2017-2020 CLIMATE & ENERGY ACTION PLAN

Energy and Built Environment Goals

Steve Walz
Director, Department of Environmental Programs

Built Environment and Energy Advisory Committee
June 16, 2016

Agenda Item #4

Metropolitan Washington
Council of Governments

Setting the Stage for 2020

- CEEPC Climate and Energy Action Plan
  - Short-term plan for reducing GHG emissions
  - Builds off the 2008 Climate Change Report
  - First edition: 2010-2012
  - Second edition: 2013-2016
    - 59 implementation actions
  - Third edition: 2017-2020
- Annual Climate and Energy Survey tracks progress
  - Climate and Energy Progress Reports
- The Resource Guide
  - Examples & resources for each of the implementation actions
- Multi-Sector Working Group
  - Strategies to meet GHG emission reduction goals

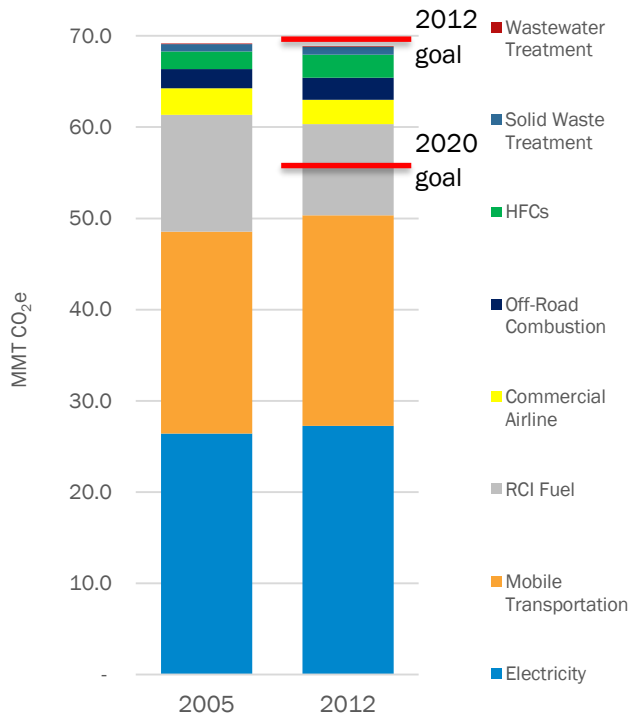
2013-2016 Goals

1. Reduce greenhouse gas emissions by 20% below 2005 by 2020
2. Reduce non-transportation energy use by 20% below 2005 by 2020
3. Meet 10% of regional electricity consumption from renewable sources by 2016
4. Minimize greenhouse gas emissions from the transportation system
5. Increase resiliency and sustainability of the region's infrastructure, economy, & environment
6. Improve pubic understanding of climate change and promote positive behavior change

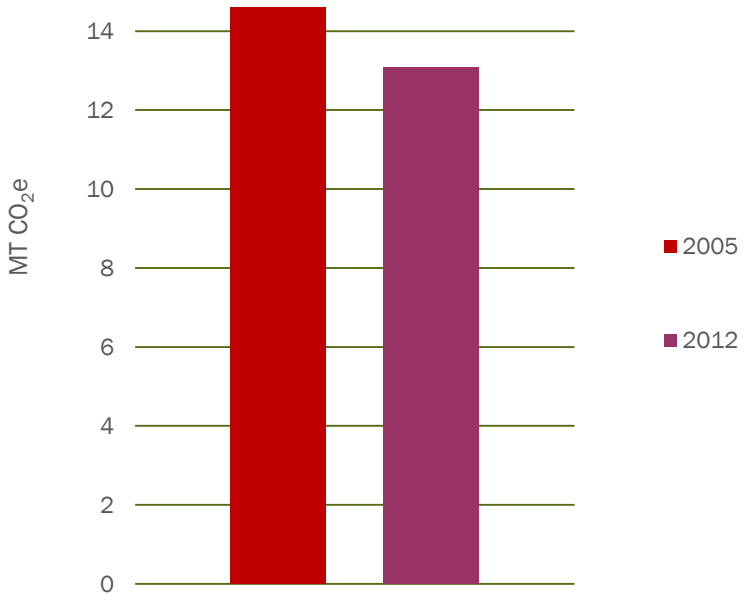
2012 Regional GHG Emissions

Met the 2012 goal
10% below BAU projections (to 2005 levels)

Emissions by Activity (- 0.5%)



