



Preliminary Greenhouse Gas Inventory Metropolitan Washington Region

Greenhouse Gas Emission
Workgroup
August 22, 2007



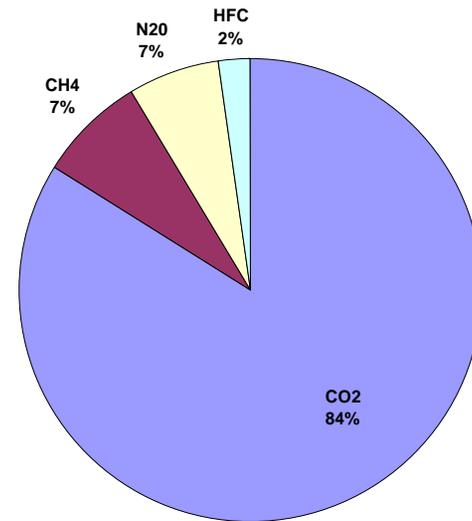
Why an inventory?



- A way to keep track of greenhouse gases that result from activities locally
- A list or catalogue of emissions contributed by source in a single year
- The inventory can be used to set future reduction targets
- Inventories used to control emissions need a **base year** and a **future year**.

Greenhouse Gases (National)

- Carbon Dioxide (CO₂)
- Methane (CH₄)
- Nitrous Oxide (N₂O)
- Hydrofluorocarbons (HFCs)
- Perfluorocarbons (PFCs)
- Sulfur Hexafluoride (SF₆)



Source: US EPA GHG Inventory.

Emission Sources

- Electricity (generation and imports)
- On-road Motor Vehicles
- Residential Fuel Use
- Commercial Fuel Use
- Industrial Fuel Use
- Other Fuel Use (military, vessel bunkering)
- Commercial Aviation
- Solid Waste
- Wastewater
- Substitutes to Ozone Depleting Substances
- Land Use, Land Use Change, and Forestry



Regional Inventory Approach

- Electricity
 - Local power plant emissions reported by EPA CAMD
 - Imported KWh * Regional EF
- On-Road Transportation
 - COG DTP, EPA MOBILE6.2, Travel Demand Model
- Fuels
 - Statewide EIA Consumption * EIA EF
 - Scaled to region using population
- Commercial Aviation
 - Total U.S. commercial aviation emissions scaled to region using share of total miles flown.

Growth Factors

- National Growth Factors
 - U.S. Department of Energy (DOE), Energy Information Administration (EIA), Annual Energy Outlook 2005-2030
- Regional Growth Factors
 - COG Cooperative Forecasts for Population, Housing, and Employment.
 - Round 7.0A

