

Business Council for Sustainable Energy

Presentation to Governor McAuliffe's
Executive Order 57 Working Group

October 6, 2016

BCSE Mission Statement

*BCSE advocates policies that promote
clean, efficient, and
sustainable energy products,
technologies and services*

About the BCSE

- The Business Council for Sustainable Energy (BCSE) is a coalition of companies and trade associations from the energy efficiency, natural gas and renewable energy sectors.
- The Council advocates for policies at state, national and international levels that:
 - increase the use of commercially-available clean energy technologies, products and services
 - support an affordable, reliable power system
 - reduce air pollution & greenhouse gas emissions

2016 BCSE Members



2016

SUSTAINABLE ENERGY IN AMERICA Factbook

Understanding the U.S. Energy Transformation

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It is a new era for American energy. In 2015, increased use of sustainable energy set the stage for a U.S. triple play of carbon reductions, cost savings and economic growth.

The 2016 edition of the Sustainable Energy in America Factbook – produced for the Business Council for Sustainable Energy by Bloomberg New Energy Finance, provides up-to-date, accurate market information about the broad range of industries – energy efficiency, renewable energy and natural gas – that are contributing to the country’s move towards cleaner energy production and more efficient energy usage.

THE SUSTAINABLE ENERGY TRANSFORMATION

The energy productivity of the U.S. economy has **INCREASED BY 13%** from 2007 to 2015, and **2.3%** since 2014.



Get the **2016** Factbook



See State Spotlight

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Infographic



Get the Facts

- American energy productivity has increased by 13% from 2007 to 2015.
- 2015 was a record year for natural gas production, consumption, flows to power generation and volumes into storage.
- Renewable energy is a prominent part (20%) of the U.S. 2015 capacity mix, with 221GW installed across the country, a 57% increase over 2008 levels.
- Total U.S. investment in clean energy topped \$56 billion in 2015, the second highest level in the world.
- 2015 U.S. power sector carbon emissions fell to their lowest annual level since 1995.

Executive Summary



Industry Focus:

Energy Efficiency
Natural Gas
Renewable Energy

Quick Facts On:

Alternative Fuel Vehicles
Biomass/ Waste-to-Energy
Carbon Capture & Storage

Combined Heat & Power
Fuel Cells
Hydropower

State Spotlight

Learn about clean energy in the following states:

- Minnesota
- Nevada
- Pennsylvania
- Virginia
- See 2016 Factbook State & Regional Slides

Previous Factbook Editions

Download previous editions of the Factbook here.

2013



2014



2015



About the Factbook Partners

Bloomberg
NEW ENERGY FINANCE

Bloomberg New Energy Finance (BNEF) provides unique analysis, tools and data for decision makers driving change in the energy system. With unrivalled depth and breadth, BNEF helps clients stay on top of developments across the energy spectrum from our comprehensive web-based platform. BNEF has 200 staff based in London, New York, Beijing, Cape Town, Hong Kong, Munich, New Delhi, San Francisco, São Paulo, Singapore, Sydney, Tokyo, Washington D.C., and Zurich.



The Business Council for
Sustainable Energy

The Business Council for Sustainable Energy (BCSE) is a coalition of companies and trade associations from the energy efficiency, natural gas and renewable energy sectors. The Council membership also includes independent electric power producers, investor-owned utilities, public power, commercial end-users and project developers and service providers for energy and environmental markets.

