# Wind Power CP – Aff Answers

## AT: Net Benefits

### AT: Elections – Wind Unpopular

#### Wind Energy isn’t green technology and it’s not liked by the public

The Economic Times, leading market/economy analyst site, March 19th, 2012, “Green Power: Wind power does not help to avert climate change”, The Economic Times, <http://articles.economictimes.indiatimes.com/2012-03-19/news/31210516_1_wind-turbines-wind-power-wind-farms>

Efforts to stem global warming have nurtured a strong urge worldwide to deploy renewable energy. As a result, the use of wind turbines has increased 10-fold over the past decade, with wind power often touted as the most cost-effective green opportunity. According to Connie Hedegaard, the European Union's commissioner for climate action, "People should believe that [wind power] is very, very cheap." In fact, this is a highly problematic claim. While wind energy is cheaper than other, more ineffective renewables, such as solar, tidal and ethanol, it is nowhere near competitive. If it were, we wouldn't have to keep spending significant sums to subsidise it. In the UK, for example, wind remains significantly more costly than other energy sources. Using the UK Electricity Generation Costs 2010 update and measuring in cost per produced kw-hour, wind is still 20-200% more expensive than the cheapest fossil-fuel options. And this is a significant underestimate. As the UK and other developed countries have rushed to build more wind turbines, they have naturally started with the windiest places, leaving poorer sites for later. At the same time, people increasingly protest against the wind farms in their backyards. Local opposition has tripled over the past three years, and local approval rates for new wind farms have sunk to an all-time low. Most people believe that a few wind turbines can be attractive, but it is an entirely different matter when turbines are scattered across the countryside, or when massive, industrial wind farms extend for miles. Complaints have also increased about enormous new wind turbines' low-frequency noise. Given souring public sentiment, most of the future increase in wind turbines is expected to take place offshore, where there is less opposition, but where costs are much higher. With its '20-20-20' policy, the EU has promised that, by 2020, it will cut its carbon emissions by 20% below 1990 levels, and increase reliance on renewables by 20%. For the UK, this needs a dramatic rise in wind power, especially offshore. This will be surprisingly costly. The UK Carbon Trust estimates that the cost of expanding wind turbines to 40 gigawatts, in order to provide 31% of electricity by 2020, could run as high as £75 billion ($120 billion). And the benefits, in terms of tackling global warming, would be measly: a reduction of just 86 megatons of CO2 per year for two decades. In terms of averted rise in temperature, this would be completely insignificant. Using a standard climate model, by 2100, the UK's huge outlay will have postponed global warming by just over 10 days. Moreover, this estimate is undoubtedly too optimistic. Wind frequently does not blow when we need it. For example, as the BBC reported, the cold weather on December 21, 2010, was typical of a prolonged cold front, with high-pressure areas and little wind. Whereas wind power, on average, supplies 5% of the UK's electricity, its share fell to just 0.04% that day. With demand understandably peaking, other sources, such as coal and gas, had to fill the gap. Making up for a 5% shortfall in supply is manageable, but the situation will change dramatically as the UK increases its reliance on wind power to reach the 31% target by 2020. Wind power becomes much more expensive when we factor in the large supplies of power that must be created for backup whenever the wind dies down.

#### The public hates Wind Turbines

ROSIE TAYLOR, Author, 12 February 2012, <http://www.dailymail.co.uk/news/article-2100259/Wind-turbines-public-menace-wind-efficient-renewable-power-National-Trust-says.html>, JJM^\_^

Wind turbines are a ‘public menace’, the chairman of the National Trust chairman has said.¶ Sir Simon Jenkins dismissed wind as the ‘least efficient’ renewable power.¶ The honest admission is surprising coming from the the head of the charity, as it champions green energy as part of its conservation work.¶ ‘We are doing masses of renewables but wind is probably the least efficient and wrecks the countryside,’ he said.¶ The National Trust is concerned about the impact of 220m (721ft) turbines on the environment and on views of the Bristol Channel¶ ‘Broadly speaking, the National Trust is deeply sceptical of this form of renewable energy.’¶ ¶ More...¶ Wind policy is sheer flatulence: Cameron should get on and build the power stations¶ BBC's Weather Test washout: Bid to check accuracy of forecasts vanishes in storm of wrangling that no one predicted¶ While the National Trust officially continues to support ‘a major increase in the UK’s renewable energy generation’, it is fighting several plans for wind farms, including one to erect a massive 417 wind turbines in the Bristol Channel.¶ The trust is concerned about the impact of the 220m (721ft) turbines on the environment and on views of the coastline.

#### **Public strongly disproves of wind power, bad health effects.**

Kathryn Gallerani, Resident Author, <http://www.patriotledger.com/news/x1222858958/Kingston-neighbors-of-wind-turbines-complain-of-ill-effects>, Jun 28, 2012, JJM ^\_^

KINGSTON —¶ Neighbors of Kingston’s new wind turbines made plenty of noise at a zoning board of appeals hearing, sharing stories with panel members about sleepless nights and anxiety caused by the turbines.¶ Leland Road resident Dan Alves, speaking at a hearing last week, said he knew there had been talk of wind turbines before they were built, but he was not informed about what it would really mean to have them near his home.¶ “Never would I have experienced what I have experienced – headaches, dizziness, vertigo,” Alves said. “It sounds like a 747 that never lands.”¶ Christopher Senie, a lawyer for some of the neighbors, presented reasons why the board should reverse zoning enforcement officer Paul Armstrong’s decision to deny Senie’s recent request for an order that would stop the turbines from spinning.¶ Senie argued there should be a new site plan hearing and conditions should be set that make sense for the operation of the wind turbines. He said he is not foolish enough to think the turbines would be shut down permanently.¶ Country Club Way resident Chris Dewitt said his heart aches at the impact these turbines have had on his family and his neighbors. He said he has been woken up early in the morning, around 3:30 a.m. one day and 4 a.m. the next, because of the turbines’ noise.¶ “This is not sustainable,” he said. “Think about this decision in respect to the people.”¶ Zoning board Chairman John Haas said it’s difficult to know how anyone can argue they did not know the wind turbines were coming with all the numerous public meetings that were held prior to construction of the four wind turbines this year.¶ The public hearing was continued to July 18, to give board members time to review the testimony.¶ The controversial towers include the Independence turbine on the town’s capped landfill and three wind turbines on business owner Mary O’Donnell’s Marion Drive property.

#### UK residents concerned about wind turbine ugliness

The Guardian, Feb 26 2012, “Debate whether windfarms are ugly but not their efficiency, says Lord Turner” The Guardian. http://www.guardian.co.uk/environment/2012/feb/27/adair-turner-windfarm-interview (added by JA)

Claims that windfarms cannot reduce carbon emissions are "rubbish" and result from critics ignoring the facts and "believing what they want to believe", according to **Lord** (Adair) **Turner**, **chairman of** the government's official independent advisers, **the Committee on Climate Change** (CCC). In an interview with the Guardian, Turner **said there was a legitimate debate over whether wind turbines were a visual blight on the hills of Britain**, but that the debate had to be honest and critics had to accept the much higher cost of placing the turbines offshore. He added that enabling local people to profit from wind power would lead to a switch in "deeply subjective aesthetic perceptions". Under his leadership, the CCC's ambitious targets for cutting greenhouse gas emissions have been accepted by parliament. The most recent carbon budget – to cut emissions by 50% by 2025 – was agreed only after a fierce cabinet battle. "We have set a real standard for fact-based analysis and established a very high level of credibility," said Turner, who also chairs the Financial Services Authority. The controversy over windfarms has become even more heated in recent weeks, with the chairman of the National Trust, Sir Simon Jenkins, claiming the NT was "deeply sceptical" over wind power – only for the organisation to respond that this did not "chime" with its official line. Turner said that there was a "confused" debate on the merits of wind power, along with nuclear power and carbon capture and storage, as part of the package to replace fossil fuels."It is really regrettable that people leap – without reading the facts – to things that they want to believe," he said. "Wind works. The idea that it is so intermittent that it is not beneficial, that is rubbish. There are countries getting large amounts of energy from wind. "**If someone argues they passionately believe that windmills are bad for the aesthetic environment** and are willing to do more nuclear instead, or willing to bear the cost of offshore wind, **that is a real argument**. But latching on to 'they don't work', or 'they are too intermittent' or 'they are not low-carbon because of the concrete' is just a failure to read the facts." Turner acknowledged the expense of going offshore. "Offshore wind today – until the costs come down and we think they will over time – is a relatively expensive way of producing electricity, because it is a new technology. But as for onshore wind, it actually is not all that much more expensive than nuclear or coal or gas once you allow for a reasonable cost of carbon." **The visual impact of turbines varies by landscape**, according to Turner, who said he did not object to turbines near his father's house in Lochgilphead, Argyll. He added: "There is something about those big, wide, rugged, sweeping landscapes that can take windmills without destroying what it is you love about that landscape. "On the other hand, **I can completely understand that there are some downland landscapes where some great big windmill development fundamentally changes the nature of it**." In Britain the vast majority of wind turbines and other renewables are owned by large energy companies, whereas in Germany most are owned by individuals and communities. Turner thinks this may be part of the reason for local opposition to windfarms, despite the public at a national level strongly favouring them over alternatives. "I think the Germans have been more effective at creating a sense of community ownership of these assets that changes the dynamics of people's attitudes towards it," said Turner. "Rather than looking at it and saying 'that big company dumped it here to make profit', they look at it and say 'that's ours and I get some profit from it' and as a result it turns out aesthetic perceptions are deeply subjective and you say 'I rather like it' rather than 'I rather dislike it.'" He added: "I think there's more opportunity for the individual wind turbine, where it is sited near a village, but you devise it so the village, the community, gets some economic benefit from it." Turner expects that three-quarters of the UK's wind turbines will end up being built offshore. "But it will come at a higher cost," he warned. He said fact-based honesty was also an essential part of the debate over cost. "If there is a cost of £100-150 per annum on the average bill [to build a green energy system], we need to tell people that, but also reassure them that it is £150 not £1,000 as some of the more crazy bits of the anti-climate change press would like to suggest."

**UK residents concerned about wind turbine ugliness**

**Wall Street Journal**, Aug 22 **2008**, “Texas Breeze: Landowners Call Wind Turbines Ugly; Court Says Too Bad” Wall Street Journal. http://blogs.wsj.com/environmentalcapital/2008/08/22/texas-breeze-landowners-call-wind-turbines-ugly-court-says-too-bad/ (added by JA)

Among all the other hurdles facing renewable energy, from economics to technology, will the real bogeyman be aesthetics? **Clean-energy revolution or eyesore?** For now, wind power’s triumphant march in the U.S. can count on another legal smackdown of “NIMBYism,” after a Texas appeals court yesterday dismissed a suit by landowners upset with a big wind farm built by FPL Energy. **Landowners decried the turbines’ noise and their spoiled sunsets**—which the court agreed was a pity—but the appeals court couldn’t find grounds to rule against the power company. **Since the early days of wind power, turbine noise and “visual pollution” have been pitfalls to its growth**, from Europe to Hyannis Port. **Plenty of people think the machines are loud and ugly.** In West Texas, which by itself is the fifth-largest wind-power market in the world, the battle is sharpened because of the economic benefits wind power brings—to some. (CBS did an interesting segment on wind power in West Texas, here.) I’ve walked under and around wind turbines for years, and never noticed anything other than a rhythmic whoosh, but then I’ve never lived near one, either. The American Wind Energy Association says a turbine 1,000 feet away is about as loud as a refrigerator. Either way, the industry never stops tweaking—next year’s “Wind Turbine Noise” conference takes place in Denmark. But the bigger question, as America struggles to rejig its whole energy mix away from a few big, centralized power stations to a lot more solar plantations and wind farms, is how people make the adjustment. Big solar power installations in the desert are already sparking environmental backlash. **Wind power has its own hurdles**, from figuring out how to snake transmission lines across private property to actually sticking them on somebody’s farm. As James Surowiecki noted recently, the “tragedy of the private” can sometimes do as much harm as the tragedy of the commons. Congress is meant to reconvene next month for yet another attempt at renewing clean-energy tax credits. **But does it have any recipe to make clean energy more appealing to the folks who hate it?**

**Private investors concerned about turbine aesthetics**

Mandy, **Adwell**, Apr 30 **2012**, “Donald Trump Demands Scotland Ditch ‘Ugly, Dangerous’ Wind Turbines” The 9 Billion (environmental blog). http://www.the9billion.com/2012/04/30/donald-trump-demands-scotland-ditch-wind-turbines/ (added by JA)

It seems lately that Donald Trump is getting really good at making a fool out of himself by simply being **Donald Trump**. Last week, the New York real estate tycoon **sauntered into Scotland’s parliament to demand the country put an end to plans to build an offshore wind farm he worries will be ugly, noisy, and dangerous for wildlife**. Oh, and will ruin the view at his new $1.2 billion golf resort set to open in July. Trump totally didn’t barge in being condescending or anything, either. “Scotland, **if you pursue this policy of these monstrous turbines, Scotland will go broke,**” he said. “**They are ugly, they are noisy and they are dangerous. If Scotland does this, Scotland will be in serious trouble and will lose tourism to places like Ireland**, and they are laughing at us.” Trump claims he was reassured by Scottish leader Alex Salmond there would be no wind farms when he spent $7.2 million on the land for his new resort. “I was lured into buying the site, after I had spent my money they came and announced the plan. At the time I bought the land I felt confident the wind farm was not going to happen.” The funny part of all this is that Trump claims to know so much about the environment and the “negative” effects of wind farms, yet the golf course and resort he is opening was built on sand dunes despite protests from locals and environmentalists. The dunes were bulldozed in 2009, destroying the home of rare wading birds. But forget birds, **wind farms are dangerous and ugly!** He cares about the world, really he does. While Trump claims he is an “expert on tourism” and knows for a fact the wind farms will destroy it, research performed by Scotland’s tourism agency showed 83% of UK visitors would not be turned off by the wind turbines. It sounds like it’s time for Donald Trump to shut his mouth (and wallet) and open his mind.

**Wind turbines kill 70 golden eagles every year**

**The Blaze**, Mar 10 **2012**, “WIND TURBINES KILL 70 GOLDEN EAGLES EACH YEAR AT CALIFORNIA’S ALTAMONT PASS” The Blaze. <http://www.theblaze.com/stories/wind-energy-under-attack-for-thousands-of-wildlife-deaths/> (added by JA)

Continuing to survive primarily on federal handouts and subsidies, the wind energy movement has recently come under fire. While it is typically seen as a “clean” and “eco-friendly” alternative to fossil fuels, as the bird carcasses accumulate, the movement is starting to see closer scrutiny. According to Robert Bryce of the Wall Street Journal: **Over the past two decades, the federal government has prosecuted hundreds of cases against oil and gas producers and electricity producers for violating** some of America’s oldest wildlife-protection laws: **the Migratory Bird Treaty Act and Eagle Protection Act.** But **the Obama administration**—like the Bush administration before it—**has never prosecuted the wind industry despite myriad examples of widespread**, unpermitted **bird kills by turbines.** A violation of either law can result in a fine of up to $250,000 and imprisonment for two years… Last June, the Los Angeles Times reported that about **70 golden eagles are being killed per year by the wind turbines** at Altamont Pass, about **20 miles east of Oakland**, Calif. **A 2008 study** funded by the Alameda County Community Development Agency **estimated that about 2,400 raptors**, including burrowing owls, American kestrels, and red-tailed hawks—**as well as about 7,500 other birds**, nearly all of which are protected under the Migratory Bird Treaty Act—**are being killed every year by the turbines** at Altamont.…bats are getting whacked, too. The **Pennsylvania Game Commission estimates that wind turbines killed more than 10,000 bats in the state in 2010.** USA Today reports that, on the other hand: **ExxonMobil pleaded guilty in federal court…to the deaths of 85 birds [not eagles] at its operations in several states**, according to the Department of Justice. The birds were protected by the Migratory Bird Treaty Act, and Exxon agreed to pay $600,000 in fines and fees. In July, the PacifiCorp utility of Oregon had to pay $10.5 million in fines, restitution and improvements to their equipment after 232 eagles were killed by running into power lines in Wyoming, according to the U.S. Fish and Wildlife Service. **That is far fewer than the estimated 10,000 birds (nearly all protected by the migratory bird law) that are being killed every year at Altamont**… Despite the deleterious effect that the windmills are having on wildlife, the wind industry is pushing to keep both its carte blanche and generous subsidies. According to Eric Glitzenstein, a Washington D.C.-based lawyer who wrote a petition to the U.S. Fish and Wildlife Service, “**It‘s absolutely clear that there’s been a mandate** from the top” **not to prosecute the wind industry for violating wildlife laws.** “To me,” he said, “that’s appalling public policy.” In 2011, wind energy was the second-largest recipient of the government’s $24 billion in energy subsidies. According CNN Money, proponents say that, “while renewable technologies may be more expensive now, federal support provides a crucial market and…given time and economies of scale, renewable technologies will eventually be able to compete with fossil fuel.”

**North Carolina considers ban of turbines on grounds of appearance**

Brian, **Merchant**, Jul 22 **2009**, “Could North Carolina Ban Wind Turbines for Being Ugly?” Treehugger. <http://www.treehugger.com/corporate-responsibility/could-north-carolina-ban-wind-turbines-for-being-ugly.html> (added by JA)

It's well known that **many object to the looks of wind farms and solar plants in nature.** But now, North Carolina state lawmakers are actually moving to make it against the law to install large wind turbines in the mountains--on the grounds that they're ugly. It would be the first such ban on wind turbines in the US, and it has clean energy advocates up in arms. Could this be the beginning of a script for a green version of Footloose? You know, about a state where renewable energy--and dancing, for good measure--is illegal? Too bad Kevin Bacon probably won't be swinging by to teach North Carolina legislators how good clean energy really is for everybody. Seriously, though. It's an interesting dilemma--one that's been raised many times before--that's coming to a head here. **Do clean energy installations disrupt or degrade the natural beauty they're ultimately designed to preserve?** And is there a point where the likes of wind turbines become inappropriate to build? And if so, what is that point? Them's a lot of questions, and as this renewable energy revolution of sorts sweeps the US, we're going to see them asked a lot more often. So, back to the case in point: (from Green Inc**.) A furious battle over the aesthetics of wind energy has erupted in North Carolina**, where lawmakers are weighing a bill that would bar giant turbines from the state's scenic western ridgelines. **The big machines would "destroy our crown jewel,"** said Martin Nesbitt, a state senator who supports the ban, according to a report in The Winston-Salem Journal. The bill in question would ban wind turbines that stand over 100 ft high from being placed on mountaintops--not exactly an outrageous motion. Residential scale wind turbines would still be fair game (those between 50-100 ft). And yet, upon closer inspection, it's revealed that the ban would make roughly two-thirds of North Carolina's wind power potential off limits: "I know of no other state that has so uniformly banned wind," he said. State lawmakers, Mr. Blevins noted, voted not long ago to enact a renewable portfolio standard requiring North Carolina to get 12.5 percent of its electricity from renewable energy and efficiency measures by 2021. "Now they're stripping away some of the most cost-effective options for their utilities" to achieve those targets, he said. And there's something else to consider as well: some people like the way those turbines look. "**The main objection seems to be appearance,** and the reality is that many people find wind turbines elegant and a symbol of a clean energy future, and that wind turbines often become a tourist attraction," [Christine Real de Azua, a spokeswoman for the American Wind Energy Association- said in an e-mail. So what do you think? Are wind turbines a beautiful instrument, and imperative for a clean energy economy--and thus worth installing anywhere where there's potential to harness wind power? Or **do the towering turbines mar the landscapes that their very presence is trying to save?** Heavy, I know. But **they're questions worth asking.**

**Canadian MPs concerned about health risks of wind power**

**Bullet News Huron**, Jul 22 **2012**, “MP Lobb calls for halt to wind farm development until health study complete” Huron News Now. <http://huron.bulletnewscanada.ca/2012/07/22/mp-lobb-calls-for-halt-to-wind-farm-development-until-health-study-complete/> (added by JA)

HURON COUNTY —Huron-Bruce MP Ben Lobb has added his voice to MPP Huron Bruce Lisa Thompson call for a halt to wind energy development until a recently announced health study by federal Health Canada has been completed. Lobb said **the announcement of a federal health study will not only help his constituents, but people across Canada who have been fighting to have their voices heard.** “I am pleased that Health Canada has made the decision to study the health effects reported by those living near wind turbines,” said Lobb. “The people of Huron-Bruce have been asking for an independent study for years. **There are real health related concerns from those living in close proximity to wind turbines** and this study will shed more light on this emerging issue.”

“This is what we should be doing—working as a team for the best interests of our constituents,” Thompson said. “We are elected to stand up for our constituents and I am pleased to stand next to my federal counterpart, MP Lobb to fight for our constituents. It’s a shame that the McGuinty Liberals won’t stand up and do the right thing for the residents of Ontario.” In March, **a private members motion** introduced by Thompson **calling for a moratorium on wind energy development until third-party** social, physical and economic **health, and environmental studies have been completed was defeated** in the Ontario Legislature. She said the Liberal government and the NDP “teamed up” to defeat her motion. The Canadian Wind Energy Association says the calls for a moratorium are not warranted because scientific and medical evidence to date clearly concludes that sound from wind turbines does not adversely impact human health. “The vast majority of Canadians choose wind energy as a top source for clean and safe new electricity. When discussing an issue as important as our energy future we must look at the facts. It is clear that the balance of research and experience to date – including hundreds of thousands of people living and working near wind turbines in 89 countries around the world – concludes that wind energy does not adversely impact human health,” said Chris Forrest, who is CanWEA’s vice-president of communications. Health Canada has extended the comment period to Sept. 7. **The study is being designed with support from experts in noise, health assessment, clinical medicine and epidemiology.** The proposed research design and methodology is posted on Health Canada’s website. Feedback will be reviewed by the design committee, compiled and published on the website, along with the design committee’s responses. The study will focus on an initially targeted sample size of 2,000 dwellings selected from as many as a dozen wind farms in Canada. In addition to taking physical measurements from participants, such as blood pressure, investigators will conduct face-to-face interviews and take noise measurements inside and outside of some homes to validate sound modelling. The federal health agency, in collaboration with Statistics Canada, expects to deliver findings of the study in 2014.

