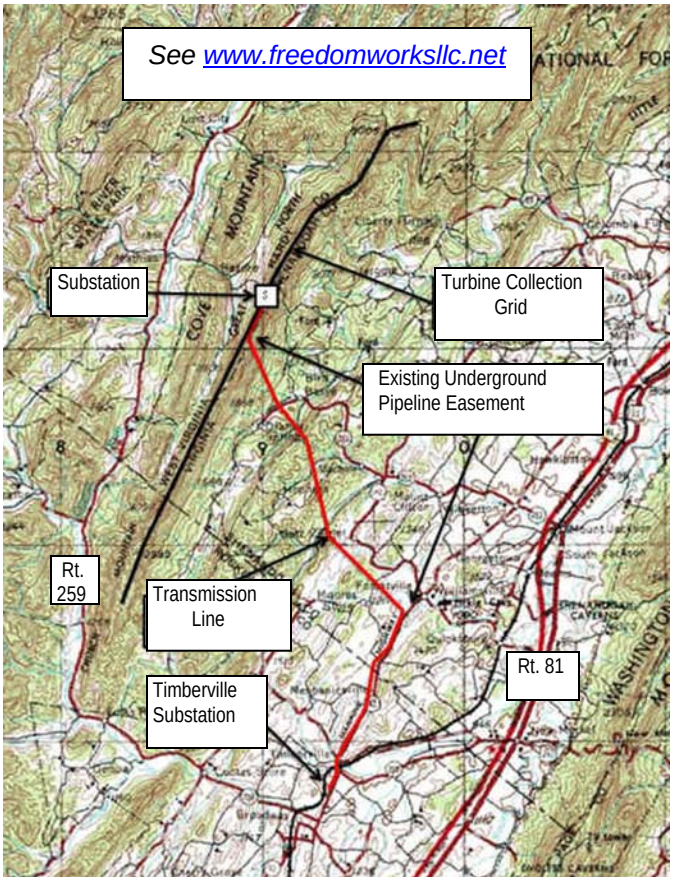
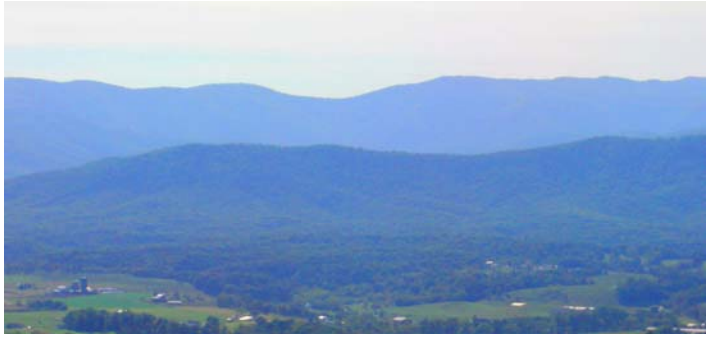
# INDUSTRIAL WIND FACTORIES IN GEORGE WASHINGTON NATIONAL FOREST

## *PUBLIC LANDS IN PENDLETON, HARDY, GRANT COUNTIES, WV AUGUSTA, ROCKINGHAM, SHENANDOAH COUNTIES, VA*

## A FACT SHEET WITH SOURCES



## TWO PROPOSALS KNOWN; MORE PLANNED

### 215 MEGAWATTS OF ELECTRICITY GENERATION PROPOSED ON CHURCH/ GREAT NORTH MTNS.

* 131 Turbines, 90 in VA, 41 in WV
* Turbines 440 feet tall
* 18 miles of new ridgetop road
* Transmission lines & access roads

On March 18, 2008, FreedomWorks LLC applied for an FAA permit to build an electricity generating wind plant on the George Washington National Forest. Tim Williamson, managing director of FreedomWorks, plans additional projects on the national forest if this proposal is permitted. *Sources: www.freedomworksllc.net; Federal Aviation Admin. Form 7460-1 for ASN: 2008-AEA-1462-OE, at oeaaa.faa.gov/oeaaa/external/portal.jsp ("search archives")*

