

Washington State Greenhouse Gas Emissions Inventory and Projections Updates December 4, 2007

Table 1 presents updated estimates of historic and projected Washington anthropogenic greenhouse gas (GHG) emissions and sinks for the period from 1990 to 2020. These values are an update to the *Draft Washington State Climate Advisory Team Greenhouse Gas Inventory and Reference Case Projections, 1990-2020*, published on July 19, 2007¹

The key updates to the estimated GHG emissions are:

Electricity:

- Note that the values in Table 1 reflect the GHG emissions associated with the electricity delivered to Washington consumers (referred to as “load-based” or “consumption-based”).
- The 1990 estimates are based on revised values from Community, Trade and Economic Development and Ecology, as posted in their draft 1990 emissions inventory, viewable at <http://www.ecy.wa.gov/climatechange/docs/Updated1990GHGreport20071119.pdf>
- The 2007-2020 projections were updated, based on analysis provided by the NW Power and Conservation Council for the report, Carbon Dioxide Footprint of the Northwest Power System.
- Although not shown in Table 1, the 2006 values have been updated based on more recent information from Washington’s Fuel Mix Disclosure

Forestry:

- Additional detail was added to the appendix, including results by east- and west-sides of the state and detailed discussions of underlying trends and uncertainties.
- While no changes were made to the methodology or the estimated carbon flux values for each carbon pool, the total net carbon stock change was revised to exclude the soil carbon pool. This change was based on input from the US Forest Service (authors of the forest carbon methodology) and was due to a relatively high uncertainty in this pool at the scale of state-level inventories.
- The revised total estimated forest carbon sink decreased by 21%.

Transportation:

- The on-road gasoline and diesel emissions have been revised to reflect the latest statewide VMT projections from WSDOT.
- The forecast of on-road gasoline and diesel emissions was revised to use 2005 as a base year (rather than 2002). Thus, 2003 – 2005 on-road gasoline and diesel emissions are now based on reported fuel sales data, rather than projections off a 2002 base year estimate.
- The estimate of current diesel emissions has been revised to reflect current biodiesel use in the state (assumed to be zero). Thus, benefits of the recent actions related to biodiesel are calculated outside the inventory and forecast.

¹ <http://www.ecy.wa.gov/climatechange/CATdocs/71907DraftWACATGHGReport.pdf>

Table 1: Washington Historical and Reference Case GHG Emissions, by Sector^a

(Million Metric Tons CO₂e)	1990	2000	2005	2010	2020
Electricity, Net Consumption-based	16.9	23.3	18.9	20.2	24.9
Coal	16.8	17.4	15.2	15.9	18.4
Natural Gas	0.1	5.3	3.6	4.2	6.3
Petroleum	0.0	0.6	0.0	0.1	0.2
Biomass and Waste (CH ₄ and N ₂ O)	0.0	0.0	0.0	0.0	0.0
Residential/Commercial/Industrial (RCI)	18.6	20.3	19.4	21.3	24.3
Coal	0.6	0.3	0.2	0.3	0.3
Natural Gas	8.6	11.4	10.3	11.0	12.7
Oil	9.1	8.4	8.5	9.7	11.0
Wood (CH ₄ and N ₂ O)	0.2	0.2	0.3	0.4	0.4
Transportation	37.5	45.9	44.5	48.5	56.9
Onroad Gasoline	20.4	24.5	24.8	26.2	29.1
Onroad Diesel	4.1	7.6	7.5	8.8	12.0
Marine Vessels	2.6	2.9	3.0	3.3	4.1
Jet Fuel and Aviation Gasoline	9.1	10.0	7.8	8.1	8.5
Rail	0.8	0.3	0.8	0.8	0.8
Natural Gas, LPG, other	0.6	0.6	0.7	1.3	2.5
Fossil Fuel Industry	0.5	0.7	0.9	1.0	1.1
Natural Gas Industry (CH ₄)	0.4	0.7	0.9	0.9	1.0
Coal Mining (CH ₄)	0.0	0.0	0.0	0.0	0.0
Industrial Processes	7.0	6.6	3.3	4.2	6.2
Cement Manufacture (CO ₂)	0.2	0.5	0.5	0.5	0.5
Aluminum Production (CO ₂ , PFC)	5.9	3.9	0.4	0.4	0.3
Limestone and Dolomite Use (CO ₂)	0.0	0.0	0.0	0.0	0.0
Soda Ash (CO ₂)	0.1	0.1	0.1	0.1	0.1
ODS Substitutes (HFC, PFC, and SF ₆)	0.0	1.6	2.1	3.0	5.1
Semiconductor Manufacturing (HFC, PFC, and SF ₆)	0.0	0.1	0.0	0.0	0.0
Electric Power T & D (SF ₆)	0.8	0.4	0.3	0.2	0.1
Waste Management	1.5	2.2	2.4	2.8	3.6
Solid Waste Management	1.0	1.5	1.8	2.0	2.7
Wastewater Management	0.5	0.6	0.7	0.8	0.9
Agriculture	6.4	6.4	5.4	5.1	4.8
Enteric Fermentation	2.0	1.8	1.6	1.5	1.3
Manure Management	0.7	0.9	0.9	1.0	1.2
Agricultural Soils	3.7	3.8	2.8	2.6	2.2
Total Gross Emissions	88.4	105.4	94.8	103.0	121.9
<i>increase relative to 1990</i>		26%	14%	22%	43%
Forestry and Land Use	-28.6	-28.6	-28.6	-28.6	-28.6
Agricultural Soils	-1.4	-1.4	-1.4	-1.4	-1.4
Net Emissions (including sinks*)	58.4	75.4	64.8	73.0	91.9

^a Totals may not equal exact sum of subtotals shown in this table due to independent rounding.