**Wind power expensive and inefficient, no jobs boost**

**Heritage** Foundation, Sep 14 **2009**, “Wind Power: An Expensive and Inefficient Way to Reduce CO2” The Foundry. http://blog.heritage.org/2009/09/14/wind-power-an-expensive-and-inefficient-way-to-reduce-co2/ (added by JA)

In a speech in May, President Obama pushed for our nation to transition to renewable energy and pointed to Denmark as an example of proof it can be done: Unfortunately. **America produces less than 3 percent of our electricity through renewable sources of energy like wind** and solar — less than 3 percent. In contrast, Denmark produces 20 percent of their electricity through wind.” But according to a new study from the Danish Centre for Political Studies (CEPOS), commissioned by the Institute for Energy Research, the road to increased wind power is less traveled for a reason. The study refutes the claim that Denmark generates 20 percent of its power from wind stating that its **high intermittency not only leads to new challenges to balance the supply and demand of electricity, but also provides less electricity consumption than assumed.** The new study says, “**wind power has** recently (2006) **met as little as 5% of Denmark’s annual electricity consumption** with an average over the last five years of 9.7%.” Furthermore, **the wind energy Denmark exports to its northern neighbors**, Sweden and Norway, **does little to reduce carbon dioxide emissions because the energy it replaces is carbon neutral.** The study goes on to say that **the only reason wind power exists** in Denmark **is “through substantial subsidies supporting the wind turbine owners.** Exactly how the subsidies have been shared between land, wind turbine owners, labor, capital and its shareholders is opaque, but it is fair to assess that **no Danish wind industry to speak of would exist if it had to compete on market terms.**” But there’s a cost involved. **When government spends more money, it necessarily diverts labor, capital and materials from the private sector.** Just like promises are made in the United States about green jobs creation, the heavily subsidized Danish program created 28,400 jobs. But “this does not, however, constitute the net employment effect of the wind mill subsidy. **In the long run, creating additional employment in one sector through subsidies will detract labor from other sectors, resulting in no increase in net employment but only in a shift from the non-subsidized sectors to the subsidized sector**.” And because these resources are being diverted away from more productive uses (in terms of value added, the energy technology underperforms compared to industrial average), “Danish GDP is approximately $270 million lower than it would have been if the wind sector work force was employed elsewhere.” The entire study is available here**. This is very similar to what we’ve seen in Spain.** Research directed by economist Gabriel Calzada, at King Juan Carlos University, analyzed the subsidized expenditure necessary to create the green jobs in Spain. It compared those funds to the private expenditure needed to support the average conventional job. Supported by other data as well, **they conclude that each subsidized green job in Spain eliminated over two conventional jobs. And it will be very similar to what we see in the United States if we move forward with cap and** **trade and a renewable electricity standard that mandates a certain percentage of electricity come from wind** and solar. **The intent of a subsidy is to increase the production of a good or service if it is underprovided by the market for some reason. This is not the case with energy. The market, not the government-funded industries, can provide the most affordable energy for consumers. Mandates, subsidies and other preferential treatment simply benefit few at the expense of many. Denmark and Spain are learning the hard way.**

**CO2-cutting ability of wind turbines is questionable**

Paul, **Willis**, June 4 **2012**, “Wind power's CO2-cutting impact disputed” TG Daily. <http://www.tgdaily.com/sustainability-features/63802-wind-powers-co2-cutting-impact-disputed> (added by JA)

**Inconsistency of supply is one of the biggest drawbacks of renewables such as wind and solar.** Put simply: **the wind doesn't blow all day, and the sun doesn't shine at night.** Now scientists are saying that the sporadic supply of renewables coupled with an inefficient power grid means that carbon emissions, Researchers at the U.S. Department of Energy's (DOE) Argonne National Laboratory used computer models to try to determine how adding wind turbines to the grid system might impact overall emissions in Illinois. According to their report, **adjusting for wind power adds inefficiencies that cancel out some of the CO2 reduction** – a conclusion that the American Wind Energy Association (AWEA) disputed. **The problem**, according to the Argonne research, **is not the clean energy itself but inefficiencies endemic to fossil fuel-burning power plants and how these inefficiencies are impacted by sporadic supply.** **Because the wind doesn't blow all the time, operators have to turn on these older plants to keep up with demand**. Lauren Valentino, who authored the report, said in a statement: **"Turning these large plants on and off is inefficient. A certain percentage of the energy goes into just heating up the boilers again."** According to Valentino the **fossil fuel-burning power plants are also less efficient when not operating at full capacity.** Illinois in particular gets high winds at night, the report's co-author Audun Botterud said, when demand is low. To accommodate these sudden bursts of wind, large, inflexible power plants had to be turned off and then on again, wasting power in the process. The solution Botterud proposes to the problem of sporadic supply is one that readers of this site will be familiar with. Botterud said a way to store large-scale amounts of energy created from wind needs to be found. This problem is being tackled elsewhere in the Argonne lab, Botterud said, but in the meantime smart grids can help by leveling out demand.However, the AWEA, the U.S. wind industry's big trade group, said the Argonne study was "a theoretical exercise" that "had "little to no bearing on how the actual utility system works."Among other flaws it alleged, the AWEA said the Argonne modeling treated Illinois as a grid unto itself, but Illinois power plants actually feed into two massive interstate electric utility systems covering parts of 23 states and Manitoba. This, the AWEA said, led the study to assume "that at high levels of wind energy output in Illinois, grid operators would be forced to reduce the output of the state's very large nuclear fleet, thereby resulting in no emissions savings." In reality, however, the nukes "would likely never see their power output reduced, because that wind and nuclear power would be shipped out of state on the large power lines," the organization said. The study was a collaboration between researchers at Argonne and summer interns Valentino and Viviana Valenzuela, from the University of Illinois at Urbana-Champaign and Georgia Institute of Technology respectively. It was published in Environmental Science & Technology. Other Argonne co-authors are Zhi Zhou and Guenter Conzelmann. Of course all this being said, the biggest block on reducing carbon emissions in Illinois, like elsewhere, is a lack of investment in renewables. Like many states, Illinois has pledged to get 25 percent of its energy from clean sources by 2025. Yet it currently lags a long way behind its potential. According to 2010 figures, the state got 2.2 percent of its energy from wind.A report issued by a trio of wind energy associations suggests that if the state of Illinois were to develop all 3,200 megawatts of currently permitted wind projects, it could potentially generate as many as 20,000 jobs and close to $1 billion in wages. The report from the Illinois Wind Energy Association (IWEA) said the state currently has about 2000 megawatts of installed wind energy capacity, but is in a position to generate much more. In real terms, are not completely eliminated by wind power.

**Wind power is impractical**

Bjørn, **Lomborg**, Mar 21 **2012**, “Wind Falls” Slate. http://www.slate.com/articles/technology/project\_syndicate/2012/03/lomborg\_wind\_power\_is\_cheap\_only\_compared\_with\_other\_alternative\_energies\_.html (added by JA)

Efforts to stem global warming have nurtured a strong urge worldwide to deploy renewable energy. As a result, the use of wind turbines has increased tenfold over the past decade, with wind power often touted as the most cost-effective green opportunity. According to Connie Hedegaard, the European Union’s commissioner for climate action, “People should believe that [wind power] is very, very cheap.” In fact, this is a highly problematic claim. **While wind energy is cheaper than other**, more ineffective **renewables, such as solar, tidal, and ethanol, it is nowhere near competitive**. If it were, we wouldn’t have to keep spending significant sums to subsidize it. **In the United Kingdom**, for example, **wind remains significantly more costly than other energy sources.** Using the U.K. Electricity Generation Costs 2010 update and measuring in cost per produced kilowatt-hour, **wind is still 20 percent to 200 percent more expensive than the cheapest fossil-fuel options.** And **even this is a significant underestimate.** As the U.K. and other developed countries have rushed to build more wind turbines, they have naturally started with the windiest places, leaving poorer sites for later. At the same time, people increasingly protest against the wind farms in their backyards. **Local opposition has tripled over the past three years, and local approval rates for new wind farms have sunk to an all-time low.** Most people believe that a few wind turbines can be attractive, but it is an entirely different matter when turbines are scattered across the countryside, or when massive, industrial wind farms extend for miles. **Complaints have also increased about enormous new wind turbines’ low-frequency noise.** Given souring public sentiment, most of the future increase in wind turbines is expected to take place offshore, where there is less opposition but where costs are much higher. With its “20-20-20” policy, the EU has promised that, by 2020, it will cut its carbon emissions by 20 percent below 1990 levels, and increase its reliance on renewables by 20 percent. For the United Kingdom, this requires a dramatic increase in wind power, especially offshore. **This will be surprisingly costly.** The U.K. Carbon Trust estimates that the cost of expanding wind turbines to 40 gigawatts, in order to provide 31 percent of electricity by 2020, could run as high as **$120 billion.** And **the benefits, in terms of tackling global warming, would be measly: a reduction of just 86 megatons of CO2 per year for two decades. In terms of averted rise in temperature, this would be completely insignificant. Using a standard climate model, by 2100, the United Kingdom’s huge outlay will have postponed global warming by just more than 10 days.** Moreover, **this estimate is undoubtedly too optimistic. Wind frequently does not blow when we need it.** For example, as the BBC reported, the cold weather on Dec. 21, 2010, was typical of a prolonged cold front, with high-pressure areas and little wind. Whereas wind power, on average, supplies 5 percent of the UK’s electricity, its share fell to just 0.04 percent that day. With demand understandably peaking, other sources, such as coal and gas, had to fill the gap. Making up for a 5 percent shortfall in supply is manageable, but the situation will change dramatically as the United Kingdom increases its reliance on wind power to reach the 31 percent target by 2020. **Wind power becomes much more expensive when we factor in the large supplies of power that must be created for backup whenever the wind dies down. The cheapest backup power by far is provided by open-cycle gas plants, which imply more CO2 emissions. Thus, wind power will ultimately be both costlier and reduce emissions less than officially estimated.** (This is also why simple calculations based on costs per kilowatt-hour are often grossly misleading, helping to make wind and other intermittent renewables appear to be cheaper than they are.) This has been shown in recent reports by KPMG/Mercados and Civitas, an independent think tank. A new report by University of Edinburgh professor Gordon Hughes for the Global Warming Policy Foundation estimates that **36 GW of new wind power would cost $190 billion for just 23 megatons of CO2 reduction per year. In other words, temperature rises would be postponed by a mere 66 hours by the end of the century.** Contrary to what many think, **the cost of both onshore and offshore wind power has not been coming down. On the contrary, it has been going up over the past decade.** The U.N. Intergovernmental Panel on Climate Change acknowledged this in its most recent renewable-energy report. Likewise, the U.K. Energy Research Center laments that wind-power costs have “risen significantly since the mid-2000’s.” Like the EU, the United Kingdom has become enamored with the idea of reducing CO2 through wind technology. But most academic models show that the cheapest way to reduce CO2 by 20 percent in 2020 would be to switch from coal to cleaner natural gas. The average of the major energy models indicates that, downscaled for the United Kingdom, achieving the 20 percent target wousld imply a total cost of roughly $150 billion over the coming decade, and $28 billion every year after that. Of course, these figures include reductions in areas other than electricity, as well as higher energy prices’ total cost to the economy.Nonetheless, the lesson is clear: **If the goal is not just to cut CO2 emissions, but also to use renewables to do it, the models show that the cost balloons to $297 billion for this decade and $57 billion every year after 2020. In effect, insisting on wind power means using energy that is far from competitive, does not help to avert climate change, and costs an extra $145 billion for the U.K. alone. For any country, this seems like a very poor choice.**

**Wind turbine efficiency exaggerated**

**BBC**, April 6 **2011**, “Wind farm efficiency queried by John Muir Trust study” BBC. http://www.bbc.co.uk/news/uk-scotland-12985410 (added by JA)

**Wind farms are much less efficient than claimed, producing below 10% of capacity for more than a third of the time**, according to a new report. **The analysis also suggested output was low during the times of highest demand.** The report, supported by conservation charity the John Muir Trust, concluded turbines "cannot be relied upon" to produce significant levels of power generation. However, industry representatives said they had "no confidence" in the data. The research, carried out by Stuart Young Consulting, analysed electricity generated from UK wind farms between November 2008 to December 2010. Statements made by the wind industry and government agencies commonly assert that wind turbines will generate on average 30% of their rated capacity over a year, it said. But the **research found wind generation was below 20% of capacity more than half the time and below 10% of capacity over one third of the time. It also challenged industry claims that periods of widespread low wind were "infrequent".** The average frequency and duration of a "low wind event" was once every 6.38 days for 4.93 hours, it suggested. The report noted: "**Very low wind events** are not confined to periods of high pressure in winter. "They **can occur at any time of the year.**" During each of the four highest peak demands of 2010, wind output reached just 4.72%, 5.51%, 2.59% and 2.51% of capacity, according to the analysis. It concluded wind behaves in a "quite different manner" from that suggested by average output figures or wind speed records. “**We have yet to hear the trust bring forward a viable alternative to lower emissions**” The report said: "It is clear from this analysis that wind cannot be relied upon to provide any significant level of generation at any defined time in the future. "**There is an urgent need to re-evaluate the implications of reliance on wind for any significant proportion of our energy requirement.**" However, Jenny Hogan, director of policy for Scottish Renewables, said no form of electricity worked at 100% capacity, 100% of the time. She said: "Yet again the John Muir Trust has commissioned an anti-wind farm campaigner to produce a report about UK onshore wind energy output. "It could be argued the trust is acting irresponsibly given their expertise lies in protecting our wild lands and yet they seem to be going to great lengths to undermine renewable energy which is widely recognised as one of the biggest solutions to tackling climate change - the single biggest threat to our natural heritage. "**We have yet to hear** the trust bring forward **a viable alternative to lower emissions and meet our growing demand for safe, secure energy.**"

**Wind turbines increase surface temperature**

**SmartPlanet**, April 29 **2012**, “Do wind farms have a negative effect on the environment?” SmartPlanet. http://www.smartplanet.com/blog/smart-takes/do-wind-farms-have-a-negative-effect-on-the-environment/26086 (added by JA)

Wind farms have been touted as the technology of the future and a way to create sustainable energy. But **new research shows that wind farms may have a negative effect on area surface temperature.** Researchers at SUNY New York looked at nearly 10 years of satellite data of areas around wind farms in Texas. Researchers chose Texas because it has four of the world’s largest wind farms. The results showed night-time surface temperatures around areas with high volumes of wind turbines were 0.72 degrees C (1.3 degrees F) higher than areas where no wind farms existed. What caused the increase in surface temperature? **During the evening, the earth cools and brings the air temperature down. But near wind turbines, turbulence from the blades keeps the air warmer.** Discovery News reports: “Given the present installed capacity and the projected growth in installation of wind farms across the world, I feel that **wind farms**, if spatially large enough, **might have noticeable impacts on local to regional meteorology**,” Liming Zhou, associate professor at the State University of New York, Albany and author of the paper published April 29 in Nature Climate Change said in an e-mail to Discovery News.” According to the research, the **warming surface temperate increased** from 2003 to 2011, **which is consistent with an increase in the number of wind turbines** in the Texas area used for this study. Because **this warming could impact crop yields of local farmers or** have an even larger effect on the **increase** in **global temperatures**, the study authors say more research is needed. “We need to better understand the system with observations and better describe and model the complex processes involved to predict how wind farms may affect future weather and climate,” Zhou said in a statement.

**British turbines to be taller than Isle of Wight**

**BBC**, July 24 **2012**, “Offshore wind farm 'will look taller than Isle of Wight'” BBC. http://www.bbc.co.uk/news/uk-england-1896505326086 (added by JA)

A **wind farm off England's south coast could appear up to three times as high as the Isle of Wight**, a report claims. **Navitus Bay will have** up to **240 turbines** just over eight miles off Peveril Point at Swanage, Dorset, and The Needles, in the Isle of Wight. The research into their visual impact at different points on the coast was commissioned by BBC Radio Solent and conducted by Bournemouth University. Eneco, which will install the turbines, has yet to decide how big they will be. **The tallest turbines** that Eneco is **allowed** to use off the Hampshire, Dorset and Isle of Wight coast **are** 210m high **(689ft).** The report found that if someone viewed the tallest turbines from Swanage, **they would appear three times as high as the highest point** on the western tip **of the Isle of Wight**, Tennyson Down, which is just under 150m high. This is because the turbines would be closer to shore. In Bournemouth the turbines would appear twice as high as Tennyson Down and in Barton-on-Sea they would appear slightly taller than the western end of the island. The university study also said **the** 76-sq-mile (200-sq-km) **wind farm would cover an area the size of Glasgow.** Nigel Garland, senior lecturer in sustainable technology at Bournemouth University who worked on the research, said the calculations were based on a worst-case scenario - if the biggest possible turbines were used. He said: "There are trade-offs in all these situations. If we are willing to continue using things like Xbox 360... with a great big plasma TV, that's an awful lot of electricity. "If we want these things, **we've got to generate the electricity somewhere.**" The wind farm's licence was won by Eneco Wind UK. It will be built between 2016 and 2019 subject to planning permission. Eneco Wind UK has said it will have a potential yield of about 900MW to power about 600,000 homes a year. **An Eneco spokesman said**: "We do understand **there are some concerns around the potential visual impact of the project** and are working to reassure by providing further detail through accurate scale visualisations, which have been developed by independent experts. "We will continue to consult with local communities and individuals throughout this process."

**Wind farms lower property values**

**LJWorld**, July 22 **2012**, “Wind Farms Lower Property Values” LJWorld. http://www2.ljworld.com/weblogs/the-week-that-was/2012/jul/22/wind-farms-lower-property-values/ (added by JA)

To those who tout the value of wind farms because they are a renewable resource, I would say that **things are not what they may seem to be at first glance. [Turbines] have to be in a place where the wind blows at a steady rate for a certain amount of time.** Unfortunately the only places were the wind does blow long and hard are places where no one lives and no one wants to. You might find a way, and an expensive way, to funnel the winds a thousand miles away to power a factory but I have my doubts. Here is what is really going to bake your noodle. In England they now have proof that **wind farms lower the value of houses built within a few miles of them. Those who have the misfortune to live closer can just fuhgettaboutit.** **Englands Valuation Office Agency** (VOA) **has officially lowered property values on houses close to wind farms. One house that is 650 yards from the Fullabrook wind farm** near Braunton, Devon, **went from £400,000 to £300,000.** The owners, who have no hope of selling their house said there was a persistent whooshing noise from the turbines and a flickering shadow as the sun goes behind the blades. In another case Jane Davis got her property taxes lowered because her £170,000 house that is 1,000 yards from a wind farm is now basically worthless. This was far from being the first official ruling that the wind farms which have been accused of spoiling aesthetics by spoiling the view and producing a deafening roar are also lowering house prices. Mrs. Davis said, "**For people living near wind farms, both now and in the future, it will be a disaster**. There are many, many people living in Middle England who have worked hard all their lives and yet will see the values of their homes suddenly diminish. This isn't about Nimbyism, but the rights of ordinary people to live a normal life." Mrs Davis and her family were forced to move into a rented house because the noise of the blades was so severe. In case you didn't know: Over 20 countries in Europe now use the euro, Britain, along with other countries such as Denmark, Sweden, Poland, Norway, Iceland, Switzerland, Hungary, Romania and Russia, have retained their own currencies. What about you? Do you live near a wind farm? Do you know someone who does? Has property values being adversely affected? Do they block your view? Cause way too much noise for you to deal with? Have you or anyone you know moved because of a wind farm?

**Noise a common complaint for city residents**

**Observer Dispatch**, July 23 **2012**, “Fairfield residents say wind turbines too noisy” UTICAOD.com. http://www.uticaod.com/news/x1645316926/Fairfield-residents-say-wind-turbines-too-noisy (added by JA)

FAIRFIELD — It’s not birds chirping. It’s not the wind rustling through the leaves. Fairfield **residents** June and Jimmy Salamone **compared the noise of the** 455-foot **wind turbines surrounding their home to jet engines** or nails on a chalkboard, grating their nerves. “**It wakes you up. It makes you feel like your whole body is pulsing to the whoosh of the turbine**,” said June Salamone, who lives on Davis Road. In hopes of correcting the issue, Iberdrola Renewables — which owns the Hardscrabble Wind Farm — installed a noise-reduction system at four turbines in Fairfield shortly after a June town board meeting, said Bernard Melewski, an environmental lawyer based out of Altamont representing the towns of Fairfield and Norway. Both towns recently announced approval of the systems and require Iberdrola to report its findings in September. Since the Hardscrabble Wind Farm was installed in the towns in 2010, two post-construction noise studies requested by the towns have been conducted by Iberdrola. They found there were times when **certain turbines exceeded the towns’ permit limits of 50 decibels** — the sound of a moderate rainfall, according to American Speech-Language-Hearing Association. Melewski said most of the spikes were in the 50-to-60 decibel range. Sixty decibels is equivalent to the sound of a dishwasher or clothes dryer. During the second study, done over the course of 80 days, Melewski said samples were taken every 10 minutes, and there were a small percentage of spikes that added up to hours over that period. “And **that’s too much**,” he said. The majority of the time, however, Melewski said the turbines were operating within the limits. Iberdrola Communications Manager Paul Copleman said in an email that this is the first time these noise-reductions systems are being installed in the United States. He said the company is confident the system will address residents’ concerns. Melewski said the company has reported that the testing has been successful so far. “What the town wants is for us to be satisfied that the company is operating within the limits consistently,” he said. “Reducing the noise generated by the turbines will be good for everyone.” Carol Riesel has been living on Davis Road for about 15 years and said her home is in the center of about 10 turbines, yet none of them are on her property. “Every window I look out of has a turbine in it,” she said. “**They just whoosh and whoosh and grind and grind.** It’s not why I wanted to live in Fairfield.”

#### Locals reject wind power

Stuart, Farrimond. Former doctor and science lecturer, May 17 2011, “Are Wind Turbines Ugly? New Research Gives Answers…” Doctor Stu’s Blog. http://realdoctorstu.com/2011/05/17/are-wind-turbines-ugly-new-research-gives-answers/ (added by JA)

Wind Turbines have come to symbolise hope. The image of a slowly rotating wind turbine on a blue sky represents a rose-tinted future where energy is abundant and free; global warming has been conquered (and bunnies leap gaily around fields). But **who would really want to live near a wind farm?** We long for a future without rising sea levels and greenhouse gases, but opponents to **wind power say this is not the solution.** The most hotly debated wind power issue is ‘**Why are they so ugly**?” No-one, it seems, **would be happy having huge grey windmills spoiling their landscape.** What is the truth? Are wind turbines really that much of an eyesore? Recently published research gives us some clues and reveals that many of our concerns may be unfounded… Would a wind farm ruin your landscape? The Czech Republic is a nation with outstanding natural beauty. Most famous for it’s historical towns and pilsner beer, this Eastern European nation is heavily reliant upon the tourist industry. Also renowned for stunning mountainous scenery and national parks, it is now home to increasing numbers of wind turbines. Czech researchers set out to answer the question “Just how ugly are wind farms?”. Choosing two comparable countryside locations, they surveyed tourists and local residents. The one difference between the regions was that one had a large, visible wind farm and the other did not… Are Wind Farms a Turn-Off to Tourists? The survey results revealed that, despite local’s concerns, tourists seemingly weren’t put off by wind turbines at all. This findings showed: People on vacation find electricity pylons and mobile phone masts more of an eyesore than wind turbinesNearly all visitors (over 90%) didn’t think wind turbines caused the region to be less attractive or desirable. Wind Farms wouldn’t stop repeat visitors coming again. The majority of tourists (65%) would go to a wind farm if there was a visitor centre! Ah, the wind farm museum… I can see it now: Happy families emerging from the wind farm museum all wearing spinning propeller caps! The Local’s Opinion: “Wind Farms – Not in My Back Yard!” No surprises here: **Local residents were far less accepting of wind turbines.** **Many a local agreed to wind turbines in principle, but they feared how it would effect the area’s image.** It seems we all want a greener, cleaner future – but one that doesn’t inconvenience us, and especially one that doesn’t affect our house price! The researchers gave an upbeat conclusion for wind energy; but they conceded that these results may not apply to other parts of the world. However, the overwhelming finding was that our worries about the ‘ugliness’ of wind power may well be unfounded – and we should all try to base our perceptions of alternative energy on facts. Question Marks Over Wind Power: The wind turbine stands for so much but **serious concerns hang over** whether this iconic invention could ever meet our energy-hungry needs. Opponents speculate that wind energy is inefficient, beset with logistical problems and ultimately unsustainable (see link below for more). **Concerns over the tourist trade are legitimate**, but let’s hope is that these worries don’t stop us seeing the bigger picture…Thanks for reading – your comments and feedback are warmly welcomed!

