UJAE Summary

Energy Information Agency (EIA) study
Impacts of the Kyoto Protocol
on U.S. Energy Markets
and Economic Activity
October 1998

The EIA is an independent statistical and analytical agency within the Department of Energy.

Major provisions of the Kyoto Protocol, which affect the burden of the treaty on the U.S., have not yet been agreed upon. These include international emissions trading among the developed countries; rules for accounting of activities, which can absorb carbon dioxide (sinks) related to agriculture, land use, and forestry activities; and the rules for acquiring emission credits from projects undertaken in developing countries.

In response to these uncertainties in the final impact of the treaty, the EIA created six carbon reduction cases:

1. Seven percent below 1990 levels: The U.S. must meet the full requirements of the Kyoto Protocol and reduce carbon dioxide emissions 7% below the 1990 level. This is an annual reduction of 542 million tons of carbon or a 30 percent reduction below the levels that will occur in 2010 without the Protocol.
2. Three percent below 1990 levels
3. Stabilization at 1990 levels
4. Nine percent above 1990: In this case emissions can rise to 9% above the 1990 level. Since population and incomes will grow, this is a reduction of 325 million tons or 18% below the level that will occur in 2010 without the Protocol. This case is very close to the DRI Case 2. In this EIA case, the U.S. must meet 60% of its carbon reduction requirement by shifting the energy mix or by curtailing fossil fuel use. DRI's Case 2 was based on meeting 58% of the requirement by shifting the mix or reducing fossil fuel use.
5. Fourteen percent above 1990
6. Twenty-four percent above 1990

In each of the carbon reduction cases, the target is achieved on average for the first commitment period, 2008 through 2012. The target is assumed to be phased in over a three year period beginning in 2005. (DRI assumed the year 2000 as a starting point)

This summary table below is limited to two cases, meeting the full requirements of Kyoto at 7% below 1990 and the 9% above 1990, which is similar to the DRI Case 2.

The drop in employment in the EIA study is much larger that the comparable scenario in DRI. This is largely due to the short period used to phase down emissions. The target is to be phased in over a 3-year period beginning in 2005 in the EIA study compared to 10 years for DRI. In a study published in July 1999, EIA changed the phase in period to 8 years, which results in a smaller employment impact. (see summary on this web page)

Impact of Kyoto Protocol on the U.S. Economy in 2010

	Case	
	1990 +9%	**1990 –7%**
Carbon Price per ton	$163	$348
GDP (billions of dollars)	Down $188	Down $397
Consumer buying (billions of dollars)	Down $99	Down $187
Gasoline	Up 24%	Up 53%
Price of Electricity to residences	Up 46%	Up 82%
Price of natural gas to residences	Up 54%	Up 110%
Energy consumption	Down 10%	Down 18%
Sales of light duty vehicles (units)	Down 610,000	Down 1,410,000
Trade balance (billions of dollars)	Down $67	Down $151
Employment	Down 2,490,000	Down 4,930,000

The complete EIA report can be found at http://www.eia.doe.gov/