

Attachment 9-i_1

For Board of Supervisors Agenda of:
December 16, 2019

Re: Applicant: Humboldt Wind
Project: Appeal of Planning Commission Denial of CUP-18-002

Attached for the Board of Supervisors consideration are the following comments:

| Public Comments provided to the Clerk of the Board's office to date 12.09.19 | | |
|---|-------------------------------------|-----|
| 1. | Larry Schussler | 2 |
| 2. | Margaret A. Plant | 3 |
| 3. | Katherine Bettis | 4 |
| 4. | Michael Evenson | 12 |
| 5. | Angelina Lasko | 15 |
| 6. | Yurok Tribe letter 12.09.19 | 17 |
| 7. | Kandis Kelsey | 22 |
| 8. | Dr. Anthony Silvaggio | 24 |
| 9. | Donna Wildearth | 26 |
| 10. | Harriet Hill | 27 |
| 11. | Hal Genger | 29 |
| 12. | Bonnie Blackberry | 31 |
| 13. | Jim and Lily Macy | 33 |
| 14. | Rick Pelren | 35 |
| 15. | Jeny Card | 44 |
| 16. | Kathleen Becker | 47 |
| 17. | Linda Byrd | 48 |
| 18. | Jack Rogers | 49 |
| 19. | Susan Rogers | 51 |
| 20. | Francene Lema-Rizza and Jim Rizza | 52 |
| 21. | Jeffery Hedin | 53 |
| 22. | Joel Merriman | 62 |
| 23. | Joan Tippetts | 69 |
| 24. | Jere Bob and Carol Bowden | 71 |
| 25. | Jeremy C Shellhase | 72 |
| 26. | Lynn Carrico | 73 |
| 27. | Lez Waker | 74 |
| 28. | Susan Haman | 75 |
| 29. | Dennis and Dorothy Simmons | 76 |
| 30. | Beverly Change | 77 |
| 31. | Ellen C. Zanzi and Kenneth E. Zanzi | 79 |
| 32. | Ellin Beltz | 86 |
| 33. | Hollis H. Kreb | 93 |
| 34. | Ken Mierzwa | 94 |
| 35. | M. R. Wolfe and Associates | 96 |
| 36. | Town of Scotia Company | 151 |
| 37. | Curtis Clark | 190 |

RECEIVED

DEC 09 2019

BOARD OF SUPERVISORS

Original -
Comments for
Terra-Gen Project ①

The Terra-Gen wind project will be placed in remote difficult to access area. This location is also a sacred site for the Wiyot tribe. As a consequence of the location the economic, environmental and social costs per KWH of electricity generated will be very high when compared to more appropriate sites. This site is probably a good investment for Terra-Gen as a result of having of rebates and subsidies, and not having to pay for all of the environmental damages. Subsidies and rebates are not free and are paid for by us, the taxpayers. I'm sure more appropriate sites can be found which will yield more CO2 savings per total dollar invested.

Local and national governments are often not adequately compensated for the resources extracted. Examples can be found in the Gulf of Mexico and the oil rich deltas of Nigeria. If this project does go through the state and county should be adequately compensated.

If power from outside Humboldt is cut. I don't think we would have much difficulty in generating a sufficient supply of electricity locally to meet our needs. We just need a big switch.

Conservation is the cheapest way of reducing our carbon emissions, more efficient lights and appliances could make a big difference. Driving from Arcata to Eureka in the 50MPH zone I can get 60 MPG in my 2013 Prelius.

Once this project is completed the pads of these windmills will probably still be in place long after our civilization collapses. If the towers are still in place it will look a little like Easter Island.

Larry Schlussler Phd
Sun Frost
Arcata



3

RECEIVED
DEC 09 2019
BOARD OF SUPERVISORS

Humboldt County Board of Supervisors
Re: Humboldt Wind Project Appeal
December 8, 2019

Rex Bohn, Estelle Fennell, Mike Wilson, Steve Madrone, Virginia Bass:

I have been a land owner in Pepperwood for 40 years, and Jordan Creek and the Demonstration Forest (staging and M & O substation) is an area I know like the back of my hand. This section from EIR, Impact 3.10-1 Potential Temporary, Short-Term Construction-Related Drainage and Water Quality Effects, ends like this: *The project would implement all measures contained in regulatory plans, programs, and policies adopted for protection of the environment. However, this impact would be potentially significant.* Our local community will be directly affected by the proposed well, noise pollution, possible run-off, and dust from construction. Humboldt County's valued assets such as tourism, redwoods, avian species, quiet and beauty will be greatly impacted. I strongly oppose this wind project.

There are a plethora of reasons why this wind development proposal doesn't make good sense for Bear River and Monument Ridges. The scientific experts don't agree! What I need you to answer is what is the county's real goal in voting for or against this project? What is the Board of Supervisors criteria for making their decision? Will you please share this on Dec. 16th?

Without truly knowing all the costs that could face the county if the paper plan doesn't go perfectly, is this a good economic bet? Terra-Gen is an LLC. What about if there's a catastrophic event, such as an earthquake along one of the faults located in the project area? What about decommissioning costs at the end of the project's life? If Terra-Gen abandons the project will the county be responsible for cleaning up the mess? You have to write a statement of overriding considerations and say that you are willing to accept the adverse impacts.

Is the County's goal to reduce fossil fuels or offset them? What other plans have been presented besides the ocean windmill farm? Is the County serious about fossil fuel emission reduction? I added up (from the FEIR) the number of typical construction equipment needed (106) and the total working days proposed for construction (4,315). These diesel burning machines adding to emissions during construction equates to going two steps backwards before even going a step forward, if that.

Is the County supporting an education or incentive program for residents to reduce consumption or are we just trying to find a way to maintain current energy usage? If you Supes want to make a make a difference, let's do something now! A conservation program would have immediate results. This kind of program, wouldn't cause permanent destruction of habitat, incidental takes of bat and bird populations, or altering species behavior possibly forever.

Yours truly,
Margaret A. Plant *Margaret A. Plant*
30716 State Hwy. 254, Scotia, CA 95565

3

Eberhardt, Brooke

From: Katherine <katherinebettis@gmail.com>
Sent: Monday, December 9, 2019 11:51 AM
To: Eberhardt, Brooke; Katherine Bettis
Subject: Wind Farm Comments Addendum

RECEIVED

DEC 09 2019

BOARD OF SUPERVISORS

I dropped off my comments in writing this morning. Here is an addendum.

Cleanup in 30 years (or sooner)?

Who will pay to clean up the wind farm at the end of its life? And what is the definition of "clean up"? Will Terra-Gen pay, upfront, in dollars adjusted to 2050, the cost of removing and disposing of the millions (I did a rough estimate - I know this number might not be accurate but the point is it's a lot of concrete) of tons of concrete and rebar, towers, and football-field-length blades? If not, will the taxpayers of Humboldt County end up with this bill? Even if it is on private property.

abandoned:



I often ride my bike over the Bear River Ridge Road. It's incredibly beautiful. I've seen eagles. I saw a hawk lift off carrying a live rabbit.

I used to ride my bike on Altamont Pass Road through the Altamont wind farm. I've seen more. The size of the wind turbines is overwhelming. It's a miserable dead landscape with giant swaths of concrete. The flashing lights are like a casino.

See my drawings to get a true idea of the scale. [Please look at the next 3 pages.]

Massive concrete foundations will be required to resist overturning on these giant structures. Roads will be huge to carry all that concrete and the giant blades. Everything is so huge that it takes aerial photos to capture the images. [See photos.]

The production of concrete causes 8% of global warming. Surface runoff causes soil erosion, water pollution and flooding.

Saving the planet isn't just about carbon, it's about preserving and protecting nature.

These windmills are not for the greater good.

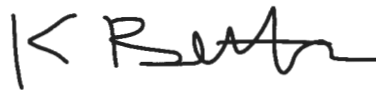
The best thing for the greater good is to preserve and protect wildlife, not hack up eagles and pave over edible rabbits. Reject this short-sighted and destructive project.

Wildlife is not expendable.

It seems the true purpose of this project is for out-of-town investors to make profit and get tax breaks while exploiting Humboldt County.

Humboldt County's amazing wildlife and birds and plants are its **treasures**. Don't give them away.

Submitted by Katherine Bettis, Humboldt Hill



Data:

Wind power has negligible effects on climate Their effect is "far less than the long-term effect of greenhouse gas emissions in driving global climate change," - Smithsonian

"...4,700 birds die per year as a result of the wind turbines [at Altamont]." – Golden gate Audubon Society

Most birds fly below 500 feet except during migration. - From a Stanford study

RECEIVED
DEC 09 2019
BOARD OF SUPERVISORS

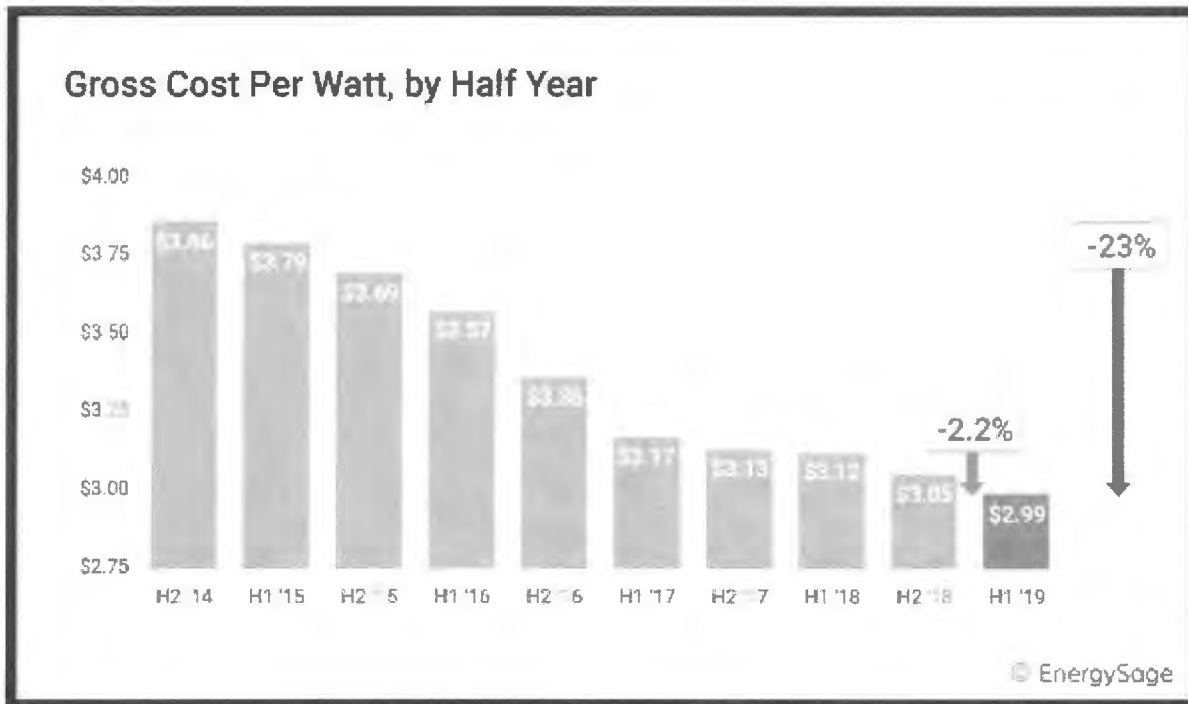
Wind farms may change the mixing of air near the surface, drying the soil near the site. - Princeton study

There is one easy way wind companies can avoid bird deaths: Put wind farms in places where birds are unlikely to fly in the first place. - Audubon society

Humboldt County is ranked the number 2 county in America for scenery and climate.

<https://www.washingtonpost.com/news/wonk/wp/2015/08/17/every-county-in-america-ranked-by-natural-beauty/>

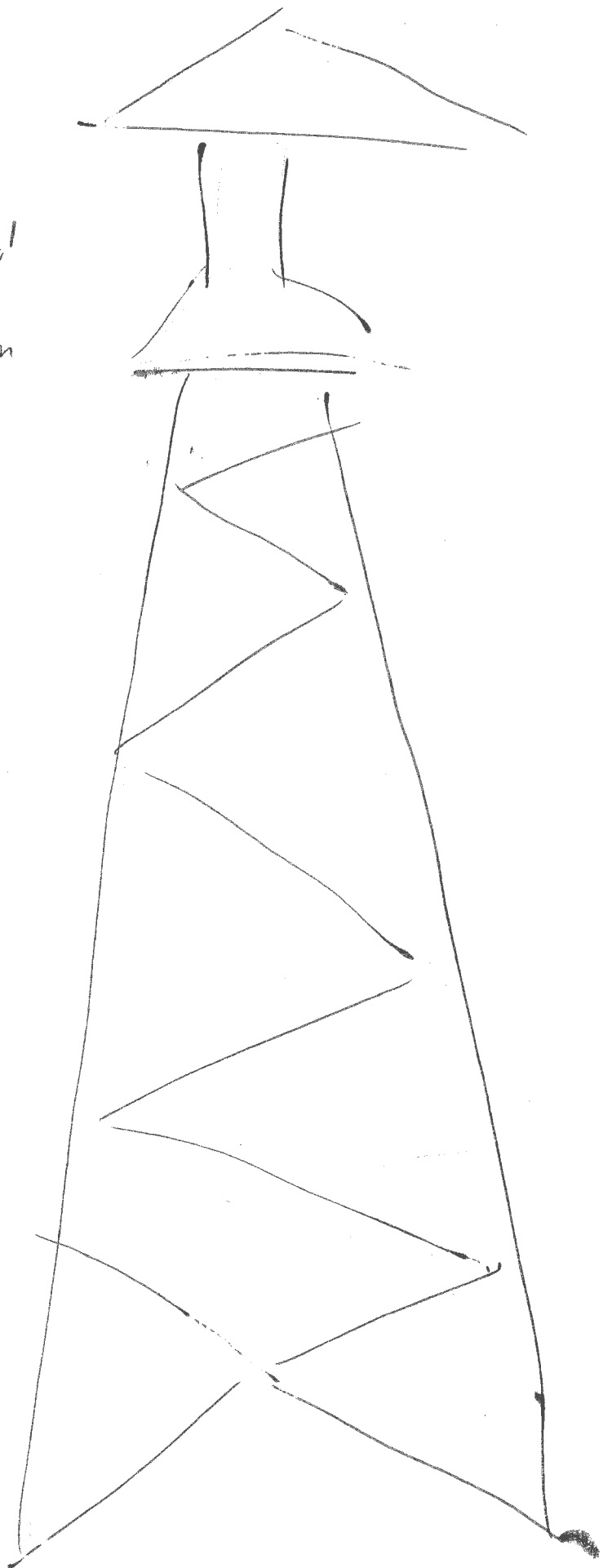
Chart showing price of solar going down drastically:



150'
transmission
tower

40'
phone pole

6' person



concrete 8% global warming

9' position

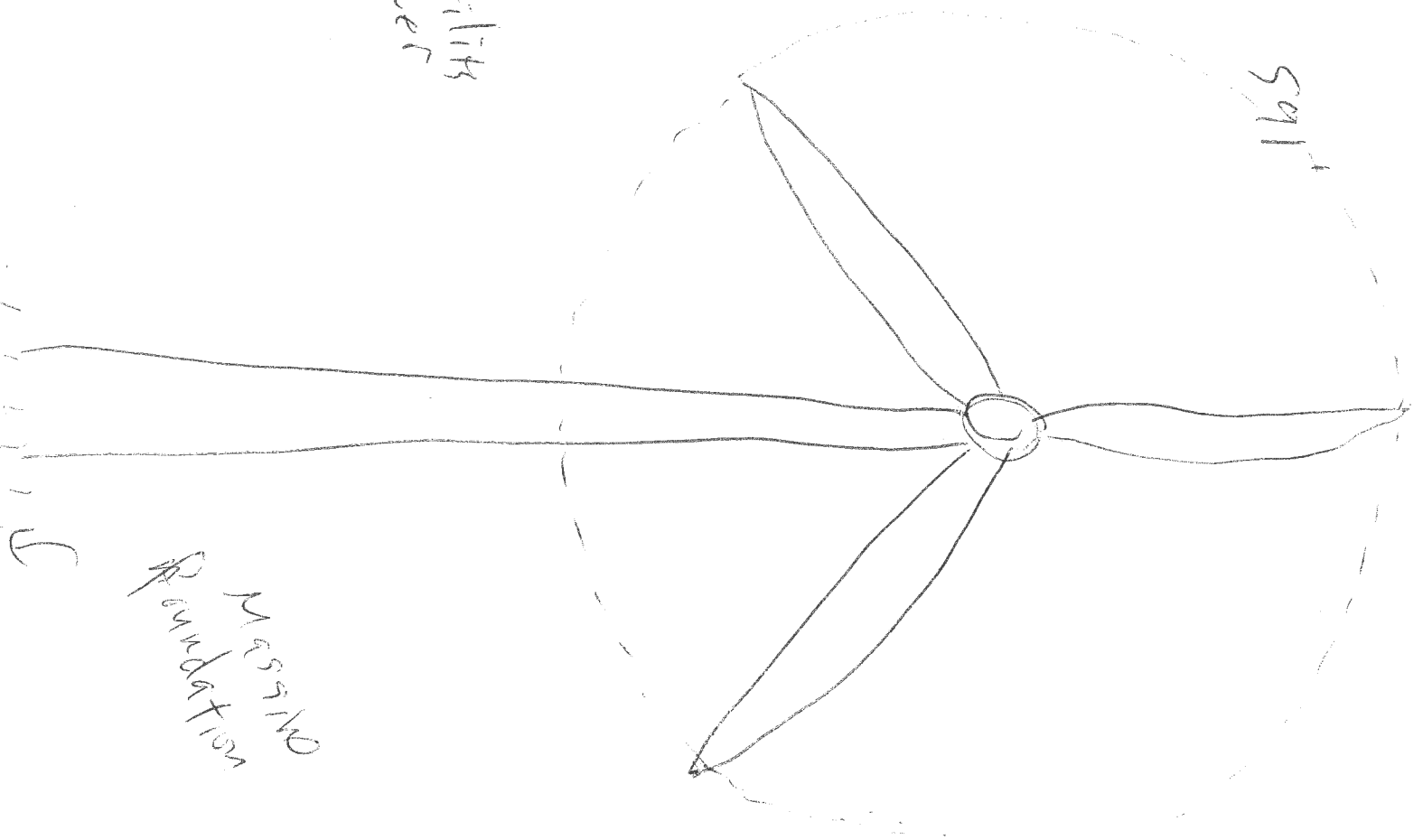
40' diameter

F

150' utility tower



591'



40' diameter foundation

PHOTOS:

Bird sliced in two by a wind turbine.





Abandoned:



Foundation and clearing for a smaller wind tower.





4

December 6, 2019
Lost Coast League
PO Box 60
Petrolia, CA 95558

RECEIVED

DEC 09 2019

BOARD OF SUPERVISORS

Humboldt County Board of Supervisors

RE: DENY Appeal of Humboldt Wind Project

Dear Supervisors,

Thank you for the opportunity to comment on this wind project. I stand with the Wiyot Tribe and those who oppose granting Terra-Gen a permit. Please **Deny the Appeal** of the Planning Commission's Denial of a permit for the Energy Capital Partners' Terra-Gen Humboldt Wind Project.

The fact that Terra-Gen needs the Supervisors' approval recognizes that the wind is a resource that we citizens of Humboldt have prior rights to, just like with the early native American treaties: signing a land treaty meant that the USA recognized the tribes' right of ownership to their land. That is the basis for tribal rights on salmon and water and other resources, upheld by the US Supreme Court.

Humboldt County has repeatedly been abused by outside capital seeking profits from our once bountiful natural resources. First came trappers of fur and the beaver were quickly gone. Then the rush for timber stripped our hills while at the same time our rivers were over-fished. Sure, we struggled along with what was left; we started with so much wealth that the remnants were still marketable for the few residents. The impacts of the logging smothered spawning salmon eggs and diminished our off-shore and instream fishing industries.

As great wealth was extracted from Humboldt, great impacts were borne by Humboldt residents. Very little wealth remained, and today we peck away at a much reduced timber base and ocean fishery. One major sawmill left? A truncated fishing season? A bad joke. But these are the consequences when elected officials do not steward public trust resources. Take heed before you sell our wind.

With the Maxxam debacle we seemed to wise up. We rejected Goldman Sachs' attempt to buy our harbor. We rejected CalPine's plan to establish an LNG terminal. We knew what a mess those entities would leave us with, and how little we would gain from their "industry."

The latest wind project falls into this pattern. The environmental documents prepared by project applicant are full of flaws, unproven assertions as to mitigations, and deadly silence on those subjects where their proposed impacts are "unavoidable and significant." In order to approve this project, you must, by law, declare there are over-riding considerations.

Do not go in that direction. Do not subject us, our heirs, and the rich biodiversity found adjacent to these proposed ridge top electrical factories, to the long-term decline that will be "unavoidable and significant." Do not accept any over-riding considerations and put our environment at risk. Our public trust resources are too diminished to risk. They have been over-ridden for too long.

To name but a few flaws in the environmental documentation:

1. Do you really take seriously the claim that erecting these machines will result in a net increase in Marbled Murrelets? Serious researchers at HSU have shot numerous holes in that claim. Similarly, they question the effectiveness of “scent-sniffing dogs” as reliable field technicians or the TAC approach as an after-effect measure. HSU wildlife biologists have submitted expert oral testimony to the Planning Commission demonstrating many inadequacies of project proponent and Planning Staff scientific consultants’ assumptions, analysis and claims. Please include all testimony, oral and written, to the Planning Commission as part of the Official Record of your review.
2. With hundreds of gallons of oil setting high atop these machines, where is the Individualized Oil Spill Response Plans for each watershed in the project? Who is the designated “Responsible Party” if there is an oil spill? Until those documents are drafted, circulated, reviewed and approved, this project should be considered unripe for a CEQA decision.
3. Where is the discussion of the impact to the recovering Eel River salmonid population from the radical alteration of roads in the already heavily cumulatively impacted Jordan Creek watershed? Repeated timber harvests in that area have been submitted and approved based upon a Licensed Engineering Geologist’s study, yet every harvest has contributed significantly to cumulative adverse impacts. Review of the road plan needs close scrutiny in the face of these repeated failures by experts to adequately evaluate the conditions. Many Humboldt residents have that expertise. It would be negligent to defer to others who have failed in the past.
4. Who is going to indemnify the farmers on the Eel River Flood Plain when watershed failures disrupt their productive enterprises? Pollute their aquifers? If you approve the Permit, Humboldt County will be on the hook. Where is the watershed clean-up plan? Who is the Responsible Party to perform a clean-up should there be impacts unforeseen and unmitigated in the EIR documents?
5. Who is going to defend the lawsuits if this highly unpopular Permit is approved? Us taxpayers? Given the great unpopularity of this proposal, you would not be exercising fiduciary responsibility by approving it.
6. Terra-Gen claims it does not know what kind of lighting the FAA will require of them on their proposed machines and, therefore, they do not evaluate the specific impacts of those lights. How can a permitting body, such as the Supervisors, evaluate the impacts of the lighted night sky on threatened and endangered species? How can a permitting body evaluate the impact to terrestrial species who traverse the ridges at night? There are no environmental documents for these impacts as required by CEQA.

Given time enough, one could cite numerous other instances of the incompleteness of the environmental documents. The project presents so many impacts that the environmental documents are thicker than a large formatted Bible. How are citizens able to digest all the information, sort fact from fiction, and comment thoroughly? The permit process is being rushed considering the scale of the project.

I submit all of the above comments and questions cognizant that we are facing a climate catastrophe and aware that we, collectively, urgently need to take firm action to reduce our Green House Gas emissions. This wind project is not such an action. It does nothing to reduce GHGs (*“It is not possible to state that operation of the project would directly replace energy generated by fossil fuel-fired plants”* according to Terra-Gen, **4.4.7 GREENHOUSE GAS EMISSIONS**), but only produces more electricity for a population that needs to go on an energy diet. We have to face our electricity obesity with both personal and collective actions. The Terra-Gen environmental documents do not adequately address GHGs.

Recognizing the value of our wind and natural heritage resources, one needs to assess the economic component of this project that puts them at risk. Terra-Gen continually complains that if there are too many restrictions placed on their permit, the project will be “economically infeasible.” That, of course, is

not related to your duty to certify or deny the CEQA documentation as adequate. If anything, it signifies that Terra-Gen wants to avoid protecting the environmental values at risk.

At every step of the process, Terra-Gen accedes to one request for modification after another. This is a clear indication that project proponents anticipate great profits. How? Because PG&E is faltering, upgrading the grid both here and elsewhere in California is expected to result in a rapid rise in the price of electricity. Terra-Gen's profit projections based on current prices to consumers are disingenuous. They are keenly aware that this is a golden opportunity to capitalize on the productivity of Humboldt County's economy, as nothing is so essential to productivity as energy consumption.

Alternate energy is an economic investment opportunity, recognized by outside corporations, but more importantly, it is also an opportunity for local Humboldt capital to keep that windfall here. The Board of Supervisors must not discourage local investment in alternative energy systems, including photovoltaic solar and other means which have far diminished environmental impacts. Approving this Permit will set back local enterprise in alternative energy solutions that aim to provide electricity locally, not merely to the Grid and Southern California. The increase in tax base such investment improvements will engender can more than compensate for the \$2million or so proposed tax offered by Terra-Gen and it will come at a lessened environmental risk and impact, especially to birds, terrestrial plants and animals, and to Humboldt's watersheds.

Local investors are currently forming partnerships to do just this, following on the successful example of the Blue Lake Rancheria. The Terra-Gen's proposal along with the Public Safety Power Shutoffs have delivered a good "kick in the pants." Humboldt is responding and we urge you not to stifle the local investment by approving this wind project with its unmitigated, significant and unavoidable environmental impacts.

One further note: Terra-Gen's "unavoidable and significant" impacts will by Terra-Gen's own admission require future alteration of the operation (see their TAC proposal on wildlife). Their hired biologists will be involved. If a local consortium alternative energy project creates impacts, we will be far better served having local players, ones we know and see face to face on a daily basis, who live in our communities, determine what course of action is necessary to correct unforeseen impacts and deficiencies. Local is much preferred over profit-seeking outfits from down South.

Please accept these comments and questions into the Official Record on behalf of myself, owner/operator of the Lost Coast Ranch® and OldGrowthTimbers.com, and the Lost Coast League.

I remain
Sincerely Yours,



Michael Evenson
(707) 629-3506
evenson@igc.org

RECEIVED

DEC 09 2019

BOARD OF SUPERVISORS

5

11/9/2019

Hello Supervisors.

I should not have to be writing you today to reject Terra-Gen's appeal of the Planning Commission's denial of the Humboldt Wind LLC conditional use permit. This project has very little benefit to the local community of Humboldt County and contributes very little amount of energy for the significant cultural, community, and biological impacts it has.

Terra-Gen stated this is a "community project build by the community" at the numerous Planning Commission meetings. Well, the community denied the project and they are now appealing it. This is NOT by far a community project when a project is denied, appealed, and pushed on the people through fabrication of the truth.

It is fact that wind and solar curtailment in 2019 is at its absolute highest (CAISO). The ISO curtailed 630,864 MWh of wind and solar generation in 2019 through May (S&P Global). Therefore, this project would get curtailed when energy demand does not meet consumption. The applicant does not want to implement curtailment for mitigation of the Marble Merlet. Curtailment and other mitigation practices would make this project not *feasible as stated by Terra-Gen and with the addition of litigation costs could be extremely financially impactful to Humboldt County. How much of the \$50 million revenue tax will go back to litigation costs and other costs from this project?* I do not want to see Humboldt County Supervisors continue to make poor economic decisions.

This project does not help to address Assembly Bill No. 2514 and instead adds to the direct problem the California grid is facing. David Olsen, chair of CAISO's governing board stated, "California should invite contracts that reward a more diverse portfolio of renewable generation, plus energy storage, for the full spectrum of power system capabilities. If we paid clean resources to provide power services instead of just energy, we wouldn't have to curtail renewables as much, because we would use them not [only] to provide energy, but to supply the grid capabilities that gas now provides." Therefore, it is known fact that in order for renewable projects to actually offset other energy sources, energy generated would have to be stored. Otherwise, this offset will be substituted with natural gas and other energy sources.

Only 5% of old-growth remain in original range and 77% privately owned. In comparison, the Terra-Gen project would produce barely 2% of California's total wind energy, without curtailment implemented, directly impacting this limited resource and the ecosystem services it provides. Not a single state's RES/PRS requires **verification** of CO2 reduction from any wind project, either beforehand or after the fact. Research *has shown that during changing temperatures, species need stable habitat to reside to that offer many ecosystem services.* Research has also shown having less fragmented landscapes allows for species to move and migrate to their food source to survive climate shifts and pressures.

Furthermore, we all know that a majority of the energy generated will not go to Humboldt. We know that most of the upgrades that are claimed are being done outside of Humboldt County and, in fact, upgrading the transmission line from Bridgeville to Cottonwood (not in Humboldt) and the Cottonwood substation (not in Humboldt). No upgrades to the transmission line from Bridgeville and Humboldt Bay substation is being done. Decoupling should happen at Bridgeville substation to actually benefit Humboldt County.

It is known fact that over a 100 years that Native Americans have been killed and their land taken, and their culture diminished. The Wiyot people might not have had access to the land for many years, but they have looked at those ridge tops for hundreds of years. The least we can do is give them the right to see their land as they want it to be, even if they don't own it. Furthermore, in my Native American studies course at HSU a student from Los Angeles stated in a discussion he did not realize Native Americans even existed anymore until he came up to Humboldt. I do not want to see continued decimation of Native American cultures. People visit Humboldt to see the Native American Culture that is present and not windmills.

Also, this project interferes with the Luna Conservation Easement that was not address or acknowledged by Terra-Gen or referred to in the FEIR.

In addition, we all know this is about production tax credits and investment tax credits for the applicant, and why they are spending the extra money to appeal this project. Which could have been given to the Wiyot or used for better mitigation and practices, that they said they could not implement. It is fact that facilities that begin construction after Dec. 31, 2019, will not be able to claim production tax credits. Which is exactly why this project is being rushed, pushed, and forced on Humboldt County.

Lastly, the jobs created would not help the citizens of Humboldt County. Most job seekers are graduating from HSU with a Natural Resource degree. This group of people are not seeking jobs in construction or for a terrible project they never agreed with. Cannabis has a better potential of creating more long term jobs with farms and other state and local agencies, and a consistent tax revenue for Humboldt County. Would also be less of an impact on the land and is a more highly regulated by the state.

Therefore, this project does not take into account the cumulative impacts of all permits needed. *It is fact that this project would be a extremely bad deal for Humboldt, and would mean the Supervisors are not listening to the public who elected them. The energy crisis is not a problem for Humboldt County and this issue should be looked at as a whole. With offshore wind, land wind, what will happen to this energy if we don't have proper storage and listen to the issues the operators are having.*

Thank you.
Angelina Lasko



YUROK TRIBE

190 Klamath Boulevard • Post Office Box 1027 • Klamath, CA 95548

RECEIVED
DEC 09 2019
Clerk
Board of Supervisors

6



Humboldt County Board of Supervisors
Attn: Kathy Hayes
825 5th Street, Room 111
Eureka, CA 95501

December 9, 2019

RE: Yurok Tribe's Comments regarding the Humboldt Wind Energy Project

Dear Humboldt County Board of Supervisors:

The Yurok Tribe is writing in support of our neighbors, the Wiyot Tribe, and in opposition to the Humboldt Wind Energy Project ("the Project") as it will have a significant impact on Wiyot cultural resources, cultural landscapes, and impact the endangered California condor, a natural cultural resource of the Yurok, Wiyot, and many other Native nations and peoples. Furthermore, we support the Humboldt Planning Commission's decision to deny the project and hope that the Board of Supervisors upholds their decision. The Yurok Tribe has considerable concerns related to the Final Environmental Impact Report ("FEIR") and the recently released Humboldt Planning Commission 11.21.19 Staff Report ("the Staff Report"). This report purports to address comments raised at the public hearings. We find that responses are either woefully inadequate, or missing altogether. Further, FEIR for the Project fails to provide adequate mitigation measures to avoid the significant harms to Wiyot cultural resources, cultural landscapes, and the California condor, in violation of the California Environmental Quality Act ("CEQA"). The Yurok Tribe urges the Humboldt County Board of Supervisors ("the County") to reject the Project because of these significant and unavoidable harms.

The Staff Report provides a long list of environmental impacts not mitigated to less than significant level, including impacts to:

- (1) aesthetic resources on Bear River and Monument Ridges;
- (2) exceeding the daily threshold of NOx in violation of the standards set by the North Coast Unified Air Quality Management District;
- (3) the threatened marbled murrelet;
- (4) raptors;
- (5) the Bear River Ridge and Valley Historic Landscape;
- (6) Tribal Cultural Resources of the Bear River Ridge area;
- (7) ethnobotanical Tribal Cultural Resources of the Bear River Ridge area; and

(8) the Tribal Cultural Resources of the California condor.

The Commission must determine if the benefits of the Project outweigh the unavoidable, adverse environmental impacts. For this Project, the significant environmental harms clearly outweigh any benefits offered by the Project. The benefits listed in the Staff Report can all be achieved by less harmful projects, including localized roof-top solar projects, which would not destroy Wiyot cultural resources and landscapes, harm large numbers of wildlife, or violate air quality standards.

The Staff Report also incorrectly asserts that the Bear River Ridge is “understood *to have been* a sacred high prayer spot...” The use of the past tense “have been” is incorrect because this site is currently and will always be a high prayer spot and significant cultural resource and landscape to the Wiyot Tribe and people. Seeking to diminish its value because Wiyot tribal membership were unjustly excluded from the site due to laws imposed by a colonial government is disingenuous. The site is of continuing high sacred value to the Wiyot people and should be referred to as such out of the respect that the proponents of this project claim to have for Wiyot culture.

Further, the Staff Report identifies significant modification to the Project that trigger the necessity to recirculate the Draft Environmental Impact Report (“DEIR”) for public comment and review. These significant modifications include:

- (1) the creation of the Technical Advisory Committee (“TAC”);
- (2) the realignment of the gen-tie;
- (3) the changes in the modeling for marbled murrelet collisions with a significant change in outcomes from 20.86 to 7.7 marbled murrelets colliding with the wind turbines;
- (4) changes in the bat TAC formation, operation, and requirements propose additional mitigations;
- (5) the reduction in the estimated raptor fatality rate;
- (6) new information regarding eelgrass protection;
- (7) no longer avoiding ground disturbance of the Bridgeville archaeological site;
- (8) the revised mitigation measures of: 3.5-1b, 3.5-2a, 3.5-2b, 3.5-2c, 3.5-3, 3.5-5a, 3.5-5b, 3.5-5c, 3.5-7, 3.5-11, 3.5-12, 3.5-13, 3.5-14, 3.5-18a, 3.5-19e, 3.5-21e, 3.5-22c, 3.5-23a, 3.5-23d, 3.5-22e, 3.5-25a, 3.6-1a, 3.6-1b, 3.6-4, and 3.13-2a;
- (9) the added stepwise adaptive management strategy of the Bat TAC;
- (10) the implementation of the American Wind Energy Association best management practices for feathering; and,
- (11) The Project’s refinements in ground disturbance, gen-tie alignment, reduction of turbines, gen-tie crossing of the Eel River, realignment of the access roads, and project substation footprint.

Only through the recirculation of the DEIR, can the public have the full opportunity to review the changes to the project and provide comments. The changes made to the Project are significant modifications and require a recirculation of the DEIR.

Further, the Staff Report ignores and fails to address three specific comments submitted by the Yurok Tribe related to the Northern California Condor Reintroduction Project. These comments are summarized in the following section of this letter. First, although there is publicly released Environmental Assessment related to the condor reintroduction project, three potential alternatives were proposed. 1) The no action alternative, 2) reintroduction under a 10(j) non-essential designation, and 3) reintroduction with full protection under the Endangered Species Act (“ESA”). No final finding has been reached related to this proposal, hence the alternative to be selected is at this time unknown. It seems appropriate to present a proposed mitigation or other actions that will occur should this condor proposal find for alternative 3 and additional ESA protections are required.

Second, the project proponent has suggested use of a geo-fence linked to birds’ satellite transmitters to facilitate warnings and grid shut-downs if necessary. While this may reduce some harms, it locks managers into satellite tag usage for the lifespan of the condor program, reducing management flexibility should managers find lower than expected condor mortality within the reintroduction region. Further, the condor project is proposed with a 20-year lifespan. The Wind Farm Project is proposed with a 30-year lifespan. Does the energy company in question, or Humboldt County propose to provide the additional 10 years of condor monitoring, trapping, and tracking required to maintain geo-fence effectiveness for the extra 10-year time-frame? The proponent suggested in previous discussions the application of Identiflight for use later during the project period, but now indicates that this tool will not be used. Clarification on this point is required.

Third, the 22-mile gen-tie line proposed by the project proponent is a collision risk in-and-of-itself. There is no way to “shut off” the risk associated with this infrastructure. Further, the newly proposed overhead crossing of the Eel River is supposed to pose minimal risk to murrelets, but there is no evidence in the record showing if this gen-tie line was assessed for risk to condors using the river valley winds for soaring.

This brings our discussion to the unsound assumptions made in the development of this proposal. In some cases, assumptions are made to indicate a dismissal of potential issues, risks, or concerns. In other cases, the assumptions made in the creation of the case supporting this project seem to over reach reality. One example is the Collision Risk Assessment dependent on avoidance in murrelets that is placed at 0.98. This is really nothing more than a guess. Perhaps an educated guess, but a guess

nonetheless. The primary basis seems to be that some other species of birds that live at sea seem to avoid collisions at certain levels, so murrelets probably do also. The best information presented in the Assessment seems to be that murrelets avoid trees while flying, which demonstrates that they can avoid obstacles. This is the case for all flighted birds, yet many experience high mortality in the presence of wind turbines. The Collision Risk Assessment also posits that other birds, such as kestrels, exhibit various behaviors that distract them and put them at higher risk of collision while murrelets do not. We would argue that murrelets are extremely social while in flight, joining as pairs and trios; communicating through vocalization during both breeding and non-breeding seasons; and, while travelling at 50 miles per hour, executing survey flights over vast areas in search of potential nesting and resting platforms. Because observation of the birds is difficult to impossible during such activities, we have no information on how “distracted” they may be, which would be an anthropogenic projection at best anyway. The problem is that such assumptions are being given numerical values in statistical models, an attempt to launder unfounded assumptions into statistical facts. These models will spit out numerical answers regardless of what is input. Garbage in/ garbage out is a very real possibility in this case. There is no meaningful peer review, other than public comment, and many of the murrelet specialists regionally are on the Projects’ pay-role and may feel conflicted about speaking out against this Project. The Yurok Tribe harbors strong doubts that this write-up for this collision risk analysis would pass muster if submitted to a peer reviewed publication.

This, finally, brings us to the question of: what if the projections, predictions, and plans related to this project fail or are found to be incorrect? There needs to be adequate contingency plans in place if the projections, predications, and plans fail and the Project is more harmful than expected. There are no contingency plans in place if there is a turbine failure and subsequent fire. The Staff Report section suggesting that the TAC will suggest adaptive mitigation measures if a special-status species population drops below self-sustaining levels is not a mitigation measure that will ensure special-status species will not be significantly harmed. Simply accepting mortalities of special status species until the population is in dire condition at a little understood and extremely low biological threshold is certainly not a best management practice.

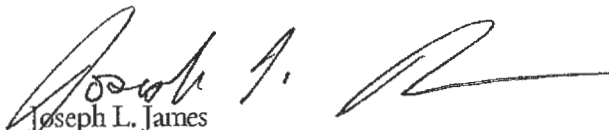
The Yurok Tribe understands the importance of finding green renewable energy as a step to decarbonizing Humboldt and addressing the causes of today’s climate crisis. But, new projects and programs addressing the climate crisis must be achieved in a way that is inclusive and addresses environmental justice concerns. Projects destroying Wiyot and Yurok cultural resources and landscapes perpetuate colonization, and therefore are not an environmentally just solution. We request that the

Humboldt County Board of Supervisors consider localized and community-based energy production and storage, such as roof-top solar and micro-grids, and move away from large-scale energy production projects that benefit large corporations and end-users outside our region, will placing Native cultural resources and environments at risk.

The Yurok Tribe knows that the Humboldt County Board of Supervisors understands the importance of cultural resources and cultural landscapes to Native people. We have worked together in the past to ensure cultural resources, sacred spaces, and culturally important plants and animals are protected. It is our hope, that the Humboldt County Board of Supervisors will consider the significant impacts the Humboldt Wind Energy Project will have on Wiyot cultural resources, cultural landscapes, and the sacred California condors and will find that -- in balance -- that the protection of Wiyot and Yurok cultural resources along with other plants and wildlife in the Project area is more important than the minimal benefits realized beyond our county's borders.

The Yurok Tribe urges the Humboldt County Board of Supervisors to not approve the Project because of the significant and unavoidable harms the Project will have on the Wiyot cultural resources, cultural landscapes, and the California condor.

Sincerely,


Joseph L. James
Chairperson
Yurok Tribe

December 9, 2020

RECEIVED

DEC 09 2019

BOARD OF SUPERVISORS

Humboldt County Board of Supervisors

RE: DENY Appeal of Terra-Gen Humboldt Wind Project

Dear Board of Supervisors,

Thank you for the opportunity to comment on this wind project. I ask that you please **Deny the Appeal** of the Planning Commission’s Denial of a permit for the Terra-Gen Humboldt Wind Project. I stand with the Wiyot Tribe and the Yurok Tribe, and oppose granting Terra-Gen a permit. The EIR fails to take adequate measures to avoid, minimize, and compensate for the significant impacts on tribal cultural and botanical resources.

While I recognize that climate change is a serious threat to Humboldt County, this project is one that I do not support. The proposed project is poorly sited and will cause long-term impacts to cultural and environmental resources. I oppose this project because it destroys tribal resources, harms threatened species, and offers few direct material benefits to our community. As the EIR states very clearly, “the entire Wiyot ancestral territory can be viewed from Bear River Ridge. Likewise, Bear River Ridge is visible from anywhere within Wiyot territory. In the past, the ridge would have been used as a high prayer spot. The project will also impede success of the condor reintroduction program proposed for the Bald Hills region of Redwood National Park. The condor is a spiritual symbol for the tribes of Humboldt County. Project operation would permanently alter the character of this tribal cultural resource, which is a cumulatively considerable contribution to the cumulative loss of cultural resources in the county.” The EIR fails to take adequate measures to avoid, minimize, and compensate for these significant impacts on Wiyot cultural and botanical resources.

Regarding the environmental impacts, this project is likely to result in death of numerous special-status species, such as the marbled murrelet, violating section 9 of the ESA by harassing and harming the threatened bird. In addition, it will cause population-level impacts to once-numerous species, such as the hoary bat, and impact efforts to re-establish the California Condor. The EIR fails to take adequate measures to avoid, minimize, and compensate for these significant impacts.

I would like to comment more on the EIR but I found it impossible to read through such a massive amount of technical information in such a short period of time. I think the permit process for this project is being rushed through in a way that limits public participation and makes it impossible for a legitimate and comprehensive review of the EIR. I think that renewable energy projects of this scale, and development and planning should involve the people in this community in a meaningful way. Projects like this that destroy tribal resources, harm threatened species, and offer so little direct material benefits to the community need to be denied. Our county need not jump at the first industrial scale energy project that comes along. We need solutions that are based on climate justice, where indigenous people and rural communities are respected. We can come up with better solutions for our community to address climate change. We can do better for our community. Please DENY the permit.

Please accept these comments to be place in the official records.

Sincerely,

A handwritten signature in black ink, appearing to read 'Kandis Kelsey', with a long horizontal flourish extending to the right.

Kandis Kelsey
1741 Waters Ave
Mckinleyville, CA 95519
(707)672-4621
kelseykandis@gmail.com

December 9, 2019

10

RECEIVED
DEC 09 2019
BOARD OF SUPERVISORS

Humboldt County Board of Supervisors

RE: DENY Appeal of Humboldt Wind Project

Dear Supervisors,

Thank you for the opportunity to comment on this wind project. I stand with the Wiyot Tribe, the Yurok Tribe, the Rio Dell City Council, the Town of Scotia, and the environmental community and oppose granting Terra-Gen a permit. I ask that you please deny the appeal of the Planning Commission's denial of a permit for Energy Capital Partners' Terra-Gen Humboldt Wind Project.

While I recognize that we have a climate crisis and need to do something about it, we need a project that is based on the principles of climate justice – where we do not place the burdens of massively scaled alternative energy projects on rural communities, indigenous peoples, and a world renowned site of rich biodiversity. Climate justice will never come from energy projects like this that ignore the legitimate claims and explicit wishes of indigenous people, rural communities, and environmentalists. The proposed project is poorly sited and will cause irreversible and long-term impacts to critical cultural and environmental resources. As policy makers, this project is a step in wrong direction. This project should be denied because it destroys tribal resources, harms threatened species, and offers no direct material benefits to the communities most impacted by the project.

This project is the poster child for false climate change solutions, and will have a devastating impact on cultural, ecological, and community resources for the financial benefit of Terra-Gen, wholly owned by Energy Capital Partners, a firm with billions of dollars invested in dirty gas, oil and power plant projects. Claims that this wind project will lessen greenhouse gas emissions are misleading, as Energy Capital Partners' is not retiring any of their many fossil fuel enterprises. The project simply creates more electricity for folks to consume. As a county that touts itself as a leader in protecting the environment, we have a responsibility to advance energy projects that address climate change in ways that are equitable and fair to communities impacted, and result in energy resilience, not grid dependence. As the Wiyot Tribe, the Yurok Tribe, the Rio Dell City Council, the Town of Scotia have clearly stated, this project is far from being equitable and fair. In addition, this project does absolutely nothing to advance independence from the grid.

As the EIR states very clearly, the project will forever impact not just the spiritual connection of the Wiyot and other individuals, but the biology of this ecological transect and the species which depend on it: "the entire Wiyot ancestral territory can be viewed from Bear River Ridge. Likewise, Bear River Ridge is visible from anywhere within Wiyot territory. In the past, the ridge would have been used as a high prayer spot. Project operation may also impede success of the condor reintroduction program proposed for the Bald Hills region of Redwood National Park. The condor is a spiritual symbol for the tribes of Humboldt County. Project operation would permanently alter the character of this tribal cultural resource, which is a cumulatively considerable contribution to the cumulative loss of cultural resources in the county." The EIR fails to take adequate measures to avoid, minimize, and compensate for these significant impacts on Wiyot cultural and botanical resources.

Regarding the environmental impacts, there are far too many problems with this EIR to mention here, but I do want to highlight a few. This project will result in the death of numerous special-status species, such as the Marbled Murrelet, violating section 9 of the ESA by harassing and harming the threatened bird. In addition, it will cause population-level impacts to once-numerous species, such as the hoary bat, and impact efforts to re-

establish the California Condor. The EIR actually makes the absurd claim that the project will increase Murrelet populations, contradicting the bird experts at Humboldt State University.

I would hope that you are all aware that Indigenous peoples are disproportionately affected by our global climate crisis. But more often than not, Indigenous people are excluded or ignored when we talk of climate change solutions. We saw this happen in North Dakota at Standing Rock over the Dakota Access Pipeline. I am sad to say that this project is yet another example of the long history of white people and white institutions ignoring the voices of Indigenous people in climate change conversations.

As is too often not discussed in these deliberations is the fact that the institutions of environmental power—elected officials, government bureaucracies like the planning commission, the board of supervisors and the like—have been, almost as a rule, created by white folks and often remain dominated by white people. While the community has made some strides to bringing out in the open these power inequalities, the legacy of racism and cultural genocide continue to haunt us here in Humboldt County. I believe that this project, as proposed, should be viewed not in the context of what Terra-Gen refers to as “the fundamentals”, but in the context of this legacy of white supremacy and the ongoing attempts to erase the history of indigenous people by destroying and despoiling their tribal resources.


I find it troubling that white folks, once again, are telling indigenous people that their land has to be sacrificed for us to adequately deal with the climate crisis, a crisis that their culture has not created. In planning commission meetings, Terra-Gen, and planning commission members have told the Wiyot that they “recognize that cultural resource will be impacted”, and that they “are very sorry”, but ... the county must fix the mess that industrial culture created, and that Wiyot land and culture stands in the way, once again of progress. Sound like a familiar story?

It's 2019 and I ask, haven't we taken enough from them? We have a climate crisis, and we need to do something about it. But we need to do something that is based on the principles of climate justice – where we do not place the burdens of alternative energy projects like this on those that did not create the problem. Our society, our institutions, and decision makers like you have a moral responsibility to safeguard the rights of the most vulnerable people and cultures and to move forward alternative energy projects that address climate change and its impacts equitably and fairly. This project is not equitable and fair to the Wiyot. They have told Terra-Gen, the planning commission, and you this very clearly. This is not a step in the right direction – this is a giant step in the wrong direction.

Once again, indigenous people bear the burdens, and native land is turned into a sacrifice zone by the state, corporations, and misguided alternative energy advocates. Climate justice will never come from projects like this, that invite indigenous people to the table, but in the end, ignore their explicit wishes and move forward with desecrating what is left of their sacred places. The Wiyot have very clearly laid out the significant impact to their culture if this project is approved. I ask the board to deny their appeal on these grounds, and respect the concerns of the Wiyot Tribe.

Thank you for the opportunity to comment on this very important matter.

Sincerely,



Dr. Anthony Silvaggio

1741 Waters Ave

Mckinleyville, CA 95519

707.798.0951

anthonyvsilvaggio@gmail.com

December 8, 2019

9
RECEIVED
DEC 09 2019
Clerk
Board of Supervisors

To the Humboldt County Board of Supervisors:

I would like to register my strong opposition to the Terra-Gen wind project on Bear River Ridge. When I first heard about this project I thought it was a great idea. I deeply understand that it is imperative for us to take action to reverse the impacts of climate change. However, in the last several months I have heard many arguments both for and against the project and, after weighing the pros and cons of this particular project, I have come to the conclusion that the negative impacts outweigh the potential benefits. I believe that, overall, the Terra-Gen wind project would have a number of serious negative environmental consequences.

I am sure you are aware of the various arguments about this project, so I will not restate them here. Suffice it to say that I hope you will thoughtfully consider—with an open mind—the many concerns that have been raised about the project by a broad spectrum of County residents, and that you will vote **against** the proposal.

Sincerely,



Donna Wildearth
2904 Williams St.
Eureka, CA 95501

RECEIVED
DEC 09 2019
Clerk
Board of Supervisors

December 9, 2019

Harriet Hill
1444 McFarlan Street
Eureka, CA 95501

Humboldt County Board of Supervisors
ATTN: Supervisor Virginia Bass
825 5th Street
Eureka, California 95501

Subject: Humboldt Wind LLC, Conditional Use Permit and Special Permit.
Case Number: PLN-13999-CUP Draft and Final Environmental Impact
Statements, Humboldt County Planning Division Staff Report of November 14,
2019, Supplemental Information No. 6 for Planning Commission Agenda
of November 21, 2019

Dear Supervisor Bass:

I am a 20 year resident of Eureka and appreciate this opportunity to submit my comments on the subject documents prepared re: the Humboldt Wind Energy Project.

Some say, we need this project to do our part to produce clean energy. But I believe that this is the wrong place and the wrong developer. Wind power projects can be “green” when they are located on already degraded lands with infrastructure already established. Indeed proper siting and sensitivity to the natural and human environment is the gold standard for wind farm placement. However, this project would be established on Wiyot sacred land and in the midst of threatened bird habitat, close to a massive seasonal congregation of Hoary Bats, and within close range of the cities of Rio Dell and Scotia.

The county’s statement of overriding considerations (SOR) claims: “Mitigation Measure 3.5-18a calls for the formation of a Technical Advisory Committee (TAC) to minimize the risk of bat mortality and to preclude the project’s contribution to significant impacts on local and regional bat populations. The formation and operation of the TAC will allow the local...scientific community to study specific populations of bats known to occur in the region. This will contribute to the greater scientific knowledge base and support future environmental analyses and mitigations.” The SOR makes a similar claim for the Birds TAC that is to be formed.

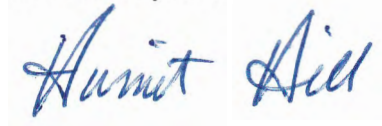
I question the power of such wildlife TAC’s to conduct research and implement adaptive management to reduce project impacts, especially for a project that has, according to its financial consultant “marginal” [financial] feasibility (see p. 9 of the Supplemental Information No. 6

document), “even without...additional mitigation measures.” The FEIR and subsequent documents do not recommend any turbine curtailment (temporary halting) for birds, despite this being a common industry standard, because it is not financially feasible for this project. For Hoary Bats, the Final EIR states that the wind turbines might be curtailed after two years of mortality surveys, but only if the total mortality exceeds approximately 8,000 bats. It also sets out many arbitrary limits on the curtailment conditions. TerraGen also has not committed to using scent detection dogs to document wildlife mortality under the turbines, another widely-used practice in this industry.

Establishing volunteer groups to review and improve the project operation does not guarantee that TerraGen will agree to enact any more mitigation measures for wildlife loss than those previously agreed to, particularly since Terra Gen operates on such a thin margin that they cannot afford even the standard wind farm mitigation practices.

It appears to me that rather than taking the time to weigh the complex impacts of the project in a planned, cautious, manner, the County is going full speed ahead to promote this development to ameliorate concerns about climate change. Yes, climate change is an emergency that cannot be ignored. But so would be the desecration of Wiyot Tribe sacred lands and the massive losses to the many threatened wildlife and plant species residing on these ridges.

I am strongly opposed to any wind project at this location.
Thanks very much for considering my comments on this issue.



Harriet Hill

11

REDWOOD REGION AUDUBON SOCIETY
P.O. BOX 1054, EUREKA, CALIFORNIA 95502
Sunday, December 08, 2019

RECEIVED
DEC 09 2019
Boa...

Humboldt County Board of Supervisors
825 5th Street
Eureka, California 95501

Subject: Humboldt Wind LLC, Conditional Use Permit and Special Permit.
Case Number: PLN-13999-CUP Draft and Final Environmental Impact Statements, Humboldt County Planning Division *Staff Report* of November 14, 2019, *Supplemental Information No. 6* for Planning Commission Agenda of November 21, 2019

Dear Chairman Bohn and Supervisors,

Redwood Region Audubon Society (RRAS), a member of the National Audubon Society, is a 501(c) (3) public benefit corporation. We promote wise, balanced, responsible and ethical use of natural systems on a local, national and global scale, protecting the biotic and abiotic components of those systems on local, national and global scales, with an emphasis on birds.

RRAS submitted a letter to the Humboldt County Planning Department reviewing the Draft Environmental Impact Report or DEIR on June 14, 2019, and to the Humboldt County Planning Commission reviewing the Final Environmental Impact Report or FEIR on November 14, 2019. The following comments focus on the November 14, 2019 *Staff Report* and the November 21, 2019 *Supplemental Information No. 6*.

1. The Hoary Bat is a seasonal migrant with the largest known seasonal congregation in North America less than four miles from the Project site. Even though mass bat activity in the project area would normally occur during minimal power generating conditions, seasonal curtailment of the turbines to avoid or reduce bat take has been deemed not necessary for at least two years, and will only be implemented if approximately 8,000 or more Hoary Bats are killed by the turbines over that time period. RRAS believes that seasonal curtailment for bats must be enacted as soon as the project becomes operational.
2. Verification and monitoring of bat and bird fatalities due to wind turbine generator (WTG) collisions are essential best management practices (BMP). In order to minimize bat and bird takes using BMP, verification and monitoring must be initiated with the first occurrence of species of concern after startup of the project. Delaying take verification and monitoring months or years after startup is inconsistent with BMP.
3. The FEIR and subsequent documents do not commit Terra-Gen to verify bat or bird mortality with the use of scent dogs by a third party. RRAS believes this is the only method that will determine actual take with reasonable accuracy and must be a required mitigation for the Project.
4. The Project applicant has not committed to any measures which would involve turbine curtailment to avoid bird (particularly Marbled Murrelet) mortality. Curtailment is commonly implemented for newer wind farm operations (such as Skookumchuck in the state of Washington). Terra-Gen's financial feasibility model indicates that none of the possible curtailment options, including seasonal curtailment of the WTGs over the murrelet nesting season, or the less expensive strategies such as Identiflight or Radar Detection, would be economically feasible. This is even the case when, as for the Radar alternative, the increase in costs would only reduce the Project returns by 0.1 percent. On page 9 of the *Supplemental Information No. 6* document, Terra Gen's consultant admits: "The feasibility of the proposed project, even without these additional mitigation measures, is marginal."
5. The estimated turbine avoidance rate for Marbled Murrelets is based on other seabird species in a different habitat. We believe that the actual "take" of Marbled Murrelets for this site is likely to be

significantly higher than the estimate. We also are not confident that the Marbled Murrelet losses would be fully compensated by the proposed mitigation measures.

6. The impact analysis for the project on the Northern Spotted Owl is based on only one year of data collected specifically for this type of project (wind energy development) at the proposed site. At least one additional year of survey data should be obtained before the Project breaks ground to determine a more accurate estimate of its effect on this Northern Spotted Owl population.
7. Terra-Gen's commitment to mitigation is generally weak, and the exact measures to be carried out are uncertain or to be determined later by Technical Advisory Committees. This, and the Project's fragile economic viability, gives us little confidence that Terra Gen will properly follow through with the monitoring and mitigation that they have committed to.
8. A recently published study in the journal *Science* reveals that since 1970, bird populations in the United States and Canada have declined by 29 percent, or almost 3 billion birds, signaling a widespread ecological crisis. Grassland birds have experienced a 53-percent reduction in population, more than 720 million birds, since 1970. The FEIR and subsequent documents do not address the Project's cumulative contribution to recently documented declines. To be responsible stewards of the environment we must look at the impacts on all bird populations, and not limit our concerns to threatened and endangered species.
9. Finally, the county's lack of timely and coordinated release of information to the public has not given all parties affected by and interested in the Project enough time to provide adequate comments.

Redwood Region Audubon Society supports the concept of green energy. However, based on our analysis of the latest project documents, there are too many unknowns regarding the applicant's mitigation commitments and the Project's overall viability for the Humboldt Wind Energy Project, as proposed, to go forward.

We therefore find the Humboldt Wind Project is likely to have potentially significant irreversible negative impacts on biological resources and should not be approved.

Sincerely,



Hal Genger
President, Redwood Region Audubon Society

RECEIVED
DEC 09 2019
Clerk
Board of Supervisors

December 8, 2019

To: Humboldt Board of Supervisors
From: Bonnie Blackberry
RE: December 16, 2019 Terra Gen Wind Project

Dear Supervisors,

I attended two of the three Terra Gen meetings at the Planning Commission. I have read many of the reports and comments and listened to the people who spoke. The vast majority were against the project for multiple reasons which I agree with and support. The project's negative impacts greatly outweigh its benefits. Please do the right thing and reject this project because of inappropriate location and too many negative impacts.

We need to protect our environment and biodiversity that exists here in Humboldt County, not destroy it. Here are some of my objections;

1. The Wiyot and Yurok Tribes are against this proposal, please do not allow the desecration and obstruction of this sacred area.
2. The California Department of Fish and Wildlife said the ridges are inappropriate project sites due to the unacceptable levels of injury and mortality to bats and birds.
3. The communities that would be most impacted are against this project.
4. All the negative environmental impacts from grading of new roads and development, destroying forests and grass lands for roads, electrical lines, and development, which includes 10 ft. deep cement covering the ridges. Negative impacts from lights and noise on wildlife and humans. Concerns about fire danger and changes in hydrological effects on fog associated with the forests and wild lands.
5. A substantial majority of Humboldt County citizens are strongly opposed to this project, which if approved would most likely bring protests and lawsuits against the county, further dividing the community.
6. The public participation process has been and continues to be problematic. Putting the project on fast track has made it difficult for interested citizens to participate in a meaningful way. The Planning Commission meetings were chaotic for all of us out in the lobby trying to hear what was being presented. The last meeting ended with people only allowed one minute to speak. Now we're suppose to deliver paper copies of any input to the County Board of Supervisors office by noon a week before the meeting. The amount of time to obtain and read through the documents and information has been inadequate.
7. Also I received the following document that was written by a woman from another community who experienced many negative impacts from a rushed wind project. Please read and consider her warnings.

Respectfully,
Bonnie Blackberry
Box 1777 Redway, CA 95560

The following letter was written by Jane Harper, Tipton County Indiana Commissioner from 2009-2012. In addition to dedicating part of her life to public service, Jane is also a farmer. She originally wrote this letter to warn the Howard County Indiana officials about the many pitfalls of wind energy development, but it's message is equally applicable to Humboldt County as well

Dear Howard County Commissioners and Council Members;

I am writing to you all as a former commissioner colleague who aided in the negotiations and agreements with E.ON Climate Renewables with Tipton County in 2011. From the onset, I was open to windfarm development in a small section of Tipton County because the commissioners had received no opposition and I felt that the landowners wanted it. My own family was offered an opportunity to lease land to E.ON and we declined because my husband did not care to farm around the towers, and I just didn't want to look at them. I set my own personal views aside and made decisions based on what I felt the majority of the public wanted. I was outspoken enough, however, to say that I would never support a plan to cover a large portion of the county with wind turbines. As it turned out, the problem was that when the decisions were being made to build

“Wildcat I”, the commissioners were not hearing from the “majority”. People really did not know this was happening, or if they did, they did not perceive it to be as “invasive” as it was. As you know, public notices are small and often overlooked in the newspaper, so not much resistance was present.....until the towers went up, and people saw how enormous and intrusive they were. The red blinking lights even disturb my own summer evenings and my home is 6 miles from the closest tower..... !!!! You don’t have the time to read what all I could tell you, so in a nutshell I just want to say that I wish I had the knowledge then that I have now. However, what I can do, is to try to pass some of what I know onto the elected officials in the neighboring county so that perhaps you can gain some wisdom from what I learned in the school of hard knocks.

In Tipton County.....my 83 year old mother is mad at me (since I signed the agreements) because she no longer has colorful birds coming to her feeders.....my brother’s view from his family dining room table used to be a vast expanse of crops and natural habitat.....now that pristine ‘vista’ is forever marred by giant metal structures.....neighbors hate each other.....back and forth letters to the editor have been selling papers for over a year now.....families are torn apart,,,,, and because the physical presence of the towers will be there for 30 years, these relationships will never be repaired. In short. . . this has become an issue that has divided our community like no other.

It has torn our county apart. The May, 2014 primary election is evidence that the majority of the voters supported candidates openly opposed to wind farm development and an incumbent commissioner was voted out of office due to his unwillingness to listen to the majority on any issue, including wind.

If I had this to do over, I would NEVER enter into an agreement with any wind company now that I know what it has done to my home community. I am not proud that my name is on those documents. The wind company has breached many parts of the agreement, but insist that their failures are “minor”. Their field representative is arrogant and cavalier in his attitude toward the people who are suffering with the effects of the noise and flicker.