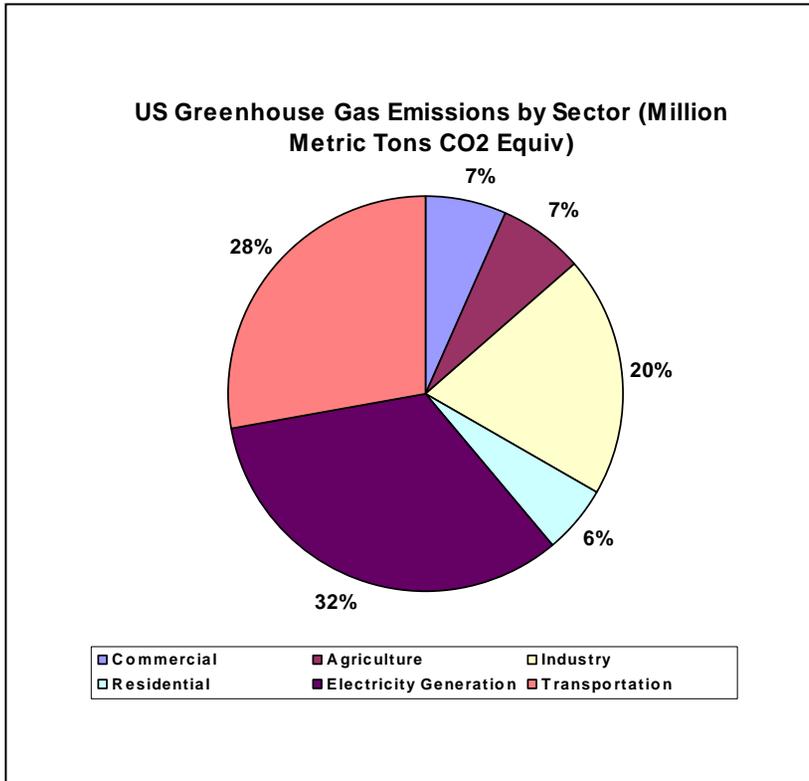
Projections – Growth Rates

	2020	2030	Growth Factor
Energy/Electrical Generating Units (EGUs) and Electricity Import	20%	33%	EIA Total Electric Power
Transportation Combustion	25%	38%	COG DTP
Residential Fuel Use	22%	33%	COG Population
Commercial Fuel Use	25%	39%	COG Employment
Industrial Fuel Use	10%	19%	EIA Total Industrial Energy
Other Fuel Use	18%	31%	EIA Total Energy Consumption
Commercial Aviation	35%	40%	EIA Jet Fuel
Others:			
Population	22%	33%	COG
Households	23%	35%	COG
Employment	25%	39%	COG

Source: U.S. Department of Energy, Energy Information Administration, Annual Energy Outlook 2007. Transportation growth percentage calculated based on COG DTP projections. COG Round 7.a Cooperative Forecast projections for Population, Households, and Employment are provided for comparison purposes.

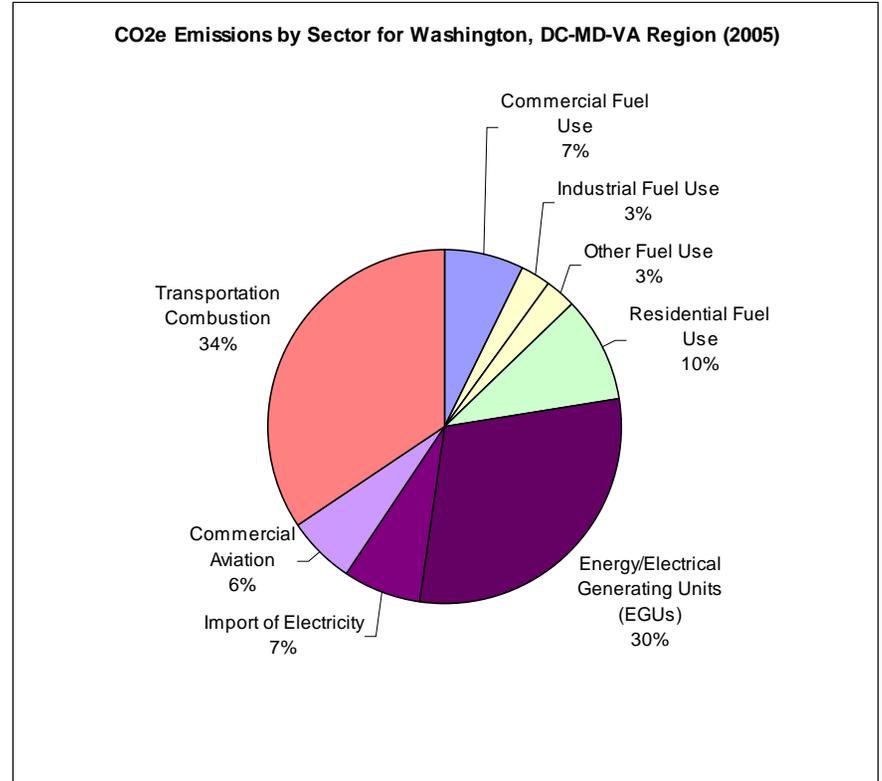


National (2004)



