

-----Original Message-----

From: Richard Caputo [mailto:richardcaputo@sbcglobal.net]

Sent: Friday, January 28, 2011 3:51 PM

To: ECOSUB

Subject: Tule Wind Project

Mr. Fisher:

I would like to submit this statement in support of the Tule Wind project to the CPUC.

Thank you for including this as part of the public process that you are operating to give this project full consideration.

Richard Caputo

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TULE WIND

news



A Green Energy Update

Summer/Fall 2010

Tule Wind Power Project

Californians are leading the way to make the earth a better place for our families and future generations. Supporting the development of clean, renewable energy sources will significantly improve the air we breathe, lower our dependence on imports of dirty fossil fuels and boost our local economies with much-needed jobs and tax revenue. Iberdrola Renewables is proud to be part of a clean energy future for San Diego County with the proposed Tule Wind Power Project.

For more than five years, Iberdrola Renewables has been monitoring the wind resource in the Backcountry's McCain Valley – finding that the strongest winds typically occur between 9 a.m. and 6 p.m. – the same period when San Diego County's peak power demand occurs. Another feature that makes this an ideal location for the project is Tule Wind's longstanding reservation on the existing Southwest Powerlink 500-kV transmission line.

Quick Facts:

- > Clean, renewable energy for 60,000 San Diego-area homes
- > Located in McCain Valley in eastern San Diego County
- > Up to 200 megawatts (MW) of clean power
- > 67-134 turbines, sized at 1.5-3.0 MW, depending on the preferred technology
- > Primarily on Bureau of Land Management and Ewiiapaayp tribal land
- > Small portion of the turbines planned for state and private land

Iberdrola Renewables aims to develop this project in such a way that it minimizes impacts to the Backcountry. As with any wind farm, less than two percent of the land in the wind lease area will be used for actual wind power production. The rest of the area will remain available for existing uses, such as hiking, rock-climbing, and off-highway vehicle recreation.

All existing roads and campgrounds in McCain Valley will remain open to the public and many of the public roads will be improved. Also, wind energy facilities require very little water to operate. So precious groundwater supplies will only be impacted to the extent of water required for restroom facilities for Tule Wind Power's onsite employees.



Tule Wind Power Project Timeline

Scoping
January/February 2010

Public Release of
Late 2010

Agency Preparation of DEIS/R
Spring/Summer/Fall 2010

Final EIS/R
Late 2010



We Need Your Help

Iberdrola Renewables needs the support of local residents like you. After five years of environmental studies, we are ready to seek approval from the federal and state governments. In early spring 2011, we will be up for our final approval with the County of San Diego. If you want to take a stand for improving the quality of life for you and your family, now is the time to take action. Here's how:

- ✦ **Sign a support card** and join our mailing list. Hearings on the environmental studies are scheduled to take place in late 2010. We'll let you know when it's time for you to act. You may fill out the enclosed support card or go online: www.tulewind.com/stay_informed/index.html
- ✦ **Write a letter.** Submit official comment urging the California Public Utilities Commission (CPUC) and Bureau of Land Management (BLM) to approve the Tule Wind Power Project.
- ✦ **Attend a hearing.** Speak out in support of responsible renewable energy development.
- ✦ **Tell a friend.** There are many ways you can help, but it's important to do something. By standing together, we will develop responsible solutions that improve our health and well-being. Please reach out to us via e-mail at info@TuleWind.com or call (866) 753-5577.

Environmental Studies to be Released

Iberdrola Renewables believes that the key to being a good neighbor is developing responsible projects that provide an overall positive impact to the environment. This is achieved two ways: Iberdrola Renewables' projects are carefully planned in a way that minimizes environmental impacts, and with each new renewable energy source there comes a reduced reliance on power drawn from fossil-fueled power plants, providing clean air benefits to the entire region.

Later this year, the public will be invited to review and comment on the Draft Environmental Impact Statement/Report (DEIS/R) developed in accordance with the National Environmental Policy Act and California Environmental Quality Act. The Bureau of Land Management (BLM) and California Public Utilities Commission (CPUC) will be evaluating comments received and respond to them in the final EIS/R.

Iberdrola Renewables has conducted five years of comprehensive environmental studies in accordance with federal, state and county guidelines, and in many cases, is going above and beyond what's required.