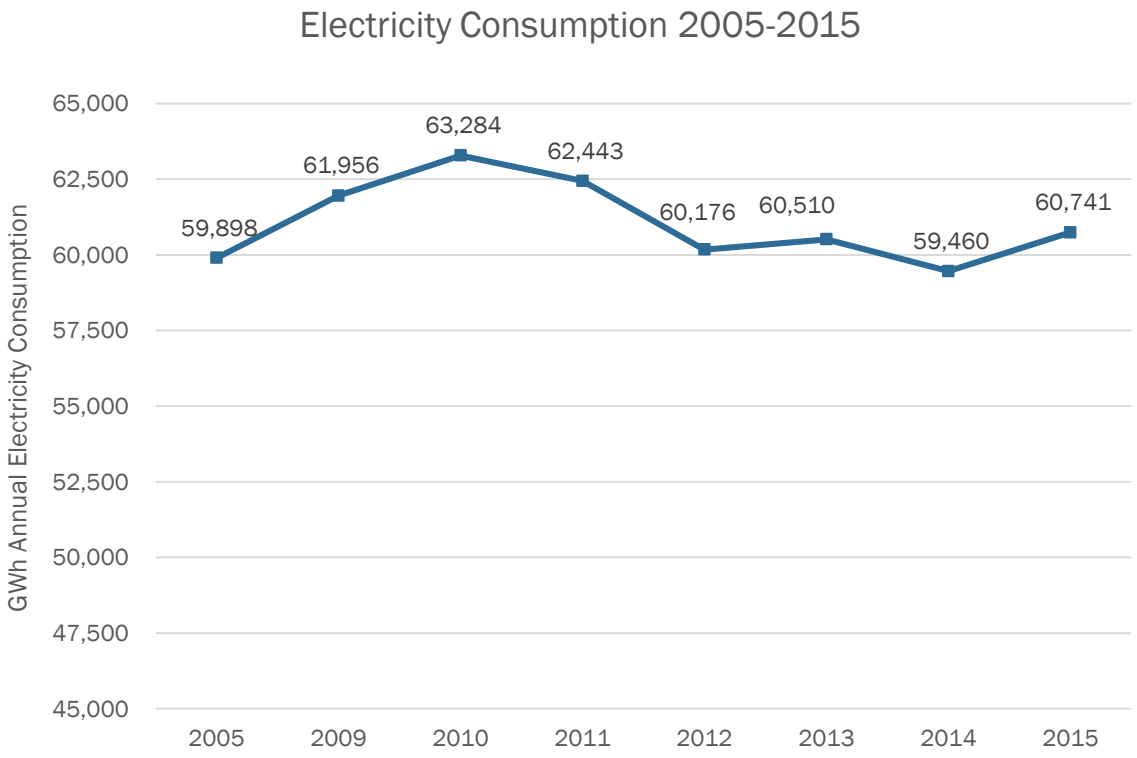
Emissions per Capita (- 10.3%)



Note: Population increased by 9.9%

2015 Regional Energy Consumption

Making progress, but challenging to sustain while population & economy are growing