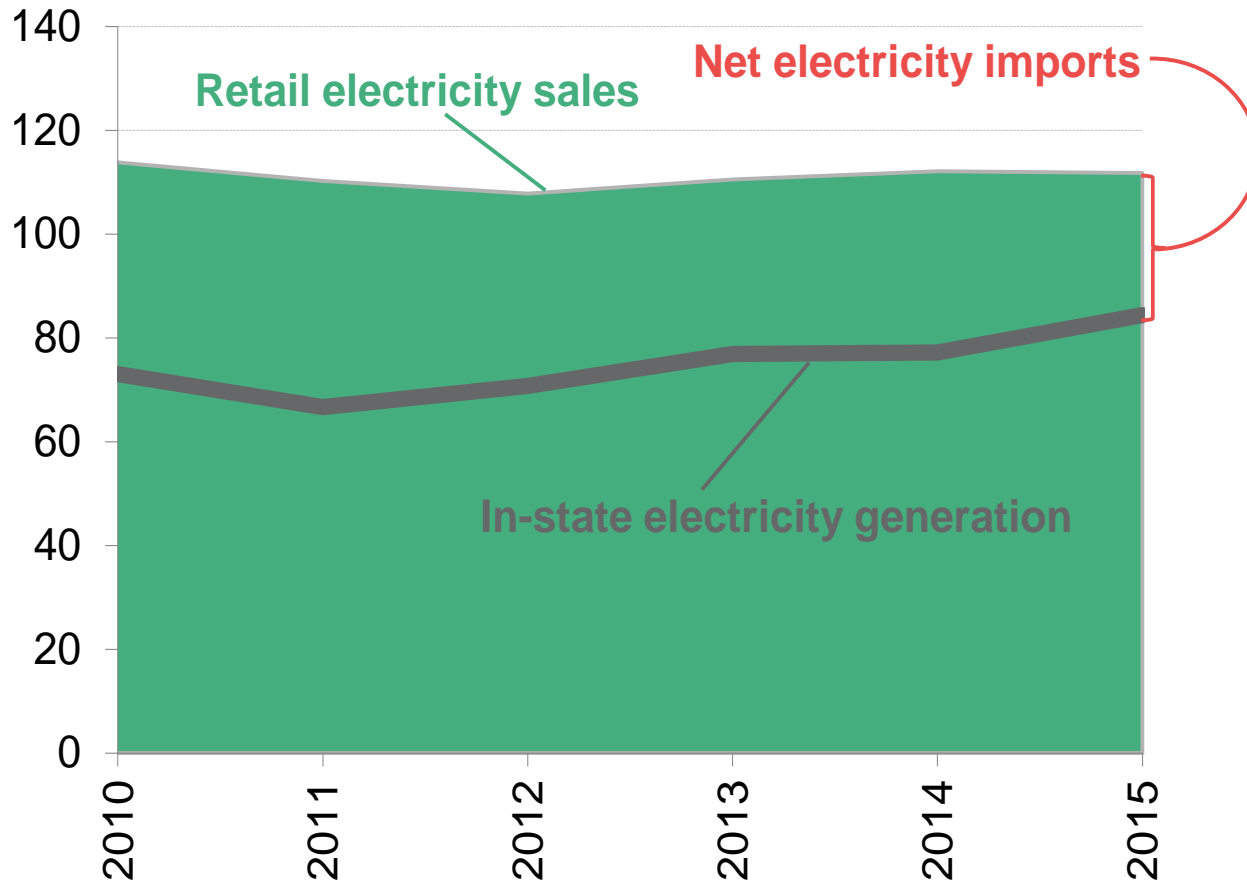
29 September 2016

STATE ENERGY FACTSHEET: VIRGINIA

Nathan Serota
Colleen Regan
Rachel Jiang

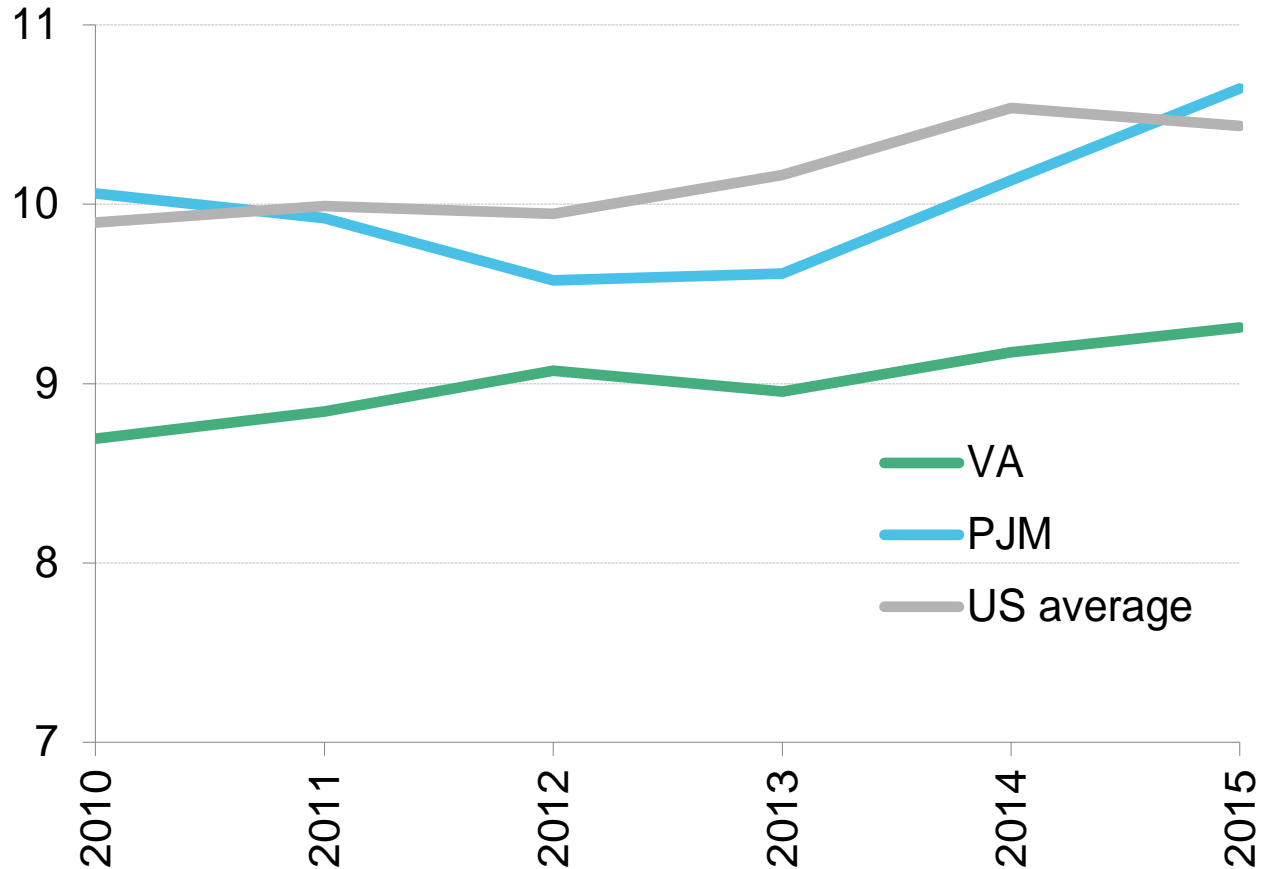
Bloomberg
NEW ENERGY FINANCE

VA ELECTRICITY SALES AND GENERATION, 2010-15 (TWH)



