

My name is Annette Smith. I am Executive Director of Vermonters for a Clean Environment. Thank you for hearing my testimony today.

VCE is a statewide non-profit that works with citizens to provide facts and information so people can make informed decisions and participate in regulatory processes.

I have spent two years researching the complex issues surrounding wind energy development. If I had any bias when I began this investigation, it was in favor of wind energy. I made fourteen visits to wind turbine projects in the region¹ and all the major proposed sites in Vermont.² I talked to people who live around existing, proposed or approved wind projects.³

I am here to share with you what we have learned, and what Vermont's experience has been as big wind projects have made their way through the regulatory process.

Vermont's Public Service Board has issued Certificates of Public Good for three big wind projects so far. A fourth begins technical hearings today. Of the three approved projects, two still have outstanding unresolved issues while one project has begun construction.⁴ About a dozen other proposals have been floated by developers. Vermont has one existing wind project in Searsburg, which has eleven .5 (half) MW turbines less than 200 feet tall, with no lights.

Vermont's legislature has not enacted any special legislation or rules regarding wind turbine siting. Siting and setback legislation was introduced last year but not taken up by committees of jurisdiction, which unfortunately are choosing to let the PSB rule on the issues on a case by case basis. I commend you for holding this hearing today to evaluate how to provide guidance to the Siting Council and establish rules for this new technology because, in my opinion and experience, the way Vermont is doing it is not working.

My written testimony lists the issues associated with building big wind turbines, with references to testimony, raw data, newspaper and magazine articles, and other sources that document what is happening worldwide with this technology.

The top two problems we find are 1) the way wind development divides communities and creates conflict and 2) wind turbines' unique noise profile that sickens people and causes some to flee their homes. Wind developers deny the problem and governments have not set adequate standards. These noisy, huge machines dominate the landscape and create sacrifice zones that reduce property values. They collapse, throw ice and blades, catch fire, create hazards for air traffic, kill birds and bats, fragment critical wildlife habitat, and have technical problems that require frequent maintenance. Utility scale wind turbines harm people, communities, and the natural environment.

Regulatory processes are grossly imbalanced, creating enormous financial burdens for communities and project neighbors, with inadequate time to develop expert witness testimony to represent their interests. Regulators are relying on expert witnesses working almost exclusively

for wind developers. Whatever standards you put into place must address these impacts and process-related issues.

I would be glad to answer questions about any of the specific issues identified. Thank you for this opportunity.

Communities Divided⁵

Promise of money to landowners and towns, no compensation for neighboring landowners or neighboring towns⁶

Noise and Health

Canadian Survey⁷ -- raw data showing distances from turbines

Canadian Health Study⁸

Canadian Litigation & Ontario Environmental Tribunal⁹

Danish Rule Limiting Wind Turbine Noise¹⁰

Australian/New Zealand Investigation¹¹

Australian Litigation¹²

Ken Kaliski testimony¹³ -- noise expert working for Vermont wind developers

Rick James testimony¹⁴ -- noise expert working for opponents nationally

Vermont Dept. of Health testimony¹⁵

Dr. Lovko testimony¹⁶ -- rebuttal of Vermont Dept. of Health testimony

Dr. Sarah Laurie¹⁷ -- Australian Doctor

Dr. Christopher Hanning¹⁸ -- British Doctor

Dr. Michael Nissenbaum¹⁹ -- Maine Doctor

Hard lessons from the Fox Islands Wind Project, Vinalhaven²⁰ -- Maine Citizen

Ohio, Too Close to Homes²¹ -- Ohio Citizen

Aesthetics

Wind Turbines are now Huge

Landscape-dominating²²

Night lighting²³

Shadow Flicker²⁴

Property Values

McCann²⁵ -- says property values decline

Hoehn²⁶ -- says property values do not decline

Buying Out²⁷ -- with gag orders

Property Value Guarantee²⁸ -- wind developers refuse

Historic Properties²⁹ -- an issue in Rhode Island

Safety -- ice throw, blade throw, fire, collapse³⁰ -- raw data showing distances

Economic Impacts³¹ -- tourism, recreation, second homes, businesses

Air Space Hazards

Met towers³² -- pilot killed
Airports³³ -- turbines create hazards
Gliders and Hang Gliders

