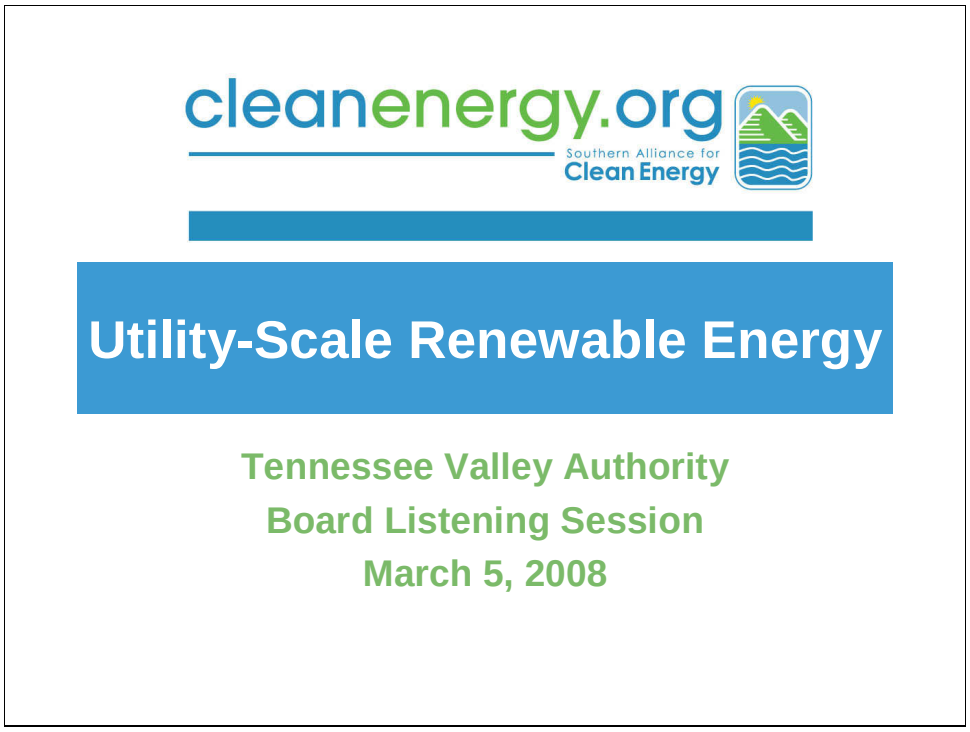

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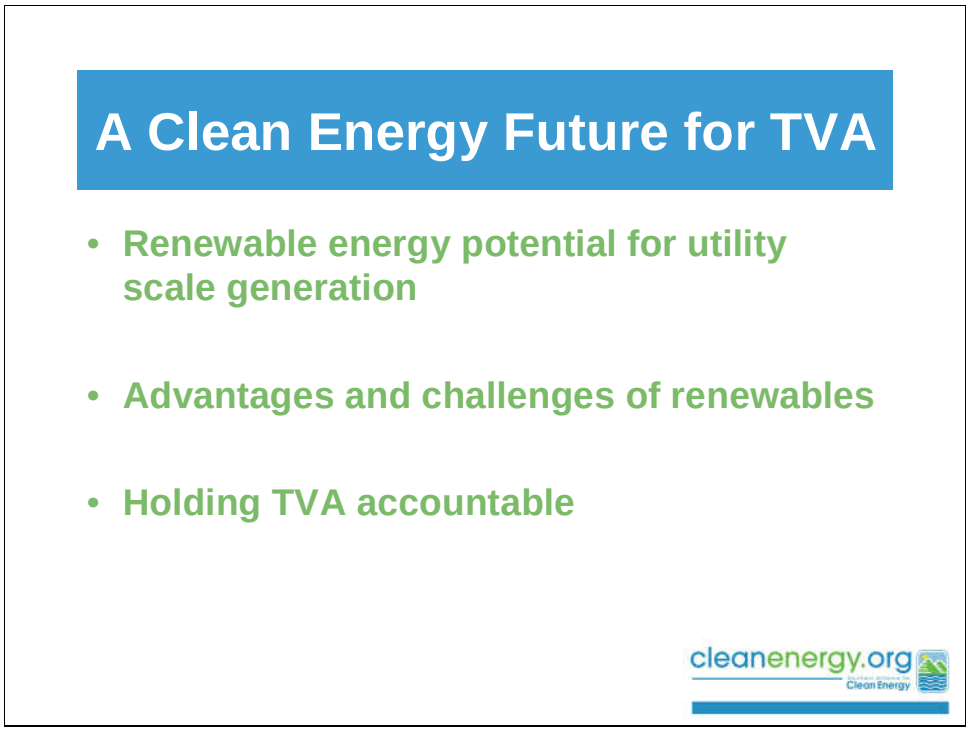