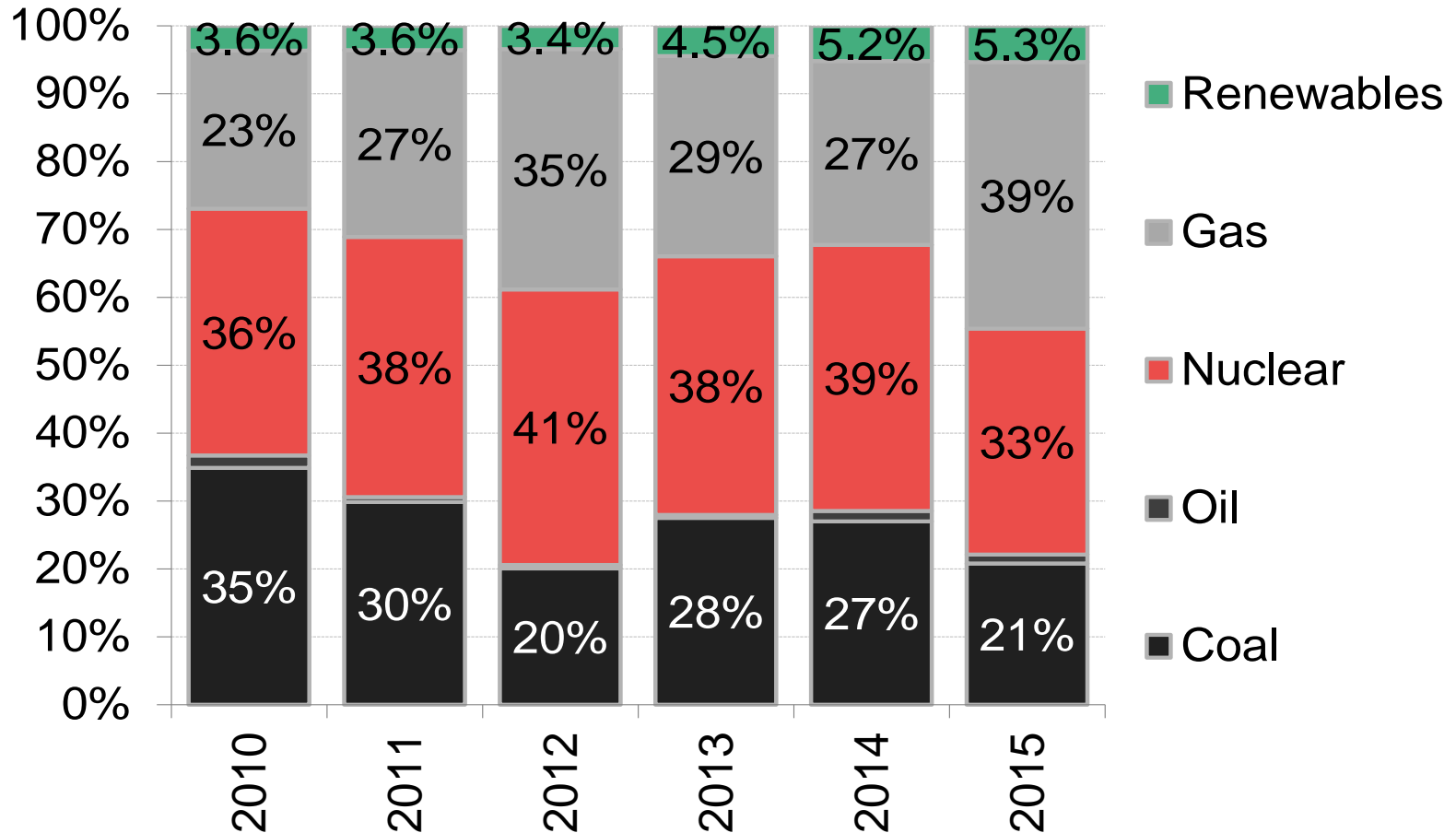
Source: Bloomberg New Energy Finance, EIA Notes: PJM is VA's wholesale power market, composed of 13 neighboring states.

VA ELECTRICITY PRICES RELATIVE TO REGIONAL (PJM) AND US AVERAGES, 2010-15 (¢/KWH)