The Tule Wind Power Project is expected to receive BLM approval in late 2010. The County of San Diego will review the project after it receives environmental clearance. The Tule Wind Power Project is slated to come online by the end of 2012, in order to qualify for federal stimulus funds under the American Recovery and Reinvestment Act. This will translate into a meaningful savings in the cost of the power.

Stewards of the Environment

In October 2008, Iberdrola Renewables became the first U.S. wind power company to voluntarily adopt an Avian and Bat Protection Plan. It is important to Iberdrola Renewables as an organization to go above and beyond required environmental studies to protect our valuable natural resources.

This July, Iberdrola Renewables hosted a tour of the proposed Tule Wind Power Project site attended by 20 representatives from the local, state and national environmental communities. Organizations represented included the National Resources Defense Council, Center for Biological Diversity, Sierra Club, Audubon Society, The Wilderness Society and San Diego Wildlife Coalition, among others. Iberdrola Renewables environmental and permitting managers led discussions about findings from five years of environmental studies and the company's efforts to minimize environmental impacts.





Record of Decision
Bureau of Land Management
Late 2010/Early 2011

Construction
2011

Tule Wind Power in the Community

Iberdrola Renewables representatives have been active in the San Diego community, sharing information about the proposed project with residents from all over the county.

April of this year was an eventful beginning to the warm season, and found Iberdrola Renewables at San Diego Earthworks EarthFair and I Love a Clean Alpine. In May, company representatives spoke to wind energy enthusiasts at the Campo Lake Morena Roundup Festival and the Santee Street Fair. This year's unusually long June gloom did not stop the outreach team from attending the 31st Annual Ocean Beach Street Fair and Chili Cookoff, where they met many San Diegans who were supportive of renewable energy alternatives for the county.

You can see what visitors to these events have had to say about the proposed project on www.YouTube.com/tulewind. Look for the outreach team at events in North County this fall.



Wind Energy in the News

Wind Farms Do Not Negatively Impact Property Values

A comprehensive study released by Lawrence Berkeley Labs in 2009 examined the impacts that wind farms had on local property values. After using multiple models to evaluate the sale of over 7,000 homes in the vicinity of 24 U.S. wind farms, the Labs could not find any evidence that the farms had significant (positive or negative) effects on the sale of these homes. (Source: <http://tinyurl.com/yfswghfm>)

Wind Turbines Are Quiet

For those who are curious about whether wind turbines affect human health due to noise factors, they can rest easy. The National Health and Medical Research Council found, through an independent research study, no evidence that wind turbines have a direct effect on human health. These results are supported by recent scientific literature from all over the world, and conclude that turbines do not produce enough noise to affect humans. (Source: <http://tinyurl.com/2455nb4>)

Fire Safety

Iberdrola Renewables knows that fire is a major concern for San Diego – East County in particular. The Tule Wind Power Project's 10-12 full-time employees will be trained in fire prevention. Additionally, all turbines on Iberdrola Renewables projects are monitored 24/7 from a local operations building, as well as from the National Control Center in Portland, Oregon. If a turbine experiences a malfunction, the onsite operations and maintenance staff are immediately notified by an automated monitoring system. Iberdrola Renewables gives extra consideration to fire

safety when designing wind production and transmission systems. Safety measures include using steel poles instead of wood, longer insulators to reduce the potential for arcing, and burying transmission lines when possible. The Tule Wind Power Project's improved road system will add fire breaks, give fire fighters better access to remote areas and serve as an additional evacuation route for the McCain Valley. Iberdrola Renewables is developing a comprehensive Fire Protection Plan in consultation with CAL FIRE, BLM Fire Control and local fire agency staff.

Who We Are

Headquartered in Portland, Oregon, Iberdrola Renewables operates 41 wind power projects throughout the country with seven more in construction now. Iberdrola Renewables is committed to maintaining and even improving the quality of life in the communities it serves, and is often invited back to develop second or third projects – and in one community, we're on our sixth! The wind energy production from Iberdrola Renewables' projects alone meets the electricity demand of about a million typical American homes each year with clean, homegrown electricity.

For more information, please call (866) 753-5577, e-mail info@tulewind.com or visit www.TuleWind.com.

Join the Conversation!

Follow Tule Wind Power on Twitter and Facebook to get plugged in to the latest news and updates on the project and share your thoughts and opinions about renewable energy.

