

# **Renewable Energy and Energy Efficiency Portfolio Standard for the Commonwealth of Virginia**

## **Virginia RPS Coordinating Group**

**Chesapeake Climate Action Network**

**Clean Energy Partnership**

**Old Mill Power Company**

**Energy and Security Group**

**Environmental Resources Trust**

**MD-DC-VA Solar Energy Industries Association**

**Highland New Wind Development, LLC**

**Presented to the Commission on Electric Utility Restructuring**

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# What is a Renewable Energy Portfolio Standard?

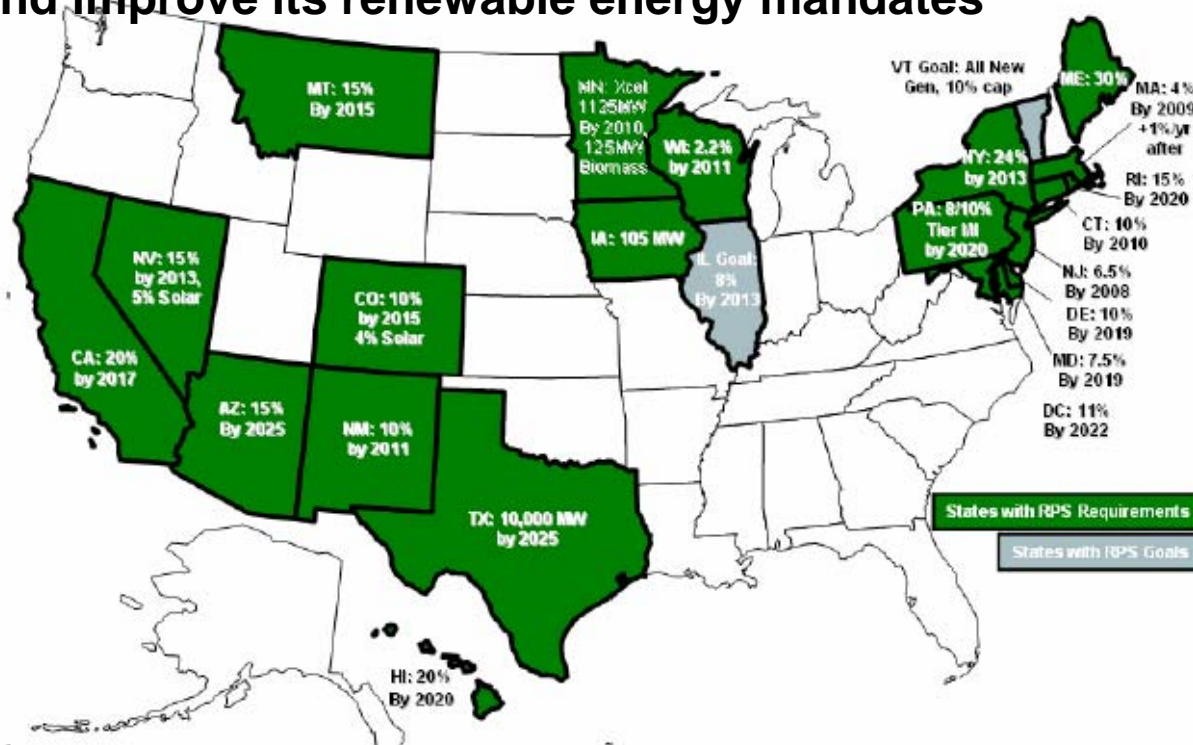
- **Renewable Energy Portfolio Standard:** A legislative mechanism developed on a state-by-state basis to require that a particular percentage of energy provided to consumers come from renewable energy resources. This standard can also include energy saved by incorporating an energy efficiency program in the standard.
- **What are renewable energy resources?** Energy derived from non-depleting resources such as the sun, wind power, biomass, etc.