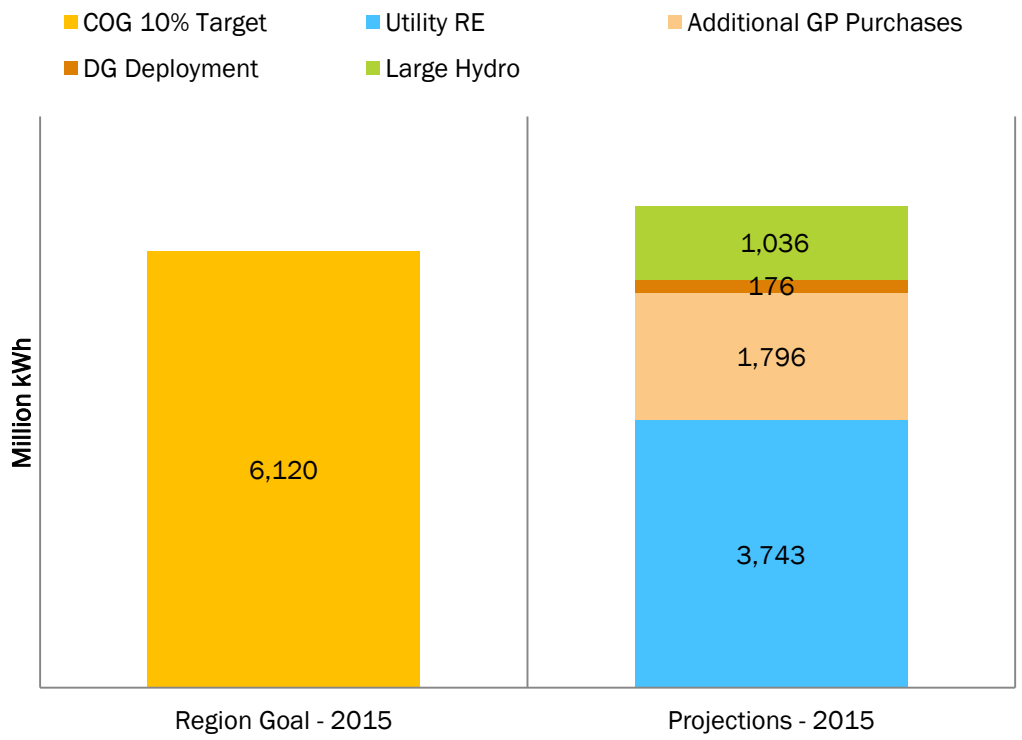


Change 2005-15	Percent Change
842.6 GWh	1%

Note: 20% reduction goal = 48,000 GWh

2015 Renewable Energy Production

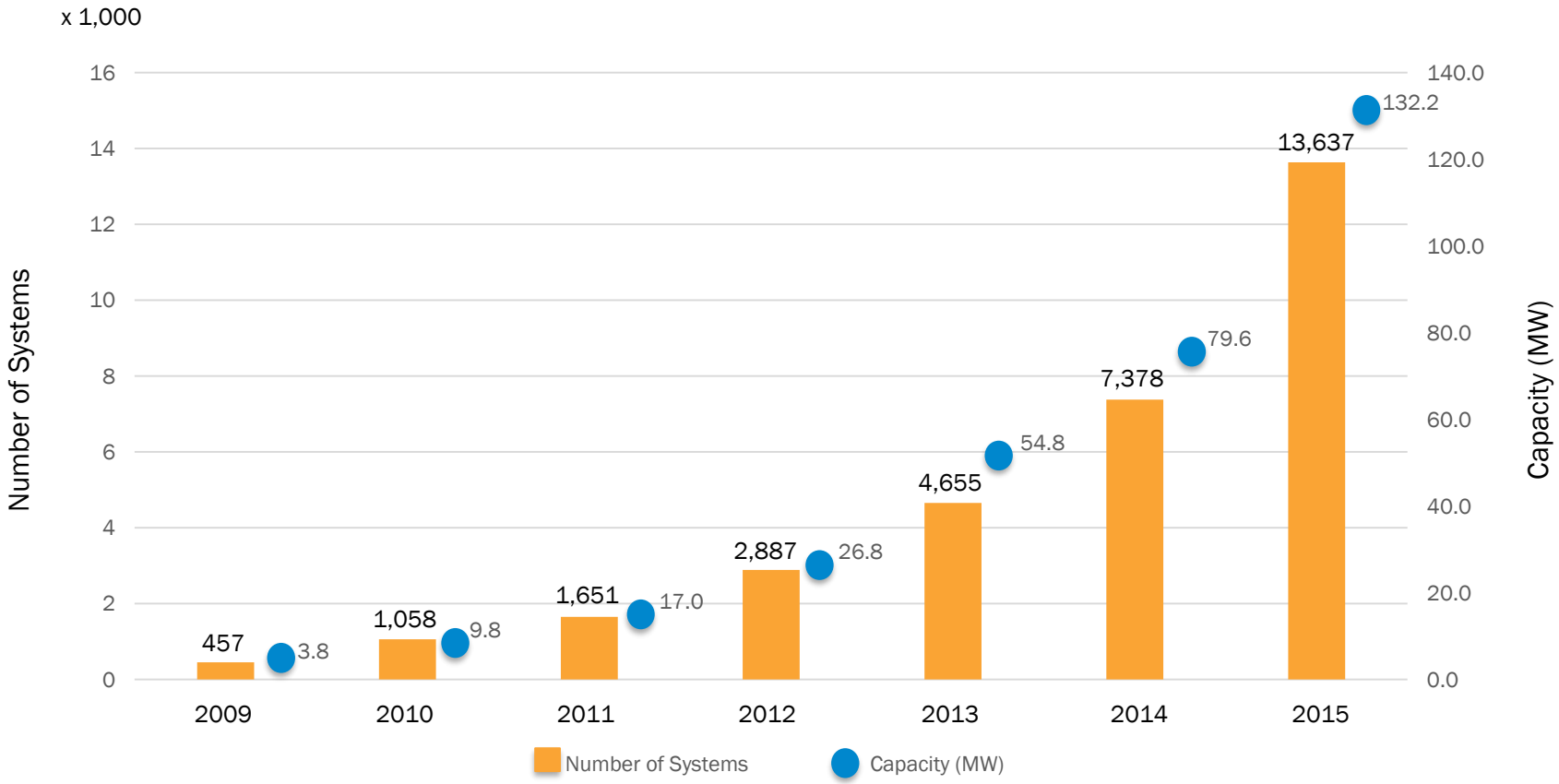
- 2016 goal – *10% electricity use supplied from renewable sources*
  - *11% as of December 2015*