#### Wind turbines will piss off people around it

Windwatch.org “Study finds wind turbines may be bad for your health” March 21 2010 http://www.wind-watch.org/news/2012/03/22/study-finds-wind-turbines-may-be-bad-for-your-health/

Everything from vertigo to sleep deprivation, migraines, heart disease, stress and tinnitus has been blamed on wind farms. The Oregon Health Authority Office of Environmental Public Health spent more than a year investigating whether living close to wind turbines damages personal health or brings discord into a community. The results appear in a recently released 134-page health impact assessment. Tuesday, the health authority at a hearing at the Umatilla County Justice Center gathered public comment on the report. Another session is scheduled from 6:30-8:30 p.m. Wednesday in Bend. About 25 people turned up in Pendleton to provide feedback. The public health study involved community listening sessions in Pendleton, Arlington and La Grande, collected online questionnaire data and reviewed existing studies to get a picture of health risks of living near wind farms. Jae Douglas, the study’s principal investigator, described wind energy development as “a fast moving train.” “Wind energy has been expanding rapidly for a number of years,” she said. “There’s no reason to think it’s going to stop expanding, especially across the West.” Wind power production in Oregon grew from 25 megawatts in 1999 to 2,104 megawatts in 2010. Some health effects are quantifiable, while others are complex and harder to quantify, the assessment discovered. At certain decibel levels, wind farm noise can disturb sleep and trigger stress. Turbine noise, the report said, “is more noticeable, annoying and disturbing than other community or industrial sounds at the same level of loudness.” That’s likely because turbines produce fluctuating sounds that are generally perceived as more annoying. One man at the session who lives less than a mile from seven turbines said the noise keeps him awake at night, making him jumpy and hyper-vigilant, “like being in combat.” The man, who didn’t want to give his name because of pending litigation, uses white noise to mask the turbines. One European study suggested that serious health effects showed up at 40-55 decibels and increased above 55. The report recommended limiting turbine noise to 36 decibels or lower and restricting the increase in noise to no more than 10 decibels above existing background levels. Land owners could choose to waive the 36 decibels maximum, but couldn’t top 50 decibels. The measures could ward off potential health impacts that include chronic stress, cardiovascular disease, decreased immune function, endocrine disorders, mental illness and a lowered quality of life. The health authority report also considered visual effects such as shadow flicker, caused by rotating turbine blades. Researchers found little evidence of health effects caused by shadow flicker. The assessment also examined whether economic effects and community conflict over wind farms could affect health. Some attending the session agreed that conflict over turbines causes angst. “Wind turbines cause heartburn in a community,” said Robin Severe of Helix. “I don’t begrudge a landowner earning money off his ground, as long as it doesn’t affect his neighbor.” Severe said he lives about 1.8 miles from the closest turbine. They are popping up all around his property. Soon, he said, “we will be completely surrounded.” Ryan Stoner of Blue Mountain Alliance, a group that advocates for keeping the mountain viewshed free of wind turbines, lamented that turbines have become a bone of contention. “Friendly farmers have turned into enemies over wind turbines going up on neighboring properties,” he said. Heppner resident John Kilkenny said wind developers have learned from the public outcry and that setbacks will solve the noise issue. “Developers are so sensitive to the noise issue that I don’t think you are going to see a gray area,” he said. “We’re assuming no one’s learned anything in the last three years. Everyone has learned a lot.” Douglas said the assessment is only a guide to help decision makers. “Wind energy is an emerging and growing field,” she said. “Decision makers are grappling with what they are hearing. This is complex on so many different levels.”

### AT: Oil – No Impact

#### Oil Prices Grossly Inflated Without Actual Need

Aresu Eqbali, Reporter, 11-25-2008, Platts Oilgram Price Report, “Iran says can withstand oil price under $10/b,” LexisNexis

Iran's President Mahmoud Ahmadinejad said November 23 that oil price fluctuations would not affect his country's economy, adding that Iran would be able to cope even if the price falls to under $10/barrel. "We can run our country with an oil price of $5-$8/barrel," Ahmadinejad was quoted as saying by the ISNA student news agency. "Despite some people's opinions, saying if someone gets a cold in the West our nation should get a fever, I announce that this [the decrease in oil prices] will have almost no effect on our economy with the plans we have made," he added. Oil prices have fallen from a record high of $147.27/b on July 11 to under $50/b. OPEC President Chakib Khelil said last month that Iran, which has been particularly vocal in arguing for more cuts in OPEC production to boost the global oil price, needs around $85/b crude to balance its current account next year. Iran's largely government controlled economy relies on oil sales for more than 70% of government revenues, with domestic economists saying OPEC's number two exporter will face budget deficit in its fiscal year with oil prices falling below $70/b. Ahmadinejad, however, said a draft "economic reform plan" to liberate fuel and energy prices, as well as the removal of subsidies on fuel and electricity and distributing this money directly to the people, will protect the economy from oil price fluctuations. "With the reform plan, the relationship between [Iran] and oil price fluctuations will be cut and there will be no problem," the president said. "Some who are sitting in arrogant palaces think the oil price fall will harm us and some said that an oil price fall will cause heavy economic crisis in Iran," Ahmadinejad said. "But I say no. Just the way your financial and banking collapse did not have any impact on our economy, the decrease of oil price will not have an effect either." Ahmadinejad also said the country was well supported by its oil savings, the size of which he has described as "a secret" from the West. "Fortunately, we have enough foreign currency savings and have a strong backup," he said. MPs and economists have repeatedly expressed concern at government withdrawals from the state Oil Stabilization Fund, which is meant to protect the country from oil price fluctuations and for providing loans to the energy and private sectors.

## SQ Solves

### SQ Solves – Wind Now

#### Wind farms are being seriously considered for implementation now

Roger Milne, Political and environment editor, 6-22-2012, Utility Week, “Parliament to probe the economics of wind power,” LexisNexis

MPs have decided to hold a quick-fire inquiry into the economics of wind power. The Commons Energy and Climate Change Committee has asked for short submissions and will hold oral sessions on 10 July. Committee chair Tim Yeo said: "Government policy on wind power should be based on sound economics and engineering, not political pressure from a small vocal minority - whether that be green campaigners or anti-wind protesters. "In this session we want to cut through all the hot air talked about wind power and examine whether the economics really add up. Windfarms are over 40 times less polluting than gas-burning power stations - per unit of energy produced - but there are concerns about the costs to consumers. "We will be asking if the chancellor is right to consider cutting onshore wind power subsidies and how much these subsidies really add to our electricity bills. Does it really make financial sense to generate low-carbon electricity from wind? Or are there cheaper ways to cut carbon emissions from our power stations?" Energy minister Charles Hendry insisted in Parliament last week there would be "full transparency" over the negotiation of nuclear generation contracts. However, there was a caveat. In a written reply, he explained: "There will be full transparency over the terms agreed following the negotiation of nuclear generation contracts. However, as set out in the draft Energy Bill 2012, the Secretary of State may not disclose information that consists of trade secrets or sensitive commercial information, unless the person to whom the information relates consents to the disclosures." Hendry was also asked about the nitty-gritty of setting the contracts for difference (CfD) strike price for new nuclear under the Electricity Market Reform (EMR) arrangements. He told the Commons, again in a written reply: "For nuclear projects, the level of the strike price will be determined through an administrative price-setting process until the conditions are in place to move to competitive forms of price discovery. To begin with, under FID [final investment decisions] enabling, this process will involve negotiation with developers on a project by project basis." Meanwhile, energy and climate change secretary Ed Davey has praised the agreement reached last week on a European Union directive on energy efficiency: "I greatly welcome the agreement reached on the Energy Efficiency Directive and want to congratulate the Danish presidency on their successful handling of a complex and rapidly moving negotiation. "The deal which has now been agreed is good for the UK and for the EU as a whole and maintains the EU's position as a global leader in tackling climate change. It signals a step change in energy efficiency and for the first time sets legally binding energy-saving targets, which at a time of economic challenge will help improve the EU's competitiveness and boost growth. This directive is also testament to how the EU can work together to tackle major challenges and make a difference. "The UK supported the move to ambitious binding energy-saving targets throughout the negotiations and played a crucial role in defining this target so that progress can be clearly and effectively demonstrated. We have also worked hard to ensure that the target provides sufficient incentive for longer-term measures that will continue to deliver into the future." In Parliament, water minister Richard Benyon was quizzed about progress on proposals to withdraw abstraction licences without paying compensation. He told the Commons: "In the immediate future, compensation will still be paid when abstraction licences are modified, except in cases where serious damage is caused to the environment. In the longer term, the Water White Paper set out the UK government's intention not to ­compensate for any losses due to the transition from the current abstraction regime to a new regime. The treatment of compensation within a new regime will be the subject of consultation. "From 15 July 2012, section 27 of the Water Act 2003 provides for the right to compensation to be withdrawn in certain circumstances when abstraction licences are revoked or varied. Defra and the Welsh Government consulted recently on the principles to be used in determining whether the revocation or variation of a licence was required to protect the environment from serious damage." Benyon said the responses were now being analysed. This week, MPs were continuing their scrutiny of the draft Energy Bill and starting to look at the Enterprise and Regulatory Reform Bill. On Wednesday, Richard Ottaway MP was scheduled to introduce his Scrap Metal Dealers Bill, which has the backing of the administration.

## No Solvency – General

### No Solvency – Empirics

#### Wind power is not as promising as it seems

Mark Landler, White House Correspondent, 10-23-2007, NYT, “Sweden Turns to a Promising Power Source, With Flaws,” <http://www.nytimes.com/2007/11/23/business/23wind.html>

Steadying himself on the heaving foredeck of an inspection ship recently, his face flecked by spray, Arne Floderus pronounced it a good day for his new offshore wind farm. A 30-mile-an-hour wind was twirling the fingerlike blades of a turbine 380 feet above his head. Around him, a field of turbines rotated in a synchronized ballet that, when fully connected to an electrical grid, would generate enough power to light 60,000 nearby houses. “We’ve created a new landmark,” said Mr. Floderus, the project manager of the $280 million wind park, one of the world’s largest, which was built by the Swedish power company Vattenfall. The park, in a shallow sound between Sweden and Denmark, testifies to the remarkable rise of wind energy — no longer a quirky alternative favored by environmentalists in Denmark and Germany, but a mainstream power source used in 26 nations, including the United States. Yet Sweden’s gleaming wind park is entering service at a time when wind energy is coming under sharper scrutiny, not just from hostile neighbors, who complain that the towers are a blot on the landscape, but from energy experts who question its reliability as a source of power. For starters, the wind does not blow all the time. When it does, it does not necessarily do so during periods of high demand for electricity. That makes wind a shaky replacement for more dependable, if polluting, energy sources like oil, coal and natural gas. Moreover, to capture the best breezes, wind farms are often built far from where the demand for electricity is highest. The power they generate must then be carried over long distances on high-voltage lines, which in Germany and other countries are strained and prone to breakdowns. In the United States, one of the areas most suited for wind turbines is the central part of the country, stretching from Texas through the northern Great Plains — far from the coastal population centers that need the most electricity. In Denmark, which pioneered wind energy in Europe, construction of wind farms has stagnated in recent years. The Danes export much of their wind-generated electricity to Norway and Sweden because it comes in unpredictable surges that often outstrip demand. In 2003, Ireland put a moratorium on connecting wind farms to its electricity grid because of the strains that power surges were putting on the network; it has since begun connecting them again. In the United States, proposals to build large wind parks in the Atlantic off Long Island and off Cape Cod, Mass., have run into stiff opposition from local residents on aesthetic grounds. As wind energy has matured as an industry, its image has changed — from a clean, even elegant, alternative to fossil fuels to a renewable energy source with advantages and drawbacks, like any other. “The environmental benefits of wind are not as great as its champions claim,” said Euan C. Blauvelt, research director of ABS Energy Research, an independent market research firm in London. “You’ve still got to have backup sources of power, like coal-fired plants.” Mr. Blauvelt publishes an annual report on wind energy in which he discusses its flaws. People in the industry would accuse him of propagating myths, he said. Now, the criticism is more tempered. “One of the big problems with wind is that people tend to get hyped up about it, very emotional,” Mr. Blauvelt said. “The difference is that the arguments are becoming more rational.” None of this is to say that wind power has peaked. On the contrary, Mr. Blauvelt figures the industry is adding capacity at a five-year compound annual growth rate of 26.3 percent. That is faster than hydroelectric power in its early days and twice the recent growth rate of nuclear energy. The United States, which is considered a pioneer in wind, added more generating capacity in 2006 than any year on record. With 11,575 megawatts, the United States is the world’s third largest wind country, after Germany and Spain, and it is adding more capacity than any other. Among new countries with significant wind capacity are Britain, Canada, Italy, Japan and the Netherlands. “What we’re seeing is a second wave of countries, which are starting to invest more heavily,” said Christian Kjaer, the chief executive of the European Wind Energy Association in Brussels.

#### Wind Energy isn’t all what’s it’s cracked up to be

Howtopowertheworld, research site dedicated to finding viable alternative energy resources, 2008, “Disadvantages of wind energy”, Howtopowertheworld, <http://www.howtopowertheworld.com/disadvantages-of-wind-energy.shtml> SP

Intermittent output of wind energy As you might imagine, wind turbines are entirely dependent on the availability of their natural resource: wind. The requirements are actually quite strict. Like Goldilocks, we need the wind speed to be just right: not too slow, and not too fast. If the wind speed is too slow, it is not economical to run the turbine. If the wind speed is too high, the wind turbines must be shut down due to safety concerns. Wind turbines tend to start up after 3-5 metres per second (6.7 - 11.2 mph) and then turn off when the speed goes above about 25 metres per second (56mph). 1 Reproduced from the Danish Wind Industry Association. One of the disadvantages of wind energy: you can see how the power output of a typical 600kW wind turbine varies with wind speed, but it doesn't operate outside pre programmed limits. Not only do wind turbines not operate all of the time, but they can also never extract 100% of the energy stored within the wind which passes through the turbine. Betz' law (a physical law derived from conservation of mass passing through the turbine) states that the wind turbine can only convert up to 16/27 (about 59%) of the energy available in the wind to mechanical energy. These limits govern both the amount of energy produced, and also the consistency of this energy. Most importantly though, a wind turbine cannot generate energy constantly. Not only that, but the output of a wind turbine is not constant. Can energy not be stored? Not on such a large scale. We use an amount of energy, and the supply in the grid is kept approximately constant. When demand increases, power plants are switched on or increase output to keep the supply stable. If demand drops, power plants are eased off. This is impossible with wind power, though. We cannot control the wind and just turn them on. It also means that if there were no other energy supplies, we would not be able to depend on wind turbines to provide that load, no matter how many wind turbines we put up. This probably the most important of the disadvantages of wind energy, and its solution will require some large scale applications. One solution is a fleet of electric cars in a country. While enough of them are plugged in to charge, they can take or give energy to or from the grid to stabilise it. Low energy density of wind energy Wind is diffuse, it is spread out of a large area. To obtain a reasonable amount of energy from a wind farm, the turbines need to cover a large ground area. This problem is not just one of the disadvantages of wind energy, but tends of be a disadvantage of most of the alternative energy sources. Not only that, but turbulence caused by each turbine creates a minimum required distance between turbines, increasing the wind farm size. There have long been arguments that wind turbines affect migratory birds, but more recently it's been discovered that they can make bats' lungs explode! That aside, it's true that we have to consider the impact that many huge towers and blades could have on local wildlife. These problems can be mitigated, but of course this needs extra planning and research, which of course increases cost. Aesthetics This one is down to personal taste, but it should be included here because wind farms have often been banned for exactly this reason, and is often the most obvious of the disadvantages of wind energy. This, unfortunately, is not a scientific or engineering problem. As pretty as we may be able to make wind turbines, it does not alter the fact that they must be large, and a certain shape. That means that the people who object to them now will always object to them for the same reasons. Unfortunately, there may be nothing we can do about this, short of building all wind turbines off-shore. National Security! There was a discovery that wind energy can even affect national security! It seems wind farms cause holes in RADAR coverage as the blades on the turbines confuse the system. Apparently they look like planes. It is so bad that they cause a large RADAR shadow behind them! This can surely be solved, though.

### No Solvency – Tech

#### Parasitic power renders wind power solutions ineffective

Willem Post, Program Manager and Green Energy Consultant, 10-1-2011, The Energy Collective, “Wind Turbines Suck Power Like Vampires,” http://www.calwatchdog.com/2011/11/01/wind-turbines-suck-power-like-vampires/

Despite all the claims of renewable power proponents about the advantages of clean wind energy, a little known secret is that wind turbines are power parasites. Power engineer Willem Post, writing online at TheEnergyCollective.com, defines parasitic power as “the power used by a wind turbine itself.” In other words, wind turbines don’t just generate power, they also require power whether the turbine is operating or not. When Southern Californians drive along Interstate 10 through the San Gorgonio Pass near Palm Springs, they may see wind turbine blades revolving at low speeds (instead of high speeds when the wind picks up). When that happens, the turbine may actually be drawing power from the grid. Post says that, during the spring and summer, the parasitism of wind turbines may be less likely. But during winter it “may be 10-20 percent of the wind turbine output.” In winter, the wind speed needs to be well above 10.7 miles per hour to offset parasitic power drawn out of the grid. More than 10.7 mph and a wind turbine will supply the grid; lower than 10.7 MPH and it will rob from the grid. Post has compiled a list of the systems and equipment that require electric power associated with a wind turbine: \* Rotor yaw mechanism to turn the rotor into the wind; \* Blade pitch mechanism to adjust the blade angle to the wind; \* Lights, controllers, communication, sensors, metering, data collection, etc.; \* Heating the blades during winter. This may require 10-20 percent of the turbine’s power; \* Heating and dehumidifying the nacelle (large utility scale turbines); this load will be less if the nacelle is well-insulated; \* Oil heater, pump, cooler and filtering system of the gearbox; \* Hydraulic brake to lock the blades when the wind is too strong; \* Thyristors, which graduate the connection and disconnection between turbine generator and grid; \* Magnetizing the stator; the induction generators used to actively power the magnetic coils. This helps keep the rotor speed constant, and as the wind starts blowing it helps start the rotor turning (see next item); \* Using the generator as a motor to help the blades start to turn when the wind speed is low or, as many suspect, to create the illusion the facility is producing electricity when it is not, particularly during important site tours. It also spins the rotor shaft and blades to prevent warping when there is no wind. Willem Post also says that continuing with the utopian effort to get more electric vehicles on the roads, charged by wind turbines mostly at night when the wind typically blows, isn’t as good as high-efficiency diesel engines along with hybrid vehicles.

### No Solvency – Emissions

#### Green energy is bad for the enviro.

David Ross, Highland Correspondent, 2-14-2012, The Herald (Glasgow), “Green energy policy branded bad for the environment,” LexisNexis

Scotland could easily achieve its ambitious green energy targets but only at a cost to the environment, a conservation charity will tell MSPs. The claim will be made by the John Muir Trust (JMT) at a parliamentary inquiry, due to open today, into the Scottish Government s goal of generating the equivalent of 100% of Scotland s own electricity demand from renewable sources by 2020. One of the first to give evidence to Holyroods Economy, Energy and Tourism Committee will be Helen McDade, policy officer for the land charity. Its submission says: Achieving the renewables target primarily with industrial-scale wind generation would be a Pyrrhic victory due to the cost to the environment, the economy and local communities, and the lack of substantial contribution to the greenhouse gas emissions reduction (GHG) targets. The JMT argues that if the 2020 renewable target is achieved primarily by wind-generated electricity, as is currently assumed, the consequences for the natural environment landscapes will be severe. It claims these changes will have a negative impact on tourism. The JMT believes that an independent National Energy Commission is urgently needed to assess the technical and economic aspects of current Scottish and UK policy. It also insists that the most effective way for public money to contribute to reduced GHG emissions within the UK is for tax or subsidies, which are levied as a contribution to energy and GHG emissions reductions measures, to be spent primarily on energy conservation. Meanwhile, Scottish Natural Heritage has published new guidance to help wind farm development. It aims to help local authority planners and developers ensure developments are located in the right places. Atmos Consulting is claiming planning success for the Shiels wind farm in Aberdeenshire on behalf of Polar Energy. Three 100m turbines, by Laurencekirk, will power 4000 homes. Both Atmos and Aberdeenshire councillors have called for more planning guidance on large-scale wind farm developments.

### No Solvency – No Demand

#### Wind Power is in the Red not the Green

H. Sterling Burnett, Ph.D. in environmental studies and contributor to the NCPA, February, 23rd, 2004, “Wind Power: Red Not Green”, National Center for Policy Analysis (NCPA), <http://www.ncpa.org/pub/ba467/>

Environmentalists have long argued that renewable energy sources (such as wind, solar, and geothermal power, and the burning of biomass), are preferable to fossil fuels (oil, natural gas and coal). Historically, fossil fuels have been relatively abundant and significantly less costly; however, in recent years the price of alternative energies, particularly wind power, has fallen. Under certain conditions, wind power has become cost competitive with conventional fossil fuel energy. In addition, alternative energy advocates claim that burning fossil fuels pollutes the air and emits greenhouse gases that many people argue are causing potentially catastrophic global warming. Renewable energy promoters claim that wind power is cheap, safe and "green." These claims are untrue. Wind Power on the Rise. The price of wind-generated energy fell more steeply than any other energy source over the past 30 years. Indeed, the cost of wind power fell from approximately 25 cents per kilowatt hour (kwh) in the early 1980s to between 5 cents and 7 cents per kwh (adjusting for inflation) currently in prime wind farm areas. Wind advocates argue that a new generation of turbines will bring the cost down below 5 cents per kwh - which is competitive with conventional fossil fuels for electricity generation. Wind power, currently less than 1 percent of the U.S. power supply, could double its share within 10 years. The American Wind Energy Association has optimistically projected that wind power could provide as much as 6 percent of the nation's energy by 2020. Wind Power in the Red. While the price of wind power has indeed fallen, it still costs more than spot market electric power (3.5 to 4 cents kwh). Furthermore, the price gap between wind and conventional power production is actually greater, since the federal government subsidizes wind power through a production tax credit of 1.8 cents per kwh. Wind power plants also receive accelerated depreciation, allowing owners to write off their costs in five years rather than the usual 20. These subsidies, along with several states' legal requirements that utilities provide some energy from cleaner power sources, account for most and perhaps all of the recent growth in wind power. Thus, when the 1.8 cent kwh tax credit lapsed in 2003, new wind power projects suddenly became uncompetitive. As a result: California 's Clipper Windpower abandoned already approved plans to build 67 windmills in Maryland . As of January 8, 2004 , orders for wind towers from the builder Beaird Industries ground to a halt, costing the company 200 jobs. Vestas Wind Technologies shelved plans to build a manufacturing plant in Portland , Ore. More than 1,000 megawatts of wind power that would have been added in 2004 will not occur due to the expiration of the tax credit, according to the American Wind Energy Association. Wind Power Equals Blight. Wind power's environmental benefits are usually overstated, while its significant environmental harms are often ignored. Despite industry claims, promised air quality improvements have failed to materialize. Because wind is an intermittent resource, wind farms must rely on conventional power plants to back up their supply. Wind farms generate power only when the wind is blowing within a certain range of speed. When there is too little wind, the towers don't generate power; but when the wind is too strong, they must be shut down for fear of being blown down. And even when they function properly, wind farms' average output is less than 30 percent of their theoretical capacity. Bringing a conventional power plant on line to supply power is not as simple as turning on a switch; thus most of the fossil fuel power stations required to supplement wind turbines are not "redundant," but must run continuously, even if at reduced levels. When combined with the CO2 emitted and pollutants released in the manufacture and maintenance of wind towers and their associated infrastructure, substituting wind power for fossil fuels does little to reduce air pollution. Wind farms are also land-intensive and unsightly. In Europe, wind power is growing at an even faster rate than in the United States. Wind Power Monthly , the British magazine for wind industry enthusiasts, has reportedly recognized that wind power's popularity is decreasing due to the industry's portrayal of wind farms as "parks" in order to trick their way into unspoiled countryside in "green" disguise. Wind farms are more like highways, industrial buildings, railways and factory farms. Often, the most favorable locations for wind farms also happen to be the current location of particularly spectacular views in relatively unspoiled areas. Wind farms that produce only a fraction of the energy of a conventional power plant require 100 times the acreage. For instance: Two of the biggest wind "farms" in Europe have 159 turbines and cover thousands of acres; but together they take a year to produce less than four days' output from a single 2,000 MW (million watt) conventional power station - which uses one percent as much space. A proposed wind farm off the Massachusetts coast would produce only 450 MW of power but require 130 towers and more than 24 square miles of ocean. A comparison of "footprints" is telling: to produce 1,000 MW of power, a wind farm would require approximately 192,000 acres, or 300 square miles; a nuclear plant needs less than 1,700 acres, or 2.65 square miles (within its security perimeter fence); and a coal powered plant takes up about 1,950 acres, 3.05 square miles.