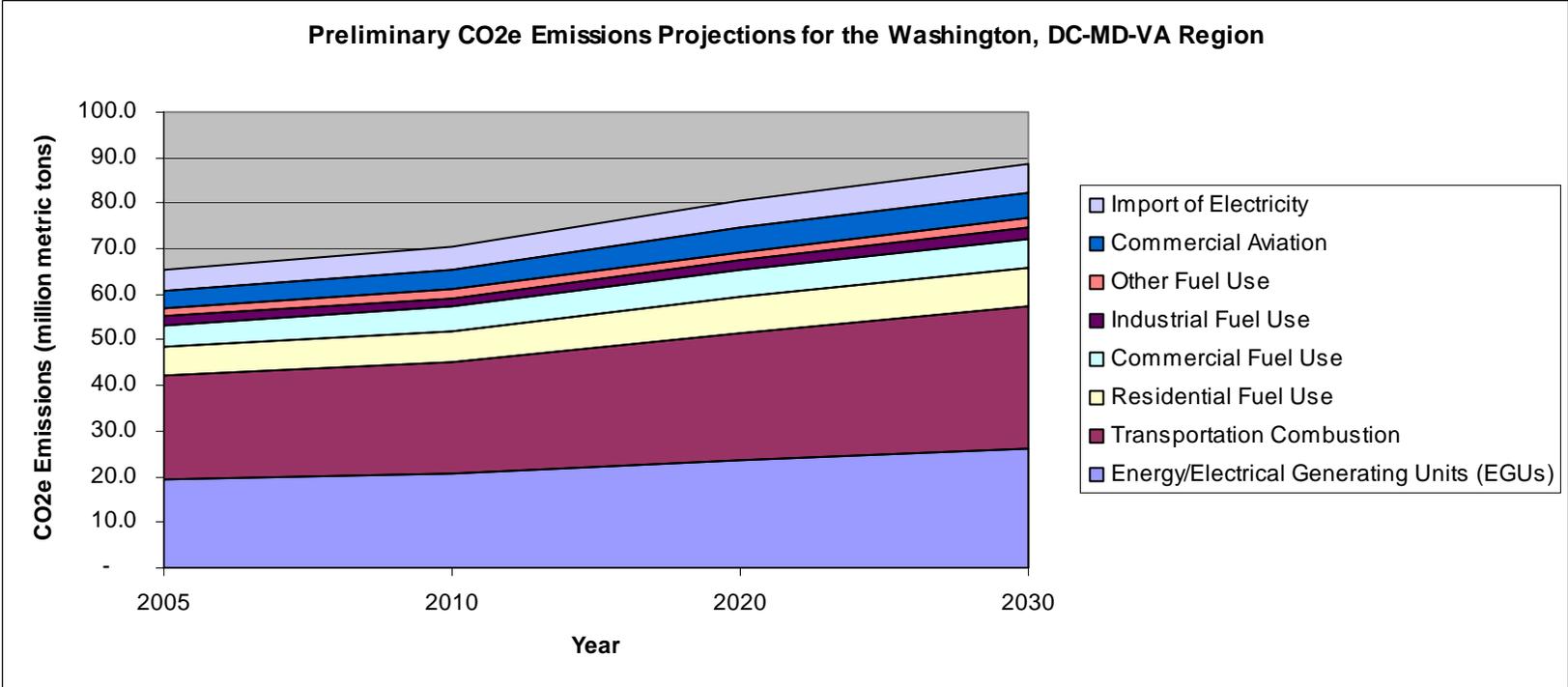
Source: EPA 2004 National GHG Inventory

Regional (2005)



Source: MWCOG estimates.

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Next Steps

- Seeking Agreement:
 - Base Year for Projections (2005)
 - Projection Years (2020, 2030)
 - Growth Factors
- Refine estimates of electricity consumption, net imports.
- Incorporate wastewater, solid waste, high-GWP, and land use, land use change, and forestry.