You can’t lose something you never had.....so you are not “losing” the supposed ‘windfall’ of money that the project purportedly brings in. What you WILL lose however, cannot be measured in dollars. You will lose the rural landscape as you know it and you will lose the closeness of “community spirit” because people will hate each other over this and the presence of the towers will always be a constant reminder of the rift.....thus the wounds will never heal.

Please consider this: What do you think of a company that KNOWS it has fierce opposition from a segment of the Howard County citizenry, but would STILL want to build in your county? It is akin to forcing themselves onto you when they KNOW they are not wanted by those in the project area who would be affected by their presence and are receiving no compensation for the change in their environment. How much of a “community partner” would they be when they really don’t care about the wishes of the people?

I don’t know anything about which “facts” are true and which “facts” are false with regard to property values and personal health issues. But what I DO know as fact is this: Any issue that has become so contentious that it has caused large groups of people to assemble and vehemently oppose it. . . . and which has caused so much heartache and angst among the citizenry just cannot be good for the whole. I do not feel that Tipton County will ever wholly heal from the deep personal wounds incurred by many from the placement of wind turbines in our county.

I will leave you with this last piece of wisdom from someone who has “been there, done that”. As an elected official/public servant. . . . if you must go forward with approvals that allow wind farm development . . . and thus you become the reason a wind farm was built in Howard County. . . it will be a decision you will regret the rest of your life.

You will join me. *Jane Harper*
Tipton County Commissioner 2009-2012

To: Estelle Fennel
Second District Supervisor
of Humboldt County

December 7, 2019

13

From:
Jim + Lily
Macy

RECEIVED

DEC 09 2019

Clerk
Board of Supervisors

Dear Estelle,

As your constituents and friends,
Jim & I want you to know how deeply
opposed we are to the Terra-Gen Wind Energy
project.

When Jim and I first saw Humboldt
County in 1970, as tourists, we were struck
by the sacred beauty of this place and we
made a decision to purchase land here.

In 1971 we borrowed money to buy our
40 acres with one idea that one day we would
retire here. That was almost 50 years ago!

We did not buy our property to make
a killing in the marijuana industry. We worked
long and hard in the industrial sprawl of Southern
California to create the means which would enable
us to come & live here year round.

This is what we have been doing for the
past seventeen years.

We consider Humboldt County to be
our spiritual home, so we can only imagine
how the Wiyot tribe must feel to have such
desecration imposed upon their (and our) unique
coastal prairie grasslands held sacred by
them for generations. Not to mention the more
than 100 plant & animal species that would be
negatively impacted by this project.

Jim & I stand with the Wiyot tribe.

Our hearts are broken at the prospect of the
Terra-Gen Wind project happening at the unique
and breath takingly beautiful Bear River Ridge.

As you know, we have been vegan for thirteen years and because of that, our carbon foot print is 50% smaller than ^{of} those who eat a standard American diet. There are many ways for people to address climate change. ~~and~~ Going vegan is one of the best.

Having finally escaped the urban sprawl of Southern California, we just can't stand the fact that a greedy Southern California Corporation has followed us here to rip off one of the last vestiges of unique beauty & habitat left on this planet for what seems to be a good motive but in truth, is only interested in financial profits. There are other ways & places to create alternative energy.

Please Estelita we ask again, as you constituents, to please stand with us at the Wigot tribe against this corporate take over of our beautiful sacred Humboldt County.

Sincerely,
Lily & Jim Macy

written by Lily Macy

In this comment, I am referring to my prior comments both on DEIR/FEIR and to the Planning Commission which were submitted in writing and published by the County. **I incorporate all my prior comments in their full and entire version into my current comment as my comments were not fully answered in the responses and Master Responses.** Specifically I would like to highlight the following major objections while including all prior objections to this project as previously noted.

RECEIVED
DEC 09 2019
Clerk
Board of Supervisors

Dear supervisors,

I would like to point out a few of the many errors (with both the DEIR and the FEIR) that have come to light. Please let me elaborate:

The FEIR presents alternative 5 (on page 9 – 217), saying “alternative 5 would reduce the total number of WT G’s from 60 to 37 and would avoid placing WT G’s on Bear River Ridge”.

So this is telling me that the WT G’s would be placed on Monument Mountain only? What does avoid mean?”

Figure 2.1 in chapter 9 says there will be 60 WT G’s.

Figure 2.2 in chapter 9 says there will be 60 WT G’s

Appendix C figure 2.2 says there will be 47 WT G’s. To be placed on both mountaintops.

I have thoroughly read both the DEIR and the FEIR, and what I get is a thoroughly confusing mishmash of figures and illustrations.

Which story are the people of Humboldt County supposed to believe?

The EIR is inadequate

NO PROJECT is the most environmentally sound option.

Rick Pelren

127 Metropolitan Heights Rd.

Fortuna, CA 95540

In this comment, I am referring to my prior comments both on DEIR/FEIR and to the Planning Commission which were submitted in writing and published by the County. **I incorporate all my prior comments in their full and entire version into my current comment as my comments were not fully answered in the responses and Master Responses.** Specifically I would like to highlight the following major objections while including all prior objections to this project as previously noted.

The populations of these species and subspecies will be reduced if the proposed wind farm is built:

- 1) The bees, because of the spraying of herbicides.
- 2) California Condor
- 3) migratory birds
- 4) northern spotted owl
- 5) marbled murrelet
- 6) peregrine falcon
- 7) merlin
- 8) american kestrel
- 9) northern harrier
- 10) white tailed kite
- 11) osprey
- 12) sharp shinned hawk
- 13) cooper's Hawk
- 14) red tailed hawk
- 15) red shouldered hawk
- 16) ruff-legged hawk
- 17) bald eagle
- 18) Golden Eagle
- 19) turkey vulture
- 20) hoary bat
- 21) gopher
- 22) mole
- 23) rabbit
- 24) Fox
- 25) bobcat
- 26) mountain lion
- 27) deer
- 28) bear

These populations of these animals will all suffer loss if this project is approved. There are far, far too many unmitigatable impacts on this proposed project. NO PROJECT is the most environmentally sound option.

Rick Pelren





*The FEIR specifies plans to reduce raptor mortality by poisoning or otherwise killing off rodents on the project site (3.5 – 7) (9 – 108) this will result in:

- 1) The deaths of raptors due to starvation.
- 2) The deaths of upper food chain predators like fox, bobcat, mountain lion, and others.
- 3) The total disruption of the food chain and a catastrophic failure of the ecosystem.

The applicant has done no evaluation on the effects of poisoning in this manner upon the ecosystem. The FEIR is inadequate on this issue.

*The FEIR also specifies plans to spray project areas with poisonous chemicals that will inhibit the growth of plants (3.5-19e (Also see appendix B [3.8])). Again, the applicant has done no evaluation on the effects of defoliant upon the ecosystem. The FEIR is inadequate on this issue.

*The FEIR states that significant cultural resources have been found in Bridgeville (2.2.3) (9 – 7) (2.3.8) (9 – 31). These finds were not reported to state and federal agencies by the applicant. These cultural resources should be treated with respect, and need to be supervised by the state.

*Applicant proposes diverting untreated industrial wastewater from HRC’s cogen facility in Scotia (2.3) (3.1) (2.3 .16) (9 – 21) (9 – 37). This is not permitted by the North Coast regional water quality control Board. Additionally, the FEIR is inadequate, due to the fact that it states that their water will be taken from the Scotia pond, then in another section states that what it will be purchased from HRC (taken from the effluent of the Scotia cogen facility).

*(9 – 11) the FAA required lighting on WTG’s will be a public nuisance, especially to the historic town of Scotia which is listed as a State historic site.

*Wintertime operations violate HRC’s HCP. (impact 3.5-28) (9-201). The lead agency abused their discretion in deciding that applicant does not have to abide by the HCP, therefore the FEIR is inadequate on this issue.

*Applicant proposes a new well at the O & M facility (9 – 20)(3.5.7)(9-108). Applicant states that this is potable water used only at the facility. I say that’s a lie, and applicant will probably try to load water trucks using that well as a source. This appears to be an SB 1262 issue. Additionally, the FEIR is inadequate on this issue, since it does not state the location of the 5 acre parcel to be used for the O & M facility, nor has there been a groundwater survey done at the site of the proposed well.

*The FEIR states the gentie corridor will be 80 feet wide, then turns around and says it’ll be 100 feet wide (3.5 – 7) (9 – 108) the FEIR is inadequate.

*(S3 .3) (4.3.2) FEIR states that the capping of archaeological resources on the proposed site has been agreed upon by all parties. Not true. The Weott tribe has never agreed to that. The FEIR is inadequate.

*The US and Fish and Wildlife Service identified the project area as a category 4 site and suggested no wind farm be developed on that area. The FEIR's definitions of acceptable are questionable. These definitions are developed within the purview of the Humboldt County Planning Department, and I can only conclude that the lead agency abused their discretion in making that decision. The FEIR is inadequate.

*Another abuse of the Planning Department's discretionary privilege: public review period was too short, and does not comply with SQL guidelines. The lead agency did not proceed as required by CEQA.

*There are too many unmitigated impacts on this proposed project, again ignored because these definitions are within the purview of the Humboldt County planning commission. Again, the lead agency abused their discretion in making that decision. The FEIR is inadequate.

*There has been no environmental impact report for the rerouting of the gentie (alternative 2). The FEIR is inadequate.

*Applicant has submitted no studies on the proposed project's effects on fog and Hydro meteorology, and the resultant effects on the redwood groves downwind from the proposed project. The EIR is inadequate.

I recommend no project, since it is the most environmentally sound option.

Rick Pelren

127 Metropolitan Heights Rd.

Fortuna California 95540

707-476-3249

RECEIVED
DEC 09 2019
Clerk
Board of Supervisors

FEIR 2.0-1 SPECULATION WITHOUT SUBSTANTIAL EVIDENCE

The FEIR reads, *“Some comments assert or request that impacts should be considered significant or that significance conclusions in the DEIR should be revised based on opinion without providing substantial evidence in support of their assertions. Substantial evidence includes facts, reasonable assumptions predicated upon facts, and expert opinion supported by facts (SQL guidelines section 15064[b].”* Later in that same paragraph, it goes on to say, *“under SQL guidelines section 15145, if, after thorough investigation, a lead agency finds that a particular impact is too speculative for evaluation the agency should note its conclusion and terminate discussion of the impact.”*

“SPECULATION WITHOUT SUBSTANTIAL EVIDENCE” is the wording the lead agency used to brush off public comments, but this wording can also be used to describe the lack of substantial evidence in the lead agency’s responses. Many of the responses were mere brushoffs without supporting them with facts, surveys, or expert opinion. This happened several times on citizens’ concerns over items such as:

- 1). Bird kill (especially that of state listed species).
- 2) Unmitigatable impacts.
- 2). GHG-creating project activities never mentioned on the DEIR (I listed 42 items in my comments submitted on June 14, but the lead agency blew me off without even an answer).
- 3). Carbon sequestration of existing forest land (also in my comments submitted on June 14).
- 4). I know there are several more well-thought-out comments from people that received the same brushoff that I did.

I believe the above requirement to provide substantial evidence should work both ways, and evidently the State of California does too, because there are protections for the public built into code section 15088 that cannot be ignored. Please read the following excerpts from the California code of regulations:

CODE SECTION 15088 EVALUATION OF AND RESPONSE TO COMMENTS:

“a) The lead agency shall evaluate comments on environmental issues received from persons who reviewed the draft EIR and shall prepare a written response.

c) The written response shall describe the disposition of significant environmental issues raised (for example, revisions to the proposed project to mitigate anticipated impacts or objections). In particular the major environmental issues raised when the lead agency’s position is at variance with recommendations and objections raised in the comments must be addressed in detail giving reasons why specific comments and suggestions were not accepted. There must be good-faith, reasoned analysis in response. Conclusory statements unsupported by factual information will

not suffice.” In other words, the lead agency cannot simply brush off valid comments from the public.

I submit that the lead agency should be held to the same high standard as they have required of the public. Their quick brushoffs and answers based on quick Internet searches won't do, especially when the lead agency's position is at variance with recommendations and objections raised in the comments. The public had a two-week time period to answer the DEIR, and the lead agency has had four months in which to fashion their responses, and they have still failed to provide good faith, reasoned analysis in response.

The lead agency is acting as both the proponent of the project, while at the same time, is acting as the discretionary body.

The lead agency has abused their discretion, and failed to proceed as required by law. To further illustrate this I'd like for you to consider the bare minimum time periods that were given to the public in which to access the DEIR before the June 14 public comment deadline, and also the three-day time period between the publication of the FEIR and the first public workshop held on November 7 (even though the public library was closed on Monday the 4th and the public did not even have access to the document until the following day around noon). Planning department has given the excuse that they have conformed to the minimum requirements required by CEQA, but this whole process has been rushed and abused, and I feel that the public has been cut out of this process.

We all know the lead agency is pushing to get this project approved by the end of the year, and their behavior shows obvious abuse of privilege given them by the people of Humboldt County.

The FEIR is inadequate.

Reasonable doubt exists as to whether the lead agency followed CEQA requirements.

There is reasonable doubt as to whether the lead agency followed the requirements of section 15088.

No Project is the most environmentally sound option.

Rick Pelren

127 Metropolitan Heights Rd.

Fortuna CA 95540

In this comment, I am referring to my prior comments both on DEIR/FEIR and to the Planning Commission which were submitted in writing and published by the County. **I incorporate all my prior comments in their full and entire version into my current comment as my comments were not fully answered in the responses and Master Responses.** Specifically I would like to highlight the following major objections while including all prior objections to this project as previously noted.

RECEIVED
DEC 09 2019
Clerk
Board of Supervisors

Dear Supervisors,

Scientific studies show that wind farms affect the hydro-meteorology (air temperature and humidity) downwind from the wind farm. Please read:

***Journal of Wind Engineering and Industrial Aerodynamics.** Volume 99, Issue 4, April 2011, Pages 491-498.

* <https://keith.seas.harvard.edu/publications/climatic-impacts-wind-power>

*Wind turbines alter microscale and possibly macroscale weather (7–9). 6 DECEMBER 2019 • VOL 366 ISSUE 6470 sciencemag.org **SCIENCE**

*Effects of Climate on Forest Habitat,

<https://wdfw.wa.gov/sites/default/files/publications/01827/wdfw01827.pdf>

*Impacts of wind farms on land surface temperature, **Liming Zhou, Nature Climate Change** volume 2, **pages 539–543 (2012)**

*EXTRACTING ENERGY FROM WIND: Simulating impacts of wind farms on local hydrometeorology,” Somnath Baidya Roy, J. of **Wind Engineering and Industrial Aerodynamics** journal homepage: www.elsevier.com/locate/jweia

*Local and Mesoscale Impacts of Wind Farms as Parameterized in a Mesoscale NWP Model,” ANNA C. FITCH, et al 2012

The areas of greatest concern are the Avenue of the Giants redwoods, and the magnificent redwoods in the Redwoods State Park. This mixing of high and low air strata by wind turbines has been proven to alter the humidity and temperature of the air. Additionally, it has long been known that the redwood forest is an environmentally sensitive ecosystem, and it’s reliance on an abundance of fog has been documented time and time again. The height of *S. sempervirens* is closely tied to fog availability; taller trees become less frequent as fog becomes less frequent. As *S. sempervirens*’ height increases, transporting water via water potential to the leaves becomes increasingly difficult due to gravity. Despite the

high rainfall that the region receives (up to 100 cm), the leaves in the upper canopy are perpetually stressed for water. This water stress is exacerbated by long droughts in the summer. Water stress is believed to cause the morphological changes in the leaves, stimulating reduced leaf length and increased leaf succulence. To supplement their water needs, redwoods utilize frequent summer fog events. Fog water is absorbed through multiple pathways. Leaves directly take in fog from the surrounding air through the epidermal tissue, bypassing the xylem. Coast redwoods also absorb water directly through their bark. The uptake of water through leaves and bark repairs and reduces the severity of xylem embolisms, which occur when cavitations form in the xylem preventing the transport of water and nutrients. Fog may also collect on redwood leaves, drip to the forest floor, and be absorbed by the tree's roots. This fog drip may form 30% of the total water used by a tree in a year. There are no industrial wind turbines in a similar location to gather data from, and the applicant has provided absolutely no studies on this subject. Terra Gen is more than willing to experiment on the Redwoods State Park; the largest remaining grove of Coast Redwoods in the world.

The proposed Humboldt Wind project may cause major unmitigable impacts to the redwoods (and the birds living there), and also may contribute to forest fires in those areas. The FEIR includes no environmental impact report on hydro-meteorology, nor does it even mention the proposed wind farm's effects on forests downwind from the project site. The FEIR has only taken into account on-site environmental damage, and has not addressed environmental damage outside the boundaries of the project site. This issue should have been set out in the statement of overriding considerations, but it was not included.

Planning department staff report dated November 21, 2019:

4. Responses to Comments Raised During the Public Hearing

Wind Energy Effects on Fog

“Commenters have expressed concern that the rotating turbines could change fog patterns in a way that would negatively affect the redwood forest. It is unlikely this wind farm will have any effect on the local temperature and humidity regimes proximate or downstream of the turbines given its location on a ridgeline, that

ridgelines' orientation, and the turbines proximity to the ocean and the resultant land and sea breeze interactions.

Sea breezes carry the abundant moisture from the cold ocean water inland at the lower levels in the atmosphere. This can be seen visually as fog and stratus (very low and flat) clouds. These can form and dissipate regularly in daily fair weather patterns, and also can be amplified or disrupted as weather systems transit the area.

Lenticular clouds (as one speaker mentioned) and fog are formed when air masses are still. When these features are present on the project site the turbines will not be operational. As the wind picks up to cut in speed of 3.0 – 3.5 mps lenticular clouds and fog will dissipate; not from turbines, but from increased wind speeds. Turbines will not remove humidity from the air at the wind farm. They will mix the air mass that is present. This mixing will not affect fog formation in the valleys outside of the project site.”

As one can readily see, Humboldt County Planning Department's (out of context) use of the word DOWNSTREAM only confuses the issue, and is taken to mean DOWNRIVER from the proposed project site. My original comment used the word downwind (not downstream), and was based on sound scientific evidence (listed above) that by mixing the upper and lower layers of air, there is the potential for significant immitigable impacts to the redwoods (and the birds that live in them) in the Redwoods State Park downwind from the proposed project.

Planning department's staff report dated November 21, 2019 was both erroneous and misleading.

The FEIR is inadequate.

CEQA; “(When) the environmental burdens of a project will be felt particularly by the neighboring communities, **this should be set out plainly in the statement of overriding considerations.**”

Rick Pelren

127 Metropolitan Heights Rd.

Fortuna, CA 95540

RECEIVED
DEC 09 2019
BOARD OF SUPERVISORS

15

Jeny Card
1020 Redmond Road
Eureka, CA 95503

December 9, 2019

Humboldt County Board of Supervisors
825 5th St.
Eureka, CA 95501

Re: Terra-Gen's Proposed Industrial Windmill

I strongly oppose Terra-Gen's proposed windmill project. This industrial monstrosity masquerading as a green antidote to climate change will destroy a uniquely biodiverse area sacred to the Wiyot tribe.

The pollution front-loaded into this project includes massive road building, clearcutting for transmission lines, and hundreds or thousands of truck trips to haul equipment and build the enormous concrete pads for the turbines -- which they will leave here forever after this short, 30-year project is finished, littering a special place that -- at least for now -- support condors, eagles, Marbled Murrelets, a unique population of bats, and pollinators already under threat from climate change and habitat loss.

The fire dangers that would be introduced by this project are unacceptable. California is under siege by unprecedented disasters caused by wildfires. It would be unconscionable to place 600+ foot tall windmills on our windy ridges, which will disrupt fog patterns and dry the immediate area, thereby creating the conditions for a firestorm. The turbines themselves are lubricated with oil and a quick google search reveals the alarming regularity with which they malfunction and catch fire. Right now, our region is less prone to fire but Terra-Gen would dry and disrupt this foggy refuge, and exacerbate this environmental trauma by also clearcutting swaths of forest to accommodate transmission lines.

Regarding Murrelets, groundbreaking fights have been waged and won in this community to protect this endangered seabird. See *Marbled Murrelet vs. Babbitt*, which affirmed the issuance of a permanent injunction against Pacific Lumber's logging plans because the threat of future harm was "reasonably certain." Terra-Gen acknowledges Murrelets (as well as condors, bats and other birds) will be killed by the turbines and insists that one year of studies is enough, and refuses to implement adequate mitigations. There is no reasonable justification for approving a money-driven project disguised as environmentally friendly that will sacrifice these birds.

We are being bombarded with greenwashed propaganda by Terra-Gen about how climate change is real and we must act quickly -- so quickly that adequate Murrelet studies won't be completed, and methods used to build this project have not been detailed, such as where the water to mix the

concrete will come from and how herbicides will be applied. It is a ruse for Terra-Gen, a subsidiary of Energy Capital Partners, which engages in fracking and other destructive fossil fuel extraction, to play on the legitimate environmental concerns of this community to greenwash itself in order to ram this project to get quick approval for financial reasons. The down-vote at the Planning Commission was intended to quickly escalate the appeal to the Board of Supervisors, as stated by Planning Commissioner Alan Bongio whose only concern is for Terra-Gen is the money they've spent on promoting this boondoggle. Bongio further stated at the November 21st Planning Commission meeting that Humboldt is anti-development and we should "try something." Supervisors must be more diligent in evaluating this project.

Please look at who doesn't want the industrial wind farm: nearby landowners, the City of Rio Dell, the Yurok Tribe, the Wiyot Tribe, and the large crowds of people who have packed public meetings to voice their opposition. All of these stakeholders would be negatively impacted through loss of property values, polluted viewsheds, and lower quality of life. The Wiyot, of course, have already suffered enormous depredations and now, to add insult to genocide, the Russ family, who would financially benefit from the windfarm, are questioning whether the Wiyot had historical use of Monument and Bear River Ridges. This obfuscation ignores the earliest historical records, including L. K. Wood's 1850 narrative describing Indian trails around what is now Rio Dell.

If you approve this project, we are not entering a permanent relationship with Terra-Gen, who is welcome to sell the wind farm to any other entity at any time. The county would be risking trashing our biodiversity and paving the way for a future buyer -- Saudi Arabia? Russia? Shell Oil? -- to buy the industrial farm.

Terra-Gen has been disingenuous from the get-go. They told one opponent that this is the "community's project" but now faced with overwhelming opposition by the community they are now appealing to the Board of Supervisors to force it on us anyway.

"It's not every day that one of these types of businesses shows up at your door saying, 'I'd like to do business in your county.'" Terra-Gen's Nathan Vajdos was quoted at a recent meeting of the Humboldt County Supervisors.

Get real. Terra-Gen is just the latest in an endless, hungry string of "these types of businesses" wanting to "do business" in Humboldt County. Calpine offered to put a highly explosive Liquid Natural Gas Plant in our densest population area. Aqueous, Inc. wanted to fill giant bags with Mad River water and tugboat them down to Southern California. Maxxam wanted to cut down thousands of acres of irreplaceable old growth redwoods (and boy did they). Outsiders doing business as Humboldt Redwood Company are continuing to destroy important forest habitat in adjoining areas to the proposed farms and cumulative impacts are not addressed. We are now, and will continue to be, bombarded with "these types of businesses" wrapping themselves in a green flag in order to shove some business our way.

The Terra-Gen project is deeply unpopular as shown by three 5 hour-long meetings in which people showed up in droves to speak against it. Terra-Gen seeks to rush an approval before more

people -- including Supervisors -- take the time to learn how destructive wind farms have been to other communities and how unhappy the residents who must either live with them or get out.

In addition to local opposition, this project fails to accord with the United Nations Declaration on the Rights of Indigenous Peoples and the Rio Declaration on the Environment.

As Planning Commissioner Melanie McCavour said in her comments at the November 21st meeting, "I've had many people write me -- former colleagues, former professors in Germany, Montreal, all of them say the same thing: you will make the international news for trying to put an old-style wind farm on sacred ridges in the world's only temperate Redwood rainforest."

Terra-Gen is not just offering to do business, they are demanding it, despite strong opposition from the people who live here and who will be forced to live with the consequences. Humboldt County Supervisors should deny this project.



Jenny Card

RECEIVED
DEC 09 2019
Clerk
Board of Supervisors

To the Humboldt County Board of Supervisors

Re: The Terra Gen wind Project Appeal.

Humboldt county can be a challenging place to live. We enjoy life here because it offers what can't be found in many places anymore. We are cradled in a unique home, surrounded by wonderful, wildlife rich natural areas. and a world renown redwood forest. But one of the things that makes this area a really great place to live, is its people. There are a lot of problems out there, we don't have a lot of money, but we have a community that cares. People step up. The best of us are there for our neighbors.

Having lived the past 40 years in Eureka, I'm not familiar with the other Supervisors, but I do know that Supervisor Bass and Supervisor Bohn have built their reputations by being there for the people of this county. Please, Supervisors, do not let us down now. The citizens of Rio Dell and Scotia, the ranchers of the Bear River Valley and the Wiyot tribe need you to have their backs.

The Terra Gen project will destroy the peace and property of Scotia, Rio Dell, the Bear River Valley, and surrounding areas. It is a a betrayal of the Wiyot people. It is a gut punch to anyone who cares about preserving the best of Humboldt county for future generations.

Proponents speak of the need to combat climate change but this project does far more harm than good.

We all want a clean, bright future for Humboldt county, but abandoning our values, and selling out our neighbors is not the way to get there.

Please deny this appeal.

Kathleen Becker
Eureka, CA

We are at a crossroads. Most of us agree there is a climate crisis and that we need to focus on clean, renewable energy and move away from fossil fuels. Having a wind energy project in Humboldt County on the surface seems the right path to take. However this particular project - Terra Gen's proposal to install wind turbines on Bear Ridge and Monument Ridge has serious and fatal flaws.

First and foremost is the choice of sites. The California Energy Commission and the California Department of Fish and Wildlife have a rating system for wind energy sites, with 1 being great, for example already has existing wind turbines, and 4 being terrible due to pristine habitats and endangered species. The site is deemed by the above groups as a site 4.

The U.S. Department of Energy says that for wind energy to be a sustainable resource it is vital that wind energy projects are appropriately and responsibly sited which includes the protection of wildlife and their habitat. I would not call a site 4 either appropriate or responsible. Trying to mitigate a very poor choice of sites doesn't make sense.

The fact that the ridge is a sacred place for the Wiyot should be heard and respected.

We can do better than this. Do not let the rush to deal with the climate crisis blind us to the realities of this project. What we lose in the process is far, far greater than whatever marginal gains we might accrue.

How about a community wind project? It would allow local organizations to develop local projects that result in more economic benefits to the community than conventional wind projects developed by companies with no local ties. Community wind projects are locally owned, locals can influence the siting and sizing of projects and ensures that local interests are honored.

Humboldt County could take the initiative and lead the way to a truly sustainable future.

Linda Byrd
Eureka, CA

RECEIVED
DEC 09 2019
Clerk
Board of Supervisors

December 8, 2019

Letter of Opposition to the Terra-Gen Wind Project Appeal

To whom it may concern:

My name is Jack Rogers. I moved to Humboldt county in October, 1971 to go to school and also, to heal from the war wounds from spending two years in Vietnam during the war. Fortunately, my wounds were mental and not physical although they are equally serious and persistent in their effect on me and many other war veterans. So, along with schooling, I came to embrace the north coast solitude with its giant redwoods, rushing rivers, wild beaches and dark skies.

For nearly fifty years I have lived and worked in many places in Humboldt County. I met and married my wife, Susan, and together we raised our two children here. Throughout this time I have lived in places where the night sky was not lit up with blinking red lights and white strobe lights. What a valued asset to ease my, sometime, struggle with my past experiences.

Now, comes along an outside corporation, Terra-Gen, with their preposterous project aimed at industrialization of Bear River and Monument Ridge. Not only is the size and scope of this project completely out of proportion for what is acceptable for these fragile land structures, but it's an attempt to force us to embrace it through fear, falsities and omission of the facts available that prove that there will be no reduction of carbon levels with its construction and operation. Such attempts to show otherwise are not based in reality but through lies and claims of factual accuracy. Why have those who produced the DEIR and the FEIR failed to address so many issues that are pertinent to such a massive undertaking? I think it's because if they actually tried to justify their findings through scientific and objective methods, they would fail to be able to support their claims. Yet they continue to maintain the accuracy of their reports.

It has been reported that Terra-Gen's parent company, Energy Capital Partners, may be in financial difficulty and needs the tax credits from this project to remain solvent and that is why they have rushed this project through the permitting process with short comment periods and a speedy appeal. Warren Buffet states "we get a tax credit if we build a lot of wind farms. That's the only reason to build them. They don't make sense without the tax credit." This is Terra-Gen's primary reason to have proposed this project and pushing it through as fast as possible is necessary because the tax credits will expire at the end of 2020 and they need the money for other projects such as further fracking natural gas projects and possible development of coal fields in Colorado and Wyoming. This company claims to care about our endangered environment but past actions and future plans demonstrate otherwise.

With the necessity of dark skies for my and countless other local resident's mental health status, this project will have a profound negative impact. My wife and I have the great fortune of residing on the north slope of the Van Duzen river valley with a beautiful view of the river and the empty ridges beyond with Bear River Ridge and Monument only seven miles away. On a clear day, they appear so close that one could almost reach out and touch them. These ridges are truly majestic to view in the daytime with the constant changing cloud patterns and colors. At night they can only be seen under bright moon light. This view is one of the greatest assets of our property. If this absurd and criminal project is allowed to proceed to completion, our dark sky will be forever destroyed with bright red and possibly strobing, bright white lights day AND night. The EIRs do not state exactly what the Federal Aviation Authority will require, but with the close proximity of the Rohnerville airport, some extensive lighting will be required. These bright lights will be visible for many miles in all directions and when there is low clouds or fog on those ridges, the lights will be transmitted even further perhaps even lighting up the skies over Humboldt bay, not to mention Scotia, Rio Dell and Fortuna. This would be extremely unfortunate not only for the residents but for the wild life that needs darkness as a vital part of their normal life cycles. This profound aspect of the project will also have a negative effect on the bottom line of Humboldt County's finances. Although Terra-Gen claims that this project will add two million dollars to our coffers, the reduction in property taxes and sale prices of the properties negatively affected by it will be significantly greater. With this in mind, I, and many others wonder why Terra-Gen used only one simulated view of the wind generators on Bear River Ridge. The sky was quite hazy so the massive towers were hardly visible. Why no simulations of the view on a clear day or at night? We know why. If they had truly shown the area as it will actually appear on clear days and at night, there would be even more opposition. As it is, the opposition is significant and widespread and we are not acting on fear or irrationality but with clear minds and

RECEIVED
DEC 09 2019
Clerk
Board of Supervisors

18

much research. I doubt that I will be able to live at my current, beloved property if this project is approved and built. I am also concerned that with this intrusion into our view-shed that we may not even be able to sell our property if we find that we can no longer live here. It will be forever negatively impacted.

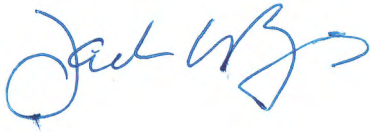
Some have accused of us as being NYMBYs. In this case for us, it is NYMFY (Not In My Front Yard). Furthermore, If NYMBYism is a bad thing, we'd now have the useless Butler Valley Dam, the GO Road and subsequent destruction of the Siskiyou Wilderness, the decimation of Headwaters Forest and many other negative projects throughout our wonderful landscape which many, many people from all over the world come to see and enjoy.

I, along with many of my fellow citizens of Humboldt County, strongly oppose Terra-Gen's proposed project and request that you, our duly elected representatives, do the same.

Please, for the current and future residents, reject the appeal. There are no positive results if it is built but only negative results with which we'll have to live forever.

Thank you for your time and consideration.

Sincerely,
Jack Rogers
PO Box 507
Hydesville, CA 95547
5697 Rohnerville Rd
Fortuna, CA 95540



December 8, 2019

To: Humboldt Co. Board of Supervisors

Re: **My Opposition to the Terra-Gen Wind Project Proposal**

From: Susan Rogers, 5697 Rohnerville Rd., Fortuna 95540

RECEIVED
DEC 09 2019
Clerk
Board of Supervisors

I am a 40 year resident of Humboldt Co., currently living in the home we own just outside Fortuna, where our view is across the valley and Van Duzen River to the ridge that Terra-Gen proposes to defile with 600 ft. tall industrial wind generators. After studying the Draft EIR and following the Final EIR, the meetings and discussions, I am opposed to this deeply flawed project for many reasons. This is not the first time a large corporation has come to our area with promises of a better economy and jobs, it is just one more attempt to profit from the land that is our home.

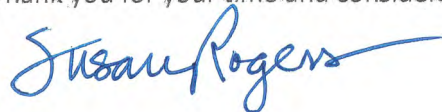
My understanding is that this is the first time wind generators of this size are to be installed anywhere, making us guinea pigs in their experiment to see how well they perform, and in the process destroying our precious environment on these magical ridges of Humboldt Co. They propose to set the enormous cement pads on fragile land in earthquake country and to put a road up Jordan Creek and clear cut a 25 mile long swath all the way to the Bridgeville Substation. Human beings make a lot of mistakes when trying to mitigate the problems caused by overconsumption and greed. Causing even more environmental destruction is just not the right way to fight global climate change. Right now the grass prairie and trees are doing a fine job of sequestering carbon, just by existing.

One of my primary concerns is the increased risk of fire. I have seen photos of wind generators exploding into flame and flinging sparks and burning debris, causing wildfires. There was one just this summer in Washington. The fires so far have been caused by shorter wind generators; imagine how far a 600 foot tall wind generator could spread flaming debris!

I am also concerned about the noise and lights from these behemoths which would be extremely disruptive to humans and wildlife living anywhere near them. There would be no more dark skies, but flashing lights all night long. Combine that with the fog and the lights will be seen from far away. Property values will plummet due to decreased desirability of properties affected. People don't come to Humboldt to see giant wind generators, they come for the redwoods, rivers, the ocean and the pastoral prairies, meadows and ridges. As good stewards of our land, we are bound to conserve and protect what we have.

I urge you to do your duty to Humboldt County and deny this project. I hope it will be a unanimous vote so Terra-Gen will have no doubt that their project will never be built here.

Thank you for your time and consideration.





December 10, 2019

To the Members of the Board of Supervisors,

This is the time to take a long term look at the future of Humboldt County. Yes, we are in a climate crisis and yes, we as a county and as individuals need to take immediate steps to bring positive lasting effects to this crisis. That is why we need to step back and look at the long term effects of the Terra-Gen project.

Here are 3 questions for you,

1. Is this for profit business company's proposal going to benefit us in Humboldt County in the future or will it be another profit making scheme that in 5-10 years leaves us with a destroyed environment with long term irrevocable consequences?
2. Are there better safer solutions and steps that the County can and should explore? Even if they will take time to develop.
3. Can we be the County that makes bold positive decisions that will benefit our communities and give us the lasting assurance of protecting the environment, wildlife and personal well being that makes this County so unique and beautiful?

My understanding and personal feelings toward this project indicate to me that this is NOT the project this County needs to be involved with. The long term lasting consequences will only render negative effects for citizens, wildlife and the environment. The County needs to explore better solutions and options. We have the technology and knowledge.

Be bold and say NO NEVER.

Respectfully,

Francene Lerna-Rizza and Jim Rizza

RECEIVED

DEC 09 2019

BOARD OF SUPERVISORS

TerraGen Project

First letter to the Supervisors

The Humboldt County Planning Staff response to all of us who expressed concern about the potential downwind effect of the TerraGen Wind Energy Harvesting proposal fo Bear River and Monument Ridges feels too generic. Our atmosphere is full of gradients: temperature, pressure, humidity, and turbulence. All are dispersing from high concentrations to low concentrations. These gradients' concentrations are results of our sunlight and our planetary terrain features. These features vary hugely site to site.

Staff dismisses our concerns by writing: " turbines will not remove humidity from the air at the wind farm. They will mix the air mass that is present. This mixing will not effect fog formation in the valleys outside of the project site."

I agree that the turbines will not remove humidity from the air mass passing through the project, and that they will mix the air mass that is passing through. This mixing will change distribution of the humidity in the air mass of the winds that pass through the project site. In our onshore dry season winds, the moisture gradient is densest at the bottom of the air mass. The mixing will decrease the moisture in the bottom of the wind air mass and increase the moisture in the top of the wind air mass. Because ground turbulence affects wind direction at the bottom of the wind air mass more than it affects wind direction at the top of the wind air mass, in the new mix these new moisture gradients will disperse in new patterns.

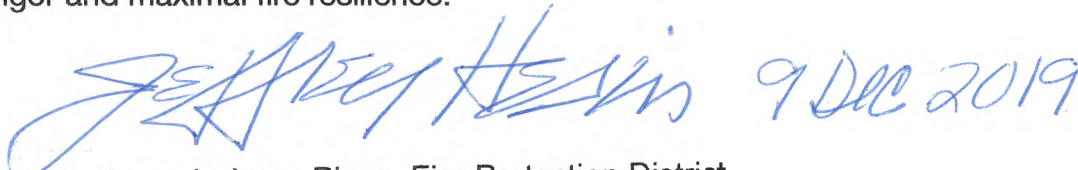
Scientists have published extensive work on the effect of wind farms on temperature, moisture and CO 2 , for example <https://doi.org/10.1073/pnas.1000493107>, <https://doi.org/10.1175/BAMS-D-11-00240.1>, <https://doi.org/10.1175/MWR-D-12-00185.1>. The work shows measurably significant changes extending upwind and particularly for miles downwind of wind farms. Furthermore, there has been little work conducted in our climate zone and in locations with surrounding fire-prone forest ecologies. It is our recommendation that further studies be conducted by the relevant experts with experience in the relevant meso climates. The following groups, familiar with west coast temperature climates and forested mountain ridges include Fox Weather Fortuna, the Oregon State University climatologists, ecologists, plant pathologists, forest health specialists, the Oregon State University Prism Group (climate center) as well as Humboldt State University scientists, and Lawrence Berkeley Wind Research Lab. These scientists should give you their input on wind farm impacts before approving such an ecologically sensitive location for a wind farm.

I hope that planning staff is right when they say this mixing, this moving humidity higher in the wind column will not affect fog formation (and by implication dew fall) in the valleys downwind. It feels presumptuous to me. I know the planning staff includes well trained intelligent people who understand that our planet's geomechanics are not simple and are site specific. Moisture high in the wind column is not necessarily going to condense where it would have condensed if left low in that column.

The Eel River basin is a significant climate refugia. It is the focus of many climate mitigation strategies. In the lower Eel basin the Rockefeller Foundation, Save the Redwoods League, the State of California Department of Fire and Forestry and Department of Recreation, University of California, the California State University system, and Humboldt County Department of Parks and Recreation have spent millions of dollars preserving, protecting and studying the local biosphere, now being recognized for its great capacity to reduce and sequester atmospheric carbon, and for its potential to burn.

I want to see lots of windmills. But as we seek mitigation strategies to eliminate atmospheric carbon loading though burning fossil fuels, let's not gamble disrupting an effective strategy to preserve and manage our forests for maximum sequestering of atmospheric carbon, and to protect us all from the negative effects of wild fire.

If this project is approved let's include as condition of approval an independent monitoring of downwind dewfall and foliar condensation in the lower Eel forests. If the turbines' mixing of the dry season onshore winds' air mass is causing its humidity to condense elsewhere and measurably affecting these forests' vigor and fire resilience, enough turbines need to be shut down long enough to let these winds deliver enough water to these forests to maintain their maximal vigor and maximal fire resilience.



Jeffrey Hedin, Commissioner Piercy Fire Protection District

1. Mesoscale Influences of Wind Farms throughout a Diurnal Cycle

Anna C. Fitch *Geophysical Institute, University of Bergen, and Uni Research, Bergen, Norway, and Mesoscale and Microscale Meteorology Division, National Center for Atmospheric Research, Boulder, Colorado*

<https://doi.org/10.1175/BAMS-D-11-00240.1>

2. Crop Wind Energy Experiment (CWEX): Observations of Surface-Layer, Boundary Layer, and Mesoscale Interactions with a Wind Farm

Daniel A. Rajewski *Department of Geological and Atmospheric Sciences, Iowa State University, Ames, Iowa*

<https://doi.org/10.1175/BAMS-D-11-00240.1>

3. Impacts of wind farms on surface air temperatures

Somnath Baidya Roy and Justin J. Traiteur

PNAS October 19, 2010 107 (42) 17899-17904; <https://doi.org/10.1073/pnas.1000493107>
<https://doi.org/10.1073/pnas.1000493107>

Comments on Terra-Gen's Humboldt Wind Energy Project Draft EIR

Respected Humboldt wind project planner, Humboldt Board of Supervisors, and public:

1. What do we know and believe that makes the TerraGen wind energy harvesting plan for Bear River Ridge and Monument Ridge worth considering?

2. Scientific evidence strongly indicates that our planetary climate has been shifting between ice ages and no ice ages for eons.

Recorded weather history shows a warming trend that is changing our climate faster than our biosphere and our economy can evolve to continue to support the human community in sustainable comfort.

3. This warming trend is paralleled by an increase in atmospheric carbon (carbon dioxide, methane, etc.).

There are behavioral changes available to us to eliminate our use of fossil fuels to feed, clothe, house, and transport the members and the wherewithal of the human community.

4. That makes wind, wave, water flow, solar, and nuclear energy sources attractive. All include problematic side effects. None is a panacea. We need a cornucopia of energy sources to replace fossil fuels.

5. And commOn to all non-fossil energy sources, none of them removes from our atmosphere the carbon overload that our scientific community's work indicates is the prime force in our planetary warming trend.

The sugar production by the photo-synthesizing members of our biosphere's floral community is the principal force reducing the CO2 in our atmosphere. And except for a few beings around our thermal vents, this photosynthesizing provides all the energy for all the metabolizing that keeps our bio community alive.

This process releases to our atmosphere exactly the amount of oxygen needed to oxidize the carbon and hydrogen the reduction process combined into sugars. It does not increase atmosphere carbon.

Furthermore, it holds carbon in the body structures of the plants and animals that build themselves using these sugars for the energy to do so. And as the beings in our bio community shed leaves, bits of bark, dead limbs, bits of hair, bits of skin, and eventually our bodies, our detrivors and our rainfall store this carbon in our soil and our waters.

To reduce the overload of atmospheric carbon we must foster, care for, stimulate, enhance the capacity of our biosphere and our geosphere (the two elements of our ecosphere) to photosynthesize sugars and store their carbon in the bodies of every living thing in our biosphere, and in our waters and our soil.

To consider permitting any non-fossil energy harvesting we must weigh the energy produced against the reduction of our ecosystems capacity to store carbon, and to continue to hold the carbon already stored.

Using simply the calculus of financial return on financial investment to decide whether or not to pursue a project is how we got ourselves into this frightening environmental situation. It is not the way to get out.

6. TerraGen identifies as an objective for this project to "displace emissions of 372,000 metric tons per year of carbon dioxide (a greenhouse gas) that would otherwise be required to generate the same amount of energy as this 155 megawatt(MW) project". (Draft EIR page 2 -3.)

At their presentation at The Old Steeple in Ferndale, TerraGen's representatives suggested that

about 15 permanent jobs would need to be filled to run this project after construction, and that tax revenue to the county would be enhanced. Lost Coast outpost reports their representatives predicted the project would provide Humboldt County \$76 million in property taxes in \$8 million in sales taxes over the life of the project.

These calculations need to be checked carefully. The presentation also predicted that increased technical efficiency would likely reduce the number of windmills needed to produce the 155 megawatts. This reduction would likely reduce the jobs needed to run to the project. Also note, when weighing against the loss of carbon sequestered in the soil and biosphere during project construction and the sequestering capacity displaced by the constructed project during it's life that the 372,000 metric tons of CO2 is only 101,454.5 metric tons of carbon.

7. Many potential environmental and financial effects of the project must be weighed before we approve this project.

8. The soil impacts from this project have not been fully presented for discussion. TerraGen draft EIR diagram indicates each tower needs a cleared area of 250' x 350' for its foundation and the permanent crane pad needed for maintenance of the windmill. This area needs to be cut and filled to maximum slopes of 1% and 2%.

(250 feet times 350 feet per tower times 60 towers) divided by 43,560 ft.² square per acre equals 120 acres.

17 miles of new roads are also predicted. These roads will have a 24 foot wide graveled center, the 50 foot wide for the crane access, indeed 200 feet of graded clearance shoulders to move the propeller units over them.

17 miles times 5280 feet per mile times 224 feet equals 20,106,240 ft.² plowed earth.

20,106,240 ft.² divided by 43,560 ft.² per acre equals 461.75 acres plowed.

17 miles times 5280 feet per mile times 24 feet gravel surface divided by foot squared per acre equals 57.70 acres of permanent bare compacted roadway.

Not detailed in the DEIR the total amount of land to be plowed to accommodate moving the cranes in the windmill pieces over the existing project access road.

The six permanent meteorological towers need 1.5 acres of clearing this as 9 acres plowed.

Total equals 120 acres +461.5 acres +9 acres equals 590.5 acres to be plowed.

The soil maps I found indicate a Dobson profile with a 2 foot topsoil with 8% carbon content in the next .5 foot subsoil of 6% carbon content. The A horizon of this 590.5 acres of soil contains 194 tons of carbon per acre.

194 tons carbon per acre times 590.5 acres equals 114,557 tons of soil carbon exposed to atmospheric oxidation. Fully oxidized this would introduce about 420,042.3 tons of CO2 into the atmosphere.

Exposed soil can lose 90% of its carbon in 10 years. We need to see a plan to prevent this loss in this disturbed soil. We also need a calculation of how much carbon extraction of atmospheric CO2 will be lost while the vegetation of these acres has been removed during construction, permanently by the road, tower founding , and crane platforms, during the revegetation process after construction, during the decommissioning at the end of the projects life, and during the revegetation process after the decommissioning is complete.

This plan's calculus and any procedural or mitigation design must include the soil impacts caused by the projects necessary alterations to the existing access road to the two ridges' project areas.

9. This proposed project will also affect the downslope aquifers on both sides of these ridges, and the summer water flow in the streams draining the valleys between these ridges and their immediate neighbors.

The scientific information collected by D. M. Rempe, W. E. Dietrich, and J. Hamm at UC Berkeley's Angelo Reserve indicate that rainwater absorbed in the tops of the ridges in Humboldt and Mendocino counties' coastal belt of our coastal mountain range is the main contributor to the summer water flows in the streams in the canyons and valleys between these ridges.

The permanently impermeable concrete surfaces will decrease soil absorption of rainwater until deconstruction. The permanently hardened new road and permanent crane surfaces will also significantly reduce rainwater absorption.

The first carbon to oxidize when soil is devegetated and exposed to atmospheric oxygen is the cell walls of the mycelial life in the soil. This is the primary source of the proteins that form soil particles, both mineral and organic, into the ped structures that create soil tilth. This tilth allows both air and water to flow into the soil filling aquifers and permitting most of the metabolic processes that create soil fertility.

If the suggested plan to protect raptors from injury or death due to collisions with spinning windmill blades by using small mammal control to diminish the raptors terrestrial food source is employed, the ability of the ridge topsoil to absorb water will be further diminished. The majority of the small mammals are burrowers. Their burrows are important conduits of water delivery to the aquifers that feed our surface water streams, provide successful anadromous fisheries, and clean water for humans and other terrestrial life.

I do not know how to calculate the total effect of this diminished capacity for soil percolation, but I know it will increase rain water surface runoff and erosion during wet seasons and decrease dry season flows. Experts who can should be consulted before project approval is granted.

10. This DEIR does not reflect the severity of our local seismic situation. Monument Ridge surely has the most extreme exposure to landslide hazards of any wind project in the United States. The ridge itself is a narrow band bounded by steep incising watersheds. The ridgeline is likely subject to ridgetop seismic amplification from the numerous potential seismic sources in the immediate vicinity. The watersheds on either side are aggressively eroding. There are headscarps of historical debris flows within a few hundred feet of the proposed towers. These headscarps are part of an historical incision wave that is not likely to have worked its way out of the system. There is no analysis in the DEIR of whether the vibration of the windmills themselves will weaken the underlying geologic structures during episodes of co-seismic ground motion, or during extreme weather events such as atmospheric rivers. Introducing new hazards to these watersheds is unacceptable. After going through the extended legal and social conflict about what are acceptable geotechnical risks to facilitate timber harvests in the 1970s, 1980s, and 1990s, it is truly disheartening to see the applicant claim that there are no significant impacts. The applicant does not have the right to destroy natural resource lands. It is not acceptable to limit consideration to human lives and structures. Clearly natural resource land owners have the obligation to consider induced geotechnical hazards impacts on water courses and fisheries.

10. This project will also affect downwind air quality. Numerous studies have confirmed that "Wind farms" are associated with significant downwind increases in temperature. TerraGen has participated in some, and should be required to address the downwind impacts on those local climates.

I am particularly concerned with scrambling the temperature gradients in the onshore wind air columns. The cooler, heavier, moister air is at the bottom of the column. This includes the fog layer. Numerous plants in the forests covering the downwind terrain are dependent on maintaining dry season vitality through foliar absorption of the airborne moisture in the bottom of this wind column, redwood trees, bay laurels, huckleberries, and sword ferns among them.

The forest in Humboldt Redwoods State Park and on private land along the Avenue of the Giants will be affected. The south eastern terminus of the project is less than a mile from Humboldt Redwoods State Park's border.

The affected includes stands in Rockefeller Forest and Founders Grove. These stands include 80% of

the known trees over 107 m tall (equals 350 feet). They also contain the worlds third highest above ground biomass measurement. Among coastal redwood stands with extremely high carbon density they are unique as they are technically located outside the technically defined temperate rainforest.

Anyone who has spent a hot summer in these parks, as I have during the six years I spent as part of the local volunteer group, Team Standish, that kept Standish Hickey State Recreation Area open during the recent California Department of Parks and Recreation's financial crisis, will recognize that the draw of fog through the canyons and valleys of the South Fork Eel watershed is an extraordinarily powerful force. This cool foggy air exerts a major influence on forest composition and health all the way to Southfork Mountain. It also affects fire behavior. The humidity drop associated with this wall of fog can be the difference between a well-behaved ground fire and the terrifying blazes we witnessed locally during the Noble Fire, the Lightning Complex Fires, and the Wilderness Lodge Fire.

These downwind parks are also critical to our local economy. They have produced hundreds of millions of dollars in local economic activity, and are the source of the most attractive images of our region to the rest of the human world. They draw tourists from all the other states, Europe, Japan, China, Israel, Australia, New Zealand,..... everywhere.

The state of California, Save the Redwoods League, The Rockefeller Foundation, numerous individual donors and citizen groups have invested substantially to protect these outstanding examples of the remaining redwood forests.

Furthermore the north coast redwoods district of DPR has over 70 permanent employees. 17 are fully employed in the parks down wind from this proposed wind energy harvesting project. Another 21 seasonal employees work in these parks, and 90 volunteers donate hours of activity to keep these parks attractive and comfortable. Most of the other 53 permanent employees' work includes service to these parks.

Protecting and expanding this employment pool feels like a wiser use of our energy than gambling on adding 15 permanent jobs predicted with caveat by TerraGen's representatives.

Before approving this project, these economic issues not addressed by the DEIR must be considered very carefully.

12. The 25 mile energy transportation corridor between the project site and Bridgeville will also diminish our region's exceptional biospheric capacity to capture and sequester atmospheric carbon. The DEIR states that if H frame structures with overhead wires are used, guy wires will be used on both sides of the frame and would be built within a 100 foot wide transmission corridor. The DEIR also declares that construction will be "in accordance with the current suggested practices of the Avian Power Line Interaction Committee"

As described in the DEIR, this corridor of about 25 miles times 5280 feet per mile times 100 feet wide equals about 13,200,000 ft.², approximately 303 acres. Can a conversion of this size be done without a formal zoning change with the Department of Fire and Forestry?

To evaluate the impact of this 303 acres of conversion of forest lands to a utility corridor, we need Terra-Gen and the ownership of the affected forest lands to provide an analysis of the resulting changes in the vegetation densities and species. We also need to know how the developers will comply with Judge Alsop's order that PG&E power line vegetation management must prevent any tree from falling onto or being wind thrown onto a power line.

Compliance to this ruling could increase the loss of photosynthesizing vegetation in this utility corridor.

It is also possible that a well-designed corrdlor could provide positive environmental qualities through increasing mosaic diversity, increasing edge affects, increasing berry and seed and forage production, etc.

Hopefully California Department of Fish and Wildlife will balance these possible positive contributions against the possible negative affects like fragmentation and introduction of non native species.

13. Terra-Gen's representatives also admitted that the blades of these windmills cannot be recycled using our current technological capacity. Can the project be designed with smaller but more numerous units using blades made of recyclable material?

We should not use any material that cannot be recycled in any new project. We must avoid anything that must be buried or stored until it deteriorates or is crushed into tiny particles that will not enhance and may threaten our biospheric vitality as it is inevitably disbursed throughout our ecosphere.

These are strange appearing machines, as if intended to win an urban design contest. To my eyes they clash with our landscape and seem to be some sort of mechanical storm troopers from a Star Wars episode marching along our ridges. Appearances are part of the environment. At the Old Steeple in Ferndale the Terra-Gen team said these towers are too dangerous to be put in urban settings. Maybe they are too dangerous to be placed here.

14. Finally, what is the cost difference between harvesting and delivering 155 MW of wind energy here versus that cost in the windy areas to the east of here in parts of the planet where the local biospheric community's capacity to sequester atmospheric carbon is far lower than the biosphere immediately affected by this project?

This commentary period is too short to allow me to research this cost analysis. I love being part of earth's bio community and have long advocated for developing energy sources without burning fossil fuels. If we decide that this proposal is not appropriate for here because it would create more environmental problems than solutions, and if building facilities to harvest wind energy is more costly elsewhere, perhaps we should petition our state and national governments to subsidize the difference. It feels unfair to make investors bear that cost difference alone when contributing to our effort to stop burning fossil fuels.

Let's decide carefully. Let's heed our grandmothers' warning that haste makes waste. And as we decide let's continue to incentivize small solar and other fossil free power generation projects, and to do whatever we can to enhance our local vegetation's capacity to sequester atmospheric carbon. These are two ways we know we can slow our planetary drift to a no ice age without risking further environmental collapse.

Thanks to those who help me write this.

Those who wish to may sign onto this petition, or copy any part to sign as yours.

Love to all,
Enjoy your dance,

Jeffrey Hedin
P.O. Box 140
Piercy, Ca. 95587

Jeffrey Hedin
6 Sept 2019

| | |
|---|--|
|  | |
|---|--|

November 14, 2019

Addendum to commentary re TerraGen Wind Energy Project

When I stood here a week ago expressing my concern that we had not yet discussed the effect this wind energy harvesting plan would have on the wind itself, I failed to introduce myself as an elected Commissioner of the Piercy Fire Protection District. I have a constituency, and our Mission Statement includes providing care for everyone in our District. If you have driven to San Francisco you have been in our care.

What I said was not meant to be a surprise. I simply repeated what was in this commentary I submitted via email during the comment period for this project. Somehow it never was delivered to you. In these copies I have red inked for you the references to this topic.

Three minutes were not enough to cover the importance to our region of the cool moist marine winds that flow over these ridges during our dry season afternoons. Adam Canter added a few things I had to leave out, but neither he nor anyone else mentioned how these winds contribute to our region's fire resilience.

These winds bathe the Eel River Basin day after day keeping our duff layer and ladder fuels damp, and depositing dew on all that is still green.

I fear global warming. But I also fear the new rapid expansion rate of urban-wildland interface fires in California.

We lost 85 people in the Paradise Fire. And we just evacuated 180,000 people from the Kincaid Fire while the lights were out.

And we here are not exempt. During my two plus decades of service I have seen the Canoe Fire, the Noble Fire, the Lightning Complex, and the Wilderness Lodge Fire burn for days over thousands of acres.

These are just the fires that got away because our response was too late. We extinguish most of the fires that start in the region. But we do it with far too few firefighters. From Willits to Fortuna we depend on Volunteers to leave work, home, shopping, play, spouse and children to drive to a Fire Station, don gear and mount Emergency Response vehicles to reach a fire before it becomes a holocaustic firestorm. These winds buy us time because they keep our tinder damp.

If we let our region get as dry as central Sonoma County, it will burn four times as hard as the Kincaid Fire. We have that much more fuel per acre.

Believe me, I want to see solar arrays wherever they can be fit, and I want to see windmills, big and small, wherever the wind is a nuisance or simply an interesting challenge to golfers. But I do not want to see windmills harvesting the wind's energy where the wind is a blessing, a godsend.

I sympathize with you and TerraGen about the tax deadline. I share the problem. California has budgeted hundreds of million dollars to increase fire resilience in the urban-wilderness interface. I am trying to get for us as much as I can, and the deadlines for this round of grant proposals are this December sixth and ninth.

I am tired of this governance by deadlines. Bless their governing hearts for being concerned, but I want to spank their minds. They are three thousand miles away, and three hundred miles away, thinking they can move us to act expeditiously by prodding us with deadlines. It's as if they never heard our grandmothers saying "haste makes waste".

We need to assess our timing. Our scientists say we have ten years to break our dependence on fossil fuels. And we have one winter, if it ever comes, to prepare for our next fire season.

TerraGen has brought us some amazing data as a premier wind energy developer. They have determined that in our entire region there is only one place where they can profitably generate electricity from wind energy even with a tax break.

That says to me that we need massive governmental mobilization. And I guarantee we can do it. I have seen it. I was drafted, trained as a medic, sent to Vietnam, and assigned to a reconnaissance platoon that was inserted all over Vietnam in 1967 and '68. The U.S.A. spent billions of dollars, built airports, harbors, field hospitals, and generated electricity wherever our military wanted. For what? I don't know. But this is for our lives. And I know our industrialists were well compensated. They didn't disappear.

TerraGen should be thanked for their research, and paid for it. It should be used to figure out exactly what we need to spend to create the electrical energy we need to sustain comfort for the human community without burning fossil fuels.

I am busy with fire resilience, but I will make myself available to discuss this with you individually or all together. I can bring others from our Associations of Fire Chiefs and Fire Departments. None of us knows everything that needs to come to the table.

At least stop the windmill rotors from noon to six o'clock p.m. on our dry season days. A holocaustic fire here will release more carbon than this project can save in thirty years.

Jeffrey Hedin, Commissioner Piercy Fire Protection District



**AMERICAN BIRD
CONSERVANCY**



Bringing back the birds

22

5 December 2019

RECEIVED

DEC 09 2019

Clerk
Board of Supervisors

Humboldt County Board of Supervisors
825 5th Street, Room 111
Eureka, CA 95501

RE: Humboldt Wind Energy Project

Dear Chairperson Bohn and Supervisors:

I am writing to convey American Bird Conservancy's opposition to the Humboldt Wind Project, and to ask that you please vote no on this unacceptable project proposal. Speaking from a national perspective on wind energy projects, this proposal poses a remarkably long list of risks for birds and other wildlife, and falls short of appropriately evaluating or mitigating these impacts.

Climate change must be addressed and this requires renewable energy development that protects at-risk species and important habitats. Unfortunately, this project does not strike a reasonable balance. The proposed plan is based on too little data and flawed analysis that artificially minimizes the risks posed to wildlife. It ignores industry precedent and available best practices. The Final Environmental Impact Report (EIR) ignores or dismisses an extraordinary amount of sound expert input.

To be appropriately vetted, this project proposal would require additional field data, analysis, and plan alterations. We recommend that any further consideration of this project require this necessary effort, with a new or revised EIR subsequently circulated for public comment.

The Humboldt Planning Commission voted to deny the project based on overwhelming public opposition via written comments and testimony at public hearings. The Board of Supervisors should uphold this conscientious vote and the will of the people.

We provide comments on the Final EIR below. Please feel free to contact me if you wish to discuss this matter further.

Sincerely,

Joel Merriman,
Director, Bird-Smart Wind Energy Campaign
American Bird Conservancy
jmerriman@abcbirds.org
(202) 888-7471

American Bird Conservancy has reviewed the Final Environmental Impact Report (FEIR) for the proposed Humboldt Wind Energy Project and we are writing to express our concerns regarding and its potential impact on birds, particularly the federally protected Marbled Murrelet, Northern Spotted Owl, Golden and Bald Eagles, and other bird species of conservation concern.

American Bird Conservancy (ABC) is a non-profit membership organization whose mission is to conserve native birds and their habitats, working throughout the Americas to safeguard the rarest bird species, restore habitats, reduce threats, and building capacity. ABC supports the effort to combat climate change, decrease air pollution, and reduce our dependence on fossil fuels through responsible “Bird-Smart” wind energy development. As you know, however, wind turbines and associated infrastructure kill birds and remove habitat, which is particularly concerning when the species affected are listed under the Endangered Species Act (ESA).

As outlined below, we have serious concerns regarding many aspects of the project proposal. It would take substantial additional measures to provide adequate protections for birds – we provide proposed stipulations to move the project toward a more acceptable proposed plan. This list of concerns and proposed stipulations are those that we find most problematic – this list should not be considered comprehensive.

General

Concerns

The proposed location for the project is poorly chosen. It overlaps the National Audubon Society-designated Cape Mendocino Grasslands Important Bird Area, is a local hotspot for hawks and eagles, is near Marbled Murrelet critical habitat, and Marbled Murrelets and Spotted Owls are known to be present in the area. In a 37-page comment letter, the California Department of Fish and Wildlife (CDFW) indicated that “all or portions of the wind turbine facilities fall into Category 4, “Project Sites Inappropriate for Wind Development.”” There are many good reasons for this.

Proposed Stipulation

Remove all proposed turbines and other infrastructure from Bear River Ridge, though we note that this would not alone alleviate this concern. However, this would greatly reduce or eliminate the need for other stipulations proposed in the following sections.

Marbled Murrelet

Concerns

The collision avoidance rate used to calculate the estimated number of Marbled Murrelets that will be killed by collisions with turbines: (1) was modeled on studies of birds with different flight ecology and in an environment where turbine avoidance is potentially less difficult than the proposed project site; (2) did not follow precedent set elsewhere in the Murrelet’s range (e.g., see calculations for the [Skookumchuck Wind Energy Project](#) in Lewis County, Washington); (3) does not adequately address the fact that fog and low cloud ceilings are regularly encountered at the proposed project site, which would reduce visibility and thus potentially increase collision risk; and (4) does not take into account that murrelets make many of their overland flights in the dark or low light levels, further reducing visibility and potentially increasing collision risk.

The proposed project proponent attempts to partially justify this in the FEIR by referencing the collision avoidance rate used in the United Kingdom, which has little bearing on Marbled Murrelets or the setting in Humboldt County. As such, the estimated number of Murrelet mortalities may be inappropriately low, and perhaps by a substantial amount. This concern was raised by multiple stakeholders in comments on the Draft Environmental Impact Report (DEIR). Yet despite this, the FEIR reduces the mortality estimate for Murrelets.