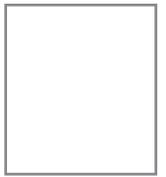
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TULE WIND POWER PROJECT
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Tule Wind news

A Green Energy Update

Support the Tule Wind Power Project for the wind-rich McCain Valley in eastern San Diego County. The project will bring clean, renewable energy to 60,000 local homes – providing improvements to the air we breathe and the environment around us. Tule Wind Power will contribute to the reliability and security of our energy supply and the economic viability of the region. The project's many benefits include:

- ✦ **Boosting the local economy by creating much needed JOBS**
The project will provide up to 325 green jobs at the peak of construction and up to 12 permanent operations and maintenance jobs.
- ✦ **Improving the air we breathe**
The Tule Wind Power Project will reduce carbon emissions by 250,000 tons annually. Emissions of sulphur and nitrogen oxides from fossil fuel generation are also displaced, improving air quality for all!
- ✦ **Funding important county services**
The project will provide \$5 million annually to county revenues, for much-needed services such as public safety and social services.
- ✦ **Increasing energy supply and reliability**
The Tule Wind Power Project will help San Diego and the State of California meet their renewable portfolio standard goal of 33 percent renewable energy usage by 2020. And local generation means a more stable and reliable grid, to the benefit of businesses and residences alike.
- ✦ **Reduces the cost of power over the long term**
If approved and built on-schedule, the project will receive federal stimulus funds, translating into a meaningful savings in the cost of the power.

Tule Wind Farm Statement

28Jan2011

I represent the San Diego Renewable Energy Society that has about 180 members the last time I checked. We are a chapter of the American Solar Energy Society that has about 10,000 members nationally. We strongly support the Tule project and the substations necessary to connect this project to our electricity transport system. We also support substation development to connect future wind projects. Why do we act in the name of these many members and lend our credibility to these projects? We do so because we think the local impacts are acceptable compared to the overall goal of moving San Diego and the U.S. to a sustainable future and reducing the catastrophic impacts of global warming that are looming over the next decades and centuries. Our generation happens to be the one that needs to act so that future generations have a chance to live on a planet that we would recognize --- rather than one that would be so changed that we would have difficulty recognizing it in a century. Without our making many difficult choices, they will have few choices.

Without question, there would be impacts from the proposed Tule wind farm. The draft DEIS/R lists about 90 impacts that were studied. About 40 had no residual impacts, and another 40 or so were able to identify measures that could mitigate impacts without adverse residues. The remaining dozen or so would provide impacts either during construction or operation that could be reduced but not totally mediated. Things like changing the scenic vista, construction dust, noise and ground vibration, light glare, possible disruption to eagles and the quino butterfly. It looks like a careful job was done in these studies and the team that conducted the evaluation should be thanked.

Let's go back for a minute to put this project in context. The whole purpose of the Tule wind farm is to contribute to the goal of about 80% renewables by the year 2050 to help San Diego reach its climate change goals. (Currently the goal is 20% by 2010, and 33% by 2020 but the science indicates the need for 80% by 2050.) If this clean project were blocked along with the many other clean energy projects that are pending, then we would fall far short of our goals and the impacts would be many and varied.

We have already witnessed the early impacts of global warming. One is the persistent drought and the rapidly increased number and intensity of forest fires --- now called firestorms. About 15 people were killed and how many animals of all species were lost during the Cedar fire alone. It was only one of a dozen fires raging at the same time in 2003. Talk about impacts. This was caused by the persistent drought that aided the bark beetle in killing 80% of some tree species in San Diego County. This drought extends to the entire southwest and will cause water issues in San Diego over the decades to come. The warming will also cause earlier snowmelt in the Sierras, our natural water storage system, causing spring floods and overwhelming our current system of dams. Thus, less water will be available in the summer for crops and even impact urban water needs. Increase in air pollution is projected, as is a huge loss of wildlife species if business as usual continues. Some estimates are as high as 80% species loss by the end of the century. Rising ocean levels will definitely impact San Diego directly and indirectly. Besides coastal flooding, a major part of our water supply from the Sacramento River delta is already below sea level.

The loss of the Tule energy project and others in the eastern deserts will all contribute to these many and varied impacts from global warming. This must be balanced against some local and immediate impacts. The most obvious is the visual impacts of these very tall wind generators that are a real and tangible loss, to those who choose to live in the Boulevard area because of its remoteness and those who visit the area for that reason.

