

**Colorado**  
**Costs to the State under the Lieberman/Warner**  
**Proposed Legislation to Limit Greenhouse Gas Emissions<sup>1</sup>**

This study analyzes the economic costs of the Lieberman/Warner Climate Security Act (S.2191 or L/W bill) at the state and household level for the citizens of Colorado. The L/W bill would enforce a nationwide cap and trade program for the emissions of greenhouse gases (GHGs). It would reduce GHG emissions covered by L/W to 4,886 MMTCO<sub>2</sub> by 2020 and then to 1,718 MMTCO<sub>2</sub> by 2050. CRA estimates this to be approximately a 27% reduction from 2005 levels by 2020 for those sectors of the economy covered by the bill, and a 74% reduction by 2050. Covered emissions are assumed to include all CO<sub>2</sub> emissions from combustion of fossil fuels in the United States, plus non-CO<sub>2</sub> GHG emissions included in the L/W cap. The price of carbon permits could reach \$74 per metric ton of CO<sub>2</sub> by 2020 and could increase to \$88 by 2030.<sup>2</sup>

**Higher energy costs would reduce jobs**

Colorado would lose 46,000 jobs in 2020 and 202,000 jobs by 2050 relative to the baseline forecast (in other words, what would happen without cap and trade or carbon tax legislation).

**Household income falls as energy and other prices rise**

Costs per household rise over time as emission caps become more difficult to meet. Relative to its current real spending power (year 2010), an average household in Colorado would lose \$1,546 per year in 2020, rising to \$3,157 by 2050.

**Energy prices rise** as the additional cost of carbon emissions directly impacts the prices paid by consumers for energy. Colorado consumers will have to pay 50% more for natural gas and 30% more for retail gasoline by 2020. By the year 2050, those prices will be twice those of the baseline. The wholesale price of electricity rises by 96% relative to the baseline in 2020. Households and businesses will pay more at the retail level.

**Why do electricity prices rise?**

Electricity prices rise between 2010 and 2020 for two primary reasons: 1) the L/W bill adds a cost for emitting CO<sub>2</sub>, and 2) there is a related shift away from coal-fired generation (78% decrease by 2020) to higher cost natural gas-fired generation (308% increase by 2020). In the long term, however, natural gas-fired generation falls to 97% below the 2020 level as coal-fired generators equipped with carbon capture and storage replace more carbon-emitting natural gas.

**Economic growth would slow**

The loss in the gross state product (GSP) causes Colorado's economy to grow more slowly over time, falling to 2.1% below the baseline forecast in 2020. GSP will remain well below baseline levels after 2020 unless new, affordable GHG-control technologies become available over time.

**Most industries suffer losses in production**

The output of goods and services declines in most of Colorado's industries. The state's largest industry, services (63% of Colorado's output in 2010), falls 1% relative to the baseline by 2020. The output from energy intensive sectors falls 1% by 2030. There is a small gain in the gas industry by 2020 that is significantly reduced by 2030. The electricity sector experiences a 30.2% decline in output by 2030.

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<sup>1</sup> These are preliminary results using the same MRN-NEEM model that Dr. Anne Smith used as the basis of her November 8, 2007 testimony to the Senate EPW Committee concerning the costs and impacts of S.2191. The results reported here reflect provisions of S.2191 as it was reported out of the EPW Committee; Dr. Smith's testimony was based on S.2191 as originally introduced. For more information on the model, see [http://www.crai.com/pubs/pub\\_7748.pdf](http://www.crai.com/pubs/pub_7748.pdf)

<sup>2</sup> All dollar figures in this summary are presented in constant 2007 dollars.