# Why Propose a Renewable Portfolio Standard (RPS)?

- **RPS is a market mechanism that promotes competition and cost reduction**
  - Diversification of the resource base lowers cost risk
  - Diversification stabilizes energy prices and puts downward pressure on natural gas prices
  - Market implementation leads to competition, efficiency, and innovation in the energy industry
  - RPSs in other states have saved consumers ~\$5/MWh
- **RPS provides a least-cost approach to achieving societal objectives**
  - RPSs stimulate economic development in rural areas and create much-needed manufacturing jobs
  - RPSs help to reduce air pollution and harmful emissions
  - Diversification of resource base leads to increased energy security and reduced state energy imports

# 21+ states have passed RPS mandates

- New Jersey currently considering more than doubling its RPS to 20% by 2020; electricity rates will increase by only 2%
- In 2004, Colorado became the first state to have its renewable energy standard mandated directly by voters
  - In November 2005, CO customers buying a percentage of wind energy paid \$10 less/mo. for their electricity than those relying on traditional sources
- California accelerated its 2002 goal of 20% renewables by 2017 to a goal of 20% by 2010; the state's 2020 goal is now at 33%. CA continues to review and improve its renewable energy mandates



# How Would the Proposed RPS Work in Virginia?

- The RPS applies gradually with percentages increasing over 10 years from 3% to 20% in 2015
- Four categories of RPS activity have different portions of the overall target
  - Small systems
  - Large systems - New technology
  - Large systems - Existing technology
  - Energy Efficiency
- Qualifying technologies include hydropower, biomass, wind, solar, geothermal, ocean energy, etc.
- Through ownership of credits, all state electricity generators/retailers are required to support a certain amount of renewable energy relative to their total annual kWh sales
  - e.g. 5% RPS for annual sale of 100,000 kWh requires 5,000 credits
- Government monitors compliance based on credit ownership; high alternative compliance payments make the mandate self-adjusting in the event of supply shortages

# Are Virginia's Renewable Resources Adequate to the RPS Requirements?

(MW of Capacity)

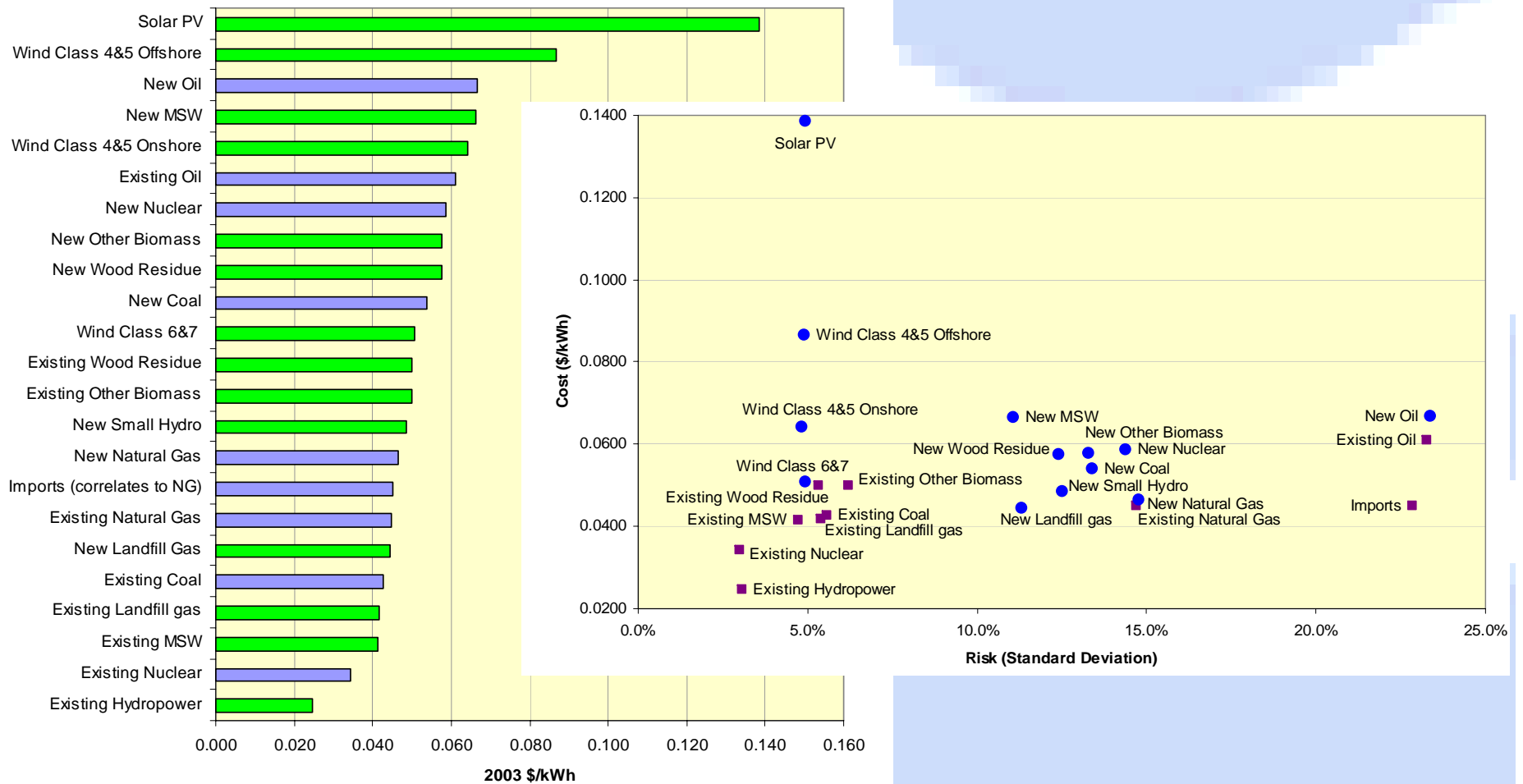
Technology	VCCER Potential	CCAN Potential	B&V Near-term Potential
Wind - On-shore	731	2,080	400
Wind - Off-shore	33,792	3,870	0
Hydropower	742	617	200
Biomass*	788	1714	300