San Diego is blessed with an abundance of natural places to enjoy and restore oneself from the travails of urban life. San Diego has the largest State Park in the 48 (over 600,000 acres) as well as a major national forest, several other state parks, county parks, and preserves of all kinds. As the former president of the Volcan Mountain Preserve Foundation, I truly appreciate the need to set aside open spaces. As someone who hikes several times a week in these remote places, I know the value of these special places. So we have to commend San Diego County, the state and the federal government in the very credible job they have done in setting aside open lands for us to enjoy.

This existing and wonderful resource should be balanced with some land being used for other purposes that fulfill other needs. For example, we have a sizable land area dedicated to activities that totally trash the land, destroy all habitats, increase pollution significantly, and are terribly noisy every day --- not just during a year or two of construction. Off-road recreational vehicle areas have all these impacts but they meet a need. The need is recreational and meets some people's needs to "get away" with family and friends. This is seen as a reasonable use of the land in certain amounts even though it is totally destruction in so many ways.

The Tule wind farm will have vastly less impacts than recreational off-road vehicle use. A wind farm actually only uses about 2% of the land in the wind farm designated area. This is mainly for the service road connecting each generator. Each generator uses an area similar to the size of a large residential house and the substation uses a few acres. Trying to balance different needs, we have found a way to allocate some land to off-road vehicle use. We should also find a way to use some land for clean energy projects that are vital to our future.

Meeting different needs implies that the conflicts and impacts of meeting these needs need to be balanced. Accepting some local impacts of a clean energy wind farm, to reduce or eliminate a host of local, county, state, national and global impacts likely to result from excessive carbon emissions, is a balancing act that we must deal with.

I must note that it is unfair that some of us have more impacts because of where we live than the rest of us who live elsewhere. I think that these local folks should be compensated for their local impacts. As far as I know, we ask them to accept these impacts such as the local visual impact, and we do not offer them any local compensation. They are asked to enjoy the benefits we all enjoy at large and to magnanimously accept their real, local impacts. There is a certain amount of inequity in this that has yet to be addressed. I enjoin the CPUC, CEC, BLM, San Diego County, other agencies, and the energy system developer to consider ways to try to balance impacts with compensation. Possibly something as simple as a reduction in energy bills for all those who can "see" the wind generators from their property. The amount of the compensation might be proportional to the distance from the Tule site. This seems

entirely fair and could be a modest expense since there are so few home site that can see the propose wind farm.

With this in mind, I must tell you that the proposed Tule wind farm will have visual impacts for me, and very strong impacts. I will see these large turbines as tangible evidence that we are finally moving in the right direction. That we are making the difficult decisions to balance the present with future needs and that these limited local impacts pale in comparison with the sum total of all the insults we will unleash on San Diego and the rest of the world if we continue business as usual. These slowly rotating kinematic sculptures will look absolutely beautiful to me. They will certainly make me smile. So the scenic vista will be diminished for some and augmented for others. How do you establish it this is a net positive or negative impact.

I know that some species will be disrupted during construction and some might be disturbed later. I also know that the project is required to avoid to the extend possible, by locating the turbines in a way to minimize impacts. I ask the parties that are responsible for the actual plant layout, to use the DEIS/R data to minimize impacts.

There will definitely be bird and bats kills resulting from the Tule wind farm. This project will generate about 3% of the electrical energy used in San Diego County. Even if 20% of our national energy came from wind farms, it would increase the current damage that we inflict on birds and bats by less than 1%. Is this acceptable? In the grand scheme of things, that looks like a very acceptable impact. But California has learned a lot about avian impacts over the past few decades as we have build wind farms and actually measured the avian impacts and learned about the siting specifics that led to impacts. We now have models that can help us understand what leads to avian impacts. These models would also allow us to mitigate these impacts by siting choices before construction. I know this understanding will be utilized in layout out the plant.

I have walked the nearly Campo wind farm and read the literature about wind farm noise. I found that I could not hear the woosssh of the blades over the ambient wind sounds when I walked about 1000 feet from the turbines. It was a windy day and the wind farm was operating at rated power. I know that on quieter evenings, home occupants will be able to hear the woosssh at a further distance if the ambient wind noise is lower. To avoid this, the siting decisions should keep the generators at least 0.5 miles from any homes.