TVA needs to set strong goals on renewable energy development, and a plan to reach those goals.

Renewable energy development will ensure that the electricity supply for the TVA is less dependent on large power plants, imported fossil and nuclear fuels, and use of water resources for cooling purposes.

Reducing fossil fuel use will result in less global warming pollution.

Renewable energy development is associated with more local jobs than power generation that relies on imported fuels. These green jobs are a major economic development activity.

-Tennessee, Alabama and Georgia are among the top 20 states in the country with potential to add wind generation related manufacturing jobs.

-Tennessee and Alabama alone could add over 21,000 manufacturing jobs if the US built 185,000 MW of new renewable generation over 10 years

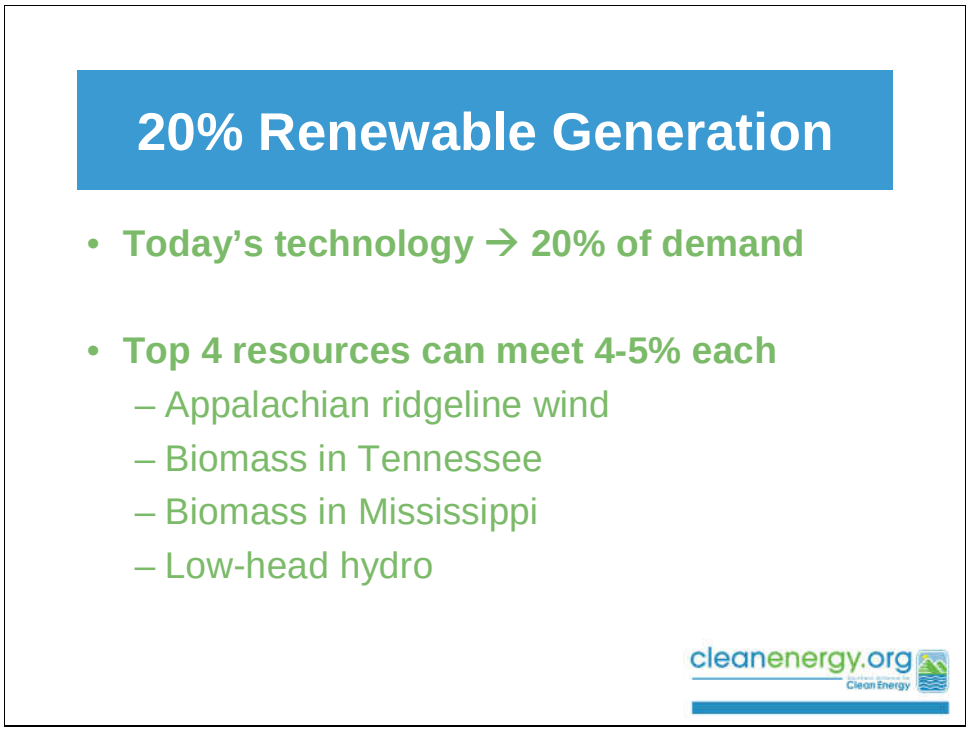
Clean renewable systems spread across the grid also helps support grid strength.