### UNIDENTIFIED COMPANY INVESTIGATES SHENANDOAH MTN.

In October, 2007, the U.S. Fish & Wildlife Service reviewed a proposal for an industrial wind installation to be built along the ridge line of Shenandoah Mtn. in Pendleton & Hardy counties, WV, and Rockingham County, VA. The request was made for an unnamed company through a consulting firm, Western EcoSystems Technology Inc. of Cheyenne, WY, according to the U.S. Fish & Wildlife Service**.** The Service responded: "We recommend that you consider alternative locations for this wind power facility because the proposed site is a high-risk site for species protected by the Endangered Species Act, the Migratory Bird Treaty Act and the Bald and Golden Eagle Protection Act." The unnamed company marked the accompanying map "Confidential" so it is not available to the public; F&WS personnel state that the installation follows the ridge line through Brandywine, WV and Bergton, VA. *Sources: Harrisonburg Daily News Record, March 26, 2008; Nov. 16, 2007 letter from U.S. Fish & Wildlife Service Field Supervisor Thomas Chapman, 694 Beverly Pike, Elkins, WV 26241, to Ms. Wendy Tidhar, WEST, Inc., 2003 Central Avenue, Cheyenne, WY 82001.*

## EAGLE POPULATIONS GROWING ALONG VA/WV BORDER

Since 1981, two separate populations of bald eagles have become established along the VA/WV border: A nesting population of 26 pairs; & an overwintering population of 60-80, including some golden eagles. They eat fish, turtles, snakes & other aquatic life from rivers & flood control reservoirs. Hundreds of golden eagle deaths have been documented in CA where turbines are sited on ridge crests, where eagles rise on upward currents. *Sources: Kieran O'Malley, Non-game Biologist, WV Dept. of Natural Resources, Romney, WV; CA Energy Comm. Report on Golden Eagles www.energy.ca.gov/pier/final_project_reports/CEC-500-2006-056.html; Eagle Photo: www.whale-images.com/; Shen. Mtn. Photo: Dan Downey.*

## BATS, EAGLES ARE MAJOR WILDLIFE ISSUES

15 counties in VA & WV contain at least 69 caves used by endangered Indiana & VA big-eared bats (VA's state bat); there are also many non-endangered bats. Bats eat huge numbers of insects, including disease-carrying mosquitoes; forage along slopes & ridgetops; & roost under tree bark or in cavities. Despite a pre-construction assessment of "no risk" to bats, an estimated 4,000 were killed in 2003 by the 44 turbines at the Mountaineer, WV plant pictured at left, the highest mortality ever documented. Owner Florida Power & Light now denies access to independent wildlife researchers. *Source: State Corp. Comm. Case PUE-2005-00101, "Potential Impacts of Wind Power Facilities on Rare & Endangered Bats," VA Highlands Grotto of The National Speleological Society, March 2006.*

## DIRECT & INDIRECT IMPACTS ON WILDLIFE: AN ASSESSMENT BY WILDLIFE RESOURCE MANAGERS

Industrial turbines on forested ridges in the eastern U.S. have the highest documented bat & bird fatalities worldwide. Turbines seem to be a relatively minor source of songbird fatalities, but these deaths are cumulative & their impact may become more pronounced over time as many more turbines are built. Two eastern sites studied (Mountaineer, WV & Buffalo Mtn., TN) indicate that many bird species already in decline are among those killed. No deterrent has yet been proven to reduce fatalities. Often overlooked are impacts resulting from loss of habitat due to the footprint of the facility & increased human access. Perhaps the greatest potential for impact on large mammals is disturbance of denning black bears, which generally prefer dens 1-2 km [approx. 1 mile] from human activity like roads. *Source: Arnett, E.C., et al, Technical Review 07-2: Impacts of Wind Energy Facilities on Wildlife & Wildlife Habitat. The Wildlife Society, 2007.*