There is concern that these wind machines will cause forest fires. As you know, this wind farm is not located in forest but in a rather arid location with little ground cover. However, older wind generators did overheat and start a fire, and some of them did cause ground level grass fires. As with noise, the fire issue has changed significantly in the current generation of wind machines. Each machine now costs 5 to 10 million dollars and needs to operate for over 10 years or so to pay back the investment. So there is a strong interest on the part of the wind farm owner to not have the machine burn up. So much for intent --- what about the specifics?

These machines are high above ground on a steel tower placed in the middle of a 70 by 70 foot gravel pad with a lack of vegetation around base of tower. The high voltage wires from the machines are underground, lightning protection devices on each tower, and temperatures inside the generators are monitored. Shut down is automatic when above normal temperatures are sensed. The data seems to show that lightning damage to newer machines is rare. However, I have unable to find comprehensive data on any ground fires caused by these newer machines.

This project will hook into existing transmission lines via the proposed substation. The fire danger of the existing transmission lines is neither increased nor decreased due to the creation of this wind farm. These existing high voltage transmission lines do not seem to have any history of starting fires. They are usually shut down if a fire comes close to them to avoid a short circuit to the ground that would damage the wires. The towers holding the wire do need to be washed to remove fire residues before turning the power back on. This situation would be exactly the same after the wind farm as it was before.

Although it was not considered in the draft Environmental Impact Report (DEIS/R), some people are concerned about property values dropping. A very comprehensive study of 25,000 residences showed there was an impact of wind farms on adjacent property values --- they increased property values. Ten wind farm projects in the US in seven states were identified. For each community adjacent to a wind farm, one was found without a wind farm that was comparable. Selling prices for homes were studied in each set of communities for 3 years before and 3 years after the wind farm was built. All this data was analyzed and gave the results of increased property values in the majority of the communities adjacent to a wind farm. More recent studies support these conclusions

Finally, some people point to the alternative of generating the clean energy solely by putting solar devices on buildings in the San Diego. They claim that there are no impacts of this approach since the buildings already exist within the urban power grid and there is no need to use transmission lines. Certainly seems like an attractive alternative. Is this really a viable choice?

Since I am representing the American Solar Energy Society, you can be assured that I support solar energy on buildings within the urban grid. This is an attractive member of the renewable energy portfolio and we support it whole heartily. Can it be the sole renewable option to the exclusion of wind farms, desert solar plants, geothermal, biomass plants including mining urban waste dumps? In a word, NO.

It is definitely a member in good standing of this team of options. The reasons that it can't be the sole renewable option are many and varied. When the amount of clean energy becomes more than a trivial amount, it is necessary to consider the operation of entire electric grid that is required to meet the needs of a city such as San Diego. San Diego is typical of cities in this county that runs 24/7. Rooftop solar is a mid day power source that operates on average at about 18% of its rated capacity. The engineers say that its capacity factor is 0.18 and it delivers 18% of the energy it could produce if it were to operate all the time.

The current mix of power sources in San Diego have a combined capacity factor of about 0.54 and they operate 54% of rated capacity on average. It is currently made up of a mixture of baseload, intermediate and peaking power plants. The peaking plants have a low capacity factor like fixed PV, but fossil peakers are used only during times of peak load as necessary since they are more expensive and polluting. Even though fixed rooftop PV has a low capacity factor, it cannot be dedicated to peak load. It produces power when the sun shines and typically reaches maximum power at noon. This is not a very good match to the summer time peaking load that occurs in late afternoon or early evening in San Diego. However, it is operating during the day when most of our power is used. Typically, the peaking credit for rooftop PV is from 20 to 60% of its rated capacity. For the urban grid to function you need something else to provide power 24/7 that can also meet late afternoon peaking. The something else would either be fossil powered electricity and/or expensive electricity storage. We are trying to move away from fossil energy and electricity storage is expensive and typically will double the cost of the energy that goes through storage. This is a significant impact – a cost impact.