If the murrelet mortality estimate is calculated incorrectly, this could result in an unacceptable number of murrelets being killed by the proposed project, create a false sense of the risk posed by this proposed project to this species, throw off the assumed need and methodology for mitigation to compensate for mortality, and set a dangerous precedent for similar calculations elsewhere in the Murrelet's breeding range.

Proposed Stipulations

- Within the next 30 days, in collaboration with and to the satisfaction and written concurrence of CDFW and the U.S. Fish and Wildlife Service (USFWS), a collision avoidance rate for marbled murrelets shall be agreed upon and used to calculate a revised estimate of murrelet mortality likely to result from the proposed project. If no concurrence can be reached, the applicant shall use a collision avoidance rate provided by the referenced agencies to calculate a revised estimate of murrelet mortality likely to result from the proposed project. The collision avoidance rate shall take into account the following at a minimum, though this should not be taken to be a comprehensive list: (1) murrelet flight ecology (speed, wing loading, etc.); (2) the frequent foggy and low cloud ceiling conditions at the proposed project site; (3) the dark or low light conditions in which murrelets traverse the site. The calculations used for the now under construction Skookumchuck project represent the precedent for this calculation, were vetted by the U.S. Fish and Wildlife Service, and were far more conservative. These should be consulted as a model for the project under consideration.
- Curtail turbines during known activity periods for marbled murrelets for the full extent of the known regional breeding season for this species.

Concerns

The proposed mitigation plan to compensate for Marbled Murrelet mortality due to collisions with turbines: (1) presents weak information that there is a sufficient population of Murrelets to justify the site as a mitigation area; (2) does not provide strong data to support the notion that predation by corvids is a significant problem there; and (3) will not include Murrelet monitoring to provide reasonable proof that more Murrelets survive to adulthood as a result of actions taken. As such, this provides no assurance that Murrelet mortality will be effectively mitigated through the proposed action.

Proposed Stipulations

- The amount of marbled murrelet habitat that will be removed for construction of this project shall be quantified, and mitigated via habitat protection or restoration. This mitigation shall be

required at a 3:1 and 5:1 ratio for habitat protection and restoration, respectively, to account for the status of this species and ensure that impacts are fully mitigated.

- Based on the above, within the next 60 days, in collaboration with and to the satisfaction and written concurrence of CDFW and the USFWS, a revised marbled murrelet mortality mitigation plan shall be developed that: (1) provides sufficient evidence that the mitigation site(s) are appropriate (e.g., provide habitat of sufficient quality and quantity or support a population of murrelets sufficient to bolster populations via the proposed action); (2) provides sufficient evidence that the threat abated by the proposed action is sufficiently problematic at the proposed mitigation site (e.g., that human food is left at the site at a problematic frequency and quantity, and that corvids are accordingly present in problematic numbers); and (3) then clearly demonstrates that the mitigation package will compensate for the revised estimated take of marbled murrelets via production of additional murrelets (i.e., that would not have otherwise survived to fledge). This mitigation shall be required at a 3:1 ratio of individuals to account for the status of this species and ensure that impacts are fully mitigated.

Concerns

The post-construction Marbled Murrelet mortality monitoring plan does not take into account that: (1) the species is very cryptic, so carcass detection by human searchers would be difficult; and (2) the high velocity at which Murrelets fly may propel carcasses to farther distances from turbines, as compared to many other species, thus reducing the likelihood of detection. As such, the post-construction monitoring plan may be incapable of actually detecting Murrelet mortalities.

Proposed Stipulations

- Within the next 60 days, in collaboration with and to the satisfaction and written concurrence of CDFW and the USFWS, a revised bird mortality monitoring plan shall be developed that incorporates the following at a minimum, though this should not be taken to be a comprehensive list: (1) utilizes dogs for carcass searches to account for marbled murrelets' highly cryptic plumage and the associated low likelihood of being detected by human searchers; (2) utilizes a search radius that takes into account the distance to which marbled murrelet carcasses may be flung, given the speed at which the species flies and the speed at which turbine blades spin; (3) is conducted at a frequency that accounts for carcass removal by scavengers.
- In order to provide assurance to the public that construction and post-construction project actions effectively document environmental impacts, monitoring activities, including collision monitoring, shall be managed by the Humboldt Planning Commission, CDFW, and/or another public agency with a mandate to balance development with environmental impacts, at the applicant's expense. This shall include, but is not limited to, hiring or selection of individuals or companies tasked with monitoring, management, analysis, and interpretation of data, and developing steps for and ensuring enactment of adaptive management actions based on said data and analysis.

Conclusion: When considered together, the above results in a scenario where the number of Murrelets that will be killed by turbines is questionable, the mitigation measures proposed provide no assurance that mortality will be effectively compensated, and the methods proposed to monitor collision

mortality provide no assurance that the impacts will be fully understood. This is too many unknowns, too much uncertainty, and too little accountability when considering avoidable mortality of a Threatened species.

Northern Spotted Owl

Concerns

The DEIR was based on Northern Spotted Owl surveys that were not conducted for the proposed project, or designed with proposed project-specific impacts in mind. Surveys were then conducted specifically for the proposed project, and identified 12 active Spotted Owl territories. Two of these were previously unknown – this is incredibly surprising, given the importance of understanding populations of this Threatened species and the fact that these were missed in surveys that are conducted annually on this property. This clearly illustrates that insufficient information has been presented, and that it is inappropriate to base proposed project design on data not specific to the proposed project.

The Spotted Owl surveys that were conducted for the FEIS followed a one-year protocol, and within a 0.25-mile buffer of the proposed project area. Many Spotted Owls breed every other year, so two consecutive years of data are needed to adequately evaluate the presence and distribution of these birds relative to the proposed project area. Further, the 0.25-mile buffer does not follow federal guidance for surveys, resulting in a reduced survey area and potentially missing birds. The previous bullet point demonstrates that the data used in the DEIR were inadequate. The data now presented in the FEIR are insufficient to base reliable conclusions or otherwise appropriately evaluate this proposed project.

Proposed Stipulation

- Conduct two consecutive years of Spotted Owl surveys within 0.7 miles of the project footprint, following federal guidance. Reassess proposed mitigation area calculations accordingly.

Concerns

The power line alignment will be cut through what is otherwise largely contiguous forest, and habitat for Spotted Owls. This long, linear cut fragments the habitat, changing conditions in the forest in ways that are largely detrimental to the species. This also increases the risk of predation by species that use fragmented forest habitat. The importance of this broadly distributed impact is not adequately addressed or mitigated in the FEIS.

Further, Spotted Owls may be killed in collisions with turbines. The FEIR uses noncommittal language for how this would be mitigated, indicating that habitat protection or Barred Owl Management may be implemented. However, it does not appear that an analysis has been completed to confirm that sufficient quality or quantity of Spotted Owl habitat is available for these purposes in the vicinity, nor how many Spotted Owls are estimated to be killed. Further, the FEIR does not make clear how this mortality would be monitored.

Proposed Stipulations

- Power lines associated with the gen-tie shall be buried, and the right-of-way restored with forest plant species identical to surroundings such that a closed forest canopy develops and blends in with the surrounding forest.
- Based on the above, in collaboration with and to the satisfaction and written concurrence of CDFW and the USFWS, an estimate of spotted owl mortality likely to result from the proposed project, including via collision with turbines, shall be calculated.
- Based on the above, in collaboration with and to the satisfaction and written concurrence of CDFW and the USFWS, a revised spotted owl mitigation plan shall be developed that effectively compensates for spotted owl habitat loss associated with construction of the proposed project and mortality associated with collisions with turbine blades. This mitigation shall be required at a 3:1 ratio of individuals to account for the status of this species and ensure that impacts are fully mitigated.
- In collaboration with and to the satisfaction and written concurrence of CDFW and the USFWS, an analysis of available spotted owl habitat shall be conducted to ensure that acreage of sufficient quality and quantity is available for mitigation needs associated with habitat removal and owl mortality associated with project construction, collisions, etc. Habitat to be included shall be required to effectively improve spotted owl habitat, e.g., by protecting habitat within or adjacent to owl territories.

Conclusion: When considered together, the above results in a scenario where too little is known about Spotted Owl populations in the vicinity of the project site, direct and indirect impacts to the species have been inadequately assessed, and proposed mitigation is inadequately detailed or evaluated to demonstrate that it will be effective. This is an unacceptable level of evaluation when considering avoidable mortality of a Threatened species.

Eagles and Other Raptors

Concerns

Bear River Ridge is a known hotspot for eagles and other raptors, and although the FEIR reduces the estimate of the number of raptors likely to be killed by turbines, this number is still very high. Of greater concern, this estimate is based on insufficient data. The 2017-2018 raptor surveys were conducted only once per month, which is insufficient data to capture the full extent of raptor presence. What's more, four survey stations on Bear River Ridge were not surveyed in the winter months when raptors appear to be most abundant. These plots were in grassland habitat, making them suitable raptor habitat in a raptor hotspot – exclusion of these stations in winter results in insufficient data for reliable analysis.

Proposed Stipulations

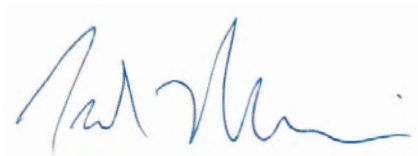
- In collaboration with and to the satisfaction and written concurrence of CDFW and the USFWS, an eagle / raptor survey protocol shall be developed that adequately assesses the species and relative abundance of species present year-round at the proposed project site. This shall be used to calculate an updated estimate of the numbers of raptors likely to be killed in collisions with turbines and power lines. Mitigation measures shall be revised accordingly.

- In collaboration with and to the satisfaction and written concurrence of CDFW and the USFWS, a smart curtailment system (e.g., IdentiFlight) shall be identified and implemented for Golden Eagles and any other raptor species for which peer-reviewed science deem this effective. This measure may be considered avoidance, and thus not require any further compensatory mitigation for turbine collision-caused mortality for these species.
- Remove all proposed turbines and other infrastructure from Bear River Ridge, though we note that this would not alone alleviate this concern.

American Bird Conservancy supports thoughtfully planned wind energy projects that incorporate adequate protections for birds. We need wind energy to combat climate change, which will have many detrimental effects to wildlife, but this must be developed in a way that does not cause new environmental problems, considered here specifically for bird populations.

To the contrary, the Humboldt Wind project proposal demonstrates a lack of caution, or openness to expert opinion, resulting in a plan that is currently unacceptable. To approve this project would be to ignore precedent and best practices, and put too many bird species, including federally Threatened and other protected species, at unnecessary risk. That is why ABC opposes this project, and urges the Planning Commission to reject this project until a more acceptable proposal can be developed.

Sincerely,



Joel Merriman,
Director, Bird-Smart Wind Energy Campaign
American Bird Conservancy
<https://abcbirds.org/program/wind-energy-and-birds/>

29 November 2019

Humboldt County Board of Supervisors
825 5th Street, Room 111
Eureka, CA 95501

23
RECEIVED
DEC 09 2019
BOARD OF SUPERVISORS

Re: Humboldt County Wind Energy Project

Dear Sirs and Madams:

There are far more reasons to oppose this project than ever to consider approving it. Above all, it would be an assault against the environment far more detrimental than any supposed benefits that it could provide. It would destroy the best that Humboldt County has to offer in the way of a carbon sink, an increasingly rare coastal prairie which is the most biodiverse grassland in North America, an area unmatched as home or respite for local and migratory birds, a flyway for the endangered marbled murrelet and numerous raptors including bald and golden eagles, and a place where several species of bats occur, that also are prone to collision with wind turbines. This area is designated as Class Four, by the California Department of Fish and Wildlife and therefore unsuitable to wind development for these reasons and more.

Wind turbines have been also shown to be injurious to humans who have to live near them. In fact, they are being actively decommissioned in Germany where they were widespread due to these health issues and the fact that they are not a reliable source of energy because blowing wind is not a constant at all. Finally, these turbines would be an eyesore for many miles around. These proposed turbines are not even state of the art. They are already outmoded before they would be put into place while despoiling so much habitat for our wildlife and local citizens. This is all in addition to the fact that their installation would be a desecration of a sacred Wiyot place.

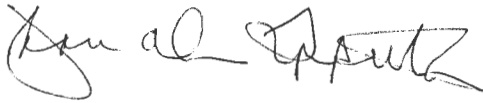
If we are concerned about atmospheric carbon in the atmosphere resulting in global warming, we should be aware of the importance of carbon sinks in the carbon cycle. Destruction of the coastal prairie will release the carbon that has been sequestered therein as will clearcutting of the forest. Furthermore, it will destroy an environment that is drawing in atmospheric carbon and giving off oxygen. Given that the forests of the Amazon Basin, central Africa, Australia and Indonesia have been on fire, that Ecuador has recently given the go ahead to drill for gas and oil in the Amazon rainforest, and that much of Alberta's boreal forest has given way to tar sands development. We are in a unique position here in the Pacific Northwest to protect temperate rainforest and coastal prairie that can still act as one of the few remaining carbon sinks and keep carbon dioxide out of the atmosphere.

Making the cement for the turbines will release carbon into the atmosphere as will all the comings and goings of the equipment to transport, install, and maintain the turbines, never mind their manufacture in the first place. Do we want to make new frontage roads around 101 overpasses too low to allow passage of the transport of these gargantuan devices, the additional cutting of forest to provide for the 23 miles transmission lines, the increase of fire risk to our forests, and widening of the roads up onto the ridges with the risk of erosion adding silt to the Eel and Bear Rivers, and remembering too that this is the most seismically active area in the lower 48 states?

I have only laid out a few of the problems associated with the installation of this project. I would like to add that this project would not necessarily even provide power for Humboldt County because it will feed into the larger grid and could very likely go elsewhere. But wherever it would go, providing only about 1/3 of one percent of California's energy needs does not justify the environmental and psychic destruction that this project would entail. It would be far easier to curtail that much energy consumption. Please say no to this project and thereby respect and retain all of the biological, recreational, and spiritual value of this special place instead of handing it over to be utilized for corporate gain.

Thank you for your time and consideration of this important matter.

Respectfully yours,

A handwritten signature in black ink, appearing to read "Joan Aline Tippetts". The signature is fluid and cursive, with the first name "Joan" being the most prominent.

Joan Aline Tippetts

1827 A Street
Eureka, CA 95501

RECEIVED
DEC 09 2019
BOARD OF SUPERVISORS

1 December 2019

Kathy Hayes, Clerk of the Board of Supervisors
County of Humboldt, Eureka, CA

TERRA-GEN WIND PROJECT - Public Hearing - 16 December 2019
Five questions for each member of the Humboldt County Board of Supervisors:

1.
Is Humboldt County not presently doing its share of combating climate change by growing and sustaining vast forests?
2.
How can you justify clear-cutting a 25 mile swath of CO2-capturing woodlands?
3.
Given recent catastrophic fires caused by high winds and singular failures of infrastructure, how is it that you could think it reasonable to install a highly complicated industrial project in an extremely fire vulnerable location where winds are high, regular and dangerous?
4.
Terra-Gen has said that all precautions have been taken to prevent possibilities of its wind turbines causing fires, but is it not known now by everyone that it takes only one small industrial failure or mistake - PGE's little sparks, for example - to create tragedy - tragedy of enormous scale and suffering?
5.
Given the necessity of reducing CO2 emissions, do you believe that Terra-Gen's proposal is truly the only and best effort possible for Humboldt County to endorse?

Respectfully,

Jere Bob & Carol Bowden
866 Arlington Avenue / P.O. Box 1244 / Ferndale, CA 95536
707-786-4434

RECEIVED
DEC 09 2019
BOARD OF SUPERVISORS

December 7, 2019

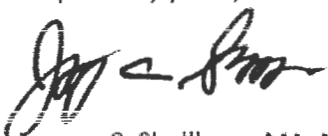
Humboldt County Board of Supervisors
825 5th Street, Room 111
Eureka, CA 95501

Supervisors,

I am writing to register my strong objections to the proposed large wind energy generation project on Bear River Ridge (Tsakiyuwit). Members of the Wiyot Tribe can speak with much more authority about the inappropriateness of such a construction on a sacred site. I can only offer my unconditional support to the keepers of this land and speak as a native Californian, twenty year resident of Humboldt County, and citizen of the earth.

We need to have clean, renewable energy to continue living on our delicate, damaged planet, but current mega windfarm technology is not the answer to this problem. These windfarms kill wildlife, damage the environment in ways not yet totally understood, and yes, they are eyesores. If they are the best that humanity can do there are better sites for them. I think there are much better alternatives that other, more qualified individuals can enumerate much more articulately than I. This technology fits best with our overly financialized economy, requiring large capital investments and good short term returns for investors. There is nothing wrong with return on capital and finance. Being nearly retired from a forty year career in public education, I will be dependent upon the return on the modest capital that I have managed to accumulate, but I'm completely willing to receive a few less basis points on my investments in order to leave a habitable earth for the next generations.

Respectfully yours,



Jeremy C. Shellhase, MA, MBA
Humboldt State University Librarian
2149 Haeger Avenue
Arcata, CA 95521

RECEIVED
DEC 09 2019
BOARD OF SUPERVISORS

Date 2019-12-08 20:00

To: Humboldt Co. Board of Supervisors

I oppose the Terra-Gen Wind tower project. The environmental damage involved w/ constructing these huge towers is unacceptable.

Although it has been removed from the EIR, the suggestion of using pesticides to reduce bird mortality shows the lack of respect for our local flora & fauna. Our beautiful Redwood forests are the best carbon sink in the world. Respect the wishes of the Wiyot tribe; don't permanently destroy their sacred site.

As a 3rd generation lifelong Humboldt Co. resident, I urge you to reject this proposal. We need clean energy. but this project is not the way to go.

Respectfully,

Lynn Carrico
Eureka, CA





27
RECEIVED

DEC 09 2008

BOARD OF SUPERVISORS

to the Wind Project Proposal Manager:

Do not inflict us with your greedy, environmentally destroying madness. This will not benefit Humboldt. It will hurt our Native sacred lands and harm our animals (humans included)

Get OUT of our county. Don't try to take your money grubbing schemes elsewhere, either. You need to rethink your strategy. It's not about the money you can make. Its about helping the planet, and there are better solutions for us All.

Humboldt has plenty of Talented and Caring folks here that can manage our own future well being, and create a more beneficial outcome for OUR community.

Lez Waker

Sweet Home Realty

Humboldt Rural Land Specialist

and advocate for our people's right to live a nice environment.

RECEIVED

DEC 09 2019

BOARD OF SUPERVISORS

Dear Supervisors:

I lived in Northern California for 40ish years and in the Humboldt area for 8 or so years. I have been a librarian and an instructor and an archivist for many years, coming to Humboldt to work at the public library and winding up at CR and the Humboldt County Historical society while I was doing online reference work and teaching through SRJC.

I do not like the idea of harming wildlife or disrespecting Native lands. I do support alternative energy if they can be done safely and with respect.

I live, now, in North Carolina, so I won't be able to make it to the hearings or the protests. However, I still have great respect and fondness for the wild lands of California. Please preserve them for the future, and decline the "opportunity" to damage Humboldt county.

Sarah Haman

RECEIVED

Humboldt County Board of Supervisors
825 5th Street, Room 111
Eureka, CA 95501

DEC 09 2019

To Humboldt Supervisors:

BOARD OF SUPERVISORS
As dedicated environmentalists and long time Humboldt County residents, we want to say that we believe the proposed wind energy project by Terra Gen is a solid project that is good for the environment, good for the county, and a step we need to take to move toward mitigating the affects of the climate crisis. It is not perfect. There is no perfect project. But it is good.

It looks like the technology has improved to the point this can be a successful project. That the environmental awareness has improved to the point that the DEIR has taken into consideration everything that we understand can be looked into. That mitigation may not be possible in all aspects, but that compromise is possible.

It is a project that is forward looking for the future. We believe we cannot afford not to consider it for the same reason that you, as our Supervisors, are working proactively to prepare for rising sea level. And, also for the reason that if we are ultimately able to isolate our local electrical grid it would be an important part of that equation.

As far as we can tell there is NO project that could meet the high standards many seem to hold. No project, NO businesses/organizations, despite their intentions or mission, will not come under the microscope of those who want nothing to change. No business large enough to accomplish a major project that won't be pegged as 'their only reason is to exploit us and make themselves rich'. Not if it changes the skyline, sends any of its product out of the area or impacts the comfort zone of what is familiar or in ways we know impact the environment and the community no matter how small relative to the benefits. We don't know how a community that was in the forefront of environmental awareness lost the Think Globally aspect of Act Locally.

That said, it is important to consider extra effort to prevent fire danger, from the towers and any new transmission lines, as fire danger is likely to get more extreme in the years ahead. Installing new transmission lines likely guarantees these measures. Perhaps the 4 acre concrete pads could be buried under a foot or two of soil, leaving room for carbon sequestering native plants to grow. And, of course, it would lighten tensions all around if it could be limited to Monument, but even if not, we believe it is worth doing.

We feel this project is well thought out, that Terra-gen has shown willingness to mitigate in any area they can and work with the community if the community is willing to work with them. The unique potential of these windy locations is an asset we can make good use of for Humboldt County and the world. It may be a drop in the bucket, but these drops can add up only if we make them happen in the first place.

We fear, as is often the case, you will hear mostly from those with complaints and fears. We hope you will also get many comments of support. We personally believe the biggest issue facing us here and now is the climate and our effect on it. Weather patterns are changing now. Wildlife and habitats are impacted now. Please know support for this wind project is out there, and that we encourage you to approve this project for the future and good of Humboldt County, California, and the world.

Sincerely,



Dennis & Dorothy H Simmons
Dinsmore, Ca 95526

PUBLIC HEARING SCHEDULED FOR DECEMBER 16, 2019

- 1 • MISUSE/ENLARGEMENT OF THE COUNTY ROAD KNOWN AS MONUMENT ROAD THAT
- 2 RUNS THROUGH MY 2501 MONUMENT RD PROPERTY BY EMPLOYEES, THEIR
- 3 CONTRACTORS, EQUIPMENT, VENDORS OR GUESTS OF THE PROJECT
- 4 • FIRE DESTRUCTION DUE TO HIGH VOLTAGE LINES RUNNING THROUGH THE PROJECT
- 5 SITE AND TRANSMISSION LINES CONTINUING TO BRIDGEVILLE
- 6 • ELECTRICAL POLLUTION
- 7 • ANIMAL LOSS DUE TO INCREASED PREDATORS DISPLACED BY TRADITIONAL HABITAT
- 8 DESTRUCTION
- 9 • DAMAGE RESULTING FROM AIRCRAFT SPRAYING AFTER IMPACT
- 10 • DIMINISHED QUALITY OF LIFE
- 11 • HEALTH CONCERNS FOR MYSELF, MY GUESTS, AND ANY FUTURE RESIDENTS CAUSED BY
- 12 ○ AIR QUALITY
- 13 ○ SHADOW FLICKER (STROBE LIGHT EFFECT)
- 14 ○ SHOWDOWING
- 15 ○ NIGHT LIGHTING
- 16 ○ VIBRATION
- 17 ○ AUDIBLE/NON AUDIBLE (LOW FREQUENCY) NOISE
- 18 ○ ELECTRICAL POLLUTION

19 I AM INCLUDING THIS POINT FOR MY FELLOW HUMBOLDT COUNTY RESIDENTS THAT MAY NOT BE
20 AWARE OF THIS PROCESS. LOSS OF REVENUE DUE TO ASTHETIC CHANGE IN THE AMBINCE OF
21 HUMBOLDT COUNTY.

22

1 AS I RECEIVED A PUBLIC NOTICE, HUMBOLDT COUNTY BOARD OF SUPERVISORS NOTICE OF PUBLIC
2 HEARING TO CONSIDER THE ITEM BELOW (NO DATE) ADVISING THAT NO FUTURE LEGAL ACTION MAY
3 BE TAKEN IN REGARDS TO THIS PROJECT UNLESS FUTURE ANTICIPATED COMPLAINTS ARE RECORDED
4 INTO THE RECORD OF THESE MEETINGS I AM SUBMITTING MY COMMENTS TO ADDRESS POTENTIAL
5 ISSUES THAT MAY RESULT IN MY PROPERTY BEING UNINHABITABLE, DAMAGED OR RESULT IN LOSS OF
6 VALUE DUE TO OUR COUNTY EMPLOYEES AND ELECTED SUPERVISORS ALLOWING THE CONSTRUCTION
7 OF THIS PROJECT IDENTIFIED AS HUMBOLDT WIND LLC, CONDITIONAL USE PERMIT AND SPECIAL
8 PERMIT APPLICATION NUMBER 13999 (FILED 10/5/2018) CASE NUMBER PLN-13999-CUP IN ITS
9 CURRENT PLAN. I BELIEVE THE ENVIRONMENTAL IMPACT REPORT TO BE INCOMPLETE AND
10 INADEQUATE FOR A PROJECT OF THIS SIZE AND SCOPE.

11 THIS STATEMENT IS BEING MADE FOR MY PROPERTIES LOCATED AT 1172 MONUMENT ROAD, RIO DELL,
12 CA AND 2501 MONUMENT ROAD, RIO DELL, CA AND ANY OTHER PROPERTY OWNED BY ME, MY
13 HUSBAND, MY HEIRS OR ANY OTHER RESIDENTS OF HUMBOLDT COUNTY.

14 I HAVE SERIOUS CONCERNS ABOUT DISTURBING THE SEISMICALLY ACTIVE GROUND IN THE GENERAL
15 AREA DESIGNATED BY THIS PROJECT. I CANNOT BE MORE SPECIFIC ON LOCATION AS THE COUNTY HAS
16 NOT MANDATED THAT INDIVIDUAL TURBINE LOCATIONS BE IDENTIFIED AND RELATED ENGINEERING
17 COMPLETED FOR ENVIRONMENTAL REVIEW.

- 18 • GROUND WATER QUALITY DUE TO SITE PREPARATION, DRILLING AND ONGOING
19 OPERATIONS
- 20 • FIRE DESTRUCTION FROM FALLING STRUCTURES, FAILING EQUIPMENT AND ONGOING
21 OPERATIONS
- 22 • PROPERTY VALUE REDUCTION

December 6, 2019

RECEIVED
DEC 06 2019
BOARD OF SUPERVISORS

Humboldt County Board of Supervisors
Kathy Hayes, Clerk
County of Humboldt
825 Fifth Street, Room 111
Eureka, CA 95501

SUBJECT: Humboldt Wind LLC, Humboldt Wind Energy Project

We are the owners of a 200-acre-ranch in the upper watershed of Bear Creek, southwest of Stafford. The property was homesteaded in the late 1800's and has been in family ownership since the 1950's. The property is used for livestock grazing, timber production, and family recreation. On the property, there is one ranch house and three barns. We are an inholding and are completely surrounded by Humboldt Redwood Company (HRC) timberlands. As a consequence, Terra-Gen is proposing wind turbines on two sides of our Harrow Prairie Ranch. Access to our property is by way of Jordan Road. (Locally known as Demo Left)

Although the exact siting of wind turbines has not been disclosed, FEIR maps indicate there will be 27 wind turbines placed on adjacent HRC timberlands. Many of these wind turbines will be in our view shed, but there are two wind turbines proposed on HRC timberland on a ridge to the northwest of our ranch that are of great concern to us. One is within 1,400 feet of our ranch house and 1,000 feet of our water source for both domestic and livestock uses. Both wind turbines are much too close to our house and are adjacent to our property line.

We have had "knee cap" discussions with the project proponent and his staff on our property during which we laid out our concerns regarding proposed placement of wind turbines and their impact on our ranch. We pointed out the proposed location of wind turbines with respect to our ranch house, water source and surrounding view shed. We have submitted comment letters (# 122 and #183) to planning staff pointing out inadequacies in the DEIR and FEIR for the project as it relates to our ranch. We also presented documentation and made oral comments to the Planning Commission at the November 14th hearing. The FEIR included our comment regarding view shed impacts with 107 Postcard commenters. I would venture to say that very few or none of the Postcard commenters set foot on Harrow Prairie.

The DEIR and FEIR documents describe impacts to our property as Insignificant or Significant and Unavoidable. We beg to differ. Following are our comments regarding impacts listed in the DEIR and FEIR:

1. **Impact 3.7: Geology** – The DEIR/FEIR is inadequate in providing relevant information about the historic geological hazards within the project area; specifically, as it is depicted in the headwaters of Jordan Creek. In the winter of 1964, a landslide occurred in Jordan Creek which took out a portion of HRC Demo Left just east of Mile Marker 5 and the entrance to our ranch. Furthermore, by failing to address these points, the DEIR/FEIR

fails to comply with County policy standards. Policy WR-P42: Erosion and Sediment Control Measures, Standard S-S1: Geologic Report Requirements. Site specific reports addressing geologic hazards and geologic conditions shall be required as part of the review of discretionary development and ministerial permits.

Jordan, Greenlaw and Bear Creeks are susceptible to catastrophic debris flows from accelerated runoff in their headwaters. Why are you even considering placing 600-foot wind turbines and the equivalent of a four-lane highway on a ridge with steep unstable slopes overlooking a redwood rain forest? As Planning Commissioner Melanie McCavour stated in her summary prior to voting against the Humboldt Wind Project, **“this is a good project in the wrong location”**.

2. **Impact 3.7: Noise** – The DEIR/FEIR does not accurately address noise levels for our ranch house, Residence R-5. The report states that the site of the study was selected to represent the noise environment at the adjacent residence. The survey for current noise levels at Residence R-5 was conducted along Jordan Road which is at least 1/4 mile and a 500- foot elevation difference from that of the residence. This study does not reflect the current noise levels at the residence. The project proponent could have easily requested our permission to conduct the study adjacent to our residence to get an accurate report. The noise analysis study for Residence R-5 is not accurate and, therefore, unusable.
3. **Impact 3.2-1: Visual** – The DEIR/FEIR states that the project’s impact on visual resources from the introduction of tall vertical structures would be Significant. A number of mitigation measures are listed; however, placing wind turbines 1,400 feet or anything close to that distance from a residence is impossible to mitigate; therefore, the wind turbines should be removed from the project.
4. **Impact 3.2-3: New Source of Substantiated Light or Glare** – The DEIR/FEIR states the impact would be Significant and Unavoidable. Since our ranch is in a commercial aviation flight path, it is inevitable that FAA will require two medium-intensity flashing white lights operating during the day and twilight and two flashing red beacons operating at night with 20-40 flashes per minute on each wind turbine. This is unacceptable and makes our home unlivable.
5. **Impact 3.2-4: Shadow Flicker Effects** – Stated response is Less than Significant. That may be true in Scotia which is 3-1/2 miles away but not true 1,400 feet from our ranch house. Staff has not mitigated this impact.
6. **Impact 3.10-1: Construction-Related Drainage and Water Quality Effects** – Staff response to our letter #183 was inadequate. Our concern for the aquifer located 1,000 feet from the closest proposed wind turbine construction pad is not only during the construction period but for ongoing effects from ground vibrations occurring once the wind turbines are in place and operating. These vibrations could affect the aquifer that supplies water to our residence and the majority of water for livestock on the ranch. If this water supply is destroyed, it can never be replaced. Further analysis is needed.

7. Standard E-S3: Wind Generating Facilities

C. 2. States *“That the use of the property for such purposes will not result in material damage or prejudice to other property in the vicinity. Placing wind turbines within 1,400 feet of our residence and immediately adjacent to our property line is showing prejudice for other property in the vicinity. Experts recommend wind turbine setback from a residence to be at least ½ mile minimum to over three miles. Operators are told to stay at least 350 feet from an operating wine turbine unless absolutely necessary. One company even requires its employees to stay 1,300 feet from operating wind turbines (See attached article on Safe Setbacks for wind turbines from homes). The height of wind turbines in this project are equivalent to a 46-story building. For access to our ranch we will have to travel extremely close or under two wind turbines. **This is an unsafe condition.** This project will make our residence unlivable due to the significant impact of placing wind turbines within such close proximity of our residence and property. Impacts include but are not limited to visual, noise, light or glare, shadow flicker effects, geology, and construction-related drainage and water quality effects. **It is impossible to mitigate the impacts to our property with the wind turbine layout as shown on the DEIR/FEIR.***

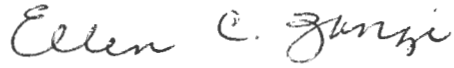
During the summer of 2018, the project proponent offered to send a staff member to take photographs of the landscape and view shed around our ranch house to super impose scaled images of wind turbines similar to those produced for the Town of Scotia. We followed up with several requests by email and phone messages as we were concerned the wind turbines would be just too close to our home but no one came to do the images. We were told that arrangements would be made for us to visit the Pattern Wind Farm on Hatched Ridge, Shasta County. No arrangements were made. No wind turbines were proposed or placed anywhere near a house in the Hatched Ridge project.

We were able to obtain a close up video and audio of the wind turbines in full operation at Hatched Ridge. Even though the wind turbines on Hatched Ridge were only 350 feet tall, it did make us fully realize that 600-foot wind turbines near our property was unacceptable and would make our house unlivable.

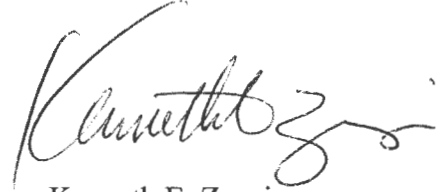
This project does not have an approved DEIR/FEIR as it was rejected by the Planning Commission. If the Board of Supervisors approve this project with the current placement of wind turbines, we consider it to be a “taking” of the livability, use, and enjoyment of our property by a public agency for the benefit of a private corporation.

Our preferred alternative remains NO PROJECT. Terra-Gen has volunteered to change the wind turbine placement from 1,200 feet to 1,400 feet from our house. This is unacceptable. If you decide to approve this project and disregard the consequential damage to our property, we respectfully request that you condition the Terra-Gen project to remove the two wind turbines closest to our house or require that the proponent pay financial compensation for the loss of value to our ranch.

Thank you for the opportunity to put our comments into the record. We have provided 9 copies for placement in the Board's hearing packet.



Ellen C. Zanzi,



Kenneth E. Zanzi

Trustees of the Kenneth E. and Ellen C. Zanzi Trust

Safe setbacks: How far should wind turbines be from homes?

kirbymtn.blogspot.com/2008/07/safe-setbacks-how-far-should-wind.html

Let's start with what one manufacturer considers to be safe for its workers. The safety regulations for the Vestas V90, with a 300-ft rotor span and a total height of 410 feet, tell operators and technicians to stay 1,300 feet from an operating turbine -- over 3 times its total height -- unless absolutely necessary.

That already is a much greater distance than many regulations currently require as a minimum distance between wind turbines and homes, and it is concerned only with safety, not with noise, shadow flicker, or visual intrusion.

In February 2008, a 10-year-old Vestas turbine with a total height of less than 200 feet broke apart in a storm. Large pieces of the blades flew as far as 500 meters (1,640 feet) -- more than 8 times its total height.

The Fuhrländer turbine planned for Barrington, R.I., is 328 feet tall with a rotor diameter of 77 meters, or just over 250 feet (sweeping more than an acre of vertical air space). According to one news report, the manufacturer recommends a setback of 1,500 feet -- over 4.5 times the total height. In Wisconsin, where towns can regulate utility zoning for health and safety concerns, ordinances generally specify a setback of one-half mile (2,640 ft) to residences and workplaces.

But that may just be enough to protect the turbines from each other, not to adequately protect the peace and health of neighbors. When part of an array, turbines should be at least 10 rotor diameters apart to avoid turbulence from each other. In the case of the proposed 77-meter rotor span in Barrington, that would be 770 meters, or 2,525 feet. For the Gamesa G87, that's 2,850 feet; for the Vestas V90, 2,950 feet -- well over half a mile.

Since the human ear (not to mention the sensory systems of other animals or the internal organs of bats, which, it is now emerging, are crushed by the air pressure) is more sensitive than a giant industrial machine, doubling that would be a reasonable precaution (at least for the human neighbors -- it still doesn't help wildlife).

Jane and Julian Davis, whose home is 930 m (3,050 ft) from the Deeping St. Nicholas wind energy facility in England, were forced by the noise to rent another home in which to sleep. In July 2008 they were granted a 14% council tax reduction in recognition of their loss. It appears in this case that the combination of several turbines creates a manifold greater disturbance.

Sound experts Rick James and George Kamperman recommend a minimum 1 km (3,280 ft) distance in rural areas. James himself suggests that 2 km is better between turbines and homes, and Kamperman proposes 2-3 km as a minimum. German consultant Retexo-RISP also has suggested that "buildings, particularly housing, should not be nearer than 2 km to the windfarm"; and that was written when turbines were half the size of today's models.

Both the French Academy of Medicine and the U.K. Noise Association recommend a minimum of one mile (or 1.5 km, just under a mile) between giant wind turbines and homes. Trempealeau County in Wisconsin implemented such a setback. National Wind Watch likewise advocates a minimum one-mile setback.

Dr. Michael Nissenbaum and colleagues surveyed residents near wind turbines in Maine and found significantly worse sleep and mental health among those living 1.4 km or closer than those living farther from the machines.

Dr. Nina Pierpont, the preeminent expert on "wind turbine syndrome", recommends 1.25 miles (2 km). That is the minimum the Davises insist on as safe as well. In France, Marjolaine Villey-Migraine concluded that the minimum should be 5 km (3 miles). In June 2010, Ontario's environment ministry proposed requirements that offshore wind turbines be at least 5 km from the shoreline.

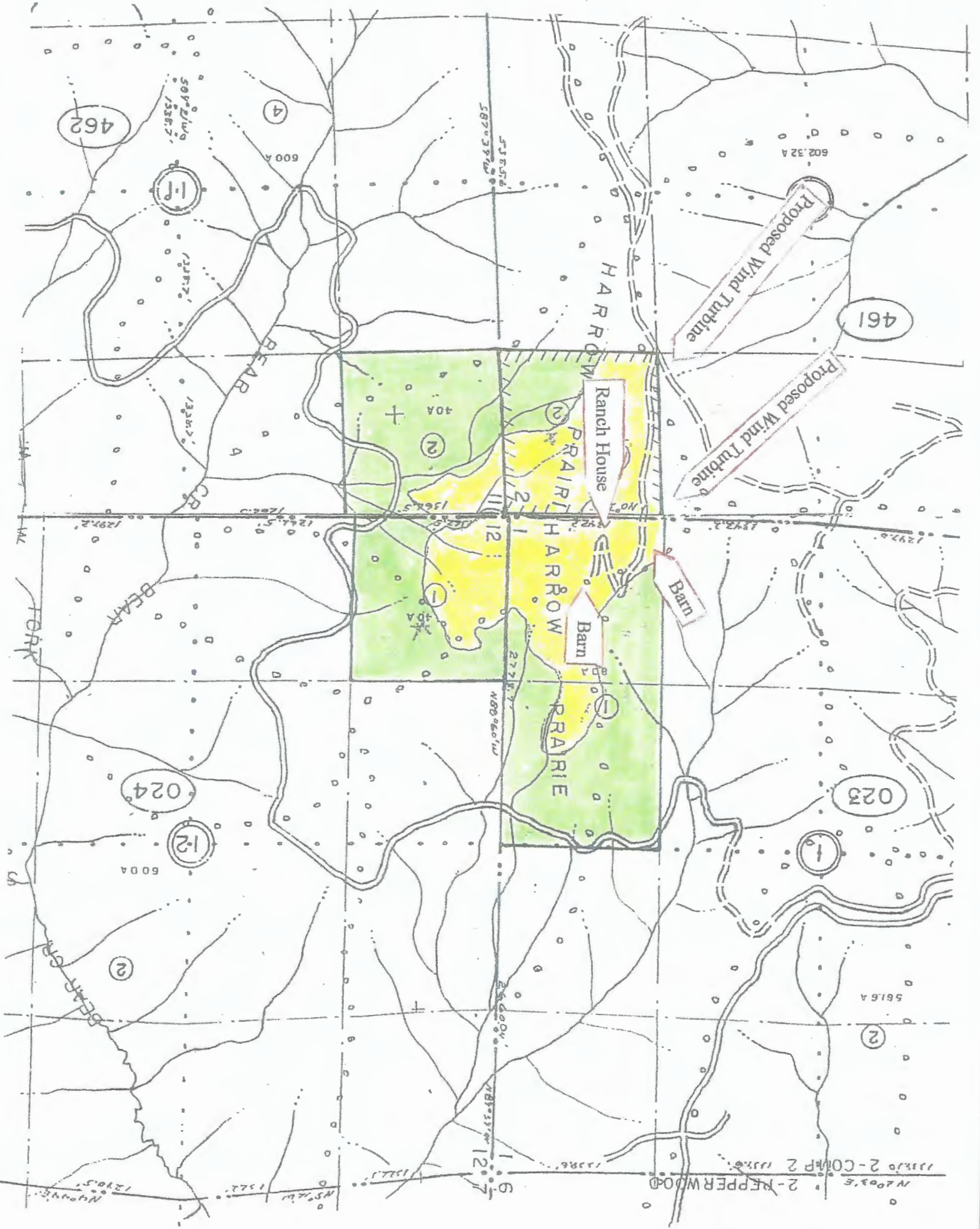
To protect human health, these distances are simply crude ways to minimize noise disturbance, especially at night, when atmospheric conditions often make wind turbine noise worse and carry it farther even as there is a greater expectation of (and need for) quiet. The World Health Organization says that the noise level inside a bedroom at night should be no greater than 30 dB(A) or 50 dB(C) (the latter measure includes more of the low-frequency spectrum of noise, which is felt as much as, or even more than, heard). A court case in Great Britain resulted in the "Den Brook" amplitude modulation conditions, which define and limit pulsating noise, which is especially intrusive, as any change, outside the dwelling, of >3 dB in the LAeq,125ms (125-millisecond averaged sound level) in any 2-second period at least 5 times in any minute with LAeq,1min (1-minute averaged sound level) ≥ 28 dB and such excess occurring within at least 6 minutes in any hour.

Updates:

Since 2008, Queensland, Australia, has limited night-time noise indoors to 30 dB(A) (1-hour average), with limits of 35 dB(A) no more than 10% of the time and 40 dB(A) 1%. Respective daytime limits are 5 dB(A) above the night-time limits. They also specify that existing continuous 90% sound levels should not be increased and that variable noise averages should not increase existing sound levels more than 5 dB(A) in the same time period.

Scottish Planning Policy "recommends" a distance of 2 km between wind energy developments and the edge of cities, towns, and villages to reduce visual impact. Since August 2011, Victoria, Australia, has allowed wind turbines within 2 km of a home only with the homeowner's written consent. In April 2013, the Québec, Canada, government approved a 2-km setback from homes in the municipalities of Haut-Saint-Laurent, Montérégie. Citizens groups in Germany suggest a minimum distance of 10 times the total turbine height to residential areas (see this story). Since July 2013, the state of Saxony has required 1 km between wind turbines and residential areas.

In February 2014, Newport, North Carolina, established a 5,000-ft (1.5-km) setback from property lines, a 35-dB limit for noise at the property lines, and a total height limit of 275 feet. The latter two conditions were also established by Carteret County, North Carolina, in February 2014, as well as a 1-mile setback from property lines.



RECEIVED

DEC 09 2019

December 9, 2019

Humboldt County Board of Supervisors

Clerk
Board of Supervisors

Thank you for the opportunity to comment on the proposed Terra-Gen Humboldt Wind Energy Project to elected officials. For those of you who do not know me, I am a retired University lecturer in Environmental Geology and Environmental Ethics as well as a published author of science reference books. I support green energy but I also know that ignoring the impacts of human disregard for biodiversity is why we have both a climate and an extinction crisis. Holding onto habitat in the current crisis is globally recognized as of supreme importance to both wildlife and humans over the coming century.

Specifically, this project has major problems: The EIR is flawed and should have been re-circulated because too much changed between the DEIR and the FEIR including: up to 1.5 miles of route changes; the crossing of the Eel & Van Duzen Rivers; Gen-Tie alignment, ownership of parcels on that line; and many other crucial details. These changes make it less possible to tell what they intend to do if they are allowed to begin under the current documentation.

The Planning Department as lead agency first writes one thing - then another - or perhaps they don't say anything at all - for example not once have they provided any simulation of what these will look like lit at night or in fog - despite videos of both being available on YouTube from other wind farms. They dismiss the effect of shadow flicker by stating that windows are a small part of the walls of a room so the flicker could be ignored. Outdoor work and recreation was not considered. (Impact 3.2-4 Shadow Flicker) Some people are affected by flashing lights leading to seizures. Low noise that never stops has been documented as leading to human health issues - and wildlife is even more sensitive to noise than are humans. Both flicker and noise are well-documented around the world near wind farms - neither was mentioned in the EIR, so it is impossible to understand the health impacts of this project on health, for vision and sound, for humans and many other species.

The EIR is missing 37 legally required mitigation and/or coordination plans. Without these plans, it is impossible for anyone to understand the impacts of the project on the environment and their health.

It is well known that all wind turbines have performance problems, can catch on fire, wear down more quickly when placed on ridgelines, and that LLC companies dissolve prior to removing broken down turbines and/or decommissioning. A drive through Palm Springs, Altamont or Big Island Hawaii shows broken turbines and blight. Even the wind-energy industry frowns upon ridge sited turbines as irresponsible. Terra-Gen could provide data on their Alta projects in Kern County to show the operations and maintenance issues involved with ridge-sited turbines, and explain why they are ignoring industry guidelines for proper turbine siting. Or they could talk about their fires:

- 2019-<https://www.10news.com/news/kern-county-fire-working-to-put-out-wind-turbine-fire-in-mojave>
- 2019-<http://www.windaction.org/posts/49927-palm-springs-windmill-catches-fire-off-i-10-then-reported-spinning-out-of-control#.Xe4DxZNKhr8>
- 2016-<http://www.windaction.org/posts/45384-kern-county-wind-turbine-fire#.Xe4DkpNKh8>
- 2012-<https://www.kcet.org/define/wind-turbine-starts-fire-near-tehachapi>

Those fires are a big reason why the industry experts themselves say not to build wind turbines on ridgelines. There is no way to fight these fires, they just have to burn out. Like Paradise.

We ignore experts - and industry standards at our peril. Little decommissioning information is provided in the EIR. Industry-wide blades last 10 years, that's 423 blades that will have to be shipped down 101 - in both directions, in and out. But this document never says they will take out the dead blades. Northbound use of the freeway is never mentioned - only parts of the southbound route. Every single blade transport is accompanied by many smaller vehicles, all with flashing lights as well as work lighting for the hard turns - watch some YouTubes about Wind Turbine Transport and be prepared to be shocked. According to TerraGen spokes people and industry reports, the blades end up as chopped carbon fiber waste that will have to be trucked to a landfill. Humboldt County doesn't even have a landfill. They never mentioned where the blade waste is, if it's going, or accounted for CO2 to clean up.

Regular oil changes and constant maintenance of turbines - which themselves have a lifetime not exceeding 20 years - is barely mentioned. These ridgetops would go from being a relatively quiet zone managed by HCP and Williamson Act Regulations to being an industrial energy generation zone - complete with debris, concrete, herbicides, rodenticides, little buildings, trash, and so on. Do you want this for Humboldt County? Is it fair to residents to ignore peer-reviewed science and industry standards?

Most of us in science are concerned about global warming. But most scientists also know that we won't solve global warming by destroying the last old growth redwood groves on Earth. This project adjoins numerous natural and dedicated areas. AECOM writes "**Changes in moisture and temperature regimes will likely affect the distribution and health of coastal redwoods** in a way that is detrimental to murrelets that nest in the protected **remnants** of old-growth redwood forest in Humboldt County." (Appendix B FEIR, pg 25)

Besides that, the EIR states the applicant intends to violate existing laws agreements, general plan and laws including

- The Humboldt Redwoods Habitat Conservation Plan (no winter work and setbacks for wildlife, 200 foot wide roads, clear-cuts, concrete in the hills, generation of electrical to be sold offsite, and so on.
- The California State Fully Protected Species Act - species for which no permits can be issued.
- California Coastal Commission regulations.
- State and Federal Endangered Species Act regulations which oppose deliberate killing of endangered, threatened and special concern species of plants and animals.
- Water agreements and Williamson Act rules as well as the Agricultural Zoning Ordinance, and Timber Harvest Plans (by not having one).
- The Humboldt County Energy Element Background Technical Report for the Humboldt County General Plan confirms PG&E's stated desire for no increase in export to the Cottonwood area which already has a surplus of power. Thus this project also conflicts with Technical Studies prepared for the County at taxpayer expense.
- The Humboldt County General Plan and Zoning Ordinance. While down wind effects are required by the General Plan (Standard E-S3, Item B) no data was provided in the DEIR (page 3.2-34). However, 6 months later, Appendix B FEIR, page 25 reads "Changes in moisture and temperature regimes will likely affect the distribution and health of coastal redwoods in a way that is detrimental to murrelets that nest in the protected remnants of old-growth redwood forest in Humboldt County." By their own statement, the health of the redwoods is threatened by this project and detrimental to murrelets.
- Headwaters Forest Agreement. Residents of this county participated in a lengthy and costly process to save part of murrelet habitat. About \$500 million dollars have been spent on this bird and the agreements between parties.

These are just a few examples of how rules and agreements that were made between stakeholders, or between government and citizens, are just being overturned - in a hurry - to favor a corporation whose business model includes massive Federal Taxpayer Subsidies.

A Statement of Overriding Considerations has to be based on science contained and described in the EIR, but this EIR does not support the assertions. The CUP is written to benefit the applicant more than Humboldt County.

There are only two local economic benefits offered in exchange for over two dozen unmitigated environmental impacts. In any other county one or two of these would be enough to stop the project dead in its tracks because they leaves the county open to litigation. Two dozen makes it nearly impossible to defend because the two local benefits to all citizens - not just a couple of big landowners - are:

- (1) increased local spending from 300 temporary jobs (over a trivial 1.5 years) and 15 permanent specialized workers who would arrive after construction; and
- (2) \$1.6 million a year in local tax revenue compared to a county budget of \$412 million in 2018 - or \$12 per resident per year. That is so small to be insignificant compared to the potential loss of redwoods, wildlife, tourism, and the environment.

Much is made of how they would be the second largest taxpayer in the county after PG&E - but that is incorrect. The taxpayers in aggregate pay the most taxes to the county; followed by PG&E and any other entities. That this project only benefits a couple of taxpayers does not entitle it to special consideration, the right to break laws and agreements, and/or to function outside the law.

The Humboldt County Planning Department, speaking on behalf of the County, claims that this project is the only way to meet self-imposed RCEA goals, but the FEIR also claims offshore wind - on which the state, the county and agencies have worked together -is "infeasible." In contrast the director of the RCEA said that offshore wind makes more energy for less disruption and environmental impact than land farms.

Terrestrial disruption is a good word for it because this DEIR/FEIR document and all its accompanying paperwork is completely contradictory to the point that were it to be approved, the applicant could do just about anything - because they have described their plans in so many mutually exclusive ways that they could do a lot more than anyone else is allowed to do. Why are they allowed to break laws? What makes this so special? The tiny bit of taxes to be received is not sufficient to offset the massive environmental impacts and this is not news. Important agencies and non-profits have been putting this in writing since scoping in 2017. This is all published as Appendix A of the DEIR, you can read it yourself.

A few examples of contradictions and fast-and-loose-fact-slinging bother me about this project - which I brought up in DEIR comments - and which were ignored in the Master and Individual Responses include: They stated they're bringing in 300 specialized workers. Where are they going to live? There aren't 300 empty apartments or houses. There's no RV park with legal hookups and 300 spaces. They're only going to be here a year and a half - so the document says "no impact." Then a few pages later in the DEIR, they claim all 300 specialized workers will be hired through the local labor pool, so again, 'no impact'. Where are you going to get 300 workers out of our labor pool for high-wire, specialized work on a moment's notice? Their insurance company would have a fit if they used unqualified labor. They can't have it both ways, but yet they do. (DEIR page 3-8 & page 3-11 Section 3.1.2, "Population and Housing")

They plan a 23-mile long by 100-foot wide clear-cut with no Timber Harvest Plan, yet everyone else needs one. They don't say what will happen to all that dead timber. Will it rot and add to the CO2 or are they planning to sell it without a THP - further enriching the company? There is no answer in the document, the trees will just be "removed."

There is no environmental work worth discussing regarding the Gen-Tie corridor in the DEIR/FEIR besides that obviously you can't accurately study anything when the route changes between the two documents. Either route opens a 23-mile long fire corridor through managed timber and violates both the spirit and the law of Timber Harvest Plans throughout the area.

They plan tiny setbacks for spotted owls unsupported by science. Never mentioned is that cannabis growers have to set back a lot farther. Is a cannabis grow that much more threatening to an owl than a giant proven bird chopper that makes noise, blinks day and night and threatens their lives? Really?

Speaking of cannabis grows, this Humboldt County Planning Department is the same outfit that according to the Times-Standard and other news outlets - takes a year and a half to do the environmental work on a couple acre cannabis grow - but less time than that to do this document for a project that extends over multiple miles, through various watersheds and directly impacts the entire county for the next 30 years. This makes me wonder about the quality of the work since this project is so much bigger than the grows.

The Department is also part of the problem that got the county in a lot of hot water with the Federal Government by failing to achieve Americans With Disabilities Act goals for the 30 years that ADA has been law. Even their own building is not ADA compliant; and the handicapped spaces at the county building dump out on gravel, concrete edges and uneven pavement before the entrance. They have a lot to do to stay busy without massive mega-projects rushed to decision and the resulting lengthy lawsuits.

But for some unknown reason the Planning Department is so desperate for this project to go forward that it will say almost anything - and has - in the county responses to comment. The post-Planning Commission responses includes several statements that illustrate the lack of quality control including:

"Commenters have expressed concern that the rotating turbines could change fog patterns in a way that would negatively affect the redwood forest." (Yes they did because the EIR documents said that the fog changes would change the redwoods - they got it from the County Planning Department's own documents. Appendix B FEIR, page 25, written by AECOM, see next paragraph. But let us continue with this quote...) **"It is unlikely this wind farm will have any effect on the local temperature and humidity regimes proximate or downstream of the turbines given its location on a ridgeline, that ridgelines' orientation, and the turbines proximity to the the ocean and the resultant land and sea breeze interactions."** (Humboldt Wind Energy Project Conditional Use Permit and Special Permit Documents after 11/21/19 in 4. Responses to Comments Raised During the Public Hearing - written by Humboldt County Planning Commission).

Compare and contrast with **"Changes in moisture and temperature regimes will likely affect the distribution and health of coastal redwoods in a way that is detrimental to murrelets that nest in the protected remnants of old-growth redwood forest in Humboldt County."** (Appendix B FEIR, page 25, written by AECOM, published by the Planning Department as lead agency)

So either the air is mixed and dried - as happens at all other wind farms, according to AECOM - or this one is so special and it won't happen here, according to the Planning Department. I suspect that AECOM and the physics are correct. Changes in moisture and temperature will occur here, despite what the Planning Department responded after comment. Notice that AECOM recognizes these effects on "remnant" old-growth redwood forests, but that the plan intends to additionally fragment the forest - in the footprint and along the Gen-Tie.

Even AECOM is capable of egregious errors uncorrected by county staff, for example:

- (1) The DEIR says that pickup trucks are louder than chain saws. (*Appendix I Biological Resources... Spotted Owls, Section 5.2, page 6*) All sound calculations are thus flawed from the first assumption.
- (2) Other ambient sound levels were measured about 10 feet back from the freeway - so the whole area was labeled "loud." Away from the freeway it's not loud.

I could make a list of 25 or 30 of these - and have in my prior comments on the DEIR and to the Planning Commission. Since both are published by the County, I include by stipulation all my concerns and complaints from prior correspondence because the process has not gotten less confusing over time and my concerns were not answered in the Responses or the Master Responses to the DEIR

The inverted thinking of the lead agency never fails to astonish; reading every word of all the documents made me feel that the directive is to disbelieve my education, what I see, what I hear, and believe only in a glowing vision of anti-apocalyptically single-handedly stopping sea level rise, ending fracking in South Dakota, vanquishing oil spills in Humboldt Bay and all the other claims. The truth is this is a very small project - and the impacts identified in the EIR are too great.

It's hubris for the department on behalf of the county to state they disagree with the California Fish and Wildlife's assessment that this is a **Category 4 "Unsuitable for Wind Energy Development"** when Planning doesn't have a single biologist on staff. It's politically short-sighted as the agencies would still have to issue permits for this project and are unlikely to change their original opinion on siting based on thin air and this EIR. Even the California Department of Fish and Wildlife spokesman called them out on this. (PC hearing (11/21/19).

For the lead agency to ignore consultations with the tribes mandated by AB52 opens the county to more litigation, and is "embarrassing" according to one of the Planning Commissioners. (11/21/19) The proposed mitigation of delivering plants uprooted by construction to the Wiyot was described as "insulting" by a tribal employee (11/14/19) and "not agreed to" by Ted Hernandez and Cheryl Seidner. The Wiyot oppose the project. The Yurok oppose the project because they are about to release Condors. A lot of taxpayer money has been spent to get the condor to the release point; chopping them up is not an option.

At a Planning Commission Meeting (11/14/19) one of the Terra-Gen consultants said that this project is the "best thing to ever happen to the Marbled Murrelet." No, it's not. In fact, this may be the very worst thing ever proposed for any species in the Eel River Valley area - birds, bats, insects, and humans. The devil-may-care attitude of the agency and applicant towards existing law does not bode well for the survival of anything but corporate profit.

The area has known seismic risk. EIR Analysis was limited to surface expressions of faults. Stantec said they didn't see any, so they said no problem. There is a problem. This is the same problem that the King

Salmon Nuclear plant had. The hill faces in this area are surface expressions of faults. Turbines are planned on top of the aptly named "Russ Fault Zone" all along Bear River Ridge extending all the way to Jordan Creek (Avenue of the Giants) and the "Bear River Fault Zone" which parallels the proposed arrays on Monument Ridge. (United States Geological Survey

<https://usgs.maps.arcgis.com/apps/webappviewer/index.html?id=5a6038b3a1684561a9b0aadf88412fcf>

No mention was made of either fault system or the known earthquakes which have struck the region pushing up the steeper side of local ridges, which are then worn down by erosion. This is another example of how local conditions were ignored by the lead agency in their hurry to enrich an out-of-county corporation at the expense of good science, the economy and environment of the county.

The applicant states that they plan winter work, including vegetation removal, all along the footprint and in the Jordan Creek Drainage where roads up to 200-feet wide will be graded. Do you recall the landslide that destroyed half of Stafford on December 31, 1996 and January 1, 1997? The San Francisco Chronicle reported that ***"Pacific Lumber Co. has agreed to pay \$3.3 million to the victims of a catastrophic mudslide on the steep slope of a clear-cut mountain that wiped out nearly half of the Humboldt County hamlet of Stafford... Pacific Lumber, Humboldt County's biggest employer, initially denied that its logging operation on the watershed above Stafford was the cause of the mudslide, but settled..."***

What is the county's liability if they allow the applicant to proceed knowing the risk of landslide here and in other steep areas in violation of the Habitat Conservation Plan hammered out with landowner Humboldt Redwoods Company and the County to prevent more environmental damage? I would expect the county would be responsible for anything that happens. The Palco payout was \$3.3 million in 2001 dollars. Just from inflation it would be a lot more than that now. Would the LLC dissolve and leave County to defend?

Do you remember the Palco bankruptcy problems? Humboldt's biggest employer, owning everything and everyone until one day they just bottomed up and left a huge mess for the county and individuals to clean up. Why do you think this will be any better? The HCP with Humboldt Redwoods was intended to stop a repeat of the same old situation - here - if this is approved - it's open season on laws and regulations, all in the name of almighty profit and alleged tax revenues to be collected later, maybe.

The Humboldt Planning Department as lead agency is in a big fast rush to impose this project on the tribes and citizens to the point of ignoring science, custom and law. CUPs are not intended to enrich private landowners, private companies or Wall Street investors. They are intended for real need for local and regional projects. There is nothing in their document that supports the CUP - and much which shows they intend to be the worst neighbors you could ever hope to not live anywhere near. They intend to violate existing laws and agreements - their documents are rushed, flawed, internally contradictory and bad science.

Any landlord faced with a tenant that has publicly announced their intent to break the law is usually liable for the illegal actions that took place because they knew it was going to happen. How would the county not end up responsible for landslides and damages from this project when the damages are so clearly laid out in the EIR as serious environmental impacts?

The scientific community of Humboldt County is nearly united in their opposition to this site as is the California Department of Fish and Game which commented in 2017 on the Scoping Documents that this applicant needs to be prepared to accept a "no project" decision due to the poor siting (meaning "this is the worst possible place for this project.") The Wiyot people told the Planning Department repeatedly that this is not a good site. Almost all of the hundreds of people who testified to the Humboldt Planning Department stated - for various reasons backed up by their education and experience - why this is a bad site. The American Bird Conservancy explained about the flyways. The Center for Biological Diversity commented on the scoping documents and suggested "no project" was the best alternative.

Why hasn't the Planning Department been listening to the feed back they have gotten on this project since 2017 in scoping? The documents are flawed, they will not stand up in court. Are you willing to defend this DEIR/FEIR with taxpayers money - possibly for years? Or would you instead support the decision of the Humboldt Planning Commission which voted against staff and denied this project? The Commissioners took the time to at least attempt to read the nearly 2,000 pages of documentation produce by the Planning Department. And they said No.

Let no be no. Cherish the environment of Humboldt County that we have left from 150 years of exploitation. Cherish the opinions of the people who have come out time and time again - despite the personal hardships - taken hundreds of hours of their personal time - commented repeatedly - showed up at Scoping Meetings, public meetings, Planning Commission Meetings, and plan to show up at your meeting next week at the Adorni Center and/or the County Building. We will be there.

Cherish us. Respect the people who are trying to save the county from expensive litigation which is already being prepared. These County documents are so full of holes that it's hard to imagine the lawsuit failing. Please remember that the taxpayers will be on the hook not only for county legal fees, but that CEQA suits permit the recovery of legal fees by the citizens/entities when they win. With the EIR document so weak and so poorly done, consideration of a source for these double legal fees prior to granting approval would be responsible stewardship of the county treasury.

The CUP urges us to fear climate change and take this action - at any cost - to do our part to save the planet. . The only reward is maybe some tax money. The reality is litigation and continued social upset.

While scientists are concerned about global warming, we are also concerned about loss of critical habitat. Given the number of species found on this site - the richness of the surrounding environment - including Humboldt Redwoods State park with preserved natural area groves - I agree with CDFW's professional assessment that this site is unsuitable for the development proposed.

For the environment, for the economy and for the taxpayer, I request you uphold the decision of the Humboldt Planning Commission and deny the applicant Terra-Gen's proposal for wind turbines in Humboldt County, California.

Sincerely yours,

Ellin Beltz
POB 1125 Ferndale, CA 95536

RECEIVED
DEC 09 2019
Clerk
Board of Supervisors

December 9, 2019

Humboldt County Board of Supervisors,

Comments on Terra Gen Humboldt Wind Farm Conditional Use Permit Application

Dear Members of the Board of Supervisors,

We oppose this project. Our aquifer is the Pepperwood Town Area Groundwater Basin. This basin will be polluted by an oil spill into Jordan Creek.