Environmental Impacts

Wetlands
Streams, Stormwater/Sedimentation³⁴
Blasting/Explosives³⁵
Trucking -- thousands and thousands of truckloads
Aggregate
Concrete
Rebar
Roads necessary for 200,000 pound components³⁶

Wildlife

Bats³⁷ -- turbines kill bats, lungs explode
Wetlands and Bats³⁸
Birds³⁹ -- turbines kill birds
Habitat Fragmentation and Natural Communities⁴⁰ -- road building impacts

Operations and Maintenance Costs

Gearboxes failures⁴¹
Blade failures, Warranties for blades
Warranties expiring⁴²
Concrete base failures⁴³

Reliance on Expert Witnesses -- the usual suspects, for example Stantec⁴⁴

Public Process Expensive and Imbalanced

Alternatives: Intervenor Funding⁴⁵
or Collaborative Stakeholder Process for choosing experts⁴⁶

Helter Skelter Development Absent a State Plan

Financial Fundamentals Lacking

LLCs -- for example First Wind's 144 LLCs⁴⁷
Iberdrola (Spain), Enel (Italy), GMP (Gaz Metro, Canada), speculators

Decommissioning -- Inadequate restoration plans

Need for Independent Studies on Energy and Emissions⁴⁸

¹ Searsburg VT (20; Cohocton (2), Maple Ridge (2), Hardscrabble NY (2); Lempster NH(1); Locust Ridge (3), Bear Creek PA (1)

² http://www.vce.org/VCEEndofYear2010_3456sm.pdf

³ Londonderry, Sheffield, Lowell, Readsboro, Manchester, Ira, Hubbardton, Milton, Eden, East Haven Waitsfield in VT, Lempster in NH, Locust Ridge in PA, Cohocton in NY.

⁴ Georgia Mountain/Setbacks, Deerfield/USFS Permit, Sheffield/First Wind

⁵ http://www.vpr.net/news_detail/89909/
<http://www.burlingtonfreepress.com/article/20110130/NEWS02/110129009/1007/Lowell-Mountain-wind-project-opponents-carry-on-despite-setbacks>

⁶ <http://technorati.com/lifestyle/green/article/breaking-news-neighbors-come-to-neighbor/>

⁷ http://windvigilance.com/downloads/symposium2010/swv_symposium_poster_windvoice.pdf

⁸ <http://topnews.us/content/231125-canadian-officer-studying-health-effects-wind-turbine>

⁹ <http://www.ottawacitizen.com/health/Court+challenge+threatens+Ontario+wind+energy+plans/4152749/story.html#ixzz1ByneuU00>
<http://www.owensoundsuntimes.com/ArticleDisplay.aspx?e=2952501>

¹⁰ http://www.publics.bg/en/news/3588/Denmark_Sets_Limits_for_Wind_Turbine_Noise.html

¹¹ http://www.aph.gov.au/Senate/committee/clac_ctte/impact_rural_wind_farms/index.htm

¹² http://www.adelaidenow.com.au/business/sa-business-journal/wind-farm-fight-heads-to-supreme-court-as-community-opposition-grows/story-e6fredel-1225996349402?from=public_rss

¹³ <http://www.kingdomcommunitywind.com/permitting/gmp-witness-kenneth-h-kaliski/>

¹⁴ <http://www.kingdomcommunitywind.com/permitting/town-of-albany-richard-james/>

¹⁵ <http://www.kingdomcommunitywind.com/permitting/dps-william-irwin/>

¹⁶ http://energizevermont.org/wp-content/uploads/2010/11/2010-11-22_Lovko_Rebuttal_TestimonyDocket7628.pdf

¹⁷ <http://www.thecourier.com.au/news/local/news/general/windfarm-health-fears-grow/2014133.aspx?src=rss>

¹⁸ <http://windvigilance.com/downloads/symposium2010/Wind%20turbine%20noise%20sleep%20and%20health%20November%202010.pdf>

¹⁹ <http://vimeo.com/11577982>

²⁰ <http://www.workingwaterfront.com/online-exclusives/Opinion/13571/>

²¹ http://www.dailystandard.com/archive/story_single.php?rec_id=14011

²² <http://www.kingdomcommunitywind.com/permitting/town-of-craftsbury-gail-henderson-king/>