Sources:

Blue Green Alliance, “Alabama’s Road to Energy Independence,” 2007.

Blue Green Alliance, “Tennessee’s Road to Energy Independence,” 2007.

Sterzinger, G and Svcek, M, “Wind Turbine Development: Location of Manufacturing Activity,” Renewable Energy Policy Project, 2004.

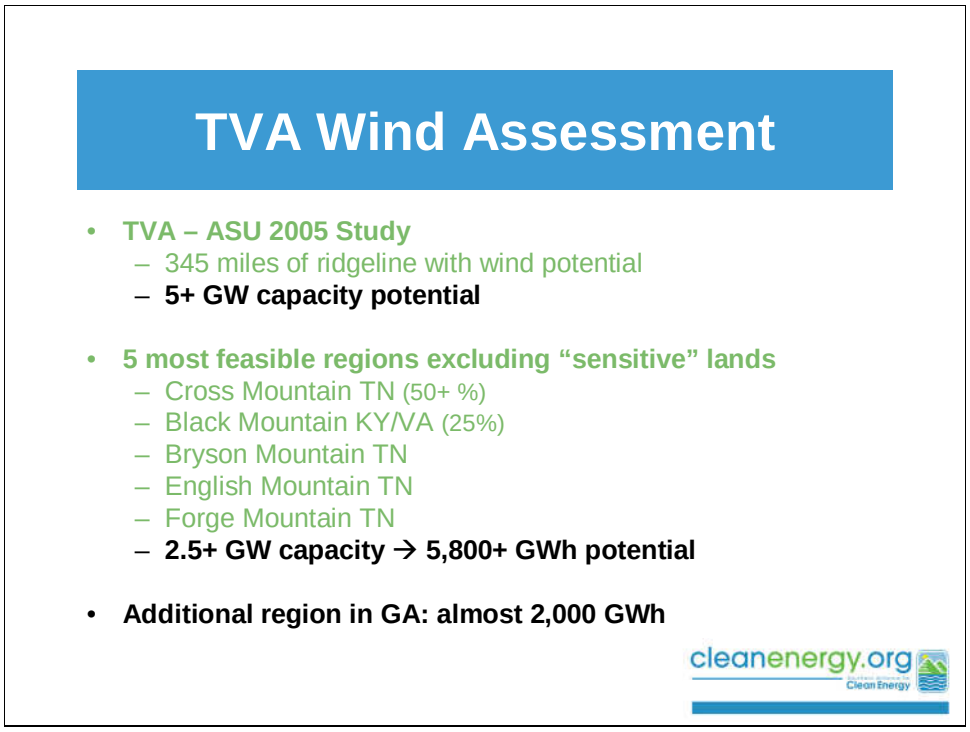


Potential to achieve 20% of demand is based on:

-165,000 GWh sales (2006)

-35,000 GWh additional renewable energy potential

See slide 12 for renewable energy potential data and definitions.



It is not clear whether the TVA – ASU study was comprehensive in identifying potential generation sites. The major wind feature in north Georgia appears to be in or adjacent to TVA service territory, but is not included in the TVA – ASU study. Overall, the TVA – ASU findings are consistent with recent analysis by NREL that shows Tennessee with a potential of up to 5 GW capacity by 2030. The "feasible regions" exclude national forest land identified in the TVA – ASU study. SACE reduced the developable potential miles by 0 – 50% within these regions based on the implied developable potential as described in the text of the report.

New data from NREL and AWSTruewind for Kentucky and Tennessee are expected to be delivered in late 2008. These will be the first 100 m wind data which will be a more accurate and updated resource for estimating wind potential for the TVA region.

Primary sources:

Bailey, B, "The Georgia Wind Resource," AWS Truewind Presentation, 2006.

Carson, R and B Raichle, "Wind Monitoring Around the Tennessee Valley Region," Tennessee Valley Authority - Appalachian State University Wind Assessment Collaboration, December 2005.

