

# MICHIGAN

## Costs to the State under Proposed Federal Cap and Trade Legislation to Limit to Limit Greenhouse Gas Emissions<sup>1</sup>

The newly proposed McCain/Lieberman (M/L) bill now contains "innovation" provisions, but the cap is the same. It would reduce covered greenhouse gas (GHG) emissions to 2000 levels in 2010. This study analyzes the costs of the base program under two post-2010 assumptions: a cap equal to 2000 level emissions forever (Low) and a cap that follows the M/L bill until 2020 and then declines as M/L intend, reflecting state proposals to reduce emissions to 80% below 1990 levels by 2050 (High).<sup>2</sup>

The new M/L "innovation" provisions would subsidize the development and deployment of selected energy technologies. These subsidies, if utilized, would only increase the costs projected in this analysis. The non-government sanctioned National Commission on Energy Policy (NCEP) has offered a similar emissions cap proposal that uses a "safety valve" to lower initial costs and thereby achieves emission results barely different from baseline emissions. The NCEP safety valve would have the same effect as an energy tax of \$26 per ton of carbon, at an annual GDP loss of \$27 billion in 2020; it would at the same time produce smaller emissions reductions than the goal of the President's ongoing voluntary program while creating unnecessary new bureaucracy, new vested interests, and large tax-like wealth transfers.

Whether by explicit cap or safety valve, both the M/L and the NCEP would place a burden on the economy with little, if any impact on reducing projected climate change. For either to achieve their objectives of stabilizing concentrations, they would require similar declining caps (M/L High).

Economic impact severity depends on the long-term emission cap. M/L would impose a financial cost of \$500 to \$790 per year on an average household in Michigan in 2010, rising to \$570 to \$960 by 2020. Michigan would lose to 21,000 to 33,000 jobs in 2010 and 31,000 to 51,000 jobs by 2020. Energy intensive industries would shrink by 2.1% to 4.9% by 2020, and manufacturing industries by 1.3% to 2.2%.

### Emissions reduction and energy taxes

Figure 1 shows total U.S. carbon emissions covered by M/L for the baseline and two policy scenarios. Emission reductions would be enforced by a nationwide cap and trade program. The price of carbon permits could range from \$75-\$210 per metric ton of carbon by 2020, and would increase through at least 2025.

### Higher energy prices for consumers and industry

Raising the price of gasoline is an explicit goal of M/L, with increases of 22¢ to 55¢ per gallon by 2020. Table 1 shows the increase in gasoline and electricity prices faced by a typical household. In addition, industry will pay higher energy costs, with an effective 19% to 52% increase in natural gas prices and 12% to 30% increases in electricity prices in Michigan by 2020.

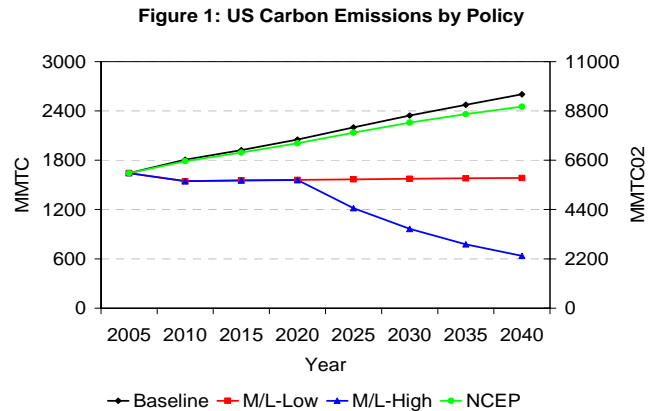
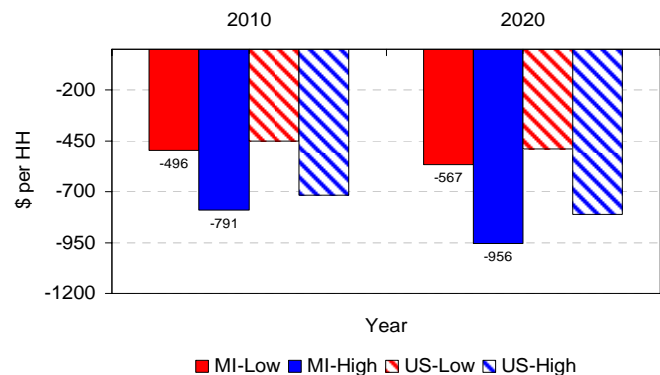


Table 1: Change in Energy Prices at Household Level

(% change from baseline forecasted price)

Sector	Year	MI		US	
		Low	High	Low	High
Electricity (Residential)	2010	9	23	7	16
	2020	12	30	9	20
Gasoline (Retail)	2010	7	17	7	18
	2020	10	27	10	28

Figure 2: Per Household Impact



<sup>1</sup> This work was sponsored by the American Council for Capital Formation. The results are based on the MRN model, see [http://www.crai.com/pubs/pub\\_3694.pdf](http://www.crai.com/pubs/pub_3694.pdf).