There is no Oil Spill Response Plan. Each of these windmills is supposed to contain 400 gallons of oil for lubrication. The towers would be immediately adjacent to two earthquake faults. Appendix T, Hydrology and Water Quality Assessment, figure 3-1 clearly shows the proposed tower locations straddling the ridge line so all watersheds on both sides could receive oil spills from tower failure in an earthquake or an accidental spill during oil delivery. Individualized Oil Spill Response Plans for each watershed in the project should be prepared and reviewed by the public before any approval moves forward. Terra Gen should be legally designated before construction starts as Responsible Party for any oil spill. They receive the profit from the project. Our county should not have to pay oil spill clean up costs.

We have lived at the north end of the Avenue of the Giants more than thirty five years. We will be negatively affected by the noise and air pollution caused by the batch plants running constantly for eighteen months.

This project is not necessary to Humboldt County. We loose our beautiful views and get nothing back. Not even electricity. Our views draw tourists from as close as the Bay Area and as far away as Europe and China. It is unnecessary destruction of our natural terrain and wildlife. Millions of dollars have been spent to slow and reverse the destruction of the salmon, steelhead, and sturgeon runs in the Eel River watershed caused by past land use practices. That investment should be followed by reasonable scientifically based decision making by our local elected officials to oppose this project.

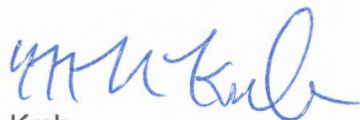
We think that the opposition to this project by sovereign Native American tribes from this county is enough to vote down the project.

We admit that we started out in favor of this project but had a change of heart as soon as we heard of the much more appropriate off shore wind farm proposal and opposition by sovereign nations. As a public trust agency the Board of Supervisors can not arbitrarily ignore the overwhelming public record established in opposition to this project. Thank you for considering our comments.

Sincerely,



Hollis H. Kreb



Melvin H. Kreb

31117 State Highway 254
Scotia, CA 95565

To: Humboldt County Board of Supervisors

From: Ken Mierzwa, Ferndale
December 8, 2019



After publication of the Humboldt Wind Energy Draft Environmental Impact Report (DEIR), I provided multiple pages of detailed written comments, primarily on technical and regulatory aspects of that document. My comments were based in part on my 30 years of consulting experience on a variety of very large projects, including CEQA and NEPA analysis; and in part on my over 12 years of experience holding elected office in Humboldt County and the resulting understanding of public opinion.

Not a single one of my many comments was adequately addressed in the FEIR. Most were not addressed at all.

At the time of my DEIR comments, I felt that the document was inadequate, and I recommended additional analysis and recirculation. Following are a few key points which summarize some of the reasons for my opposition to the project.

- The project description is incomplete, inadequate, and in places contradictory. Multiple statements made by Terra Gen in Planning Commission meetings and other public meetings proposing changes or updates were never incorporated into the project description. Many aspects of the proposed project were never adequately characterized, or left open for future design. Thus, it is impossible for a reasonable person (or the County's CEQA consultant) to adequately analyze the impacts of the proposed project.
- Because of the above, many potential impacts are not discussed or are discussed only generically. For example, the gen tie corridor is never adequately characterized, and it appears that relatively little field work was done there.
- The aesthetics analysis shows simulations of a few tiny white turbines against a washed out white sky on distant ridges. Think back to the last time you drove over Altamont Pass, or near any other large-scale wind project. Was there anything remotely inconspicuous about those turbines? Even those at a distance? The aesthetics analysis in the present document is at best qualitative and anecdotal and does not accurately identify the future condition. I suggest that this project, if built, would forever change the character of the Humboldt County landscape.
- My past written comments, and those of many prominent Humboldt County scientists and regulators, have pointed out the numerous inadequacies in the biological resources section of the DEIR and FEIR. Never before have I seen so many local scientists united against one project, and for good reason. Most of the weaknesses are a result of the above-mentioned inadequate project

description provided by the applicant, and of the apparent rushed schedule which did not allow enough time for field work and analysis. A few sections (for example, the discussion of impacts to Marbled Murrelet) are junk science, with complex quantitative analysis applied to unsubstantiated and unrealistic assumptions thus rendering the findings meaningless.

- The cultural resources analysis and subsequent discussion utterly fails to address strong opposition from the tribes.
- The document includes numerous examples of deferred mitigation.
- The County's consultant correctly identifies numerous instances of significant impacts which cannot be mitigated. This is not something to be taken lightly.
- The greenhouse gas and carbon offset analysis is unconvincing and relies in part on accounting tricks. As a past member of the NCUAQMD Governing Board, it is my opinion that the analysis among other things fails to adequately account for the loss of carbon sequestration associated with clearcut of over 900 acres of forest and loss of additional acreage of grassland and other natural vegetated communities.
- Given the massive significant and unmitigated impacts on a project footprint covering hundreds of acres, a statement of overriding considerations is not in my opinion justified. Most of the project benefits flow to a large corporation and rely heavily on public tax dollars in the form of federal subsidies. The alleged local and regional benefits are relatively modest, and in some cases are uncertain. The energy generated by the proposed project would feed into the same grid which recently failed spectacularly, and reportedly would do nothing to reduce the probability of future local outages.

For these reasons, and others documented in my earlier written comments, I ask you to uphold the Planning Commissions denial of the EIR, the statement of overriding considerations, the CUP, and the MMRP.

December 9, 2019

RECEIVED
DEC 09 2019
Clerk
Board of Supervisors

By Hand Delivery
Original with 9 Copies

Chair Rex Bohn and Supervisors
Humboldt County Board of Supervisors
c/o Clerk of the Board
825 5th Street, Room 111
Eureka, CA 95501

**Re: Appeal of Planning Commission's Denial of the Humboldt Wind
LLC Conditional Use Permit**

Dear Chair Bohn and Supervisors:

On behalf of Monument Mountain Vineyards, LLC, and Carol Hoopes, please accept and consider the following points in support of the Planning Commission's decision not to certify the environmental impact report (EIR) for the Humboldt Wind Project referenced above ("Project"). Monument Mountain Vineyards is located at 2330 Monument Road, Rio Dell, CA 95562, where Ms. Hoopes also resides. For the reasons listed below, the Board of Supervisors should DENY the appeal and uphold the Planning Commission's action.

I. Introduction

The EIR cannot lawfully be certified in its present form. As explained below and in forthcoming technical reviews from Scott Cashen, M.S. and R.J. Gutierrez, PhD,¹ the EIR is replete with materially inconsistent and conflicting statements about the physical characteristics of the Project, and the extent of timberland and grassland habitat that will be de-forested. The EIR's disclosure and analysis of the extent to which the Project's construction and operation will directly impact numerous species, including special-status plants, birds, and mammals, is based on slipshod survey data that was gathered in contravention of industry-standard protocols established by both federal and state resource agencies, and in blatant disregard of those agencies' comments and recommendations with respect to the Draft EIR. The EIR's

¹ This letter will be followed by an additional technical reviews from biologists Scott Cashen, M.S. and R.J. Gutierrez, PhD, which will be submitted to the Clerk of the Board in advance of the December 16, 2019 hearing.

mitigation measures are demonstrably inadequate to reduce species and habitat impacts to less-than-significant levels as claimed, while other measures that are plainly feasible have been indefensibly rejected.

Furthermore, the responses to our and others' comments on the Draft EIR fail to provide facts, information, and analysis in good faith as required by CEQA. In many if not most cases the Final EIR simply ignores substantive comments, and where it does respond it does so dismissively or misleadingly. Finally, the Final EIR contains so much new information of substantial importance, including the results of biological resource surveys undertaken after the Draft EIR was released, that the County is effectively depriving the public of a meaningful opportunity to review, validate, and/or comment upon key aspects of its methodology and conclusions.

As a result of these deficiencies, there simply is not substantial evidence in the record before you to support the findings necessary to certify the EIR and approve the Project under the California Environmental Quality Act ("CEQA"), Public Resources Code section 21100 et seq. To the contrary, the evidence establishes beyond question that the Project will have several significant, unmitigated impacts on a broad array of biological resources, including special-status animal, bird, and plant species, that have not been disclosed, evaluated, or mitigated in the manner required by CEQA.

For these reasons, we urge the Board to uphold the Planning Commission's action and likewise decline to certify the EIR at this time.

II. Conflicting and inconsistent statements throughout the Final EIR render it inadequate under CEQA and negate any substantial evidence to support the County's proposed findings.

An EIR must include an accurate, stable, and consistent description of the proposed project. The project description must contain sufficient specific information about the project to allow a complete evaluation and review of its environmental impacts. 14 Cal Code Regs §15124. Here, the DEIR provides inconsistent information on the width of the Project's transmission line corridor, making it extremely difficult to assess the extent and area of impacts associated with the gen-tie component of the Project.

There are numerous examples of conflicting and inconsistent statements of material facts and/or conclusions in the Draft and Final EIRs, as well as in their respective tables and appendices. These include, most notably, inconsistent statements concerning the total acreage of habitat that will be directly impacted by

the Project,² together with substantial downward revisions in the reported amount of impacted forestland acreage with no explanation provided.³ Information regarding the heights and diameters of the wind turbines is also inconsistently reported.⁴ Information concerning the presence of golden eagle territories and nests near the Project site is likewise contradictory, with the Draft and Final EIR text stating that there are 8 golden eagle territories and 13 nests within 10 miles of the Project while comment responses indicate 11 territories and 16 nests.⁵

As a matter of law, conflicting and inconsistent statements in an EIR vitiate any substantial evidence that might otherwise support findings regarding impact significance. As the Supreme Court has affirmed: “Factual inconsistencies and lack of clarity in [a] Final EIR leave the reader - and the decision makers - without substantial evidence for concluding [impacts are less than significant].” *Vineyard Area Citizens for Responsible Growth v. City of Rancho Cordova* (2007) 40 Cal.4th 412, 439. *See also Preserve Wild Santee v. City of Santee* (2012) 210 Cal.App.4th 260, 283-284 (discrepancies between statements in EIR and its technical appendices “precludes the existence of substantial evidence” that an impact is insignificant). Here, the numerous material factual inconsistencies listed above, together with others that will be documented by Gutierrez and Cashen, absolutely preclude the existence of substantial evidence concerning the nature and extent of the Project’s impacts.

III. Inadequate information concerning environmental baseline

The CEQA “baseline” is the set of environmental conditions against which to compare a project’s anticipated impacts. *Communities for a Better Environment v. So Coast Air Qual. Mgmt. Dist.* (2010) 48 Cal.4th 310, 321. Section 15125(a) of the CEQA Guidelines (14 C.C.R., § 15125(a)) states in pertinent part that a lead agency’s environmental review under CEQA:

“...must include a description of the physical environmental conditions in the vicinity of the project, as they exist at the time [environmental analysis] is commenced, from both a local and regional perspective. This environmental setting will normally constitute the baseline physical conditions by which a Lead Agency determines whether an impact is significant.”

(*See Save Our Peninsula Committee v. County of Monterey* (2001) 87 Cal.App.4th 99, 124-125 (“*Save Our Peninsula.*”) As the court of appeal has explained, “the impacts of the

² Compare impacted acreage figures in Final EIR, Table 3.5-9 with those in Table 3.5-12.

³ See Final EIR, p. 9-46 (revision from 91 acres of timberland conversion to “less than one acre”).

⁴ See Final EIR p 9-8, 9-10, and Figure 2-3.

⁵ Compare Draft EIR, p. 3.5-89, with Final EIR, p. 9-95.

project must be measured against the ‘real conditions on the ground.’” (*Save Our Peninsula*, 87 Cal.App.4th 99, 121-123.) As the court has explained, using such a skewed baseline “mislead(s) the public” and “draws a red herring across the path of public input.” (*San Joaquin Raptor Rescue Center v. County of Merced* (2007) 149 Cal.App.4th 645, 656; *Woodward Park Homeowners v. City of Fresno* (2007) 150 Cal.App.4th 683, 708-711.)

As CDFW and others have informed the County, the EIR fails to include sufficient survey data to establish a meaningful environmental baseline with respect to habitat and population of affected plant, bird, and mammal species. Results from two years of surveys of special-status birds, including marbled murrelet and northern spotted owl, were required to be publicly circulated for review and comment in a Draft EIR. Furthermore, as will be documented in the forthcoming reviews by Gutierrez and Cashen, the surveys that were actually undertaken fail to adhere to the standards and protocols established by Federal and State resource agencies, and accordingly cannot form the basis for any evidence-based assessment of the Project’s impacts. Without the necessary survey data, it is impossible for the Board or the public to gauge what resources will actually be impacted by the Project’s construction and operation. The EIR’s discussion and conclusions with regard to such impacts is therefore correspondingly without substantial evidentiary basis.

IV. Comment Responses in the Final EIR Are Inadequate.

As explained in an earlier letter to the Planning Commission, we submitted detailed comments on the Draft EIR by letter dated June 14, 2019. While the EIR preparers responded to some of our concerns, there are numerous other issues that remain wholly unaddressed. As detailed below, the Final EIR’s comment responses in most cases simply do not satisfy CEQA’s standards for good faith, reasoned analysis in response to substantive public comment. We accordingly stand by and reassert the concerns raised in our June 14 comments on the draft EIR and our November 14 letter to the Planning Commission, and incorporate them by reference into this letter.

The County’s obligations under CEQA are clear. The statute imposes a clear duty on the County to respond to public comments raising substantive concerns on the analysis and conclusions in the Draft EIR in good faith, with fact-based, reasoned analysis, not conclusory statements. *People v. County of Kern* (1974) 39 Cal.App.3d 830, 841-842; Guidelines, § 15088(c). Failure to address comments “in detail,” providing “specific factual information” requested by the commenter, violates CEQA. *Cleary v. County of Stanislaus* (1981) 118 Cal.App.3d 348, 359. Importantly, where comments seek omitted facts or analysis essential to an EIR’s conclusions, the failure to correct those omissions “renders the EIR defective as an informational document.” *California Oak Foundation v. City of Santa Clarita* (2005) 133 Cal.App.4th 1219, 1236 [response must “directly address” the concern in the comment].

With regard to the gen-tie, we asked the County to discuss the activities that will be conducted within the transmission line corridor, including the type, frequency, and extent of vegetation management activities that will be implemented to maintain shrub/scrub habitat within the corridor. Response O7-2 does not address our request for this information. Instead, it simply states:

As described in the project description, the width of the gen-tie would be approximately 80 feet. The 80-foot corridor would be subject to periodic vegetation management, on an as-needed basis, to achieve the necessary fire safety standards.

A later response explains that vegetation management activities would be conducted in a manner consistent with NERC Standard FAC-003 and CPUC General Order 95. Regardless, this discussion fails to describe the actual activities that would be conducted within the miles-long corridor, and is therefore patently non-responsive.

With regard to Vegetation and Habitat Mapping (comments O7-8 and -9), we observed that the Draft EIR did not conform to the CWHR classification system. Specifically, it failed to provide any information on the seral stage (based on a combination of size and cover class) of the forests in the Project area. Instead, the habitat information was limited to an extremely coarse level for both habitat type (e.g., Forest/woodland) and vegetation community (e.g., “redwood forest”). Furthermore, the description of each habitat type was vague (e.g., “[m]uch of the forest is logged and the canopy varies from closed to open”). Accordingly, we asked the County to: (1) apply the CWHR system to provide a description of habitats in and adjacent to the Project area; (2) quantify each CWHR habitat type, by stage, in and adjacent to the Project area; (3) clarify whether the Project would directly impact any residual old-growth trees; (4) quantify and map stands of mature second-growth that occur in and adjacent to the Project area; and (5) assess Project impacts to mature second-growth forests.

This information is critically necessary to understand whether there is potential habitat for each of the special-status wildlife species addressed in the Draft EIR (e.g., marbled murrelet, fisher, etc.), and the extent of the Project’s impacts to each. Yet in response, the Final EIR simply fails to provide any of this information. Instead, it simply argues:

The applicant’s consultant used industry-standard methods to map vegetation communities...Please note that the use of CWHR types is not necessary for an assessment of vegetation communities as habitat for wildlife species. Particularly for special-status species, the analysis in Appendix M of the DEIR

included independent descriptions and assessment of the habitat for special-status species.

Please note that while the Applicant's consultant may have used the industry-standard methods to map vegetation communities, that is not the industry standard for mapping wildlife habitat. The standard in the State of California is the CWHR. Indeed, HRC includes CWHR habitat information in its THPs. The information in Appendix M does not resolve the issue because it also fails to provide information on the vegetation characteristics in the Project area. For example, for the Pacific Fisher it states:

Dens and forages in intermediate to large stands of old-growth conifer/mixed hardwood conifer forests or mixed stands of old-growth and mature trees with greater than 50% canopy closure.

The Appendix thus acknowledges that fisher populations are supported by forests that contain specific size and canopy closure characteristics; however, nowhere does the Draft EIR provide the characteristics associated with the various forest stands in the Project area. This precludes the ability to evaluate whether the Project would impact fisher habitat, how much habitat would be impacted, and where those impacts would occur. To the contrary, the Draft EIR simply offers the conclusory statement that there is no old growth in the Project area. However, Stantec detected fishers on two separate occasions during their surveys. Therefore, if fishers are associated with old-growth (as reported in Appendix M), there must a presumption that old-growth occurs in the Project area.

Additionally, with particular regard to impacts on Pacific Fisher (comment O7-15), the Final EIR's response states that:

All temporary impacts to Pacific fisher habitat would be restored, and the maximum permanent impacts would total approximately 35 acres, which is de minimis when compared to the 210,000 acres of forest owned by HRC in Humboldt County, as well as other available forest in the area.

This response, too, is misleading. As reported in Appendix M to the Draft EIR, habitat associated with fisher consists of: “[d]ens and forages in intermediate to large stands of old-growth conifer/mixed hardwood conifer forests, or mixed stands of old-growth and mature trees with greater than 50% canopy closure.....May use riparian corridors for movement.” Underline added. It should go without saying that it takes 200 years or more to restore old-growth conifer and mixed hardwood conifer forest. There therefore is no rational basis for the comment response to classify some fisher impacts as “temporary.”

With regard to our comments concerning the adequacy of bird and wildlife surveys (comment O7-7), the Final EIR's response confirms that "the specific areas surveyed differed depending on the resource." This suggests that the Draft EIR's claims regarding the extent of surveys was misleading. There are still portions of the Project area that have had no surveys for special-status plants because the surveyors had "no access" (*see* 2019 botanical report in Final EIR Appendix B). If the EIR preparers had no access for special-status plant surveys (which extended through July 2019), they must also have had no access for other bird, wildlife, and plant surveys. Regardless, the failure to conduct two years of surveys for spotted owls, as required in the survey protocol, remains a substantive deficiency in both the Draft and Final EIR. At the very least, the new one-year owl survey should be recirculated (together with the qualifications of the surveyors, which the Final EIR omits) so that the public may gauge its accuracy.

With regard to comments concerning analysis of impacts to yellow-breasted Chat (comment O7-14), we noted that the chat is a California Species of Special Concern, and asked the County to explain why Table 3.5-5 in the Draft EIR finds a low potential for this species to occur in the Project area, even though the table acknowledges that the eBird database has records of it in the Project area. We also requested that the County actually assess Project's impacts to the yellow-breasted chat. The County provided the following response:

While eBird is not an entirely reliable source of information, occurrences of yellow breasted chat by eBird users have been documented within the County, but in lower elevation areas within suitable habitat (riparian stands)...the yellow breasted chat has a low potential to occur because no suitable habitat is present onsite.

This response is disingenuous and misleading. The eBird records cited are for Bear River Ridge. They were submitted by a professional biologist and were vetted by eBird staff biologists. Thus, they should be considered reliable. The comment response simply fails to provide the information sought with no defensible justification.

Furthermore, with regard to Spotted Owl habitat mapping (comment O7-17), we specifically requested provide copies of HRC's existing NSO habitat maps and occurrence records; the specific methods that were used to "develop habitat spatial data using ESRI ArcGIS/Arcinfo;" the spatial data used to develop NSO habitat maps and identify the date and source of that data. The Final EIR does not contain any of the GIS files or other mapping data requested, nor does it explain why the information is being withheld. It simply ignores the request.

With regard to marbled murrelet habitat assessment (comment O7-20), our comments on the Draft EIR sought evidence to substantiate the conclusions regarding potential nesting habitat in the Project area. Specifically, we asked the County to clarify the number of stands that provide potential nesting habitat for the murrelet, and to clarify what data that were collected for each stand and the rationale for concluding a stand did not provide potential nesting habitat.

The Final EIR's response cavalierly asserts that the assessment was based on "professional judgment and scientifically accepted measures and metrics." This response is patently inadequate under CEQA which, as explained, requires actual data and analysis in response to substantive public comment. The variables that determine habitat for marbled murrelet are quantitative (i.e., tree that is at least X tall and with branches at least 4 inches in diameter). Therefore, subjective judgment has no value in assessing habitat value. This is aggravated by the Draft EIR's initial failure to provide an adequate description of how the professional judgments were accomplished. Professional judgment is not an accepted substitute for data collection. We expressly requested data that would support the assertion that scientifically accepted measures and metrics were used, but none were provided with the Final EIR. We expressly requested the specific dates (between August 13 and 31) of the on-the-ground evaluations and the person-hours associated with those evaluations. The Final EIR provides no response. Indeed, we asked the County to provide data or other documentary support for several other of the Draft EIR's conclusions regarding murrelet habitat suitability, but the Final EIR remains entirely silent.

With regard to our comments concerning documentation of bird use at other wind projects (comment O7-22), we asked for the estimated fatality rates that were calculated for each project listed; the data that establishes the meteorological conditions at the 21 wind project sites in relation to the meteorological conditions at the Terra Gen Project site; information about the location, type, and bird fatality rates for the other projects; and the copies of the fatality studies cited. In response, Final EIR claims that we have simply "stated an opinion but do not provide any evidence that wind projects are creating population-level impacts on common non-raptor birds. No revisions are necessary." Once again, this response to a comment seeking information expressly cited or otherwise referenced in the Draft EIR is patently inadequate under CEQA.

With regard to comments concerning noise impacts on murrelet habitat (comment O7-26), the Final EIR's response explains that the EIR preparers placed three noise meters along the highway where there is no habitat. *See* Supplement to Humboldt Wind Energy Project Marbled Murrelet Habitat Assessment and Auditory and Visual Disturbance Analysis Report in Appendix B. The noise measurements were then used to justify the Draft EIR's conclusions related to Project noise on habitat that is not next to the highway. The response fails to explain or justify how

noise meters placed along the highway will generate data relevant the Project's noise impacts on habitat located elsewhere.

With regard to our comment seeking information on how the 17 miles of new roads would affect the implementation of the HRC HCP (comment O7-31), specifically whether such new roads were anticipated in the HCP EIS/EIR analysis and whether other new roads have been constructed in the HCP area, the Final EIR simply declined to provide any responsive information. With regard to mitigation of impacts to special-status mammal migration (comment O7-39 and -40), our Draft EIR comments asked for specific information needed to gauge the efficacy of the proposed mitigation measures, including the 50-foot buffer. The Final EIR responds by simply declaring that "the adequacy of the 50-foot buffer is based on the professional opinion and experience of qualified biologists. The commenter has not provided any evidence that a 50-foot exclusion buffer is inadequate." The County has provided no evidence to support the assertion that 50-foot buffers are effective, so there is no way for the public to assess the accuracy of the statement.

Indeed, there is no evidence that the biologist that provided this opinion has any expertise in this topic area. We suspect that he or she has little if any, as all of the species listed in the mitigation measure in question have home ranges that extend well beyond 50 feet. They may thus be subject to being run over by construction equipment, falling into trenches, and habitat disturbance that alters normal breeding, sheltering, and feeding activities, while noise levels at 50 feet will be enough to cause the animals to abandon nest sites, resulting in mortality of young. Regardless, the comment response remains inadequate under CEQA. It is the County, not the public, that bears the burden of information gathering and disclosure under CEQA. *Kings County Farm Bureau v. City of Hanford* (1990) 221 Cal.App.3d 692, 724.

With regard to CDFW's comment that the Project site is a "Category 4" area inappropriate for wind farm development due to species and habitat impacts, though this was not our own comment, we would observe that the Final EIR's conclusory, dismissive statement that it "does not concur" is patently inadequate under CEQA. As with the responses to our own comments, it simply fails to provide facts, data, or analysis in good faith. This omission is aggravated by the fact that the comments come from a responsible state agency with jurisdiction and particular expertise over the impacted resources.

We underscore that the foregoing are just some examples of instances where the Final EIR has failed to respond substantively and in good faith to public comments raising significant and material concerns about the information inadequacies of the Draft EIR.

V. Substantial New Information Requires Recirculation For Additional Public Comment.

The Final EIR includes an overwhelming volume of new, often highly technical information that neither the public nor responsible agencies with jurisdiction over impacted natural resources have ever before seen. The figure below comprises just the list of the studies, memos, supplemental analyses, survey data, and other critically relevant materials that the public has been given only 10 days to review before the Planning Commission's approval hearing.

Fig. 1 List of new studies contained in the Final EIR.

Appendix B Updated Technical Information

- [2019 Botanical Resources Survey Results Memo \(PDF\)](#)
- [Adjustments to Turbine Siting and Revised Take Estimate for Murrelets \(PDF\)](#)
- [Bat Acoustic Monitoring Report Addendum \(PDF\)](#)
- [Compensatory Mitigation Strategy for Marbled Murrelets \(PDF\)](#)
- [Credit Agricole Letter \(PDF\)](#)
- [Disposal Field Suitability Investigation Results \(PDF\)](#)
- [Eagle and Raptor Nest Survey Report - Year 2 \(PDF\)](#)
- [Eagle Use Count Survey Results Memo November 2018 - August 2019 \(PDF\)](#)
- [Eelgrass Avoidance Recommendations \(PDF\)](#)
- [Marbled Murrelet Collision Risk Assessment Two Year Report \(PDF\)](#)
- [Marbled Murrelet Radar Survey Report Year 2 \(PDF\)](#)
- [Non-technical Summary of Marbled Murrelet Mitigation Strategy \(PDF\)](#)
- [Northern Spotted Owl Activity Center Occurrences Memo \(PDF\)](#)
- [Northern Spotted Owl Off-Site Mitigation Sites \(PDF\)](#)
- [Northern Spotted Owl Survey Results 2019 \(PDF\)](#)
- [Operational Impacts to Eagles \(PDF\)](#)
- [Operational Impacts to Raptors \(PDF\)](#)
- [Reclamation Revegetation Weed Control Plan \(PDF\)](#)
- [Summary of Collision Risk Modeling for a General Audience \(PDF\)](#)
- [Supplement to Compensatory Mitigation for Marbled Murrelet \(PDF\)](#)
- [Supplement to Marbled Murrelet Habitat Assessment, Auditory and Visual \(PDF\)](#)
- [Updated Criteria Air Pollutant and GHG Emissions Calculations \(October 2019\) \(PDF\)](#)
- [Updated Vegetation and Aquatic Resources Survey of Supplemental Project Areas \(PDF\)](#)
- [Willow Flycatcher Status and Risk Evaluation \(PDF\)](#)
- [Wind Availability Analysis and Location of Project \(PDF\)](#)

Notably, the list includes an entirely new, never before seen Northern Spotted Owl survey (which identified previously undisclosed activity centers). This constitutes new information of substantial importance that was absolutely required to be included in the Draft EIR but was not.⁶ It also includes a new Mitigation Strategy for Marbled Murrelets, new second-year results of a Marbled Murrelet survey and collision risk report, new or second-year studies of the wind turbines' operational impacts to eagles and other raptors, and surveys of new areas for impacts to botanical resources. CEQA plainly requires that all these materials be circulated for a 45-day public comment period so that the public and responsible agencies, including the California Department of Fish & Wildlife and U.S. Fish and Wildlife Service, would have a meaningful opportunity to review and comment upon their adequacy. By publishing them for the first time in a Final EIR released just days before the Planning Commission's approval hearing, the County has simply not complied with CEQA.

The legal requirements in this context are clear. An agency must recirculate a revised draft EIR for public comment whenever "significant new information" is added after public notice is given of the availability of the draft EIR for public review but before certification. Guidelines, § 15088.5(a). "Significant new information" requiring recirculation includes information showing a new or more severe significant impact than the draft EIR disclosed, or information showing that the draft EIR was "so fundamentally and basically inadequate and conclusory in nature that meaningful public review and comment were precluded." Guidelines, § 15088.5(a)(4); *Mountain Lion Coalition v. Fish & Game Com.* (1989) 214 Cal.App.3d 1043, 1052. The new information triggering recirculation may appear in the Final EIR or in post-Final EIR material. *Cadiñ Land Co. v. Rail Cycle* (2000) 83 Cal.App.4th 74, 95; *Save Our Peninsula Committee v. Monterey County Bd. of Supervisors* (2001) 87 Cal.App.4th 89, 131.

The fact that the County now claims that nothing in the new information discloses a new significant impact is immaterial. The purpose of recirculation is to subject the new information "to the same critical evaluation that occurs in the draft stage," so that "the public is not denied an opportunity to test, assess, and evaluate the data and make an informed judgment as to the validity of the conclusions to be drawn therefrom." *Save Our Peninsula, supra*, 87 Cal.App.4th at 131; *Sutter Sensible Planning v. Board of Supervisors* (1981) 122 Cal.App.3d 813, 822." *Laurel Heights Improvement Association v. U.C. Regents* (1993) 6 Cal.4th 1112, 1132. Based on this

⁶ The failure to circulate the NSO survey for public comment is a prejudicial violation of CEQA, as the survey is inadequate on its face. As will be explained further in a forthcoming submittal from R.J. Gutierrez, PhD, the survey failed to adhere to established CDFW/USFWS survey protocols, which require two years of survey data, not just one. Moreover, the survey failed to assess the presence of barred owls, the single greatest threat to NSO, which will likely invade and occupy areas of existing NSO habitat that will be de-forested for the transmission line and WTG construction.

reasoning, and under *Mountain Lion, supra*, the wholesale omission of relevant information from a draft EIR triggers a duty to recirculate such information when first provided in a final EIR regardless of whether it discloses a new or more significant impact. 214 Cal.App.3d at 1052.

We submit that the vast amount of substantive technical information contained in the Final EIR establishes per se that the Draft EIR omitted relevant information wholesale, thereby precluding meaningful public review and comment. The County is therefore obligated to recirculate this new information in a revised Draft EIR before it may lawfully certify any Final EIR and approve the Project.

VI. Failure to evaluate and mitigate impacts from undergrounding.

The Final EIR discloses for the first time that a portion of the gen-tie located at ridge-top will be buried underground as a means of mitigating impacts to eagles and other birds. Yet there will be foreseeable significant impacts from doing so that the FEIR fails to disclose or analyze. For example, the area where ground disturbance will occur (to place the line underground) was not surveyed for rare plants, wetlands, or other sensitive resources. Furthermore, underground transmission lines emit heat, which can dry out the soil, kill soil microorganisms, and alter the plant community.

If a mitigation measure identified in an EIR would itself cause significant environmental impacts distinct from the significant effects caused by the project, those impacts must be discussed in the EIR, but in less detail than the project's significant impacts. 14 Cal Code Regs §15126.4(a)(1)(D). This CEQA Guideline is based on *Stevens v City of Glendale* (1981) 125 Cal.App.3d 986, in which the court upheld a judgment vacating certification of an EIR because the agency adopted a major mitigation measure that was not discussed in the EIR without considering whether a supplement to the EIR should have been prepared to examine the mitigation measure's impacts. *See also Save Our Peninsula Comm. v Monterey County Bd. of Supervisors* (2001) 87 Cal.App.4th 99, 131 (adoption of new mitigation measure proposed after EIR completed triggered need for supplement to EIR). Compare *Western Placer Citizens for an Agric. & Rural Env't v County of Placer* (2006) 144 Cal.App.4th 890 (agency did not have to supplement EIR to analyze change to mitigation measure adopted after EIR was completed because change reduced project's impacts); *River Valley Preservation Project v Metropolitan Transit Dev. Bd.* (1995) 37 Cal.App.4th 154, 169 (change in mitigation measures does not trigger need for supplement to EIR absent a showing that new significant impacts will result).

VII. TerraGen has improperly segmented the Project in violation of CEQA.

For purposes of CEQA coverage, a “project” is defined as comprising “the whole of an action” that has the potential to result in a direct or reasonably foreseeable indirect physical change to the environment. 14 Cal Code Regs §15378(a). In earlier comments we observed that the County had not DEIR did not identify, disclose, evaluate, or mitigate the foreseeable direct and indirect impacts associated with the construction and operation of the Van Duzen Storage Project. An Initial Study and Mitigated Negative Declaration was released for public comment earlier in 2019, which claimed that: “[a]lthough the Humboldt Wind Project and the Van Duzen Storage Project would both connect to the PG&E transmission system via the Bridgeville Substation, they are separate projects with independent utility.” We asked for an explanation of the relationship between the two projects, and a justification for omitting analysis and mitigation of impacts from the battery storage project in the EIR for this Project.

In response to this comment, the Final EIR merely re-asserts that the two projects have “independent utility,” and that the application for the battery storage project had been withdrawn. Apart from the fact that TerraGen withdrew the application only after a law firm representing labor unions requested access to all documents related to the battery storage project, the evidence belies any claim that the two projects are in any way separate. As the attached LLC registration materials from the Secretary of State show, TerraGen is the corporate owner and proponent of both the Van Duzen Battery Storage Project and the Wind Energy Project. Stantec likewise is the environmental consultant for both projects. The two projects are plainly part of the same overall development effort, and CEQA requires that their individual and cumulative impacts be evaluated together.⁷

VIII. Conclusion

We submit that the Final EIR does not even approach the standards for information disclosure and analysis prescribed by CEQA. As a result, there is no substantial evidence to support its findings and conclusions. The Project will have numerous significant, unmitigated impacts that the EIR fails to acknowledge, and the impacts it does disclose and purport to mitigate will be more severe than reported. We would observe that the Final EIR’s substantive inadequacy appears to be the result of undue haste to obtain Project approvals before December 31, 2019, the date that the federal Production Tax Credit (PTC) is set to lapse. The PTC would likely

⁷ It is immaterial that TerraGen voluntarily withdrew the use permit application for the battery storage project. If its implementation is reasonably foreseeable, which it plainly is given its intent of storing energy generated by the wind farm, its impacts must be evaluated in the Project’s EIR.

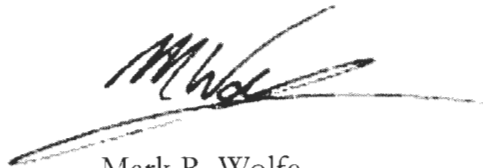
confer a significant financial benefit to the applicant, but only if actual construction starts before then. The County should not forego the level of diligent, meaningful investigation, disclosure, and analysis of environmental impacts that the Project – a massive construction and operational undertaking on a truly unprecedented scale in Humboldt County, in an ecologically rich and delicate ecosystem – for the sake of financial expediency.

In sum, the Board should DECLINE to certify the EIR and issue a use permit for the Project.

Thank you for your consideration of these concerns.

Yours sincerely,

M. R. WOLFE & ASSOCIATES, P.C.

A handwritten signature in black ink, appearing to read 'MR Wolfe', with a long horizontal flourish extending to the right.

Mark R. Wolfe
on behalf of Monument Mountain Vineyards and
Carol Hoopes

MRW:sa
attachments

ATTACHMENTS



Secretary of State
Application to Register a Foreign Limited Liability Company (LLC)

LLC-5

201825310456

FILED RATB

Secretary of State
 State of California

SEP 10 2018

Handwritten signature

IMPORTANT — Read Instructions before completing this form.

Must be submitted with a current Certificate of Good Standing issued by the government agency where the LLC was formed. See Instructions.

Filing Fee - \$70.00

Copy Fees - First page \$1.00; each attachment page \$0.50;
 Certification Fee - \$5.00

Note: Registered LLCs in California may have to pay minimum \$800 tax to the California Franchise Tax Board each year. For more information, go to <https://www.ftb.ca.gov>.

IPC

This Space For Office Use Only

1a. LLC Name (Enter the exact name of the LLC as listed on your attached Certificate of Good Standing.)

Humboldt Wind, LLC

1b. California Alternate Name, If Required (See Instructions – Only enter an alternate name if the LLC name in 1a not available in California.)

2. LLC History (See Instructions – Ensure that the formation date and jurisdiction match the attached Certificate of Good Standing.)

a. Date LLC was formed in home jurisdiction (MM/DD/YYYY)

01 / 18 / 2018

b. Jurisdiction (State, foreign country or place where this LLC is formed.)

DE

c. Authority Statement (Do not alter Authority Statement)

This LLC currently has powers and privileges to conduct business in the state, foreign country or place entered in Item 2b.

3. Business Addresses (Enter the complete business addresses. Items 3a and 3b cannot be a P.O. Box or "in care of" an individual or entity.)

| a. Street Address of Principal Executive Office - Do not enter a P.O. Box | City (no abbreviations) | State | Zip Code |
|---|-------------------------|-------|----------|
| 437 Madison Avenue, Suite 22A | New York | NY | 10022 |
| b. Street Address of Principal Office in California, if any - Do not enter a P.O. Box | City (no abbreviations) | State | Zip Code |
| | | CA | |
| c. Mailing Address of Principal Executive Office, if different than Item 3a | City (no abbreviations) | State | Zip Code |
| | | | |

4. Service of Process (Must provide either Individual OR Corporation.)

INDIVIDUAL – Complete Items 4a and 4b only. Must include agent's full name and California street address.

| a. California Agent's First Name (if agent is not a corporation) | Middle Name | Last Name | Suffix |
|---|-------------------------|-----------|----------|
| | | | |
| b. Street Address (if agent is not a corporation) - Do not enter a P.O. Box | City (no abbreviations) | State | Zip Code |
| | | CA | |

CORPORATION – Complete Item 4c only. Only include the name of the registered agent Corporation.

c. California Registered Corporate Agent's Name (if agent is a corporation) – Do not complete Item 4a or 4b

COGENCY GLOBAL INC.

5. Read and Sign Below (See Instructions. Title not required.)

I am authorized to sign on behalf of the foreign LLC.

Handwritten signature of Jeff Cast

Signature

Jeff Cast Manager

Type or Print Name

Delaware

The First State

Page 1

I, JEFFREY W. BULLOCK, SECRETARY OF STATE OF THE STATE OF DELAWARE, DO HEREBY CERTIFY "HUMBOLDT WIND, LLC" IS DULY FORMED UNDER THE LAWS OF THE STATE OF DELAWARE AND IS IN GOOD STANDING AND HAS A LEGAL EXISTENCE SO FAR AS THE RECORDS OF THIS OFFICE SHOW, AS OF THE TENTH DAY OF SEPTEMBER, A.D. 2018.

AND I DO HEREBY FURTHER CERTIFY THAT THE SAID "HUMBOLDT WIND, LLC" WAS FORMED ON THE EIGHTEENTH DAY OF JANUARY, A.D. 2018.

AND I DO HEREBY FURTHER CERTIFY THAT THE ANNUAL TAXES HAVE BEEN ASSESSED TO DATE.



6715313 8300

SR# 20186565732

You may verify this certificate online at corp.delaware.gov/authver.shtml

A handwritten signature in black ink, appearing to read "JBULLOCK", is written over a horizontal line. Below the line, the text "Jeffrey W. Bullock, Secretary of State" is printed.

Jeffrey W. Bullock, Secretary of State

Authentication: 203388249

Date: 09-10-18



Secretary of State

LLC-5

Application to Register a Foreign Limited Liability Company (LLC)

201901710064

FILED

Secretary of State
State of California

JAN 11 2019

This Space For Office Use Only

IMPORTANT — Read instructions before completing this form.
Must be submitted with a current Certificate of Good Standing issued by the government agency where the LLC was formed. See Instructions.

Filing Fee - \$70.00

Copy Fees - First page \$1.00; each attachment page \$0.50;
Certification Fee - \$5.00

Note: Registered LLCs in California may have to pay minimum \$800 tax to the California Franchise Tax Board each year. For more information, go to <https://www.ftb.ca.gov>.

1a. LLC Name (Enter the exact name of the LLC as listed on your attached Certificate of Good Standing.)

Van Duzen Storage, LLC

1b. California Alternate Name, if Required (See Instructions – Only enter an alternate name if the LLC name in 1a not available in California.)

2. LLC History (See Instructions – Ensure that the formation date and jurisdiction match the attached Certificate of Good Standing.)

| | |
|--|---|
| a. Date LLC was formed in home jurisdiction (MM/DD/YYYY) | b. Jurisdiction (State, foreign country or place where this LLC is formed.) |
| 1 / 10 / 2019 | Delaware |

c. Authority Statement (Do not alter Authority Statement)

This LLC currently has powers and privileges to conduct business in the state, foreign country or place entered in Item 2b.

3. Business Addresses (Enter the complete business addresses. Items 3a and 3b cannot be a P.O. Box or "in care of" an individual or entity.)

| | | | |
|---|-------------------------|-------|----------|
| a. Street Address of Principal Executive Office - Do not enter a P.O. Box | City (no abbreviations) | State | Zip Code |
| 437 Madison Avenue, Ste. 22a | New York | NY | 10022 |
| b. Street Address of Principal Office in California, if any - Do not enter a P.O. Box | City (no abbreviations) | State | Zip Code |
| | | CA | |
| c. Mailing Address of Principal Executive Office, if different than Item 3a | City (no abbreviations) | State | Zip Code |
| | | | |

4. Service of Process (Must provide either Individual OR Corporation.)

INDIVIDUAL – Complete Items 4a and 4b only. Must include agent's full name and California street address.

| | | | |
|---|-------------------------|-----------|----------|
| a. California Agent's First Name (if agent is not a corporation) | Middle Name | Last Name | Suffix |
| | | | |
| b. Street Address (if agent is not a corporation) - Do not enter a P.O. Box | City (no abbreviations) | State | Zip Code |
| | | CA | |

CORPORATION – Complete Item 4c only. Only include the name of the registered agent Corporation.

c. California Registered Corporate Agent's Name (if agent is a corporation) – Do not complete Item 4a or 4b

COGENCY GLOBAL INC.

5. Read and Sign Below (See Instructions. Title not required.)

I am authorized to sign on behalf of the foreign LLC.

Signature

Type or Print Name

Jeff Cast

Managing Director

Delaware

Page 1

The First State

I, JEFFREY W. BULLOCK, SECRETARY OF STATE OF THE STATE OF DELAWARE, DO HEREBY CERTIFY "VAN DUZEN STORAGE, LLC" IS DULY FORMED UNDER THE LAWS OF THE STATE OF DELAWARE AND IS IN GOOD STANDING AND HAS A LEGAL EXISTENCE SO FAR AS THE RECORDS OF THIS OFFICE SHOW, AS OF THE ELEVENTH DAY OF JANUARY, A.D. 2019.

AND I DO HEREBY FURTHER CERTIFY THAT THE SAID "VAN DUZEN STORAGE, LLC" WAS FORMED ON THE TENTH DAY OF JANUARY, A.D. 2019.

AND I DO HEREBY FURTHER CERTIFY THAT THE ANNUAL TAXES HAVE BEEN ASSESSED TO DATE.



Jeffrey W. Bullock, Secretary of State

7232561 8300

SR# 20190213797

You may verify this certificate online at corp.delaware.gov/authver.shtml

Authentication: 202064591

Date: 01-11-19

201901710064



**Secretary of State
Statement of Information
(Limited Liability Company)**

LLC-12

19-B91954

FILED

In the office of the Secretary of State
of the State of California

MAY 16, 2019

This Space For Office Use Only

IMPORTANT — Read instructions **before completing this form.**

Filing Fee – \$20.00

Copy Fees – First page \$1.00; each attachment page \$0.50;
Certification Fee - \$5.00 plus copy fees

1. Limited Liability Company Name (Enter the exact name of the LLC. If you registered in California using an alternate name, see instructions.)
VAN DUZEN STORAGE, LLC

2. 12-Digit Secretary of State File Number 201901710064
3. State, Foreign Country or Place of Organization (only if formed outside of California)
DELAWARE

4. Business Addresses

| | | | |
|--|-------------------------------------|-------------|-------------------|
| a. Street Address of Principal Office - Do not list a P.O. Box 437 Madison Ave., Suite 22A | City (no abbreviations) New York | State NY | Zip Code 10022 |
| b. Mailing Address of LLC, if different than item 4a 437 Madison Ave., Suite 22A | City (no abbreviations) New York | State NY | Zip Code 10022 |
| c. Street Address of California Office, if Item 4a is not in California - Do not list a P.O. Box | City (no abbreviations) | State CA | Zip Code |

5. Manager(s) or Member(s) If no **managers** have been appointed or elected, provide the name and address of each **member**. At least one name **and** address must be listed. If the manager/member is an individual, complete Items 5a and 5c (leave Item 5b blank). If the manager/member is an entity, complete Items 5b and 5c (leave Item 5a blank). Note: The LLC cannot serve as its own manager or member. If the LLC has additional managers/members, enter the name(s) and addresses on Form LLC-12A (see instructions).

| | | | |
|--|-------------------------------------|-------------|-------------------|
| a. First Name, if an individual - Do not complete Item 5b | Middle Name | Last Name | Suffix |
| b. Entity Name - Do not complete Item 5a Terra-Gen Development Company, LLC | | | |
| c. Address 437 Madison Ave., Suite 22A | City (no abbreviations) New York | State NY | Zip Code 10022 |

6. Service of Process (Must provide either Individual OR Corporation.)

INDIVIDUAL – Complete Items 6a and 6b only. Must include agent's full name and California street address.

| | | | |
|---|-------------|-------------------------|-------------|
| a. California Agent's First Name (if agent is not a corporation) | Middle Name | Last Name | Suffix |
| b. Street Address (if agent is not a corporation) - Do not enter a P.O. Box | | | |
| | | City (no abbreviations) | State CA |
| | | Zip Code | |

CORPORATION – Complete Item 6c only. Only include the name of the registered agent Corporation.

c. California Registered Corporate Agent's Name (if agent is a corporation) – Do not complete Item 6a or 6b
COGENCY GLOBAL INC. (C2003899)

7. Type of Business

a. Describe the type of business or services of the Limited Liability Company
management services

8. Chief Executive Officer, if elected or appointed

| | | | |
|---|-------------------------------------|---------------------|-------------------|
| a. First Name James | Middle Name | Last Name Pagano | Suffix |
| b. Address 437 Madison Ave., Suite 22A | City (no abbreviations) New York | State NY | Zip Code 10022 |

9. The information contained herein, including any attachments, is true and correct.

05/16/2019

Jeffrey Cast

Managing Director

Date

Type or Print Name of Person Completing the Form

Title

Signature

Return Address (Optional) (For communication from the Secretary of State related to this document, or if purchasing a copy of the filed document enter the name of a person or company and the mailing address. This information will become public when filed. SEE INSTRUCTIONS BEFORE COMPLETING.)

Name: []

Company:

Address:

City/State/Zip: []

**Van Duzen Storage Project
Conditional Use Permit
Application**

Humboldt County Planning and Building
Department
3015 H Street
Eureka, CA 95501

February 22, 2019

Prepared for:

Van Duzen Storage, LLC
11455 El Camino Real, Suite 160
San Diego, CA 92130

Prepared by:

Stantec Consulting Services Inc.
1383 N. McDowell Blvd, Suite 250
Petaluma, CA 94954

Abbreviations and Acronyms

| | |
|-------|--|
| AC | alternating current |
| CPUC | California Public Utilities Commission |
| DC | direct current |
| HVAC | heating, ventilation, and air conditioning |
| kV | kilovolt/s |
| kVA | kilovolt to ampere/s (i.e., 1,000 volt-amperes) |
| MW | Megawatt |
| MWh | megawatt hour/s |
| NPDES | National Pollutant Discharge Elimination System |
| PCS | power conversion system |
| PDC | Power distribution center |
| PG&E | Pacific Gas and Electric Company |
| SCADA | supervisory control and data acquisition |
| SPCCP | Spill Prevention, Countermeasure, and Control Plan |
| SR | State Route |
| TSP | tubular steel poles |

VAN DUZEN STORAGE PROJECT CONDITIONAL USE PERMIT APPLICATION

February 22, 2019

1.0 INTRODUCTION

Van Duzen Storage, LLC, proposes to construct and operate the Van Duzen Storage Project (the Project) in Humboldt County, California. The Project would consist of 20 containers, each measuring 53 feet long, 8.5 feet wide, and 9.5 feet tall, and each containing batteries capable of 2 megawatt hours (MWh) of energy storage. The Project would provide 40 MWh of energy storage.

The Project would be located in Humboldt County (Figure 1) adjacent to the existing Pacific Gas & Electric (PG&E) substation at Bridgeville and would be built wholly within one parcel (Assessor's Parcel Number 207-074-027-000) and cover approximately 3.0 acres: up to 2.0 acres would be used for the battery storage Project to the east of the existing Bridgeville Substation, and up to 1.0 acre would be used for the expansion of the PG&E Bridgeville Substation to the north of the existing Bridgeville Substation (Figure 2, Figure 3). Lands on which the Project would be sited are zoned as "RA" – Rural Residential Agriculture. Under this zoning designation, constructing and operating the Project would require a Conditional Use Permit from Humboldt County. Accordingly, Van Duzen Storage, LLC, is submitting this Conditional Use Permit application pursuant to County Code Section 3.1.2, which, if approved, would cover all Project activities in Humboldt County regardless of the underlying zoning designation.

The Project described is based on information available at the time of this application. Van Duzen Storage, LLC, is currently evaluating site conditions, market needs and opportunities, energy storage technologies, equipment manufacturers, and other information. Accordingly, this description is intended to illustrate workspaces within which the Project would be constructed and the methods by which construction could proceed.

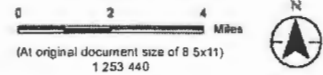
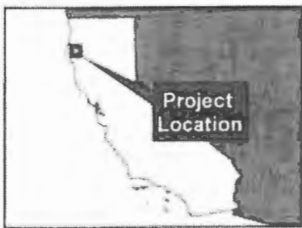
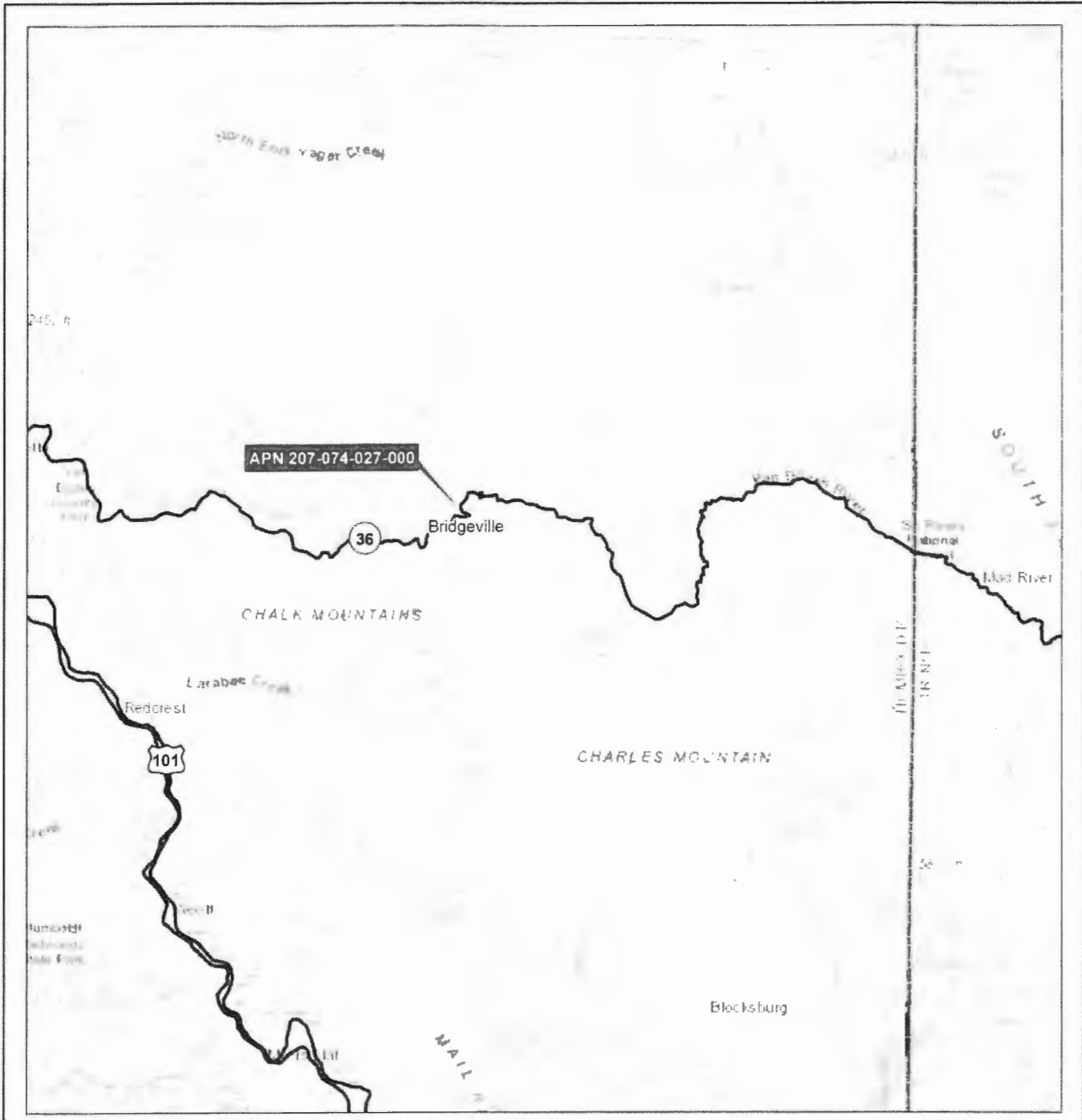
The following required application materials are provided as appendices to this document:

- Appendix A Grant Deeds

VAN DUZEN STORAGE PROJECT CONDITIONAL USE PERMIT APPLICATION

February 22, 2019

This page intentionally left blank.



Project Location: APN 207-074-027-000 Humboldt Co. CA
 Prepared by JT on 2019-01-17
 TR by PG on 2019-01-17
 IR Review by DP on 2019-01-17

Client/Project: VAN DUZEN STORAGE PROJECT

Figure No: 1
 Title: Project Vicinity

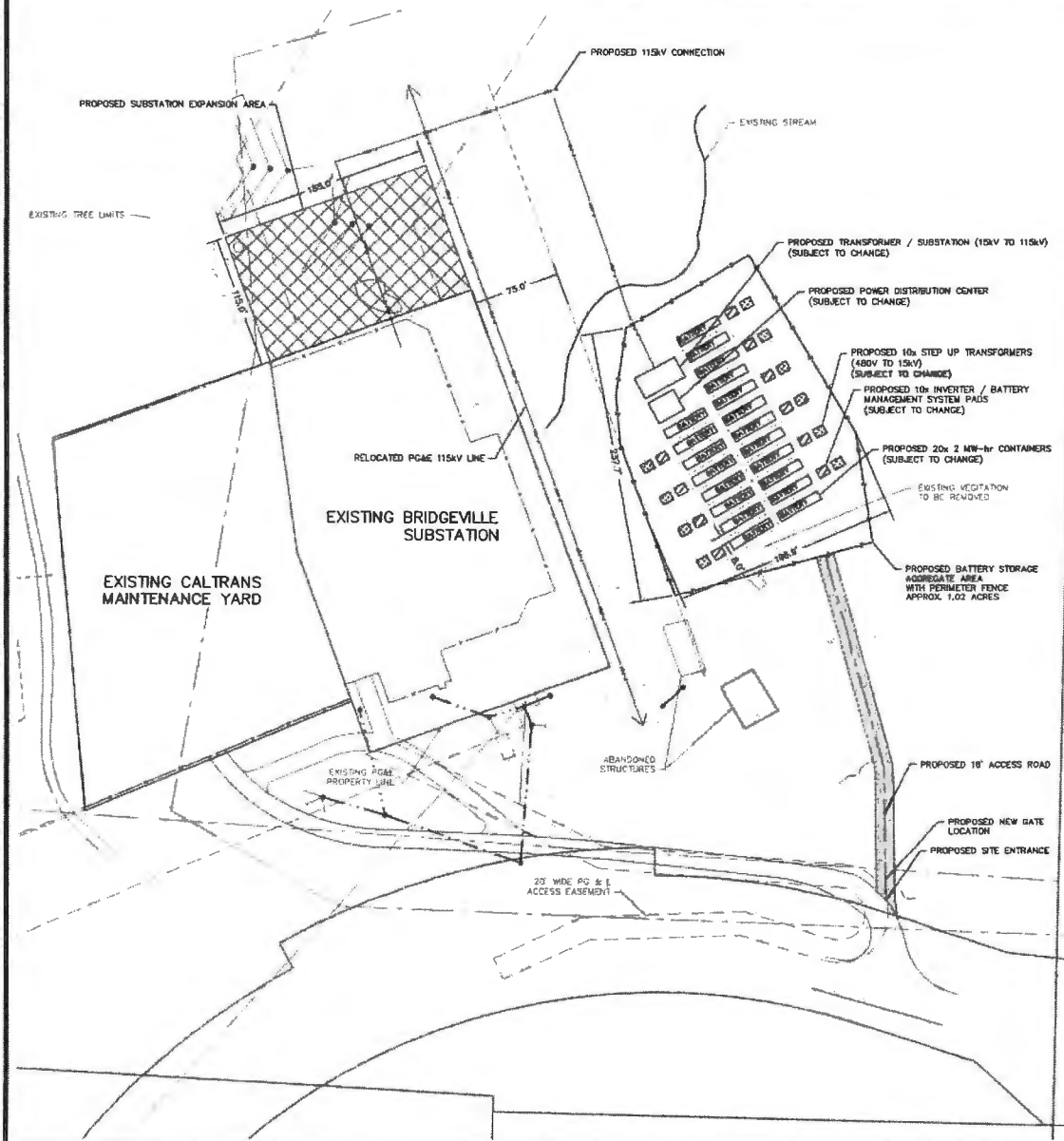
Notes
 1. Coordinate System NAD 1983 UTM Zone 10N
 2. Background Sources Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), swisstopo, © OpenStreetMap contributors, and the GIS User Community

VAN DUZEN STORAGE PROJECT CONDITIONAL USE PERMIT APPLICATION

February 22, 2019

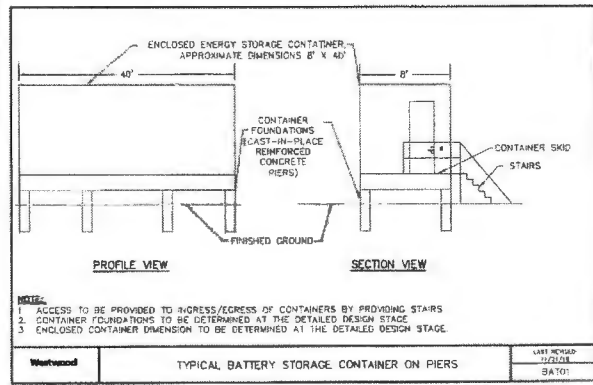
This page intentionally left blank.

40 MW-hr BATTERY ENERGY STORAGE SYSTEM



- LEGEND:**
- EXISTING SUBSTATION FENCE LINE
 - EXISTING PG&E PROPERTY LINE
 - EXISTING ROAD
 - EXISTING STREAM
 - EASEMENT LINE
 - ▨ PROPOSED SUBSTATION EXPANSION AREA
 - ▭ PROPOSED BATTERY STORAGE AGGREGATE AREA
 - ▭ PROPOSED BATTERY STORAGE AREA FENCE LINE
 - PROPOSED ACCESS ROAD
 - ⊠ PROPOSED STEP UP TRANSFORMER (480V TO 15kV)
 - ⊠ PROPOSED INVERTER
 - ▭ PROPOSED BATTERY STORAGE CONTAINER
 - PROPOSED POWER LINE

- NOTES:**
1. BATTERY STORAGE SYSTEM TO PROVIDE UP TO 40 MEGAWATT HOURS (MWH) OF LI-ION BATTERY STORAGE.
 2. ENCLOSURES WOULD BE PLACED ON SHALLOW, CAST-IN-PLACE, REINFORCED CONCRETE PIERS (ALSO REFERRED TO AS FOOTINGS) MEASURING ABOUT TWO FEET IN DIAMETER AND RISING FOUR TO SIX INCHES ABOVE GROUND.



| | |
|--------------|-----|
| Prepared by: | DPW |
| Checked by: | CSB |
| Drawn by: | DPW |
| Revised by: | DPW |
| Project No.: | |
| Scale: | |
| Sheet No.: | |

Prepared for:

Van Duzen Storage Project
 Humboldt County, CA

Issued For Review
 (Not For Construction)

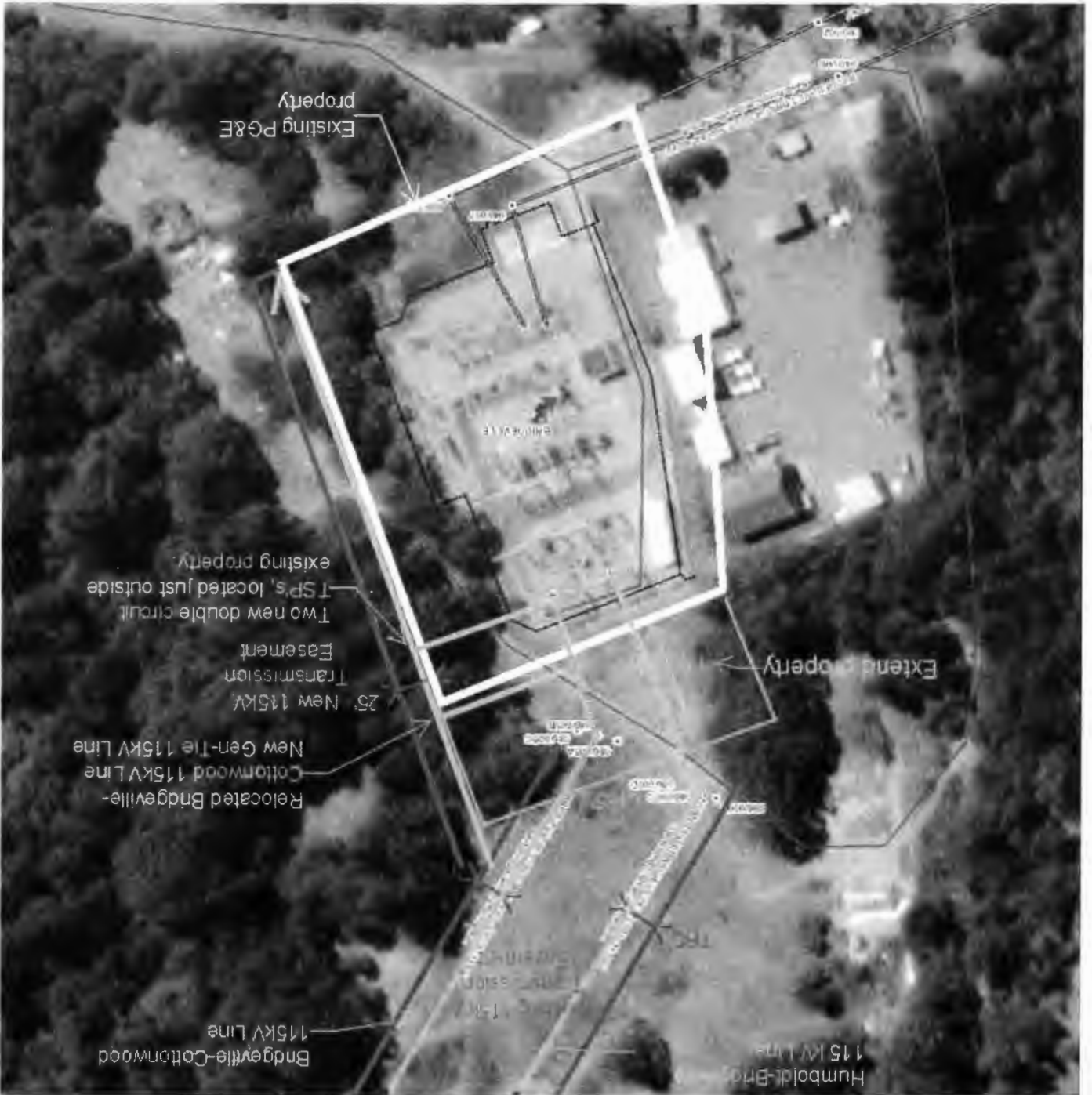
Date: 2/21/2019
 Sheet 1 of 1

VAN DUZEN STORAGE PROJECT CONDITIONAL USE PERMIT APPLICATION

February 22, 2019

This page intentionally left blank.