### No Solvency – Accidents

#### Wind Turbines Malfunction and are prone to disasters.

POSTED **BY WHENWINDTURBINESGOBAD** AT 10:55 AM NO COMMENTS: ¶ LABELS: WINDFARM WIND TURBINE FIRE¶ FRIDAY, MARCH 21, 20**08**, <http://whenwindturbinesgobad.blogspot.com/>, JJM^\_^

Not surprisingly, tall wind turbines are prone to lightning strikes. Here's the result of one such strike on the blade of a turbine in The Netherlands:¶ Unfortunately, the repair work involves lots of people, several giant cranes and shedloads of equipment. Wiping out any perceived emissions saving from that turbine for a while:¶ Fire: Palm Springs, California, June 2007¶ A wind turbine stationary and on fire:¶ POSTED BY WHENWINDTURBINESGOBAD AT 11:09 AM NO COMMENTS: ¶ LABELS: WIND TURBINE FIRE WINDFARM¶ THURSDAY, MARCH 20, 2008¶ Collapse: Scotland, November 2007¶ From The Herald, 12th November 2007:¶ Engineers were working over the weekend to investigate the collapse of a wind turbine which led to three Scottish wind farms being shut.¶ The 200ft turbine at the Beinn an Tuirc wind farm in Argyll and Bute "bent in half" during heavy winds last week.¶ ScottishPower, which owns the 26-turbine facility, has closed it while representatives of the company that manufacture Vestas V47 machines investigate the fault.¶ Dunlaw wind farm, a 26-turbine base near Lauder in the Borders, and the 20-turbine Hare Hill facility, close to New Cumnock, Ayrshire, were also shut down as a precautionary measure.¶ POSTED BY WHENWINDTURBINESGOBAD AT 9:28 AM NO COMMENTS: ¶ WEDNESDAY, MARCH 19, 2008¶ Collapse: Oregon, August 2007¶ A giant wind turbine tower collapsed in Eastern Oregon, causing a worker to fall to his death and another man to be injured.¶ Full article in Komotv.com.¶ POSTED BY WHENWINDTURBINESGOBAD AT 6:34 AM NO COMMENTS: ¶ LABELS: WIND TURBINE COLLAPSE OREGON USA¶ TUESDAY, MARCH 18, 2008¶ Fire: Sunderland, December 2005¶ A major north-east road had to be closed after fire broke out at a £2m windfarm.¶ The fire started in one of the turbines at Nissan's Washington factory. Both carriageways of the nearby A19 in Sunderland were shut to traffic amid fears that smoke would reduce visibility and that the turbine could fall into the trunk road.¶ A fault in the power pack at the top of a 180ft concrete shaft of a turbine is thought to have started the blaze, which was allowed to burn out. Its three fibreglass blades were badly damaged and investigations were under way to find out what exactly sparked the fire.¶ Further information from the This Is the North East archive.¶ POSTED BY WHENWINDTURBINESGOBAD AT 4:16 AM NO COMMENTS: ¶ LABELS: WIND TURBINE FIRE WINDFARM SUNDERLAND WASHINGTON UK¶ Fire: Burgos, Spain, July 2007¶ Spectacular fire in a wind turbine, which is stationary. Lots of smoke. Unaffected turbines on either side are also stationary:¶ POSTED BY WHENWINDTURBINESGOBAD AT 3:40 AM NO COMMENTS: ¶ LABELS: WINDFARM WIND TURBINE FIRE SPAIN¶ MONDAY, MARCH 17, 2008¶ Explosion: Aarhus, Denmark, February 2008¶ Many wind turbines contain a braking mechanism. This stops the turbine from overspinning, the runaway effect of which is:¶ That's a turbine in Hornslet near Aarhus, Denmark. Here's the same spectacular explosion from a more distant angle. Note how long it takes for the blades to fall to earth, and also the white van at the base of the tower.¶ Thankfully no-one was hurt, as a zone of 400 metres around the tower was evacuated.

### No Solvency – Inconsistency

#### Wind is inconsistent

Howtopowertheworld.com “Disadvantages of wind energy” 2010 http://www.howtopowertheworld.com/disadvantages-of-wind-energy.shtml

Disadvantages of wind energy The disadvantages of wind energy include: the intermittent availability of the wind producing an variable energy output; low energy density;damaging effects on local wildlife and and concerns of ruining the appearance of the countryside. The intermittent availability of the wind is the most important of these. As the production one moment can change in an instant, wind energy would have to be coupled with an advanced energy storage system. Wind energy faces keen opposition from special interest groups who want to preserve the view of the natural environment, and economic conditions make the manufacture of turbines expensive. Intermittent output of wind energy As you might imagine, wind turbines are entirely dependent on the availability of their natural resource: wind. The requirements are actually quite strict. Like Goldilocks, we need the wind speed to be just right: not too slow, and not too fast. If the wind speed is too slow, it is not economical to run the turbine. If the wind speed is too high, the wind turbines must be shut down due to safety concerns. Wind turbines tend to start up after 3-5 metres per second (6.7 - 11.2 mph) and then turn off when the speed goes above about 25 metres per second (56mph). 1 Reproduced from the Danish Wind Industry Association. One of the disadvantages of wind energy: you can see how the power output of a typical 600kW wind turbine varies with wind speed, but it doesn't operate outside pre programmed limits. Not only do wind turbines not operate all of the time, but they can also never extract 100% of the energy stored within the wind which passes through the turbine. Betz' law (a physical law derived from conservation of mass passing through the turbine) states that the wind turbine can only convert up to 16/27 (about 59%) of the energy available in the wind to mechanical energy. These limits govern both the amount of energy produced, and also the consistency of this energy. Most importantly though, a wind turbine cannot generate energy constantly. Not only that, but the output of a wind turbine is not constant. Can energy not be stored? Not on such a large scale. We use an amount of energy, and the supply in the grid is kept approximately constant. When demand increases, power plants are switched on or increase output to keep the supply stable. If demand drops, power plants are eased off. This is impossible with wind power, though. We cannot control the wind and just turn them on. It also means that if there were no other energy supplies, we would not be able to depend on wind turbines to provide that load, no matter how many wind turbines we put up. This probably the most important of the disadvantages of wind energy, and its solution will require some large scale applications. One solution is a fleet of electric cars in a country. While enough of them are plugged in to charge, they can take or give energy to or from the grid to stabilise it. Low energy density of wind energy Wind is diffuse, it is spread out of a large area. To obtain a reasonable amount of energy from a wind farm, the turbines need to cover a large ground area. This problem is not just one of the disadvantages of wind energy, but tends of be a disadvantage of most of the alternative energy sources. Not only that, but turbulence caused by each turbine creates a minimum required distance between turbines, increasing the wind farm size. Wildlife There have long been arguments that wind turbines affect migratory birds, but more recently it's been discovered that they can make bats' lungs explode! That aside, it's true that we have to consider the impact that many huge towers and blades could have on local wildlife. These problems can be mitigated, but of course this needs extra planning and research, which of course increases cost. Aesthetics This one is down to personal taste, but it should be included here because wind farms have often been banned for exactly this reason, and is often the most obvious of the disadvantages of wind energy. This, unfortunately, is not a scientific or engineering problem. As pretty as we may be able to make wind turbines, it does not alter the fact that they must be large, and a certain shape. That means that the people who object to them now will always object to them for the same reasons. Unfortunately, there may be nothing we can do about this, short of building all wind turbines off-shore. National Security! There was a discovery that wind energy can even affect national security! It seems wind farms cause holes in RADAR coverage as the blades on the turbines confuse the system. Apparently they look like planes. It is so bad that they cause a large RADAR shadow behind them! This can surely be solved, though.

### No Solvency – Distance

#### **Long distances make energy tradeoff poor.**

Paul Driessen, Theorist, June 6, 2012, http://www.washingtontimes.com/news/2012/jun/6/wind-down-wind-subsidies/

:Wind turbines, transmission lines and backup generators also require vast amounts of crop, scenic and wildlife habitat land. A typical 600-megawatt coal or gas-fired power plant requires 250 to 750 acres, to generate power 90 percent to 95 percent of the year; a 600-megawatt wind installation needs 40,000 to 50,000 acres (or more), to deliver 30 percent performance. Because wind installations must go where the wind blows, hundreds of miles from our cities - transmission lines add thousands more acres to every project.

### No Solvency – Inefficient

#### **Britain proves Wind power inefficient.**

[http://www.**sodahead.com**/united-states/britain-waking-up-to-the-staggering-cost-and-inefficiency-of-wind-power/question-2499779/](http://www.sodahead.com/united-states/britain-waking-up-to-the-staggering-cost-and-inefficiency-of-wind-power/question-2499779/), March 2012, JJM^\_^

To the nearest whole number, the percentage of the world’s energy that comes from wind turbines today is: zero. Despite the regressive subsidy (pushing pensioners into fuel poverty while improving the wine cellars of grand estates), despite tearing rural communities apart, killing jobs, despoiling views, erecting pylons, felling forests, killing bats and eagles, causing industrial accidents, clogging motorways, polluting lakes in Inner Mongolia with the toxic and radioactive tailings from refining neodymium, a ton of which is in the average turbine — despite all this, the total energy generated each day by wind has yet to reach half a per cent worldwide.¶ If wind power was going to work, it would have done so by now. The people of Britain see this quite clearly, though politicians are often wilfully deaf. The good news though is that if you look closely, you can see David Cameron’s government coming to its senses about the whole fiasco. The biggest investors in offshore wind — Mitsubishi, Gamesa and Siemens — are starting to worry that the government’s heart is not in wind energy any more. Vestas, which has plans for a factory in Kent, wants reassurance from the Prime Minister that there is the political will to put up turbines before it builds its factory.¶ This forces a decision from Cameron — will he reassure the turbine magnates that he plans to keep subsidising wind energy, or will he retreat? The political wind has certainly changed direction. George Osborne is dead set against wind farms, because it has become all too clear to him how much they cost. The Chancellor’s team quietly encouraged MPs to sign a letter to No. 10 a few weeks ago saying that ‘in these financially straitened times, we think it is unwise to make consumers pay, through taxpayer subsidy, for inefficient and intermittent energy production that typifies onshore wind turbines’.

#### Wind Power is inefficient

Louise Gray is a environmental correspondent for the Telegraph “Wind power is expensive and ineffective at cutting CO2 say Civitas” January 9th 2012 http://www.telegraph.co.uk/earth/earthnews/9000760/Wind-power-is-expensive-and-ineffective-at-cutting-CO2-say-Civitas.html

A study in the Netherlands found that turning back-up gas power stations on and off to cover spells when there is little wind actually produces more carbon than a steady supply of energy from an efficient modern gas station. The research is cited in a new report by the Civitas think tank which warns that Britain is in danger of producing more carbon dioxide (CO2) than necessary if the grid relies too much on wind. Wind turbines only produce energy around 30 per cent of the time. When the wind is not blowing - or even blowing too fast as in the recent storms - other sources of electricity have to be used, mostly gas and coal. However it takes a surge of electricity to power up the fossil fuel stations every time they are needed, meaning more carbon emissions are released. “You keep having to switch these gas fired power stations on and off, whereas if you just have highly efficient modern gas turbines and let it run all the time, it will use less gas,” said Ruth Lea, an economic adviser to Arbuthnot Banking Group and the author of the Civitas report. RELATED ARTICLES Busy lizzy shortage due to disease 17 Jan 2012 Mild winter: bad apple harvest 18 Jan 2012 The Queen finally goes green 20 Dec 2011 Chocolate will become an expensive luxury item due to climate change 26 Dec 2011 Farmers must take better care of our countryside 09 Jan 2012 “If you use less gas in a highly efficient gas turbine you use less carbon dioxide than having wind backed up by gas.” The Dutch report, published at the end of last year by retired physicist Dr C le Pair, also points to the carbon emissions produced in building wind farms, that last a relatively short period of time compared to conventional power stations. It concludes: “The wind projects do not fulfill 'sustainable' objectives. They cost more fuel than they save and they cause no CO2 saving, in the contrary they increase our environmental 'foot print'.” The UK Government want to build up to 32,000 wind turbines over the next 20 years, of which at least 6,000 could be onshore. The report also found that wind is “horrendously expensive”, especially offshore wind, because of the cost of taking the turbines out to sea and installing the structures. The fact that the power source always has to be backed up by fossil fuel stations also increases the cost. Civitas cite official Government figures that warn green policies will add up to £400 to electricity bills over the next two decades. The report concludes: “The most cost-effective technologies are nuclear and gas-fired. Onshore, and especially offshore, wind technologies are inordinately expensive.” But Dr Gordon Edge, Director of policy at the lobby group RenewableUK, said much of the information was gathered from “anti-wind farm cranks”. He explained that modern gas plants are not required to provide back-up for wind. Instead, wind is "integrated" into the existing system to act as a fuel saver, enabling the UK harness a free electricity source from the weather when it’s available. Some additional investment is required, but Dr Edge said “credible analysis” makes clear it will cost less for consumers than relying on fossil fuels, that are rising in price all the time. “It is surprising that a think tank such as Civitas has published a report based on the work of anti-wind cranks, repeating the same discredited assertions. The UK’s energy policy over the next ten years will play a critical part in our economic success – offshore wind in particular has the potential to revitalise our manufacturing sector, with the promise of over 70,000 jobs," he said. "This report, based on outdated and inaccurate information, does nothing to advance the debate.”

## No Solvency – Advantages

### No Solvency – Environment

#### Wind Farms aren’t that green or viable

Eli Martin, Harvard grad and OP-ED contributor to the Harvard Crimson Newspaper, September 10th, 2010, “Wind Farms: Not So Green”, The Harvard Crimson, <http://www.thecrimson.com/article/2010/9/10/wind-energy-power-farms/>

At first—or even second and third—glance, wind farms appear to be an optimal solution to our growing climate and energy crisis. They produce entirely domestic, self-sufficient power, they are frequently built in underemployed, rural areas, and they emit not a drop of pollution. It would seem as though the target of producing 20 percent of our electricity from wind energy by 2030 should be only the starting point. And yet, wind energy is not as perfect as it might appear; a closer inspection reveals that it does not meaningfully reduce our reliance on non-renewable energy sources. As such, we must be very careful in considering how to best pursue a push toward “green” electricity. The question of efficiency is critical to any informed discussion of wind energy. Wind turbines produce less energy than their “maximum capacity” rating would have us believe. Due to the fluctuation of wind currents—not exactly a novel discovery—turbines actually produce around 26.9 percent of the energy they could in theory generate. This is known as their “capacity factor.” By contrast, conventional power plants tend to have a capacity factor of 40 to 80 percent. This has one obvious ramification: Wind farms are less efficient and cost-effective than non-renewable sources of energy. Although this conclusion is hardly shocking, the unpredictability of wind power presents a much more serious problem. Because wind power can never be completely reliable, we will always need other, more reliable forms of energy to serve as a backup for “wind reliant” buildings and infrastructure. According to Eon Netz, a grid manager in Germany and subsidiary of E.ON energy, the amount of backup power required for wind energy stands at around 80 percent, roughly in line with wind's aforementioned capacity factor. This means that wind energy will actually sustain, not replace, our reliance on non-renewables and even lead to further proliferation of conventional power plants. Indeed, as the world increasingly becomes reliant on gas as opposed to coal and oil, the ability to turn gas supply 'on and off' at will complement perfectly the exponential use of wind energy, which cannot be stored for later use. Promoters of wind energy estimate that the backup power issue will not become serious until wind energy accounts for 20 percent of our electricity, yet this is precisely what many in the U.S. are aiming for right now. Of course, the capacity factor of wind energy will likely improve over time with advances in technology, but due to its reliance on wind currents, a scenario in which turbines are ever able to rival the reliability of a coal plant is hard to envisage. If we are, indeed, so desperate to become a green economy, then wind power is not a viable solution right now. Aside from the problems with wind energy's output, wind farms frequently end up being a blight on nature. Many farms are situated in remote and rural areas. In the United Kingdom, one of the world's most aggressive pioneers in this field, major wind farms are disproportionately found in the countryside. More specifically, an unfortunate correlation appears to be developing between the positioning of sites and their proximity to national parks or official “scenic areas.” Northern and eastern England, Wales, and Scotland, all of which contain some of the most wild and picturesque scenery in Europe, are all home to a large number of wind farms. This is no accident: Scotland is easily the “windiest” place in Europe. Its Highlands, where many wind farms are either already built or being proposed right now, have a population density of eight inhabitants per square kilometer. By contrast, the south and Midlands of the U.K. (two areas which help make England the most crowded country in Europe) are practically bereft of wind farms. A wind turbine is also no laughing matter; industrial models are over 300-feet high and cause not only serious noise pollution but also damage to both the surrounding terrain and wildlife (including birds). Fervent environmentalists are good at laughing off such complaints as trivial compared to the need to reduce our use of destructive fossil fuels. But this objection actually cuts to the heart of the issue of why we invest in wind energy. If our intent is to protect nature and the environment for future generations, then building massive turbines in some of the truly unspoiled areas left in the world makes little sense. In short, wind farms mar beautiful places but, as we have seen, do little to actually help save nature in the long run. This is not to suggest that we turn our backs on wind power. Clearly, the technology of turbines will improve over time. But until the capacity factor of turbines comes closer to rivalling that of conventional power plants, we ought to seriously consider putting their proliferation on ice. Until then, they really won't do much to reduce our reliance on fossil fuels. Meanwhile, governments must do everything they can to hinder the spread of wind turbines to remote areas, where local people are either motivated to make a huge profit by having the turbines erected on their own land or mistakenly hope to reduce their fuel bills. Above all, wind energy is far from the sole renewable. While solar energy enjoys similar capacity factor issues, other sources, such as hydropower, biofuels, and even clean coal, remain viable, less obtrusive, and potentially more efficient forms of clean power. Wind farms are simply not what they are cracked up to be.

#### There are many environmental drawbacks to wind energy and emissions produced in the production of the wind turbines cancels out already minor environmental benefits

Robert Bradley Jr., Policy Analyst for the CATO Institute, August 27th, 1997, “RENEWABLE ENERGY: “Not Cheap, Not “Green”, The CATO Institute, <http://www.mensetmanus.net/windpower/cato/probwind.shtml>

A distinct air-emission problem of wind capacity is created when a new project is built where there is surplus electricity-generating capacity. Because wind farms require hundreds of tons of energy-intensive materials, virtually all of the air emissions associated with the gas or electricity used to make the materials (such as cement or steel) must be counted against the "saved" air emissions once the farm comes on line and displaces fossil-fuel-generated output. For a recently announced wind farm of 45 effective MW, for example, the emissions associated with 10 million pounds of materials must be calculated. [99] If there were not surplus capacity, on the other hand, only the incremental emissions associated with constructing a wind facility instead of a fossil-fuel facility would be used. Although not calculated here, the air emissions associated with the construction of wind capacity that is not needed to meet either peak or baseload demand would be substantial enough to create an environmental externality from the viewpoint of its proponents. Wind power's land disturbance, noise, and unsightly turbines also present environmental drawbacks, at least from the perspective of some if not many mainstream environmentalists. Yet at least one well-known environmental group has a double standard when considering wind power versus other energy options. In testimony before the California Public Utilities Commission (CPUC), Ralph Cavanagh of the Natural Resources Defense Council argued against opening the electricity industry to competition and customer choice because of the development of significant new transmission and distribution lines to link buyers and sellers of power. In addition to the visual blight of additional power lines on the landscape, these corridors can displace threatened or endangered species. [100] Christopher Flavin of Worldwatch Institute applies the same rigorous standard to gas development that "at least for a time, mars the landscape with drilling rigs, pipelines, and other equipment." [101] Yet Altamont Pass's 7,000 turbines (located near Cavanagh's San Francisco office) have a record of sizable avian mortality, large land-use requirements, disturbing noise, and "visual blight." [102] The irony of visual blight was not lost on environmental philosopher Roderick Nash, who, referring to the Santa Barbara environmentalists, asked, "If offshore rigs offend, can a much greater number of windmills be any better?" [103] Wind (like solar) "mars" the landscape all the time, not "at least for a time." [104] Environmentalists have raised concerns over erosion from service roads cut into slopes (an important problem for California, where mud slides are a hazard), [105] "fugitive dust" from unpaved roads, [106] flashing lights and the red-and-white paint required by the FAA on tall towers, [107] rushed construction for tax considerations, [108] fencing requirements, [109] oil leakage, [110] and abandoned turbines. [111] The "not in my back yard" problem of wind turbines may seem a trivial nuisance for urbanites, but for rural inhabitants, who "choose to live in such locations . . . primarily because the land is unsuitable for other urban uses," [112] there is an environmental cost. The ancillary environmental problems are not minor, even to wind power's leading proponents. Gipe, author of Wind Power for Home & Business and Wind Energy Comes of Age, in an October 15, 1996, letter to the chairman of the CEC, called for a moratorium on new wind subsidies until the problems of previous construction were addressed. Stated Gipe, I am a longtime advocate of wind energy in California and my record in support of the industry is well known. I have chronicled the growth of California's wind industry for more than twelve years. It therefore pains me greatly to urge the Commission to . . . recommend to the legislature that no funds from the [California Competition Transition Charge] be distributed to existing or future wind projects in the state. Funds that were destined for this purpose should instead be deposited in a wind energy cleanup fund to be administered by the Commission. Money from this fund could then be used to control erosion from plants in California, to remove abandoned and nonoperating wind turbines littering our scenic hillsides, and to mitigate other environmental impacts from the state's wind industry. [113] As Gipe has reminded his audience elsewhere, "The people who build wind farms are not environmentalists." [114] The Union of Concerned Scientists also has been quick to point out "environmental concerns" with wind power, stemming from "not only avian issues, but also . . . the effects of road construction, tree felling, and visual impacts." [115] Another problem of wind farms appears to be fire and smoke. Summarized one article, Wind farm operators are feeling the heat from the state Department of Forestry and Fire Protection over blazes in Altamont Pass. Causes range from electrical shorts to exposed wires to flaming birds. [116] Wind farms also fail the land-use test compared with fossil-fuel alternatives. A wind farm requires as much as 85 times more space than a conventional gas-fired power plant. [117] Gipe estimates the range to be between 10 and 80 acres per megawatt--from 30 to more than 200 times more space than needed for gas plants. [118] Wide spacing (a 50 MW farm can require anywhere between 2 and 25 square miles) is necessary to avoid wake effects between towers. [119] The world's 5,000 MW (nameplate) wind-power capacity in 1995 consisted of 25,000 turbines [120]--little bang for the land usage and visual blight buck. The argument that the actual space used by wind towers is much smaller than the total acreage of wind farms ("as little as 1 percent of the land is actually occupied") [121] is the "footprint" argument that eco-energy planners refuse to consider for petroleum extraction in the Arctic National Wildlife Refuge in Alaska. [122] Consistency aside, "the visual impact of wind turbines on the countryside is one of their most contentious issues." [123] Another environmental consideration with wind projects is created when they are combined with gas turbine backup to lower the weighted average cost of power and to achieve reliability as a firm source of electricity. Gas-wind hybrids (or gas-solar hybrids) blur the distinction between renewable energy and fossil fuels and beg two questions: why not have a gas-only project, and is the project really needed at all given existing overcapacity?