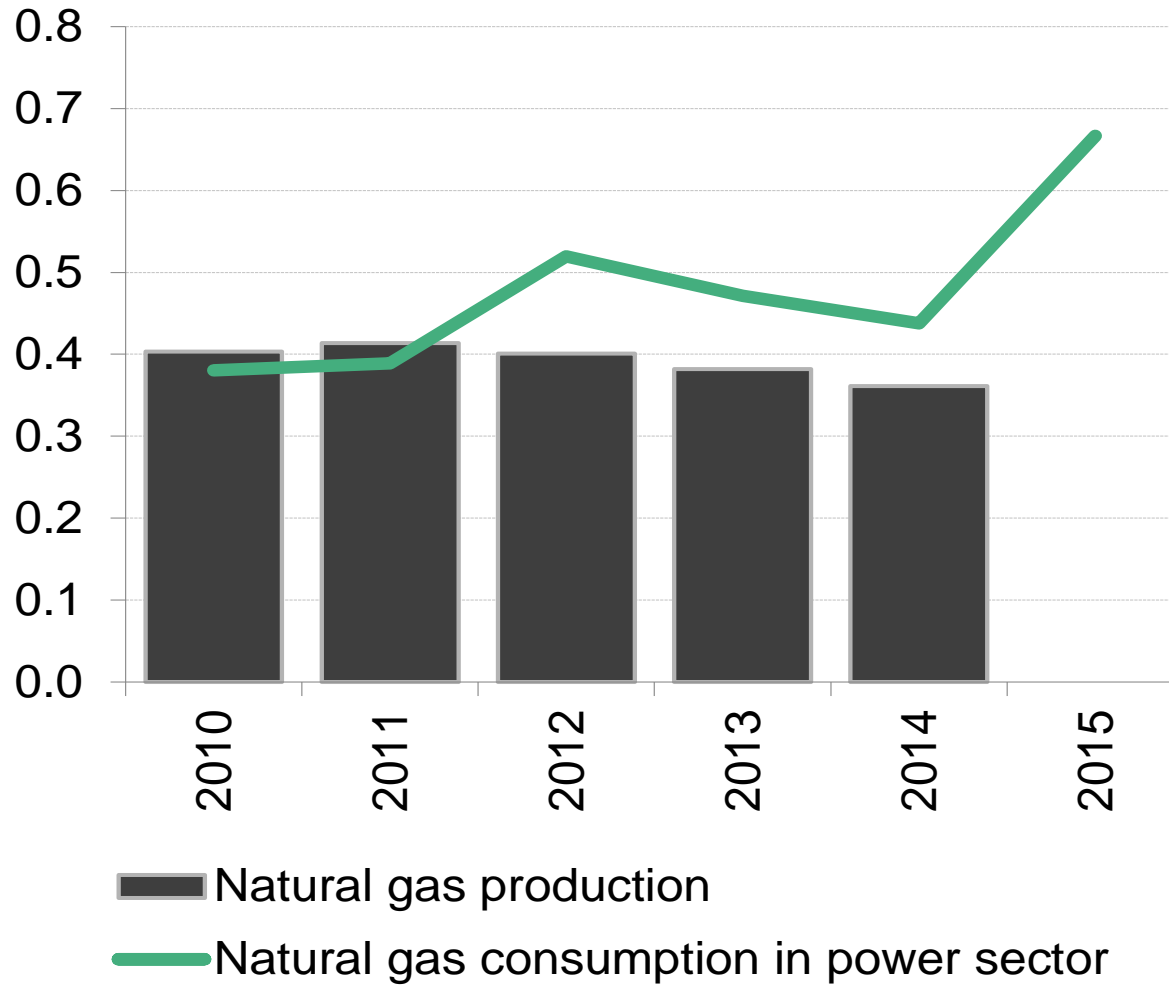
Source: Bloomberg New Energy Finance, EIA Note: PJM is PA's wholesale power market, composed of 13 neighboring states.

VA ELECTRICITY GENERATION MIX BY TECHNOLOGY, 2010-15 (%)



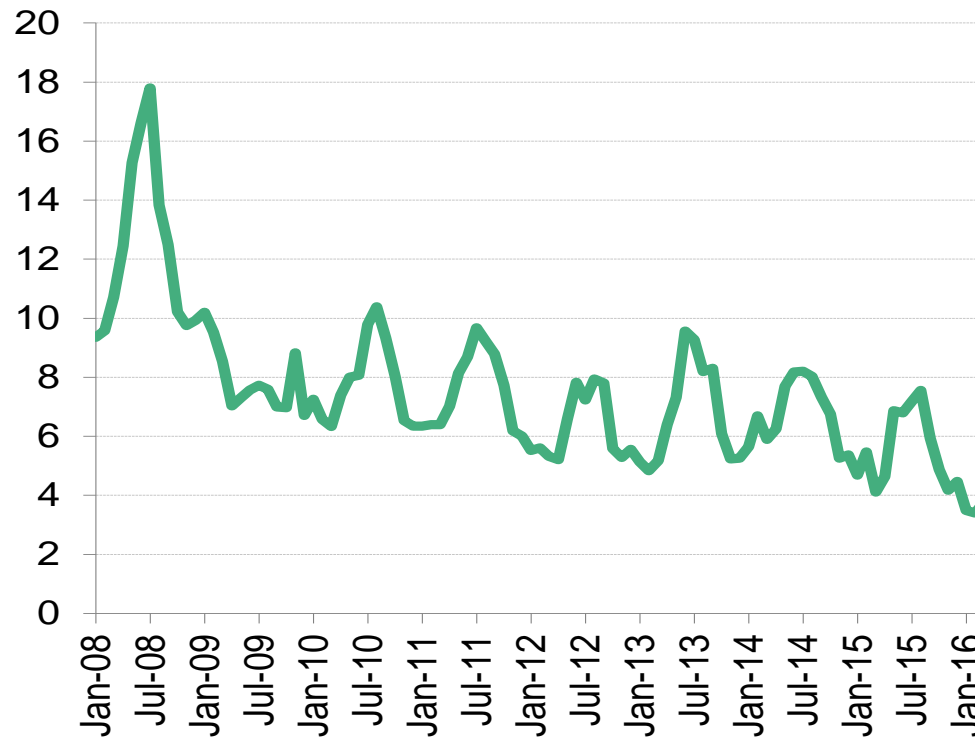
Source: Bloomberg New Energy Finance, EIA Note: Generation only includes production from utility-scale units.