# Possible RPS Targets for 2015

(MW of required capacity)

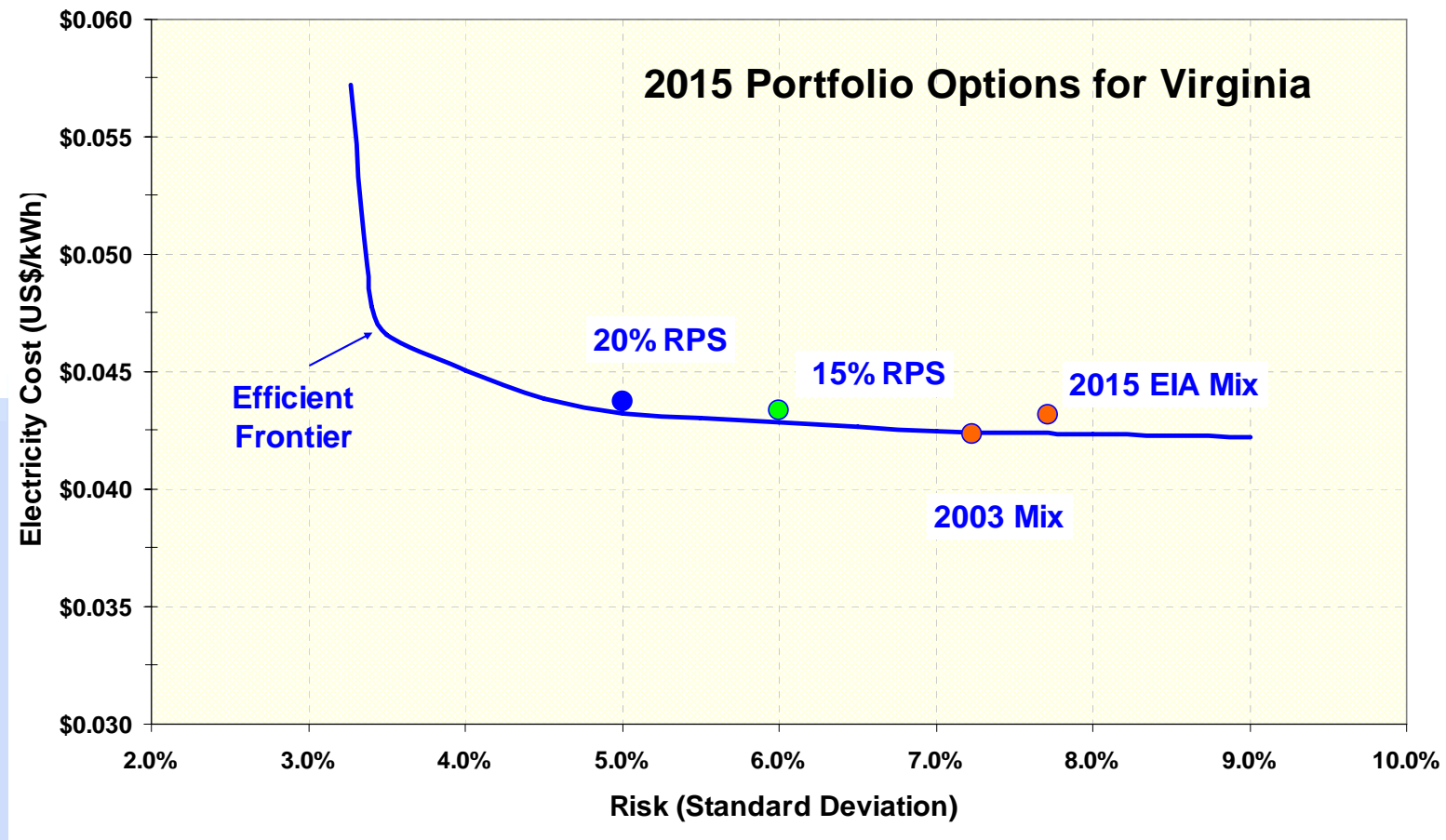
RPS Target	20%	15%
Category 1 - Small	254	254
Category 2 – Large: New Technology Wind	2,047	960
Hydro	614	412
Biomass	768	412
Category 3 – Large: Existing Technology	180	180
Category 4 Energy Efficiency (Megawatts)	1,564	1,368
Total Equivalent Capacity	5,426	3,585