### No Solvency – Warming

#### Wind Farms contribute to Global Warming

Amy Kraft, blogger and journalist for “smartplanet”, April 29th, 2012, “Do wind farms have a negative effect on the environment?”, smartplanet, <http://www.smartplanet.com/blog/smart-takes/do-wind-farms-have-a-negative-effect-on-the-environment/26086>

Wind farms have been touted as the technology of the future and a way to create sustainable energy. But new research shows that wind farms may have a negative effect on area surface temperature. Researchers at SUNY New York looked at nearly 10 years of satellite data of areas around wind farms in Texas. Researchers chose Texas because it has four of the world’s largest wind farms. The results showed night-time surface temperatures around areas with high volumes of wind turbines were 0.72 degrees C (1.3 degrees F) higher than areas where no wind farms existed. What caused the increase in surface temperature? During the evening, the earth cools and brings the air temperature down. But near wind turbines, turbulence from the blades keeps the air warmer. Discovery News reports: “Given the present installed capacity and the projected growth in installation of wind farms across the world, I feel that wind farms, if spatially large enough, might have noticeable impacts on local to regional meteorology,” Liming Zhou, associate professor at the State University of New York, Albany and author of the paper published April 29 in Nature Climate Change said in an e-mail to Discovery News.” According to the research, the warming surface temperate increased from 2003 to 2011, which is consistent with an increase in the number of wind turbines in the Texas area used for this study. Because this warming could impact crop yields of local farmers or have an even larger effect on the increase in global temperatures, the study authors say more research is needed. “We need to better understand the system with observations and better describe and model the complex processes involved to predict how wind farms may affect future weather and climate,” Zhou said in a statement.

#### **Wind power costly, inefficient, and doesn’t solve C02 emissions.**

**Fox Islands Wind Neighbors** The truth about living near Vinalhaven wind turbines, **no date,** <http://fiwn.wordpress.com/2012/05/23/wind-power-costly-inefficient-and-overstates-c02-reduction-claims/>, JJM^\_^

Having one’s property value, quiet and health stripped away by wind turbines is terrible, but what is worse is that the popular enthusiasm for wind power turns out to be based on false assumptions.¶ One of the last lines of defense for wind power dilettantes is that this technology significantly reduces carbon emissions. Greenhouse gases are warming the planet, but wind power is not the answer. Willem Post, an energy analyst, writes:¶ “Energy systems engineers, with decades of experience analyzing energy systems, have analyzed the real-time, 1/4-hour grid operations data published by EirGrid, manager of the Irish grid: CO2 emissions, wind energy produced, total energy produced.¶ The engineers were expecting a CO2 emissions reduction of 80 to 90 % of the expected value. However, they were surprised that these measured data showed little reduction of CO2 emissions compared to what was expected.¶ For example: It was found that 12% of wind energy on the grid caused only a 4% reduction of CO2 emissions, i.e., the CO2 emissions reduction was only one third of the reduction expected for this share of wind energy. See Section 4. of http://www.clepair.net/IerlandUdo.html¶ The above situation has led to a spell of deception and delusion. The Deception: too many RECs (renewable energy credits) are being granted to RE producers than is warrented based on the CO2 reduction. The Delusion: that RECs tied to industrial wind turbines are “doing something about climate change”.

#### **Other Countries still pollute. Wind turbines alone cannot solve CO2 emissions.**

Paul Driessen, Theorist, June 6, 2012, http://www.washingtontimes.com/news/2012/jun/6/wind-down-wind-subsidies/

Even if carbon dioxide does contribute to climate change, there is no evidence that even thousands of U.S. wind turbines will affect future global temperatures by more than a few hundredths of a degree. Carbon-dioxide emissions from backup generators (and wind-turbine manufacturing) offset any reductions from wind installations, and rapidly increasing emissions from Brazil, China, India, Indonesia and other developing countries dwarf any possible U.S. wind-related CO2 reductions.

### No Solvency – Environment/Econ

#### Wind is neither cheap nor green

Robert Bradley Jr., Policy Analyst for the CATO Institute, August 27th, 1997, “RENEWABLE ENERGY: Not Cheap, Not “Green”, The CATO Institute, <http://www.mensetmanus.net/windpower/cato/probwind.shtml>

Of immediate concern to eco-energy planning is wind power, beloved as a renewable resource with no air pollutants and considered worthy of regulatory preference and open-ended taxpayer and ratepayer subsidies. Despite decades of liberal subsidies, however, the cost of generating electricity from wind remains stubbornly uneconomical in an increasingly competitive electricity market. Many leading wind-power providers have encountered financial difficulty, and capacity retirements appear as likely as new projects in the United States without major new government subsidy. [6] On the environmental side, wind power is noisy, land- intensive, materials-intensive (concrete and steel, in particular), a visual blight, and a hazard to birds. The first four environmental problems could be ignored, but the indiscriminate killing of thousands of birds--including endangered species protected by federal law--has created controversy and confusion within the mainstream environmental community. Unfavorable Economics Relative prices tell us that wind power is more scarce than its primary fossil-fuel competitor for electricity generation--natural gas, used in modern, state-of-the-art facilities (known in the industry as combined-cycle plants). [7] That is because wind power's high up-front capital costs and erratic opportunity to convert wind to electricity (referred to as a low capacity factor in the trade) more than cancel out the fact that there is no energy cost for naturally blowing wind. [8] Low capacity factors, and still lower dependable on- peak capacity factors, are a source of wind power's cost problem. In California, for instance, where some 30 percent of the world's capacity and more than 90 percent of U.S. wind capacity is located, wind power operated at only 23 percent realized average capacity in 1994. [9] That compares with nuclear plants, with about a 75 percent average capacity factor; coal plants, with a 75 to 85 percent design capacity factor; and gas-fired combined-cycle plants, with a 95 percent average design capacity factor. [10] All those plants produce power around the clock. Wind does not blow around the clock to generate electricity, much less at peak speeds. Peak demand for electricity and peak wind speeds do not always coincide. [11] A study by San Diego Gas & Electric in August 1992 concluded that wind's dependable on-peak capacity was only 7.5 megawatts per 50 MW of nameplate capacity (a 15 percent factor). [12] The CEC consequently has recalculated the state's 1994 wind capacity from 1,812 MW to 333 MW, an 18 percent dependable capacity ratio. [13] The cost of wind power declined from around 25 cents per kilowatt-hour in the early 1980s to around 5-7 cents (constant dollars) in prime wind farm areas a decade later. [14] By the mid-1990s, wind advocates reported that a new generation of wind turbines had brought the cost down below 5 cents per kWh and even toward 4 cents per kWh in constant dollars. [15] A DOE estimate was 4.5 cents per kWh at ideal sites. [16] However, even at the low end of the cost estimate, the total cost of wind power was really around 6-7 cents per kWh when the production tax credit and other more subtle cost items were factored in, as discussed later. The all-inclusive price in the mid-1990s was approximately double the cost of new gas-fired electricity generation--and triple the cost of existing underused generation. The total cost of wind power is higher than the advertised estimates for several reasons. 1. Wind receives a 1.5 cent per kWh federal tax credit, escalating with inflation, which is approximately one-third of its (as-delivered) selling price. Accelerated depreciation is also given to wind-powered facilities, further lowering their tax rate. Gas-fired electricity generation does not have a tax credit or an option of accelerated depreciation, and natural gas extraction has a total deduction (primarily a scaled-back percentage depletion allowance) of less than 2 percent of its wellhead price. [17] State severance taxes, which totaled $45 billion for oil and gas extraction between 1985 and 1994, swamp the wellhead deduction. [18] Thus wind power's entire tax credit should be added back in for an apples-to-apples comparison with gas-fired alternatives. Local tax incentives for wind, such as in California, would increase the add-back. 2. Low-cost wind depends on select sites with strong, regular wind currents (Class 4 and above wind speeds), whereas other power generation facilities can be built in larger increments in far more places, or converted or repowered in existing locations. Remote wind sites [19] often result in additional transmission line construction, estimated to cost as much as $300,000 to $1 million per mile, [20] in comparison with locally sited gas-fired electricity. The economics of transmission are poor because, although the line must be sized at peak output, wind power's low capacity factor ensures significant underutilization. That adds 0.5 cent per kWh, sometimes more and sometimes less, to the levelized cost of wind. [21] 3. Because wind is an intermittent (unpredictable) generation source, [22] it has less economic value than fuel sources that can deliver a steady, predictable source of electricity. Utilities obligated to provide firm service must either "firm up" the intermittent power at a premium (estimated by power traders to be around 0.5 cent per kWh) [23] or penalize the provider of interruptible supply. Output uncertainty also increases financing costs of outside lenders compared with more predictable, proven power generation. [24] Therefore, a premium has to be added to the interruptible wind rate to compare it with firm generation alternatives such as gas-fired combined-cycle plants. 4. Wind power becomes more expensive if any account is taken of negative environmental externalities as mainstream environmentalists do for fossil-fuel plants (full-cost pricing). Whereas coal and gas plants have incurred higher costs for emission reductions pursuant to Clean Air Act mandates (and in some cases have been penalized in resource planning decisions where state regulators add "externality adders" to plant costs), no penalty has been imposed for the environmental problems of wind farms--noise, land disruption, visual blight, avian mortality, and air emissions associated with the incremental materials required in wind turbine construction. [25] Neither has there been an allowance for the substantial social cost of taxpayer subsidies. [26] All-inclusive wind prices, factoring in the hidden incremental costs mentioned, are quite different from the advertised price of new wind capacity. [27] Complained San Diego Gas and Electric about its "winning" wind-power bids of about 8 cents per kWh in a 1993 auction, SDG&E observes that the resulting price to wind developers of 6-6.5 cents per kilowatt-hour when added to the 1.8 cent [federal and state] tax credit is so far above the five cents/kilowatt- hour revenue wind developers have reportedly claimed they require as to indicate that the BRPU auction would result in unfair costs to consumers. Before the [California Public Utilities] Commission commits to such high prices, wind developers should be asked to explain why the price customers must pay to them is so much higher than what they claim they need. [28] San Diego Gas & Electric's bid experience was approximately the same as the calculated cost of a proposed (but more recently canceled) 45 MW wind project in northern California that would have sold power to the Sacramento Municipal Utility District. [29] A new 35-MW wind-power project in West Texas, where the winds are better, has a 25-year fixed-price contract for 4.7 cents per kWh. Adding in the federal tax credit, 0.5 cent per kWh for incremental transmission expenses for the 400-mile trip to Austin, and 0.5 cent for nonfirm delivery, however, the cost is around 7 cents per kWh from the get-go--not including the implicit costs due to the incidence of off-peak production and higher financing costs. A December 1996 report from the Northwest Energy System, a group of electricity stakeholders in the Pacific Northwest, including environmental groups, reconfirmed the severe economic plight of wind as well as other renewable energies. Utility-scale solar, wind and geothermal technologies still are more expensive than gas-fired combustion turbines and current market prices. . . . Several renewable resource projects designed to confirm various technologies under Northwest conditions . . . are anticipated to produce electricity that is from one and one-half [wind] to four times [geothermal] more costly than gas-fired combustion turbines. [30] That estimate for wind does not account for implicit costs, which would add approximately 1 cent per kWh to its price, making it double the cost of gas-fired generation and triple the cost of widely available economy energy in the Pacific Northwest. Paul Gipe, in his treatise on wind power, estimates that the best technology (as of 1995) could deliver wind power for $1,050 per kW, or for between 7.5 and 8.3 cents per kWh. [31] This estimate, adding the incremental costs discussed earlier, again confirms the conclusion that as of the mid-1990s wind energy was double the cost of new gas-fired generation and triple the cost of surplus energy (called economy energy, which refers to the price of electricity on the spot market). New gas-fired combined-cycle capacity in the same period, the early to mid-1990s, could generate electricity for between 3 and 5 cents per kWh, according to the Federal Energy Regulatory Commission (FERC). [32] San Diego Gas & Electric and the Sacramento Municipal Utility District estimated the cost of their gas-fired generation alternative at about 4 cents per kWh. [33] This is firm generation with the flexibility to be located near customer demand; thus it avoids the subtle costs that wind faces. A gas-fired project can even lock in long-term gas prices to remove price risk for consumers and ensure a price saving over renewable-energy projects with relatively high capital costs. The advantage is imperviousness to short-run gas prices, even a near doubling of prices such as occurred last winter. Because of a "backwardation" curve, long-term prices became substantially below near-term prices, reflecting the long-term supply optimism of the market. [34] The result was that 10-year fixed gas prices and the resulting price of electricity were little changed. [35] It is erroneous to conclude that even if wind is not competitive now, it soon will be. Wind is competing against improving technologies and the increasing abundance of natural resources. The cost of gas-fired combined-cycle plants--the most economical electricity-generation capacity for central-station power at present--has fallen in the last decade because of improving technology and a 50 percent drop in delivered gas prices adjusted for inflation. [36] The energy-efficiency factors of gas turbines have increased from just above 40 percent in the early 1980s to nearly 60 percent today. [37] Forecasts by the DOE and other sources expect continued efficiency improvements in the years 2000 through 2015 for gas-fired generation. [38] One forecast is that new gas-fired generation of virtually any capacity will cost from $200 to $450 per kW, generating power at 2 cents per kWh. [39] To illustrate the point, compare the most recent nominal levelized prices of advanced wind technologies operating in prime wind areas with new-generation gas turbines. Long-term fixed-price wind contracts are available at about 3 cents per kWh (nominal) in prime areas, translating into an all-inclusive price of 5 to 6 cents per kWh (a price that factors in the tax preferences and other implicit costs, as discussed). The price of combined-cycle gas turbines in 1996-97 also has reached new lows, between $400 and $500 per kW, bringing electricity below 3 cents per kWh and even below 2.5 cents per kWh in select regions such as the Pacific Northwest, where natural gas prices are the lowest. That suggests that the historic delivered-price discrepancy still holds and may continue to hold. Indeed, technological change can be congruent between different energy technologies, and falling gas prices and electricity prices from gas-fired generation are lowering wind turbine costs as well. But even if the gap were cut in half, a 50 percent premium for new wind capacity is substantial. Head-to-head comparison of wind power and other generation alternatives for new generation capacity is mostly a hypothetical debate. An even greater competitive problem for wind, and an environmental problem as well, [40] has been and continues to be surplus sunk-cost capacity with very low incremental costs that exists in many markets around the country. California, in particular (where the U.S. and world wind-power industry is centered), [41] has had substantial surplus gas-fired capacity that in the early to mid-1990s was generating electricity for as little as 2 cents per kWh. [42] New wind capacity had to compete with 2-cent existing power, not 3-cent new power, which made new wind capacity between 100 percent and 300 percent more expensive than the relevant competition. That insurmountable competitive disadvantage for wind, ironically, had been created partly by California's multi-billion-dollar investment in demand-side management programs, which idled gas-fired capacity and helped to remove the need for new generation capacity in the state. [43] In northern California, where the state's wind industry is concentrated, new capacity is not forecast by the CEC until 2004. In southern California, where the solar industry is centered, new capacity is not forecast until 2005. [44] Moreover, this gas-fired capacity, experiencing use rates of 30 percent and less because of low demand, [45] has been retrofitted pursuant to California's stringent air quality rules to become virtually environmentally benign. [46] The surplus capacity problem for prospective wind power exists outside California as well. Most other regions have surplus gas-fired (if not coal-fired) generating capacity, particularly off-peak, and that surplus will increasingly become national as electricity-industry restructuring makes the grid more interconnected. The analysis just given pertains to central-station wind power. Regarding residential wind systems, the American Wind Energy Association states, "As a general rule of thumb, a turbine owner should have at least a 10 mph average wind speed and be paying at least 10 cents per kWh for electricity." [47] Properties need to be one acre or more to support an 80- to 120-foot tower, and noise levels "about half as much as . . . a lawn mower" can be expected. [48] Assuming optimal wind speeds and the right-sized property, the 10-cent criterion at the residential level leaves 11 states--Alaska, California, Connecticut, Hawaii, Maine, Massachusetts, New Hampshire, New Jersey, New York, Rhode Island, and Vermont--as potential sites. [49] With the impending restructuring of the electricity industry (to be discussed), 10-cent electricity will become a thing of the past in the lower 48 states. Opening the national electricity grid likely will equalize rates across state boundaries and reduce the nation's 8 cent per kWh average residential rate, leaving still fewer economic applications

### No Solvency – Econ

#### **Wind turbines cost jobs, and are require money from Chinese banks.**

Paul Driessen, Theorist, June 6, 2012, http://www.washingtontimes.com/news/2012/jun/6/wind-down-wind-subsidies/

:It is impossible to have wind turbines without perpetual subsidies - mostly borrowed from Chinese banks and future generations. There is no credible evidence that wind will be able to compete economically with traditional energy in the foreseeable future, especially with abundant natural gas costing one-fourth what it did just a few years ago. It makes more sense to rely on the plentiful, reliable, affordable electricity sources that have powered our economy for decades, build more coal and gas-fired generators - and recycle wind turbines into useful products (while preserving a few as museum exhibits).¶ Economics 201:As Spain, Germany, Britain and other countries have learned, wind-energy mandates and subsidies drive up the price of electricity - for families, factories, hospitals, schools, offices, churches and shops. That means two to four traditional jobs are lost for every wind or other “green” job created. It means the 37,000 jobs that the AWEA claims the U.S. wind industry creates (via $5 billion to $10 billion in combined annual subsidies, or $135,000 to $270,000 per wind job) are likely costing the United States 74,000 to 148,000 traditional jobs every year.

#### Wind Energy is doesn’t create jobs

Larry Bell writes about climate, energy, environmental and space policy issues. “Wind Energy's Overblown Prospects” Mar 08 2011http://www.forbes.com/sites/larrybell/2011/03/08/wind-energys-overblown-prospects/

Unfortunately, wind doesn’t afford the benefits marketers promise. It isn’t an abundant, reliable power source; doesn’t appreciably reduce fossil dependence or CO2 emissions; isn’t free, or even cheap; doesn’t produce net job gains; nor does it cool brows of feverish environmental critics. Many green energy advocates have exaggerated the capacity of wind power to make a significant impact on U.S. electrical needs. Any euphoric fantasy that an unlimited, free and clean alternative to carbon-cursed fossil-fuel sources is blowing by with scant notice is exceedingly naïve and misguided. A major point of public confusion in this regard lies in a failure to differentiate maximum total capacities, typically presented in megawatts (MW), with actual predicted kilowatt hours (kWh), which are determined by annual average wind conditions at a particular site. Wind is intermittent, and velocities constantly change. It often isn’t available when needed most — such as during hot summer days when demands for air-conditioning are highest. According to a 2009 Energy Information Agency Report on Electricity Generation, wind power provided only 70 billion kWh of the total U.S. 3,953 kWh supply (1.79% of generated power). Yet in May 2008, the U.S. Department of Energy estimated that it is feasible to increase wind capacity to supply 20% of this nation’s electricity and enough to displace 50 % of natural gas consumption and 18% of coal use by 2030. The report, drawn up by its national laboratories said that meeting this target presumed some important assumptions. It would require improvements in turbine technology, cost reductions, new transmission lines and a five-fold increase in the pace of wind turbine installations. What exactly does that mean in terms of real, available kWh generating output? Actually, it means very little if merely a minor percentage of that technical feasibility provides electricity when needed. To be extremely optimistic, let’s assume that actual average output would be 25% of that projected installed capacity. In that case, the real output would be less than 5% of the country’s electricity, and more realistically, about half of even that amount under optimistic circumstances. Output volatility due to wind’s intermittency varies greatly according to location and time of year, typically ranging from 0% to about 50%. Texas, one of the most promising wind energy states, averages about 16.8% of installed capacity, yet the Electric Reliability Council of Texas assigns a value of 10% due to unpredictability. Only about 20% of that capacity is generally available during peak demand periods (about 5:00pm), while average generation during off-peak time averages about 40% of capacity. Electricity must be instantaneously available day and night to meet “base load” requirements. When peak loads exceed supplies bad things quickly happen. Electrical frequencies and voltages drop as power line currents increase, necessitating automatic or manual interruption of loads (blackouts) to protect grids. But unlike such workhorse power generators as coal-fired and nuclear plants designed to constantly run at peak load capacities, wind (and solar) power requires incorporation of “spinning reserve” backup systems to provide continuity. These are typically gas-fired turbines, much like those used for jet aircraft engines that are connected to generators. That’s where it gets particularly expensive. Wind power must be integrated as part of a larger, balanced, grid network. When that wind generation component increases, the temperatures of fossil-fueled boilers must be dropped to maintain demand-supply equality. This involves wasteful shedding of heat for cooling — then more wasting to add heat back into the system without accomplishing any additional work. And since the spinning reserves don’t stop consuming fuel when wind generation is occurring, claims of energy savings or CO2 emission reductions are largely mythological. But assuming that wind is always blowing somewhere, won’t “smart grids” balance it all out? That is good in theory only. Ed Hiserodt, writing in an October 2010 New American .com. article titled “Wind Power: An Ill Wind Blowing” cites an example of 18 interconnected wind farms located in Southeast Australia. Covering a large area of approximately 40,000 square miles, those installations benefited from sites near a coast where winds are stronger and more constant than inland placements. Yet their combined total capacity was still insufficient to even begin to keep pace with base load demands. Another major limitation of individual wind farms is that they don’t produce power on massive scales needed in large cities and industrial areas where necessary space is at a premium and land is expensive. The most ideal locations are typically remote from areas where demands are highest, requiring large investments for power transmission lines and land right-of-way use. Wind turbines are also very expensive to build and maintain. The National Renewable Energy Laboratory reports that “Despite reasonable adherence to those accepted design practices, wind turbines have yet to achieve their design life of 20 years, with most requiring significant repair before the intended life is reached”. Those in offshore locations are even more costly to install, and fare much worse from corrosion damage. Will the construction and maintenance of wind power produce the many thousands of “high-quality green jobs” touted by the industry? Not according to a report from Spain released by researchers at King Juan Carlos University. It concluded that every “green job” created by the wind industry killed off 4.2 jobs elsewhere in the Spanish economy through missed opportunities to put that money towards more useful and productive ends. While research director Gabriel Calzada Alvarez didn’t fundamentally object to wind power, he did find that when a government artificially props up the industry with subsidies, higher electrical costs (31%) and tax hikes (5%), along with government debt follow. Each of those jobs was estimated to cost $800,000 per year to create, and 90% of those were temporary. A few months after the study was released, researchers at the Danish Center for Politiske Studier reached similar conclusions based upon their country’s experience: “It is fair to assess that no wind energy would exist if it had to compete on market terms.” Just how environmentally friendly is that “green” wind energy? Depends a lot on whom you ask and where they live. The best energy-generation sites are typically along mountain ridges and coastal areas–the same types of locations prized for scenic views and overflown by bird and bat species that become turbine blade casualties. And while some national environmental organizations such as Greenpeace and the Sierra Club have become staunch wind power advocates in their war against fossils, others who live in proposed wind farm locations have launched strong legal opposition. Robert F. Kennedy, Jr., nephew of a popular president and prominent lawyer for the Natural Defense Research Council, has fought hard against a proposed 130-turbine offshore “Cape Wind” development in Nantucket Sound. Another uncle, the late Sen. Ted Kennedy, along with Senate colleague and fellow Massachusetts resident John Kerry, didn’t want Cape Wind disturbing his vistas either. Then there’s the concern about whales. Yes, you read this right! On June 25, 2010, environmental groups filed a suit to block the Nantucket Sound project because it will endanger migratory birds and whales. Are they possibly underestimating whale intelligence? But what about risks to our economy and the well-being of ratepayers and taxpayers who must cover wind power costs? More than half of all revenues for companies that install and operate the systems come from federal, state and local tax benefits. Some state programs also legislate mandatory renewable portfolio standards that require electric utility companies to purchase designated amounts of energy from wind, solar and bio-fuel providers, typically at premium costs that are passed on to customers. So long as industry survival depends upon those preferential government-imposed benefits, two things are clear. Wind is certainly not a competitive free market source of energy, or a charity we can continue to afford.

### No Solvency – Oil Dependence

#### Oil dependency isn’t solved by wind turbines.

[http://www.**wind-power-problems.org**/](http://www.wind-power-problems.org/), nodate. JJM ^\_^

Wind turbines produce electricity, but only 1% of American electricity comes from oil.¶ Producing electricity with wind doesn't help because electricity isn't coming from oil.¶ Even if wind could produce all our electricity, it wouldn't impact oil.¶ Industrial wind has no impact on foreign oil dependence or consumption.