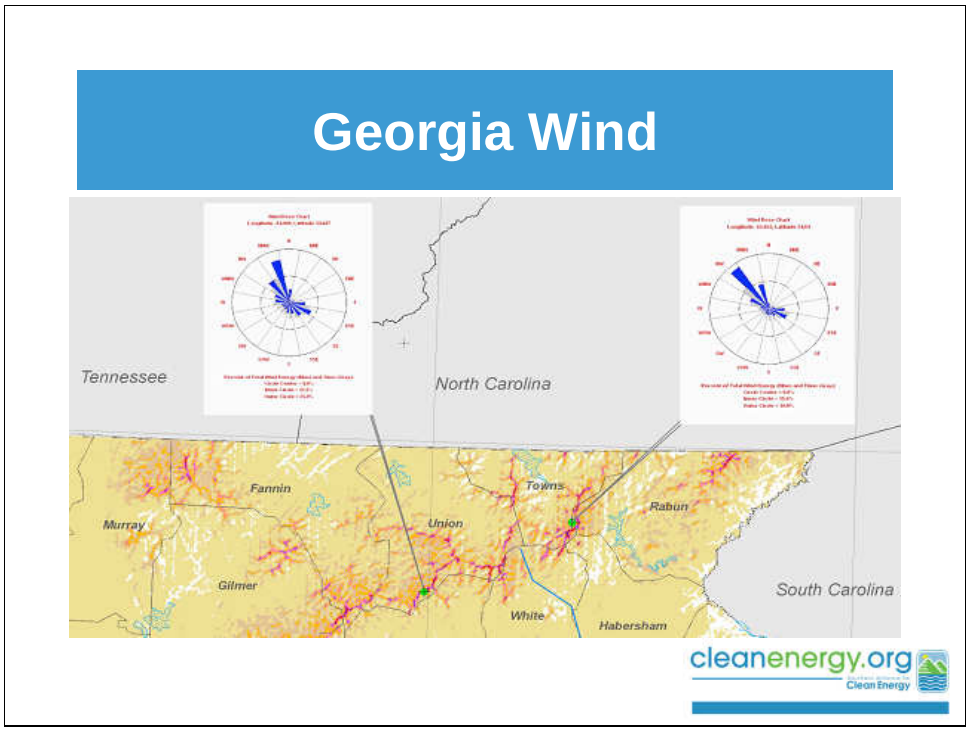
NREL, "WinDS of Change," 2006 NREL Research Review, 2006.

Raichle, B, "Method for Estimating Potential Wind Generation in the Appalachians," Appalachian State University, 2007.

Also relevant:

Denholm, P and W Short, "Documentation of WinDS Base Case Data," National Renewable Energy Laboratory, August 2006. Supplemented with clarifying data provided by Paul Denholm in July 2007 via personal communication.

Hagerman, G, personal communication, Virginia Tech Advanced Research Institute, including data supplied by AWS Truewind, 2007.



AWS Truewind identifies this region as having:

-Up to 8 m/s mean annual wind speed

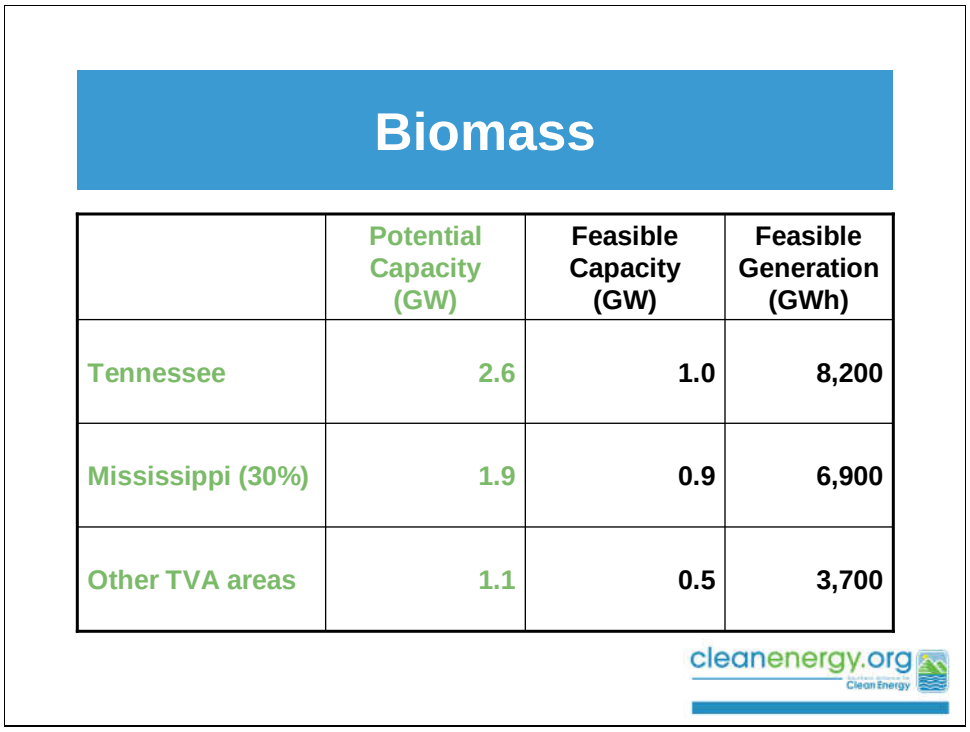
-Capacity factor 30 – 35%

-Sites with class 3 to class 6 wind potential

For this analysis, it is assumed that 50% of Georgia's onshore wind potential identified in the AWS Truewind analysis is accessible to the TVA.

Primary source:

Bailey, B, "The Georgia Wind Resource," AWS Truewind Presentation, 2006.



See slide 12 notes for explanation of terms.

Biomass resources:

-1/3 energy crops (switchgrass, hybrid poplar, etc.)

-1/3 woody materials (logging residues and other mostly secondary resources)

-1/3 other, including landfill methane and agricultural residues

Primary sources:

Hodges, A W, “Current and Potential Biofuels Resource Utilization,” personal communication, January 2008.

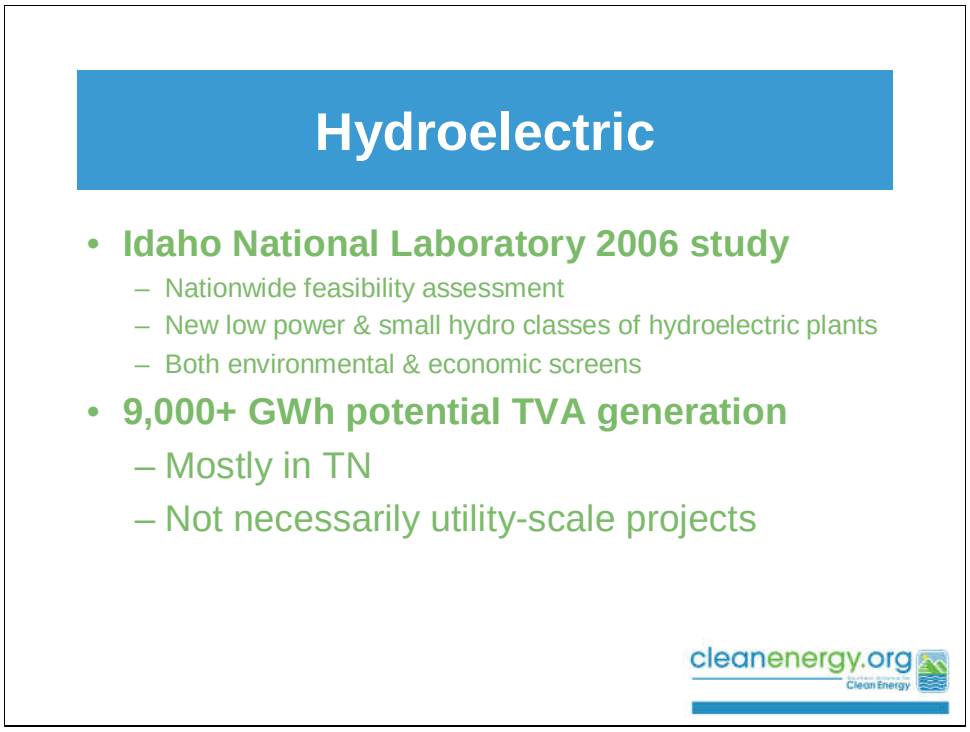
Langholtz, M R Plate and M Monroe, “Sources and Supply,” Wood-to-Energy Fact Sheet, Cooperative Extension Service, University of Florida, 2007. Supporting state-level data provided by personal communication from M Langholtz, 2007.