VA NATURAL GAS PRODUCTION AND POWER SECTOR CONSUMPTION, 2010-15* (BCFD)



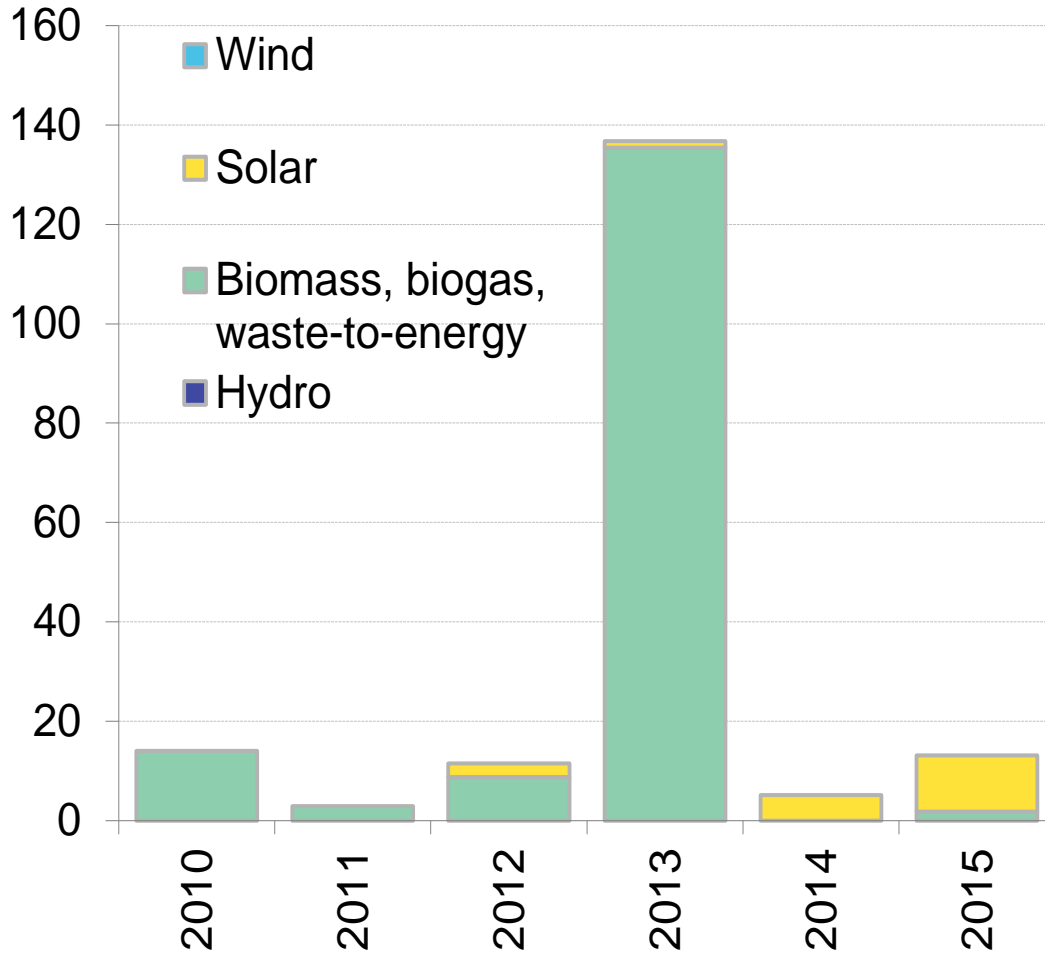
Source: Bloomberg New Energy Finance, EIA Note: *2015 data is not yet available for natural gas production in VA.

VA NATURAL GAS PRICE (CITYGATE), 2008-MARCH 2016 (\$/MMBTU)