Figure 3. Bridgeville Substation Aerial Schematic



VAN DUZEN STORAGE PROJECT CONDITIONAL USE PERMIT APPLICATION

February 22, 2019

This page intentionally left blank.

February 22, 2019

2.0 PROJECT DESCRIPTION

2.1 PROJECT PURPOSE AND BACKGROUND

Battery energy storage provides a means to increase use of renewable forms of energy generation. By storing energy that is generated at off-peak times (i.e., when there is less demand for energy) or when renewable output is at its highest, batteries provide a ready source of power that can be deployed by the California Independent System Operator at times of greatest benefit. The benefits include grid efficiency, energy cost savings, energy redundancy, fewer service disruptions, and reduced greenhouse gas emissions that would otherwise be associated with gas-fired power generation.

The Project as proposed would be a 4-hour system, providing increased capacity and energy stability to the local grid. The Project's location makes efficient use of space and infrastructure to connect to the existing grid with minimal improvements.

2.2 PROJECT DESCRIPTION

The Project would be composed of Lithium (Li)-ion batteries (i.e., cells) arranged into modules, which in turn would be stored in battery racks. The racks would be entirely housed within containers. The Project would include 20 containers, each measuring 53 feet long by 8.5 feet wide by 9.5 feet tall. Each container will house arrays of Li-ion batteries capable of providing 2 MWh of energy storage, for a total of 40 MWh (Table 2-1).

The Project would place the batteries, containers, transformers, power distribution center (PDC), and power conversion system (PCS) enclosures inside a fenced area with a locked gate. The enclosure would be surfaced with compacted gravel. The 20 containers inside the enclosure would each be placed on 8 cast-in-place reinforced concrete piers (i.e., footings) of about 2 feet in diameter, extending about 48 inches below grade, and rising 4 to 6 inches above the ground surface. The footings would be located at each corner and two pairs of evenly spaced footings would be located along the long axis of the container. The auxiliary equipment would be mounted on individual reinforced concrete foundations sized for the equipment (Figure 2). Each container would have a heating, ventilation, and air conditioning (HVAC) unit within the container. An inverter with a battery management system and container control system would be installed externally on a concrete pad next to each container. One step-up transformer would be associated with each pair of containers and would be installed alongside the containers on a separate concrete pad (Table 2-1, Figure 2).

2.2.1 Battery Energy Storage System Components

The main components of the Project are (Figure 2):

- **Batteries:** Li-ion cells are assembled either in a series or a parallel connection in sealed modules. The cells would have an operating direct current (DC) voltage ranging between 2 and 6 volts, while the battery modules would have a DC voltage ranging between 40 and 60 volts. The battery modules would be installed in self-supporting racks electrically connected in a series or

VAN DUZEN STORAGE PROJECT CONDITIONAL USE PERMIT APPLICATION

February 22, 2019

parallel to each other. The operating rack-level DC voltage would range between 700 and 1,000 volts. The individual battery racks would be connected in series or parallel configuration to deliver the battery storage system energy and power rating.

- **Battery Storage System Enclosure and Controller:** The battery storage system enclosure would house the batteries described above, as well as the battery storage system controller. The battery storage system enclosure would also house required HVAC and fire protection systems.
- **Power Conversion System:** The PCS would consist of an inverter, protection equipment, DC and alternating current (AC) circuit breakers, filter equipment, equipment terminals, and connection cabling system. Electricity would be transferred from the existing power grid to the Project batteries during a battery charging cycle and from the Project batteries to the power grid during a battery discharge cycle. The PCS would convert electric energy from AC to DC when the energy is transferred from the grid to the battery and from DC to AC when the energy is transferred from the battery to the grid.
- **Step-up Transformer:** The transformer would be pad-mounted and transforms the output of the PCS to medium AC voltage (15 kilovolt [kV]) to increase the overall efficiency of the battery storage system and protect the PCS in case of electrical faults. One or more PCS units would be connected to the step-up transformer in a three-winding configuration.
- **Medium Voltage Switchgear:** The medium voltage switchgear would be mounted in the PDC and provide a feeder breaker for the battery storage system and provide the required level of protection during electrical faults in the system.
- **Auxiliary Transformer:** The auxiliary transformer would be mounted in the PDC, powered from the 15-kV switchgear, and provide all auxiliary power to the battery storage system.
- **Access Road:** A 16-foot-wide access road that would extend from existing access road (approximately 300 feet).

Table 2-1. Van Duzen Storage Project Component Dimensions

| Battery Storage System Component | Number | Height (feet) | Width (feet) | Length (feet) | Foundation Design | Foundation Surface Area (feet ²) | Excavation Volume (cubic yards) |
|----------------------------------|--------|---------------|--------------|---------------|---|--|---------------------------------|
| Energy Storage Project Enclosure | 20 | 9.5 | 8.5 | 53 | Concrete footings (8 per unit), 2-foot diameter, 4 to 6 inches above grade, 18 inches below grade | NA | 2 |
| Power Conversion System (PCS) | 10 | 9 | 11 | 5 | Concrete pad, 11 feet by 5 feet, 4 to 6 inches above grade, 18 inches below grade | 55 | 7 |
| Step Up Transformers | 10 | 9 | 11 | 5 | Concrete pad, 11 feet by 5 feet, 4 to 6 inches above grade, 18 inches below grade | 55 | 7 |

VAN DUZEN STORAGE PROJECT CONDITIONAL USE PERMIT APPLICATION

February 22, 2019

| Battery Storage System Component | Number | Height (feet) | Width (feet) | Length (feet) | Foundation Design | Foundation Surface Area (feet ²) | Excavation Volume (cubic yards) |
|---|--------|---------------|--------------|---------------|---|--|---------------------------------|
| Power Distribution Center (PDC) | 1 | 10 | 14 | 14 | Concrete pad, 4 to 6 inches above grade, 18 inches below grade | 196 | 20 |
| 12,500 kVA ¹ Main Transformer | 1 | 20 | 20 | 20 | Concrete pad w/retainment, 4 to 6 inches above grade, 48 inches below grade | 400 | 1500 |
| 75 kVA Auxiliary Transformer (Mounted in PDC) | | | | | | | |
| 15kV Switchgear (Mounted in PDC) | | | | | | | |
| Cable Trench | NA | 2 | 2 | 350 | | NA | 50 |

¹ kV = kilovolt; kVA = kilovolt-ampere

The Project also includes upgrades to the existing PG&E Bridgeville 115kV Substation to accommodate interconnection of the battery storage Project to the grid: an expansion area, pad, fence, building expansion, infrastructure, and overhead lines (Figure 3).

The Project site would require vegetation clearing and moderate grading to level the terrain for pads. Two small, abandoned buildings would be removed. Excavation would be required for the concrete footings, electrical conduit banks, PDC, PCS, and transformer pads. Additional external Project features (civil, structural, and electrical) include two pad-mounted low-voltage transformers located in the battery storage system walled area adjacent to the battery containers and low-voltage yard lights to illuminate the battery storage equipment when needed during nighttime hours. Collection is by overhead 115 kV gen-tie on wooden poles to the point of interconnection.

2.2.2 PG&E's Bridgeville Substation Upgrades

The Bridgeville Substation is part of PG&E's existing 115-kV transmission system and is located between the Cottonwood Substation to the east and the Humboldt Substation to the west. Bridgeville is currently configured as a 115/12-kV substation, which connects local distribution lines to PG&E's 115-kV transmission system. To accommodate the Project, PG&E would upgrade the Bridgeville Substation to connect the Project to the 115-kV side of the substation.

PG&E would extend the existing substation graveled pad to the north requiring approximately 1.0 acres of clearing and installing new perimeter fencing. Two new intermediate transmission structures with a maximum height of 120 feet above grade may be needed to connect the gen-tie to the point of interconnect. Additionally, modifications to the existing Humboldt-Bridgeville 115kV line and the Bridgeville-Cottonwood 115kV line entering and exiting the Bridgeville Substation may be required to

VAN DUZEN STORAGE PROJECT CONDITIONAL USE PERMIT APPLICATION

February 22, 2019

interconnect the Project. During construction, PG&E may need to construct a temporary line (i.e., a “shoo-fly”) up to 600 feet long and up to 120 feet above grade to maintain electrical service while substation upgrades are completed.

Structural components in the substation expansion would include:

- Chain-link or similar security fencing up to 8 feet tall and locked access gates
- 115-kV breaker to electrically isolate the Project from the Bridgeville Substation
- Up to 4 poles tubular steel poles (TSPs) up to 40 feet in height
- Two new circuit breakers to the existing 115-kV bus
- Telecommunications links (fiber optic)
- Up to 5 supervisory control and data acquisition (SCADA) switches

Access Roads

There is an existing access road to the substation from State Route (SR) 36 (Figures 2 and 3). No new access roads would be required for the expansion of the existing substation.

Substation Expansion Safety and Security

Site access exists to the PG&E Bridgeville Substation via an unnamed road exiting from and to the north of SR 36. The substation expansion would be fenced and have access secured by a locked gate. It would be surrounded by an up-to 8-foot-high link or similar security fence and be accessible only by PG&E staff.

Signage

PG&E would install signage as required by the California Public Utilities Commission (CPUC) and any other entities with jurisdiction.

2.3 CONSTRUCTION SEQUENCE

Construction activities for the Project would generally occur as follows:

- 1) Pre-construction survey to confirm absence or adequate avoidance of any sensitive resources
- 2) Equipment staging
- 3) Use of stormwater BMPs (e.g., silt fences, straw wattles, or gravel bags; covering stockpiled soil) to contain soil and runoff onsite consistent with the Project’s grading and stormwater permits
- 4) Preparation of driveway and equipment foundations by removing existing vegetation and two small abandoned buildings; grading
- 5) Site compaction and gravel
- 6) Excavating footings and pads

VAN DUZEN STORAGE PROJECT CONDITIONAL USE PERMIT APPLICATION

February 22, 2019

- 7) Pour-in-place concrete footings and pad foundations
- 8) Install below-ground conduit banks
- 9) Install PCS, PDS, and pad-mounted transformers
- 10) Install below-ground and above-ground conduit to existing PG&E utility poles
- 11) Install safety features and security lighting
- 12) Cleanup and demobilize Project site
- 13) Conduct operator orientation and training

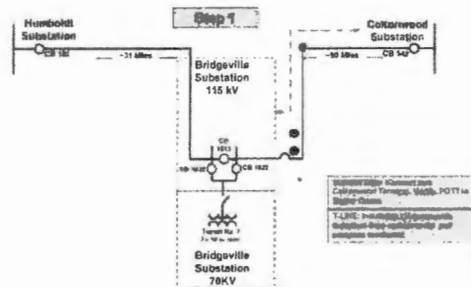
Construction of the PG&E upgrades to the substation would generally occur as follows:

- 1) Bridgeville-Cottonwood 115 kV line relocation
- 2) Bridgeville Substation expansion
- 3) Complete Project interconnection and energization; testing

The construction process would be as follows:

Step #1 Rerouting Bridgeville-Cottonwood 115 kV Transmission Line

- o Expand the Bridgeville Substation and install a new perimeter fence surrounding the expansion area.
- o Construct new line terminal in the Bridgeville Substation for rerouting a portion of the Bridgeville-Cottonwood 115 kV transmission line and new dead-end structures (i.e., new equipment where the line ends), associated foundations, and conduit and grounding. For this rerouting, two to four new TSP's and three to five new conductor spans will be required.
- o Install transmission line structures to relocate the portion of the Bridgeville-Cottonwood 115kV transmission line and connect it into new line terminal at Bridgeville. Protection and associated telecommunication upgrades will be completed in this step.

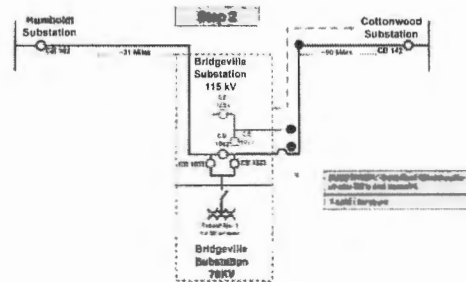


VAN DUZEN STORAGE PROJECT CONDITIONAL USE PERMIT APPLICATION

February 22, 2019

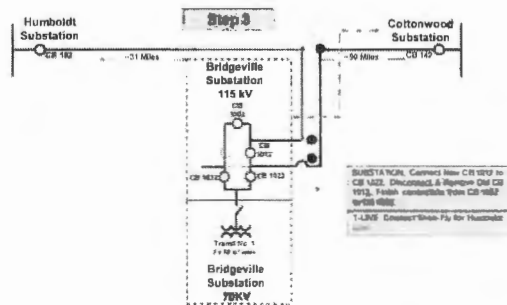
Step #2 Construction inside Bridgeville Expansion Area

- Install two new Circuit Breakers (CB) with disconnect switches, buswork (i.e., conductor or group of conductors that serve as a common connection in electrical circuits) and dead-end structures for the expanded Ring Bus. In a Ring Bus configuration, all the circuit breakers are connected to form a ring, with switching isolators on both sides of each circuit breaker. Expand the existing control and protection building up to 100 feet in length, and up to 40 feet in width to accommodate required equipment.



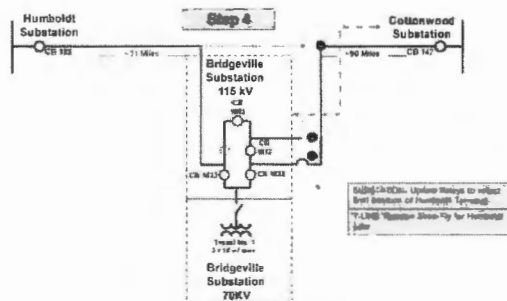
Step #3 Create temporary line and remove old equipment

- Install temporary line (i.e., the "shoo-fly") to connect the Bridgeville-Humboldt 115kV line to the new line terminal. This will allow the completion of buswork underneath the current and future terminal conductors for the Humboldt 115kV line. The old line (i.e., CB 1012) will be disconnected and removed from service as it is not used in the final Ring Bus configuration.



Step #4 Finish Bridgeville Substation and all network upgrades

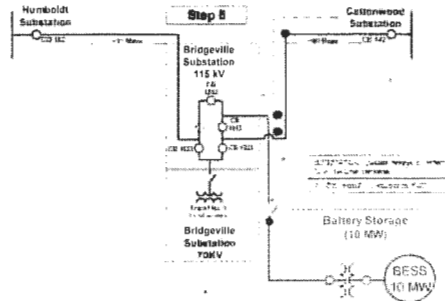
- Remove temporary line and complete Humboldt 115kV line terminal.



VAN DUZEN STORAGE PROJECT CONDITIONAL USE PERMIT APPLICATION

February 22, 2019

Step #5 Bring substation in-service and start commercial operations.



2.4 CONSTRUCTION PERSONNEL AND EQUIPMENT

Construction personnel would consist of approximately 15 to 20 workers and supervisors at any given time, depending on the construction activities. The following equipment would be used during construction and commissioning of the Project:

- Excavator (1)
- Backhoe (1)
- Dozer (1)
- Roller/Compactor (1)
- Dump truck (2)
- Concrete mixer (1)
- Flatbed-mounted utility crane (1)
- Portable generator and welding equipment (1)
- Forklift (1)
- Pickup trucks (4)
- Utility line trucks (2)

2.5 CONSTRUCTION TRAFFIC AND PARKING

Construction vehicles would access the site via a new access road from SR 36 (Figure 2). Estimated trip generation would include the following:

- One-time mobilization and demobilization of heavy equipment (excavator and backhoe) at the start and end of earthwork or other construction stage, as needed
- One-time delivery of the major battery storage system equipment components

VAN DUZEN STORAGE PROJECT CONDITIONAL USE PERMIT APPLICATION

February 22, 2019

There would be no parking of Project construction vehicles on public roads unless as required to complete a specific construction task.

2.6 OPERATIONS AND MAINTENANCE

Upon completion of construction, the Project would be properly operated and maintained. Given the conditions at the Project site, requirements to ensure proper site maintenance are minimal but include maintaining access and evacuation routes. The Project would implement all relevant safety measures into the Project to ensure the safety of employees, visitors, and residents near the Project site. The Project would be generally unmanned during routine operation. After commissioning and during the operational life, qualified technicians would routinely inspect the battery storage system and conduct necessary maintenance to ensure safe operational readiness.

2.6.1 Testing and Van Duzen Storage Project Commissioning

Before being commissioned, the Project would be tested to ensure compliance with required specifications and proper working order.

2.6.2 Cleanup

Following construction, all construction-related debris would be removed so that the site is left during operations in accordance with the requirements of Humboldt County or permits and authorizations issued by other regulatory agencies. All construction debris and waste would be temporarily stored outside of any jurisdictional drainages and in locations that avoid unnecessary movement of the material. When removed, material would be disposed of at an appropriate location by a local, licensed disposal company.

2.6.3 Water Supply and Usage

The water used by the Project would be during construction, for soil compaction, dust suppression, and cement mixing. Construction water would be sourced from the Humboldt Redwood Company. Operations will not require water supply. Procurement of water for construction would comply with all Federal, State, and local laws and ordinances and would conform to all mitigation measures for the Project.

2.7 PROJECT DECOMMISSIONING AND RESTORATION

The Project would have a lifespan of at least 15 years, after which Van Duzen Storage, LLC, would follow requirements specified by Humboldt County and would require removal of Project structures and areas impacted by construction, operation, and decommissioning. Any underground improvements would be abandoned in place; none are anticipated. If required, the foundations would be removed to a depth determined by landowner agreements and local, State, and Federal regulations. There would be no access roads to remove and restore, and no disturbed lands would result from the Project, and accordingly, none would require reclamation or restoration.

Alternatively, new technology may become available for repowering the Project. If the Project is repowered, the Project would be required to apply for all required environmental and permit/entitlement

VAN DUZEN STORAGE PROJECT CONDITIONAL USE PERMIT APPLICATION

February 22, 2019

reviews and landowner agreements to extend the operational period. Van Duzen Storage, LLC, will be financially responsible for restoring the land to its natural ecological composition, structure, and function after Project operations.

3.0 ANTICIPATED PERMITS AND APPROVALS

The Project would require the discretionary approval of a Conditional Use Permit by Humboldt County and subsequent administrative or ministerial approvals (e.g., grading permit, building permit, electrical permit, fire permit). The Project would also require several environmental permits, including a discharge permit under the National Pollutant Discharge Elimination System (NPDES) through the Clean Water Act and a Spill Prevention, Countermeasure, and Control Plan (SPCCP). Any upgrades to the Bridgeville Substation will require authorization from the CPUC pursuant to General Order 131-D.

VAN DUZEN STORAGE PROJECT CONDITIONAL USE PERMIT APPLICATION

February 22, 2019

APPENDICES

VAN DUZEN STORAGE PROJECT CONDITIONAL USE PERMIT APPLICATION

February 22, 2019

Appendix A GRANT DEED

2008-10569-3

Recorded — Official Records
Humboldt County, California
Carolyn Crnich, Recorder

Recorded by FIDELITY NATIONAL TITLE CO.
Rec Fee 13.00
Doc Trf Tax 350.90
Survey Mon 10.00
Clerk: LH Total: 373.90
Apr 28, 2008 at 15:31

RECORDING REQUESTED BY:
Fidelity National Title Company of California
Escrow No.: 08-231963-JS
Locate No.: CAFNT0912-0912-0001-0000231963
Title No.: 08-231963

**When Recorded Mail Document
and Tax Statement To:**
Mr. and Mrs. Glen Brown
PO Box 927
Jasper, Alabama
35502

APN: 207-074-027, 208-111-014

SPACE ABOVE THIS LINE FOR RECORDER'S USE

GRANT DEED

**The undersigned grantor(s) declare(s)
Documentary transfer tax is \$350.90**

[x] computed on full value of property conveyed, or
[2] computed on full value less value of liens or encumbrances remaining at time of sale,
Unincorporated Area ~~City of Bridgeville,~~

FOR A VALUABLE CONSIDERATION, receipt of which is hereby acknowledged, Christopher Martin Weston, Sr.,
Trustee of the Christopher Martin Weston, Sr Living Trust utd 1/6/04,

hereby GRANT(S) to Glen Brown and Kay Brown, husband and wife as joint tenants

the following described real property in the City of Bridgeville, County of Humboldt, State of California:
SEE EXHIBIT "A" ATTACHED HERETO AND MADE A PART HEREOF

DATED: April 2, 2008

State of California)
County of Humboldt)

Christopher Martin Weston, Sr. Trustee of the
Christopher Martin Weston, Sr Living Trust utd
1/6/04

On 4/2/08 before me,
Jennifer M Simpson, Notary Public
(here insert name and title of the officer), personally appeared
Christopher Martin Weston

By: Christopher Martin Weston
Christopher Martin Weston, Trustee Justice

who proved to me on the basis of satisfactory evidence to be the
person(s) whose name(s) is/are subscribed to the within instrument
and acknowledged to me that he/she/they executed the same in
his/her/their authorized capacity(ies), and that by his/her/their
signature(s) on the instrument the person(s), or the entity upon
behalf of which the person(s) acted, executed the instrument.



I certify under PENALTY OF PERJURY under the laws of the State of
California that the foregoing paragraph is true and correct.

WITNESS my hand and official seal.

Signature Jennifer M Simpson (Seal)

MAIL TAX STATEMENTS AS DIRECTED ABOVE

FD-213 (Rev 12/07)
(grant)(12-07)

GRANT DEED

6

Escrow No.: 08-231963-JS
Locate No.: CAFNT0912-0912-0001-0000231963
Title No.: 08-231963

EXHIBIT "A"

THE LAND REFERRED TO HEREIN BELOW IS SITUATED IN THE COUNTY OF _ STATE OF CALIFORNIA AND IS DESCRIBED AS FOLLOWS:

TRACT A

The East Half of the Northeast Quarter of Section 12, Township 1 North, Range 3 East, Humboldt Meridian.

EXCEPTING THEREFROM, the following lands:

The land conveyed to Pacific Gas and Electric Company by deed recorded March 13, 1953 in Book 242 of Official Records, page 549, Humboldt County Records.

The land conveyed to the State of California by deed recorded July 26, 1956 in Book 402 of Official Records, page 639, Humboldt County Records.

The land lying within the State Highway 36 boundaries conveyed to the State of California by deed recorded March 21, 1960 in Book 579 of Official Records, page 177, Humboldt County Records.

The land conveyed to George H. Cox by deed recorded September 25, 1940 in Book 247 of Official Records, page 15, Humboldt County Records.

TRACT B

That portion of the land lying North of the South line of the East Half of the Northeast Quarter of Section 12, Township 1 North, Range 3 East, Humboldt Meridian, described as follows:

BEGINNING at a point in Van Duzen River distant 200 feet East of the Northwest Quarter of the Southeast Quarter of said Section 12; and running

thence South 2 degrees 05 minutes West, 170.5 feet;

thence leaving said River South 75 degrees East, 180 feet;

thence South 63-1/2 degrees East, 76.5 feet;

thence North 86-1/2 degrees East, 110 feet;

thence North 71-3/4 degrees East, 123 feet;

thence North 34 degrees East, 99 feet;

thence North 55-1/2 degrees East, 57 feet;

thence North 70 feet to the center of Little Larabee Creek;

thence North 87 degrees 50 minutes West along the centerline of said creek, 565 feet to the point of beginning.

TRACT C

Lot 2 of Section 7, Township 1 North, Range 4 East, Humboldt Meridian.

EXCEPTING THEREFROM the following lands:

That portion of Lot 2 lying Easterly of the Westerly line of the land conveyed to State of California by deed recorded April 15, 1968 in Book 957 of Official Records, page 376, Humboldt County Records, being the same as depicted on a Survey for the State of California and recorded in Book 37 of Surveys, page 120, Humboldt County Records, and being "Lot B" as shown on that certain Record of Survey recorded in Book 57 of Surveys, page 14, Humboldt County Records.

2008-10569-3

2

ALSO EXCEPTING THEREFROM the following lands:

That portion of Lot 2 lying Southerly of the Northerly line of the land conveyed to the State of California by deed recorded March 21, 1960 in Book 579 of Official Records, page 177, and by deed recorded October 2, 1970 in Book 1059 of Official Records, page 563, Humboldt County Records.

APN: 207-074-027, 208-111-014

2008-10569-3

3

2018-005938

Recorded - Official Records
Humboldt County, California
Kelly E. Sanders, Recorder
Recorded by: SPL EXPRESS

Pages: 5

Recording Fee: \$ 99.00
Tax Fee: \$0
Clerk: sc Total: \$99.00
Apr 02, 2018 at 01:36:52



RECORDING REQUESTED BY
STEWART TITLE GUARANTY COMPANY

A4181

RECORDING REQUESTED BY
AND WHEN RECORDED MAIL TO:

Terra-Gen Development Company, LLC
11512 El Camino Real, Suite 370
San Diego, CA 92130
Attn: Vice President, Real Estate

APN: 207-074-027

The undersigned Optionee hereby declares that the following is true and correct: The Documentary Transfer Tax is None; option only.

MEMORANDUM OF OPTION AGREEMENT

For good and valuable consideration, the receipt of which is hereby acknowledged, **Kay Brown**, a widow ("**Optionor**"), hereby grants to **Terra-Gen Development Company, LLC**, a Delaware limited liability company ("**Optionee**"), an option to purchase an approximately 1.5-acre to 1.64-acre portion of that certain real property in the County of Humboldt, State of California, legally described on Exhibit A, attached hereto and incorporated herein.

This Memorandum of Option Agreement is a short form of that certain unrecorded Option Agreement between Optionor and Optionee ("**Option Agreement**"). The portion to be purchased (the "**Property**") shall be determined as provided in the Option Agreement. In the event of any conflict between this Memorandum and said Option Agreement, the Option Agreement shall control.

The option granted hereby must be exercised, if at all, within thirty-six (36) months of the "Effective Date" as defined in the Option Agreement, and then Optionee must purchase the Property within thirty (30) days after exercise of the option. Therefore, if Optionee or its nominee has not purchased the Property within thirty-eight (38) months of the date this Memorandum is recorded in the Official Records of Humboldt County, California, then absent breach by Optionor, this Memorandum shall expire and Optionee shall thereafter have no further interest of record in the Property.

Optionor hereby authorizes Optionee, or its successor or assignee, at Optionee's sole cost and expense, to act as his agent and on his behalf in applying to any public agency for land use entitlements or permits necessary or convenient to cause the Property to become a legal parcel (if necessary) and for the construction, operation and maintenance of electric substation and related facilities on the Property. Optionor shall, at no cost or expense to Optionor, cooperate with and assist Optionee in the processing of

3NB9418-MEMO OF OPTION AGREEMENT Humboldt Brown
01/16/18

1

"THIS DOCUMENT WAS FILED FOR RECORDING BY STEWART TITLE AS AN ACCOMMODATION ONLY. IT HAS NOT BEEN EXAMINED AS TO ITS EXECUTION OR AS TO ITS EFFECT UPON THE TITLE OR ITS RECORDABILITY."

the application, and to the extent necessary or appropriate, promptly execute any such items and materials upon request by Optionee.

Optionor hereby waives, to the fullest extent permitted by law, any and all setbacks and setback requirements, whether imposed by applicable law or by any person or entity, including any setback requirements described in any zoning ordinance of any governmental authority or in any governmental entitlement or permit heretofore or hereafter issued to Optionor ("Setback"), as they apply to the Property. Further, where waiver or elimination of any Setback is not permitted by law, Optionor hereby consents to any reduction in such Setback as applied to the Property. Further, if so requested by Optionor, Optionor shall, without demanding additional consideration therefor, (i) execute (and if appropriate cause to be acknowledged) any consent letter to any setback waiver, setback elimination or setback reduction, or other document reasonably requested by Optionee or any governmental authority in connection with the document and (ii) return the executed document to the requesting party within ten days after the request.

In witness whereof, Optionor and Optionee have executed this Memorandum of Option Agreement as of 3/27, 2018.

Optionor:

Kay L. Brown
Kay Brown

Date: 3/27/2018

Optionee:

Terra-Gen Development Company, LLC,
a Delaware limited liability company

By: Randall W. Hoyle
Randall W. Hoyle
Senior Vice President

Date: 3/27/18

ACKNOWLEDGMENT

A notary public or other officer completing this certificate verifies only the identity of the individual who signed the document to which this certificate is attached, and not the truthfulness, accuracy, or validity of that document.

STATE OF CALIFORNIA)
) ss.
COUNTY OF Humboldt)

On 3/27, 2018, before me, Tanya Standley, Notary Public, personally appeared Kay Brown who proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) ~~is~~ are subscribed to the within instrument and acknowledged to me that he ~~is~~ /she /they executed the same in his ~~is~~ /her /their authorized capacity(ies), and that by his ~~is~~ /her /their signature(s) on the instrument the person(s) or the entity upon behalf of which the person(s) acted, executed the instrument.

I certify under PENALTY OF PERJURY under the laws of the State of California that the foregoing paragraph is true and correct.

WITNESS my hand and official seal.



Notary Public



ACKNOWLEDGMENT

A notary public or other officer completing this certificate verifies only the identity of the individual who signed the document to which this certificate is attached, and not the truthfulness, accuracy, or validity of that document.

STATE OF CALIFORNIA)
COUNTY OF SAN DIEGO) ss.

On MARCH 29, 2018, before me, Donald J Foeller, Notary Public, personally appeared **Randall W. Hoyle**, who proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s) or the entity upon behalf of which the person(s) acted, executed the instrument.

I certify under PENALTY OF PERJURY under the laws of the State of California that the foregoing paragraph is true and correct.

WITNESS my hand and official seal.

[Signature]
Notary Public

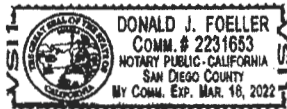


EXHIBIT A

The real property situated in the State of California, County of Humboldt, unincorporated area, and described as follows:

The East Half of the Northeast Quarter of Section 12, Township 1 North, Range 3 East, Humboldt Meridian.

EXCEPTING THEREFROM, the following lands:

The land conveyed to Pacific Gas and Electric Company by deed recorded March 13, 1953 in Book 242 of Official Records, page 549, Humboldt County Records.

The land conveyed to the State of California by deed recorded July 26, 1956 in Book 402 of Official Records, page 639, Humboldt County Records.

The land lying within the State Highway 36 boundaries conveyed to the State of California by deed recorded March 21, 1960 in Book 579 of Official Records, page 177, Humboldt County Records.

The land conveyed to George H. Cox by deed recorded September 25, 1940 in Book 247 of Official Records, page 15, Humboldt County Records.

APN: 207-074-027

| <u>Assessor's Parcel Number</u> | <u>Section, Township, Range</u> |
|---------------------------------|---------------------------------|
| 207-074-027 | Sec. 12, T 1 N, R 3 E, H.M. |

RECORDING REQUESTED BY
STEWART TITLE GUARANTY COMPANY

A4181

RECORDING REQUESTED BY AND
WHEN RECORDED MAIL TO:

NANCY L. OEHLER
KLEIN, DeNATALE, GOLDNER, et al.
4550 California Ave, 2nd Floor
P.O. Box 11172
Bakersfield, CA 93389-1172

2018-005939

Recorded - Official Records
Humboldt County, California
Kelly E. Sanders, Recorder
Recorded by: SPL EXPRESS
Pages: 5

Recording Fee: \$ 194.00
Tax Fee: \$0
Clerk: sc Total: \$194.00
Apr 02, 2018 at 01:36:52



MAIL TAX STATEMENTS TO:

Kay Brown
P.O. Box 123
Bridgeville, CA 95526

APN: 207-074-027, 208-111-014

AFFIDAVIT - - DEATH OF JOINT TENANT

STATE OF CALIFORNIA)
) ss.
COUNTY OF HUMBOLDT)

KAY BROWN, of legal age, being duly sworn, deposes and says:

That GLEN CLARK BROWN, also known as GLEN BROWN, the decedent mentioned in the attached certified copy of Certificate of Death, is the same person as GLEN BROWN named as one of the parties in that certain Grant Deed dated April 2, 2008, executed by CHRISTOPHER MARTIN WESTON, SR., TRUSTEE OF THE CHRISTOPHER MARTIN WESTON SR. LIVING TRUST UTD 1/6/2004 to GLEN BROWN and KAY BROWN, husband and wife, as joint tenants, recorded on April 28, 2008, as Document No. 2008-10569-3, of Official Records of Humboldt County, California covering the property situated in the County of Humboldt, State of California more particularly described as follows:

- See legal description attached hereto as Exhibit "A" and incorporated by reference.

Dated: 3/27, 2018

Kay L. Brown
KAY BROWN

"THIS DOCUMENT WAS FILED FOR RECORDING BY STEWART TITLE AS AN ACCOMMODATION ONLY. IT HAS NOT BEEN EXAMINED AS TO ITS EXECUTION OR AS TO ITS EFFECT UPON THE TITLE OR ITS RECORDABILITY."

17704-12/3NU2073.DOCX

A notary public or other officer completing this certificate verifies only the identity of the individual who signed the document to which this certificate is attached, and not the truthfulness, accuracy, or validity of that document.

STATE OF CALIFORNIA)
) ss.
COUNTY OF HUMBOLDT)

Subscribed and sworn to (or affirmed) before me on this 27 day of March, 2018, by KAY BROWN, proved to me on the basis of satisfactory evidence to be the person who appeared before me.



NOTARY PUBLIC



STATE OF CALIFORNIA
CERTIFICATION OF VITAL RECORD
COUNTY OF HUMBOLDT
Eureka, California 95501

DOC #2018-005939 Page 3 of 5

3052016180318

CERTIFICATE OF DEATH

3201612000924

| | | | | | |
|--|--|---|--|--|--|
| 1. NAME OF DECEDENT - FIRST (GIVEN) | | 2. MIDDLE | | 3. LAST (FAMILY) | |
| GLEN | | CLARK | | BROWN | |
| 4. DATE OF BIRTH (mm/dd/yyyy) | | | | | |
| 12/23/1947 | | | | | |
| 5. AGE YRS | | 6. AGE YRS | | 7. SEX | |
| 68 | | 68 | | M | |
| 8. BIRTH STATE/FOREIGN COUNTRY | | 10. SOCIAL SECURITY NUMBER | | 11. EVER IN U.S. ARMED FORCES? | |
| AL | | 2594 | | <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO <input type="checkbox"/> UNK | |
| 13. EDUCATION - Highest Level (Grade) | | 14. WAS DECEDENT HISPANIC/LATINO/SPANISH? (If yes, see supplemental on back) | | 15. MARRIAGE STATUS (as of date of death) | |
| BACHELOR | | <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO | | MARRIED | |
| 17. USUAL OCCUPATION - Type of work for most of life. DO NOT USE RETIRED | | 18. KIND OF BUSINESS OR INDUSTRY (e.g., grocery store, steel construction, employment agency, etc.) | | 19. YEARS IN OCCUPATION | |
| FORESTER | | LOGGING | | 35 | |
| 20. DECEDENT'S RESIDENCE (Street and number, or location) | | | | | |
| 26388 STATE HIGHWAY 36 | | | | | |
| 21. CITY | | 22. COUNTY/PROVINCE | | 23. ZIP CODE | |
| BRIDGEVILLE | | HUMBOLDT | | 95526 | |
| 24. DECEASED'S NAME - RELATIONSHIP | | 25. STATE/FOREIGN COUNTRY | | | |
| KAY BROWN, WIFE | | CA | | | |
| 26. NAME OF SURVIVING SPOUSE (first, middle, last) | | 27. ADDRESS (Street and number, or location, P.O. box, city or town, state and zip) | | | |
| KAY | | P.O. BOX 123, BRIDGEVILLE, CA 95526 | | | |
| 28. NAME OF SURVIVING SPOUSE (first, middle, last) | | 29. MIDDLE | | 30. LAST (FAMILY) | |
| KAY | | ELLEN | | LENOIR | |
| 31. NAME OF FATHER (first, middle, last) | | 32. MIDDLE | | 33. LAST (FAMILY) | |
| HAYES | | D | | BROWN | |
| 34. NAME OF MOTHER (first, middle, last) | | 35. MIDDLE | | 36. LAST (FAMILY) | |
| MARY | | M | | DAVIS | |
| 37. LAST (FAMILY) | | 38. BIRTH STATE | | 39. BIRTH STATE | |
| DAVIS | | LA | | MS | |
| 40. PLACE OF FINAL DISPOSITION | | 41. TYPE OF DISPOSITION | | | |
| BROWNS POINT FARM | | CR/TR | | | |
| ATHEN, AL 35611 | | 42. SIGNATURE OF EMBALMER | | | |
| | | NOT EMBALMED | | | |
| 43. NAME OF FUNERAL ESTABLISHMENT | | 44. LICENSE NUMBER | | 45. SIGNATURE OF LOCAL REGISTRAR | |
| GOBLES FORTUNA MORTUARY | | FD697 | | DONALD BAIRD, MD | |
| 46. DATE OF DEATH | | 47. DATE - mm/dd/yyyy | | 48. LICENSE NUMBER | |
| 09/16/2016 | | 09/16/2016 | | 08/15/2016 | |
| 49. PLACE OF DEATH | | | | | |
| RESIDENCE | | | | | |
| 100. COUNTY | | 101. FACILITY ADDRESS OR LOCATION WHERE DEATH OCCURRED (Street and number, or location) | | 102. CITY | |
| HUMBOLDT | | 26388 HIGHWAY 36 | | BRIDGEVILLE | |
| 103. CAUSE OF DEATH | | | | | |
| ACUTE MYOCARDIAL INFARCTION | | | | | |
| ATHEROSCLEROTIC CORONARY VASCULAR DISEASE | | | | | |
| 104. OTHER SIGNIFICANT CONDITIONS CONTRIBUTING TO DEATH BUT NOT RESULTING IN THE UNDERLYING CAUSE GIVEN IN 103 | | | | | |
| EMPHYSEMA AND AGENT ORANGE EXPOSURE | | | | | |
| 105. WAS OPERATION PERFORMED FOR ANY CONDITION IN ITEM 103 OR 104 IN THE 12 MONTHS PRECEDING DEATH? | | | | | |
| YES; CORONARY STENTS X 2 PLACED 2008 AND 2010. | | | | | |
| 106. CERTIFY THAT TO THE BEST OF MY KNOWLEDGE DEATH OCCURRED AT THE HOUR, DATE, AND PLACE STATED FROM THE CAUSE STATED | | | | | |
| 107. SIGNATURE AND TITLE OF CORONER | | 108. LICENSE NUMBER | | | |
| TREVOR J ENRIGHT | | 116. LICENSE NUMBER | | | |
| 109. DATE - mm/dd/yyyy | | 117. DATE - mm/dd/yyyy | | | |
| 09/14/2016 | | 09/14/2016 | | | |
| 118. TYPE OF CORONER / DEPUTY CORONER | | | | | |
| TREVOR J ENRIGHT, DEPUTY CORONER | | | | | |
| 119. MANNER OF DEATH | | | | | |
| <input checked="" type="checkbox"/> Natural <input type="checkbox"/> Accidental <input type="checkbox"/> Suicide <input type="checkbox"/> Homicide <input type="checkbox"/> Pending Investigation <input type="checkbox"/> Could not be determined <input type="checkbox"/> YES <input type="checkbox"/> NO <input type="checkbox"/> UNK | | | | | |
| 120. PLACE OF INJURY (e.g., home, construction site, wooded area, etc.) | | | | | |
| 121. DESCRIBE HOW INJURY OCCURRED (If events which resulted in injury) | | | | | |
| 122. LOCATION OF INJURY (Street and number, or location, and city, and zip) | | | | | |
| 123. SIGNATURE OF CORONER / DEPUTY CORONER | | | | | |
| TREVOR J ENRIGHT | | 124. DATE - mm/dd/yyyy | | | |
| 09/14/2016 | | 125. TYPE NAME, TITLE OF CORONER / DEPUTY CORONER | | | |
| | | TREVOR J ENRIGHT, DEPUTY CORONER | | | |
| STATE REGISTRAR | | | | | |

This is a true and exact reproduction of the document officially registered and placed on file in the office of the Humboldt County Local Registrar.



Donald J. Baird
 DONALD J. BAIRD, M.D.
 HEALTH OFFICER AND LOCAL REGISTRAR
 HUMBOLDT COUNTY, CALIFORNIA

SEP 15 2016
 DATE ISSUED

This copy is not valid unless prepared on an engraved border, displaying the date, seal and signature of the County Health Officer.



EXHIBIT "A"

THE LAND REFERRED TO HEREIN BELOW IS SITUATED IN THE COUNTY OF HUMBOLDT, STATE OF CALIFORNIA AND IS DESCRIBED AS FOLLOWS:

TRACT A

The East Half of the Northeast Quarter of Section 12, Township 1 North, Range 3 East, Humboldt Meridian.

EXCEPTING THEREFROM, the following lands:

The land conveyed to Pacific Gas and Electric Company by deed recorded March 13, 1953 in Book 242 of Official Records, page 549, Humboldt County Records.

The land conveyed to the State of California by deed recorded July 26, 1956 in Book 402 of Official Records, page 639, Humboldt County Records.

The land lying within the State Highway 36 boundaries conveyed to the State of California by deed recorded March 21, 1960 in Book 579 of Official Records, page 177, Humboldt County Records.

The land conveyed to George H. Cox by deed recorded September 25, 1940 in Book 247 of Official Records, page 15, Humboldt County Records.

TRACT B

That portion of the land lying North of the South line of the East Half of the Northeast Quarter of Section 12, Township 1 North, Range 3 East, Humboldt Meridian, described as follows:

BEGINNING at a point in Van Duzen River distant 200 feet East of the Northwest Quarter of the Southeast Quarter of said Section 12; and running thence South 2 degrees 05 minutes West, 170.5 feet; thence leaving said River South 75 degrees East, 180 feet; thence South 63-1/2 degrees East, 76.5 feet; thence North 86-1/2 degrees East, 110 feet; thence North 71-3/4 degrees East, 123 feet; thence North 34 degrees East, 99 feet; thence North 55-1/2 degrees East, 57 feet; thence North 70 feet to the center of Little Larabee Creek; thence North 87 degrees 50 minutes West along the centerline of said creek, 565 feet to the point of beginning.

TRACT C

Lot 2 of Section 7, Township 1 North, Range 4 East, Humboldt Meridian.

EXCEPTING THEREFROM the following lands:

That portion of Lot 2 lying Easterly of the Westerly line of the land conveyed to State of California by deed recorded April 15, 1968 in Book 957 of Official Records, page 376, Humboldt County Records, being the same as depicted on a Survey for the State of California and recorded in Book 37 of Surveys, page 120, Humboldt County Records, and being "Lot B" as shown on that certain Record of Survey recorded in Book 57 of Surveys, page 14, Humboldt County Records.

ALSO EXCEPTING THEREFROM the following lands:

That portion of Lot 2 lying Southerly of the Northerly line of the land conveyed to the State of California by deed recorded March 21, 1960 in Book 579 of Official Records, page 177, and by deed recorded October 2, 1970 in Book 1059 of Official Records, page 563, Humboldt County Records.

APN: 207-074-027, 208-111-014

"Humboldt Wind" Turbine Generators Project

On appeal from denial of permits and rejected
Environmental Certification of Final Impact Report by the
Humboldt County Planning Commission



County of Humboldt Board of Supervisors
Clerk of the Board
825 Fifth Street, Room 111, Eureka CA 95501

Town of Scotia Company, LLC

RECEIVED

DEC 06 2019

BOARD OF SUPERVISORS



December 5, 2019

Humboldt County Board of Supervisors
RE: Humboldt Wind Project

Introduction

The following comments are provided on behalf of the Town of Scotia Company LLC (TOS), which owns and operates most of real property parcels in the community of Scotia, CA. We are truly at "ground zero" for adverse impacts from the subject project, especially during the 18 month to 2 year projected 'construction' phase of the proposal. I serve TOS as its president and director of legal affairs.

Executive Summary

Briefly and by way of executive summary, TOS is opposed to the permitting and approval of the Humboldt Wind project. TOS particularly objects to Certification of the inadequate environmental impact review and reporting (EIR) documentation and the rushed approval process applied to this permit application.

Harmful Project

Even the skewed analysis undertaken in this case demonstrates that this is a very impactive project, from which adverse impacts will result and remain, and for which scores of additional analyses and mitigations have been "deferred" to a later time, after project approval and out of the public view. (See Exhibit A Attached, TOS Comments on the DEIR at pp 12-22).

If nothing else, one thing is perfectly clear from the EIR: The "Humboldt Wind" industrial turbine factory proposed is a demonstrably *harmful project*.

- There are seven separate categories of significant, foreseeable, adverse, "unavoidable" impacts acknowledged, documented and detailed in the FEIR.
- After months of additional review and analysis following circulation of the DEIR for public comment, Terra-Gen refused to mitigate harm to "less-than-significant" levels for *any* of those impacts, claiming any such project adjustments would be *infeasible*. The harm described in the FEIR remains.

All Terra-Gen was willing to do in the Final analysis was essentially to 'fiddle' with the mitigations. But as staff readily admits, Terra-Gen was not willing to provide any curtailment of the project to the extent necessary for County staff to find *even one* of the continuing adverse impacts could be reduced to a level of *insignificance*. For this reason, TOS formally incorporates by reference all of its comments on the DEIR and FEIR here as if fully put forth again. Those comments are located at Exhibit A attached.

Those continuing, "unavoidable" impacts are as follows:

- Aesthetic Impacts to local communities and property owners;
- Impacts from turbine equipment lighting, to be required by the FAA;
- Daily exceedances of safe Air Quality limits established for Oxides of Nitrogen from construction trucks and equipment;
- Impacts resulting in unpermitted 'take' of Marbled Murrelets, a listed threatened and endangered species;
- Impacts resulting in the unpermitted killing of Golden Eagles and other Raptors;
- Impacts to Wiyot Tribal Cultural lands and resources; and
- Impacts to tribal ethno-botanical landscape and upon anticipated release of Condors.

Deferred Analysis

Moreover, the full scope of adverse impacts and mitigations has been inadequately analyzed by the county staff. Through "deferral" of literally dozens of studies, plans, permits and approvals, staff has put off to another time (and in a non-public forum) critical assessment of impacts which range widely, from

- the scope of direct killing of endangered and fully protected species; to
- a presumptuous and badly bungled construction-water supply availability analysis (see Exhibit B pp 6-9; Exhibit C, NCRWQCB letter);
- traffic congestion and related hazards in Scotia;
- wind turbine generator FAA lighting requirements;
- permanent conversion to non-timber use of land zoned TPZ -- dedicated exclusively to growing and harvesting timber and compatible uses; and
- the obvious and adverse effects from creation of a 20 plus-mile-long *linear clearcut* for overhead high voltage Gen. Tie lines from Scotia to Dinsmore.

In our comments upon the DEIR, we specifically analyzed the impropriety of deferred review and approval of *24 separate plans, permits, programs and guidelines* which are intended to be undertaken AFTER project approval, and OUT of the public view, to identify and establish impacts and to develop operational protocols and mitigations to ameliorate impacts yet to be assessed. (Exhibit A, TOS DEIR Comments attached pp 12-22)

Staff's response to the objections by the public to these scores of 'deferred' analyses, impact assessments and mitigations is essentially to say, "...we can do it this way when we're in a rush." Since when has the standard of practice in Humboldt County land use planning become the minimum required? "...we can get away with it..." doesn't serve the public interest in this case, or any case, but especially not in connection with the most massive and impactful project *ever* to come before the HC BOS.

Overriding considerations to excuse and justify unavoidable harm

Staff is now calling for adoption of its statement of 'overriding considerations' to excuse and justify the acknowledged "unavoidable" harm posed by the project. This is an extraordinary, shallow attempt to "bargain-away" direct harm from this project by citing

purported "benefits" of project construction and operation, chiefly among them the creation of Fifteen (yes, only 15) permanent jobs and an increase in tax revenue.

Naturally, the simple analysis heralds Humboldt's contribution to limiting global warming and greenhouse gasses generally produced by other electrical power generation and distribution methods and takes credit for promoting alternative energy production and independence.

Of course, we all want to stop climate change and make things better. Of course, wind power initially seems like a good idea. But jumping on the first out-of-area project exploits not only our environment, but also our good will and good intentions, and leaves us with lots of damage, widespread GHG emissions, a permanently altered landscape and some high priced electricity. We have better options.

No matter how much electricity this thing generates, it is just wrong to put this power factory in forested watersheds, native grasslands, and scenic, predominant ridges sacred to local Native Americans, essentially forever. Doomsayers notwithstanding, We have time to exercise informed judgment so that we avoid trading one bad situation for another which leaves us with harmful impacts, forever.

This project promises only 15 permanent jobs, likely staffed by imported workers, and requires continuous maintenance because these windmills are very complex machines, and they fail dangerously and often, especially in untested terrain like ours. This project defiles redwood and Doug fir biomes that are supposedly managed to protect and regenerate ecosystem values under the Headwaters Forest Habitat Conservation Plan.

With an industrial complex of this magnitude, that's impossible because of the scope of industrial infrastructure required to support the project. The Scale of this project is enormous for our area.

- Now forty-seven (47) @600 ft vibrating windmills with 250 foot blades rotating at 200mph at their tips,
- each lubricated with an integral tank holding 400 gal of oil,
- on bases of concrete 65 ft in diameter, 10 feet into the ground, and those will never come out.
- each with a crane pad -- squares of scraped and compacted, graveled ground 350 ft. sq. approx 3 ac. Each, terraced across the sloping ridge top landscape.
- Six (6) @250-400 ft meterological towers
- *17 miles of new permanent roads* some as much as *200 feet wide* to accommodate component hauling and grade adjustments, up the impaired Jordan Creek watershed
- over twenty (20) miles of 80 ft wide, clearcut corridors through forestland to from Scotia, across the Eel River, to Bridgeville.
- constant human activity for 30 years, or more.

That's all once the project is operational; the construction activities include:

- using 15,000 gal of water a day, that's 62 acre-ft of water (over a month's supply for the Town of Scotia) for construction alone.¹
- Over a million gallons of diesel fuel
- 10,000 truck trips, some weighing 110 tons and 90 feet long,
- 2 temporary bypasses on 101 at Hookton and 12 St Fortuna
- over 11,000 yards of concrete from 1-2 new dirty cement batch plants fueled by generators,
- 3 million cu. ft. of soil displaced, soil that now stores Carbon better than trees in wildfire CA
- continuing road and surface erosion into Eel R tributaries
- Over 25 acres of temporary and permanent staging and Operations facilities
- 900 acres of clearing & logging

All of it, from mining and manufacture to ultimate operation, with powered fossil fuel energy.

Conclusion

Who Gains

The real winners here are neither we the people of the affected communities, nor the planet. The only thing renewable and green is the money to be made by the project proponents.

The Russ Ranch and Humboldt Redwood Company (HRC) get 30-year, *renewable* leases, without doing anything, and Terra Gen, owned by Energy Capital Partners (ECP), a \$20B venture capital consortium, gets 10-year tax credits and a quick write-off of expenses no matter how these windmills perform; plus of course, selling the power back to us with increased transmission costs.

We are supposed to trust ECP & Stantec Corp., which prepared wildlife surveys here. They are both heavily into international oil and gas, coal mining, fracking, shale and tar sands oil, pipelines everywhere, transmission lines, and the giant equipment used to haul turbine components.

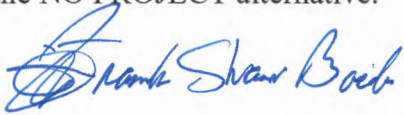
If estimates pan out, the County gets a measly \$2m a year, which can sound like a lot compared to other taxpayers, but only because TPZ lands pay so little in taxes.

¹¹ As described in our comments to the Planning Commission of the FEIR (Exhibit B attached hereto and incorporated by this reference). The applicant and staff performed a perfunctory and invalid water supply study, concluding Terra-Gen would simply take 62 acre ft of sewage effluent from the Scotia Log Pond for construction water needs. The NCRWQCB staff has now clarified, and we know such use would be in violation of the State and Federal Law and applicable NPDES permit (see Exhibit B FEIR Comments pp4-6; also Exhibit C (NCRWQCB letter re: same at p1-2). To this day Terra-Gen cannot say where its water will come from.

- As far as we can tell, BOS has **never** encountered a DEIR or an FEIR like the instant Humboldt Wind Report -- which, County staff admits,
 - *will cause so much harm*, with so many acknowledged "unavoidable" adverse effects;
 - *defers study and mitigation design* for so many (dozens) of the project's particular effects; and for which,
 - the Applicant steadfastly *refuses to mitigate* any -- not even one -- of the seven separate categories of "unavoidable" significant adverse effects *to less-than-significance*;
 - Claiming EVERY such mitigation, necessary to make ANY such finding (impact reduced to less-than-significant) would simply be "infeasible."

- Finally, this rush to approval creates an *environmental injustice*, targeting poorer, smaller communities (Scotia and Rio Dell, native tribes) whose voices do not generally command notice. This project will:
 - shamefully defile lands held sacred by the local First Nations people, including Wiyot and Yurok tribes,
 - despoil the scenic, undeveloped ridge-top vistas so prominent and precious that they serve as the primary vertical element of the surrounding scenery, and which contribute so much to the character of our small, historic rural communities.
 - Threatening damage to the value, marketability and alienation of real property most closely affected by the project.

We respectfully request that the Board of Supervisors reject staff's proposed resolutions for approval and refuse to certify the Final EIR, and deny the application for conditional use permit and special permit. This is a peculiarly *Harmful Project*. It is sited inadvisably and inappropriately. Even in its most reduced form, continues to pose significant adverse environmental impacts. The environmentally superior alternative is the NO PROJECT alternative.



Frank Shaw Bacik, President and Director of Legal Affairs
Town of Scotia Company, LLC

Exhibit A

HUMBOLDT WIND, LLC HUMBOLDT WIND ENERGY PROJECT



TOWN OF SCOTIA COMPANY, LLC COMMENTS ON DRAFT ENVIRONMENTAL IMPACT REPORT (SCH. No. 201872076)

Comments must be directed to:
Humboldt Wind Energy Project Planner

County of Humboldt Planning Department

3015 H Street

Eureka, CA 95501

CEQAResponses@co.humboldt.ca.us



June 12, 2019

Humboldt County Planning and Building Department
Eliz Burks
3015 H Street
Eureka, CA 95501

RE: DEIR SCH #2018072076

Dear Ms. Burks,

INTRODUCTION

On behalf of the Town of Scotia Company, LLC (“Town of Scotia” or “TOS”) which owns and operates most of the residential, commercial, and institutional properties in the community of Scotia, CA, we present our responses to and comments upon the Draft Environmental Impact Report (DEIR) for the proposed Humboldt Wind Project (“Project”) to be located immediately adjacent to, south and southwest of Scotia and on Monument and Bear River Ridges.

After careful consideration and close review of the DEIR, Town of Scotia hereby joins with entities and organizations such as the City of Rio Dell, the Wiyot Tribe, Scotia Community Services District and others in urging the County to reject this DEIR as inadequate, inaccurate and inconsistent with the CEQA. We believe this Project could irreparably damage our environment and materially impact our community, and we urge the County to adopt the identified environmentally superior alternative of “NO Project”.¹

TOS supports well planned alternative energy projects, sited in appropriate locations. However, this project, as proposed, is not such. It will cause several significant adverse, unmitigated and unavoidable impacts to our community.

EXECUTIVE SUMMARY OF COMMENTS AND CONCERNS

FALSE WATER SUPPLY CLAIM

For one thing, the DEIR and appendix T provides an erroneous water supply claim and analysis, asserting that effluent from Scotia’s sewer plant which is not secured, not suitable or legally available to the Project will provide the 62 acre ft of construction process water resources needed to create concrete, abate dust, compact soil fills and wash down equipment. We address this glaring error in Section I of our specific comments.

¹ Town of Scotia hereby adopts and incorporates by reference the comments and DEIR responses submitted on behalf of the aforementioned organizations and entities in order to exhaust administrative remedies in the event of litigation.

UNAVOIDABLE ADVERSE AESTHETIC IMPACTS

Scotia is surrounded by scenic vistas, predominantly including Monument and Bear River Ridges, and many of our tenants and home buyers choose to live, work and recreate in Scotia particularly because of our outstanding visual surroundings.

Should the project be built-out as planned, those surrounding will be forever adversely changed. The DIER declares these impacts to be *unavoidable*. No mitigation can adequately ameliorate the material injury to our community. We address adverse visual impact more particularly in Section II of our comments.

While visual impacts are a primary concern, our comments also focus on the unmitigated and significant adverse impacts the proposed project would have on the following values:

- Scotia's status as a Special Historic District of statewide, even national significance (discussed in Section III of our comments);
- Solid Waste;
- Agricultural and Forestry Resources;
- Geology and Soils, erosion;
- Greenhouse Gas Emissions;
- Hazardous Materials;
- Safety Hazards from use of Explosives;
- Operational Hazards;
- Hydrology and Water Quality;
- Transportation and Traffic;
- Fire Safety, Protection, Risk Planning;
- Biological Resources;
- Murrelets, Raptors, etc.

FAST TRACK, SHORT CIRCUIT

For *most all* of these impacts, analysis has been deferred, delayed to a later time, when not-yet-devised studies, plans, programs or managements schemes are intended to provide more complete insight into the significance of potential impacts or to provide mitigation to ameliorate those impacts. This "Rush job" serves the interest of Terra Gen, but not of the public or the purposes of CEQA. The haste to "fast track" his project has driven the EIR consultant to improperly truncate its analysis and to rely on subsequent preparation of plans *Not Subject to Public Review* to resolve almost all legitimate concerns.

PIECEMEAL REVIEW TO HIDE IMPACTS

This strategy also seeks to break-up the project impact and mitigation analysis into dozens of "black box" processes, submitted *after project approval and certification* of environmental review. These plans are often to be provided only to the County Planning Director or some other agency, thus "piece-mealing" the review to minimize or manipulate impacts. The Practice is so heavily relied upon, and so often employed, as to be elevated to an art form in the DEIR. In Section IV of our comments, we have specifically identified *dozens* of instances of deferred analysis and manipulation in the DEIR.

As a consequence, the DEIR is bereft of credibility; hollow of substance much more baldface advocacy than dispassionate analysis. A more fulsome DEIR must be assembled and recirculated for public review.

LEGITIMATE ALTERNATIVES IGNORED

TOS also objects to the failure to consider or evaluate far-superior alternatives such as, *off-shore* wind power projects, one of which has recently been the subject of planning, preparation and public discussion.

Off-Shore Wind Energy Option Superior

RCEA, Principal Power, Inc., EDPR off shore North American, LLC and Aker Solutions, Inc. recently submitted a lease application to the Bureau of Ocean Energy Management for a comparable off shore wind energy farm. That project promises to be far superior, without almost any of the significant unavoidable adverse impacts identified to result from this Project.

On-Shore Wind Generation Alternative Sites Not Examined

We also recognize that there are other alternative locations from *on-shore* wind turbine generation which would not pose the same adverse impacts to so many innocent residents, tenants, homeowners, workers, and visitors in and around the “ground zero” communities Scotia and Rio Dell. For some reason, these alternatives were not considered in the DEIR.

An example is the “Schoolhouse Hill” area near Kneeland just west of the PG&E Bridgeville Substation. Prior study has yielded “wind maps” produced by the National Research Energy Laboratory (NREL). In reference to these maps, wind characteristics on Schoolhouse Hill are very similar to those on Bear River and Monument Ridge.

Many of the significant adverse visual impacts posed by this project could be eliminated all together. This alternative should be given a good faith analysis and that evaluation should be recirculated for public review.

Town of Scotia has the following specific comments and concerns regarding the project and the DEIR.

I. False Water Supply Analysis.

The Project does not have a reliable source for construction process water.

The DEIR asserts [at 3.1.3 Utilities (p.3-8) and in the Draft Water Supply Appendix T (3-1) "Water Supply Planning/Project Water Supply and Demand,"] the project will require 62 acre feet (20,202,789 gallons) of water for construction activities, like road-watering/ dust suppression, concrete mixing, soil backfill compaction and equipment wash-out, etc.

- The DEIR erroneously asserts this mass volume of a project cited essential resource will come from the partially treated wastewater effluent from the nearby *Scotia Community Services District's* (SCSD) *Scotia Log Pond*. That is simply inaccurate, and impossible.

