

SOUTHEAST ENERGY OPPORTUNITIES

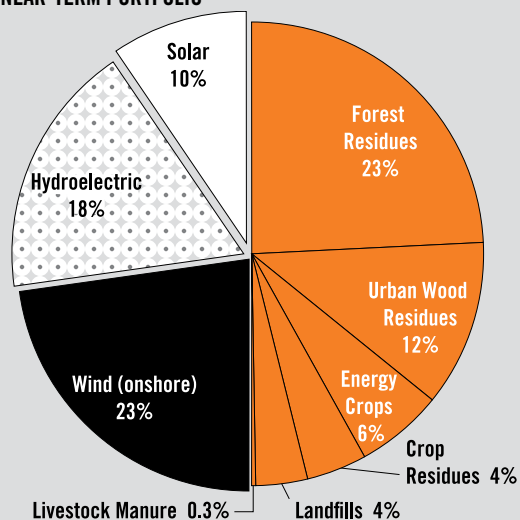
LOCAL CLEAN POWER

April 2009

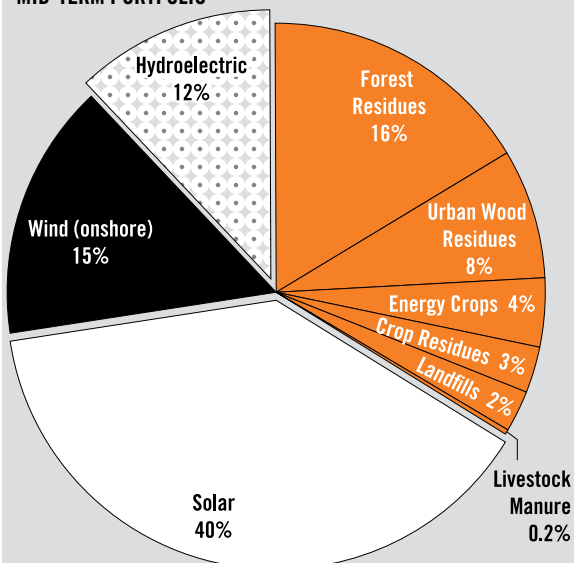
Table 1. Renewable Power Generation Potential (GWh)

	NEAR-TERM (through 2015)	MID-TERM (through 2025)
Solar PV	1,789	11,924
Biomass	9,334	10,371
Wind (onshore)	4,278	4,753
Low-impact hydro	3,287	3,653
Total	18,687	30,700

NEW RENEWABLE ELECTRICITY GENERATION: NEAR-TERM PORTFOLIO



NEW RENEWABLE ELECTRICITY GENERATION: MID-TERM PORTFOLIO



Renewable Energy Opportunities in VIRGINIA

Virginia can generate an additional 30,700 GWh of electricity from available renewable energy resources (see Table 1), which would make total renewable power production equal to **approximately 30 percent of current electricity sales**.

Renewable and conventional power options are comparable in total costs for new generation, but renewable energy resources offer advantages in terms of water use, air quality, and climate impacts (see back).

POLICY PRIORITIES

- o Establish firm targets and flexible market frameworks with a renewable electricity standard (RES) that requires utilities to generate or source an increasing percentage of their power from renewable resources. A target of 25 percent renewable electricity by 2025 is an achievable goal.
- o Provide flexible tax credits, investment rebates, low-interest loans, and market pricing for third-party renewable electric power production.
- o Develop interconnection and net metering rules, along with advanced grid infrastructure and clear and predictable permitting processes.
- o Create environmental performance criteria, definitions, and incentives for sustainable biomass energy resources. Provide research and resource monitoring support to ensure adequate supplies and best management practices.

This fact sheet is based on data and discussion in the WRI/SACE/Southface issue brief "Local Clean Power" (see: www.wri.org/publication/southeast-energy-policy).



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TABLE 2 Comparative Assessment of Electric Power Resources with Respect to Energy, Economic, and Environmental Criteria

= low = moderate = high

RESOURCE power supply, output ¹	LEVELIZED COSTS ²	WATER USE ³	AIR QUALITY IMPACTS ⁴	CLIMATE CHANGE RISKS ⁵
Energy Efficiency				
Biomass (Baseload, firm)				
Natural gas (Baseload, firm or peak)				
Coal (Baseload, firm)				
Nuclear (Baseload, firm)				
Low-impact hydro (Intermediate, variable)				
Wind (onshore) (Intermediate, variable)				
Solar PV (Peak/intermediate, variable)				

The above table focuses on electric power options and attempts to compare relative impacts of various energy resources based on the metrics noted below. It does not include other commercial clean power technologies, such as solar hot water systems, that can help meet certain energy demands in the Southeast. For discussion about regional solar hot water opportunities, see companion brief on water-energy links in the Southeast: www.wri.org/publication/southeast-energy-policy.

1. Adapted from slide 212 in Navigant. 2008. "Florida Renewable Energy Potential Assessment." Prepared for the Florida Public Service Commission, Florida Governor's Energy Office, and Lawrence Berkeley National Laboratory. Available online: www.psc.state.fl.us/utilities/electricgas/RenewableEnergy/Assessment.aspx
2. Based on cost estimates (in \$/MWh) from Lazard. 2009. "Levelized Cost of Energy Analysis – Version 3.0." Note that cost assessment does not include transmission and distribution costs, future regulatory costs for greenhouse gas emissions, or externalities, such as air pollution and public health impacts.
3. Based on water consumption ranges (in gal/MWh) from Myhre, R. 2002. "Water & Sustainability (Volume 3): U.S. Water Consumption for Power Production—The Next Half Century." Prepared for the Electric Power Research Institute. Available online: mydocs.epri.com/docs/public/000000000001006786.pdf
4. Based on emissions of criteria air pollutants (in pounds/MWh), such as sulfur dioxide, nitrogen oxides, and particulate matter. See U.S. Environmental Protection Agency's Clean Energy Program: www.epa.gov/cleanenergy/energy-and-you/affect/air-emissions.html and Emissions Factors & AP 42: www.epa.gov/ttn/chief/ap42/index.html.
5. Based on life-cycle emissions of greenhouse gases (in pounds/MWh). Does not include carbon capture and storage. See U.S. Environmental Protection Agency's Clean Energy Program: www.epa.gov/cleanenergy/energy-and-you/affect/air-emissions.html and Emissions Factors & AP 42: www.epa.gov/ttn/chief/ap42/index.html.

For full discussion of this table, refer to the "Local Clean Power" issue brief at www.wri.org/publication/southeast-energy-policy.