

## 2009 Per Capita Energy Use as a Regional Indicator

Prepared for use by the Energy Advisory Committee on June 16, 2011

### Background

*Region Forward* is a plan adopted by the COG Board of Directors that uses goals and targets to guide future efforts and measure progress in the greater Washington region. Progress will be monitored using many indicators.

**Energy (electricity and natural gas) use per capita** is an indicator that will help inform progress on specific sustainability targets. There is no specific goal for this indicator. Energy use per capita will inform progress on goals and specific targets that are included in the *Region Forward* plan such as:

- a significant decrease in greenhouse gas emissions, with substantial reductions from the built environment and transportation sector;
- efficient public and private use of energy region-wide, with reliance upon renewable energy and alternative fuels for buildings, vehicles, and public transportation;
- by 2020, all new residential and commercial buildings will be built using sustainable design practices equivalent to LEED Silver Standards;
- and by 2020, reduce regional greenhouse gas emissions by 20% below 2005 levels. By 2050, reduce emissions by 80% below 2005 levels.

### Calculation

In collaboration with regional utilities COG collected data informing the regional greenhouse gas inventory with a baseline year of 2005. Beginning with data for 2009, COG is receiving information on electricity and natural gas consumption from utilities on an annual basis. Data contains energy use and the number of accounts by sector.

Per capita energy use

$$= \frac{(\text{residential electric} + \text{residential natural gas})^a \text{ in kWh equivalent}}{\text{population}^b}$$

OR

$$= \frac{(\text{power plant total generation})^c \text{ in kWh}}{\text{population}}$$

| 2009 Energy Use per Capita |            |   |
|----------------------------|------------|---|
| Jurisdiction**             | Population | Residential Energy Use per capita (kWh) |
| District of Columbia       | 599,700    | 12,147                                  |
| <b>Maryland</b>            |            |   |
| Frederick County           | 234,400    | 9,790                                   |
| Montgomery County          | 971,600    | 9,836                                   |
| Prince George's County     | 834,600    | 9,805                                   |
| <b>Virginia</b>            |            |   |
| City of Alexandria         | 150,000    | 9,078                                   |
| Arlington County           | 209,300    | 8,988                                   |
| City of Fairfax            | 24,700     | 10,379                                  |
| Fairfax County             | 1,052,000  | 8,832                                   |
| City of Falls Church       | 11,900     | 13,710                                  |
| Loudoun County             | 283,300    | 10,677                                  |
| City of Manassas           | 35,900     | 4,707 <sup>d</sup>                      |
| City of Manassas Park      | 14,000     | 4,378                                   |
| Prince William County      | 392,900    | 8,236                                   |
| REGIONAL <sup>e</sup>      | 4,814,300  | 9,713                                   |
| POWER PLANT GENERATION     | 4,814,300  | 4,429 <sup>f</sup>                      |

\*\*Preliminary evaluation– DO NOT CITE.

<sup>a</sup>Regional utilities provided this data.

<sup>b</sup>COG Economic Trends Report 2005-2009: <http://www.mwco.org/uploads/publications/p15fXFs20100902145959.pdf>

<sup>c</sup>US Energy Information Administration 2009 power plant generation data.

<sup>d</sup>Manassas data represents only electric, not natural gas.

<sup>e</sup>Regional use represents the total energy use divided by the total population, not an average of local jurisdiction uses.

<sup>f</sup>Power plant generation represents total energy use, not just residential sector.

## **Sustainability Goals, Targets, and Indicators**

Taken from *Region Forward* for use by the Energy Advisory Committee on April 21, 2011

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### **Goals**

- A significant decrease in greenhouse gas emissions, with substantial reductions from the built environment and transportation sector
- Efficient public and private use of energy region-wide, with reliance upon renewable energy and alternative fuels for buildings, vehicles, and public transportation
- Enhancement of established neighborhoods of differing densities with compact, walkable infill development, rehabilitation, and retention of historic sites and districts, and preservation of open space, farmland and environmental resource land in rural areas
- Protection and enhancement of the region's environmental resources by meeting and exceeding standards for our air, water, and land
- Preservation and enhancement of our region's open space, green space, and wildlife preserves

### **Targets**

- By 2020, all new residential and commercial buildings will be built using sustainable design practices equivalent to LEED Silver Standards
- By 2020, reduce regional greenhouse gas emissions by 20% below 2005 levels. By 2050, reduce emissions by 80% below 2005 levels.
- Beginning in 2014, the region's air quality will be improving and ambient concentrations will be reduced below federal standards
- The region will identify, conserve and enhance a network of protected open spaces, parks, and green infrastructure to provide ecological benefits, wildlife habitat, recreational opportunities, and scenic beauty
- By 2050, 50% of all sentinel watersheds will be in good or excellent condition
- By 2025, achieve 100% of Chesapeake Bay Program's Water Quality Implementation Goals
- Beginning in 2012, the region will maintain more than 450,000 acres of agriculture land in farms

### **Indicators**

- Emissions per vehicle mile
- Energy (Electricity and Natural Gas) use per capita
- Percent of Renewable Energy purchased by local governments
- Solid Waste Generation per capita
- Regional Recycling Rate per capita
- Forest Coverage/Tree Canopy
- Percent of wastewater treatment capacity remaining
- Water usage per capita
- Acres of Impervious Surfaces