The other way to balance the grid so that it both reduces fossil dependency and keeps cost reasonable is for a mixture of renewable power sources. This mixture would have some baseload (geothermal, bio-gas, bio-mass or small hydro), intermediate (desert concentrating solar thermal plants with cheap thermal storage), sunrise to sunset solar tracking plants, fixed solar desert plants, less expensive wind with night time and day time capability, and finally, fixed PV. The capacity factor for this mixture goes from about 0.92 for baseload, to about 0.42 for desert solar with cheap storage, to about 0.28 for tracking solar, 0.22 for desert fixed PV, and 0.18 for fixed rooftop PV. Wind is about 0.4 and is available during the night and day depending on the season and daily weather. By mixing these options, you can achieve the capacity factor that is desirable as there is greater and greater use of renewables. As you approach 80% renewables by 2050, you can envision about ¼ baseload, ¼ of the middle capacity factor tracking solar, and ¼ fixed rooftop PV and ¼ wind as a viable mix. Even this mixture could benefit from some storage capability in the 2050 time frame being available to the grid whether it be utility scale battery, hydrogen, on-board batteries in PHEV and EV vehicles, pumped hydro, or movable mass storage. The eventual amount and type of storage would need to be determined by future dynamic grid studies that are not available at this time. If you limit yourself to just fixed rooftop PV at 0.18 capacity factor, it would make the job of a balanced grid extremely difficult and expensive.

Of all the renewable options that are commercially available at this time, PV is the most expensive. Its costs have been dropping since commercial applications started in the 60s and they continue to drop. Over the last decade, the cost learning factor is about 17.5% based on global production. That is, for every doubling of global production, the cost of an installed PV system reduces by 17.5%. This rate had been about 22% in previous decades so the rate of cost reduction is still high but is reducing somewhat. If this rate of cost reduction continues for another decade, the current levelized cost of a residential PV system would go from today's 20 cents/kWh with current federal and state subsidies in San Diego, to 16 cents/kWh without any subsidy in 10 years. Today's cost for residential electricity is about 17.5 cents/kWh in San Diego and has risen historically at close to 5%/yr. Clearly, the unsubsidized cost in 10 years would be attractive if a home owner had the cash to invest or

could negotiate financing. This is a goal that California and federal policy is striving to attain. This would still be the most expensive form of renewable energy in 2020 since the other alternatives would be from 8 to 14 cents/kWh without subsidies. However, the extra cost of residential PV is moderated by a number of considerations such as its contribution to reducing electric distribution cost if the PV is distributed evenly in the grid. There are other more external considerations that favor distributed PV. It will still be an attractive option and stays in the mix.

So what does all this come down to?

Based on balancing the grid and avoiding expensive storage costs, rooftop PV cannot be the sole renewable electricity option and must take its place among the other desirable forms of renewable electricity. Neither can wind be the sole renewable option. But wind is a valuable addition to the renewable energy mix in the San Diego region. It is clean. It is the least expensive renewable energy source. It can be easily integrated into grid operation especially if the grid operators use previous day wind forecasting. Typically, wind farms generate more energy at night and tend not to meet daytime electricity needs and especially not meet summer peaking loads. Fortunately, the Tule wind site has wind characteristics that are favorable even to meeting summer peaking loads and has an average capacity factor of about 0.4. So, it will be able to help meet the new and potentially large night time electric vehicle load as well as the day time summer peaking loads in San Diego. This is an attractive combination of characteristics and may be unique to the Tule site.

When we stand back and look at Tule in light of the bigger picture, we see a clear advantage in going ahead with Tule. The modest local impacts are more than out weighted by the local, regional, state, national and global advantages it contributes to.

We must note that it is unfair to have these local impacts fall on the shoulders of the people who live near the Tule site. Justice demands that a way needs to be found to partially balance these impacts with local benefits.

Respectfully submitted,

Rich Caputo

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Tule Wind Farm and Electrical Connections in South East San Diego County

Many objections are raised about a wind farm in the mountains in eastern San Diego County such as the Tule Wind Farm. Typical comments are that the noise from a wind farm would be intrusive, property values would fall, large numbers of birds and bats would be killed, it would start forest fires, it would spoil our beautiful vista, etc., etc. What are the facts today?

What about the noise? We are not talking about 1980s technology. That was noisy. We are talking about 2008+ technologies that is not noisy. Well, how noisy is not noisy? You can stand at the base of the tower and have a normal conversation without raising your voice. At 750 to 1000 feet, a wind farm generates a noise that is about the same as you sitting in your kitchen with your refrigerator is running. That is a range of about 35 to 45 dB --- 35dB is a quiet bedroom, a library is about 40dB while 45dB is a really quiet office. When I visited the Campo wind farm, I could not hear the swish of the blades at about 1000 feet. So, the edge of the wind farm should be at least 0.5 miles away from residences to have no noise intrusion.