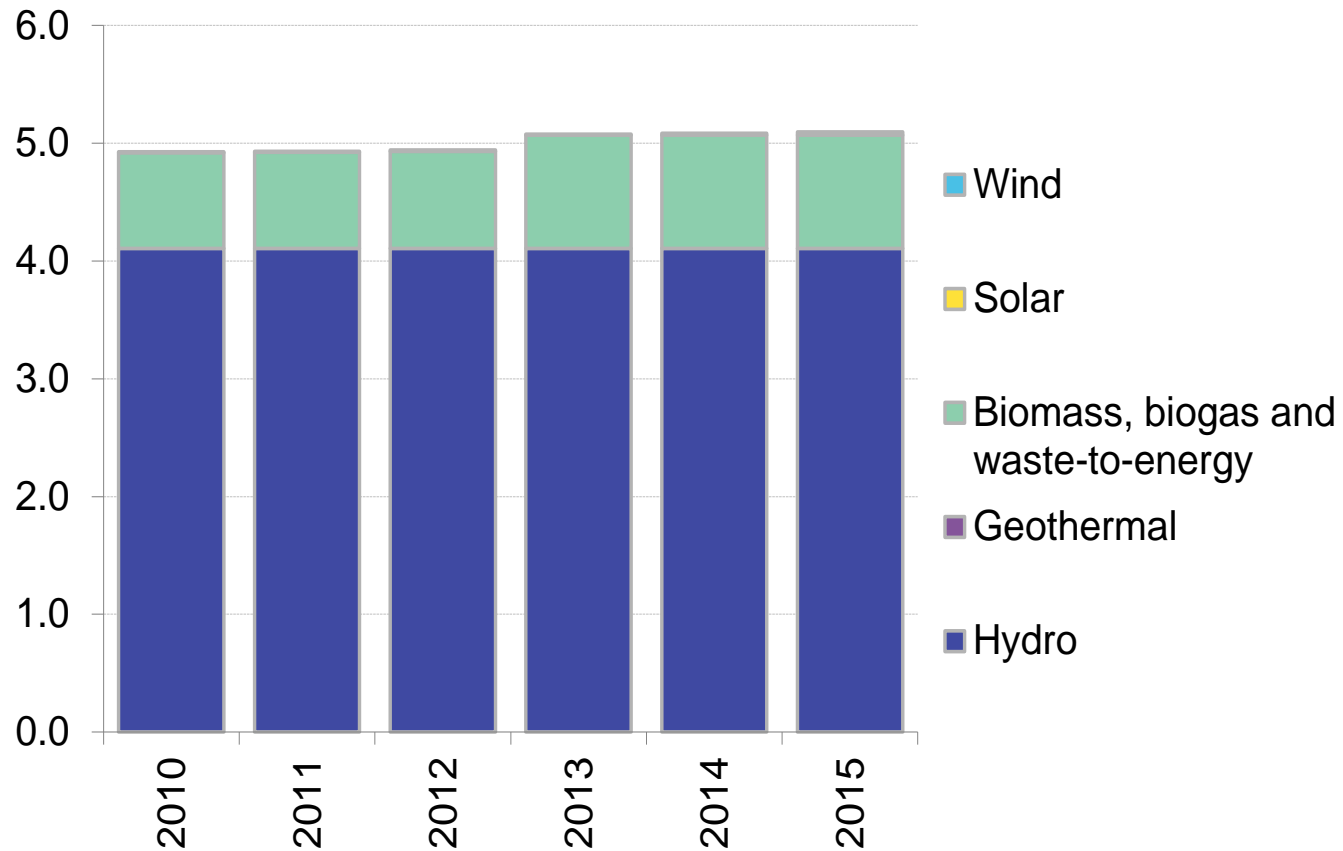
Source: Bloomberg New Energy Finance, EIA Note: 'Citygate' refers to the point at which a distribution gas utility receives gas from a natural gas pipeline company or transmission system.

VA RENEWABLE CAPACITY ADDITIONS, 2010-15 (MW)



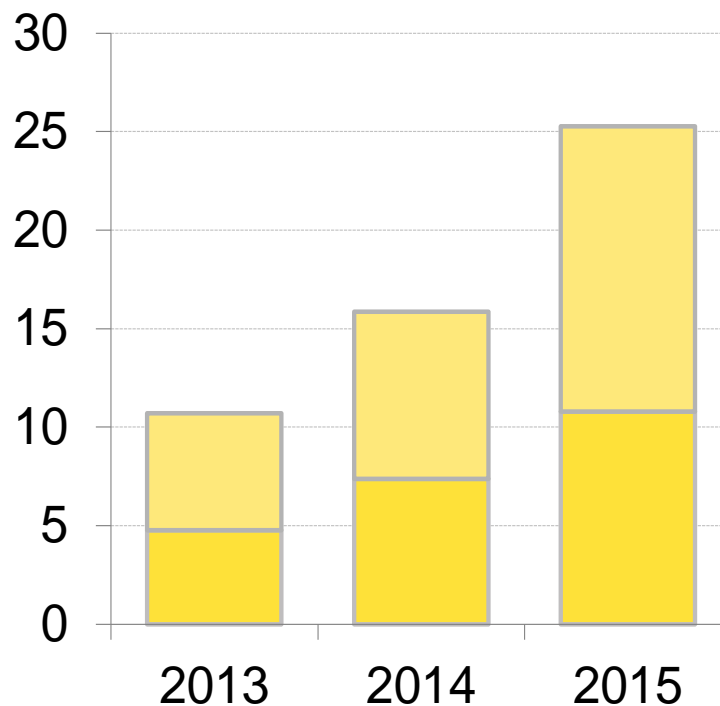
Source: Bloomberg New Energy Finance, EIA Note: includes BNEF data on distributed (ie, residential, commercial, and industrial) solar capacity. Solar numbers are given in DC MW.