Milbrandt, A, "A Geographic Perspective on the Current Biomass Resource Availability in the United States," NREL/TP-560-39181, December 2005.

Also relevant:

Curtis, W, C Ferland, J McKissick and W Barnes, "The Feasibility of Generating Electricity from Biomass Fuel Sources in Georgia," Center for Agribusiness and Economic Development, The University of Georgia, FR-03-06, August 2003.

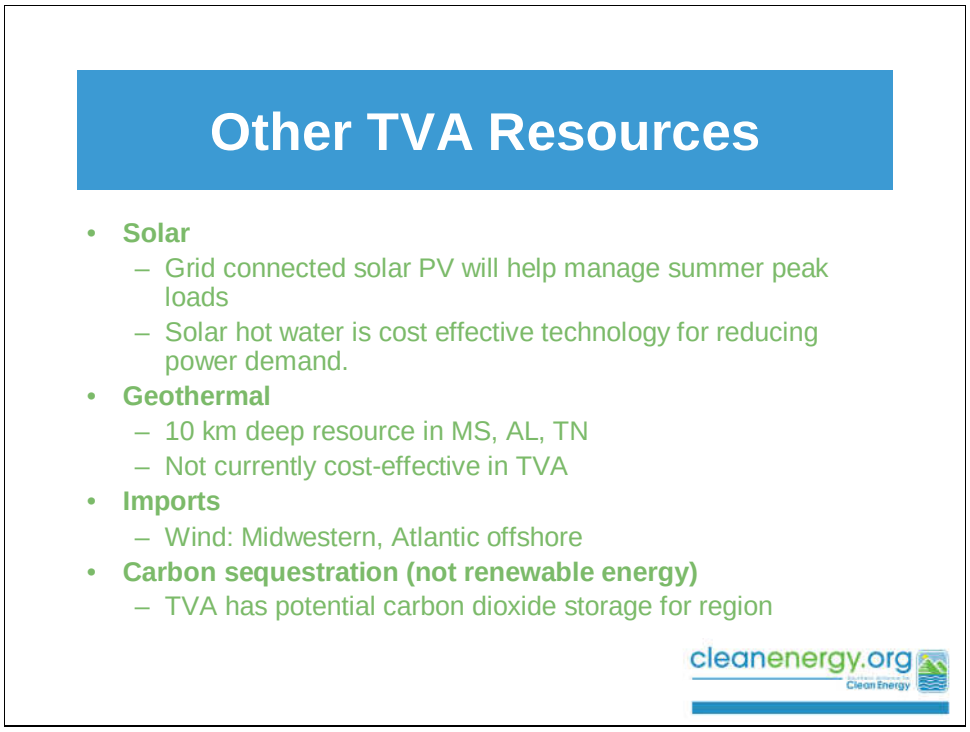
National Renewable Energy Laboratory, "Assessing the Potential for Renewable Energy on National Forest System Lands," NREL/BK-710-36759, January 2005.



Primary sources:

Idaho National Laboratory, "Estimation of Economic Parameters of U.S. Hydropower Resources," INEEL/EXT-03-00662, July 2003.