<sup>2</sup> Low: Constant emission caps after 2010 at 2000 levels, a backstop price starting at \$300/tonne and declining to \$150/tonne by 2050, and free outside credits. High: Emission caps at 2000 levels until 2020, then falling to 80% below 1990 levels by 2050, backstop price starting at \$300/tonne and declining to \$75/tonne by 2050, and outside credits relatively expensive.

**Purchasing power erodes, as household income falls and prices rise**

Costs per household rise over time as emission caps become more difficult to meet with continued economic growth. Figure 2 shows the reduction in spending on goods and services for the average household. Census data indicate a typical household has 2.5 members and an average income of \$53,250.

**Cost burden falls most heavily on poor and elderly**

Cost impacts of M/L are regressive. In Michigan, the poorest 20% of households, with \$15,400 or less income, will bear a 54% larger burden from energy cost increases than the highest income households. The elderly will face a burden 13% greater than the population under 65.

**Economic growth would slow**

The loss in the gross state product grows over time, reaching \$9.7 to \$22.2 billion per year in 2020. Losses would continue to grow unless new technologies with falling cost become available over time.

**Higher energy cost would reduce jobs**

Michigan would lose 21,000 to 33,000 jobs under M/L in 2010 and 31,000 to 51,000 jobs by 2020.

**Lost tax revenue and higher expenditures would hike federal and state budget deficits**

Lower wages and lower employment will reduce income and spending, causing state sales and income tax revenues to fall. The drop in industrial production will also reduce state tax collections. The impacts of M/L on wages and employment will also affect government expenditures, increasing unemployment benefits and other transfer payments to affected workers. In addition, M/L will increase Michigan’s energy costs, particularly for public transportation, vehicle fleets, including school buses, and for heating and cooling public buildings, schools, and hospitals.

The State of Michigan could expect to see losses in revenue from many sources. For example, losses in personal income tax collections and reductions in state gasoline tax collections and the linked loss in Federal highway trust fund grants will lead to a loss in state revenues of \$265 to \$504 million dollars in 2010. Any increases in state outlays for energy related costs would increase these impacts. These outlays and lost revenues will require the state to choose between cutting programs or raising taxes or some combination of both. This will add to the burden of higher energy prices on consumers.

**All industries suffer losses in production<sup>3</sup>**

One of Michigan’s major industries, motor vehicle manufacturing, will face output reductions of 1% to 2% because consumers in responding to higher gasoline prices will drive less, which in turn will lead to a drop in demand for vehicles. Michigan’s other energy-intensive industries will also suffer losses of output of 2% to 5%. Electricity production will be down by 16% to 34%. This threat of emission caps will have a chilling effect on new investment and strand powerplant assets.

Figure 3: Loss in Employment (thousands of jobs)

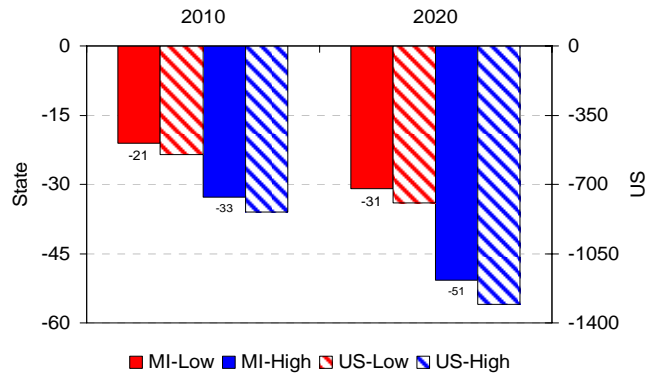
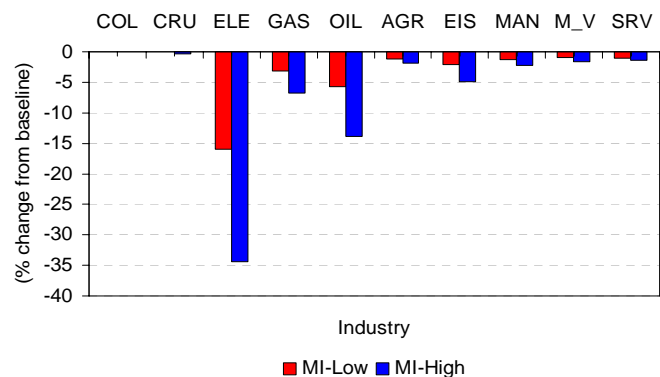


Table 2: Revenue Change (millions of \$)

	MI		US	
	Low	High	Low	High
Motor Fuels Tax - State	-\$56	-\$128		
Motor Fuels Tax - Federal	-\$66	-\$151	-\$1,762	-\$3,990
Income Tax Revenue	-\$143	-\$225	-\$19,577	-\$30,517
Total	-\$265	-\$504	-\$21,339	-\$34,507

Figure 4: Change in the Industrial Output (2020)



<sup>3</sup> COL: Coal, CRU: Crude Oil, ELE: Electricity, GAS: Natural Gas, OIL: Refined Petroleum Products, AGR: Agriculture, EIS: Energy Intensive Sectors, MAN: Manufacturing, M\_V: Motor Vehicle Manufacturing, and SRV: Services