- As the SCSD District Staff has explained at its public Board of Directors' meetings, and in its DEIR comments, No one -- not the Applicant Terra Gen, or the County or the EIR Drafter AECOM -- has ever even approached the Community Services District about using that log pond water. If they had, the proposed use would have been rejected as an unpermitted use.
- The Log Pond property, the Sewer Treatment Plant (of which the Pond is a part), as well as the Drinking Water Treatment Plant, and the very Eel River Water Rights and Community Water System Permit for the entire town of Scotia are all owned, operated, licensed and permitted by the Community Services District (SCSD).
- Under SCSD's current National Pollution Discharge Elimination System (NPDES) permits, that sewage effluent water may not be bought, sold or traded for use off-site, outside of Scotia; nor may it be exported by water truck or any other means or to any other location.²
 - In fact, the 'water' in the Log pond is comprised of incompletely treated sewer plant effluent, and even if it was legally available -- which is not the case -- it is not suitable for construction.
 - The pH from HRC Power Plant operations effluent which also discharges through a ditch into the Log Pond, [for example], varies significantly (up to a caustic pH 14), and inputs from industrial processing at the HRC Sawmill and power plant are often out of compliance with the regulatory standards for discharge into and out of the Log Pond.
- There probably is not 62 acre-feet of water in the entire Log Pond, but even if there was, a substantial level of the Scotia Log Pond water is always retained as a "last means of defense" as a fire suppression source. Neither the SCSD nor the Community would sell off that "last defense" source.
 - In 1992, after three earthquakes of substantial magnitude over a couple days, power and water pressure were both lost in Scotia, gas leaks ensued, fire erupted, and the Scotia Shopping Center market and adjacent commercial buildings began to burn.
 - The entire block of the Scotia Center was destroyed over the next couple days, but with herculean effort, and drawing water for fighting fires directly from the Log Pond, the historic Winema theater and other nearby priceless historic facilities (Scotia Museum, Hospital, etc.) were saved.
- The terms of the NPDES Permit are clear and *prohibit* the DEIR proposal Log Pond effluent use, which is simply *presumed* by the DEIR writer, without substantial evidence in support of the assertion or any other basis or analysis in the DEIR whatsoever.
- We understand, from recent SCSD Board proceedings, that the SCSD is now considering an agreement for placement of floating Solar (photo-voltaic) panels on the surface of the Scotia Log Pond, and any withdrawal of heavy industry

² Note: The comment writer personally negotiated the NPDES permit with Regional Water Quality Control Board staff for the Scotia Waste Water Treatment Facility (WWTF). Town of Scotia then conveyed the WWTF as well as the Log Pond, water rights and all the relevant real and personal property to the Scotia Community Services District in 2016, and it has operated independently as a public agency since.

construction process water would be inconsistent with that reasonably foreseeable proposed alternative energy project going forward.

- The DEIR contains a flawed and simply incorrect Water Supply analysis. That is obviously a key part of any proposed construction project of the size and scope of Terra-Gen's industrial scale wind factory, and the water availability analysis must now be completely revised.
- New source evaluation will require new impact analyses for such an extraordinary volume of water, required for so many project functions. That significant new information must be made available for meaningful public review and comment, and the DEIR must be *recirculated*.

II. Aesthetics.

Adverse impacts to aesthetic values of the town of Scotia, its resident tenants, homeowners, workers, visitors and tourists, is perhaps the single most prevalent and most often expressed concern about the Project. Town of Scotia Company, LLC hereby joins such organizations as the Wiyot Tribe, the City of Rio Dell, the Scotia Community Services District and local community members, environmental and conservation organizations in opposition to the Project placement on Bear River Ridge and/or Monument Ridge, both of which loom over Scotia and Rio Dell as the most prominent landscape features of the scenic vistas surrounding our special communities.

The DEIR employs visual resource assessment methodologies based upon Federal Guidelines for visual impact assessment on highway projects. This is an inappropriate methodology. Based on that analysis, the aesthetic impact of the Project is broken into physical perspectives and assigned components of “cultural order” and “natural harmony”, including subjective elements such as “vividness”, “intactness”, and “unity”. All of this appears to be an effort to breakdown and measure with precision what is admittedly a subjective, though common sense, determination.

- The analysis concluded that the Project will have *significant adverse, unavoidable impact* upon the current scenic vistas of the ridges above Scotia, even after mitigation.
- No basis or reasoned analysis, no substantial evidence is presented to support an argument for *overriding* these concerns over threatened adverse impacts.

Town of Scotia Company, LLC (TOS) has a special interest in maintaining the historic integrity and scenic coherence of the town of Scotia because it *owns most of the town*.

- TOS acquired such ownership by distribution from the bankruptcy estate following reorganization of the Pacific Lumber Company in 2007.
- All of the residents in Scotia are either *tenants* who live in houses owned by Town of Scotia Company or *homeowners* who have purchased their home from the Town of Scotia Company in the last 2 or 3 years in connection with the planned subdivision and privatization of the former company town as a part of the Reorganization Plan.

- In addition, the Town of Scotia Company is required to disclose pendency of this significantly impactful industrial wind factory Project to prospective purchasers under standard subdivision and real estate marketing law.
- The DEIR admits that the visual impact of this prospective project will be significant and adverse to the town of Scotia. We reasonably fear the visual blight of an industrial mechanized wind factory that will forever affect the heretofore open, undeveloped pastoral hillslopes and ridges that rise steeply from the Eel River along which Scotia is located. The photo visualization attached from Terra-Gen, which probably minimizes the impact to Scenic Vistas in Scotia, is reflective of those visual impacts. Ugly. Inconsistent. Unnecessary.

Impact 3.2-1

The DEIR admits the Project's introduction of wind turbine generators would be noticeable at all viewing distances throughout Scotia, and these tall vertical structures would degrade visual quality. This impact would be significant. The Project is, therefore inconsistent with the General Plan.

- The General Plan recognizes the importance and seeks to protect all scenic vistas throughout Humboldt County.
- "Scenic Beauty is perhaps the most notable characteristic of Humboldt County for visitors and one of the most appreciated attributes among residents. Forested hillsides, working agricultural land, river corridors, and the coast provide a range of stunning scenic areas. Certain of these are exemplary and warrant protections to maintain the County's characteristic scenic beauty and unique sense of place. ("Humboldt County General Plan Section 10.7.2" Scenic Resources.)
- However, the DEIR turns this proclamation on its head. "The General Plan does not identify specific scenic vistas. Because the General Plan does not identify *specific* vistas from which the Project impacts could be assessed, construction, operation or decommissioning of the Project would result in *no impact* on scenic vistas as defined by the General Plan."

This last summary and conclusion is characteristic of the DEIR's reliance upon non-sense rather than analysis, so often reaching a conclusion without any support in the record and contrary to logic or common understanding.

- At least regarding relevant *criteria*, we agree with the DEIR that the "relevant CEQA criterion is whether the proposed Project would substantially degrade the existing visual character or quality of public views of the site and its surroundings." (Page 3.2-34).
- The answer here is absolutely "yes". There would be a substantial degradation of the existing visual character of the site and its surroundings.
- The DEIR states that "ground disturbance to widen shoulders and cut and fill slopes, WTG pads, staging/equipment laid down areas, and batch plant pads would result in both adverse impacts on scenic vistas along Bear River ridge and on the visual character of the ridges viewed from surrounding locations."

- The DEIR further states that grading, compaction and vegetation removal would increase the potential for erosion, which could further degrade the visual resources along the ridge.
- Humboldt County General Plan Standard E-S3: Wind Generating Facilities specifies that wind generating facilities are conditionally permitted in most land use designations. However, the standard requires consideration of both the *height* and *appearance* and design of those facilities.
- General Plan requires as a *necessary finding* for project approval that those facilities **Not** be detrimental to the public convenience or welfare, and will **Not** result in material damage or prejudice to other property in the vicinity. (Standard ES-3 B, E, & C). Those finding can not be made or supported here, and no effort is made, or evidence presented, to do so.

For all these reasons, the Project is inconsistent with Humboldt County General Plan and should be rejected.

- The DEIR finds that “across all viewsheds, analyzed in detail in Appendix C, the WTG’s would....create a strong contrast visually with the broader horizontal lines of the horizon.”
- “Spinning the rotor blades would further contrast with the most static elements in the view..... WTG’s would appear silhouetted above the ridge top trees”. “Thus the Project would redefine the skyline”.
- “For many of the Key Observation Points... vividness would be increased because of the addition of memorable features in other KOP’s.”
- “Introducing a wind generation facility into landscapes that predominantly feature rural residential and agricultural uses would generally reduce the compositional harmony of these views.....”(3. 2-54 *passim*. emphasis added).

Further conflicts with the General Plan Policies and Standards include the following regarding Facility Operations:

- “In this view “KOP3” (Scotia Main Street) the WTG’s would appear prominent human-made features above the forested ridgeline in the background.the presence of the WGT’s would increase the memorability of human-made features; the motion of spinning rotor blades and the darkened structures, backlit in views to the south from Scotia would be noticeable.”

These are impacts that will affect the aesthetics as perceived from the town of Scotia, essentially forever. 600 foot towers are approximately the size of *55 story skyscrapers!* This is what will be remembered of one’s visit to Scotia. To have up to 60 of these mechanisms marching across the scenic vista of the undeveloped ridges above Scotia certainly increases the “vividness” of the experience, but like a train-wreck, that “vivid” experience is entirely negative.

Under the General Plan policies the scenic beauty of Humboldt County is deserving of protection, not exploitation. The DEIR has already found these impacts to aesthetics will be significant, adverse, unavoidable, even after mitigation. Therefore, the Planning Commission or the Board of Supervisors would have to find *overriding considerations* in order to even consider approving this Project. No reasoned argument is made in the

DEIR for considerations overriding these important General Plan policies in the face in this administrative record.

III. Cultural Resources: Scotia Historic District.

The DEIR concludes that the Project, including full build-out as applied for, will have no significant adverse effect on Historic Resources in Scotia. We disagree. The construction of the Project as well as its long term operation would have a significant and adverse unmitigated impact upon the special sense of place which contributes to the cultural and historical significance of the town of Scotia.

This special significance has been recognized by the County both in requiring and certifying a Historic Resources Assessment in connection with town development projects and subdivision, and in the County's adoption of a Special Historic Resource Zoning Designation and Historic District Zoning Code Regulations applicable to *Scotia alone*. (Humboldt County Zoning Code Regulation §§19.1.19 et seq.)

Scotia Historic Resource Assessment

- In a wide ranging and relevant certified EIR completed in 2009 in connection with the Scotia town-wide General Plan Amendment, Rezone, Zoning Code Text Amendment, major subdivision, and associated application for creation of the Scotia Community Services District, the County required preparation of a Historic Resources Assessment (Gerald Takano, TBA West Inc. 2007).
- As the DEIR admits that Historical Resources Assessment determined that Scotia meets eligibility requirements for registration on the National Register of Historic Places (NRHP), under the regulations adopted by the Secretary of Interior. (3.6-11).
- Among other DEIR findings supporting the conclusion that the Project would have a significant adverse impact upon Historical Resources are the following:
 - “The potential Historic District is significant under NRHP criterion A for having the oldest surviving mill of its type in lumber production and for association with development of the lumber industry in the United States and California....during its period of significance from 1896-1959”
 - “The potential district also possesses *architectural significance* and was evaluated under NRHP criterion C. The building types in Scotia are mostly *traditional structures*....and the components of *Scotia's cultural historical landscape vernacular* were found to collectively contribute to its significance.”
 - “The potential District also embodies distinctive architectural types, methods of construction, and technical innovations, which reflect the towns' evolution.”
 - “Three hundred and nine (309) of three hundred forty-one (341) historic age resources in the potential District boundaries were identified as *contributors to the Historic District*, and the district appeared to retain sufficient historic integrity of location, design, setting, materials, workmanship, feeling, and association to define the town physical integrity”(3.6-11 passim. emphasis added)

Scotia Historic Resource District Special Zoning Regulations

As mentioned, at the time of the EIR review for the Scotia town-wide General Plan Amendment, Rezone, Subdivision, etc. (2006 through final approval of all of those component projects in 2009), the County felt so strongly about the need to maintain the historic and physical integrity of the Scotia Historic District that it adopted a special historic resource zoning “D” Design designation and specific historic resource zoning regulations applicable to Scotia only. (Humboldt County Zoning Code Sections 19.1.19 et seq.)

- Briefly, those regulations are intended to restrict development of any kind, including construction, demolition, reconstruction, alteration, etc. that could significantly interfere with or conflict with design, materials, workmanship, or physical and historical integrity of structures determined to be contributing to historic significance. (Id.)
- In effect, the County of Humboldt has limited the use and utility of real property within the Historic District of Scotia in order to preserve its historic integrity with special emphasis on design, setting, feeling, and association to define the town’s physical integrity. The DEIR recognizes these special characteristics.
 - ‘Based on the finding of the 2007 report, the Scotia Historic District is considered to be a *historical resource* for the purposes of CEQA. ‘
 - “The 2007 report also identifies Scotia’s abundance of forested areas in the immediate vicinity as a character-defining feature of its *setting* that is *significant with the regional and state wide importance.*’
 - “Scotia is the last company town-owned town of its kind in California”
 - “The environmental setting of Scotia as a working community adjacent to the Eel River and distant from more urbanized areas, such as Eureka, is also a contributing element to the town’s distinctive identity, and it retains its feeling as a secluded early 20th century company town.(3.6-11 passim. emphasis added)

All of these of important components of historical significance will be starkly contrasted, undermined, and substantially diminished by construction and operation of the Project. Historic integrity, design, setting, materials, workmanship, feeling, and association, all elements which contribute to Scotia’s historic significance, stand to be cheapened and canceled, utterly overwhelmed by the placement of up to 60, 600 foot tall, modern space-age, wind factory machines, traipsing like mechanical giants across the scenic ridges which are the most prominent feature of the surroundings viewed, cherished, and identified by all Scotia residents, workers and visitors.

The utter inconsistency between an early 20th century setting, materials and workmanship and the stupefying scope and scale of the big wind factory Project, its construction and operation, simply can not be reconciled.

- The construction and operation may occur on the adjacent hillsides immediately above Scotia, but the *adverse impact*, confusion, inconsistency, and the diminishment of historical resources will be *felt* in Scotia.
- It is where the adverse impact is *felt* that the mitigation must be focused. To eliminate that adverse impact, the Project must be relocated, or alternatives

should also be selected which simply do not result in placement of wind-factory WTG's in visible locations, above Scotia.

- The historic character of the town of Scotia is important to the community, and its significance at the local and state level qualifies it as a cultural resource worth protecting.
 - See Humboldt County General Plan CUP-S1: Significant Cultural Resources defined. “Significant Cultural Resources include, but are not limited to, any object, building, structure, site, district, area, or place that is culturally, historically, or archeologically significant, or is significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, military, or cultural annals, of Humboldt County...
 - Humboldt County General Plan Policy CUP-5 lists the findings necessary for the approval of any project that includes the loss or destruction of cultural resources. Substantial adverse changes to significant cultural resources shall *not be allowed* through a ministerial or discretionary action unless;
 - (a) cultural resources is found *not to be significant*; or
 - (b) there is an *overriding benefit* from the project; and compensating mitigation to offset the loss is made part of the project.

Here the 2007 Resources Report and DEIR both find Scotia to be significant. The adverse impacts from this Project undermine any argument that there will be any overriding benefit to anyone other than Terra-Gen.

- There is simply *no overriding benefit* from the Project that could explain or justify the County reversing its determination that the Scotia Historic District is of *significance* or that its adoption of Special Zoning Regulations applicable to Scotia alone was necessary to protect the special distinctions that qualify Scotia to be a Historic District such as setting, materials, workmanship, feeling, and association, etc.
- Under these circumstances, the County would be breaking good faith and fair dealing with Scotia were it to foist upon the community the industrial blight of 600 ft WTG's while restricting uses and development in Scotia which detract from Historic Resource significance by homeowners and residents.

The Monument at Monument Ridge

Another cultural resource that will inevitably be impacted, obstructed, and obviated by construction of the wind factory on Monument Ridge is the “monument” from which the ridge and peak get their name.

- Since the 1850's there has long been a monument, and to this day there is located near the high point or “monument peak” overlooking Scotia, a plaque which recognizes and celebrates the of the Initial Point for all Land Surveys in Humboldt and Mendocino and Trinity Counties. There are only 3 such points in California, only one for the state of Oregon and Washington together.

- These initial points were designated in the 1850's and 60's particularly because they are high, unobstructed, and features and distances can be discerned from atop the designated ridges for many miles distant; and they can be seen from many locations to take bearings to commence a land survey.
- For example, Mount Diablo is the initial point for most of Northern California outside of the Monument peak area. It was selected because it was high enough to enable the territory to be seen in all directions and high and clear enough to see from the territory in all directions to take and get bearings.
- The planned turbines threaten to obstruct those open views and the very function of the initial point, and at a minimum, should be clustered away from the initial point so that it may serve its function without confusion, detraction, or mistake as to its unique location. There is no mention of the initial point in the DEIR, and there appears to be no care or consideration given to this component of our community's historic cultural heritage.

IV. Deferred Assessment and Mitigation.

Concerns Applicable to all Comments: General Principles from California Case Law.

- Deferring Environmental Assessment of a significant impact conflicts with CEQA.
- Deferring the Adoption of Mitigation until a future study identifies the mitigation is also prohibited by CEQA.
- The study must be done as part of the EIR, not later or after Project approval.
- The discovery or determination of any significant new information regarding unavoidable or unmitigated adverse impacts or available mitigation *after the DEIR issues* requires recirculation for new public review.
- Conducting only truncated evaluation of impacts and effects at the time of the DEIR, and later, conducting studies, identifying adverse effects and devising mitigation *without recirculation*, improperly "piecemeals" the project review, falsely minimizing and improperly manipulating the significance of impacts.

Examples of Improperly Deferred Assessment and Mitigation and Planning in the DEIR

(a couple dozen examples should suffice)

Chapter 3.2 Aesthetics – The DEIR has determined that there will be significant and unavoidable adverse environmental impacts to Aesthetics as a consequence of Project development. The Project will substantially degrade the existing visual character and quality of public views. (Impact 3.2-1)

However, the design and determination of mitigations to be implemented to reduce impact significance is deferred to a future time, to be based on ongoing studies, reviewed and approved by other agencies or evaluated post approval without public process and without specification in the DEIR of particular mitigation criteria.

The development of such significant new information and the fashioning of appropriate mitigation will require DEIR recirculation for appropriate public review.

- The DEIR found, for example, that ground disturbance to widen shoulders, and cut and filled slopes, WTG pads, staging/equipment layout areas in the Wind Turbine Generator (WTG) areas, and batch plant pads would result in adverse impacts on scenic vistas along Bear River and Monument Ridges and on the visual character of the ridges as viewed from surrounding locations.
- These impacts would also increase the potential for erosion, which could further degrade visual resources along the ridge.
- As mitigation, the DEIR says that several plans would be prepared *in the future* to reduce impacts, including a **Storm Water Pollution Prevention Plan, a Grading and Erosion Control Plan, and a Reclamation Revegetation, and Weed Control Plan.** (Page 3.2-62).
- None of these Plans are prepared and presented with the DEIR for public review and comment.
- No reason is given as to why the information cannot be provided for public review. All are left to be determined at a later date, without public process and without specific mitigation or performance criteria provided. This is significant new information which requires recirculation.
- **FAA Part 77 Notification Procedure:** With an Industrial Project of this size, FAA must be consulted. The DEIR warns that once consulted, the FAA *may or may not* recommend installing tower markings and aviation safety lights on all or a portion of the WTG towers.
- Depending on the contents of the Plan and the outcome of the notification procedure, the DEIR says there could be substantial contrast in nighttime views and the intensity of safety lighting. The DEIR admits the number of lights installed could create a source of *light pollution* that would cause viewers to direct their attention from their immediate surroundings to the Project site, a significant adverse effect.
- This “distraction” impact could be unsafe and would be significant. As of the date of issuance of the DEIR, the notification procedure has not been commenced; consultation with FAA has not yet taken place, so it cannot be determined whether a significant and unavoidable impact will result or can be mitigated, or how. Intensity, density, safety of the impact etc. cannot be evaluated by the public at this time. Once the particulars are determined, and only then, can the public be informed about, and comment on the significance of the impact and the adequacy of the mitigations.
- The DEIR should be supplemented with this important new information and recirculated for public comment.

Solid Waste – Construction activities would generate various types of solid waste. Project construction is estimated to generate 3 tons of solid waste. The DEIR cites as mitigation the preparation of a **Construction Waste Management Plan** which identifies materials to be diverted from disposal by effective usage, recycling, or salvaging, etc.

- This **Construction Waste Management Plan** has not yet been prepared, and no draft has been provided for public review or comment.
- No particular mitigation or performance criteria are presented for public review.
- No explanation is given as to why the information cannot be provided for public review.
- The plan should be prepared for review and the DEIR recirculated for additional comment on this key plan.

3.3 Agriculture and Forestry Resources – The majority of the Project site is managed for timber harvest. Per the DEIR, the Project would involve the harvest of up to 900 acres of merchantable timber, most in the form of 100 ft wide linear clear cuts for overhead transmission line and Rights of Way, presumably to be maintained with herbicides, as well as road widening, pad clearing, etc. The Project would also permanently “convert” up to 91 acres of forest land to non-forest use, forever.

- These activities require the preparation of a **Timber Harvest Plan** and a **Conversion Permit**.
- These are clearly part of the Project, and these processes are reasonably foreseeable and will require impact analysis.
- Yet the relevant Timber Harvest Plan and Conversion Permit are not made available to the public or provided for review and comment with the DEIR. The failure to provide this plan defers assessment and mitigation and requires recirculation of the DEIR.
- Withholding the plan also "piecemeals" the Project review, minimizing impact of the whole Project, without explanation as to why a complete review cannot be undertaken.

3.6 Historical Resources – Cultural Resources, including Tribal Cultural Resources.

The DEIR finds that there would be significant and unavoidable adverse environmental impacts to cultural resources. As a consequence a **Historical American Land Survey Report** must be prepared to identify the impacts and appropriate mitigation.

- Before any project-related ground disturbance, the historic landscape that will be negatively affected by the Project must be described and documented.
- This report has not yet been prepared, the extent of adverse impact has not been determined. The mitigation measure that will be required will be submitted to Humboldt County Planning before **Grading or Improvement Plans** for any ground disturbing activities. But there is no provision for circulation of the plans to the public for any public review process.
- The DEIR also fails to consider or describe the impact of Industrial Scale Development subsuming the Humboldt Meridian Initial Point and associated Monument on Monument Ridge and/or the Cultural and Historic significance of the initial point for all local surveys – modern and historic -- and the impact upon Bearer Marker visibility from various points of reference and distances.
- The analysis of impacts and mitigation, if any, should be made available now, with the DEIR. As a consequence, the DEIR should be revised and recirculated.

3.6-3b Historic Resource Mitigation Measures - Prepare and implement a **Site Protection Plan.**

Again before any permits are issued for construction or grading activity, the DEIR recommends a detailed **Site Plan** to protect historic-age built-environment resources. No specific performance or mitigation criteria are presented.

- There doesn't seem to be any additional circulation or public review anticipated or required once the plan is prepared.
- Like so many other *deferred studies* which, by their very nature, will generate important new information, the plan needs to be prepared for the public to comment upon with the DEIR. The plan should be prepared, and its criteria presented, and the DEIR should be recirculated.

3.6-3c Mitigation Measure – Ethnobotanical Plants incorporated in **Reclamation Revegetation, and Weed Control Plan.**

- This is a yet-to-be determined mitigation plan. Which plants are included to address cultural concerns is once again deferred and left to be determined at a later time, employing as yet unidentified criteria.
- There appears to be no public process involved in that future review, and no circulation of the Plan to the public is provided. The plan should be incorporated within a redrafted DEIR and recirculated for public comment.

3.7 Geology and Soils

Impact 3.7-2 - The DEIR admits that there are possible risks to people and structures caused by strong seismic ground shaking. The Project site is in an area of high seismic activity and many recent damaging earthquakes. The region contains known active faults and structures, and employees could be subject to hazards from strong seismic ground shaking.

- The primary mitigation offered for such risks is simply “project compliance with the California Building Code”.
- Other **Geotechnical Reports** and **Investigations** are also required. However, these are deferred, will not be prepared until later, after Project review. Therefore, the public won't get an opportunity to review and comment upon them.
- Given the erosive, unstable nature of the local geology and the sediment impaired condition of the local water sheds, the public requires the basic information so as to meaningfully evaluate the Project's broad potential adverse impacts and possible mitigations on such topics of concern as:
 - Site Preparation
 - Appropriate Sources and Types of Fill
 - Road, Pavement, and Parking Areas
 - Appropriate Foundation Design
 - Soil Corrosion of Concrete and Steel
 - Seismic Ground Shaking
 - Expansive Soils
 - Unstable Soils

- These are essentially all of the important ground stability, geology and soils considerations which should be addressed in an EIR. But in this hurried DEIR, they're all left for future determination, and the public will be provided no opportunity for review and comment.
- At this point, absent any of this information in the DEIR, the analysis blithely concludes that the impact will be less than significant "given project compliance with existing state and local regulatory requirements...".
- In an area of high seismic activity and significant public concern, this is nothing short of putting key and critical analysis into a black box to which the public has no input or insight.
- The Geotechnical Report should be disclosed and the DEIR recirculated.

3.7-4 Erosion during Construction and Operation – This mitigation requires a **Grading and Erosion Control Plan** be prepared for the Project. The plan is to be subject to review by Humboldt County Planning before any Grading Permits are issued. Again, no public review or comment opportunity is anticipated or provided.

- Given the massive amount of earthwork, road, contouring, excavation, fill disposal and compaction proposed, this critical information should be presented with the DEIR to meaningfully evaluate impacts and to assess effectiveness of generalized pre-plan mitigations so vaguely described. The environmental analysis is improperly deferred, piecemealed, and this requires recirculation.
- Significant timber harvesting throughout the winter months is planned as part of the Project. (3.7-24). The **Timber Harvest Plan (THP)** and the **Wet Weather Operations Plan (WWOP)** should be submitted with the DEIR for review, so that the public can see what silvicultural methods will be employed, where and how much harvest and road work will be undertaken, whether and what age and size class distributions will remain following harvest, whether it's appropriately mitigated and where and how regeneration will be implemented, etc.
- Again, the public is simply "assured" that everything will be undertaken in compliance with state and local regulations. So, the Draft asserts, any impact will be less than significant.
- *This is not analysis:* Because the plans are not presented; if they exist, no substantial evidence supports the conclusion. The DEIR, the THP and WWOP should be presented, and the DEIR should be recirculated.

Unless the public has an opportunity to see and evaluate the mitigations as well as the potential for adverse impacts, public comment in this entire review process is meaningless. It merely "assures" us that everyone will go forth and comply with all authority, but this simplistic conclusion subverts the purposes of CEQA to provide the public with the information it needs to be informed and decide if the public interest is being protected, and if not, so it can "throw the bums out".

3.8 Greenhouse Gas Emissions – The DEIR notes that significant greenhouse gas emissions "GHG" would be created by construction related activity, particularly during with estimated 18 month intensive construction period it finds those significant impact from the NOx generation to be *unavoidable*.

- However the consideration of potential for impact is deliberately minimized and manipulated in the DEIR by amortizing those emissions and fuel use over the theoretical 30 year life of the Project.
- This “*amortization*” of the GHG is nothing short of sleight of hand to minimize the project's significant and substantial emissions from heavy materials transport, off-road equipment, worker commute, and on-site heavy duty construction equipment, etc. Which the DEIR says will consume one million gallons for fuel in short order.
- An accurate, defensible analysis should be prepared and the DEIR recirculated.

3.9 Hazardous Materials – The DEIR identifies hazardous materials that would be maintained and used on the Project site and the potential for measures to reduce hazards and adverse impacts to health and safety, the environment, etc. To reduce the potential accidental release of hazardous materials, a **Hazardous Materials Business Plan** would be prepared.

- That plan has not yet been prepared and has not been submitted.
- That plan would require significant new information, identify matters of importance to the public, including hazardous waste material storage areas, proper handling and disposal techniques, and of course identification of how much of what hazardous materials will be where, at the Project site, much of which is subject to open public access.
- The plan should be prepared, presented and the DEIR recirculated.

3.9-1 Mitigation Measure – Investigate known Hazard along the Project WTG alignment:

Because Agency data base searches have disclosed the report of an underground storage tank at Mt. Pierce (“Monument Peak”), mitigation is to include **Soil Sampling and Testing** at the area identified.

- Those samples and lab tests have not yet been undertaken; no summary of findings is available to the public, and no one knows whether significant adverse impacts are posed or if further remediation will be required. Nor will we know until after those plans and studies are complete. There’s no provision for public participation or input in that future plan review.
- Breaking this part of the impact analysis off for separate review improperly piecemeals that evaluation.
- This is important new information requiring recirculation.

Impact 3.9-3- Potential Safety Hazards - A major concern associated with Project arises because construction may include the use of **explosives**. The DEIR notes reasonably foreseeable accidents associated with blasting, including accidental discharge, fly rock, etc. Blasting is an *inherently dangerous* activity, and the DEIR admits that potential hazards could occur and are foreseeable.

- **Mitigation measure 3.9-2** – The DEIR requires the preparation and implementation of a **Blasting Plan** to minimize potential for blast related safety incidents.

- Once again, this key mitigation in the form of a “plan” is not timely submitted to the public. The review, if any, will be in a “black box” not subject to public review or input.
- That plan requires a description of procedures to be implemented for proper storage and transportation of materials.
- None of these criteria or mitigations are identified or described for public review in the DEIR, yet they’re said to somehow reduce the potential for impact to less than significant, notwithstanding the inherently dangerous nature of blasting.
- The information should be disclosed and the DEIR recirculated.

Impact 3.9-4 Operational Hazards - The DEIR recognizes that there are reasonably foreseeable upset and accident conditions during operation of turbine generators, including blade throw, ice throw or shedding, tower collapse, etc. However, all those potential and foreseeable hazards are said to be addressed simply by “maintenance” and the submission of an **Operations and Maintenance Plan** with “monitoring operations conducted from computers”.

- There are no specific performance criteria provided.
- The plan is not available to the public in the DEIR, and we are not given the opportunity to review, comment, provide input, or objection.
- This is yet another deferred mitigation, depriving the public of its right to an adequate, complete informational document. The plan should be provided for review and the DEIR must be circulated for consideration of this important new information.

3.10 Hydrology and Water Quality

Impact 3.10-1: Construction Drainage and Water Quality Effects. The DEIR identifies many potentially significant water quality effects caused by grading and earth movement, soil erosion, replacing existing drainage culverts, directional drilling, and many other Project operations. To address these adverse impacts a **Storm Water Pollution Prevention Plan (SWPPP)** is required.

- The public is entitled to know what measures will be required by this plan so it can evaluate the risk and remedies.
- Because the needed mitigation measures are not identified and no specific performance standards are discussed, the plan should be presented and the DEIR recirculated.

3.12 Transportation and Traffic

Mitigation Measure 3.12-1 – Rehabilitation/Reconstruct County Maintained Roads Damaged by Truck Traffic.

- This mitigation measure requires the Project proponent prepare a **Transportation Route Plan** that avoids heavy truck trips on Monument Road and Mattole Road. This plan must be provided before any issuance of Grading Permits.
- We understand that the Monument Road is *already* being used by trucks from Terra Gen and Stan Tech for Project planning and preparation, so this is obviously

a mitigation that should be completed at the earliest possible time and in full view to the public for evaluation.

- As part of this mitigation, the applicant is required to rehabilitate/reconstruct roads to the satisfaction of the County Department of Public Works. However, the standards that guide that discretion are not specified, and therefore, any determination regarding rehabilitated roads, who will pay for rehabilitation, how much and when, will avoid public review and input.
- The performance criteria and the plan should be made available to the public and the DEIR should be recirculated.

Vehicle Size, Propellers, Towers, Nacelles, Etc.:

- “Transporter” vehicles up to 90 ft long that will carry the wind turbine generators and propeller blades 200 ft long to the Project site. These vehicles are wider than the standard 12 ft travel lane on all State and US Highways. Many of the other massive components are hundreds of feet long.
- Nonetheless, the DEIR asserts that there will be no significant impact and no impediment to vehicular traffic or emergency response during transportation because of reliance upon a yet-to-be-obtained **Transportation Permit** from the County and the city of Fortuna.

Mitigation Measures 3.2-2 Create a Traffic Control Plan

- Since US Highway 101 is under Cal Trans jurisdiction, it would seem that plan must *also* satisfy Cal Trans requirements, including a **Traffic Control Plan**.
- In any event, the performance criteria for compliance are not specified. The Cal Trans **Plan and Permit** is yet another mitigation strategy that will be required before transportation is undertaken.
- The DEIR assumes that incorporation of the traffic control measures outlined by the Transportation Plan will ensure that vehicle access is maintained, and the Project will not impede emergency vehicle access.
- Because it will contain such essential mitigation that without the plan, the Project would otherwise result in significant adverse environmental impact, that **Traffic Control Plan** should be subject to public inspection, review, input, comment, etc.
- The plan and permit should be presented now, and the DEIR should be recirculated.

3.13 Fire Protection Services and Wildfire Hazards

The DEIR establishes that the Project will increase demand for Fire Protection Services and could result in additional needs for fire fighting equipment and technical rescue services that would exceed the training and existing equipment capabilities of likely responders. The DEIR says this adverse impact would be potentially significant. (Impact 3.13-1)

- The Rio Dell Fire Protection District has indicated that the district would indeed require additional equipment, including an aerial truck, water tender, and commercial fire fighting equipment, and specialized training in order to provide adequate rescue and fire protection services for calls for service at the Project site.

(DEIR Pg.3.13-15) But who will pay what, when and how for this needed equipment?

Mitigation Measure 3.13-1a – Prepare and implement a **Fire Services Financing Plan**.

Before energizing the Project...Applicant shall develop and implement a **Fire Services Financing Plan** in consultation with Humboldt County Fire Chiefs Association and Rio Dell Fire Protection District. The plan to include:

- Equipment needed
- Costs to acquire equipment
- Project Applicant's Fair Share Contribution towards acquisition
- Financing Mechanism to allow for receipt and distribution of funds to implement the Plan.

The Plan has not been negotiated or presented: the generally identified factors are not specified. How, if, when, or whether such a plan is feasible, sufficient, or affordable is not clear. This will be significant new information. The plan should be presented and the DEIR recirculated.

Mitigation Measures 3.13-1b – Prepare and implement a **Fall Protection & Rescue Plan**.

The DEIR says before any construction permits are issued or any construction begins, project Applicant shall prepare a **Fall Protection & Rescue Plan**. The plan shall be implemented throughout the life of the Project.

- No reason is given for deferring the important safety mitigation plan. It should be prepared and presented and the DEIR recirculated.

Impact: Increase Risk of Wildland Fires

The Project is located on land considered State Responsibility Area (SRA) as well as within a local fire district's response area, with a *high fire hazard severity rating*. The DEIR admits that the Project construction would include activities that may create sparks or flames representing potential hazards. This impact would be potentially significant. To address the risk, the DEIR proposed preparation of a **Detailed Vegetation Management Plan** and a **Fire Safety Management Plan** to minimize potential for wildland fires. These plans are not presented. The measures are deferred to some future time.

Before any construction permits are issued and construction activity begins, The DEIR says the Project Applicant shall develop a **Fire Protection Plan** subject to review by Humboldt County Planning.

- These plans will supposedly mitigate risk of significant adverse impact, but it's not clear when or how. There are no specific performance criteria required, and the public will be given no opportunity to review this important new information. The plans should be presented and the DEIR recirculated.

Mitigation Measure 3.5-1a – Minimize Construction Footprint on Marble Murrelet Habitats

The DEIR admits that the plan could have significant adverse impacts to Murrelets. Many will inevitably be killed.

- By way of General Mitigation, the DEIR asserts that the Project will not remove any old growth or mature coniferous forests that could support nesting, and to the extent feasible will *maximize buffers* between construction activities and suitable Murrelet habitat.
- In fact, the documentation depicting Murrelet nesting habitat is not yet overlaid with construction footprints to confirm that there will be no direct impact, and it won't be provided until preparation *at a later time* -- some time before any ground disturbing activity, in the form of a **Buffer Plan**.
- What constitutes infeasibility for the Project here is not particularly described, but *if* the Project proponent doesn't believe that the buffer called for will be feasible, it might still provide documentation to support some *alternative* buffer size and shape before issuance of Construction Permits.
- Neither the consultation document or type and form of review by the Wildlife Agencies is more particularly described. The public is left with no clear description or indication of what alternative buffers might be considered or available within the limitation of the Endangered Species Act, etc.
- Under the ESA and CESA (Murrelets are both state and federally listed), any Take of listed species requires an **Incidental Take Permit**, an **Implementation Agreement** and **Consultation Documentation** with other responsible Agencies.
- We simply can't comment on this entire mitigation process, because the appropriate information is not provided. It should be provided to the public and the DEIR must be recirculated for review.
- Another mitigation touted by the DEIR is the intent of the Project proponent [before the start of construction activity] to develop a **Worker Environmental Awareness Program**. Like most of the other "mitigation" plans, this would be submitted to the Humboldt County Planning Department, but not made available to the public for review and comment.
- This vast Worker Environmental Awareness Program would provide multidisciplinary training in a dozen complex statutory and regulatory regimes as well as specialized skills such as Species Identification, Fire Protection Measures, and "instructions regarding the scenarios in which permit conditions require notifications...", etc. Whatever this last element may mean, it is not now part of an extant plan or a devised mitigation, and there is no explanation as to why it's not provided for DEIR review.
- These are not clear performance standards. The Awareness Program itself is not included in the DEIR. Nor will it ever be seen by the public be under the conditions laid out in the DEIR.
- This "Awareness Program" should be developed now, not after Project approval, and it should be made available to the public for review and comment with the DEIR. When available, the DEIR should be recirculated.

Mitigation Measure 3.5-2c – Implement Compensatory Mitigation to Offset Operational Impacts on Marble Murrelets

- The DEIR requires the Project applicant to prepare and implement a **Marble Murrelet Mitigation Plan** to offset the anticipated level of Murrelet Take over the life of the Project. Whether realistic or accurate, no one can tell, because it is not presented.
- The DEIR estimates that some 20 Murrelets will be killed as a consequence of operation over the course of the Project. “Take” in terms of disturbances or nesting behavior interruption may be far greater. Precatory language like “a Murrelet shall be *created* for each one taken” is unexplained in the DEIR.
- Much reliance is placed on corvid control, but it’s not quite clear how many jays or crows will have to be killed to “*create* a Marble Murrelet” in compensation for those lost.
- Some reliance is also given to possible *thinning* of forest stands by Public Agencies, to accelerate development of remaining trees to mimic old tree characteristics, possible to create suitable nesting habitat.
- The problems with this proposal is that it is entirely *speculative*, might never occur, remains under the discretion of third party agencies, and would take dozens of years, perhaps a century, to have any effect.
- Given the dire condition of Murrelet populations now, cutting *more* timber in marginal habitat is not universally accepted as mitigation, or even worth the risk of experiment.
- In any event, that plan is not presented in the DEIR. While the DEIR says, “... Applicant shall prepare and implement a Marble Murrelet Mitigation Plan...”, The public is told only that the plan will *eventually* describe the proposed measures to minimize and fully mitigate all impacts of the Project on Murrelets, and
- the Plan will describe the monitoring and reporting process to document compliance and effectiveness of minimization and mitigation measures, as well as address who is going to pay for it and how.
- However, those are not specific performance standards; the information to be announced in the plan itself is not available to the public, and it can not be reviewed as part on the Environmental Review Process.
- That plan should be developed now, the measures proposed to minimize and mitigate impacts should be provided in the DEIR for review and recirculation; the monitoring the review process should be spelled out at this time for public review and comment, not later, after the Project is approved.

V. Conclusion.

For all of the reasons described in the foregoing comments, Town of Scotia opposes the Project and recommends the “No Project” alternative be selected if ultimately, any recirculated DEIR is ever certified.

First, however, this DEIR is technically and legally flawed. As many as a couple dozen plans, programs, studies and detailed reports, upon which the DEIR relies for impact analysis and/or mitigation have been *deferred*, delayed to a later time and removed from public scrutiny in connection with the CEQA process. Those deferred matters must be

completed, presented for public review and recirculated for DEIR comment and response before any further processing or hearing is scheduled.

The baldfaced efforts to “fast track” this Project have resulted in an inadequate DEIR. The *bum 's rush* has raised substantive concerns over Terra Gen’s good faith and fairness and the suitability of this Project for Humboldt County. Critical information about the Project is being withheld from the public. Obvious efforts abound to minimize and euphemize significant, plainly foreseeable adverse, unmitigated effects.

Even the deeply flawed DEIR *admits* that the Project will have significant unavoidable adverse impacts upon scenic vistas, and aesthetics; that the Project construction will result in significant pollutant emissions, that it will kill threatened, endangered and fully protected species; and that it will irretrievably disturb tribal/cultural resources.

Under these circumstances, in order to approve this Project, the County must throw the interests of the communities of Scotia, Rio Dell and the Wiyot Tribe “under the bus”, reject required norms of CEQA analysis, ignore environmental degradation and “sell out” to the industrialization of our precious scenic and aesthetic resources. And for what? What possible overriding considerations can be found that militate in favor of accepting these affronts?

This is a Project that is not well planned or well sited. Alternatives like off-shore WTG and alternative on-shore locations which would eliminate so many significant impacts are not even acknowledged. All of this Project’s purposes can be achieved elsewhere. Yes, we are all concerned about Greenhouse gas pollution and favor clean, green energy production. The Project here is *neither*. Humboldt need not sell out to the first industrialized alternative energy project to come along.

Frank Shaw Bacik

Frank Shaw Bacik, President and Director of Legal Affairs
Town of Scotia Company, LLC

Exhibit B



November 13, 2019

Robert Morris
Chairperson
Humboldt County Planning Commission.

RE: Humboldt Wind Turbine Project

Introduction.

The following comments are provided on behalf of the Town of Scotia Company, LLC (TOS), which owns and operates most of real property parcels in the community of Scotia, CA, "ground zero" for adverse impacts from the subject project proposal. I serve TOS as its president and director of Legal Affairs.

Briefly and by way of executive summary, TOS is strenuously opposed to the project, particularly its review and approval process, and we object to the inappropriate siting of the project and the inadequacy of the environmental review process undertaken thus far.

Significant Adverse Environmental Effects Remain Unmitigated.

The DEIR identified seven separate categories of significant adverse unmitigated and unavoidable impacts that will result from project implementation -- in essentially every alternative form considered except for the "No Project" alternative. County staff and the project applicant then purportedly spent additional months in consideration of public and regulatory agency comments. But under the close direction of the project applicant, and with the now-blatantly-apparent support and advocacy by County staff, the FEIR been modified only in non-substantive ways.

Impacts Remain Unchanged.

In fact, Not ONE of the impacts, as assessed and characterized in the DEIR, has been changed in the FEIR. The applicant has merely 'fiddled' with the mitigations; but importantly, NONE of the seven significant adverse "unavoidable" impacts have been addressed with additional or alternative measures sufficient to minimize those adverse effects to a level of *'less-than-significant.'*

Instead, staff has adopted the project applicant's unsupported assertions that *more effective* mitigation or *recirculation* would be "unnecessary" or "infeasible." So no *effective* mitigations are recommended by staff, volunteered or accepted by the Applicant Terra-Gen, to render those significant impacts *safe and insignificant.*

Staff has Prejudged this Project, Affecting the Due Process Rights of Affected Property Owners.

Following inquiry by one of the Planning Commissioners on Nov. 7, 2019, we now know that staff has prepared a series of Findings, and has recommended that the Commission adopt a Statement of Overriding Considerations (SOC) to recognize the seven types of unavoidable significant adverse effects, and yet, elect to *go forward and approve* the project, notwithstanding the damage and prejudice those effects will cause.

The Applicants' Financials were Never Requested or Reviewed by Planning Staff.

The SOC will be a ginned-up balancing of the costs of project harm and benefits of the project approval, which justification, to our understanding and as of the date of this comment, has never yet seen the light of day. In any event, the Planning Director has made abundantly clear, in response to Commissioner questions at the first PC Hearing on Nov. 7, that the 'balancing' was prepared *without the benefit of review of any project specific financial analysis* from the applicant. The Commission can assess for itself what is really "feasible" as opposed to what is acceptable to this mitigation-stingy applicant.

Only One-Sided Resolutions are Provided to the Commission.

The Commission is provided with thousands of pages of boilerplate and comments to review in short order, but in that rush, staff repeatedly implies the conclusion is *foregone*, for the only motions and resolutions being referenced and provided with the staff report are all designed to *approve* the project, and to *override* what would be the logical *denial* of so impactive and prejudicial a proposal, so lacking in mitigation that seven significant adverse impacts remain.

Staff has embraced this "approve-at-all-costs" conclusion in a recommended set of one-sided resolutions without ever bothering to include standard *alternative* motions or resolutions, which should be ready in case the Commission Members choose *not* to follow staff's blithe embrace of the damages posed by the project.

TOS Incorporates its Comments Earlier Provided in Response to DEIR.

As described above, staff has several times admitted that *no adverse impact findings have been changed from the DEIR to the FEIR*. In the Final EIR, All 7 categories of reasonably foreseeable, significant, adverse, unmitigated environmental effects identified in the DEIR remain, are likely to occur with implementation of this project, and all have been declared "unavoidable." Those impacts are as follows:

- Aesthetic Impacts to local communities and property owners;
- Impacts from lighting to be required by the FAA;
- Daily exceedences of safe Air Quality limits established for Oxides of Nitrogen;
- Impacts resulting in unpermitted 'take' of Marbled Murrelets, a listed species;
- Impacts resulting in the unpermitted 'take' of Golden Eagles and other Raptors;
- Impacts to Wiyot Tribal Cultural lands and resources, etc.
- Impacts to tribal ethnobotanical landscape and upon anticipated release of Condors.

After months of additional study following submission of public and agency comment on the DEIR, all Terra-Gen was willing to do was essentially to "adjust" the mitigations. But as staff readily admits, Terra-Gen was not willing to provide any curtailment of the project to the extent necessary for County staff to find *even one* of the continuing adverse impacts could be reduced to a level of insignificance. For this reason, TOS formally incorporates by reference all of its comments on the DEIR here as if fully put forth again. Those comments are located at Appendix A-Comment Letter #8, pages 2091-2113.

Yes, Terra-Gen has finally proposed some specific locations for the turbines (micro siting, etc.) for some reason not previously specified, and it has finally decided to disclose the number of turbines it demands must be approved (*or else*, it will apparently take its project and go home), a number which we have no doubt they had in mind throughout.

At every public appearance, coffee clutch, truck and helicopter ride given to planning staff, commissioners and supervisors, and at every Terra Gen public dog-and-pony-show event since the concept was first introduced, Terra Gen spokespersons have always represented that the "up to 60 Turbines" number described in the project/permit application was *preliminary only*, that the number would *really* be "far fewer." In Ferndale, for example, we were told by Terra-Gen's spokespersons that the round number which identified "up to 60" was simply a theoretical maximum number that could be "mitigated." This chicanery does the applicant no good, for the courts have held that a project applicant cannot take mitigation credit for foregoing something it never intended to do.

Critical Analysis of Timber Harvest and Endangered Species Act Impacts Deferred.

And in any event, the FEIR declares that no matter that the number of Turbines has been adjusted, still a 'take' of listed species will result, creating an unavoidable significant adverse direct impact, requiring an incidental take permit (ITP) which has not yet been issued, and a Habitat Conservation Plan (HCP) which has not yet been negotiated.

And there is still the matter of how many Murrelets and Eagles and other raptors really will be killed. The Department of Fish and Wildlife (DFW) -- the state's expert on such matters -- has pointed out its opposition to the project without additional design changes and more study, and particularly its objection to the use of certain deterministic model presumptions about the Murrelets collision-avoidance rate or capability (proposed by Terra-Gen to be 98%).

As DFW describes in its comments, the only other HCP to deal with murrelet wind turbine avoidance modeling in this evasive bird's range has employed an avoidance capability rate in the 70% range, which factor would increase the number of takes due to this project exponentially. And how does the FEIR resolve this discrepancy regarding the severity of impacts? Staff says it simply "does not concur" with the DFG scientist's discussion and conclusions.

Like almost two dozen other matters which require additional analysis, study, mitigation design and permitting or plan approval, staff has here allowed the applicant to *defer* that critical analysis to another time, after approval of the project. However, the land use limitations that will be required by the Wildlife agencies in negotiating ITPs and HCPs are critically relevant to and inform, the environmental assessments which the EIR is required to complete.

How do we know whether this project and permit as placed before this Commission, if approved, will not result in *unpermitted* levels of 'take' of listed species? The lead agencies for that component of this project (DFW and USF&W) have not yet issued their Biological Opinion detailing the acceptable and permitted level of take, based upon the population biology and wildlife regulation and law, etc. This staff, and respectfully this Commission, is not competent or authorized to make such an assessment.

The same is true of the Timber Harvesting Plan (THP) and the Timber Conversion Permit (TCP) that will be required of the project Applicant. We're now told that the timber removal part of the project will not be undertaken by Terra-Gen, but that Humboldt Redwood Company (HRC) will conduct the logging and take the trees. However, under the currently applicable HCP for the former Pacific Lumber Company land, HRC's Forest Stewardship (FSC) certification and its publicly pronounced policy, *HRC does not conduct Clear Cut Forestry*.

So how will HRC achieve the *25 mile linear clear-cut* required for the Gen-Tie right of way? More importantly, How do we know such a project will ever be approved, given a harvest permit for the site specific conditions on this erosive land has not yet been assembled, submitted or approved? When was the last time anyone in Humboldt County had a 25 mile long clearcut plan approved? How do we know that the CALFIRE reviewers will approve a Timber Conversion Permit, or that HRC has committed to the change of use for so much of its land zoned TPZ to another form of taxation once converted forever to some other use and utility?

No Meaningful Water Supply Analysis has been Undertaken for the Project Construction. The project will require 62-acre feet of process water to be supplied during the construction phase of the project. This includes water to be used for road watering, dust abatement, fill compaction, concrete mix and manufacture, equipment washing, etc. Nothing but the most simplistic assertions have been included in the DEIR and FEIR by way of a purported water supply analysis.

In the DEIR, the applicant had asserted that it would be using water from the Scotia Log Pond. The log pond is part of the Scotia sewage treatment process. In response, the Scotia Community Services District indicated that Log Pond was their property, their responsibility to manage and maintain the log pond water levels, and to control the treatment and ultimately the discharge of treated effluent to the Eel River, as appropriate, and as permitted by the National Pollution Discharge Elimination System (NPDES) Permit. Neither the Log Pond or its water is the property of Humboldt Redwood Company, and as part of the waste water treatment facility, water in the log pond is not

suitable or available for any “export” or other use other than local facility dust control. The effective NPDES Permit does not allow water to be extracted from the Log Pond for other uses, or in other locations, or at any significant volume. The water in the Log Pond is also relied upon as a “final resort” source of fire suppression supply in the event of a fire in the town of Scotia. Such last – hope access has been resorted to in the course of significant fires that have occurred following earthquakes in the past, threatening loss of lives and property.

Now, in the FEIR, faced with the understanding the HRC has no right or interest in the water in the log pond, it has been asserted that the water will simply be diverted from the discharge to pond. The industrial waste effluent, which would have been treated in the pond, will instead be used for the project construction. It’s not clear, whether the untreated effluent will be stored on site or will be transferred to trucks, but eventually that water is apparently intended to be utilized for the construction needs described above on the project site, above Scotia.

Any such use, diverting the permitted flow of industrial waste away from the log pond is inconsistent with the NPDES. We understand that the Regional Water Control Board staff has been determined that it would be a *violation of the NPDES Permit* to divert the waste streams as proposed for the project construction and use.

No analysis whatsoever is undertaken anywhere in the DEIR or FEIR in connection with the potential impacts of having tanks of untreated industrial effluent stored on site or trucked elsewhere, indeed if it is to be trucked away from the industrial discharge points.

No consideration whatsoever is given to the effect of volume removal upon the operation of the Log Pond and other components of the town’s waste water treatment facility which serves all of Scotia (not just the industrial dischargers).

No information or analysis whatsoever was undertaken in connection with the potential adverse impacts from traffic that would be required to provide adequate trucking to remove the industrial waste to a location where it can be utilized for the construction part of the project, even if that were permitted by the NPDES, which is not the case.

Therefore, at least four (4) significant adverse unaddressed environmental impacts are posed by the FEIR water supply proposal, which is *unpermitted* and *inconsistent with the NPDES Permit*, and would constitute a violation in any event:

1. The effect upon the operation of the waste water treatment facilities, including treatment, ponds, settlement ponds, clarifiers, etc., if the 62-acre feet of water were removed from the system, before or after discharge from HRC’s industrial facilities effluent waste;
2. The potential impacts from employing industrial waste or effluent for road watering, equipment washout, concrete construction, including upon the health and safety of those utilizing the effluent which contains metals and acid, etc.;
3. Traffic impacts to Scotia from trucking 62 acre feet of water;

4. The effect upon the safety of the people of Scotia caused by removing substantive volume from the managed log pond and limiting its availability for fire last resort suppression supply.

Conclusion.

This is the wrong place and the wrong time for this project. It will never be the right time or place for selling off our scenic ridgetop vistas and sacred lands for the benefit of an outside corporate, extractive energy development company.

We are all in favor of green energy and the projects that promise to provide it. But it makes no sense at all to engage in the most severe disruption and largest excavation, construction and earth moving project ever brought to Humboldt County -- the brownest of projects ever proposed locally -- in the name of environmental benefit. Significant adverse, unmitigated impacts will remain no matter the mitigation measures agreed to by the applicant.

There are several other deferred plans, programs, permits and agreements which must yet be applied for, negotiated, evaluated and put in place before the true extent of the impact and damage will ever be known. For example, the wildlife agencies (CDFW and US FWS) will require for listed species impacts one or more incidental take permits, habitat conservation plans and implementation agreements which run with the land, and only those agencies -- not the county Planning Commission or Board of Supervisors -- have the authority, jurisdiction and technical expertise to determine 'take' impacts and to decide what's necessary to mitigate, permit or enforce 'take' limits.

The tree removal proposed by the applicant, and apparently to be undertaken by HRC, will include one or more Timber Harvest Plans and a Timber Conversion Permit in order to harvest the proposed massive rights of way, -- some as wide as 200' -- along the forested access roads just to get the project pieces in place. A similar authorization will be required to permanently open the 20+ miles of clearcut for the Gen-tie right of way.

We have identified in our DEIR comments at least twenty other, similar permits, plans and programs that will have to be obtained and/or approved before the project can be implemented. These authorizations should have been outlined and evaluated before the project may approved in order to meaningfully evaluate the potential for adverse effects.

And what is staff's response to these points? Staff says we *don't have to* include those deferred authorizations in our review, so we didn't.

It's now obvious that staff is rushing the review and approval of this project as an advocate for the applicant and the project. It's one thing to accommodate an applicant with an odd or delayed determination that might be reasonably attended to after approval, where objective standards of performance are identified and the County *commits to mitigate* any impacts in the subsequent or supplemental review. But it's another thing entirely to simply look the other way when a couple dozen such reviews are deferred, out of the public's view.

In this case such deferral includes permits and processes like the Endangered Species Act ITP/ HCP or the Forest Productivity and Practices Acts THP/ TCP are employed in ways that will almost certainly substantively modify the project and will almost certainly identify potential significant adverse project effects in light of the specialized review (a larger 'take' estimate for example, or a sensitive streamside zone unsuitable for clear cut along the Gen-Tie) after the project has been approved, where the applicant can claim vested rights in that approval.

Town of Scotia Company LLC stands in solidarity with the Wiyot Tribe, the City of Rio Dell, the Scotia Community Services District, and all the communities and property owners which are threatened with permanent, adverse impact from approval and/or implementation of the proposed Humboldt Wind project. We oppose this project, and respectfully request that the EIR should not be certified, and the project should be denied. The NO PROJECT alternative has already been indented as the Environmentally Superior Alternative.

A handwritten signature in blue ink that reads "Frank Shaw Bacik". The signature is written in a cursive, flowing style.

Frank Shaw Bacik, President and Director of Legal Affairs
Town of Scotia Company, LLC

Exhibit C



North Coast Regional Water Quality Control Board

November 21, 2019

Mr. Michael Richardson
Director of Scotia Cogeneration Operations
Humboldt Redwood Company
P.O. Box 37
Scotia, CA 95565
MRichardson@hrcllc.com

Dear Mr. Richardson:

The Humboldt Sawmill Company (HSC) is currently regulated by the North Coast Regional Water Quality Control Board (Regional Water Board) under Waste Discharge Requirements, Order No. R1-2012-0065 (2012 Permit). The 2012 Permit also serves as a National Pollutant Discharge Elimination System (NPDES) permit (NPDES No. CA0006017). The 2012 Permit includes Discharge Prohibitions and Reclamation Specifications (Recycled Water). The 2012 Permit is set to be renewed in 2020. Re-use of industrial process water for the uses described in the Humboldt Wind Energy Project EIR documents was not indicated in the in submitted application for renewal of the 2012 Permit receive by Regional Water Board staff.

Regional Water Board staff have reviewed the Final Environmental Impact Report (FEIR) for the Humboldt Wind Energy Project and we have concerns regarding the proposed use of industrial process water from the Scotia Cogeneration Plant, which is part of the HSC facility, for "dust suppression, backfill compaction, and cement mixing."

Section 2.3.16 (Water Supply and Usage) of the Humboldt Wind Energy Project FEIR, Revisions to the Draft Environmental Impact Report (DEIR), states, "*Most of the project's water use would occur during the construction phase for dust suppression, backfill compaction, and cement mixing. These activities are expected to require 62 acre-feet of water over the duration of construction. This water demand would be met by the use of water sourced from the nearby Scotia Community Services District's ~~wastewater treatment and cogeneration facilities~~ and from HRC who would sell the water before it discharges into the "Log Pond" located in the town of Scotia. Potable water required at the O&M building would be provided by a groundwater well.*"

Section 3.8 of the DEIR has been revised in the Final EIR to state, "*An estimated 62 acre-feet of water would be required for construction-related activities. Most of this water would be used during construction of wind turbines, transmission lines, the project substation, and related facilities; for dust suppression; for compaction of soil backfill;*"

VALERIE L. QUINTO, CHAIR | MATTHIAS ST. JOHN, EXECUTIVE OFFICER

and for manufacture of concrete. Construction-related water demands would be met by water treated wastewater discharged from the Scotia Community Services District's wastewater treatment facility to Humboldt Redwood Company's purchased by HRC from the Scotia potable water supply for use in the HRC cooling towers of the cogeneration plant. HRC discharges this water into the Log Pond. Under an arrangement with HRC, the applicant will collect water before it is discharged into the Log Pond. This water, prior to discharge into the Log Pond, is the property of HRC who has rights to the use of this water and can sell the water for use in the proposed project. (Pers. communication, Dennis Thibeault, Humboldt Redwood Company, L.L.C., June 25, 2019). Treated effluent Water would be delivered to the project site via water truck. The use of water to meet the demands for project construction, therefore, would not constitute a groundwater extraction or a surface water diversion.

Although the 2012 Permit authorizes the use of secondary treated effluent from the Log Pond for use on HRC Sawmill property for dust suppression, there is no authorization for the use of untreated industrial process water for the proposed uses listed in the Humboldt Wind Energy Project (dust suppression, backfill compactions, and cement mixing). The 2012 Permit also includes prohibitions (Discharge Prohibitions III.E, III.I and III.J) that would prohibit the proposed uses listed above.

As a technical matter, the proposed uses of untreated industrial process water raise a number of water quality concerns related to the presence and potential discharge of metals such as chromium, zinc and chlorine. The water quality concerns are related to threats to surface water from potential process water runoff, threats to soil contamination and ground water impacts from the percolation of process water. It also raises regulatory issues as recycled water use requires that the water is first treated to the equivalent of tertiary treatment and must be properly permitted and monitored to evaluate impacts to surface and ground water.

Thank you for your consideration of these comments. If you have any questions, please contact Justin McSmith at 707-576-2082 or at Justin.McSmith@waterboards.ca.gov.

Sincerely,



Justin McSmith
Water Resource Control Engineer

191121_JM_er_Humboldt Wind Energy Project Use of Cooling Tower Water

Certified-Return Receipt Requested

cc: Frank Bacik, Town of Scotia, fbacik@townofscotia.com
Leslie Marshall, General Manager Scotia CSD, infoscotiacsd@gmail.com
Ronnean Lund, Division of Drinking Water, Ronnean.Lund@waterboards.ca.gov
John Ford, Humboldt County Planning, JFord@co.humboldt.ca.us
Suzanne McClurkin-Nelson, Environmental Specialist,
SMcClurkin-Nelson@hrcllc.com
Krista Ranstrom, Environmental Health & Safety Manager,
KRanstrom@hrcllc.com
Humboldt Wind Project Planner. Humboldt County Planning,
CEQAResponses@co.humboldt.ca.us
Steve Werner, Humboldt County Planning, SWerner@co.humboldt.ca.us

RECEIVED
DEC 09 2019
BOARD OF SUPERVISORS

To: All Humco. Supervisors:

Notebook: First Notebook

Created: 12/9/2019 9:55 AM

Updated: 12/9/2019 10:24 AM

To: All Humco. Supervisors:

Subject: Terra-Gen wind power project & argument for denial in comparison to Redwood Coast Offshore Wind Project ['Redwood Coast Project' / 'RCP']

Enclosed are copies of published info. for Redwood Coast Offshore Wind Project. More info. can be obtained from lead project manager, RCEA.

The main points are that this project is moving ahead & offers a far, far greater potential at far less environmental impact than the Terra-Gen project.

As shown, it is going thru responsible vetting by BOEM, NREL, Federal Interior Dept. etc. partners at a level that far exceeds the efforts by Terra-Gen.

Redwood Coast Project has the backing of State of California & several Federal agencies and large private offshore wind companies with expertise.

This has a bearing on making a responsible decision on the Terra-Gen project as the RCP's gigawatt potential just dwarfs Terra-Gen & all it's negative land based impacts.

I encourage you to take these points into consideration,

Sincerely, Curtis Clark [5th district / Steve Madrone constituent.]

NEWS [archives](#) [rss](#) |

« [Reminder: ShakeOut Earthquake Drill...](#) |

[Fire and Food in Karuk and Yurok Co...](#)

Thursday, October 18, 2018

[BUSINESS](#) / [ECONOMY](#) / [ENVIRONMENT](#) / [NATURAL RESOURCES](#) / [GOVERNMENT](#)

Interior Department Moves on Offshore Wind RCEA's Application Remains in the Mix

POSTED BY THADEUS GREENSON

ON THU, OCT 18, 2018 AT 4:09 PM

[click to enlarge](#)

How Offshore Floating Wind Farms Work

1. Floating wind turbines are configured in an array to optimize the capture of wind energy.
2. Energy captured by the turbines is conveyed through a transmission line to a floating substation.



BO

How offshore wind works.

The U.S. Interior Department announced this morning that it is officially beginning the process of looking for companies interested in developing offshore wind farms along the California coast.

The department will issue a "call for information and nominations" tomorrow, which will kick off a 100-day comment period that will close Jan. 27.

So what does this mean for Humboldt County? A few things.