#### **Fossil fuels are needed for wind power to function.**

 Paul Driessen, Theorist, June 6, 2012, http://www.washingtontimes.com/news/2012/jun/6/wind-down-wind-subsidies/

Energy 101: It is impossible to have wind turbines without fossil fuels, especially natural gas. Turbines average only 30 percent of their “rated capacity,” and less than 5 percent on the hottest and coldest days, when electricity is needed most. Hydrocarbon-fired backup generators must run constantly, to avoid brownouts, blackouts and grid destabilization owing to constant surges and fall-offs in electricity to the grid.¶ Energy 201:Despite tens of billions in subsidies, wind turbines still generate less than 3 percent of U.S. electricity. Thankfully, conventional sources keep our country running - and America still has centuries of hydrocarbon resources, if only our government would make them available.

#### Wind Energy won’t solve America’s severe oil dependence

**TSaugust**, non-profit corporation that provides information on energy security and dependence and conservation, July 19th, **2007**, “Wind Energy Will NOT Reduce US Oil Dependence—July 2007 Update—2006 Data”, Tsaugust, <http://www.tsaugust.org/images/Wind%20Energy%20Will%20Not%20Reduce%20US%20Oil%20Dependence%20%2007-07-19.pdf> SP

One of the false claims made by “wind energy” advocates is that greater use of wind energy would reduce US dependence on oil, including oil imports. In fact, adding more wind turbines will have no significant impact on US oil consumption. Unfortunately, many well-meaning people (including reporters) and some regulators and political leaders have accepted – and repeated -- the wind advocates’ false claims about reductions in oil use. This brief paper explains why the reduced oil use claim is false. (The claim about reduced oil dependence is only one of many false and misleading claims made by the wind industry, US Department of Energy (DOE), DOE’s National Renewable Energy “Laboratory” (NREL) and other wind advocates. Other such claims are discussed elsewhere. 1 ) Facts about oil use in electric generation in the US 1. The only potential use of wind turbines is to produce electricity. 2. Very little oil is used in the US to produce electricity. In 2006, only 1.07% of the electricity generated in the US was produced by using oil. 2 Oil use was down significantly from 2005, undoubtedly due to high oil prices which led to greater use of other energy sources -- principally natural gas, and coal. Shares of electric generation from nuclear energy and hydropower also increased. The share of electricity produced by oil has dropped well below EIA’s projections 3. Most of the use of oil in the US for electricity generation occurs in a few states. In 2006, 3 states (Florida, Hawaii and New York) accounted for more than 70% of all the electricity in the US generated by using oil. 4. Oil accounted for more than 5% of electric generation in only 4 states and the District of Columbia. Those states are Hawaii, Florida, Massachusetts, and Alaska. 5. Oil accounted for less than 1% of electric generation in 39 states. Thirty-six of those were less than ½ of 1%. Reasons why wind energy will have no significant impact on oil use for electric generation 6. Even in the 11 states (and the District of Columbia) where oil accounts for more than 1% of electricity generation, adding wind turbines would have very little, if any, impact on oil consumption. The facts supporting this conclusion are complex and many of those who have believed the false claims might be forgiven for their errors. However, the complexity does not excuse officials from DOE, NREL or the wind industry who should know better. But, in any case, here is why wind energy is highly unlikely to reduce to reduce oil use in electric generation: 2 a. About 7.7% of the oil used in electric generation in 2006 was “distillate” oil 4 used in combustion turbine and internal combustion electric generating units. 5 The cost of this oil is high and such units are used almost exclusively in times when electricity demand is at its highest level (e.g., during hot weekday afternoons in July and August). Little if any wind generated electricity is available during those times. b. Most of the remaining 92% of the oil used in electric generation was “residual oil” (#4 & #5) that is used in older, oil-fired steam-electric generating units (oil is burned to heat water and create steam to drive a turbine). c. These older oil-fired steam-electric units are quite unlikely to be the units that are backed down or ramped up to adjust for the intermittent, highly volatile (output often varies widely minute to minute) and largely unpredictable output from wind turbines – which produce electricity only when the wind is blowing in the right speed range. 6 Also, some of the old oil-fired steam-electric units are located close to major load centers (e.g., New York City and Long Island) and must be run to maintain proper voltage. d. Instead, the generating units that are likely to be used to “back up” the intermittent wind turbines will be units that are either: 1) Designed and designated to serve in an Automatic Generation Control (AGC) mode to keep an electric grid in balance (i.e., frequency and voltage), 2) Producing at less than full capacity and capable of ramping up or down on short notice, or 3) Operating in a “spinning reserve” mode. 7 Electricity supply and demand must be kept in balance. Electricity production is constantly adjusted to meet electricity demand. The generating units that serve best in backing up intermittent, volatile wind turbines are hydropower units because the output from these units can be increased or decreased almost instantaneously. The next best alternatives are gas-fired turbine-based generating units (e.g., combined-cycle or larger simple cycle). Oil-fired units are less likely to be used in the required balancing role for wind turbines because (a) the oil-fired combustion turbine and internal combustion units are unlikely to be running except in times of peak demand, and (b) the oil-fired steamelectric units are likely to have slower response times than is necessary to back up wind turbines. e. The generating units used to “back up” intermittent and volatile wind generation will depend on the generating mix and other conditions in the grid control area that is receiving the electricity from wind turbines. In the Pacific-Northwest, for example, hydro power would likely serve in the balancing role – with no savings in oil. In New England, with its heavy dependence on natural gas and a significant amount of newer gas-fired generating capacity, a gas-fired unit would likely serve in the balancing role, again with little or no savings in oil use. 7. In summary, there is very little likelihood that any oil use in electric generation would be reduced by adding wind turbines. This would certainly be true in the states with only small shares of their electric generation from oil. 3 The electric industry officials who will have the exact data on the generating units that are run to balance the intermittent and volatile output from wind turbines are those who handle the day to day management and control of electric grids and transmission systems; i.e., depending on the region of the US, electric utility, the power pool, the independent system operator (ISO), or the regional transmission organization (RTO).

#### Wind just won’t end our oil dependence

Kurt **Krueger**, journalist for Benzonia and the “Arcadia Wind Study Group”, May 26th, **2011**, “Wind Won’t End Oil Dependency”, Arcadia Wind Study Group, <http://arcadiawindstudygroup.org/2011/05/26/wind-wont-end-oil-dependency/> SP

Our community has quickly become a staging ground for the national debate over alternative energy. However, many people seem to misunderstand the effect wind power will have on our nation. Many seem to think that wind power can help reduce our countries dependence on foreign oil. This would be great, if it were true. Unfortunately, in reality there is no connection between wind power and this country’s dependence on foreign oil. Electricity in this country is generated primarily from coal, nuclear, hydroelectric power and natural gas none of which are imported in any significant quantities. Less than 1% of our electricity comes from oil (from www.eia.doe.gov/energyexplained/). We are not paying $4 for a gallon of gas or fighting wars in the Middle East due to a lack of wind turbines. This truth differs from the picture with wind industry would like to present to us about how wind power can save us from oil spills and high gas prices. Sadly many people are buying into this myth and end up supporting the wind industry for the wrong reasons. It makes them feel good to support wind, so they never end up thinking about the consequences of wind turbines or end up questioning their pre-suppositions. We must come to terms with the fact that wind power has its limitations, its drawbacks, and needs proper zoning regulation in order to prevent damage to our community.

#### Rare earth metals are required for Wind turbines. Getting these out of the ground uses fossil fuels.

Paul Driessen, Theorist, June 6, 2012, http://www.washingtontimes.com/news/2012/jun/6/wind-down-wind-subsidies/

Environment 101:Industrial wind-turbine projects require enormous quantities of rare-earth metals, concrete, steel, copper, fiberglass and other raw materials; for highly inefficient turbines, multiple backup generators and thousands of miles of high-voltage transmission lines. Extracting and processing these materials, turning them into finished components, and shipping and installing the turbines and power lines involve enormous amounts of fossil fuel and extensive environmental damage.

### No Solvency – Ozone

#### **CO2 Emissions destroy the ozone layer. Only the aff solves Ozone, which is an existential risk.**

 A. El-Kholy, E. El-Hinnawi, M. W. Holdgate, D. F. McMichael, and R. E. Munn, eds. 1992. Ozone depletion. Chapter 2 in The world environment 1972-1992. New York: Chapman and Hall., <http://www.ciesin.org/docs/011-466/011-466.html>, JJM^\_^

About 90 per cent of the Earth's protective ozone layer resides in the stratosphere between 15km and 50km altitude (Figure 1). Molecular oxygen is broken down in the stratosphere by solar radiation to yield atomic oxygen, which then combines with molecular oxygen to produce ozone. Ozone is destroyed naturally through a series of catalytic cycles involving oxygen, nitrogen, hydrogen and to a lesser extent chlorine and bromine species. The abundance of stratospheric ozone is therefore chemically controlled by the stratospheric abundances of compounds containing hydrogen, nitrogen, chlorine and bromine. Increases in the abundances of methane and nitrous oxide (sources of hydrogen and nitrogen oxides respectively) thus affect the abundance and distribution of stratospheric ozone. Stratospheric ozone is also affected by the abundance of carbon dioxide (CO2), because the rates of the chemical reactions that control the abundance of ozone are temperature-dependent, and the abundance of CO2 plays a key role in determining the temperature structure of the stratosphere.¶ During the 1970s and early 1980s, theoretical model calculations focused on predicting the response of stratospheric ozone to changes in chlorine, assuming that the atmospheric abundances of other trace gases remained constant. However, since the early 1980s, with advances in understanding of trace gas trends and model formulation, model calculations have been used to predict the response of stratospheric ozone to simultaneous increases in chlorine (from chlorofluorocarbons, hydrochlorofluorocarbons, carbon tetrachloride, methylchloroform and methyl chloride) and bromine (from halons and methyl bromide), as well as methane, nitrous oxide and carbon dioxide.

### No Solvency – Heg

#### Wind Energy isn’t cheap and heg isn’t threatened if we don’t implement wind turbines

Michael Schirber, journalist for “Live Science” which is a respected science information site, September 24th, 2008, “Article: 5 Myths About Wind Energy”, Live Science, <http://www.livescience.com/2890-5-myths-wind-energy.html>

With these numbers projected to grow in the coming years, it might be good to be aware of a few myths that are blowing in the wind. 1. Wind is cheap No one owns the wind, so it might seem like wind energy should cost less than other technologies that require costly fuel, such as coal or natural gas, to operate. However, the initial investment for wind energy is high. Large scale wind turbines cost a few million dollars per megawatt to put up, which at face value appears competitive with new coal-fired power plants, but the wind doesn't always blow. In effect, wind turbines typically only produce electricity about 30 percent of the time, so it takes longer to pay back the building costs. Taken together with government incentives and maintenance costs over a turbine's 20-year lifetime, wind energy ends up costing about 4 cents per kilowatt-hour, according to DOE estimates. That's slightly more than coal, but the two are getting closer all the time. 2. America is way behind the rest of the world Denmark gets 20 percent of its energy from wind. Germany has the most wind turbines of any country. China is set to nearly double its wind energy capacity in just one year. You might think the United States is dragging its heels, but in terms of the raw total, America produces more wind energy than any other country (thanks to it being windier here than in Germany). And more investment is on the way. One recent headline grabber is the world's large wind farm project in Pampa, Texas, proposed by oil magnate T. Boone Pickens. This is part of the so-called Pickens Plan to invest $1 trillion on wind turbines throughout the wind corridor from the Dakotas down to the Texas panhandle. 3. Wind turbines are loud Wind turbines used to be loud, but newer designs are less so. Some of the bad rap about noise can be attributed to a single wind turbine constructed in 1978 outside of Boone, N.C., which generated low-frequency sound waves that rattled windows and made some people sick in nearby homes. Since then, most new rotors turn slower and are mounted in front of (not behind) their towers. These and other changes have dramatically lowered the noise, said Pat Moriarty of the National Renewable Energy Lab in Golden, Colo. Still, some neighbors complain, and the wind industry continues to search for even quieter designs. 4. Wind turbines kill birds This one is actually true, but the problem is not as bad as some people claim. The impression that all turbines are dangerous to birds comes from Altamont Pass Wind Resource Area in California. This was one of the first big wind farms, and unfortunately it was placed in a migratory bird pathway, Moriarty said. In addition, Altamont's 4,800 small wind turbines — many installed in the early 80s — have rotors low to the ground and packed close together, which may be why more than 1,000 birds (half of which are raptors) die there each year. Newer wind farms report fewer bird deaths probably because the turbines are taller and spread further apart. And for comparison's sake, studies show that many more birds die colliding with cars and buildings than die in turbine blades. 5. Any house can own a windmill Unless you have a good chunk of land around your house, it's probably not a good idea to get a wind turbine. If it's too close to buildings or trees, the wind will be turbulent and won't produce the power that it's supposed to. But what do we know. The small wind turbine market grew by 14 percent in 2007. Some of these are for boats, but others supply homeowners who live off the grid.’’

## Wind Bad

### Wind Bad – Health

#### Wind Turbines are bad for your health-Oregon proves

Kathy **Aney**, journalist for the East Oregonian and contributor to the National Wind Watch, March 22nd, 2012, National Wind Watch, <http://www.wind-watch.org/news/2012/03/22/study-finds-wind-turbines-may-be-bad-for-your-health/> SP

Everything from vertigo to sleep deprivation, migraines, heart disease, stress and tinnitus has been blamed on wind farms. The Oregon Health Authority Office of Environmental Public Health spent more than a year investigating whether living close to wind turbines damages personal health or brings discord into a community. The results appear in a recently released 134-page health impact assessment. Tuesday, the health authority at a hearing at the Umatilla County Justice Center gathered public comment on the report. Another session is scheduled from 6:30-8:30 p.m. Wednesday in Bend. About 25 people turned up in Pendleton to provide feedback. The public health study involved community listening sessions in Pendleton, Arlington and La Grande, collected online questionnaire data and reviewed existing studies to get a picture of health risks of living near wind farms. Jae Douglas, the study’s principal investigator, described wind energy development as “a fast moving train.” “Wind energy has been expanding rapidly for a number of years,” she said. “There’s no reason to think it’s going to stop expanding, especially across the West.” Wind power production in Oregon grew from 25 megawatts in 1999 to 2,104 megawatts in 2010. Some health effects are quantifiable, while others are complex and harder to quantify, the assessment discovered. At certain decibel levels, wind farm noise can disturb sleep and trigger stress. Turbine noise, the report said, “is more noticeable, annoying and disturbing than other community or industrial sounds at the same level of loudness.” That’s likely because turbines produce fluctuating sounds that are generally perceived as more annoying. One man at the session who lives less than a mile from seven turbines said the noise keeps him awake at night, making him jumpy and hyper-vigilant, “like being in combat.” The man, who didn’t want to give his name because of pending litigation, uses white noise to mask the turbines. One European study suggested that serious health effects showed up at 40-55 decibels and increased above 55. The report recommended limiting turbine noise to 36 decibels or lower and restricting the increase in noise to no more than 10 decibels above existing background levels. Land owners could choose to waive the 36 decibels maximum, but couldn’t top 50 decibels. The measures could ward off potential health impacts that include chronic stress, cardiovascular disease, decreased immune function, endocrine disorders, mental illness and a lowered quality of life. The health authority report also considered visual effects such as shadow flicker, caused by rotating turbine blades. Researchers found little evidence of health effects caused by shadow flicker. The assessment also examined whether economic effects and community conflict over wind farms could affect health. Some attending the session agreed that conflict over turbines causes angst. “Wind turbines cause heartburn in a community,” said Robin Severe of Helix. “I don’t begrudge a landowner earning money off his ground, as long as it doesn’t affect his neighbor.” Severe said he lives about 1.8 miles from the closest turbine. They are popping up all around his property. Soon, he said, “we will be completely surrounded.” Ryan Stoner of Blue Mountain Alliance, a group that advocates for keeping the mountain viewshed free of wind turbines, lamented that turbines have become a bone of contention. “Friendly farmers have turned into enemies over wind turbines going up on neighboring properties,” he said. Heppner resident John Kilkenny said wind developers have learned from the public outcry and that setbacks will solve the noise issue. “Developers are so sensitive to the noise issue that I don’t think you are going to see a gray area,” he said. “We’re assuming no one’s learned anything in the last three years. Everyone has learned a lot.” Douglas said the assessment is only a guide to help decision makers. “Wind energy is an emerging and growing field,” she said. “Decision makers are grappling with what they are hearing. This is complex on so many different levels.”

#### **Wind turbine Have serious health effects.**

 KATHY ANEY, East Oregonian, 21 March 2012 , <http://www.wind-watch.org/news/2012/03/22/study-finds-wind-turbines-may-be-bad-for-your-health/>, JJM^\_^

Wind power production in Oregon grew from 25 megawatts in 1999 to 2,104 megawatts in 2010.¶ Some health effects are quantifiable, while others are complex and harder to quantify, the assessment discovered.¶ At certain decibel levels, wind farm noise can disturb sleep and trigger stress. Turbine noise, the report said, “is more noticeable, annoying and disturbing than other community or industrial sounds at the same level of loudness.”¶ That’s likely because turbines produce fluctuating sounds that are generally perceived as more annoying. One man at the session who lives less than a mile from seven turbines said the noise keeps him awake at night, making him jumpy and hyper-vigilant, “like being in combat.” The man, who didn’t want to give his name because of pending litigation, uses white noise to mask the turbines.¶ One European study suggested that serious health effects showed up at 40-55 decibels and increased above 55. The report recommended limiting turbine noise to 36 decibels or lower and restricting the increase in noise to no more than 10 decibels above existing background levels.¶ Land owners could choose to waive the 36 decibels maximum, but couldn’t top 50 decibels.¶ The measures could ward off potential health impacts that include chronic stress, cardiovascular disease, decreased immune function, endocrine disorders, mental illness and a lowered quality of life.¶ The health authority report also considered visual effects such as shadow flicker, caused by rotating turbine blades. Researchers found little evidence of health effects caused by shadow flicker. The assessment also examined whether economic effects and community conflict over wind farms could affect health. Some attending the session agreed that conflict over turbines causes angst.¶ “Wind turbines cause heartburn in a community,” said Robin Severe of Helix. “I don’t begrudge a landowner earning money off his ground, as long as it doesn’t affect his neighbor.”

#### Wind turbines damage human health

The Daily Free Press “Wind turbines harmful to health, Mass. residents say” Feb 15 2012 http://dailyfreepress.com/2012/02/15/wind-turbines-harmful-to-health-mass-residents-say/

Although they provide cleaner energy, wind turbines may be damaging to the health of Bay State residents, according to recent testimonies. Members of the Massachusetts Department of Environmental Protection and Department of Public Health received mixed reviews at the Massachusetts State House on Tuesday from residents living near wind turbines. The discussion was the first of the three public hearings about a recent report on the potential health effects associated with proximity to wind turbines. “Over the last year and a half, we have heard some reports that people were experiencing health or other types of problems they believe are associated with living near wind turbines,” said MassDEP Commissioner Kenneth Kimmell to the audience in the Gardner Auditorium at the State House. He said the reports prompted MassDEP commissioners to start a “fact-finding mission.” They compiled an independent, scientific panel of bachelors from various disciplines to perform a scientific review using protocols of the National Academy of Sciences, Kimmell said. This, he said, was intended to help give MassDEP a sense of what the literature tells them about wind turbines’ potential health effects. Opponents of the report’s findings said the noise, vibrations and shadow flickers from the wind turbines do indeed have health impacts on residents. This contradicts the findings that said there was “insufficient epidemiologic evidence” to determine “an association between noise from wind turbines and measures of psychological distress or mental health problems,” according to the report. Neil Andersen, of Falmouth, was the first to speak on behalf of those affected by the turbines. “By ignoring those of us in Falmouth and excluding most of our supporting literature and testimonials,” Andersen said, “this so-called health study has done a great injustice to the citizens of this Commonwealth.” Andersen said he lives a quarter mile from the 500-foot tall structures with eight-ton rotating blades and that there have been thousands of complaints since their installation. “It is certainly obvious that there are quite a few people who aren’t doing their jobs,” Andersen said. Professor Wendy Heiger-Bernays, of Boston University’s School of Public Health, said this is a complex issue the panel has spent many months studying, according to a State House press release. “By reviewing the available data and information, we believe that we have significantly added to the understanding of the potential for health effects from wind turbines,” she said. The panel included three BU professors. Andersen said the wind turbines “do not belong anywhere near neighborhoods” because they make people sick. He gave examples of his own headaches, heart palpitations, vertigo and more health complications that have disappeared since the turbines were turned off in November. “We cannot get used to it,” Andersen said. “There is no compromise. There is no mitigation.” But members of Northeastern University’s Wind Action Committee said MassDEP should adopt the conclusions of the study. WAC Founder Emily Rochon, of Dorchester, said to the panel that the wind turbines are far safer and cleaner than other sources of power. Other supporters of the independent report, including members from New England’s Environmental Business Council, said it was well conceived and has attainable goals. Still, residents said anecdotal evidence must be taken into consideration. Former environmental science student Kathryn Elder, of Falmouth, said she lives 1,700 feet from a wind turbine and that her life has been turned upside-down by the turbine because it has been built too close to her house. “It is not my perception, it is not my opinion and it is certainly not annoyance that wakes me up repeatedly at night,” Elder said to the panel. “Members of my family . . . have extreme anxiety and other physical issues in response to being close to the turbine.”

#### Citizens around turbines experience adverse health effects

Mobile Magazine “Wind Turbines – Bad For Your Health?” Feb 25, 2011 http://www.mobilemag.com/2011/02/25/wind-turbines-bad-for-your-health/

A group of Ontario residents who live near wind turbines claim the turbines have caused health problems. The group spoke up against the Ontario government’s decision to give energy giant Suncor a licence to build an eight-turbine wind power project in the city of Chatham-Kent, Ontario. The group of Chatham-Kent citizens filed an appeal to Ontario’s Environmental Review Tribunal. This marks Canada’s first hearings examining the health effects of wind turbines. According to the group of citizens, exposure to windmills can cause sleep problems, headaches, dizziness, nausea, exhaustion, anxiety, anger and even depression. In 2009, the Canadian Wind Energy Association funded a study done by a panel of experts to determine whether windmills cause health problems. According to their report, there is no evidence that sounds emitted by the turbines cause physiological effects, and that the windmill’s vibrations are too weak to be detected by humans. The report claims people’s negative reactions to wind turbines are based on personality, “some may find this sound annoying, a reaction that depends primarily on personal characteristics as opposed to the intensity of the sound level.” Basically, they think people who have issues with wind turbines are people who are more easily annoyed than others. Other anti-wind advocates in Ontario are calling for more studies to be done on the effects of windmills on health before the government allows any more wind projects. One-third of Canada’s wind turbines are located in Ontario, and the wind industry is growing the fastest in the province out of all of Canada. The tribunal is expected to make a decision on the Chatham-Kent project sometime in May 2011.

### Wind Bad – Birds

#### **Thousands of rare birds are slaughtered every year by wind turbines.**

Paul Driessen, Theorist, June 6, 2012, http://www.washingtontimes.com/news/2012/jun/6/wind-down-wind-subsidies/

:U.S. wind turbines slaughter nearly half a million eagles, hawks, falcons, vultures, ducks, geese, bats and other rare, threatened, endangered and otherwise protected flying creatures every year. But while oil companies are prosecuted for the deaths of even a dozen common ducks, turbine operators have effectively been granted a “007 license to kill” exemption from endangered- and migratory-species laws and penalties.