Idaho National Laboratory, "Feasibility Assessment of the Water Energy Resources of the United States for New Low Power and Small Hydro Classes of Hydroelectric Plants," DOE-ID-11263, January 2006.



There is a need for resource potential studies at the state level for solar energy taking into account the rapid technology development occurring in this sector. Existing studies are too highly focused to adequately capture the potential for investing in a range of complementary technologies.

Primary sources:

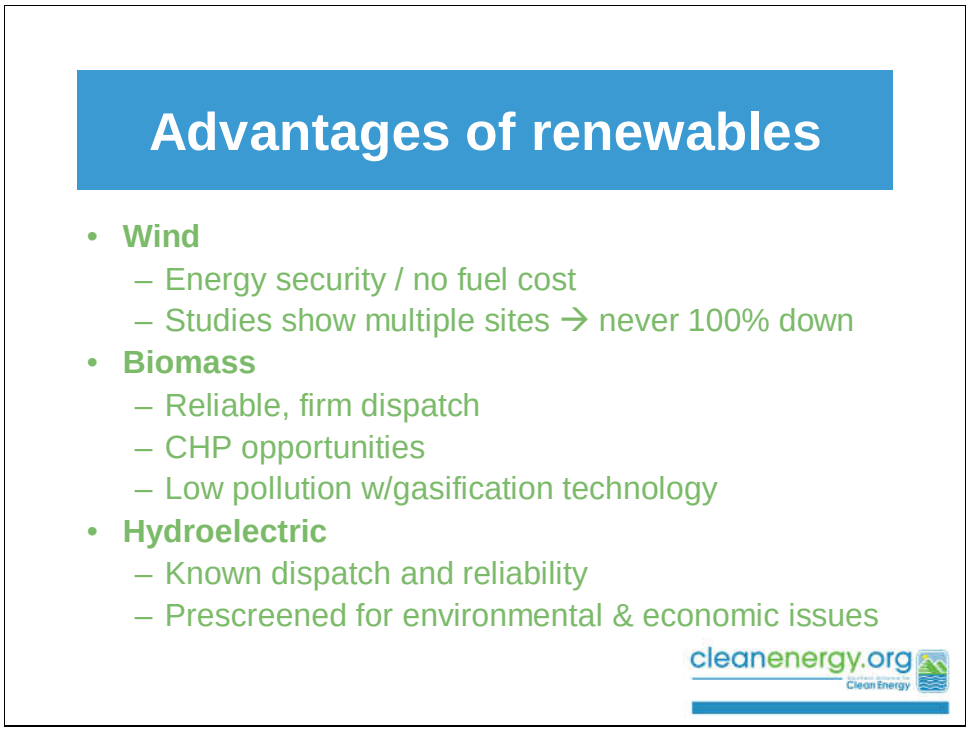
Chaudhari, M L Frantzis and T Hoff, "PV Grid Connected Market Potential under a Cost Breakthrough Scenario," Navigant Consulting, September 2004.

Denholm, P, “The Technical Potential of Solar Water Heating to Reduce Fossil Fuel Use and Greenhouse Gas Emissions in the United States,“ NREL/TP-640-41157, March 2007.

Denholm, P and R Margolis, “The Regional Per-Capita Solar Electric Footprint for the United States,” NREL/TP-670-42463, December 2007.

Massachusetts Institute of Technology, "The Future of Geothermal Energy," Idaho National Laboratory Report INL/EXT-O6-11746, 2006. Unpublished supporting data provided by Black Mountain Technology, July 2007.

Smyth, Rebecca C et al, "Potential Sinks for Geologic Storage of Carbon Dioxide Generated in the Carolinas," Gulf Coast Carbon Center, 2007.



Sources:

EnerNex Corporation, "2006 Minnesota Wind Integration Study," Minnesota Public Utilities Commission, November 2006.