²³ <http://www.kingdomcommunitywind.com/permitting/gmc-jean-e-vissering/>

²⁴ <http://www.cbc.ca/canada/prince-edward-island/story/2011/01/21/pe-turbine-flicker-complaint.html>

- ²⁵ <http://www.windturbinesyndrome.com/news/wp-content/uploads/2010/09/McCann-appraisal-6-8-10.pdf>
- ²⁶ <http://www.allvoices.com/s/event-8031983/aHR0cDovL3d3dy5uaHNIYy5uaC5nb3YvMjAxMC0wMS9pbmRleC5odG0=>
- ²⁷ <http://www.thecourier.com.au/news/local/news/general/waubra-wind-farm-buys-more-properties/2000865.aspx>
- ²⁸ <http://www.watertowndailytimes.com/article/20101213/NEWS05/312139985>
<http://www.windaction.org/documents/30293>
- ²⁹ <http://www.windaction.org/news/29720>
- ³⁰ <http://www.caithnesswindfarms.co.uk/fullaccidents.pdf>
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<http://www.ngnews.ca/News/Local/2011-01-31/article-2187158/Electrical-problem-expected-as-cause-in-windmill-fire/1>
- ³¹ http://www.vpr.net/news_detail/88795/
- ³² http://www.mercurynews.com/breaking-news/ci_17132945?nclick_check=1
- ³³ <http://www.watertowndailytimes.com/article/20101007/NEWS03/310079998>
http://www.jamestownpress.com/news/2010-09-16/Front_Page/FAA_rejects_wind_turbine_at_Taylor_Point.html
- ³⁴ <http://energizevermont.org/wp-content/uploads/2010/09/08-252c.SheffieldWind.dec-2.pdf>
- ³⁵ <http://caledonianrecord.com/main.asp?SectionID=180&SubSectionID=778&ArticleID=53195>
- ³⁶ <http://vimeo.com/16284505>
- ³⁷ http://www.bu.edu/cecb/files/2009/08/Horn_et_al_2008.pdf
<http://www.batcon.org/index.php/what-we-do/bats-and-wind-energy.html>
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<http://www.telegraph.co.uk/earth/earthnews/8066012/Wind-turbines-should-be-painted-purple-to-deter-bats-scientists-claim.html>
- ³⁸ http://andrew.elmore.cc/pubs/Lookingbill_et_al_2010_BioCon.pdf
- ³⁹ <http://www.thewhig.com/ArticleDisplay.aspx?e=2946372>
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⁴⁰ http://www.vpr.net/news_detail/89795/
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⁴¹ <http://vce.org/TheElephantintheWind.pdf>

⁴² [http://social.windenergyupdate.com/industry-insight/turbine-om-costs-spiral-coming-years?
utm_source=WEU%25](http://social.windenergyupdate.com/industry-insight/turbine-om-costs-spiral-coming-years?utm_source=WEU%25)

⁴³ [http://www.cbc.ca/canada/nova-scotia/story/2011/02/01/ns-nuttby-mountain-wind-farm-cracks.html?
ref=rss#ixzz1CnSmgYmS](http://www.cbc.ca/canada/nova-scotia/story/2011/02/01/ns-nuttby-mountain-wind-farm-cracks.html?ref=rss#ixzz1CnSmgYmS)
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threatened-species/content/56092463-an-offshore-wind-farm](http://www.allvoices.com/contributed-news/8031983-proposed-wind-farm-imperils-falcons-other-threatened-species/content/56092463-an-offshore-wind-farm)
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⁴⁵ http://vce.org/IntFund_FactsMemo.pdf

⁴⁶ http://www.virginia.edu/ien/docs/collaboration_part1.pdf
http://www.virginia.edu/ien/docs/collaboration_part2.pdf
http://www.virginia.edu/ien/docs/collaboration_part3.pdf

⁴⁷ <http://www.vce.org/First%20Wind%20LLCs.pdf>
<http://www.windaction.org/news/29721>

⁴⁸ http://www.vpr.net/news_detail/89924/

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