VA CUMULATIVE RENEWABLE CAPACITY, 2010-15 (GW)



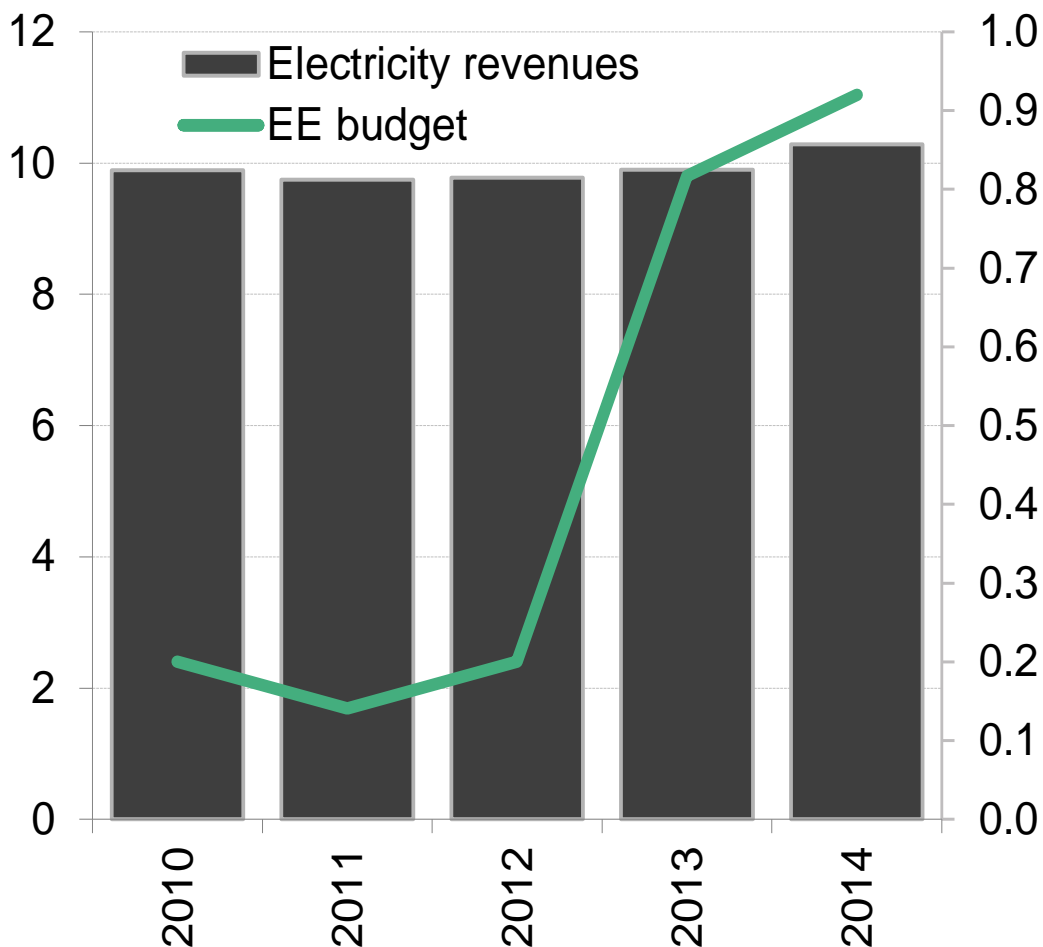
Source: Bloomberg New Energy Finance, EIA Note: includes BNEF data on distributed (ie, residential, commercial, and industrial) solar capacity. Solar numbers are given in DC MW. The majority of hydroelectric capacity is pumped storage and thus does not contribute materially to renewable energy generation.

VA CUMULATIVE INSTALLED DISTRIBUTED SOLAR PV CAPACITY, 2013-15 (MW)