Intermittency Analysis Project Team, "Intermittency Analysis Project: Final Report," California Energy Commission CEC-500-2007-081, July 2007.

Demeo, E A et al, "Wind plant integration," *IEEE Power Energy Magazine* vol. 3, 2005.

Smith, J C, "Utility Wind Integration and Operating Impact State of the Art," *IEEE Transactions on Power Systems* vol 22, August 2007.

Federal legislation

- **TVA can meet national standard**
- **20% renewable potential**
  - Far more: cost-effective large scale solar
- **Reduce (eliminate?) load growth with energy efficiency**
- **Should always be in addition to voluntary programs**

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We recommend . . .

- **Utility-scale generation**
  - Wind, biomass and small hydro investment
  - ***Minimum*** 10% by 2015 . . . 20% by 2020
  - Pay 2 cents per kWh bonus for large-scale plants
- **Customer-scale generation**
  - Low-head hydro
  - Energy recycling (CHP, waste heat recovery)
    - Bonus for biomass use
  - TVA Generation Partners
    - Wind and solar incentive: 7.5 cents plus retail
    - Add a second tier for larger systems: 5 cents
    - Add a Energy Star bonus for efficient customers: 5 cents

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Total Potential Capacity (MW)	TVA	AL	GA	KY	MS	TN
Onshore Wind	**7,535**		2,364			5,171
Biomass	**5,158**	537	336	194	1,906	2,186
Hydroelectric	**14,662**	1,463	813	650	2,683	8,797
Geothermal	**132,183**	30,859	1,951	6,005	40,149	50,733
Solar	**38,376**	1,220	653	2,038	4,393	30,073
Total	**197,914**	**34,079**	**6,117**	**8,886**	**49,130**	**96,960**

Maximum Feasible Capacity (MW)	TVA	AL	GA	KY	MS	TN
Onshore Wind	**3,440**		820		-	2,620
Biomass	**2,393**	204	155	113	879	1,042
Hydroelectric	**2,098**	316	105	98	283	1,296
Geothermal	**-**	-	-	-	-	-
Solar	**16**	1	0	1	2	13
Total	**7,947**	**520**	**1,081**	**211**	**1,164**	**4,971**

Maximum Feasible Generation (GWh)	TVA	AL	GA	KY	MS	TN
Onshore Wind	**7,712**		1,902			5,809
Biomass	**18,869**	1,607	1,226	893	6,929	8,214
Hydroelectric	**9,003**	1,212	403	454	1,044	5,738
Geothermal	**-**	-	-	-	-	-
Solar	**21**	1	0	1	2	17
Total	**35,604**	**2,819**	**3,531**	**1,348**	**7,975**	**19,778**

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REFERENCE PAGE

Estimated renewable energy resource potential for the TVA region. These estimates are constrained by the availability of suitable studies with state-specific data.

-Total Potential Capacity: This is the maximum “theoretical” resource potential estimated in available studies, without filtering for economic, environmental or other feasibility factors. Available studies may place constraints on the “theoretical” resource studied. For example, the solar resource potential is based on rooftop photovoltaic potential and does not consider other potential solar resource installations.

-Maximum Feasible Capacity: Environmental and economic screens are applied to the Total Potential Capacity to determine what an aggressive development scenario might appear to be. The screening is either applied in the cited study or based on a documented method.

-Maximum Feasible Generation: Resource-based capacity factors are used to determine the average annual energy generation based on the Maximum Feasible Capacity. The capacity factors are either included in the cited study or based on a documented method.

-The wind resource assessment is described in the slides and notes for that portion of the presentation.

-For other resources, state resources are pro-rated as follows, with some variation by resource based on review of available maps illustrating the distribution of resources as compared to the TVA service area.

-Alabama: 5 – 30%

-Georgia: 2 – 20%

-Kentucky: 10%

-Mississippi: 20 – 40%

-North Carolina (not shown): 0 – 5%

-Tennessee: 100%

-Virginia (not shown): 0%