

Projected emissions of greenhouse gases for Washington State

Based on “Washington's Greenhouse Gas Emissions: Sources and Trends” (Dec. 06, rev. 2/12/07) and other data from the Washington State Department of Community, Trade, and Economic Development (CTED). <http://www.cted.wa.gov/site/540/default.aspx>

Note: “GHG” is short for “greenhouse gas,” “BAU” is short for “business as usual”, and “MMT” is short for “million metric tons.” A metric ton is 1,000 kilograms, or 2,204.6 pounds. So a “metric ton” is slightly more (1.1023 times more) than what we call a “ton” in the U.S.

Summary

In MMTs	1990	2004 (est.)	2020	2050
Historic GHG emissions	78	88		
Projections (Business As Usual)			105	135
Projections (with existing policies)			87	103
Governor’s targets			78	39

Recent Trends in GHG Emissions

Total GHG Emissions

- Total GHG emissions grew from 78 MMT in 1990 to 88 MMT in 2004, an increase of 9.5 MMT (12%), corresponding to an annual increase of 0.8%.
- Most of the growth occurred in the transportation sector 6.3 MMT, and the electric power sector 6.5 MMT. Industrial sector GHG emissions *declined* by 4.2 MMT over the time frame.
- Growth in GHG and CO₂ emissions are highly correlated with population growth.
- In 2004 Washington per capita CO₂ emissions were 12.2 metric tons per year and have remained at this level for past 20 years. Our per capita emissions are 63 percent of the national average of 19.4 metric tons per year.

Forecast Emissions for 2020 and 2050

The 1990 through 2004 GHG emission were used as the basis for estimating emission in 2020 and 2050. Many factors could emerge over the next several decades that could cause actual emissions to deviate from the forecasts. The forecasts below assume very little action is taken on limiting GHG emissions, and is referred to hereafter as the Business As Usual (BAU) forecast.

The 2020 Business As Usual Forecast

- Total GHG emissions are forecast to increase to 105 MMT, an increase of 17 MMT (19%) over 2004 levels, corresponding to an annual increase of 1.2%.
- As with recent growth trends in GHG and CO₂ emissions, most growth in the BAU forecast will occur in the transportation and electric power sector.

The 2020 Forecast, Taking Existing Policies into Effect

- From the BAU forecast of 105 MMT, the Clean Cars program (the 2005 adoption of the California Clean Car standards) is expected to save 3.5 MMT; adoption of biofuels (by law we are supposed to have 2% biodiesel/ethanol by 2008) is expected to save 1.2 MMT; energy efficiency is expected to save 5.0 MMT; and renewable power (through I-937, an initiative passed last year) is expected to save 7.6 MMT.
- Altogether, existing policies are expected to reduce emissions by 17 MMT, meaning that total GHG emissions taking existing policies into account are forecast to be 87 MMT by 2020 (compared to 88 MMT for 2004 and 78 MMT in 1990).
- The governor's goal for 2020 is to reach 1990 levels. To go from the 2020 BAU forecast of 105 MMT to the 1990 level of 78 MMT, the state needs to reduce 2020 emissions by 27 MMT. Existing policies are expected to reduce emission by 17 MMT, which is over 60% of the goal of 27 MMT.

The 2050 Business As Usual Forecast

- Total GHG emissions are forecast to increase to 135 MMT, an increase of 47 MMT (53 %) over 2004 levels, corresponding to an annual increase of 1.1 %.
- Most growth occurs in the transportation and electric power sector, while actual emissions from the industrial and agricultural sectors decline slightly. Population growth and increasing energy related emissions drive GHG and CO₂ emissions.

The 2050 Forecast, Taking Existing Policies into Effect

- From the BAU forecast of 135 MMT, the Clean Cars program (the 2005 adoption of the California Clean Car standards) is expected to save 10.7 MMT; adoption of biofuels (by law we are supposed to have 2% biodiesel/ethanol by 2008) is expected to save 1.7 MMT; energy efficiency is expected to save 11.4 MMT; and renewable power (through I-937, an initiative passed last year) is expected to save 7.7 MMT.
- Altogether, existing policies are expected to reduce emissions by 32 MMT, meaning that total GHG emissions taking existing policies into account are forecast to be 103 MMT by 2050 (compared to 88 MMT for 2004 and 78 MMT in 1990).
- The governor's goal for 2050 is to reach 39 MMT (50% below 1990 levels). To go from the 2050 BAU forecast of 135 MMT to the goal of 39 MMT, the state needs to reduce 2050 emissions by 94 MMT. Existing policies are expected to reduce emission by 32 MMT, which is over 30% of the goal of 94 MMT.