## RIDGETOP USE ELIMINATES OPTION

Three options exist for wildlife & plant species to respond to global warming: move northward, which many plants & small animals cannot do; move upward to higher elevations, which roads & development of ridges would preclude; and go extinct. *Source: Chris Burkett, VA Dept. of Game, Presentation at State Wind Symposium, James Madison Univ., June 18, 2008 vwec.cisat.jmu.edu/conf/)*

## HUMAN HEALTH IMPACTS: WIND TURBINE SYNDROME

symptoms occur in a significant number of people near industrial wind turbines: chronic sleep disturbance is most common; headaches, dizziness, irritability, problems concentrating & learning, & tinnitus (ringing in ears). It is essential to site windmills at least 1.5 miles from homes or places of congregation. In mountains, where valleys act as channels for noise, this 1.5 mile set-back should be extended to 2 to 3 miles from homes. *Source: Testimony before the NY State Legislature Energy Committee, March 7, 2006 by Dr. Nina Pierpont www.wind-watch.org/documents/wp-content/uploads/Pierpont-WindTurbineSyndrome.pdf.*

As low frequencies penetrate through walls and windows, many people may be exposed in their dwellings. Sleep disturbances are commonly reported in case studies on low frequency noise. *Source: "Noise & its effects on health: a brief bibliography," Natl. Library of Medicine, May 2007 www.windturbinenoisehealthhumanrights.com/Noise_effects_on_health_Pubmed_bibliography_27May2007.doc*

"We live just under a mile from the turbines. Depending on weather & the way the blades are turned, they can be very noisy – a deep, thudding, groaning sound. When you lay your head on your pillow, it's like you can hear your heart pumping, and feel a kind of pressure in your ears." *Source: Karen Ervin, speaking from her family farm in Meyersdale, PA, June 31, 2008*

# GEORGE WASHINGTON NATIONAL FOREST
## A REFUGE FOR PEOPLE AND WILDLIFE

Healthy forest ecosystems are ecological life-support systems that provide goods & services vital to human health – natural assets called **ecosystem services.** Many of these goods & services are traditionally viewed as free benefits to society, or "public goods" - wildlife habitat & diversity, watershed services, carbon storage, & scenic landscapes, for example. Lacking a formal market, these natural assets are traditionally absent from society's balance sheet; their critical contributions are often overlooked in public, corporate, and individual decision-making. When national forests are undervalued they are increasingly susceptible to development pressures & conversion. Recognizing forest ecosystems as natural assets with economic & social value can help promote conservation & more responsible decision-making. *Source: U.S. Forest Service www.fs.fed.us/ecosystemservices/*

The George Washington National Forest (with the Jefferson Natl. Forest to the south) provides habitat for approx. 200 species of birds & 55 species of mammals. Sixty percent of neo-tropical birds are interior forest species & require large blocks of undisturbed forest habitat. Dozens of communities depend on clean water from the national forest for water supply. Clear air from the national forests benefits the entire region. Millions of board feet of timber are harvested annually. Millions of people visit the GWNF annually to hunt, fish, camp, hike, mountain bike, watch birds, look for wildflowers, picnic, and study nature. As private land is increasingly posted, national forests have become important for hunting & fishing. *Source: George Washington/Jefferson National Forests www.fs.fed.us/r8/gwj/about/index.shtml; U.S.F.S. Roanoke, VA Public Affairs Office.*

## DEFINING MULTIPLE USE IN NATIONAL FORESTS

"It is the policy of the Congress that the national forests are established and shall be administered for outdoor recreation, range, timber, watershed, and wildlife and fish purposes." *Source: Public Law 86-517 [16 U.S.C. 528]*