What about property values plummeting? A very comprehensive study of 25,000 residences showed there was an impact of wind farms on adjacent property values --- they increased property values. Ten wind farm projects in the US in seven states were identified. For each community adjacent to a wind farm, one was found without a wind farm that was comparable. Selling prices for homes were studied in each set of communities for 3 years before and 3 years after the wind farm was built. All this data was analyzed and gave the results of increased property values in the wind farm adjacent communities. So, if you are worried about property values, make sure you build a wind farm nearby.

What about the large number of birds and bats that would be killed? Well, wind generators do kill birds. Each one kills about 1 to 2 birds per year on average. That is a problem but residences kill 1 to 10 birds a year. The road that your car drives on kills 15 to 20 birds per mile. Your house cat kills 1 to 2 birds per year. All told, human activities (and house cats) kill from 260 to 1380 million birds a year. Even if 30% of all our electricity in the USA was generated by wind farms, they would kill about 0.6 million birds. So where does this leave us? One could conclude that bird kill from wind farms are insignificant in the general scheme of human activities. Yet, the California Energy Commission's (CEC) policy is "no activity should kill birds without mitigation simply because other human activities also kill birds." A wise policy. Now that a number of wind farms have been built in California and we have a better understanding of what factors contribute to higher bird kills, wind farms can be designed to reduce the impact on birds. The CEC demands that each new wind farm be designed to mitigate bird impact based on this new understanding. We wouldn't know the likely impacts of this proposed wind farm until a bunch of data was collected and analyzed. This would only occur at the completion of the draft Environmental Impact Statement.

Older wind generators did start fires and some of them did cause ground level grass fires. As with noise, the fire issue has changed in the current generation of wind machines. Each machine now costs 1 to 3 million dollars and needs to operate for about 15 years or so to pay back the investment. So there is a strong interest on the part of the wind farm owner to not have the machine burn up. So much for intent. What about the specifics. These machines are high above ground on a steel tower placed in the middle of a 50 by 70 foot gravel pad with a lack of vegetation around base of tower. The high voltage wires from the machines are underground, lightning protection devices on each tower, and temperatures inside the generators are monitored. Shut down is automatic when above normal temperatures are sensed. The data seems to show that lightning damage to newer machines is rare. However, I have unable to find comprehensive data on ground fires caused by these newer machines one way or the other but it does not seem to be a problem. Even recent lightening strikes or other causes to the lightening balls that destroyed the blades of almost all of the wind generators at the nearby Campo wind farm did not initiate any ground fires.

Finally, you certainly can see a modern wind generator. They are large with the tower being about 300' tall and each of three blades being about 150' long. The question is when you see them, what is your reaction? That depends on the eye of the beholder. It can range from a stick in the eye reaction if it spoils the view you are used to. Or you can see elegant and beautiful kinetic sculptures that are symbols of a less polluting future.

Some say that we will lose our vista and it would be a tragedy for San Diego County. When you look at the map of San Diego County, you will see an enormous amount of land are dedicated to county parks and preserves, state parks and preserves and national forests and recreation areas. One nearby state park is over 600,000 acres. San Diego County is truly blessed with more than ample outdoor space to enjoy in many ways. To take these few 100 acres that are a combination of private, state, Native American and BLM land for the laudable purpose of generating clean energy, is not depriving San Diegans of natural vistas. We have many, many natural vistas and are suggesting using this particular piece of land for a commitment to a cleaner tomorrow. We need to keep things in perspective.

This is a local impact that falls mainly on those living within view of these wind generators. This single 200 MW wind farm will duplicate the renewable energy generated in San Diego by all the roof-top PV systems installed as part of the state CSI \$3.3 billion dollar program over 10 years. This is a notable contribution to San Diego reduction of green house gases (GHG) and thus will moderate some of the Climate Change (CC) impacts from San Diego. Although this is a global problem it has local impacts. One of the most onerous is the increase in frequency and intensity of east county fires in San Diego. The persistent droughts set up conditions for what are now called firestorms. CC will have other significant impacts on San Diego including ocean rise, water supply difficulties and adverse changes in air pollution related diseases. This wind farm will contribute its part to reducing GHG and local impacts related to GHG but it will increase the local impacts especially the change in the viewscape. Only the full environmental study will be able to balance these impacts and point out which is the better bargain.