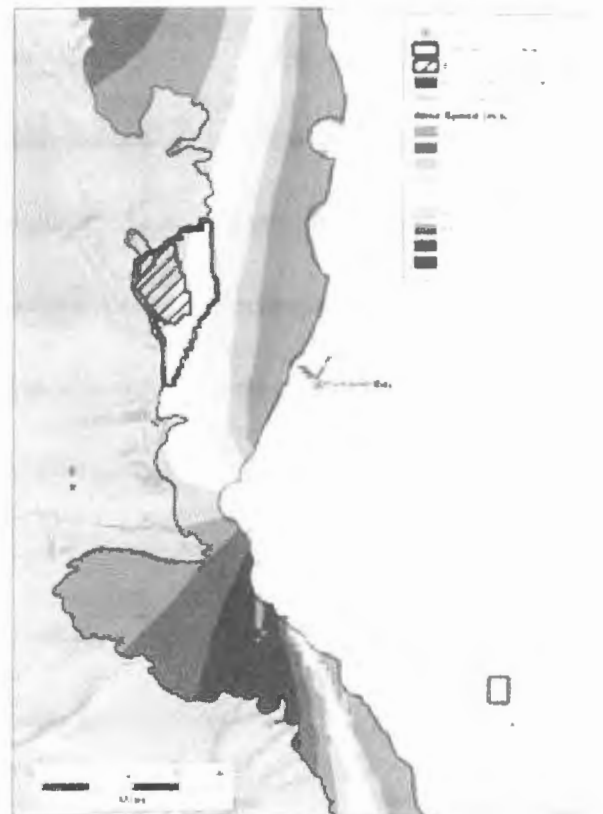
First and foremost, it means that the unsolicited lease request submitted by a consortium of companies and the Redwood Coast Energy Authority is now being added to a larger process. RCEA Executive Director Matthew Marshall said this has always been a possibility and likely won't have much of an impact on RCEA's proposal to put between 10 and 15 turbines about 20 miles off the coast from Humboldt Bay. The project is projected to produce enough energy to power most of Humboldt County's electric grid.

But Marshall said there are some aspects of today's news that are of note.

The Bureau of Ocean Energy Management is not limiting its call for information to the stretch of ocean off the North Coast. The U.S. Navy had initially objected to any wind farms being placed off the California coast south of Big Sur, saying they might interfere with military testing operations. That turned all wind energy companies' eyes to the North Coast. But today's news notes that BOEM is also assessing interest in some areas of the Central Coast, which Marshall said is an indication that the Navy has likely agreed to bend a bit.

And Marshall said that could be good news for a couple of reasons. It could mean less competition for leases off Humboldt's coast,

[click to enlarge](#)



BO

This map shows wind resources off the North Coast as well as the areas being considered for

12/9/2019, 1:39 AM

giving RCEA's proposal — which comes with development by BOEM and some form of local input and control — a better RCEA.

chance at success. It also might ultimately

result in more wind farms off the entirety of California's coast, which could put Humboldt Bay in position to become a servicing hub for wind turbines and equipment, as it's one of the only harbors on the Pacific Coast that ships can access without passing under a bridge, which isn't feasible for barges toting 750-plus-foot-tall wind turbines in need of repair.

For more on what RCEA is proposing, check out prior *Journal* coverage here or the nonprofit's unsolicited lease application here. (Also check out a guest opinion piece in this week's issue by a local fisherman concerned about potential impacts to the commercial fishing industry here.) And for more on the BOEM process announced today, click here and read the Interior Department press release copy below.

Trump Administration Announces Historic Progress on Offshore Wind in California and Massachusetts Continues to fulfill promise of a secure energy future for Americans

WASHINGTON — Yesterday, U.S. Secretary of the Interior Ryan Zinke announced three major developments in American offshore wind energy spanning from coast to coast. Continuing with the Trump Administration's all-of-the-above energy policy, the Secretary spoke at the American Wind Energy Association's Offshore Wind Conference and announced 1.) much-anticipated wind auction in federal waters off the coast of Massachusetts; 2.)

~~the environmental review of a proposed wind project offshore Rhode Island; and 3.) the next steps to a first-ever wind auction in federal waters off of California.~~

“I’m very bullish on offshore wind, and harnessing this renewable resource is a big part of the Trump Administration's made in America energy strategy,” said Secretary Zinke. *“We are always looking at new ways to increase American innovation and productivity to provide abundant and affordable energy for our homes and manufacturers. I think this is a win for America. Working together with states, fishermen and the energy industry, we are making offshore wind a reality, and these three historic announcements are proof.”*

Wind Auction Offshore Massachusetts

The Bureau of Ocean Energy Management (BOEM) will hold the next offshore wind auction – to include nearly 390,000 acres offshore Massachusetts – on Dec. 13, 2018. Nineteen companies have qualified to participate in the auction for the Massachusetts Wind Energy Area, demonstrating continued strong commercial interest in the U.S. offshore wind market.

“The Massachusetts sale has a lot of potential for both energy and economic activity,” Zinke said. *“If fully developed, the wind auction could support approximately 4.1 gigawatts of power to supply nearly 1.5 million homes. This is just one example of the importance of fostering wind energy as a new American*



Potential Offshore Wind Energy Areas in California: An Assessment of Locations, Technology, and Costs

Walter Musial, Philipp Beiter, Suzanne Tegen,
and Aaron Smith

National Renewable Energy Laboratory



This report is available from the Bureau of Ocean Energy Management by referencing DCS Study BOEM 2016-074. The report may be downloaded from BOEM's Recently Completed Environmental Studies –Pacific web page at <http://www.boem.gov/Pacific-Completed-Studies/>.

This study was funded by the U.S. Department of the Interior, Bureau of Ocean Energy Management.

**NREL is a national laboratory of the U.S. Department of Energy
Office of Energy Efficiency & Renewable Energy
Operated by the Alliance for Sustainable Energy, LLC**

This report is available at no cost from the National Renewable Energy Laboratory (NREL) at www.nrel.gov/publications.

Technical Report
NREL/TP-5000-67414
December 2016

Contract No. DE-AC36-08GO28308

NOTICE

This report was prepared as an account of work sponsored by an agency of the United States government. Neither the United States government nor any agency thereof, nor any of their employees, makes any warranty, express or implied, or assumes any legal liability or responsibility for the accuracy, completeness, or usefulness of any information, apparatus, product, or process disclosed, or represents that its use would not infringe privately owned rights. Reference herein to any specific commercial product, process, or service by trade name, trademark, manufacturer, or otherwise does not necessarily constitute or imply its endorsement, recommendation, or favoring by the United States government or any agency thereof. The views and opinions of authors expressed herein do not necessarily state or reflect those of the United States government or any agency thereof.

This study was funded by the U.S. Department of the Interior, Bureau of Ocean Energy Management, Pacific Region, Camarillo, CA, through Interagency Agreement M14PG00038. The report has been technically reviewed by the Bureau of Ocean Energy Management and it has been approved for publication. The views and conclusions contained in this report are those of the authors and should not be interpreted as representing the opinions or policies of the United States government, nor does mention of trade names or commercial products constitute endorsement or recommendation for use.

This report is available at no cost from the National Renewable Energy Laboratory (NREL) at www.nrel.gov/publications.

Available electronically at SciTech Connect <http://www.osti.gov/scitech>

Available for a processing fee to U.S. Department of Energy and its contractors, in paper, from:

U.S. Department of Energy
Office of Scientific and Technical Information
P.O. Box 62
Oak Ridge, TN 37831-0062
OSTI <http://www.osti.gov>
Phone: 865.576.8401
Fax: 865.576.5728
Email: reports@osti.gov

Available for sale to the public, in paper, from:

U.S. Department of Commerce
National Technical Information Service
5301 Shawnee Road
Alexandria, VA 22312
NTIS <http://www.ntis.gov>
Phone: 800.553.6847 or 703.605.6000
Fax: 703.605.6900
Email: orders@ntis.gov

Cover Photos by Dennis Schroeder. (left to right) NREL 26173, NREL 18302, NREL 19758, NREL 29642, NREL 19795.

NREL prints on paper that contains recycled content.

Acknowledgments

The authors would like to thank the many people who contributed to the content of this report. In particular, we would like to recognize the National Renewable Energy Laboratory (NREL) staff including Joshua Bauer, Caroline Draxl, Jenny Melius, Robin Newmark, Gian Porro, Zach Parker, Billy Roberts, George Scott, and Paul Veers.

We would like to thank the following peer reviewers external to NREL: Karen Herrera (Bureau of Ocean Energy Management [BOEM]), Sara Guiltinan (BOEM), Kate Huckelbridge (California Coastal Commission), Jeff Kehne (Magellan Wind), Jean Thurston (BOEM), David Hochschild (California Energy Commission), Andrea Eugster (Statoil), and Aubryn Cooperman (University of California Davis) for their thoughtful reviews, comments, and suggestions. More than 175 comments were submitted by the external reviewers. A record of these comments and their resolution is maintained by NREL.

This work was funded by BOEM. For their support, we thank Sara Guiltinan, Doug Boren, Joan Barminski, and Abby Hopper. We would also like to thank Forest Kaser at the California Public Utilities Commission for his support and advice.

Editing was provided by Sheri Anstedt (NREL).

Any omissions are the sole responsibility of the authors.

List of Abbreviations

| | |
|----------------|--|
| AEP | <i>annual energy production</i> |
| BOEM | <i>Bureau of Ocean Energy Management</i> |
| BOS | <i>balance of system</i> |
| CapEx | <i>capital expenditures</i> |
| COD | <i>commercial operation date</i> |
| DC | <i>direct current</i> |
| EIA | <i>Energy Information Administration</i> |
| FCR | <i>fixed charge rate</i> |
| FST | <i>Floater Sizing Tool</i> |
| GIS | <i>geographic information system</i> |
| GW | <i>gigawatt</i> |
| GWh | <i>gigawatt-hour</i> |
| Hs | <i>significant wave height</i> |
| HVAC | <i>high-voltage alternating current</i> |
| HVDC | <i>high-voltage direct current</i> |
| IEC | <i>International Electrotechnical Commission</i> |
| km | <i>kilometer</i> |
| kV | <i>kilovolt</i> |
| kn | <i>knot</i> |
| kN | <i>kilonewton</i> |
| kW | <i>kilowatt</i> |
| kWh | <i>kilowatt-hour</i> |
| LCOE | <i>levelized cost of energy</i> |
| m | <i>meter</i> |
| mm | <i>millimeter</i> |
| MW | <i>megawatt</i> |
| MWh | <i>megawatt-hour</i> |
| nmi | <i>nautical mile</i> |
| NPV | <i>net present value</i> |
| NREL | <i>National Renewable Energy Laboratory</i> |
| O&M | <i>operation and maintenance</i> |
| OpEx | <i>operational expenditures</i> |
| TWh | <i>terawatt-hour</i> |

Executive Summary

In this document, possible offshore wind energy locations in the state of California are examined, reference areas and potential wind plant technologies are selected, and the levelized cost of energy (LCOE)¹ between 2015 and 2030² is analyzed. By studying representative technology located at reference wind energy areas, cost and performance characteristics were evaluated. Reference areas were identified as sites that are suitable to represent actual offshore wind projects based on physical site conditions, wind resource quality, known existing site use, and proximity to necessary infrastructure. The intent is to assist decision-making by state utilities, independent system operators, state government officials and policy makers, the Bureau of Ocean Energy Management, and its key stakeholders. The report is not intended to serve as a prescreening exercise for possible future offshore wind development.

This study is based on assumptions and analysis from *A Spatial-Economic Cost-Reduction Pathway Analysis for U.S. Offshore Wind Energy Development from 2015–2030* (Beiter et al. 2016), which was written to support the *National Offshore Wind Strategy* (Gilman et al. 2016). The *National Offshore Wind Strategy* builds on the previous *Wind Vision Study Scenario* calling for 86 gigawatts (GW) of offshore wind deployed by 2050 in the United States. Under this scenario, 20% (17.2 GW installed capacity) of the nation's total offshore wind comes from the Pacific coastal states (DOE 2015). Although most of the offshore development activity has been focused in Europe in water depths of 50 meters (m) or less, 96% of California's offshore resource is located in waters with depths greater than 60 m. These deeper waters will likely require floating wind technology, which is still in a nascent stage of development, but is advancing toward commercialization in both Europe and Asia. The eventual commercialization of floating offshore wind is supported by market indicators such as accelerating deployment, improving cost, and increasing global research and development spending (Beiter et al. 2016). Cost-reduction scenarios point to fixed-bottom and floating wind LCOE benchmarks that may converge within the next decade. These cost reductions may enable floating offshore wind to compete in California electricity markets to help meet state renewable energy targets. In addition, other inherent offshore wind attributes may indirectly add further value to the California economy through reductions in state water consumption (via displaced fossil generation), complementary diurnal load characteristics with solar energy, and reduced transmission constraints due to proximity to dense population centers.

Six sites were identified that met the site selection criteria needed to sustain a major commercial offshore wind project. These criteria include:

- Annual average wind speeds greater than 7 meters per second (m/s)
- Water depths shallower than 1,000 m
- Lowest use conflicts

¹ Costs estimated for this report do not include subsidies or incentives.

² All reported years represent Commercial Operation Date (COD), unless indicated otherwise.

California's future electricity demand and state renewable energy targets, up to 50% renewables and beyond.

Table ES-1. Summary of Representative Sites

| Offshore Wind Reference Area | 2 – Channel Islands North | 5 – Humboldt Bay Area |
|---|---------------------------|-----------------------|
| Mean wind speed (m/s) at 100 m hub height | 8.86 | 9.73 |
| Min, mean, max significant wave height (m) | 1.8/2.3/2.5 | 2.7/2.7/2.8 |
| Min, mean, max depth (meters) | 198/575/774 | 592/870/994 |
| Construction port | Port Hueneme, CA | Fields Landing, CA |
| Operation and maintenance (O&M) port | Port Hueneme, CA | Fields Landing, CA |
| Centroid distance to centroid distance to O&M port (straight line - km) | 127 | 78 |
| Centroid distance to centroid distance to O&M port (avoids land - km) | 127 | 87 |
| Interconnection point | Goleta, CA | Eureka, CA |
| Centroid distance to interconnection (offshore until landfall) (straight line - km) | 69 | 80 |
| Centroid distance to interconnection (offshore until landfall) (avoids land - km) | 69 | 87 |
| Distance point of cable landfall to interconnect (km) | 6 | 5 |
| Area (km ²) < 1,000 m depth | 445 | 431 |
| Total potential capacity (MW) | 1,335 | 1,293 |

Based on engineering experience with continued turbine size growth and available market trend information, technology assumptions were made as a basis for an analysis of future costs. Table ES-2 describes the technology assumptions modeled in this study.

TERRA-GEN
JUST
~135 MW

Table ES-2. Technology Assumptions for California Offshore Wind Cost Analysis

| | 2015 Technology | 2022 Technology | 2027 Technology |
|--|-----------------|-----------------|-----------------|
| Turbine Rated Power (MW) | 6 | 8 | 10 |
| Turbine Rotor Diameter (m) | 155 | 180 | 205 |
| Turbine Hub Height (m) | 100 | 112 | 125 |
| Turbine Specific Power (W/m ²) | 318 | 314 | 303 |
| Substructure Technology | Semisubmersible | Semisubmersible | Semisubmersible |

Net annual energy production was calculated using these technology assumptions and site wind characteristics, including losses as a result of wakes, electrical transmission, availability, drivetrain conversion, and other system inefficiencies.

Using the technology assumptions in Table ES-2, the cost analysis also considered the variation in offshore resource quality and relevant physical characteristics along the California coast, including distance from shore, water depth, and wave height. The change in LCOE for a given

site resulting from expected technology innovations and advancements was also modeled for three target years—2015, 2022, and 2027—for projects at their commercial operation date (COD). In addition, these modeled costs were extrapolated to 2030.

For developing cost reductions specific to floating technology, we followed the methodology framework and inputs of the DELPHOS tool developed in the United Kingdom by BVG Consulting and KIC InnoEnergy (Valpy 2014), but included a modified set of cost-reduction options to account for differences between fixed and floating offshore wind technology. The DELPHOS cost assessment builds from The Crown Estate’s *Offshore Wind Cost Reduction Pathways Study* (2012) and from European offshore wind experience. The resulting method provides a comprehensive, bottom-up assessment of the potential to reduce the cost of multiple subelements of a project’s capital cost breakdown structure, including improvements to system reliability and performance. The results of this cost analysis for California are shown in Figure ES-2 for the two representative sites described in Table ES-1. Table ES-3 provides the same data in tabulated form.

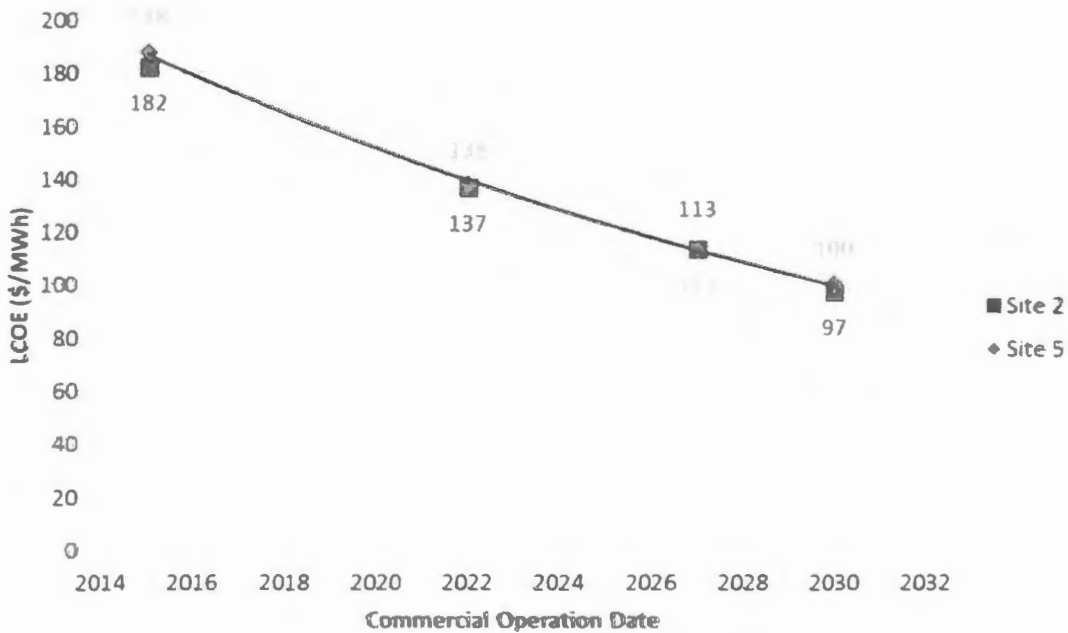


Figure ES-2. Estimated (unsubsidized³) LCOE for California sites 2 (Channel Islands North) and 5 (Humboldt Bay)

³ These estimates are made without considering any potential impacts from policy (e.g., state renewable portfolio standards, production tax credits, carbon pollution and other greenhouse gas regulation, or loan guarantee programs). Further, accelerated depreciation (Modified Accelerated Cost Recovery System) is considered.

Table ES-3. Estimated LCOE for the two representative Californian sites (unsubsidized)

| Year (COD) | LCOE (in \$/MWh) | |
|------------|--------------------------------|-----------------------|
| | Site 2 (Channel Islands North) | Site 5 (Humboldt Bay) |
| 2015 | 182 | 188 |
| 2022 | 137 | 138 |
| 2027 | 113 | 113 |
| 2030 | 97 | 100 |

The similarity in the LCOE values and cost reduction trends plotted in Figure ES-2 are a result of comparable geographic conditions and wind speeds. The analysis estimates that the LCOE of both sites has the potential to decrease from approximately \$185/megawatt-hours (MWh) in 2015 (COD) to approximately \$100/MWh by 2030 (COD).

The limitations of this analysis are described in more detail in Beiter et al. (2016) and in Section 6 of this report. In general, the following limitations should be considered:

- The modeled cost reduction trajectory depends, in part, on continued global investments in offshore wind technology innovation, and the emergence of a robust domestic and Californian supply chain commensurate with recent European supply chain developments.
- The cost-reduction pathways modeled were developed from European project data but the study does not provide analysis to convert European to U.S. and Californian offshore wind market conditions. U.S. projects may have different risk and uncertainty profiles because of varying geographic (e.g., deeper waters) and market conditions (e.g., policy).
- The cost model incorporates a number of simplifications and uncertainties including first-order tools that may not reflect some details in the design, lack of U.S. commercial-scale offshore wind experience, uncertainty in technology suitability and availability, and uncertainty in macroeconomic factors (e.g., exchange rates, commodity prices).
- This analysis does not consider policy-related factors or subsidies, either at the national level or in California.
- The full set of environmental issues was not taken into account. The authors recommend that offshore wind developers work closely with regulatory bodies including BOEM, the U.S. Environmental Protection Agency, Federal Aviation Administration, and California state and local agencies to ensure they are considering conservation areas, marine-protected areas, habitats, migration patterns, marine flora, and many other important environmental factors.
- The time frame considered only the period to 2027 (COD) (LCOE results are extrapolated to 2030). Because floating offshore wind technology is still in a nascent stage of development, the analysis period should be considered a near-term window.

- **Fixed-bottom offshore wind project costs are decreasing more rapidly than anticipated by many industry cost models, including the cost-reduction pathway estimated by this analysis.** Recent competitive tenders include Borssele I&II in the Netherlands (58% reduction in power price from 2010) and Krieger's Flak in Denmark (59% reduction in power price relative to projections made in 2012). The extent that these lower costs can be sustained and passed on to floating technology is not evaluated.
- The quantitative values provided in the DELPHOS bottom-up analysis have not yet been independently verified (however, general trends are supported by historic learning curves **from similar industries that show that cost reductions of this magnitude are possible**). Cost-reduction opportunities included in the DELPHOS analysis for floating wind turbines did not undergo the same level of review as the original 40 cost-reduction areas determined by The Crown Estate. Because of a lack of industry experience in floating wind and the preliminary status of this analysis, there is a higher degree of uncertainty in the floating criteria presented.

The key findings drawn from this analysis indicate:

- **There is 112 GW of technical offshore wind resource potential over the entire California coastline.** This corresponds to 392 TWh/year of potential energy production, or about 1.5 times the state's electric energy consumption based on 2014 EIA figures (Musial et al. 2016; Energy Information Administration 2015a).
- **Ninety-six percent of the technical offshore wind resource is in waters deeper than 60 m,** indicating that floating wind technology will likely be the most viable option in California (Musial et al. 2016).
- The six reference sites have a combined installed capacity potential of over 16 GW and **illustrate that offshore wind could potentially be deployed at a scale large enough to significantly contribute to California's electricity demand for low carbon energy.**
- Market growth indicates an emerging market for floating wind turbines worldwide and **expected commercial phase development by 2025.**
- **The variation in offshore resource quality and spatial characteristics along the California coast** including distance from shore, water depth, and wave height resulted in relatively small variations in LCOE at the reference sites for 2015, 2022, 2027 (modeled), and extrapolated to 2030.
- **Relatively small differences in LCOE were found between the representative sites 2 and 5,** which are indicative of site similarities among the potential California offshore wind sites. Site selection was primarily guided by higher wind speeds and lower water depth. However, because the water depth increases rapidly, all of the sites were a similar **distance from shore (approximately 30 km [see Figure 13]), to avoid nearshore visual impacts and far shore extreme water depths.**

- The cost-reduction potential for the two reference sites was also very similar. Site 2 showed potential LCOE reductions from \$182/MWh to \$97/MWh whereas site 5 showed potential reductions from \$188/MWh to \$100/MWh. These similarities are indicative of the cost-reduction assumptions used and the physical site similarities.
- The baseline cost of the 2015 floating offshore wind technology is derived from only a few deployments in Europe that are now several years old, but these California baseline starting points (\$187/MWh average across the six considered sites) are the primary element used to establish LCOE in later years. The higher degree of uncertainty in the floating baseline suggests a possible range of future costs when the existing baseline data are updated.
- The economic potential for offshore wind to compete at the estimated costs in California is dependent on technology attributes, market factors, prevailing electricity prices, and the level of policy support for the year being considered.
- Grid connections and port services are more abundant and readily accessible in southern California, which may facilitate near-term development in these areas.
- California has a relatively severe wave climate that contributes to higher LCOE estimates driven up by increased operation and maintenance (O&M) and lower availability. New turbine access methods, tow-to-shore O&M strategies, and mooring/array cable system designed for easy connect/disconnect could help mitigate these challenges.
- To illustrate the potential contribution of offshore wind: if 1.2 GW (two 600-MW wind plants) were installed at each of the six reference sites, 35.3 terawatt-hours/year of offshore wind could be added to the existing generation. This level of generation would be approximately 13.5% of California's 2014 electric energy demand.⁴
- Floating wind technology is in a nascent stage and it is unknown at this point which configuration could achieve the lowest costs. However, given recent declines in the cost of energy from fixed-foundations offshore wind projects and the level of innovative floating foundation design work that is now underway, we would expect cost estimates for these technologies to change over time.

⁴ This scenario would use less than half of the area indicated in Figure ES-1.

A Citizen's Guide

TO THE BUREAU OF OCEAN ENERGY MANAGEMENT'S
RENEWABLE ENERGY AUTHORIZATION PROCESS


December 2016



BOEM
BUREAU OF OCEAN ENERGY MANAGEMENT



Overview



This guide is intended to help the public understand the Bureau of Ocean Energy Management's (BOEM) process for overseeing renewable energy projects on the Outer Continental Shelf (OCS) and to highlight opportunities for public involvement.

About BOEM

BOEM is the Bureau within the U.S. Department of the Interior responsible for managing development of the nation's offshore energy resources in an environmentally and economically responsible way. BOEM promotes energy independence, environmental protection, and economic

development through responsible, science-informed management of offshore energy resources.

Introduction

The United States is experiencing increased interest in the development of marine energy projects using wind, wave, and ocean current technologies. These types of renewable energy sources can provide densely populated coastal communities with a clean source of electrical power while helping to diversify the U.S. electrical supply. For additional information on offshore renewable energy technology, see BOEM's "Offshore Renewable Energy Guide" at <http://www.boem.gov/Offshore-Renewable-Energy-Guide/>.

In 2016, the U.S. Department of Energy (DOE) estimated 10,800 gigawatts (GW) of offshore wind energy could be accessed within the 200 nautical miles (nm) Exclusive Economic Zone (EEZ) boundary. DOE estimates offshore wind energy capacity recoverable given current technical capabilities to be 2,058 GW, with an energy generation potential almost double the electricity consumption of the United States.

BOEM's Regulatory Authority for Renewable Energy Activities

BOEM is the federal agency responsible for issuing leases, easements, and rights-of-way for renewable energy projects on the OCS. The OCS is regulated by the Department of the Interior through the Outer Continental Shelf Lands Act (OCSLA). The OCS refers to the 1.7 billion acres of Federal submerged lands, subsoil, and seabed beginning three nm off the coastline (for most states) and extending to the edge of the EEZ.

BOEM's authority to oversee renewable energy development derives from amendments to subsection 8(p) of the OCSLA (43 U.S.C. 1337) as set forth in section 388(a) of the Energy Policy Act of 2005 (EPA) (Pub. L. 109-58). The Secretary of the Interior delegated authority to BOEM to regulate activities that produce or support the production, transportation, or transmission of energy from sources other than oil and gas. BOEM published regulations governing its renewable energy program in 2009 (30 C.F.R. Part 585). For additional information on BOEM's renewable energy regulatory framework and associated guidelines, see <http://www.boem.gov/National-and-Regional-Guidelines-for-Renewable-Energy-Activities/>.

BOEM's Renewable Energy Oversight Process

Types of Leases and Grants

A lease is an agreement authorizing the use of a designated portion of the OCS for renewable energy activities. There are three types of leases.



- 1 **Commercial lease** — for commercial activities that generate energy for sale and distribution.
- 2 **Limited lease** — for activities that support the production of energy, but do not result in the production of electricity for sale or distribution beyond a very limited threshold.

Site Assessment Plan (SAP) — The SAP describes how the lessee will conduct resource assessment activities, such as the installation of meteorological towers or buoys, and technology testing during the site assessment phase of the commercial lease. BOEM must approve the SAP before the lessee can install facilities or conduct activities described in the SAP.



Construction and Operations Plan (COP) — The COP describes how the lessee will construct and operate a commercial wind project on a commercial lease. The COP includes a description of all planned facilities as well as a description of proposed construction activities, commercial operations, and conceptual decommissioning plans. BOEM must approve the COP before the lessee can install facilities or conduct commercial activities described in the COP.

General Activities Plan (GAP) — The GAP describes how the lessee/grantee will construct and operate renewable energy facilities on a limited lease or ROW/RUE grant. The GAP includes a description of construction activities for all planned facilities, associated activities, and conceptual decommissioning plans. BOEM must approve the GAP before the lessee can install facilities or conduct activities described in the GAP.

The Licensing Process

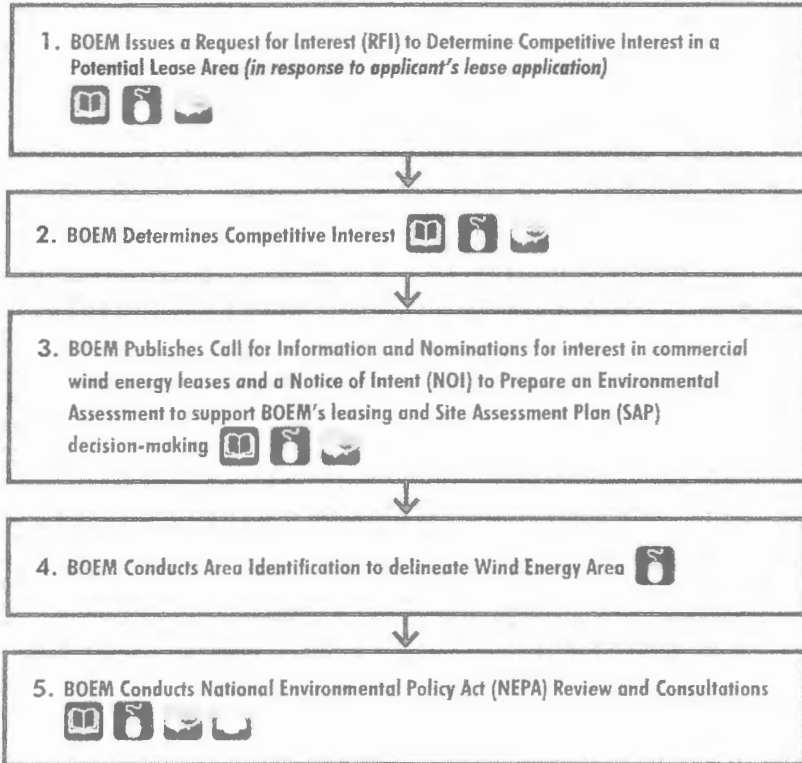
The following charts describe the various renewable energy authorization processes, noting opportunities for public involvement, for OCS project proposals. For offshore wind energy projects, BOEM has sole jurisdiction and determines whether to issue leases and approve projects. For marine hydrokinetic projects (such as wave or ocean current), BOEM and FERC have a shared jurisdiction where BOEM issues leases and oversees the siting of such projects, and FERC issues licenses and approves construction and operation of the projects.



Chart 1

BOEM TYPICAL AUTHORIZATION PROCESS FOR COMMERCIAL WIND ENERGY PROJECTS ON THE OUTER CONTINENTAL SHELF:

Note: for illustrative purposes only



Footnote: there can be some variances to this process (e.g. BOEM may issue a call and forgo the RFI stage).

PUBLIC INVOLVEMENT OPPORTUNITIES:

 Published in the
Federal Register
www.federalregister.gov

 Posted on
BOEM's Website
www.boem.gov

 Public Comment
Period

 Public Meetings

6. BOEM Lease Issuance

- a. BOEM Issues Proposed Sale Notice   
- b. BOEM Issues Final Sale Notice  
- c. BOEM Holds Lease Sale Auction
- d. BOEM Awards Lease 

7. Lessee Submits SAP; BOEM reviews proposed activities and approves, approves with modification, or disapproves SAP 

8. If SAP Approved, Lessee Conducts Site Assessment and Submits Construction and Operations Plan (COP) 

9. BOEM Conducts NEPA Review and Consultation, Review of COP Activities, and Technical Reviews    

10. BOEM Approves COP 

In the Wind

Thadeus Greenson

As legalized recreational cannabis takes hold in California, some Humboldt County officials think the local economy's future isn't tied to farms in the hills. It might be in the wind.

A triad of factors has state and local officials, as well as energy companies, increasingly excited about the potential of offshore wind energy in Humboldt County, with the hope it could become a hub for the emerging renewable energy technology, transforming the local electric grid into 100 percent renewable energy while creating hundreds of jobs and revitalizing the port. Redwood Coast Energy Authority Executive Director Matthew Marshall says that while wind energy is nothing new, its local potential is.

"Frankly, we've got pretty much the best offshore wind resource in the entire country," he says, adding that the North Coast has the kind of consistent, strong winds that make wind energy companies salivate. "The wind has always been there and that's been known."

What's historically ruled the North Coast out of wind energy discussions, Marshall says, is that the waters off the local coast "get too deep, too quick," meaning the wind turbines used in shallow waters off the East Coast and elsewhere won't work off the Humboldt County coastline. But a new floating platform technology is proving to be a game changer.

The technology, which involved massive, 750-plus-foot-tall wind turbines fixed to partially submerged barges or platforms that are then tethered to the ocean floor, is proving viable, with the first full-scale deep water wind farm opening off the coast of Scotland last fall, after nearly a decade of pilot tests. State officials in California, which passed Senate Bill 350 in 2015 pledging the state to transition to 50 percent renewable energy by 2030, have taken notice and begun looking at offshore wind as a viable option for reshaping the state's electric grid.

"Three years ago, offshore wind energy wasn't in our thought process," said California Energy Commission Renewable Energy Integration Specialist Michael Sokol at a recent meeting convened by RCEA. He made clear that it is now. Part of what's tantalizing about offshore wind for state officials is its potential balance with the state's existing solar infrastructure. While solar energy production peaks at midday and vanishes at sunset, offshore wind would see its highest production in the late afternoon and evening, lessening the need for energy storage.

With California officials feeling an urgency to find renewable technologies that could work on a large scale and the emerging floating platform technology making the Pacific Coast potentially viable for offshore wind, eyes turned to

the Central Coast. While the wind potential down south isn't as strong as off the North Coast, its proximity to population centers and energy infrastructure made the location a natural fit. State and federal officials were busy last summer conducting hearings and outreach on a lease application for a wind farm near San Luis Obispo until the U.S. Navy quietly threw a wrench in those plans back in August, signaling that it would veto the application because it could interfere with military testing operations. But the Navy didn't stop there, deeming the entire coastline from Los Angeles to north of Big Sur — more than 35,000 square miles — off limits.

That left Humboldt County as one of the only viable candidates for potential sites. In addition to getting the crucial OK from the Navy, Humboldt Bay is the only port in the northern stretch of the state that would be able to bring the huge turbines into port for maintenance, as they are too tall to clear the bridges of the San Francisco Bay.

"These things are huge," said Scott Morgan, a deputy director of administration in Gov. Jerry Brown's office at the recent RCEA meeting. "The blades on them are monsters."

Seemingly all of a sudden, the California Energy Commission began pointing energy companies toward Humboldt Bay.

At that point, Marshall says, RCEA had already entered into a partnership with Principal Power Inc., a technology and services provider for the offshore deep water wind energy market based in the Bay Area, to assess the potential of offshore wind energy. As the community choice aggregator for Humboldt County, RCEA has a clear stake in the outcome of the process and Marshall says the agency also wanted to ensure a local entity is involved in the process and conversations in order to retain some local control and ensure Humboldt doesn't end up at the whim of a large, multi-national energy company.

But when news of the Navy's veto of the majority of California's coast became public, Marshall says things kicked into high gear. RCEA is now circulating a request for qualifications, looking for other entities with the "needed technical and financial" means to help cooperatively develop Humboldt County's offshore wind infrastructure. The agency hopes to find partners by the end of March.

Marshall says, the plan is to start small with a farm consisting of 10 to 15 wind turbines located 20 to 30 miles offshore, with the potential to scale up. For the moment, there isn't much incentive to go larger than that, Marshall says, as the infrastructure to connect Humboldt County to the rest of the state's electric grid doesn't exist, meaning it can't export excess electricity.

Changing that would require either extending high-capacity power lines east through Trinity County to connect with the state grid in Cottonwood or building an undersea transport system to the south. Both would come with price tags in the hundreds of millions of dollars.

While the conversation is entirely speculative at this point, it has local officials abuzz at the potential.

As the executive director of the Environmental Protection Information Center, **Tom Wheeler jokes that he's often in the position of playing bad cop and shooting holes in development ideas. But not in this case.**

"So far, we've been really excited about the conversation," he says, making clear there is still lots of information to be gathered and many questions to be answered. **"It seems like we could have good, blue collar jobs and clean renewable energy from this project. It's just making sure we do it in a way that minimizes impacts to wildlife."**

The wildlife impacts question seems a hard one to answer, as there's been minimal study on the issue so far. **At 20 to 30 miles offshore, Wheeler says there aren't the concerns about harm to bald eagles, golden eagles and bats that onshore wind farms bring. But there are some concerns about impacts to pelagic birds and marine life. Most notably, Wheeler says there is the question of whether the vibrations or sounds from the windmills would affect migrating whales along the coast, which is currently unknown. Wheeler also says he's heard concerns that the floating platforms could attract sea birds by becoming "reef-like" ecosystems that draw fish and, consequently, feeding birds that would then get caught in the propellers.**

"There are some concerns but we're at the investigation stage right now, and I fully support the investigation," he says. **"I think this could be a great thing for Humboldt. This could be really cool."**

Humboldt Bay Harbor District CEO **Larry Oetker says the topic of an offshore wind farm has been on his radar since he stepped into the job in December. If things move forward, Oetker says, it would necessitate infrastructure improvements in the bay. Currently, he says, the bay entrance is deep enough and wide enough to accommodate barges pulling the wind turbines into port for maintenance and repairs. The problem is the docks in the bay — all of which were built primarily for loading and unloading wood products — can't handle the weight of the turbines, which run some 500 tons. But rebuilding one of the bay's docks to accommodate that kind of tonnage, along with the hoists needed to move things of that size, could create a host of other shipping possibilities.**

"That would open up a whole container world to us, having containers come in and out of the port," Oetker says.

While at least initially the turbines themselves would be shipped to the North Coast, Marshall says, there would need to be local maintenance and repair crews, which would create some jobs. But if the farm proves successful and scales up, there's the potential for the large-scale creation of well-paying jobs locally.

The port of Grimsby in England used to be home to one of the world's largest fishing fleets back in the 1950s, but declines in fisheries and territorial squabbles over the waters of neighboring countries have largely decimated it, sending the city into a deep economic slump and one of the nation's highest unemployment rates. **But about a decade ago, energy companies came calling about offshore wind.**

"To be truthful, it sounded a load of rubbish," Port Chief Martin Boyers told *Public Radio International*. "It's turned out to be very good for us."

According to the *PRI* report, the offshore wind boom has resulted in the creation of thousands of jobs, with more on the way as England looks to ramp up its use of renewable energy in the coming decades. In addition to the technicians and maintenance workers needed to keep the wind farms up and running, Grimsby has welcomed a number of factories that manufacture the massive turbines, which have hand-made blades that weigh 30 tons and stretch 250 feet long.

If the pilot project gets up and running and does well, Marshall says, there's similar potential in Humboldt County. He says he can envision wind power companies buying up land on the Samoa Peninsula — which is designated as a free trade zone and comes with some special tax benefits to companies located there — and producing turbines locally. Further, he says, there's the potential for numerous licensed farms along the Northern California and Oregon coasts, with Humboldt Bay serving as the production and maintenance hub.

"If the sector really takes off, then there's that potential next phase," he says.

But that's all putting the cart way before the horse. Marshall says RCEA is currently meeting with stakeholders and gather public input, having already met with representatives of the fishing industry, local governments, environmental groups and local tribes.

So far the feedback has been invaluable and largely supportive, Marshall says. As an example, he says fishermen balked at the initial proposal to locate the farm 15 to 20 miles off shore, saying 15 "would be horrible," but were fine with it being 20 to 30 miles out, so RCEA adjusted plans accordingly. The added distance, Marshall says, will also mean the turbines will be even less visible from shore. Spotting them, he says, will be somewhat like trying to find the smoke stack on the old pulp mill while standing on Trinidad Head. "Getting 20 to 30 miles off the coast, you're going to be lucky to be able to see it on a clear day with binoculars," he says.

Having already gathered a lot of stakeholder input, RCEA will now begin to reaching out to the general public. To that end, Marshall says the agency has a pair of informal public information sessions planned — from 4 to 7 p.m. on March 5 at the Social Club in Samoa and March 6 at Plaza Grill — when folks can drop in, have a snack and a beverage and learn more about the project.

Meanwhile, RCEA hopes to identify partners with an eye on hitting the ground running on a proposal this spring. But Marshall warns the process will be slow. Once RCEA has partnerships in place and its ducks in a row, it will begin the lease process with the Bureau of Ocean Management by submitting an application. If the bureau deems there's competitive interest — which seems likely in this case — it would put the lease out to auction. Once a high bidder secures the rights, the project would then undergo studies, evaluations, site plans and environmental review.

"We have to plan to plan, then comes the planning, then reviewing the plan,"

BOEM's

Renewable Energy

In 2009, Department of the Interior announced final regulations for the Outer Continental Shelf (OCS) Renewable Energy Program, which was authorized by the **Energy Policy Act of 2005 (EPAct)**.

These regulations provide a framework for issuing leases, easements, and rights-of-way for OCS activities that support production and transmission of energy from sources other than oil and natural gas.

DOI's Bureau of Ocean Energy Management (BOEM) is responsible for overseeing offshore renewable energy development in Federal waters. Since the regulations were enacted, BOEM has worked diligently to oversee responsible renewable energy development.

Commercial Leasing

A commercial lease gives the lessee the exclusive right to seek BOEM approval for the development of a leasehold. It allows a lessee to conduct survey activities for site characterization but does not grant the right to construct any facilities.

Office of Renewable Energy Programs Statistics



8 competitive lease sales

Over **\$473 million** in bids



over **1.7 million** acres

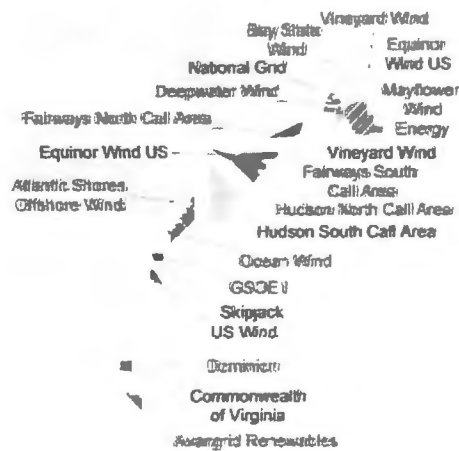


15 active offshore wind leases
with over **21 GW** total capacity

Current Lease Status

| LESSEE | STATE | ACREAGE | LEASE #, YEAR | NEXT STEP |
|-------------------------------------|-------|---------|------------------|-----------|
| Garden State Offshore Energy I | DE | 70,098 | OCS-A 0482, 2012 | SAP |
| Deepwater Wind New England | RI/MA | 97,498 | OCS-A 0486, 2013 | COP |
| Deepwater Wind New England | RI/MA | 67,252 | OCS-A 0487, 2013 | COP |
| Virginia Electric and Power Company | VA | 112,799 | OCS-A 0483, 2013 | COP |
| US Wind | MD | 79,707 | OCS-A 0490, 2014 | COP |
| Vineyard Wind | MA | 166,886 | OCS-A 0501, 2015 | COP |
| Bay State Wind | MA | 187,523 | OCS-A 0500, 2015 | COP |
| Ocean Wind | NJ | 160,480 | OCS-A 0498, 2016 | COP |
| Atlantic Shores Offshore Wind | NJ | 183,353 | OCS-A 0499, 2016 | SAP |
| Equinor | NY | 79,350 | OCS-A 0512, 2017 | COP |
| Avangrid Renewables | NC | 122,405 | OCS-A 0508, 2017 | SAP |
| Skipjack | DE | 26,332 | OCS-A 0519, 2018 | COP |
| Equinor | MA | 128,811 | OCS-A 0520, 2018 | SAP |
| Mayflower Wind | MA | 127,388 | OCS-A 0521, 2018 | SAP |
| Vineyard Wind | MA | 132,370 | OCS-A 0522, 2018 | SAP |

* COP: Construction and Operations Plan, SAP: Site Assessment Plan



BOEM is also in the planning stages for areas offshore New York, South Carolina, California, and Hawaii.

In addition to the leases above, BOEM received the following unsolicited research lease applications:

BOEM received two research lease requests from the Virginia Department of Mines, Minerals and Energy. In response to both requests, BOEM determined there was no competitive interest. One of the research leases associated with the proposed Virginia Offshore Wind Technology Advancement Project was executed in March 2015.

A research lease request for a wave energy test site in Federal waters offshore Oregon was submitted to BOEM by Oregon State University. BOEM determined there was no competitive interest and continues to process the research lease request.

For more information on what is happening in each of our coastal states, please visit www.boem.gov/Renewable-Energy-State-Activities

Offshore Wind Energy Project Inches Forward on the North Coast

Thadeus Greenson

Saturday, September 15, 2018

Offshore Wind Energy Project Inches Forward on the North Coast

Posted By Thadeus Greenson @ThadeusGreenson on Sat, Sep 15, 2018 at 1:29 PM

[click to enlarge](#)



- Courtesy of Statoil
- Hywind floating turbine demo off the coast of Karmøy, Norway.

Efforts to build a wind energy farm off the North Coast took a substantial step forward this week, when the Redwood Coast Energy Authority and a consortium of private companies submitted a lease application to the federal Bureau of Ocean Energy Management.

The application seeks site control of about 70 square miles of ocean approximately 20 square miles off the coast of Eureka, with the goal of identifying a roughly 12-square-mile area that would eventually become home to up to 15 floating wind turbines anchored to the ocean floor.

While the application is a crucial step, the project's path forward remains very unclear.

As we reported earlier this year ("[In the Wind](#)," Feb. 22), a triad of factors have local and state officials, as well as some energy companies, increasingly excited about the potential of offshore wind energy on the North Coast.

The winds off the North Coast are strong and consistent, making them a perfect fit for wind energy. That, coupled with California's increasingly aggressive push toward renewable energy and a U.S. Navy decision to veto any offshore wind operations south of Big Sur, has local officials increasingly excited about the possibilities. The hope is that not only will RCEA and its partners successfully develop a small-scale wind farm that would provide almost all the electricity needed in Humboldt County, but that Humboldt Bay would also become a manufacturing and maintenance hub for the wind turbines, servicing other farms in the Pacific Northwest and becoming an economic driver locally.

But there's a long road ahead.

Matthew Marshall, RCEA's executive director, said the agency got involved in the process with the aim of seizing some local control over what may become a hugely sought after resource. Marshall said there are essentially two tracks for leasing from the Bureau of Ocean Energy Management. Most typically, the bureau takes it upon itself to research the feasibility of an area and then puts a lease up for auction. But RCEA is taking the track of submitting an unsolicited lease request, having already identified a location. After the bureau reviews RCEA's request, if it decides the location is worth pursuing, it would then issue a request for competitive interest, which could trigger a competitive bidding process.

"We're excited to be taking this next step," Marshall said. "But it's one step forward in a multi-year process that's going to have many stages."

Moving forward, Marshall said he hopes the bureau will decide on the application by next spring, which would trigger the request for competitive interest and the next phase of the process. Facing a host of unknowns and questions beyond their control, Marshall said RCEA and its partners are shooting to have the wind farm operational in 2024.

See the full press release from RCEA copied below and find past *Journal* coverage of the issue [here](#).

Redwood Coast Energy Authority and Consortium of Development Partners Submit Lease Application for Northern California Offshore Wind Energy Project

EUREKA, California, September 12, 2018 – The Redwood Coast Energy Authority (RCEA), with support from a consortium of private companies, has submitted a lease application to the Bureau of Ocean Energy Management (BOEM) to advance the development of an offshore wind energy project off the coast of Humboldt County, in Northern California. The 100-150 megawatt (MW) floating offshore wind farm is planned to be located more than 20 miles off the coast of Eureka.

RCEA and the consortium, which includes Principle Power Inc., EDPR Offshore North America LLC, and Aker Solutions Inc., have been working with members of the community since 2017 to explore and develop the offshore wind potential of Humboldt County. RCEA initiated a competitive process earlier this year and selected the consortium to enter into a public-private partnership to pursue the development of the proposed project. Since its founding in 2003, RCEA, a local government joint powers agency, has provided an array of energy services to Humboldt County residents and businesses.

In recent months, RCEA has done an increasing amount of community outreach – informing the public and commercial interests, gathering feedback, and listening to and incorporating the concerns and desires of the region – to form the basis for the lease application submitted to BOEM. The project is expected to bring significant economic benefits to the region in the form of jobs and increased spending in the local community and State of California. A longer-term goal of the project is for Humboldt Bay to become a central hub of a US west coast offshore wind industry.

“Humboldt County has much to gain by harnessing our offshore wind power potential,” said County Supervisor and RCEA board member Estelle Fennell. “Coastal resiliency, local jobs, increased investments in economic development, manufacturing, protecting wildlife and future generations of Humboldt County.

The State of California set ambitious goals this week by signing Senate Bill 100, reaching for carbon neutrality and 100% clean electricity by 2045. We are at the very beginning of a multi-year process, but so far, the response from the public has been positive. Humboldt County has a long history of innovative leadership when it comes to renewable energy solutions.”

RCEA’s work with the Humboldt community, state and federal agencies, and others has generated an overall positive response to the proposed project and sets the framework for successfully delivering clean energy to local ratepayers at a competitive cost, under an efficient, locally driven and guided development philosophy. RCEA and the consortium will continue to focus on community and stakeholder outreach during this multi-year process to understand and address potential concerns.

Donna Wright, Executive Director of the Greater Eureka Chamber of Commerce, said “the Chamber supports economic development opportunities with offshore wind and clean energy and supports efforts to keep Humboldt County and California competitive in this growing industry. Business plays a key role in community leadership and by working with RCEA and their consortium we want the community to know that we are committed to supporting policies and advocating for programs that promote economic, environmental and community sustainability.”

RCEA and its project partners engaged in a systematic, comprehensive process to determine a location for the Humboldt offshore site that minimizes impacts to the environment and communities, including commercial fishing, that are active offshore. Based on this interactive process, the proposed lease area will support selecting a final project site for an expected 10-15 turbines that avoids or minimizes impacts on marine navigation corridors, major commercial fishing areas, and environmental resources.

RCEA’s project partners bring the expertise needed to develop, finance, and operate projects as well as build an offshore wind energy supply chain. The complementary capabilities of Principle Power, EDPR, and Aker Solutions bring the long-term commitment needed for a successful project. RCEA and its consortium of development partners are working to bring the project online in 2024, which will help unlock the extraordinary value of offshore wind energy for California.

“We wanted a project of this magnitude to move forward with the local community having a strong role throughout the process,” added Matthew Marshall, Executive Director at RCEA. “We are extremely excited that we’ve been able to partner with such a highly-capable and experienced team of companies that are committed to that vision of a community-led project.”

About the Redwood Coast Energy Authority

The Redwood Coast Energy Authority is a local government Joint Powers Agency whose members include the County of Humboldt; the Cities of Arcata, Blue Lake, Eureka, Ferndale, Fortuna, Rio Dell, and Trinidad; and the Humboldt Bay Municipal Water District. The purpose of the Energy Authority is to develop and implement sustainable energy initiatives that reduce energy demand, increase energy efficiency, and advance the use of clean, efficient and renewable resources available in the region for the benefit of the Member agencies and their constituents.

Tags: [RCEA](#), [offshore wind energy](#), [electricity](#), [Bureau of Ocean Energy Management](#), [North Coast](#), [ocean](#), [Image](#)

California Offshore Renewable Energy

BOEM California Intergovernmental Renewable Energy Task Force

About the BOEM California Intergovernmental Renewable Energy Task Force

The BOEM California Intergovernmental Renewable Energy Task Force ("Task Force") is a partnership of members of state, local and tribal governments and federal agencies created in 2016 that provide critical information to the decision-making process for planning future offshore renewable energy development opportunities in federal waters offshore California. The Task Force is seeking to identify potential areas in federal waters offshore California that may be suitable for offshore renewable energy development. It serves as a forum to:

- Discuss stakeholder issues and concerns;
- Exchange data and information about biological and physical resources, ocean uses and priorities; and
- Facilitate early and continual dialogue and collaboration opportunities.

Where is the Wind?

BOEM is responsible for regulating offshore energy uses in federal waters, extending from 3 nautical miles (nm) offshore to the edge of the Exclusive Economic Zone ending at 200 nm offshore, except within boundaries of any National Park, National Marine Sanctuary, National Wildlife Refuge (or associated systems) or National Monument. BOEM and the Task Force are focused on exploring areas for offshore renewable energy off California's coast. The Task Force is pursuing a data and information gathering effort along the entire California coast, with special emphasis in

central California because there is commercial interest by offshore wind developers, readily available existing transmission infrastructure and viable wind energy resources.

BOEM California Task Force Offshore Data Collection Area



Did you know?

- The Department of Interior is responsible for offshore energy resources and has jurisdiction over 1.7 billion acres on the Outer Continental Shelf (OCS).
- California Governor Jerry Brown signed SB 350 into law, which set a 50% renewable portfolio standard (RPS) for the state to achieve by 2030.
- One gigawatt (GW) of offshore wind energy could power 350,000 homes with clean, renewable energy. According to a 2016 study from the National Renewable Energy Laboratory, there is more than 158,000 GW of capacity offshore California.

About Floating Wind Technology

Numerous offshore wind farms already provide electricity to millions of people in Europe. In the U.S., the 30MW, five-turbine Block Island Wind Farm began producing energy offshore Rhode Island in 2016. Floating wind energy technology is gaining interest offshore of California where water depth drops off rapidly, making most federal and state waters too deep for fixed, bottom-mounted turbines. A typical floating offshore wind facility is pictured below.

A project in federal waters must pass through state waters with its electrical cable to get to a land-based power substation, requiring federal and state permits in addition to a BOEM OCS lease.

How Offshore Floating Wind Farms Work

1. Floating wind turbines are configured in an array to optimize the capture of wind energy.

2. Energy captured by the turbines is conveyed through a transmission line to a floating substation.



Collaborative Data and Information Gathering Effort

The California Energy Commission, in partnership with BOEM, is developing an online data portal to facilitate decision-making about offshore wind energy development in the context of existing ocean resources and uses. The State and BOEM will work with stakeholders and members of the Task Force to identify appropriate existing data sets to include in the data portal.

How Can I Become Involved?

- Share information and data to include in the data portal. California and BOEM (the Team) will hold webinars to support data sharing in early 2017.
- Participate in tribal outreach meetings. The Team plans five meetings between November 2016 and spring 2017.
- Participate and provide comments in public meetings open to everyone; these are provisionally scheduled for spring 2017.
- Participate in smaller, targeted outreach meetings with community groups, including fishermen, environmental NGOs, elected officials and others.
- Attend Task Force meetings; the next meeting will be held near the central Coast and is expected in summer 2017.
- Track progress on the BOEM website, www.boem.gov/California
- Provide your contact information to BOEM so that we can contact you regarding future activities; you can decide at what level you want to be involved. Email Jean.Thurston@boem.gov.
- Public media inquiries: John.Romero@boem.gov



BOEM
BUREAU OF OCEAN ENERGY MANAGEMENT

Pacific Regional Collaboration | Bureau of Ocean Energy Management

West Coast Ocean Alliance

BOEM is an active member of the West Coast Ocean Alliance (WCOA), which serves as the Regional Ocean Partnership for the West Coast. The WCOA builds upon previous regional ocean coordination activities carried out through the West Coast Regional Planning Body (2014-2018), West Coast Governors Alliance on Ocean Health (2007-2015), and West Coast Ocean Partnership (2015-2018). The WCOA engages state, tribal, and federal government partners in a collaborative, non-regulatory forum to pursue consensus-driven activities carried out by members in support of the group's Regional Vision. The WCOA's four goals to achieve its regional vision are:

- **Compatible and Sustainable Ocean Uses**
- **Effective and Transparent Decision-Making**
- **Comprehensive Ocean and Coastal Data**
- **Increased Understanding of and Respect for Tribal Rights, Traditional Knowledge, Resources and Practices**

BOEM serves on the WCOA Executive Committee, sub-regional working groups focused on specific coastal areas of the West Coast, and annual meeting planning committee.

- **West Coast Ocean Data Network and Portal**: BOEM is an active member of the West Coast Ocean Data Network and contributor to the West Coast Ocean Data Portal (WCODP). The West Coast Ocean Data Portal is a project to increase discovery and connectivity of ocean and coastal data and people to better inform regional resource management, policy development, and ocean planning. The Portal informs priority West Coast Ocean issues.
- Since 2014, BOEM has been part of several WCODP technical teams whose efforts include developing a story map on marine renewable energy as an example of changing ocean uses on the West Coast and synthesizing spatial data on benthic infauna, littoral cells, kelp surveys and extents, and fishing closure areas. These data sets have been integrated into the WCODP to inform ocean planning, policy development, and resource management on the West Coast.

Tribal Engagement

BOEM And State Of California Launch California Offshore Renewable Energy Task Force

Contact: [John Romero](#)

WASHINGTON – *The Bureau of Ocean Energy Management (BOEM) and the State of California held the inaugural meeting of the California Intergovernmental Renewable Energy Task Force today in Sacramento, California, to begin planning for future renewable wind and wave energy development opportunities in federal offshore waters along the Golden State.*

California is the 14th U.S. coastal state to form a renewable energy task force to provide critical information to the decision-making process, including how to resolve potential conflicts between development and environmental concerns and other uses. The California task force will facilitate coordination and communication between BOEM and state, local, and tribal governments and other federal agencies concerning potential renewable energy leasing for research activities and commercial development on federal submerged lands on the Outer Continental Shelf (OCS), offshore California. California Governor Jerry Brown requested formation of the task force in a May 12, 2016 letter to Interior Secretary Sally Jewell.

“Today’s inaugural meeting of the California Intergovernmental Renewable Energy Task Force underscores the Obama Administration’s commitment to combating the effects of climate change and marks an important step in California’s role as a leader in renewable energy development,” said Janice Schneider, Interior Assistant Secretary for Land and Minerals Management. “California, with its track record of collaborative planning to bring online land-based renewable energy projects, now sets its eye to the sea to begin early planning on how Pacific offshore winds and waves may one day help the state meet its aggressive renewable energy goal.”

Today’s inaugural meeting established a common set of themes and objectives the task force will use to guide future collaboration and consultation among its members. Drawing on the collective expertise and experience of its member agencies and governments, and utilizing the best available science, the task force will seek to identify potential areas in federal waters offshore California that may be suitable for renewable energy research and/or commercial development.

“California looks forward to working with BOEM on the task force and engaging in further dialogue on the potential of offshore renewable energy and the planning, permitting, and coordination issues associated with this technology.” said California Energy Commissioner Karen Douglas. “California is currently implementing a comprehensive set of climate change policies, including 50% renewable energy target by 2030, and we are interested in

learning about how offshore wind could play a role in helping achieve our climate and renewable energy goals.”

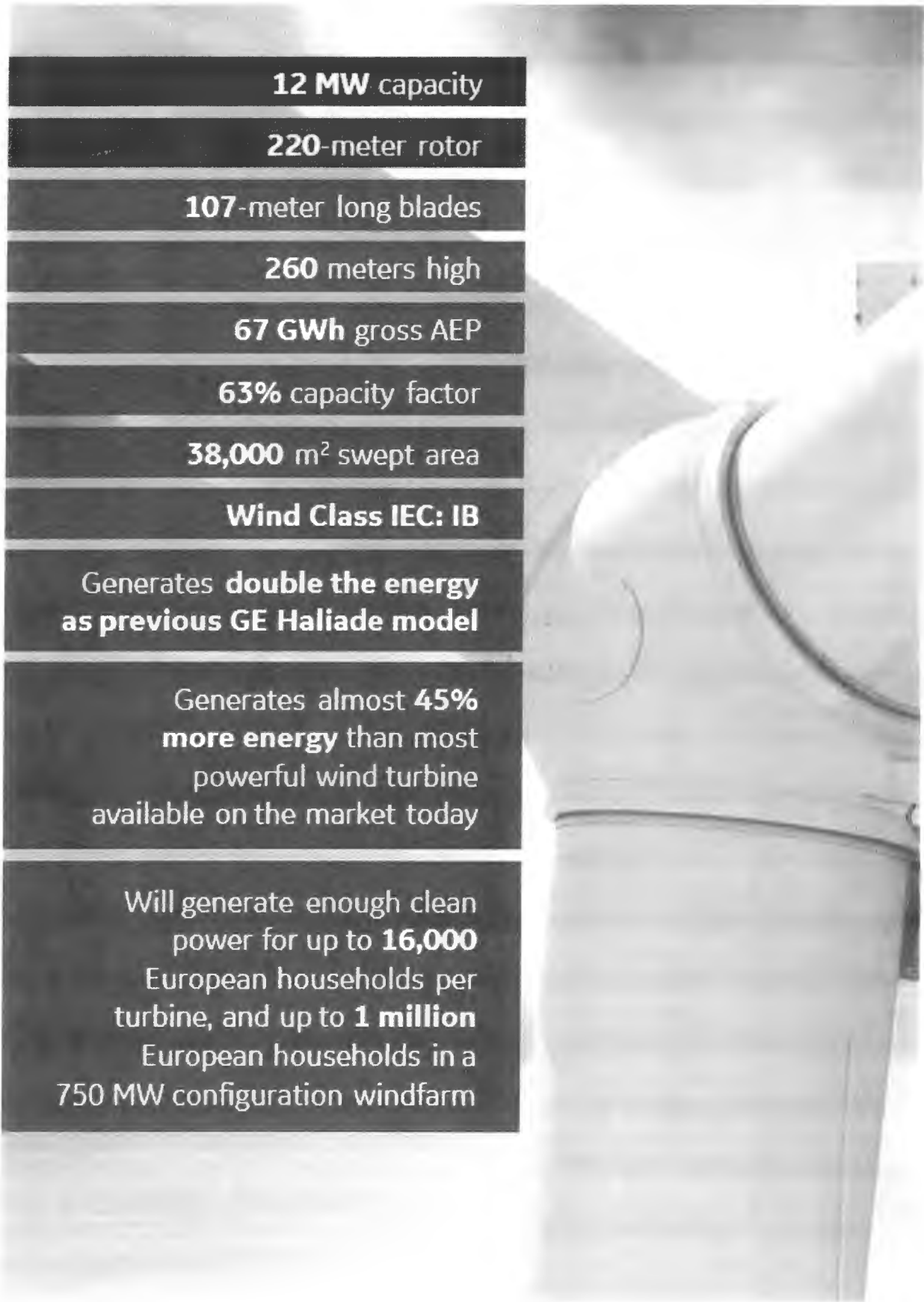
“Working closely with California’s coastal and ocean stakeholders will also allow BOEM and task force members to identify and address issues early in the planning process for future offshore renewable energy leasing and development,” said BOEM Director Abigail Ross Hopper. “As we move forward, it’s critical we actively engage these important stakeholders throughout the planning process.”

In April 2009, the Obama Administration announced the final framework for renewable energy development on the OCS. This framework establishes the process BOEM uses for granting leases, easements and rights-of-way for offshore renewable energy development activities, such as the siting and construction of facilities on the OCS. The framework also allows for BOEM to use task forces in carrying out its responsibilities for authorizing OCS renewable energy activities.