#### Wind blades kill birds

Darryl Fears has worked at The Washington Post for more than a decade, mostly as a reporter on the National staff. He currently covers the environment, “wind farms under fire for bird kills” August 28th 2011 http://www.washingtonpost.com/national/health-science/wind-farms-under-fire-for-bird-kills/2011/08/25/gIQAP0bVlJ\_story.html

Six birds found dead recently in Southern California’s Tehachapi Mountains were majestic golden eagles. But some bird watchers say that in an area where dozens of wind turbines slice the air they were also sitting ducks. The U.S. Fish and Wildlife Service is investigating to determine what killed the big raptors, and declined to divulge the conditions of the remains. But the likely cause of death is no mystery to wildlife biologists who say they were probably clipped by the blades of some of the 80 wind turbines at the three-year-old Pine Tree Wind Farm Project, operated by the Los Angeles Department of Water and Power. As the Obama administration pushes to develop enough wind power to provide 20 percent of America’s energy by 2030, some bird advocates worry that the grim discovery of the eagles this month will be a far more common occurrence. Windmills kill nearly half a million birds a year, according to a Fish and Wildlife estimate. The American Bird Conservancy projected that the number could more than double in 20 years if the administration realizes its goal for wind power. The American Wind Energy Association, which represents the industry, disputes the conservancy’s projection, and also the current Fish and Wildlife count, saying the current bird kill is about 150,000 annually. Over nearly 30 years, none of the nation’s 500 wind farms, where 35,000 wind turbines operate mostly on private land, have been prosecuted for killing birds, although long-standing laws protect eagles and a host of migrating birds. If the ongoing investigation by the Fish and Wildlife Service’s law enforcement division results in a prosecution at Pine Tree, it will be a first. The conservancy wants stronger regulations and penalties for the wind industry, but the government has so far responded only with voluntary guidelines. “It’s ridiculous. It’s voluntary,” said Robert Johns, a spokesman for the conservancy. “If you had voluntary guidelines for taxes, would you pay them?” The government should provide more oversight and force operators of wind turbines to select sites where birds don’t often fly or hunt, the conservancy says. It also wants the wind industry to upgrade to energy-efficient turbines with blades that spin slower. The lack of hard rules has caused some at the conservancy to speculate that federal authorities have decided that the killing of birds — including bald and golden eagles — is a price they are willing to pay to lower the nation’s carbon footprint with cleaner wind energy. But federal officials, other wildlife groups and a wind-farm industry representative said the conservancy’s views are extreme. Wind farms currently kill far fewer birds than the estimated 100 million that fly into glass buildings, or up to 500 million killed yearly by cats. Power lines kill an estimated 10 million, and nearly 11 million are hit by automobiles, according to studies. “The reality is that everything we do as human beings has an impact on the natural environment,” said John Anderson, director of siting policy for the wind-energy association

#### Wind turbines murder birds

USA Today “Wind turbines taking toll on birds of prey” Jan 4th 2005 http://www.usatoday.com/news/nation/2005-01-04-windmills-usat\_x.htm

ALTAMONT PASS, Calif. — The big turbines that stretch for miles along these rolling, grassy hills have churned out clean, renewable electricity for two decades in one of the nation's first big wind-power projects. But for just as long, massive fiberglass blades on the more than 4,000 windmills have been chopping up tens of thousands of birds that fly into them, including golden eagles, red-tailed hawks, burrowing owls and other raptors. After years of study but little progress reducing bird kills, environmentalists have sued to force turbine owners to take tough corrective measures. The companies, at risk of federal prosecution, say they see the need to protect birds. "Once we finally realized that this issue was really serious, that we had to solve it to move forward, we got religion," says George Hardie, president of G3 Energy. The size of the annual body count — conservatively put at 4,700 birds — is unique to this sprawling, 50-square-mile site in the Diablo Mountains between San Francisco and the agricultural Central Valley because it spans an international migratory bird route regulated by the federal government. The low mountains are home to the world's highest density of nesting golden eagles. Scientists don't know whether the kills reduce overall bird populations but worry that turbines, added to other factors, could tip a species into decline. "They didn't realize it at the time, but it was just a really bad place to build a wind farm," says Grainger Hunt, an ecologist with the Peregrine Fund who has studied eagles at Altamont. Across the USA — from Cape Cod to the Southern California desert — new wind projects, touted as emission-free options to oil- and gas-fueled power plants, face resistance over wildlife, noise and vistas. The clashes come as wind-energy demand is growing, in part because 17 states have passed laws requiring that some of their future energy — 20% in California by 2010 — come from renewable sources. Environmental groups, fans in principle of "green" power, are caught in the middle. "We've been really clear all along, we absolutely support wind energy as long as facilities are appropriately sited," says Jeff Miller, Bay Area wildlands coordinator for the Center for Biological Diversity, which took 12 companies to court. Wind energy is a tiny but fast-growing share of U.S. energy — 0.4%, up from less than 0.1% five years ago. Since November, when Congress reinstated a key tax credit for wind producers, the industry is poised to expand by as much as a third this year, the American Wind Energy Association says. In 2004, wind generated enough electricity to power 1.6 million households, the association says. Altamont's turbines are the nation's No. 2 producer. Few energy experts think environmental concerns will discourage wind development long-term because the tradeoff is too appealing. "When you opt for wind turbines, you don't opt for pollution that harms children and crops from fossil-fuel power plants," says Dan Kammen, an energy professor at the University of California-Berkeley. But windmills — derisively dubbed by some "toilet brushes in the sky" — draw fire when they're planned in areas prized for their pristine landscapes: Cape Cod groups are fighting what they call visual pollution from 130 turbines, each taller than the Statue of Liberty, sought for Nantucket Sound. Fishermen fear loss of prime fishing grounds from the USA's first offshore project. Rep. Nick Rahall, D-W.Va., asked the Government Accountability Office to study the effects more windmills would have in the Appalachians. Research found that existing turbines killed up to 4,000 bats on Backbone Mountain last year. In the Flint Hills of Kansas, the Audubon Society worries that windmills could despoil views in one of America's few remaining stands of native tallgrass prairie and harm habitats of migrating prairie birds. Acting Gov. Richard Codey last month ordered a 15-month wind-power moratorium on the New Jersey shore, where the desire to preserve Atlantic views has collided with plans for offshore turbines near Ocean City and other sites. Altamont Pass bird kills have been known for years, but turbine owners and federal regulators ignored them except to urge more research, says Miller of the Center for Biological Diversity. But a California Energy Commission study in August found bird fatalities much higher than had been thought and laid out steps to limit them. At the same time, 20-year-old county permits were up for renewal, and the U.S. Fish and Wildlife Service decided to crack down. "Twenty years has just been too long to resolve this problem," says Scott Heard, the agency's chief Northern California enforcement agent. Fish and Wildlife can prosecute those responsible for kills under federal laws that protect eagles and migratory birds. The center's lawsuit was withdrawn but filed again in November because the wind companies' bird-protection plan was "not a serious attempt," Miller says. The center is appealing Alameda County's approval of new permits. The state study's key recommendation would be costly for companies: replace old turbines with fewer, larger-capacity modern ones, relocate them away from favorite bird haunts and build them more than twice as high so blades rotate above the birds' flight paths. Environmentalists want 3-year permits that can be renewed only if companies show progress. The companies, citing financial pressures, have proposed at least 13-year permits and want their own timetable for installing new turbines. Alameda County is trying to broker a deal. "We can't put them out of business by telling them to take out all their old turbines," says assistant planning director Steven Buckley. Turbine owners say Altamont's 4,000-plus windmills are outdated and eventually will be replaced by 1,000 or fewer new ones. G3 Energy, a small Altamont operator, is replacing 180 obsolete turbines with 38 larger ones .Others are more cautious. FPL Energy, Altamont's biggest operator with 2,000 turbines, wants the study's findings tested. "Certainly the turbine owners hope fewer, taller turbines reduce collisions," says FPL spokesman Steve Stengel. "But there has not been research done to verify that."

### Wind Bad – Econ

#### **The economy will suffer from Wind turbines.**

Paul Driessen, Theorist, June 6, 2012, http://www.washingtontimes.com/news/2012/jun/6/wind-down-wind-subsidies/

Skyrocketing electricity prices owing to “renewable portfolio standards” raise heating and air-conditioning costs; drive families into fuel poverty; increase food, medical, school and other costs; and force companies to lay off workers, further impairing their families’ health and welfare. Audible and inaudible turbine noise causes fatigue, headaches, dizziness, irritability, sleep problems and vibro-acoustic effects on people’s hearts and lungs. Landowners receive royalties for having turbines on their property, but neighbors receive no income and face adverse health effects, decreased property values and difficulty selling their homes.¶ Real World Civics 101: Politicians take billions from taxpayers, ratepayers and profitable businesses to provide subsidies to Big Wind companies, who buy turbines mostly made overseas - and contribute millions to the politicians’ re-election campaigns, to keep the cycle going.¶ It is truly government gone wild and is unsustainable. Americans can contact their elected representatives to demand science-based energy policies. These reasons could be a good way to start the conversation.

#### **Wind Energy kills traditional jobs**

Pantagraph.com “Wind energy is too expensive” 4/20/11 http://www.pantagraph.com/news/opinion/mailbag/article\_988d1286-6252-11e0-b5f8-001cc4c03286.html

The verdict is in: wind won’t work. Within the last year, all the countries that were fans of wind energy have reversed course: Spain, Denmark, Italy, Holland and Germany all drastically cut or eliminated subsidies for wind. Why? Wind costs a fortune and kills jobs. For every so-called “green” job created (at a huge cost to the public), two to five traditional jobs were lost; see “The Myth of Green Energy Jobs: The European Experience,” www.aei.org (February 2011). The party is over over there. That’s why the wind vampires are coming here now. And they’re biting everyone around them — wealthy landowners, school administrators, county boards, and feckless universities — to create more money-sucking vampires to lobby for the industry and help it get even more “free money.” Unfortunately, it’s not free. The Section 1603 stimulus program needs to be shut down before we hemorrhage another $3 to $5 billion (billion!) in cash grants to foreign industry, mostly China and India. The final insult is that we will have to borrow that $5 billion from the people we are giving it to. In the end, their economy will get the $5 billion back and their government will get an extra $3 billion in interest from us and our kids! Europe has learned the hard way that wind doesn’t work. America needs to wake up and smell the snake oil before it’s too late. Carolyn Gerwin

### Wind Bad – Dangerous

#### Wind Power is dangerous to humans and animals

Powered Generators.com “Dark Side of Wind Power” (no date) http://www.poweredgenerators.com/wind/dark-side.html

People say never trust an oil man because all they care about is making a buck and T. Boone Pickens enthusiasm to wind power has sound fishy and it is. First wind power is not always constant because wind speeds change frequently and if there is no consistent energy from wind farms there could be brownouts all over. To prevent this, there has to be a backup source, usually powered by a source that can turn on instantly, which is why natural gas is more favorable and why Pickens wants more wind turbines as he has major investments in the fossil fuel. Next wind energy is not as efficient because too many turbines are needed in order to create as much energy as say a nuclear plant or coal plant. This means, to meet the high energy demand, lots of land need to be planted with wind turbines and there is no real answer to rather this land can be reconstructed for another use if wind turbines are not the right answer. The process is liked destroying the land with turbines, cables, and material without really knowing the end result. Many people feel that onshore wind turbines take away from the beauty of the land but no one can deny that these towering structures cannot be missed. The manufacturing of wind turbines and creating wind farms is another downside to wind energy. Creating these massive structures requires lots of material which emits CO2 to the environment and then actually setting the wind turbines into the ground by drilling and setting a base with concrete, sand and other material also emits more and more CO2. There are no unbiased reports as to the amount of CO2 produced in setting up a wind farm and the amount of CO2 that will be saved during the lifetime of wind turbines. There are many factors that go into this situation but the main one is location and how well the wind farms are setup. One major drawback that has not been researched as much as it should is the noise and small vibration from wind farms. The noise produced by wind turbines is definitely noticeable even though some may not find it as unpleasant as others. Wind farms are usually located as far away from towns and cities as possible but with the laying of lines some farms are located near smaller ones. There is a book by Dr. Nina Pierpont called Wind Turbine Syndrome: A Report on the Natural Experiment that talks about the possible health issues from living near wind turbines. The book talks about how the low frequency noise and vibration from the turbines affect the inner ear and can cause difficulty sleeping, mood disorders, childhood terrors, tinnitus, and many other health issues. There are many cases of people facing these problems and many researchers have found similar factors. There definitely needs to be more research on the issue before more and more wind farms are built. Wind farms also affect wildlife both onshore and offshore and are definitely a negative factor for wind power. Wind turbines always have a chance of killing flying animals that try to fly through the blades. There has been bad planning in the location of some wind farms being located in the path of migratory birds or near places other flying animals often transverse. The Altamont Pass wind farms are a perfect example of a bad location as many migratory birds of prey fly through and are killed including rare species. Other locations have been known to kill bats as well. For offshore wind farms, there needs to be more research on the effects on fish and other animals nearby like seals. The platforms and noise may drive away fish, seals, and other animals which would in turn drive away other animals and could affect the ecological system in the area. Many companies do look at these factors before building offshore wind farms but more work needs to be done to insure complete safety. The last drawback mentioned here is this major push, especially by Pickens to massively produce wind farms which may be copied all over the world. There are many corrupt businesses doing wind farms who are looking to make a buck and do not invest enough into measures to insure the best result for the environment and the people. Setting up wind farms should require extensive research on the land, the affect on the environment and people, and overall long term affect which some companies do not spend the time to examine. After all wind could be the next oil discovery and companies are trying to invest as fast as possible which could mean the same lobbying and behind the door bribes that Big Oil is already probably doing.

### Wind Bad – Environment

#### Wind Turbines negatively impact the environment

Clean energy ideas, comprehensive information site on natural and renewable energy resources, 2012, “A Wind Turbines Impact On the Surrounding Environment”, Clean energy ideas, <http://www.clean-energy-ideas.com/articles/wind_turbines_impact.html>

There are many issues relating to a wind turbines impact on the surrounding environment, and these contribute to the significant level of disadvantages of wind turbines. This article discusses some of the impacts wind turbines place upon the environment, and the disadvantages of producing this type of natural electricity. Noise Pollution The most noticeable impact a wind turbine places upon the environment is noise pollution. Many people think wind turbines are a great idea, yet a large proportion of these people would oppose a wind farm development close to their home. This is down to the noise, and many people compare the sound output of a wind turbine to a small jet engine. The impact of noise pollution has the potential to lower property values within a varying radius of the construction. Modern technologies are ever increasing the efficiency of wind turbines, yet they fail to decrease the noise output by significant levels. The noise pollution can greatly depend on the average annual wind speed (i.e. the higher the wind speed, the greater the noise output can be) and the size of the blades. Noise pollution is said to be one of the biggest disadvantages of a wind turbine. Visual Impact Another disadvantage regarding a wind turbine and it's impact on the surrounding environment can be expressed with the term "visual impact" or "visual pollution". Some people believe wind turbines actually look quite nice, yet many people disagree. You may enjoy the visual impact of turbines, but this does not stop the majority of people seeing turbines as a scare on the landscape. Wildlife Impact The third and final most significant impact of a wind turbine on the surrounding environment is mainly argued by wildlife groups. In some areas of wind farm developments, birds have been found dead around the base of turbines. The force of the blades high up in the air may not seem powerful to you, yet they are more than capable of harming wildlife. Also tied in with this matter is the construction of wind turbines. As with many other developments, wind turbines need deep foundations, and this has the potential to destroy underground habitats, and disturb surrounding ones. Overview So there we have it, some of the impacts and disadvantages of the various wind turbine developments across the world. Although these impacts are significant, newer technologies are making wind turbines ever more friendly towards the surrounding environment, and as our energy demands grow, we can expect to see many more wind farms constructed across the world.

#### Wind energy obliterates environment

Michael Sandoval is the Managing Editor of People’s Press Collective and a former political reporter for National Review Online. “Dispelling the Myth of “Clean” Green Energy” Dec 9th 2011 http://energy.i2i.org/2011/12/09/dispelling-the-myth-of-clean-green-energy/

Typically, readers are treated to some sort of facile environmental comparison between say, coal power and wind turbines: Casual readers are expected to deduce that in comparison to coal power, wind power generation is nearly neutral environmentally–aside from being “20-story high Cuisinarts” for flying animals like birds and bats. Just a bad website oversimplifying. Ok. The American Wind Energy Association has this to say in its teaching materials intended for K-2: “As long as the sun shines there will be wind moving across the earth. Wind is called a renewable energy source because solar energy makes wind all of the time. We will never run out of wind. Wind turbines do not burn fuel, so they do not pollute the air. Wind is a safe, clean energy source for making electricity.” Ok, we’re talking 7 year olds. What about high school seniors? Nope: “Wind is energy in motion—kinetic energy—and it is a renewable energy source. Along with wind, renewable energy sources include biomass, geothermal energy, hydropower, and solar energy. They are called renewable because they are replenished in a short time. Day after day, the sun shines, the wind blows, and the rivers flow. Renewable sources only make up seven-percent of the United States’ energy portfolio. We mainly use nonrenewable energy sources to make electricity.” The education materials provided by the AWEA ignore completely the production of the permanent magnet (labelled “generator”) that converts wind, rather inefficiently, into electricity. While the mechanics of the conversion are explained, the manufacturing process of the magnetic generator has been elided. Conveniently, these renewable energy industry lobbyists have carefully omitted the one very glaring portion of wind energy production that is most environmentally unfriendly: the creation of the wind turbines themselves. It’s as if they sprout up, pre-fabricated and ready to generate power, from a Dutch wind turbine bulb farm. Aside from the rather obvious environmental cost of transporting the various large windmill components to their often remote final destination (wherever wind is deemed sufficiently consistent), it is in the actual creative portion of the wind turbine–the parts that convert the rotation of the turbine’s blades into energy–that the true environmental impact can be found. In a few words? Rare earth elements. Simply put, without REEs, many of the most crucial components of most renewable energy platforms do not exist. REEs are the sine qua non of the “New Energy Economy,” and their production has been obfuscated by the most ardent green proponents. The Environmental Protection Agency, in the report “Investigating Rare Earth Element Mine Development in EPA Region 8 and Potential Environmental Impact” (PDF) dated August 15, 2011, outlines a few of the specific uses of REEs over a range of “renewable” products, including wind turbines, hybrid vehicle batteries, lighting, and other electronics: “Permanent magnets represent the staple clean energy technology of future green economies. They constitute main components of lightweight, high powered motors and generators due to their production of a stable magnetic field without the need for an external power source. Permanent magnet motors power contemporary electric, hybrid electric, and plug-in hybrid electric vehicles, while permanent magnet generators produce electricity from wind turbines (USDOE, 2010). The key element derived samarium-cobalt permanent magnets dominate rare earth technology because they produce a magnetic field in a much smaller size. The samarium-cobalt permanent magnet also retains its magnetic strength at high temperatures making it ideal for clean energy and even military applications, including precision guided munitions and aircrafts (IAGS, 2010). Permanent magnets work in conjunction with high efficiency rare earth based batteries to store energy in electric, hybrid electric, and plug-in hybrid electric vehicles (USDOE, 2010). Current generation hybrid electric vehicles use a battery with a cathode containing a host of rare earths including lanthanum, cerium, neodymium, praseodymium, and cobalt (Kopera, 2004). Each hybrid electric battery may contain several kilograms of rare earth materials (USDOE, 2010). Plug-in hybrid and electric vehicles require even greater storage capacity and higher power ratings than typical hybrid vehicles. In light of this, automakers will likely use the lithium ion battery, increasing demand for yet another key element. Scientists at the Argonne National Laboratory estimated one lithium ion battery contains 3.4-12.7 kilograms of lithium depending on proprietary design (USDOE, 2010). Perhaps the fastest growing consumer of rare earth material is the phosphor production industry. In 2008, phosphors alone accounted for 7% of all rare earth usage by volume and 32% of total rare earth value. Phosphor materials produce luminescence essential to today’s lighting technologies. Older generation fluorescent lighting used no rare earths, but rare earths make current fluorescent lighting phosphors more efficient and visually pleasing. Specific rare earths responsible for this include lanthanum, cerium, europium, terbium, and yttrium. Fluorescent lighting phosphor usage is expected to rise by 230% over current levels due to USDOE mandating increased efficiency ratings. Mass quantities of similar phosphor materials are produced for application in television screens, computer monitors, and electronic instrumentation, increasing demand for rare earth based phosphors (USDOE, 2010).” Just as wind turbines don’t magically sprout from the ground, rare earth elements require extensive mining and refining processes pose significant environmental impacts–significant enough for the EPA to stipulate the each step of the destructive extraction, chemical processing, toxic tailing and contaminant disposal, and transportation. REEs are often derived as byproducts of other mining operations, as most REE deposits are not economically viable on their own, due to their, erm, rarity. The EPA details the specific byproducts of the production of REEs, and they’re not very “green”: “According to the Chinese Society of Rare Earths, every ton of rare earth elements produced generates approximately 8.5 kilograms of fluorine and 13 kilograms of flue dust. Additionally, sulfuric acid refining techniques used to produce one ton of rare earth elements generates 9,600 to 12,000 cubic meters of gas laden with flue dust concentrate, hydrofluoric acid, sulfur dioxide, and sulfuric acid. Not only are large quantities of harmful gas produced, alarming amounts of liquid and solid waste also resulted from Chinese refining processes. They estimate at the completion of refining one ton of rare earth elements, approximately 75 cubic meters of acidic waste water and about one ton of radioactive waste residue are produced. The IAGS reports China produced over 130,000 metric tons of rare earth elements in 2008 alone (IAGS, 2010). Extrapolation of the waste generation estimates over total production yields extreme amounts of waste. With little environmental regulation, stories of environmental pollution and human sickness remain frequent in areas near Chinese rare earth element production facilities (Figure 21). United States government agencies, including EPA, can learn a lot from China’s environmental issues related to rare earth element production. As discussed, mining and refining processes can introduce radionuclides, rare earth elements, metals, and other potential contaminants into the environment at unnaturally high rates. Once introduced into the environment, the potential contaminants can be redistributed through the three “environmental mediums.” These three mediums include air, soil, and water. Living organisms depend on environmental mediums with stable chemical properties for their survival. The release of the possible contaminants from rare earth element production could alter the properties of the three environmental mediums.” “Extreme amounts of waste.” These are not the words of a report from a think tank in the pockets of “big oil,” Mr. Wockner. Apparently the proponents of wind power that produced the earlier images somehow missed this report. There are no “green” mulligans for renewable energy, it seems. But if pictures are worth a thousand words, then video is even better (including a cameo from Vestas, which coincidentally has four wind turbine factories and an estimated $1 billion investment in Colorado at the moment): “Green campaigners love wind turbines, but the permanent magnets used to manufacture a 3 MW turbine contains some two tons of rare earth,” says the reporter. Using the EPA’s numbers, each turbine in a windmill farm produces approximately 20,000 cubic meters of toxic gases, 150 cubic meters of acidic waste water, two tons of radioactive waste residue, plus a variety of other harmful dusts and chemical byproducts. Perhaps the largest wind farm in the world, the Roscoe Wind Farm in Texas, houses more than 600 wind turbines stretched out over 400 square kilometers. Quick mathematical calculations reveal that the environmental impact of these wind turbines is somewhat greater than just a bird blender. The American Wind Energy Association estimates the output of wind power in the U.S. at more than 43,000 MW through the 3rd quarter of 2011. Roscoe Wind Farm as seen from Google Maps: In the embedded video, Zhao Zengqi of the Baotou Research Institute of Rare Earth acknowledges the environmental impact of the production of the permanent magnets that comprise the “green” wind turbine technology. “The environmental problems include air emissions with harmful elements such as fluoride and sulfur, waste water that contains excessive acid, and radioactive materials too. China meets 95 percent of the world’s demand for rare earth, and most of the separation and extraction is done here, so the pollution stays in China too,” said Zhao. China’s monopoly (which they threaten to enforce through decreased production of REEs) has forced the most damaging aspects of wind power out of sight and mind. But the planned reductions have pushed the U.S. to consider its own strategic defense implications–hence the EPA report–and push more homegrown REE mining projects, including the possibility of opening mines in Colorado. As Jim Burnell, a senior geologist for the Colorado Department of Natural Resources told the Post in January, “There’s no such thing as no-impact mining. You can’t promise that.” Not even when you’re “green,” Mr. Wockner. Like their renewable cousins, solar modules, wind turbines are anything but “clean” and “green.” The EPA report examined the potential risks to air and soil quality, and particularly to water contamination: “Water represents the environmental medium of overall greatest concern at Bear Lodge. Not only can the possible contaminants go into solution, a great deal of water is consumed during rare earth element mining and processing. Such issues generate both water quality and quantity concerns that will heavily depend on what management practices are put into place.” The EPA strongly urges appropriate environmental mitigation efforts, pointing to the harmful effects of REE production that include cancer: “The possible contaminants cause negative effects towards aquatic and terrestrial organisms in addition to humans. Some of the radionuclides and metals contaminants are even classified as human carcinogens by international and federal health agencies. Others possible contaminants increase the mortality rates of aquatic and terrestrial organisms. Cooperation between all government agencies designed to protect the environment and companies responsible for rare earth element production will prove invaluable in ensuring these operations do not pose a threat to human health and the environment in the United States . . . Areas of China have suffered the consequences of haphazard rare earth element production.” Given the combination of China’s stranglehold on REE extraction and delivery, and the gross environmental negligence it allows such production to operate under, wind turbines for the foreseeable future will continue to be manufactured at less than “green” standards. Environmental advocates like Mr. Wockner will quickly point to Vestas as an outstanding local alternative to the new exploration in Northern Colorado. Given the precarious nature of the wind energy sector sans FTCs and the turbines’ established environmental cost, a more proper evaluation comparing energy “futures” can be undertaken. The EPA’s report, combined with the realities of REE production, indict nearly every renewable energy platform due to the centrality of REEs as part of the actual energy generation or storage mechanism in each, respectively (magnets and batteries). These impacts can only be projected to increase given government pushes to expand renewables as part of state or national portfolio standards. Wind power is only reliable 32 percent to 42 percent of the time. Fully diversified energy portfolios requiring significant amounts of renewables, therefore, necessitate significant backup capacity to bridge wind power’s production shortfalls. Furthermore, subsidizing failure is bad enough; subsidizing environmentally degrading platforms that could virtually disappear overnight without lucrative federal tax credits coveted by crony capitalist players is even worse. Let us return now to the question posed by Mr. Wockner: “What are the environmental impacts?” As demonstrated here using the EPA’s own report, the environmental impact of wind alone is nowhere near “neutral” as some in the renewable energy cheerleading camp would like consumers and taxpayers to believe. Through rhetorical kabuki, they dress up or eliminate the actual manufacturing steps in the process of wind or solar production, skipping straight to the energy generation portion of the renewable unit’s life cycle and then conduct their comparison. Dispelling the myth that “clean” and “green” energy is produced without environmental impact is critical for establishing a level playing field for comparison between renewables and fossil fuels.

