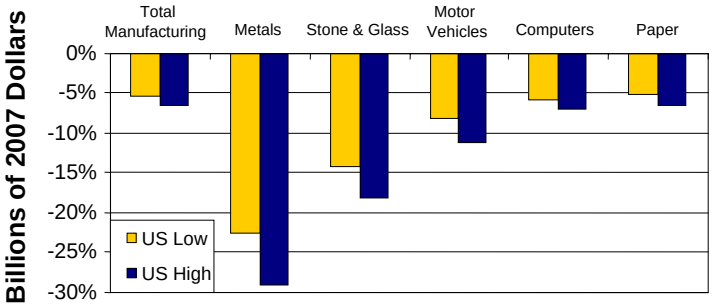
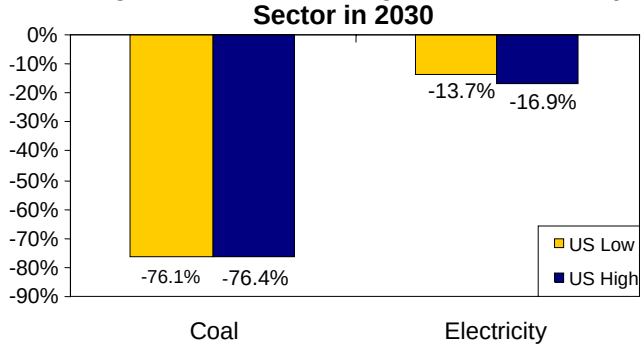


Figure 6. Percent Change in Production by Sector in 2030



[2] "Low" refers to the Low Cost Case, which assumes higher nuclear capacity, fewer constraints on new generating technologies, etc. "High" refers to the High Cost Case, which assumes low nuclear additions and constrained new generation technologies, etc. (See the full report for all assumptions).

[3] All dollar figures in this report are presented in constant 2007 dollars.

[4] These projections assume that the energy expenditures by income quintile in the state are the same as the average for the census division, since there is insufficient data to accurately calculate this quantity on the state level.