## MARYLAND RULES OUT PUBLIC LANDS FOR WIND

"While we must continue to explore and make progress on creating a more sustainable & independent energy future for Maryland, we will not do so at the expense of the special lands we hold in the public trust," said Governor Martin O'Malley. People of western Maryland were unified in opposition to the use of state forests & parks for wind turbines. *Source: April 12, 2008 MD Press Release www.dnr.state.md.us/dnrnews/pressrelease2008/041208.html*

## ENVIRONMENTAL BENEFITS VS. IMPACTS ON NATIONAL FOREST: A SUMMARY

### Environmental Benefits

* Turbines emit no pollutants
* Turbines require no water
* Turbines require no mining or drilling
* Wind is renewable & free

### Environmental Impacts

* Clearcutting 4 to 5 acres per turbine
* Fragmentation (edge) effects on many more acres
* Continuing, long-term wildlife mortalities
* Permanent habitat loss
* Many miles of extra wide, permanent new roads in previously undisturbed habitat
* Erosion & sedimentation of streams from construction
* Invasion of nonnative weeds & pests along new roads; also poachers
* Night lights required by FAA; steady lights attract night-migrating birds; FAA considering flashing lights
* Shadow flicker (strobe effect) day & night
* Noise from "kitchen refrigerator" to "jet plane roar" depending on distance, blade direction, & weather
* Health impacts from low frequency sound
* Industrialization of scenic & historic landscapes
* Intermittent nature of wind requires permanent coal or other fuel back-up

## WEIGH BENEFITS VS. IMPACTS MAKE YOUR OPINION KNOWN

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Roanoke, VA 24019-3050

*Sources: American Wind Energy Association www.awea.org/; DOE's Wind Powering America www.eere.energy.gov/windandhydro/windpoweringamerica/wpa_about.asp; Windustry www.windustry.org/; Industrial Wind Action Group www.windaction.org; VA Wind www.vawind.org; National Research Council, 2007: Environmental Impacts of Wind Energy Projects www.nap.edu/catalog.php?record_id=11935*

## WIND POWER NOT RELEVANT TO INDEPENDENCE FROM FOREIGN OIL

Turbines produce electricity, which in the U.S. comes largely from coal; less than 2% of electricity comes from oil, which is used mainly for transportation. According to the American Wind Energy Association, the major trade organization, one megawatt (MW) of wind energy generates an average of 2.7 million kilowatt-hours (kWh). Because wind blows intermittently, turbines do not produce their rated maximum output. The average capacity factor in the mid-Atlantic region is about 30%, dipping to less than 10% in summer (when wind is weakest, although demand is highest due to air conditioning). The 215 MW FreedomWorks project on p. 1 can therefore be expected to produce an annual average of approx. 43 MW. At an average household use of 10,655 kWh/year, this would power approx. 11,000 homes. Because of its unreliability, wind power must always be backed up by coal or other fuel. The wind industry installed 5,244 MW in 2007, an increase of 45% from 2006, for a total of 16,818 MW in 34 states, led by TX. This is estimated to provide just under 1% of U.S. electricity. Demand for electricity is expected to grow by 39% by 2030 to 5.8 billion megawatt-hours. The U.S. Dept. of Energy is promoting "20% Wind Energy by 2030," which will require more than 100,000 turbines & offset coal emissions by approx. 5%. *Sources: American Wind Energy Assn. www.awea.org/; Natl. Research Council, 2007: Environmental Impacts of Wind Energy Projects www.nap.edu/catalog; DOE: 20% Wind Energy by 2030 www.osti.gov/bridge*

## ECONOMIC BENEFITS VS. COSTS ON NATIONAL FORESTS

### Economic Benefits

* Developers recover most costs via tax subsidies
* Developers can sell "Renewable Energy Credits"
* Urban consumers can choose "renewable" power
* Small amount of electricity generated
* Small number of permanent jobs created

### Economic Costs

* Taxpayers subsidize most costs
* Use of public lands constitutes additional subsidies
* No property taxes are charged on federal land
* Potential property value losses near turbines
* Possible electromagnetic interference with communications systems