#### Wind Energy bad for the environment-Vermont proves

Steve Wright, OP-ED contributor for the New York Times, September 28th, 2011, “The Not-So- Green Mountains”, The New York Times, <http://www.nytimes.com/2011/09/29/opinion/the-not-so-green-mountains.html>

BULLDOZERS arrived a couple of weeks ago at the base of the nearby Lowell Mountains and began clawing their way through the forest to the ridgeline, where Green Mountain Power plans to erect 21 wind turbines, each rising to 459 feet from the ground to the tip of the blades. This desecration, in the name of “green” energy, is taking place in Vermont’s Northeast Kingdom on one of the largest tracts of private wild land in the state. Here and in other places — in Maine and off Cape Cod, for instance — the allure of wind power threatens to destroy environmentally sensitive landscapes. Erecting those turbines along more than three miles of ridgeline requires building roads — with segments of the ridgeline road itself nearly half as wide as one of Vermont’s interstate highways — in places where the travel lanes are now made by bear, moose, bobcat and deer. It requires changing the profile of the ridgeline to provide access to cranes and service vehicles. This is being accomplished with approximately 700,000 pounds of explosives that will reduce parts of the mountaintops to rubble that will be used to build the access roads. It also requires the clear-cutting on steep slopes of 134 acres of healthy forest, now ablaze in autumn colors. Studies have shown that clear-cutting can lead to an increase in erosion to high-quality headwater streams, robbing them of life and fouling the water for downstream residents, wild and human. The electricity generated by this project will not appreciably reduce Vermont’s greenhouse gas emissions. Only 4 percent of those emissions now result from electricity generation. (Nearly half come from cars and trucks, and another third from the burning of heating oil.) Wind doesn’t blow all the time, or at an optimum speed, so the actual output of the turbines — the “capacity factor” — is closer to about one-third of the rated capacity of 63 megawatts. At best, this project will produce enough electricity to power about 24,000 homes per year, according to the utility. Still, wind does blow across Vermont’s ridgelines. The Vermont Public Interest Research Group, for instance, has suggested that wind power could provide as much as 25 percent of the state’s electricity needs, which would require turbines on 29 miles of ridgeline. Other wind advocates, notably David Blittersdorf, the chief executive of a wind and solar power company in Williston, Vt., has urged that wind turbines be placed along 200 miles of ridgeline in the state. But it is those same Green Mountain ridgelines that attracted nearly 14 million visitors to Vermont in 2009, generating $1.4 billion in tourism spending. The mountains are integral to our identity as the Green Mountain State, and provide us with clean air and water and healthy wildlife populations. Vermont’s proud history of leadership in developing innovative, effective environmental protection is being tossed aside. This project will set an ominous precedent by ripping apart a healthy, intact ecosystem in the guise of doing something about climate change. In return, Green Mountain Power will receive $44 million in federal production tax credits over 10 years. Ironically, most of the state’s environmental groups have not taken a stand on this ecologically disastrous project. Apparently, they are unwilling to stand in the way of “green” energy development, no matter how much destruction it wreaks upon Vermont’s core asset: the landscape that has made us who we are. The pursuit of large-scale, ridgeline wind power in Vermont represents a terrible error of vision and planning and a misunderstanding of what a responsible society must do to slow the warming of our planet. It also represents a profound failure to understand the value of our landscape to our souls and our economic future in Vermont.

### Wind Bad – Environment/Econ

#### Wind Power bad for economy and environment

Sara Burrows is an associate editor of Carolina Journal. “Wind Power Does Not Help Economy or Environment, Experts Say JLF-hosted event in Wilmington makes case against renewable energy mandate” Dec 28, 2011 http://www.carolinajournal.com/articles/display\_story.html?id=8597

WILMINGTON — State law requires North Carolina utility companies to generate 7.5 percent of their electricity from renewable sources by 2018. The standard can’t be met without wind, an energy source some scientists call counterproductive. Electricity generated from the wind is inefficient, extremely expensive, and bad for the environment, argued scientists and economists at a forum sponsored by the John Locke Foundation Dec. 5, at the University of North Carolina-Wilmington. John Droz, a fellow at the American Tradition Institute, is a physicist, economist, and self-described environmentalist. He spent most of his professional life working in management at General Electric. Droz said he initially supported wind energy. But after some research, he concluded that wind is neither economically viable nor environmentally responsible. For the first hundred years after electricity was invented, Droz said, there were six guiding principles that helped determine which sources we would use in the United States. Traditionally, energy sources were expected to: provide large amounts of electricity; provide reliable and predictable electricity; provide electricity supplies that can be increased or decreased to satisfy demand; meet the demand for either a base load (operating 24 hours a day, seven days a week) or a peak load; have a compact facility; and provide electricity economically. “These criteria became the basis for what developed into the most successful grid system on the planet, which has a large amount to do with our country’s economic success,” Droz said. Today, the power sources that meet those standards are coal, nuclear, natural gas, and hydro, he said. Sources that failed to meet the standards, like oil, which became too expensive, were pushed out of the electricity business. “That’s how the market works when left on its own,” Droz said. But recently a nonmarket-driven principle has been added to the list. The state and federal governments have decided that sources of electricity also must make a positive environmental impact, reducing carbon emissions and fighting global warming. This principle is mandated by the state government — through a law known as the Renewable Energy Portfolio Standard (REPS) or Senate Bill 3 — and subsidized by both the state and federal governments. Before S.B. 3 mandated renewable energy in 2007, a program called NC Green Power allowed North Carolinians to decide if they want to help put renewable energy on the grid voluntarily. “The problem was the public was not supporting NC Green Power,” said Daren Bakst, director of legal and regulatory studies for the John Locke Foundation. “There was no support whatsoever. It was embarrassing how bad it was.” Bakst said there is no way utilities will be able to meet the 7.5 percent renewable energy mandate without including wind energy in their portfolio. There are only two places in the state wind power can work, he said: in the mountains and on the coast. Because the state’s Ridge Law prohibits tall structures from being constructed in the mountains, “there’s going to be intense pressure to allow wind power plants on the coast” over the next couple of years, Bakst said. Talks are under way about building a wind power project in Beaufort County. “One of the justifications for allowing the project is the fact that S.B. 3 exists,” Bakst said. “If you didn’t have the mandate, there wouldn’t be any proposed wind power plants,” he said. “Even with all the subsidies wind power gets, we wouldn’t be discussing it, because the subsidies by themselves weren’t enough. The state actually had to mandate it.” Droz said the mandate will cost North Carolinians millions of dollars in higher energy bills and won’t help the environment in the least. Wind doesn’t meet any of the six traditional market-driven criteria for what makes a good energy source, he said. “Because of the wide fluctuations of wind, it typically produces less than 30 percent of its nameplate capacity,” Droz said. “This problem is made worse by the fact that there is no practical or economical way to store the electricity produced.” It’s not reliable or predictable and cannot be counted on to provide power on demand, he said. Wind power plants aren’t compact either, he added. They cover more than 1,000 times the surface area of a conventional facility. Most importantly to Droz, wind power is not economical. The cost of running a wind power plant is higher than any other type of plant. “The more wind power an energy company uses, the higher the consumer’s electric bill,” he said. “Denmark, which uses more wind power than any country in the world, has the highest cost of electricity of any country in the world. Their residential electricity rate is more than three times as much as ours.” Finally, wind does not make a consequential reduction in carbon emissions, said Droz. “No scientific study has ever proven that wind power saves a meaningful amount of CO2. A National Academy of Sciences study says U.S. CO2 savings by 2020 will be at about 1.8 percent." “More than 90 percent of all CO2 saved in the last 35 years is due to nuclear power, very little due to renewables,” he said. David Schnare, director of the Environmental Law Center at the American Tradition Institute, suggested wind turbines actually create more pollution than other energy sources. Because wind is inconsistent and its energy cannot be stored, wind power plants must be backed up by another type of power plant. “In Colorado, [sulfur dioxide and nitrogen oxide] — which create smog — were significantly higher than they would have been had they not cycled the coal plants to compensate for wind generation,” Schnare said. “Cycling a coal plant causes more pollution than letting it run constantly.” Droz said a law mandating wind power “makes about as much sense as an edict mandating that a certain percentage of our trucks and automobiles must be operated by horse power in a few years.” It’s a step backward that will decrease our standard of living. Big oil companies like BP have become wind-power investors because they can use their investment in wind power to offset corporate tax liabilities, he said. “The company that pioneered wind power to avoid paying taxes was Enron.”

### Wind Bad – Accidents

#### Wind Turbines are prone to accidents and malfunction

Edward Malnick and Robert Mendick, journalists for the London-based Telegraph News, December 11th, 2011, “1,500 accidents and incidents on UK wind farms”, The Telegraph, <http://www.telegraph.co.uk/news/uknews/8948363/1500-accidents-and-incidents-on-UK-wind-farms.html>

One manufacturer of wind turbines admitted one of its models had a defect – understood to be caused by a faulty braking system that meant the blades could fly off – that led to hundreds of turbines being ordered to be shut down in September by the Health and Safety Executive. The company, Proven Energy Ltd, based in Scotland, went into receivership shortly after. Blades attached to smaller domestic wind turbines have also become detached and hit buildings – in one case penetrating the roof of a cabin used as an office. Campaigners claim that the incidents show that "some parts of the country are too windy for turbines". Most turbines automatically shut down when the wind speed rises above 56mph because at that speed they can become unsafe. In September a blade flew off a wind turbine on the roof of a new car park at Lister hospital in Stevenage, Hertfordshire, hitting a staff member’s car. Last year a 140-turbine wind farm near Glasgow was temporarily shut down after a 14-tonne fibreglass blade broke off in windy conditions and landed at the base of its tower. Two years ago, a 50ft turbine collapsed in the playground of a school on the Island of Raasay off the coast of Scotland, and in the same year a blade on a 190 ft wind turbine in Rotherham owned by Sheffield University broke in strong winds, prompting an investigation by its manufacturers. The incidents were compiled by the Caithness Wind Farm Information Forum, which campaigns against turbines in Scotland and publishes accidents - backed up by media reports - on its website. RenewableUK said the deaths had been recorded in 2009 and 2010. One involved a maintenance worker in Scotland who had become 'tangled' with the driveshaft of a turbine while the other three deaths took place during construction of onshore and offshore wind farms. Chris Streatfeild, RenewableUK's director of health and safety, said: "No members of the public have ever been injured or harmed in the reports we have received. "The risk to the public is one in 100 million. You are much more likely to be injured by a lightening strike than by a wind turbine." Mr Streatfeild said RenewableUK had recorded 1,500 incidents over the past five years, many of which were very minor. Of those, about 18 per cent - or close to 300 incidents - led to an injury, again usually very minor. He said planning and safety rules meant turbines were always at a certain minimum distance from roads and homes, reducing further the risk to the public. He said the number of fires and structural collapse each amounted to just a ‘handful’. Mr Anglin said last week that wind farms had an “excellent health and safety record”, adding: “In stressful situations any power equipment may develop faults, and that’s true of gas, nuclear, oil, and is also true of wind.” The Health and Safety Executive (HSE) said last week it was “extremely difficult” to assemble a “complete picture of reported incidents at wind farms” because accidents are not recorded by industry type. The HSE said its figures showed three fatal accidents between 2007/08 and 2009/10 and a total of 53 major or dangerous incidents in the same time frame. An HSE spokesman said wind turbines were classed as machines rather than buildings or structures and that there was no obligation to report mechanical failures. Angela Kelly, chairman of the Country Guardian, a national network of anti-wind farm campaigns, said: “We have been aware of accidents on wind farms for years but the new figures released by the industry’s own trade body are particularly alarming. “Developers seem to have ignored the fact that some parts of the country are too windy for turbines.”

### Wind Bad – Laundry List

#### Wind farms cause harm

Nj.com “Wind farms may be warming the planet” April 30, 2012 http://blog.nj.com/njv\_paul\_mulshine/2012/04/wind\_farms\_warming\_the\_planet.html

The radical environmentalists who push Al Gore-Style alarmism over climate change keep claiming that so-called "alternative energy" is wonderful for the world. They leave out all the negative environmental and aesthetic effects of giant wind and solar farms. It's turning out wind isn't so wonderful after all. The first wind farms turned out to be vast killing fields for migratory birds. And the noise and vibration they create makes them unsuitable as neighbors to humans. Meanwhile over at the Lew Rockwell blog, I came upon a link to this British newspaper report on yet another negative effect of wind power: Usually at night the air closer to the ground becomes colder when the sun goes down and the earth cools. But on huge wind farms the motion of the turbines mixes the air higher in the atmosphere that is warmer, pushing up the overall temperature. Satellite data over a large area in Texas, that is now covered by four of the world's largest wind farms, found that over a decade the local temperature went up by almost 1C as more turbines are built. This could have long term effects on wildlife living in the immediate areas of larger wind farms.

### Wind Bad – Waste

#### Wind energy is a money hole

Sbynews.com “WIND ENERGY – A MULTIBILLION DOLLAR BOONDOGGLE THAT’S BAD FOR EVERYONE EXCEPT THAT INDUSTRY” April 20th 2012 http://sbynews.blogspot.com/2012/04/wind-energy-multibillion-dollar.html.

According to a 2008 Energy Information Agency (EIA) report, the average 2007 subsidy per megawatt hour for wind and solar was about $24, compared with an average $1.65 for all others. Since first adopted in 1992, the “temporary” Production Tax Credit (PTC) for wind energy which, unless extended is scheduled to sunset at the end of the year, has ballooned from $5 million per year in 1998, to over $1 billion annually today. And even if ended, taxpayers are still obligated to cover nearly $10 billion in tax credits for projects built during the last decade. That’s in addition to an almost $20 billion debt for wind projects eligible under a Section 1603 extension, the renewable energy bailout of 2011. In many parts of the country the PTC actually exceeds the wholesale price of power. In the meantime, while taxpayers cover much of the added expense and mandated wind purchases and prices are being locked in at economically burdensome rates, abundant natural gas prices are plummeting, falling nearly half from about $5 /mmBTU last summer, to around $2.35/mmBTU now. (By the way, the EIA equates the energy equivalent of $3 natural gas to the same as $18 oil.) Also, for comparison, construction costs for offshore wind power projects runs about $5,000 per kilowatt, or about the same as a nuclear plant which will provide at least three times as much capacity with continuous rather than intermittent output. An offshore wind installation costs about five times as much as a natural gas-fired generator to construct per kilowatt, plus also requires a backup power source (typically natural gas) to balance out the power grid during most of the time when the wind isn’t blowing. Along with high taxpayer and ratepayer costs, scenic impacts and objectionable noise associated with wind power, the industry is also facing fierce blowback from environmental groups over the destructive consequences of the turbines upon wildlife. Yet while federal law enforcement officials have filed hundreds of cases against oil and gas companies and electric utilities under the Migratory Bird Treaty Act (MBTA) of 1918, somehow, the U.S. wind industry has usually gotten a get-out-of-jail free card. For example, in August 2009 ExxonMobil pled guilty and agreed to pay $600,000 in fines on charges it killed 85 birds that came in contact with hydrocarbons in company-owned uncovered tanks and wastewater facilities located in five western states. But no charges were filed when in 2009 the Los Angeles Times reported that turbines are killing about 70 eagles each year at Altamont Pass in California. A 2008 study funded by the Alameda County Community Development Agency estimated that about 2,400 other raptors, including burrowing owls, American kestrels and red-tailed hawks along with about 7,500 other birds protected by MBTA are being killed as well. There are lots of bat casualties too…caused by a change in air pressure near turbine blades that ruptures their lungs. A study of a 44-turbibe wind farm in West Virginia found that up to 4,000 had been killed in 2004 alone. A 420-turbine installation in Pennsylvania reportedly killed more than 10,000 in 2010. Yet the only legal action the wind industry has ever faced was filed against NextEra Energy Resources by the State of California in 2010 for the Altamont bird kills. The company agreed to a $2.5 million settlement, and agreed to remove or replace all turbines by 2015. But now, the wind industry itself faces human-caused endangerment, a lethal threat of economic starvation if vital subsidies aren’t extended. A 2011 report released by HIS Emerging Energy Research, an independent group in Cambridge, Mass concluded that expiration would cause wind power installations to decrease from 5.6 gigawatts a year since 2005, to 2.3 gigawatts per year from 2013 to 2016 thanks in large part to competition from low natural gas prices. As IHS analyst Matt Kaplan observed, “Fundamentally, the industry is not ready to stand alone”. Writing in MasterResource, Lisa Linowes tells us all to expect scary stories from the American Wind Energy Association warning of a crushing blow to American jobs if Congress lets the wind power Production Tax Credit lapse. But don’t expect them to mention that most of the industry sector’s jobs are temporary construction positions, with less than 20,000 involved in the manufacture of parts used in turbines. Lisa concludes that the Production Tax Credit is one earmark many Americans know about, and their opinion is remarkably consistent: “The cost of the PTC is excessive, the benefits are elusive, and frankly, Big Wind’s pitiful performance measured against industry promises makes this entitlement easy to sunset.”

### Wind Bad – Evil

#### **Wind power is evil.**

Alexander Turner, 2011, <http://nerds-central.blogspot.com/2011/11/wind-farms-are-evil.html>, JJM^\_^

Subsidies for wind farms in the UK are nothing other than a way to take tax payer's money and electricity bill payer's money and give to industrialists to line their pockets. The farms themselves, if on shore or off shore are pointless. The evil is that every penny given to these sham technologies is a penny not spent on something worth while. It is not the look of these things or what they do to the countryside which matters. It is the transfer of wealth to those who do not deserve it for no benefit to humanity or the environment - that is what is evil:

### Wind Bad – Feng Shui

#### Wind turbines are bad for feng shui

Simon Chan, Feng Shui consultant, 7/24/12, <http://netgent1-creativelife.blogspot.com/2012/07/is-wind-turbine-bad-feng-shui-or-good.html>, JJM ^\_^

Wind turbines have become one of the popular means of green energy in recently years, wind farms are popping up in many parts of the world. As more wind turbines are being built near to the living communities, objections and even law suits are started to emerge. Most of them are from the anti-wind turbines groups and the “not-in-my-back-yard” reactionary property owners near to the wind farms. The main complains they have are people living close to the wind farms are exposed to health risks, many people claimed they are suffering from the so-called “wind turbine syndrome” like heart disease, tinnitus, vertigo, panic attacks, migraines and sleep deprivation. As from the property owners, they are concerned that their property value will be affected.¶ There has been a lot of scientific studies and research done by both the anti- wind farm groups and the wind energy industry’s lobbyist, each claiming they are right. Recently, as reported from the Toronto Star dated July 11, 2012, Health Canada says it will launch a national study into the possible relationship between wind-turbine noise and health problems as reported by people living near wind power development. I have been following closely to the above development with a lot of interest, since there are still no concrete scientific proofs regarding its effects on the health of people living near to them; I have decided to present my thinking of the wind turbine from the perspective of feng shui. ¶ In authentic feng shui, external physical objects are referred as “ luan tao (外巒頭)” which will affect the feng shui of the house, especially if the entrance door or windows are facing at them. In general, when it is considered an unfavorable “luan tao”, it is referred as “luan tao sha (巒頭煞)”. Accordingly to the guidelines of the “form school” of feng shui, wind turbine is considered as a wood element due to its tall structure and shape, rather than fire element as some people may think, as they envision that the wind turbines are generating electric power. Furthermore, the turning (movement) of the blades of the wind turbine is considered as “agitator” to the phenomenon of the “wood element sha chi” generated by the wind turbine.¶ Let us now look at some of the possible health problems of the people living near to the wind turbine. As reported on the Toronto Star‘s article, many people in Kingston, Ontario living near to the wind turbines are reporting suffering from symptoms of tinnitus and trouble in sleeping. http://www.patriotledger.com/news/x1222858958/Kingston-neighbors-of-wind-turbines-complain-of-ill-effects Well, it is just common sense and easy to comprehend that living very close to the wind turbine will affected by its noise and shadows of lights casted on the house. This is demonstrated in the article that an elderly couple living just 1 kilometer away from three wind turbines are experiencing the “ wind turbine syndrome”.¶ This phenomenon can be explained by the theory of Xuan Kong Flying Star feng shui. When the entrance door or windows are facing an outside “luan tao sha”, in this case the wind turbine, it will acts as an enforcer of the ill effects to the house. For example, if there is an untimely flying star combination, for instance [6, 4] at the sector, it will cause health issue like tinnitus and vertigo, which is the common complaint from the people living close to the wind turbine. Another scenario causing the above health issues is most likely when the NW sector (metal element) of the house is facing the wind turbine (wood element), and at the same time the annual and monthly #2 star fly to the NW sector. In short, I believe the critical factor that is causing all the health problems is the distance between the house and the wind turbine. In fact, an Ontario government commissioned study conducted a review in 2012 that look at more than 100 papers and reports; and concluded that there was no health risk posed by wind turbine sound if the structures are located at least 550 meters away from people’s house; which is the Ontario’s regulated setback distance. Looking from the perspective of feng shui, it does make sense because based on the authentic feng shui principles, "chi got scattered in open air". Simply put, the sha chi of the wind turbine get dispersed when it is far away from the houses and thus will not affect the occupants of the house.