# RPS Technologies Provide Fixed Electricity Costs Because of Low Fuel Price Risk





# Expanding Electricity Generation With RPS Technologies Significantly Lowers Risks for All Virginians at Very Little Cost



# **An RPS Creates Jobs and Economic Development in Rural Areas of the State**

- **Manufacturing:** Virginia is already home to two plants that make wind turbine and solar PV components
- **Construction and Operation:** An RPS will create thousands of jobs
- **Agriculture:** Switchgrass is an energy crop, native to VA, that's an economically feasible alternative to tobacco, cotton, peanuts, and other cash crops
  - Switchgrass limits soil erosion, improves local water quality, provides habitat for declining bird species, and can be harvested with existing hay harvesting equipment
  - Co-firing switchgrass with coal can minimize air pollution (SO<sub>x</sub>, NO<sub>x</sub>, and Hg) compliance costs for coal power plants and reduces net carbon dioxide emissions

# **An RPS Improves Energy Price Stability and Supply Security**

- **Less dependence on fuels with volatile prices reduces exposure to electricity price shocks**
- **Increasing use of RPS technologies puts downward pressure on natural gas prices and indirectly saves consumers money (as much as \$5 of savings per MWh of RPS generation)**
- **An RPS could result in net energy cost savings to Virginia consumers/businesses of over \$18 million under the 20% scenario**
- **Virginia currently imports about 25% of its electricity consumption and an RPS could replace some imports with Virginia-based electricity (and fuel) generation**

# **RPS Legislation is Sound Government Policy**

- **Benefits include**
  - **Job creation**
  - **Direct cost savings to consumers**
  - **Economic development in rural areas of the state**
  - **Increased energy price stability and supply security**
  - **Reductions in air pollution emissions**
  - **Improved health and quality of life**
- **The benefits of renewable energy are a “common good” that accrues to all**
- **Renewable Portfolio Standard (RPS) legislation is one government policy that promotes this common good**