2015 Grid-Connected Renewables

Region surpassed 5,000 grid-connected renewables goal

>13,600 systems with >132 MW capacity



2013-2016 Implementation Actions

Strong Improvement

- Community inventories
- Local govt energy plans
- Energy audits
- Bike/pedestrian plans
- Greenspace plans
- Tree canopy goals
- Green business challenges
- Govt employee education

Less Implementation

- DOE Better Buildings Challenge
- Energy aligned leases
- Encouraging private sector benchmarking
- Greyfield/brownfield govt facilities and private incentives
- Energy assurance planning
- Green streets policies

Multi-Sector Working Group

- Consistent with local policies -- Regional action
  - Solid waste; Existing buildings; New buildings; Non-road equipment
  - Increase tree canopy; Increase activity center development
  - Increase public sector fleet alternate fuel use
- Consistent with local policies – Selected local action
  - Infrastructure energy; Support Clean Power Plan; Distributed renewables
  - Improved system operations; Travel demand management; Transit service enhancements; Improve private fleet fuel economy; Transit fare reduction
- Strategy dependent on others – Regional support
  - Reduce natural gas leaks
  - Low carbon fuel standard; Reduce highway speeding; Truck stop electrification

Preliminary staff survey results (do not cite)

Building/Energy Metrics and Approaches

- International
  - Carbon neutrality of public buildings (Wales and ACT-Australian Capital Territory by 2020, North Rhine-Westphalia, Germany by 2030)
  - Carbon Neutral Capital Program (British Columbia, Canada)
  - Nearly Zero Energy Building standard (EU by 2020, Lombardy Region of Italy by 2016)
  - Net Zero Ready Home Program (Alberta, Canada)
  - 40% share of new buildings certified green by 2015 and 80% by 2020 (Shenzhen, China)
  - 80% of all existing and new buildings certified Green Mark by 2030 (Singapore)
  - Green Data Centre Standard (Singapore)
  - Eradicate fuel poverty through energy efficiency by 2018 (Wales)
- National
  - Energy and Water Conservation and Disclosure Ordinances (San Diego)
  - Improve efficiency of 50 percent of residential buildings to achieve a 30 percent reduction in energy used. Retrofit 400,000 residential units by 2020. (Chicago)

Renewable Energy Metrics and Approaches

- International
  - 100% CO_2 neutral and nuclear free region-wide heat and power supply by 2025 (Provincial Government of Carinthia, Austria)
  - 100% by 2035. Implement through community choice aggregation program, supporting Cali's Green Tariff Shared Renewables Program (San Diego)
  - 70% by 2020 (Kronoberg region, Sweden)
  - 60% by 2017 and 100% by 2020. Implement via the Renewable Energy Local Investment Framework (ACT)
  - 50% non-fossil fuels (natural gas, solar, biomass, wind) by 2015 and 60% by 2020 (Shenzhen, China)
- National
  - 55% renewables, 75% carbon-free energy, and will divest from ownership of coal generation facilities by 2025 (Austin)
  - Procure enough large-scale renewable energy for Chicagoans to reduce electricity emissions by 20 percent (Chicago)
  - Install renewable technologies in 5% of city's housing stock. Implementation via incentives and utility partnerships (Chicago)

2017-2020 CLIMATE & ENERGY ACTION PLAN

Energy and Built Environment Goals

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Agenda Item #6

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Setting the Stage for 2020

- Continue to raise the bar
  - Goals
    - Outcomes
      - Implementation Actions - include a “menu of options”?
- Build on the Multi-Sector Workgroup report and the Renewable Energy Potential Study
- Expand use of performance-based metrics

2020 Goals, Objectives & Actions – Energy & Built Environment

- Reduce GHG emissions to 20% below 2005
- Reduce non-transportation energy consumption to 20% below 2005
  - *Outcome: 10,000* high performance buildings

  (LEED, ENERGY STAR, EarthCraft, Living Buildings, Passive House, Net Zero, Other: NAHB Green Building Standard)
  - Implementation Actions
    1. Adopt the current version of the IgCC energy standard
    2. Adopt the current version of the IECC
    3. Implement a commercial building benchmarking program
    4. Publicly disclose government building energy use

2020 Goals, Objectives & Actions – Energy & Built Environment

- Increase renewable energy production to 25% of regional electricity consumption
  - Outcomes
    - *25,000* Distributed renewable energy systems
    - *3,500* million kWh in Green power purchases
  - Implementation Actions
    1. Streamline permitting and inspections
    2. Fast-track standard system permitting
    3. Adopt a solar access ordinance
    4. Allow solar, with reasonable conditions, in historic neighborhoods
    5. Require new building install distributed RE systems

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