Some people say why don't we put all our eggs into one basket and only use rooftop PV as our renewable energy source. Urban-sited PV does have a lot of advantages as one of a portfolio of renewable energy options. It is in the urban center without explicit need for transmission connections to the existing grid. However, large amounts of urban PV would need the distribution system to be redone to handle energy movement both ways on the system. This would be a major upgrade to the existing distribution system that assumes that electricity flows in one direction in most parts of the distribution system.

Also, large amounts of PV would require backup since it only has significant energy production over about six hours on the typical day, and misses the summer time peak demand that is in the late afternoon-early evening in San Diego. Each 100 MW of PV typically displace about 20 to 60 MW the peak power demand. The needed backup would take the form of retention of fossil energy use and power plants and/or expensive energy storage. In San Diego that imports about 60% of its energy, large amounts of urban PV would depend on the transportation system to bring in the backup energy. So, rather than a particular link to an existing transmission system such as the Tule wind farm, large amounts of urban PV would require the entire existing transmission system for it to function.

Rooftop PV is expensive and is about three times more expensive than wind energy without subsidies. As with wind, PV does not do a very good job at displacing peak electrical power. So both depend on other renewable energy sources such as baseload geothermal, baseload biomass electric plants and desert solar thermal plants with cheap thermal storage to make the electric grid system work with some stability and adequately meeting peak power demands. Without these other renewable energy options, you would depend too heavily on fossil fuels and expensive storage. This wind farm and roof-top PV need to be considered as part of a portfolio of renewable energy sources because neither wind nor PV do well as "the" single energy source of the future. They both need grid back up and support. You really can't consider them alone as is often done in environmental impact studies. They need to be part of a system that functions well as an electric system. If used exclusively as the "the" renewable energy source, they would introduce imbalances in the grid that would require extensive use of fossil fuels or expensive storage.

All of the above is an attempt to address the negative allegation made against a wind farm. Most of the allegations seem to have little support.

There is a very strong case that you can make for wind farms as a form of renewable energy. This is usually acknowledged by most and then we jump right to the BUT.... What are the elements of a strong case for? The major elements are that for every Kwhr of wind electricity that substitutes for how we now generate electricity, we eliminate air and water pollutants, eliminate green house gases, lower the cost of electricity, don't deplete fossil fuels, and avoids a host of other conventional energy problems and generate jobs both locally and elsewhere in the U.S.

What air pollutants do we eliminate? There would be no sulfur dioxide or nitrogen oxides which make acid rain, or any smog formation from nitrogen oxides, or particulate matter to clog our lungs, or heavy metals such as mercury to cause brain damage to children. To put numbers on this, if 30% US electricity provided by wind and it substituted for today's coal plants, then SO₂ would be reduced by 16 billion pounds/yr, and NO_x reduced by 9 billion pounds/yr. The avoided human health impacts would be: avoided deaths of 14,364 people/yr; avoided asthma attacks of 300,000/yr, avoided upper respiratory symptoms of 2.07 million/yr. And a bunch of CO₂ would not be generated and reduce the people induced warming of the planet.

What good does reducing green house warming gases do for us? It reduces things like weather extremes such as increased floods and droughts, more frequent and more violent tropical storms (such as Katrina), and rising ocean level. So every KWhr of wind electricity steers us away for our current tinkering with global climate and steer us toward a more stable future.

Wind electricity also avoids all the dreadful other impacts of coal, oil and gas extraction and transport. It also avoids all the geo-political complications and incredible cost of our current immersing in the middle-east. It avoids hazards of nuclear power which are many and insidious such as the dilemma of small probability of catastrophic accident, the use of weapon grade nuclear materials with links to terrorism, the further terrorist threat of "mole" disrupting nuclear plant operation and causing melt down, the terrorist threat of small organized group taking over a nuclear plant and causing melt down, and the long term (geological) radioactive waste storage problem.

Wind is a real benefit and should be pursued vigorously to replace fossils and nuclear power. We can't rely on others in far away places to solve our problem of generating too much green house gases for our own good. This seems like a good place to site a wind farms in our region. This coupled with a host of other things to improve our efficient use of energy and a portfolio of other renewable sources of energy should get us to a much brighter future.

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