*Sources: U.S. Forest Service, Roanoke, VA Public Affairs Office; American Wind Energy Assn. www.awea.org; CiteSeer Scientific Literature Digital Library citeseerx.ist.psu.edu/viewdoc/summary?doi=10.1.1.21.5990*

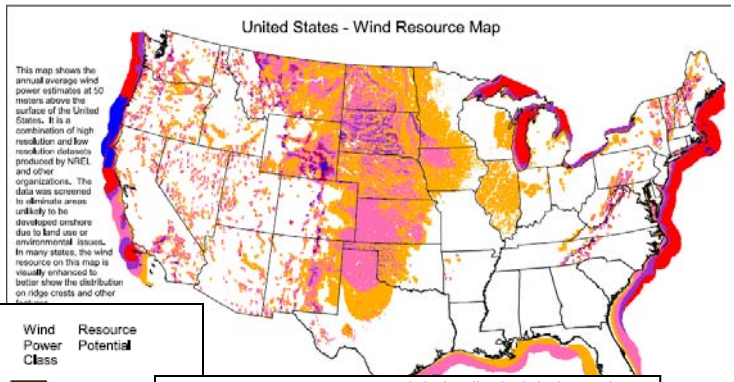
## FEDERAL TAX CREDITS

The pace of growth beyond 2008 is largely dependent on an extension of the federal production tax credit, enacted in 1992 & set to expire at the end of 2008. It has expired 3 times since 1992; each of those years brought the industry to a standstill. *Sources: American Wind Energy Assn. www.awea.org/; DOE's 20% Wind Energy by 2030 www.osti.gov/bridge*

## WIND FARMS: THE NEXT dot.com BUBBLE?

The wind industry is growing rapidly due to technological advancements, political will & government subsidies. Utility companies, independent power providers, institutional investors & oil companies are all seeking to capitalize on lucrative support mechanisms. Strong growth therefore continues with record investments, yet record wind farm development costs & valuations are now driving 'dotcom' comparisons as the economics of wind farming projects come under increasing pressure.

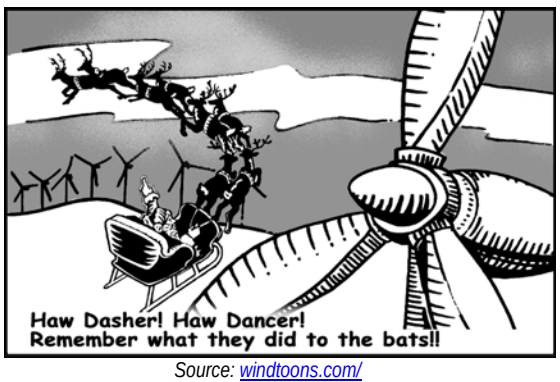
*Source: Engineer Live: For Engineers, By Engineers*
*www.engineerlive.com/news/20332/wind-farms-the-next-dotcom-bubble.thtml*




*Source:www.eere.energy.gov/windandhydro/windpoweringamerica/pdfs/wind_maps/us_windmap.pdf. For VA see vwec.cisat.jmu.edu/conf/twvalidate_pwr50_1-1-1.pdf, also www.vawind.org*

## ALTERNATIVES TO INDUSTRIAL WIND

Industrial turbines can contribute to green power without huge environmental costs when sited in appropriate places, such as the Great Plains & offshore, where wind is stronger & more reliable (although little research has been done on offshore wildlife impacts). Elsewhere, decentralized, community & household-scale solar & small wind systems offer the best opportunities to strengthen the nation against terrorist attacks & natural disasters like Hurricane Katrina, with little environmental impact. Schools, hospitals, community centers, farms, businesses, individual homes & apartment buildings could all provide some of their own power if government policies & subsidies were aimed at them instead of multinational corporations. See www.homepower.com/home/, www.gaiam.com/realgoods/, www.solarelectricpower.org/, www.seia.org/, & many other sites for additional information.




*Source: windtoons.com/*