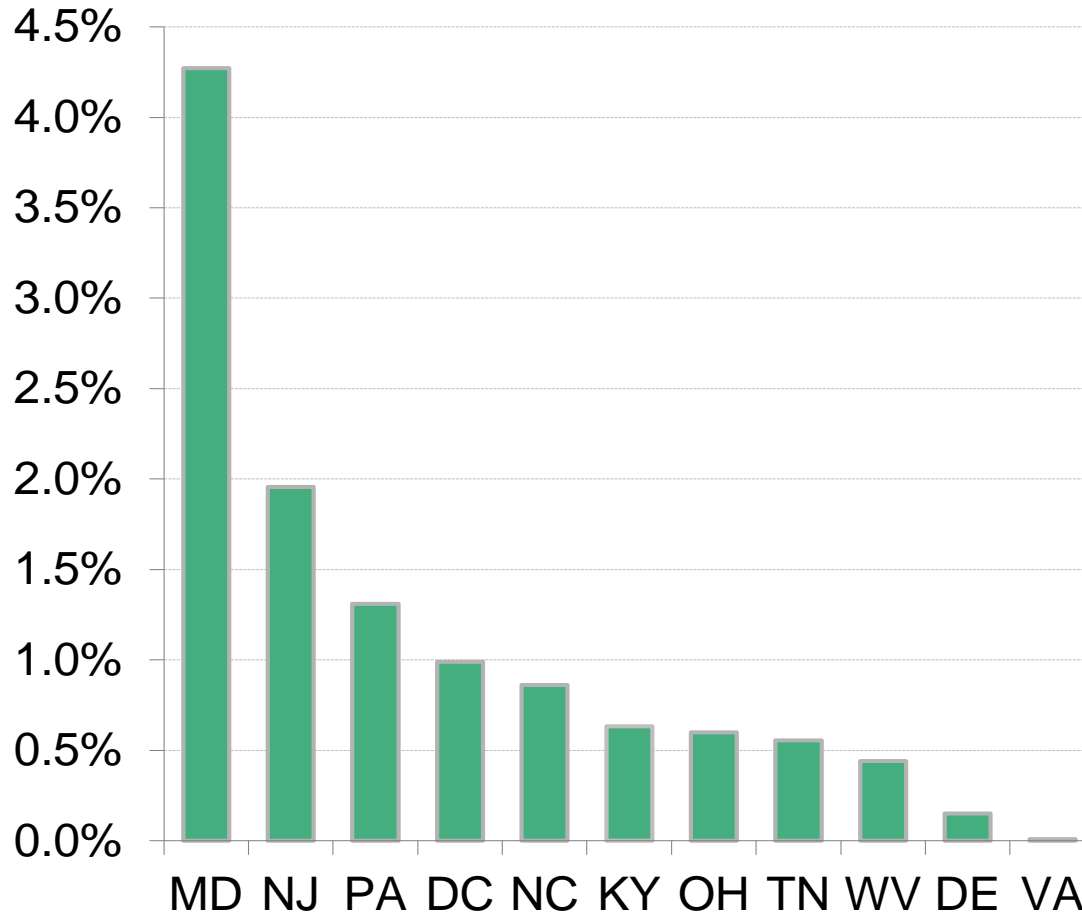


- Residential
- Commercial and industrial

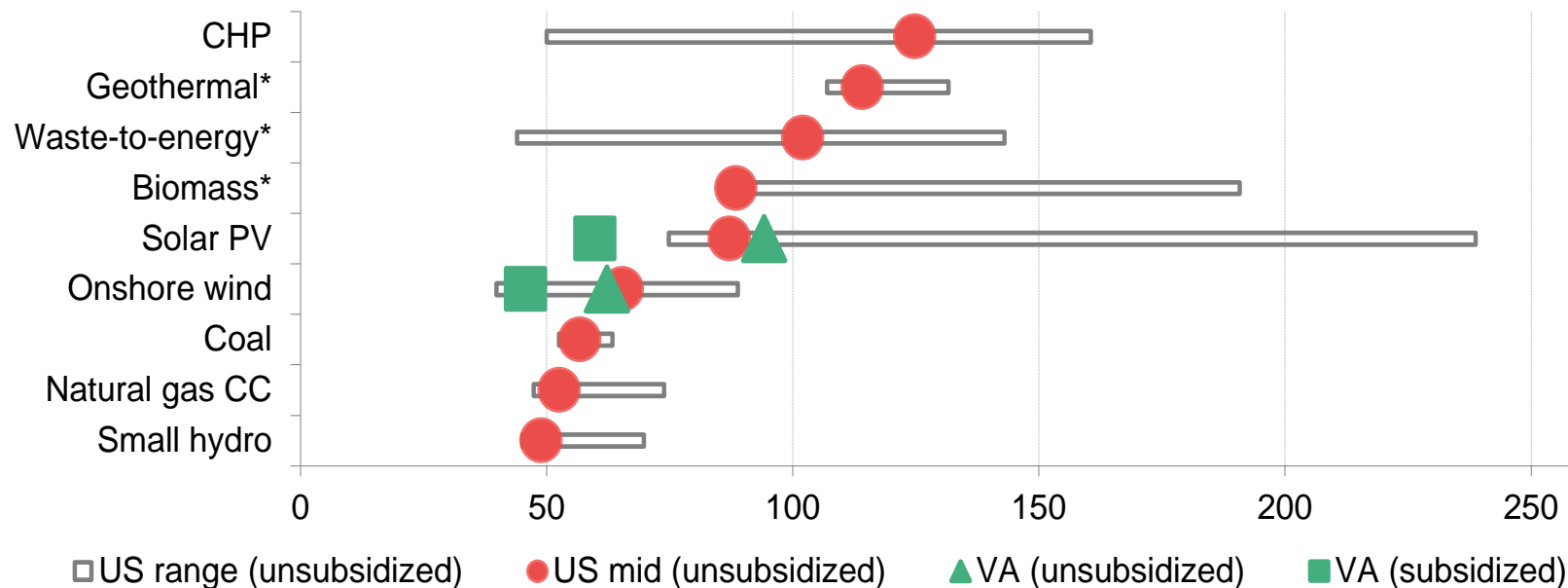
VA UTILITY ELECTRICITY REVENUES (LEFT AXIS, \$BN) AND ELECTRICITY EFFICIENCY BUDGET (RIGHT AXIS, \$M), 2010-14



STATES' UTILITY ELECTRICITY EFFICIENCY BUDGETS AS A FRACTION OF STATE-WIDE ELECTRICITY REVENUE, 2014 (%)



UNSUBSIDIZED LCOE OF SELECT TECHNOLOGIES IN THE US COMPARED TO SUBSIDIZED AND UNSUBSIDIZED LCOE OF ONSHORE WIND AND SOLAR PV IN VA, H1 2016 (\$/MWH)



Source: Bloomberg New Energy Finance. Notes: *LCOE for waste-to-energy in this report is a global estimate; biomass and geothermal LCOEs are Americas region estimates; all other LCOEs in Figure 13 are either US or PA-specific. Variations in PA versus US average result from variations in capacity factor, capex and financing rates. Bars indicate the range of unsubsidized LCOE for each technology in the US. Key policies such as the \$23/MWh Production Tax Credit (PTC) and accelerated depreciated (MACRS) bring down unsubsidized LCOEs to subsidized levels. LCOE for combined heat and power (CHP) is for reciprocating engines with CHP. LCOE for small hydro assumes 56% capacity factor, but this can vary significantly depending on annual rainfall conditions.

Contact Us

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