According to the National Renewable Energy Laboratory (NREL), areas off the west coast of the United States and Hawaii hold great renewable energy potential. This technical potential presents a compelling market opportunity that would assist states in meeting many of their ambitious and critically important renewable energy goals. In particular, NREL estimates areas off California have the technical potential to generate about 392 terawatt hours of electricity from offshore wind per year. This potential is about 1.5 times the total electricity consumption of the state, based on 2014 statistics.

To date, BOEM has awarded 11 commercial offshore wind leases, including nine through the competitive lease sale process (two offshore Maryland, two offshore Massachusetts, two offshore New Jersey, two in an area offshore Rhode Island-Massachusetts, and one offshore Virginia). These lease sales have generated approximately \$16 million in winning bids for more than a million acres in federal waters.

The Bureau of Ocean Energy Management manages the exploration and development of the nation’s offshore energy and mineral resources. The Bureau seeks to balance economic development, energy production, and environmental protection through oil and gas leasing, renewable energy development and environmental reviews and studies.



- 12 MW** capacity
- 220-meter** rotor
- 107-meter** long blades
- 260 meters** high
- 67 GWh** gross AEP
- 63%** capacity factor
- 38,000 m²** swept area
- Wind Class IEC: IB**
- Generates **double the energy** as previous GE Haliade model
- Generates almost **45% more energy** than most powerful wind turbine available on the market today
- Will generate enough clean power for up to **16,000** European households per turbine, and up to **1 million** European households in a 750 MW configuration windfarm

SPECIFICATIONS



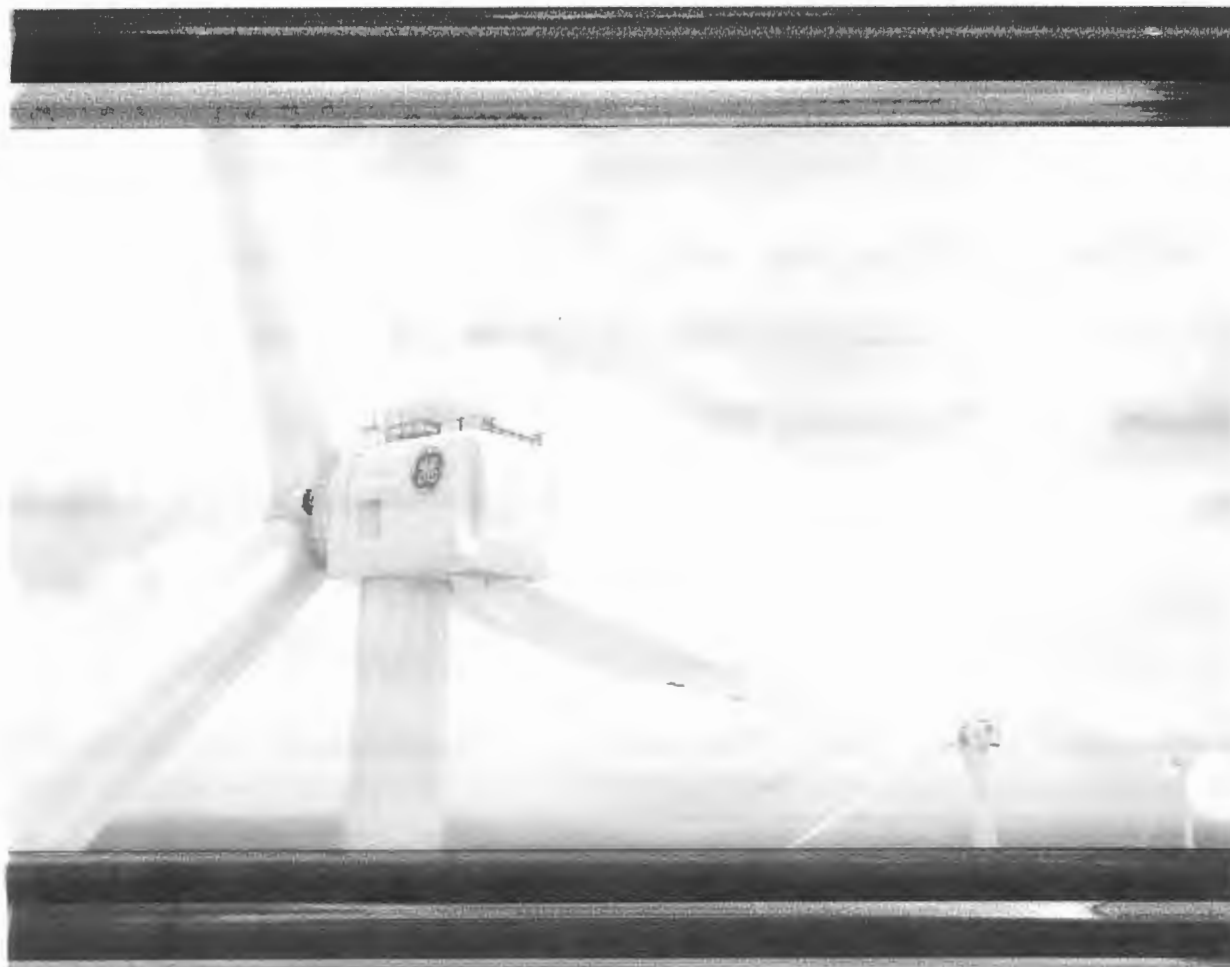
VIDEO

Haliade-X 12 MW nacelle unveiled

GE Renewable Energy has revealed the first manufactured components of the Haliade-X 12 MW offshore wind turbine at its production site in Saint-Nazaire, France.

our technology

Get to know GE's Haliade-X 12 MW offshore wind turbine





VIDEO

Haliade-X offshore wind turbine - installation time lapse

Installation time lapse of the world's most powerful wind turbine - GE Renewable Energy's Haliade-X - in Rotterdam port, the Netherlands.

VIDEO

World's Most Powerful Offshore Wind Turbine

Introducing the Haliade-X 12 MW, the most powerful offshore wind turbine in the world, with 220-meter rotor, 107-meter blade, leading capacity factor (63%), and digital capabilities.

GE: 'Inevitable' That Offshore Wind Manufacturing Comes to the US

Karl-Erik Stromsta

Having won nearly 5 gigawatts of orders for its Haliade-X offshore wind turbines over the past month, **GE is thinking about where its next production facilities will be built — and the U.S. looks like a prime candidate.**

“For us, I think it’s inevitable eventually to do something locally,” Derek Stilwell, commercial leader for North American offshore wind at GE Renewable Energy, **said Friday in New York.**

A GE spokesperson later clarified that Stilwell was talking about the broader supply chain bringing investment to the U.S., and not GE specifically.*

"It's premature to talk about whether GE will bring additional U.S. manufacturing capacity to the U.S. until the market matures and the company signs additional agreements to supply turbines," the spokesperson said.

For years, offshore wind executives have said the U.S. needed a larger pipeline of projects to warrant a local turbine factory. Europe’s mature supply chain is expected to provide many of the most valuable components for the first wave of American projects.

But with a 25-gigawatt pipeline now in play in U.S. waters, and numerous East Coast states having made significant commitments to offshore wind, the conversation about local factories is taking on a new light.

Local-content requirements for offshore wind projects can push up prices, Stilwell said, speaking at an event hosted by the American Wind Energy Association. **But local factories can also help to offset the cost of transporting huge offshore wind equipment across the Atlantic Ocean.**

GE, a relative newcomer to the offshore wind business, currently operates two factories for the market, both in France. The company has a nacelle plant in Saint-Nazaire, at the mouth of the Loire River, where it recently completed the **first hub for its 12-megawatt Haliade-X** model. And it has an offshore blade plant in Cherbourg, along the English Channel.

In July, GE announced plans to build a new **offshore wind factory in China’s Guangdong province, expected to be up and running in late 2021.**

“There’s a window right now where the existing capacity can serve [demand],” Stilwell said. “But increasing demand in Europe, increasing demand in Asia and the demand here in the U.S. mean that eventually we’ll need to build **additional capacity**.”

Last month, GE landed the first orders for its Haliade-X platform, with Ørsted planning to deploy 1,200 megawatts of the turbines at its Ocean Wind and Skipjack projects off Maryland and New Jersey between 2022 and 2024.

Less than two weeks later, GE announced another 3.6-gigawatt order for a trio of projects known as Dogger Bank in the U.K., developed by Equinor and SSE Renewables.

GE's decisions on future factory locations will be "driven by the orders we get," Stilwell said. "What we're seeing now is the first large orders signed [in the U.S.], which means we need to support the developers in meeting their local-content commitments."

"We'll move as fast as we can in the next phase, as costs permit."

GE is not the only offshore turbine supplier to have won a big order in the U.S. market. Vineyard Wind chose MHI Vestas for its 800-megawatt project off Massachusetts, while Ørsted handed Siemens Gamesa a 1.7-gigawatt order for three projects set to deliver power into New York, Rhode Island and Connecticut.

Ørsted, the world's leading offshore wind developer, has committed to helping German foundation manufacturer EEW establish a factory in Paulsboro, New Jersey, as part of its winning bid for a 1.1-gigawatt project in the state.

GE makes nacelles for onshore wind turbines in Pensacola, Florida, in addition to operating several blade factories in the central U.S.

The company reentered the offshore wind market through its 2015 acquisition of Alstom's power and grids businesses. Despite the recent flurry of big orders for the Haliade-X, GE lags far behind Siemens Gamesa and MHI Vestas in terms of installed capacity and committed orders.

**Story and headline are updated based on clarification from GE.*

World's Most Powerful Offshore Wind Turbine: Haliade-X 12 MW | GE Renewable Energy

Driving efficiency and decreasing the cost of offshore wind energy

Introducing Haliade-X 12 MW, the most powerful offshore wind turbine in the world. GE is investing to develop the Haliade-X, the industry's first 12 MW offshore wind turbine. In addition to being the most powerful wind turbine in the world, the Haliade-X is also the most efficient ocean-based wind platform, with a leading capacity factor of 63%. GE's investment in the Haliade-X will help make offshore wind a more cost-effective and competitive source of clean energy.

16,000*

HOMES CAN BE POWERED

63%

LEADING CAPACITY FACTOR

220 meter

ROTOR

260 meters

HEIGHT

**One Haliade-X 12 MW wind turbine can power up to 16,000 European households according to wind conditions on a typical German North Sea site.*

Engineered for performance

Key features from the Haliade-X 12 MW offshore wind turbine

The Haliade-X offshore turbine features a 12 MW capacity, 220-meter rotor, a 107-meter blade, and digital capabilities.

The Haliade-X 12 MW is not only the most powerful wind turbine in the world but also features a 63% capacity factor—five to seven points above industry standard. Capacity factor compares how much energy was generated against the maximum that could have been produced at continuous full power operation during a specific period of time. Each incremental point in capacity factor represents around \$7 million in revenue for our customers over the life of a windfarm.

**UNSOLICITED APPLICATION FOR AN OUTER CONTINENTAL SHELF
RENEWABLE ENERGY
COMMERCIAL LEASE
UNDER 30 CFR 585.230**

Redwood Coast Offshore Wind Project



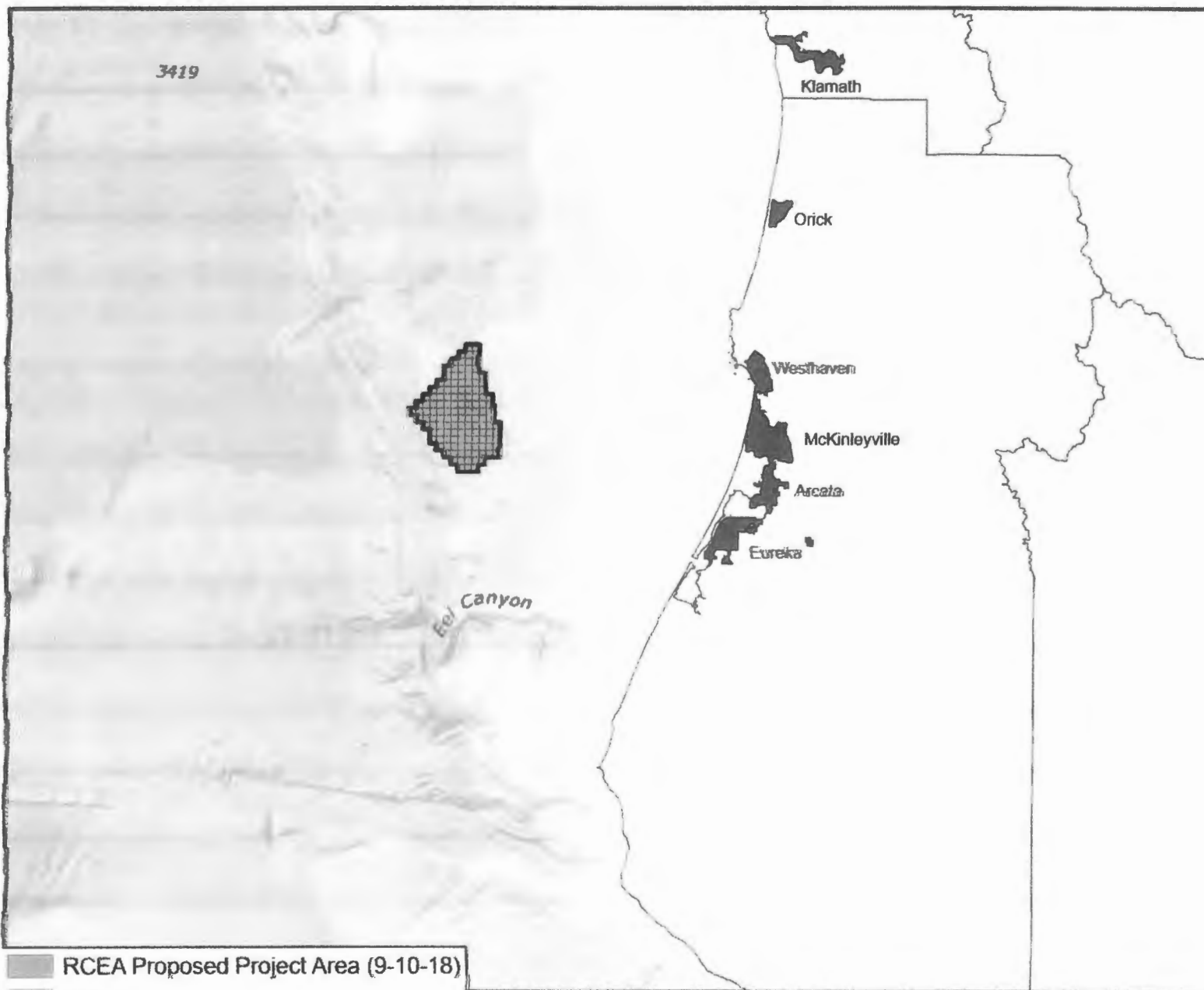
Submitted to:
U.S. Department of the Interior
Bureau of Ocean Energy Management (BOEM)
Pacific Region
770 Paseo Camarillo, Second Floor
Camarillo, California 93010

Submitted by:
Redwood Coast Energy Authority (RCEA)
633 3rd Street
Eureka, California 95501

September 2018

Public Version

3419



■ RCEA Proposed Project Area (9-10-18)
■ Cities
□ Counties



Coordinate System: NAD 1983 UTM Zone 10N

2:\Users\pendleth\Documents\ArcGIS\Projects\Redwood Coast Energy Authority\Redwood Coast Energy Authority.aprx

**UNSOLICITED APPLICATION FOR AN OUTER CONTINENTAL SHELF
RENEWABLE ENERGY
COMMERCIAL LEASE
UNDER 30 CFR 585.230**

Redwood Coast Offshore Wind Project

Table of Contents

| | |
|--|-----|
| EXECUTIVE SUMMARY | iii |
| 1. INTRODUCTION..... | 1 |
| 2. INFORMATION REQUIRED FOR AN UNSOLICITED REQUEST FOR A COMMERCIAL LEASE..... | 2 |
| 2.1. Area Requested for Lease - 30 CFR 585.230(a)..... | 2 |
| 2.1.1. Screening Process Used to Select Site | 5 |
| 2.2. General Description of Objectives and Facilities | 11 |
| 2.2.1. Objectives | 11 |
| 2.2.2. Offshore Production Facilities..... | 12 |
| 2.2.3. Power Transmission and Grid Interconnection | 14 |
| 2.2.4. Onshore Support Facilities and Staging Areas (Ports)..... | 15 |
| 2.3. General Schedule of Proposed Activities | 17 |
| 2.4. Renewable Energy Resource and Environmental Conditions in Area of Interest..... | 17 |
| 2.4.1. Energy Resource..... | 17 |
| 2.4.2. Environmental Resources | 20 |
| 2.5. Conformance with State and Local Energy Planning Initiatives..... | 39 |
| 2.6. Documentation of Lessee Qualifications | 40 |
| 2.6.1. Legal Qualifications | 40 |
| 2.6.2. Technical Capability | 40 |
| 2.6.3. Financial Capability | 43 |
| 3. REFERENCES..... | 44 |

Appendices

| | |
|-------------|--|
| APPENDIX A: | DOCUMENTATION DESCRIBING APPLICANT'S LEGAL QUALIFICATIONS |
| APPENDIX B: | DOCUMENTATION DESCRIBING THE TECHNICAL QUALIFICATIONS OF APPLICANT AND CONSULTANTS/CONTRACTORS |
| APPENDIX C: | DOCUMENTATION DESCRIBING APPLICANT'S FINANCIAL QUALIFICATIONS |
| APPENDIX D: | MEMORANDUM OF UNDERSTANDING WITH HUMBOLDT FISHERMEN'S MARKETING ASSOCIATION |
| APPENDIX F: | LETTERS AND INDICATIONS OF COMMUNITY SUPPORT |
| APPENDIX H: | RCEA REQUEST FOR PROPOSAL DOCUMENT |

List of Figures

| | | |
|-----------|--|----|
| Figure 1. | Area of Proposed Lease Offshore of Humboldt County, California | 3 |
| Figure 2. | Front, Top and Side Views of the WindFloat | 13 |
| Figure 4. | General Layout of Transmission Cable | 15 |
| Figure 5. | Map of Humboldt Bay | 16 |
| Figure 6. | Key Milestones for the Humboldt project | 17 |
| Figure 7. | Wind Speed Map of California Offshore Technical Wind Resources Calculated at a 100-Meter Elevation Above Water (NREL 2016) | 19 |

List of Tables

| | | |
|----------|---|----|
| Table 1. | OCS Lease Area Blocks | 4 |
| Table 2. | 12MW Turbine Specifications | 12 |
| Table 4. | California Offshore Wind Resource by Wind Speed Interval, Water Depth, and Distance from Shore within 50 nm of Shore (EERE, WINDEXchange, 2015) | 18 |
| Table 5. | Threatened and Endangered Species that could occur in the Project Area | 21 |
| Table 6. | Northern California Commercial and Recreational Fisheries, Gear Types, and Locations | 33 |
| Table 7. | Humboldt County Race/Ethnic Groups, 2016 | 36 |
| Table 8. | Summary of Applicant and Project Partner Organizations | 40 |

EXECUTIVE SUMMARY

Redwood Coast Energy Authority (RCEA) is submitting this unsolicited request for a United States Outer Continental Shelf (OCS) commercial lease in conjunction with the unrivalled capabilities and commitment of **EDPR Offshore North America LLC (“EDPR Offshore”), Principle Power, Inc. (PPI), and Aker Solutions Inc. (“ASI”), collectively the “Project Partners.”** Following a competitive community-driven process¹, RCEA selected the Project Partners to enter into a public-private partnership to pursue the development of the Redwood Coast Offshore Wind Project (“Redwood Coast Project”).

Since 2003, RCEA has been an integral part of the Humboldt County community. RCEA is a local government Joint Powers Agency founded in 2003 whose members include the County of Humboldt, the Cities of Arcata, Blue Lake, Eureka, Ferndale, Fortuna, Rio Dell, and Trinidad, and the Humboldt Bay Municipal Water District. RCEA’s Board is made up of representatives of each of its members; an organization that is a true reflection of the community’s character. RCEA has worked with members of the project partnership and members of the community since 2017 to explore and develop the offshore wind potential of Humboldt County. RCEA and Project Partners are thoroughly familiar with the community resources, values, and conditions in, around, and offshore of Humboldt County. RCEA and partners have done extensive community outreach – informing the public and commercial interests, gathering feedback, and listening to and incorporating the concerns and desires of the entire region – to form the basis for the Redwood Coast Project lease application submitted to BOEM. Overall, RCEA and Project Partners’ advanced work with the Humboldt community, state and federal agencies, and the Department of Defense, has generated an overwhelmingly positive response to the proposed project, and sets the framework for successfully delivering clean energy to local ratepayers at an acceptable cost.

RCEA and the Project Partners propose a commercial wind farm for deployment offshore of Humboldt County, California. The approximately 100-150 megawatt (MW) project is expected to consist of approximately 8 to 16 WindFloat foundations outfitted with large scale commercial offshore wind turbines not smaller than 8.0MW. The floating wind farm would be sited in 600-1,000 meters of water approximately 21 to 29 nautical miles from shore (about 24 to 33 miles; 38 to 53 kilometers [km]). An offshore grid and subsea cable would be used to export produced electricity to facilities at the Humboldt substation. Infrastructure planning in conjunction with the Port of Humboldt Bay is already underway.

The Redwood Coast Project will bring unprecedented economic development to the region. The Project Partners plan for facilities at the Port of Humboldt Bay to potentially serve as the final assembly, hull load-out, turbine installation, and future maintenance base for WindFloat units. As a result, the Redwood Coast Project would require investment and revitalization of local infrastructure at the Port of Humboldt Bay and other nearby onshore facilities. To the greatest extent possible, the Redwood Coast Project will maximize the use of existing facilities and collaborate with local stakeholders to identify and address local infrastructure improvements. These investments will require skilled labor from the immediate and surrounding area and will create jobs and training to fulfill these commitments, thus advantageously positioning Humboldt County for future offshore development up and down the West Coast. RCEA and Project

¹ A Request for Qualifications (RFQ) was released by RCEA in February 2018. The RFQ document is attached in the appendices

Partners believe this project will kick off the offshore wind industry and increase the interest and success of future BOEM leases.

RCEA and its Project Partners have engaged in a systematic and comprehensive process to **determine the best location for the Humboldt offshore site that mitigates impacts to the environment and community. Based on preliminary discussions with the local community, including fisheries' representatives, the proposed site location 21 to 29 nautical miles from shore avoids or minimizes impacts on marine navigation corridors, major commercial fishing areas, environmental resources such as wildlife migratory corridors, sensitive habitats, and threatened or endangered species. Most importantly, this site location is de-conflicted from groundfish commercial fishing activities as much as possible. RCEA and Project Partners will continue proactive community and stakeholder outreach, including further dialogue with the commercial fishing community and recreational fishers, as the project progresses to understand and address potential concerns.**

RCEA's mission is to develop and implement sustainable energy initiatives that reduce energy demand, increase energy efficiency, and advance the use of clean, efficient and renewable resources available in the region. The proposed site taps into the highest average annual wind speed offshore Humboldt Bay to maximize the capacity factor and power produced by the project. Wind speed averages annually between 9 m/s and 10 m/s in the proposed lease area, among the best in California. The site has also been sized appropriately for this small project, about 194 sq. km or 75 sq. miles to start and likely to shrink as micro-siting occurs. The size allows some buffer as flexibility to consider seabed conditions unknown at this stage of the project, and importantly, allows ample space outside the proposed lease area for the additional leasing of other sites in the future, with the guidance of BOEM and the support of the community.

RCEA and Project Partners possess an unparalleled ability to develop, finance, operate projects and build an offshore supply chain. The complementary capabilities of PPI, EDPR Offshore and ASI coupled with strong balance sheets bring the long-term commitment over the whole project life cycle needed for a successful project. **With more than 5GW located in the US, EDPR is ranked fourth in the world in wind energy based on net installed capacity. EDPR NA operates 226MW in California where it already has negotiated and holds offtake agreements with utilities and community choice aggregators. PPI's WindFloat is the leading technology in its class with the most promising current and projected levelized cost of energy (LCOE). The WindFloat technology has been proven in multiple scenarios ranging from a full-scale single prototype unit, to planned deployments of multi-unit demonstration projects (25-50 MW), and the ongoing development of a full scale commercial wind farm (400MW+). Due to its shallow draft and deployment flexibility, the WindFloat is perfectly suited for Humboldt County. Its construction and installation philosophy is designed to leverage the natural advantages and existing onshore infrastructure and assets that Humboldt County currently features.**

PPI and EDPR's track record of developing together multiple floating offshore wind projects will enhance the development process and the ability of the project to reach bankability that will endorse its stand-alone commercial viability. In addition, ASI is part of the Aker Solutions group of companies, a 14,000 employee global energy services company with a proven track record in designing and delivering over 160 floating facilities, and will participate in the development and financing of the project, while building supply chain interests locally and throughout the region. The team also includes experts in federal, state and local permitting; and local avian ecology and behavior; vertebrate community ecology; marine mammal presence, habitat use, and

migration; and marine bathymetry, current patterns, physical oceanography, and coastal processes between the Eel Canyon and Trinidad Canyon.

RCEA and Project Partners are committed to deliver the Redwood Coast Project on or prior to 2024. We believe we can leverage the world-class wind resource, the natural enabling infrastructure and strong ecosystem of relevant stakeholders to make the Redwood Coast Project the first project to unlock the extraordinary value of offshore wind energy for California.

1. INTRODUCTION

Redwood Coast Energy Authority (RCEA) is pleased to submit this unsolicited request for a United States Outer Continental Shelf (OCS) commercial lease in accordance with the requirements of 30 CFR § 585.230.

In April 2018, RCEA conducted a competitive community-driven process² to select a team to enter into a public-private partnership to pursue the development of the Redwood Coast Offshore Wind Project ("Redwood Coast Project"). RCEA selected a consortium that includes **Principle Power, Inc (PPI)** for project management, design and technology engineering, project development services, operational and health and safety services to the project; **EDPR Offshore North America LLC (EDPR Offshore)** for project management, development, procurement, financing, construction management and wind farm operation; and **Aker Solutions Inc. (ASI)** for project management, project financing services, power system design, export/array cables design, offshore facilities design, and offshore O&M support to the project. In addition, planning, environmental, and permitting services will be provided by H. T. Harvey & Associates, and Herrera Environmental Consultants, Inc. Throughout this application, RCEA, the applicant, and its partners, are collectively referred to as the "Project Partners."

RCEA and Project Partners propose a commercial wind farm for deployment offshore of Humboldt County, California. The approximately 100-150 megawatt (MW) project is expected to consist of approximately 8 to 16 WindFloat foundations outfitted with large scale commercial offshore wind turbines not smaller than 8.0 MW. The floating wind farm would be sited in 600-1,000 meters of water approximately 21 to 29 nautical miles from shore (about 24 to 33 miles; 38 to 53 kilometers [km]). An offshore grid and subsea cable would be used to export produced electricity to facilities at the Humboldt substation. Infrastructure planning in conjunction with the Port of Humboldt Bay is already underway. The Project Partners plan for facilities at the Port of Humboldt Bay to potentially serve as the final assembly, hull load-out, turbine installation, and future maintenance base for WindFloat units.

The project, including the turbine, will be assembled and tested on-shore or quayside in a controlled environment. No heavy lift operations or commissioning of the turbines will be conducted at sea. As a result, transport and installation of the project is simplified, requires less-costly vessels, and is not subject to the same weather restrictions as offshore wind projects employing bottom-fixed foundations.

The wind resource off the California coast is robust (see Section 2.4.1). The Redwood Coast Project units will be deployed in water depths of approximately 600 to 1,000 meters, with development to occur away from areas where existing uses might conflict. A preliminary analysis of Humboldt's wind resource and known environmental and stakeholder constraints suggests that the proposed location is favorable for project development.

The proposed project plans for final configuration to be determined as the engineering, leasing and environmental assessments progress. The mooring system for each unit is made of conventional components: chain, polyester rope, and heavy chain, connected to anchors - a technology that requires no piling and is well suited to deep and variable seabed conditions. The installation is completely reversible (no permanent infrastructure will be left on the sea bed upon

² A Request for Qualifications (RFQ) was released by RCEA in February 2018. The RFQ document is attached in the appendices

decommissioning), and acoustic disturbances are expected to be minimal. RCEA and Project Partners will continue to conduct comprehensive stakeholder interviews and environmental/existing-use analyses prior to micro-siting the turbines within the requested lease area.

RCEA and the Project Partners have engaged with agencies (state and federal) and stakeholders regarding the development of the Redwood Coast Project, including BOEM, Department of Defense, California Energy Commission, U.S. Fish and Wildlife, NOAA Fisheries, Bureau of Land Management, and U.S. Coast Guard. Conversations held with the Humboldt Bay fishing community have included the Humboldt Fishermen's Marketing Association and the Pacific Coast Federation of Fishermen's Associations to identify the general location of several valued fishing areas within proximity to the project area. RCEA has also entered preliminary discussions with local and regional education and research institutions (e.g., Humboldt State University - Schatz Energy Research Center) and non-governmental organizations interested in the intersection of energy development and environmental protection in California. RCEA has also had initial meetings with local tribes including the Wiyot, Blue Lake Rancheria, Trinidad Rancheria, and Yuroks.

Principle Power, Inc's (PPI's) WindFloat is the leading technology in its class with the most promising current and projected levelized cost of energy (LCOE). The WindFloat technology has been proven in multiple scenarios ranging from a full-scale single prototype unit, to planned deployments of multi-unit demonstration projects (25-50 MW), and the ongoing development of a full-scale commercial wind farm (400MW+). Due to its shallow draft and deployment flexibility, the WindFloat is perfectly suited for Humboldt County. Its construction and installation philosophy are designed to leverage the natural advantages and existing onshore infrastructure and assets that Humboldt County currently features.

With more than 5GW located in the US, EDPR is ranked fourth in the world in wind energy based on net installed capacity. EDPR NA operates 228MW in California where it holds offtake agreements with utilities and community choice aggregators. PPI and EDPR track record of developing together multiple floating projects will enhance the development process and the ability of the project to reach bankability that will endorse its stand-alone commercial viability. In addition, ASI is part of the Aker Solutions group of companies, a 14,000 employee global energy services company with a proven track record in designing and delivering over 160 floating facilities. ASI will leverage its global capabilities and participate in the development and financing of the project, while building supply chain locally and throughout the region.

2. INFORMATION REQUIRED FOR AN UNSOLICITED REQUEST FOR A COMMERCIAL LEASE

The Bureau of Ocean Energy Management (BOEM) regulations allow for the submission of an unsolicited request for a commercial lease. The following information addresses each of the elements required, under 30 CFR 585.230, for a commercial lease.

2.1. Area Requested for Lease - 30 CFR 585.230(a)

RCEA and the Project Partners propose the deployment of a multi-turbine floating wind farm off of Humboldt County, California, at a location that is approximately 600 to 1,000 meters (1,968-3,280 feet) deep and approximately 21 nautical miles [nm] (24 miles or 38 kilometers [km]) from any land area of the State (Figure).

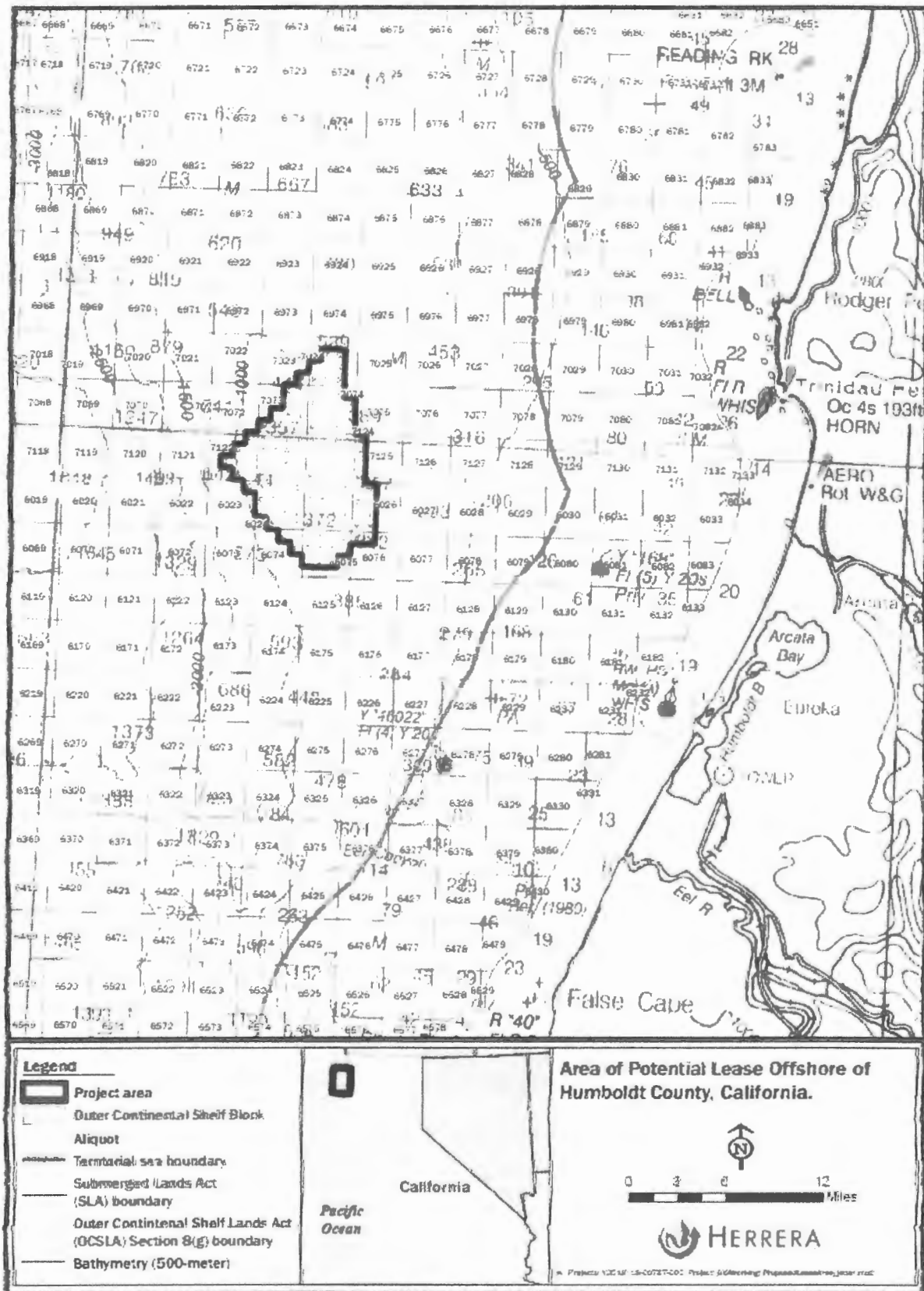


Figure 1. Area of Proposed Lease Offshore of Humboldt County, California

Table 1 provides the legal description of the proposed area for the lease is within the OCS official Protraction Diagram NK10-01.

Table 1. OCS Lease Area Blocks

| Block Number | Partial Block (Aliquot) Designation | Quantity of Aliquots |
|--------------|-------------------------------------|----------------------|
| 6023 | D | 1 |
| 6024 | A,B,C,D,E,F,G,H,I,J,K,L,N,O,P | 15 |
| 6025 | A,B,C,D,E,F,G,H,I,J,K,L,M,N,O,P | 16 |
| 6026 | A,B,E,F,I,J,M,N | 8 |
| 6074 | C,D,H | 3 |
| 6075 | A,B,C,D,E,F,G,H,I,J,K | 11 |
| 6076 | A,B | 2 |
| 7023 | P | 1 |
| 7024 | F,G,I,J,K,M,N,O | 8 |
| 7073 | C,D,G,H,I,J,K,L,M,N,O,P | 11 |
| 7074 | A,B,C,E,F,G,H,I,J,K,L,M,N,O,P | 15 |
| 7122 | D,G,H,I,J,K,L,O,P | 8 |
| 7123 | A,B,C,D,E,F,G,H,I,J,K,L,M,N,O,P | 16 |
| 7124 | A,B,C,D,E,F,G,H,I,J,K,L,M,N,O,P | 16 |
| 7125 | A,E,I,M | 4 |

A spatial file compatible with ArcGIS 9.3 (geographic information system shape files) in a geographic coordinate system (North American Datum of 1983 [NAD 83]) is included with this submittal.

Figure represents the most suitable site location based on local stakeholder feedback (discussed below in Section 2.1.1), with the following characteristics to maximize energy capture while minimizing impacts:

- The total surface area of the proposed lease area is about 194 sq. km or 75 sq. miles. It is directly located offshore Humboldt Bay as close to the proposed interconnection point as possible.
- Once detailed assessments of oceanographic and seabed conditions have been undertaken, the final wind farm size is assumed to be significantly smaller. The approximately 100-150 MW wind farm will be micro-sited within the proposed lease area, with an expected total footprint of approximately 30 sq. km or approximately 12 sq. mi. Each platform of the wind farm will be spaced approximately one mile apart which would correspond to about 7-8 turbine diameters.

- **This site taps into the highest average annual wind speed offshore Humboldt Bay to maximize the capacity factor of the project.** Wind speed averages annually between 9 m/s and 10 m/s in the proposed lease area.
- **To keep the project sited at a distance from shore ranging from 24 mi to 36 mi, the water depth varies between 600m and 1,000m. The rationale for this distance from shore is to minimize visual impacts from the coast by taking advantage of the curvature of the Earth and minimize impacts to the fishing community. This location will limit any potential viewshed issues and minimize conflicts with fishing activities.**

2.1.1. Screening Process Used to Select Site

RCEA and its Project Partners have engaged in a systematic and comprehensive process to determine the best location for the Humboldt offshore site. In August 2018, RCEA and Project Partners shared the proposed project area with BOEM during their initial spatial planning process assessing north coast offshore wind potential. The following components are described in more detail below:

- An examination of wind, ocean, and sea floor resources
- An examination of environmental conditions and potential issues
- Extensive consultation with local stakeholders

Wind and Infrastructure Resources

At the broadest level, RCEA and Project Partners consider the market conditions and wind resource first, then grid interconnection and local infrastructure capabilities. Because of the WindFloat's flexibility in siting at a selected project location, consideration of local socioeconomic and environmental issues follows, although they are considered no less important.

Based on previous WindFloat deployments, several criteria were established to successfully implement the Humboldt offshore wind project and, therefore, address the project purpose and need. They include, but are not limited to:

- **Strong wind resource, that is, greater than 18 miles per hour (mph) (8 meters per second [m/s]) average wind speed, with sufficient potential to generate project revenue.**
- **Close to harbor facilities with suitable heavy-lift capability, lay-down and assembly infrastructure, and deep-draft marine access**
- **Free from physical obstructions that would block access between onshore WindFloat assembly site and offshore installation site. The WindFloat units potentially will be assembled at a port facility, then towed out to sea. The tow route must be free of obstructions, such as bridges, that are less than 600 feet above the mean higher high-water elevation.**
- **Close proximity to a potential customer(s) willing to purchase power generated by the project**

- **Suitable onshore electrical/transmission infrastructure**
- **Water depth of at least 164 feet (50 meters) at installation site**

The Humboldt County location was selected for the unsolicited lease application after application of these criteria and the following results:

- **Sites with average wind speeds of more than 10m/s are quite common up and down the Humboldt County Coast (NREL 2016) which would induce very large capacity factors for wind farms sited there.**
- **Humboldt County already possesses natural assets and a strong ecosystem of local players to develop this project, with the potential to kick-start an entire industry as the leading offshore wind hub of the West Coast:**
 - **The Port of Humboldt Bay is a deep-draft port facility with upland infrastructure available that could be revitalized and upgraded at least for the erection of the floating wind turbines³. We are aware that quayside investments are needed, but these investments can be directed towards the broadest community benefit and with a larger pipeline of projects in mind.**
 - **RCEA is a community choice aggregator that provides some flexibility and is eager to develop the offshore wind resource in the County**
 - **Humboldt State University and the Schatz Energy Center provide tremendous academic and research support and can prepare the next generation of industry participants.**
 - **This project will rely on the existing grid infrastructure as much as possible and will not require any major upgrades. Humboldt County has been characterized as an electricity peninsula due to its limited local capacity and importing/exporting capabilities; this project can drive investment into transmission connecting to the larger California grid in the medium to long-term. Given the world-class wind resource, we can expect additional offshore wind projects will be proposed off of Humboldt County in the years following this project.**
- **Market conditions in California are the highest priced on the West Coast**
- **Other potential locations along the California coast were deemed incompatible with Department of Defense activities.**

Environmental Resources

RCEA and Project Partners also use criteria to assure that a site will avoid or minimize impacts on environmental resources, such as fish and wildlife migration corridors, sensitive habitats, threatened or endangered species, marine navigation corridors, and major commercial fishing areas.

³ This is also demonstrated in Robert Collier's paper: "High Road for Deep Water", available at: <http://e3center.berkeley.edu/pdf/2017/High-Road-for-Deep-Water.pdf>

To assess potential conflicts, RCEA and Project Partners examined nautical charts featuring the proposed project area and datasets in the Multi-Purpose Marine Cadastre (BOEM 2013) and California Offshore Wind Energy Gateway through DataBasin. In addition, RCEA and Project Partners consulted with local experts including representatives of the commercial fishing fleets, commercial vessels, and noncommercial users to determine the viability of the project area. RCEA and Project Partners also consulted with staff from the Harbor District, local agencies, the Ocean Protection Council, and BOEM.

Drawing from these consultations and expertise, RCEA and Project Partners have examined and identified the issues that will likely drive the environmental permitting process, and have initiated discussions with important stakeholder groups. The highest priority environmental interactions that will likely drive baseline and post-installation monitoring are expected to be:

- Potential threats to soaring seabirds from the turbine blades;
- Potential for the physical presence of multiple wind platforms to affect the nearfield habitat and sediments;
- Potential for the platforms to create a collision risk to marine mammals and interfere with whale migration;
- Potential effects of electromagnetic fields on elasmobranchs (sharks and rays);
- Potential effects of cable installation on whale migration and listed seabirds and fish;
- Potential effects of project moorings to entangle lost fishing gear; and
- Potential effects of lighting on birds.

Additional environmental issues that may be raised include:

- The physical presence of the device affecting the far field habitats in the region and resulting in avoidance by seabirds or cetaceans;
- Potential effects of electromagnetic fields on the behavior of fish and sea turtles; and
- Potential effects of boat traffic on marine mammals during installation and maintenance operations.

After these consultations and because of the WindFloat's ability to be sited in various water depths and sea bottom conditions, RCEA and Project Partners are confident in the proposed general location for the project.

RCEA and Project Partners will rely on the expertise of the Harbor District staff and consultations with local experts including representatives of the commercial fishing, recreational fishing, commercial vessels, noncommercial users, California state and local regulatory agencies, and the general public – and the results of studies completed and discussions with scientists - to microsite the project components within the project area to be leased

Outreach, Coordination and Engagement Efforts

RCEA and Project Partners believe that the project's success will depend on engaging, educating, and involving the local community and key stakeholders in all stages of the project development process. *The permitting pathway provides opportunities for public input and comment, but a greater public participation role is desirable for this project to be community-based. RCEA and its partners have already reached out to the local community many times, with commitment to continue to engage, educate and involve these stakeholders through the development and operations of the project.*

In June 2017 RCEA and PPI started a stakeholder engagement process with the local Humboldt community, and organized one-on-one meetings with different stakeholder groups. RCEA and/or PPI representatives met with the following types of organizations present in Humboldt County:

- **Local government and city officials - Ongoing conversations and presentations**
- Humboldt State University (notably the Schatz Energy Research Center), including faculty linked to environmental and fishing interests
- **Humboldt Bay Harbor, Recreation and Conservation District (Humboldt Bay Harbor District)**
- Environmental groups in the area
 - Humboldt Baykeeper
 - Northcoast Environmental Center
 - EPIC (Environmental Protection Information Center)
 - Redwood Sierra Club/Audubon
 - Redwood Alliance
 - Friends of the Dunes
 - Trinidad Coastal Land Trust
 - Humboldt 350.org
 - Humboldt Surfrider
- Local Tribes
 - Wiyot Tribe, Trinidad Rancheria, Blue Lake Rancheria, Bear River Rancheria
- **Fishermen and local fishing associations**
 - Local fishermen
 - Humboldt Fishermen's Marketing Association. See Appendix D for a Memorandum of Understanding (MOU).
 - Pacific Coast Federation of Fishermen's Associations
- Economic Development and Labor Organizations
 - City of Eureka - Economic Development

- **Prosperity Network**
- Carpenters Local 751
- Operating Engineers Local No. 3
- Greater Eureka Chamber of Commerce

- **Supply chain and onshore infrastructure**
 - Humboldt Bay Harbor District

- **Public Presentations and Meetings**
 - **October 14, 2017, North Coast Sustainable Living Expo.**
 - **November 9, 2017, Humboldt State University Sustainable Futures Speaker Series.**
 - **November 13, 2017, Osher Lifelong Learning Institute lunchtime lecture series.**
 - **February 9, 2018, Governor's Office of Research and Planning workshop on North Coast regional Integrated Climate Adaptation, Resiliency, and Renewable Energy Development and Infrastructure.**
 - **March 5 & 6 2018, Open House Events in Eureka and Arcata, with displays, Q&A, discussions about offshore wind and other local energy issues.**
 - **March 22, 2018, Annual North Coast Economic Development Forum.**
 - **March 28, 2018 Humboldt Bay Harbor working group lunchtime lecture series.**
 - **April 18, 2018, Informal State and Federal North Coast Stakeholder Workshop.**
 - **April 20, 2018, CA Energy Commission Integrated Energy Policy Report North Coast Regional Workshop.**
 - **May 17, 2018, Humboldt Bay Harbor Safety working group.**

- **Media/Press**
 - **December 2017**
 - > **KHSU** – Radio interview with Matthew Marshall on the KHSU “Homepage” program.
 - **January 2018**
 - > **KHUM** – Radio interview with Matthew Marshall on the “Coastal Currents” program.
 - **February 2018**
 - > **North Coast Journal** (cover story, 5 pages) “*In the Wind - Can offshore wind energy reshape the future of Humboldt County?*” - Humboldt's local weekly

journal looked at the potential benefits of a renewable wind energy industry based in Humboldt Bay. (See Appendix F)

- > **KHSU EcoNews Report** – Hour-long produced program/discussion about offshore wind in Humboldt, with **Matthew Marshall and Jen Kalt**.
- **March 2018**
 - > **Times-Standard** - "Wind resource in Humboldt is phenomenal": Local experts look into area wind energy feasibility.
 - > **KIEM-TV** – Harbor Working Group explores potential offshore wind energy project, a TV broadcast.
 - > **KMUD Community Radio** - A one-hour call-in talk show about offshore wind, with **Matthew Marshall**.
- **April 2018**
 - > **North Coast Journal** – "RCEA Selects 'Highly Capable' Wind Energy Team"
 - > **Times-Standard** – "RCEA announces partnership for offshore wind farm"
 - > **KMUD Community Radio** – Interview with **Matthew Marshall**.
 - > **Jefferson Public Exchange** – "North Coast Eyes Offshore Wind Farm," interview with **Lori Biondini** of RCEA, **Jason Busch** of the Pacific Ocean Energy Trust, and host **Geoffrey Riley**.
- **June 2018**
 - > **Greater Eureka Chamber of Commerce** - June 12, 2018: Presentation for the "Business and Industry" committee.
- **July 2018**
 - > **KHSU Thursday Night Talk** – **Lori Biondini** of RCEA and **Jen Kalt** of Humboldt Baykeeper discussed the proposal and potential environmental impacts, both positive and negative, with host **Tom Wheeler**.

With these preliminary meetings which aimed at engaging, informing and starting a dialogue with the local community, RCEA and Project Partners have already demonstrated commitment and a track record of transparent and collaborative community engagement and participation in Humboldt County. The project has received broad community support (see Appendix F).

Based on these discussions with the local community, the proposed site location avoids or minimizes impacts on environmental resources, such as wildlife migratory corridors, sensitive habitats, threatened or endangered species, marine navigation corridors, and major commercial fishing areas. Most importantly, this site location minimizes conflict with groundfish commercial fishing activities as much as possible (public data on the trawl fishing tracks in deeper waters in the past ten years was utilized to select the area with minimal impact), but further dialogue with

the fishing community, including recreational fishers, is planned to occur as the project progresses.

A multi-stakeholder approach will be taken for any investment that the project will drive, which means that any potential investment in the community will be discussed with local stakeholders to see how this investment could potentially benefit these groups as well. RCEA and pro Project Partners will continue to coordinate with stakeholders, including fishing interests, regulatory agencies, and the public, to learn of potential project-related concerns, to refine the project to address those concerns, and to enhance the benefits the project can bring to the community and minimize the impact of the project on current coastal uses. With these preliminary meetings which aimed at engaging, informing and starting a dialogue with the local community, RCEA and Project Partners have already demonstrated commitment and a track record of transparent and collaborative community engagement and participation in Humboldt County.

2.2. General Description of Objectives and Facilities

2.2.1. Objectives

The objective of the Redwood Coast Project is the installation and operation of approximately 8 to 16 WindFloat foundations outfitted with large scale commercial offshore wind turbines not smaller than 8.0 MW, for a total installed capacity of approximately 100-150 MW. The Project aims to be not only the first commercial offshore wind farm in California, but also the anchor to cast Humboldt County as the offshore wind industry hub of the West Coast and as a flagship for the Floating Offshore Wind industry worldwide. The planned capacity of approximately 100-150 MW and location approximately 21 to 29 nautical miles off the coast of Humboldt County will bring sufficient scale to produce competitive clean and sustainable energy and limited environmental impacts for the benefit of the Humboldt County community. Specifically, the project will address the following objectives:

- **Deliver cost-effective renewable energy to the local grid.** By harnessing the plentiful local offshore wind resource, the Redwood Coast Project will deliver clean energy to local ratepayers at an acceptable cost. The lack of anticipated major transmission upgrades will allow for a fast-track project and aid cost-effectiveness.
- **Bring economic development to the region.** The Redwood Coast Project will require investment and revitalization of local infrastructure at the Port of Humboldt Bay and other nearby onshore facilities. The Redwood Coast Project will maximize the use of existing facilities and collaborate with local stakeholders to identify and address local infrastructure improvements. These investments will require skilled labor from the immediate and surrounding area and will create jobs and training to fulfill on these commitments, thus advantageously positioning Humboldt County for future offshore development.
- **Educate and promote social acceptance.** RCEA and Project Partners will continue proactive community and stakeholder outreach to understand and address potential concerns.
- **Mitigate impacts to the environment and community.** RCEA and Project Partners will leverage experience and local knowledge to mitigate and address environmental issues

and will collaborate with fishers and recreational ocean users to mitigate any potential impacts to the community.

2.2.2. Offshore Production Facilities

Turbine

The offshore wind turbine considered initially for the Redwood Coast Project is a 12MW wind turbine. Table 2 shows the main characteristics and specifications of a wind turbine with a 12MW power rating.

Table 2. 12MW Turbine Specifications

| | | | |
|--------------------------------|------------------------|-------------------------------------|------------------------------|
| Rated Power | 12 MW | Tower type | Tubular Steel |
| Cut-In Wind Speed | 3.5 m/s | Hub Height (from water line) | 132 m |
| Cut-Out Wind Speed | 28 m/s | Blade Length | 107 m |
| Operational Rotor Speed | From ~3.0 to ~10.0 rpm | Rotor Diameter | 220 m |
| Nominal Rotor Speed | ~8.0 rpm | Swept Area | 38,000 m ² |
| | | Generator | Permanent Magnet Synchronous |
| Design Parameters | | | |
| Wind Class | IEC B | Nominal Voltage | 6.6 kV |
| Structural Life | 25 years | Frequency | 60 Hz (US Market) |
| | | Gearbox Type | Direct Drive (no gearbox) |

Floating Platform

The WindFloat is a unique semi-submersible type, column-stabilized, offshore platform with water-entrapment plates, an asymmetric mooring system, and an offshore wind turbine located on one of the columns. The WindFloat has been developed specifically to achieve exceptional stability performance while reducing structural weight and simplifying logistics during installation and operation. The practically pitch- and yaw-free performance in the offshore environment allows the use of existing commercial offshore wind turbines, with only minor modifications to control software.

Three columns (Figure 2, item 1) provide buoyancy to support the turbine and provide stability from the water plane inertia. Columns are spaced about 75m apart, laid out in a triangle, to counteract the large wind-induced overturning moment.

The columns are interconnected with a truss structure composed of main beams (Figure 2, item 2) connecting columns and bracings (Figure 2, item 3). The secondary structure includes a boat landing (Figure 2, item 4) on one of the columns, deck space and railings on top of columns and between columns to enable personnel access (Figure 2, item 5), and equipment to support the onboard crane, array cable hang off, etc. Additional areas may be used to support secondary structures, such as to provide access around the wind turbine tower. The height of the deck (freeboard) is positioned to ensure that the highest expected wave crests will not damage deck equipment or the turbine blades.

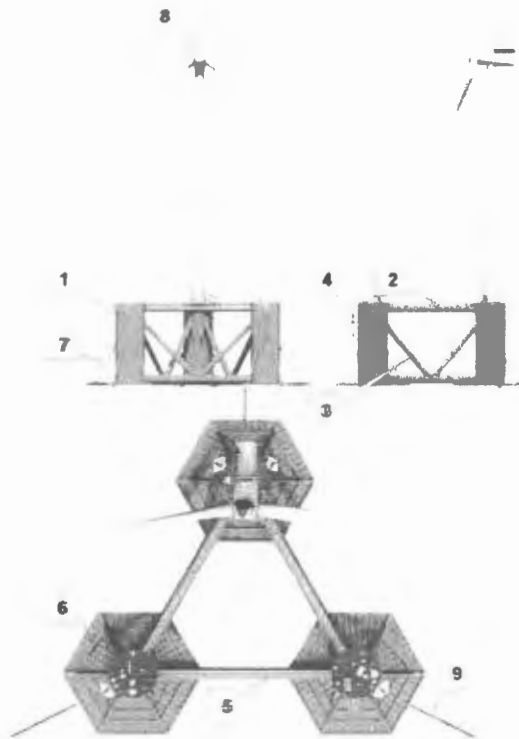


Figure 2. Front, Top and Side Views of the WindFloat

Horizontal plates (Figure 2, item 6) at the bottom of the columns shift the natural period away from the wave energy; increasing viscous damping in roll, pitch, and heave. These water-entrapment plates provide additional hydrodynamic inertia to the structure due to the large amount of water displaced as the platform moves. In addition, vortices generated at the edge of the plates generate large damping forces that further impede platform motion. Stiffeners cantilevered from the bottom of the columns, with bracings (Figure 2, item 7) provide structural support to the heave plates.

The WindFloat substructure is designed to keep wind turbine motions within the manufacture-specified design envelope, meaning that commercial offshore wind turbines can be used "off-the-shelf" with no physical modifications (Figure 2, item 8).

The tower is made of two or three large tubular steel sections that are usually bolted together via a flange. At its lower end, the turbine tower extends into the column in order to maximize continuity of the structure, leading to minimized stress concentration in critical areas of the structure where bending moments are highest due to wind-induced overturning moment, and where large tubulars connect to the other stabilizing columns.

Mooring System and Inter-Array Cables

Three mooring lines (Figure 2, item 9) are arranged in an asymmetrical fashion to provide a mooring system with low pretension requirements. The mooring system is designed to address

station keeping issues (it does not need to contribute to the floater's stability) and enables simple connection-disconnection procedures that can be performed by widely available and inexpensive tug vessels. The mooring system is made of conventional components: chain, polyester rope, and heavy chain, connected to anchors.

The inter-array electrical cable configuration between the units is also shown on Figure 3. Inter-array cables will use subsurface buoys and will be submerged to the depth that would provide for the safe operation of the wind farm.

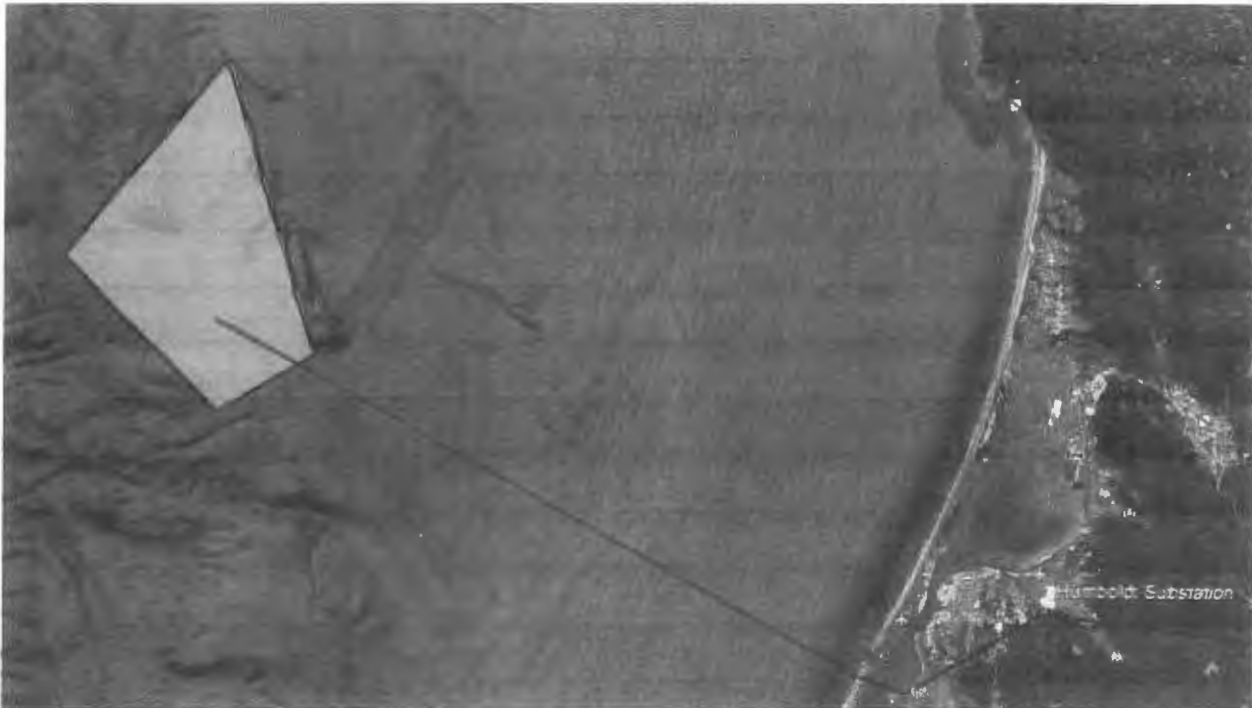
2.2.3. Power Transmission and Grid Interconnection

RCEA and Project Partners currently assume an electrical system that involves connection of the Redwood Coast Project to the grid with one parallel 115 kV export cable from a floating substation moored at the site. This configuration will need to be compared to a configuration with two parallel cables of 66kV directly connected to an onshore transformer that allows for full power transfer, minimizes the single-point-of-failure risk exposure, and avoids the need to install a high voltage substation offshore.

The proposed route of the approximately 24-mile offshore power cable will travel from the eastern most WindFloat unit in a straight line to shore. The power cable will be horizontally directionally drilled at a location offshore to be assessed by the Project Partners to avoid sensitive near-shore areas. From that point, the power cable will travel underground below the beach and the south spit of the Humboldt Bay to a point inland representing a junction with proposed onshore power infrastructure. The exact route will be subject to change based on design optimization and subsea conditions that will consider the inputs from site characterization. In cases where sensitive or hard-bottom habitat is identified, RCEA and Project Partners will have the flexibility to route the power cable around such sensitive areas.

Complete design of the offshore grid and cable infrastructure and connections, cable protection systems, and subsea connections will be completed by RCEA and Project Partners later after consideration of the results from metocean, seabed, geotechnical, and site characterization; operational factors; and interconnection requirements.

Once ashore, transmission cables will take a direct path to the interconnection point (Figure 4). After multiple site visits and investigations around the Humboldt Bay, RCEA and Project Partners found that the most suitable interconnection point would be located at the Humboldt substation. The existing transmission resources in the vicinity of the project site are owned by PG&E and are part of its Humboldt Service Area. RCEA and partners have requested a Point of Interconnection (POI) at Humboldt 115kV substation in the CAISO Cluster 11 study window. The Project is currently in Phase 1 of the CAISO Cluster Studies and was accepted into the CAISO system in early June 2018. A Phase 1 report will be issued by the end of 2018, with the full cluster study expected to be finalized in August 2020.



Note: Offshore export cable is shown in purple and onshore transmission lines are shown in red

Figure 4. General Layout of Transmission Cable

Complete design of the onshore transmission route and interconnection infrastructure will be completed by RCEA and Project Partners at a later time after consideration of geotechnical conditions, land use and infrastructure constraints, and interconnection requirements.

2.2.4. Onshore Support Facilities and Staging Areas (Ports)

Port and redevelopment

RCEA and Project Partners would potentially contract with one or more facilities to fabricate platform components (i.e., columns, upper beams, V-braces, lower beams, bottom plates) and to perform final assembly (i.e., joining fabricated components and load out) of the WindFloat units. The ultimate final solution for supply chain strategy will include a balanced approach between local development and economical power prices.



Note: Picture taken by PPI at the Humboldt Bay Harbor District

Figure 5. Map of Humboldt Bay.

Humboldt Bay (shown on Figure 5) is the only deep-water port in Northern California located in Humboldt County with substantial port infrastructure. RCEA and partners made a preliminary assessment of the existing facilities in the past few months and believes that Humboldt Bay would serve as a good turbine erection and O&M facility for this project. There is also real opportunity to develop in the medium- and long-term capabilities for structures fabrication and assembly facilities by upgrading and piggy-backing on existing infrastructure at the port. There is ample space at harbor facilities for staging, storage, fabrication, and assembly operations. With the possibility to incrementally building the required infrastructure for larger commercial projects, Humboldt Bay could become a potential hub for offshore wind on the Northern Coast.

Harbor improvements and potential upgrades will be required to support this project. The harbor currently lacks a quay with sufficient size and bearing capacity to support turbine erection operations. Upgrades can be made in a way that will benefit local community, especially the fishing community. These required upgrades are expected to draw strong local community support, when carried out with the right approach and outreach effort.

The Harbor District at the Port of Humboldt Bay has shown strong interest to help plan for and build suitable facilities that will eventually serve the project. A multi-purpose berth/dock project that would accommodate assembly of floating wind turbines, and potentially other uses for local stakeholders is underway and will require inputs from the Redwood Coast Project partners.

2.3. General Schedule of Proposed Activities

RCEA and Project Partners propose a preliminary schedule that can be divided into pre-site control, early development/survey, late development, financing and pre-construction, construction and installation, commercial operations, and project lease renewal/repowering or decommissioning. The plan for each activity is detailed in this section. More engineering studies are planned to be conducted by RCEA and its partners in the next few years to refine the project construction plan. All dates assume a non-competitive lease process.

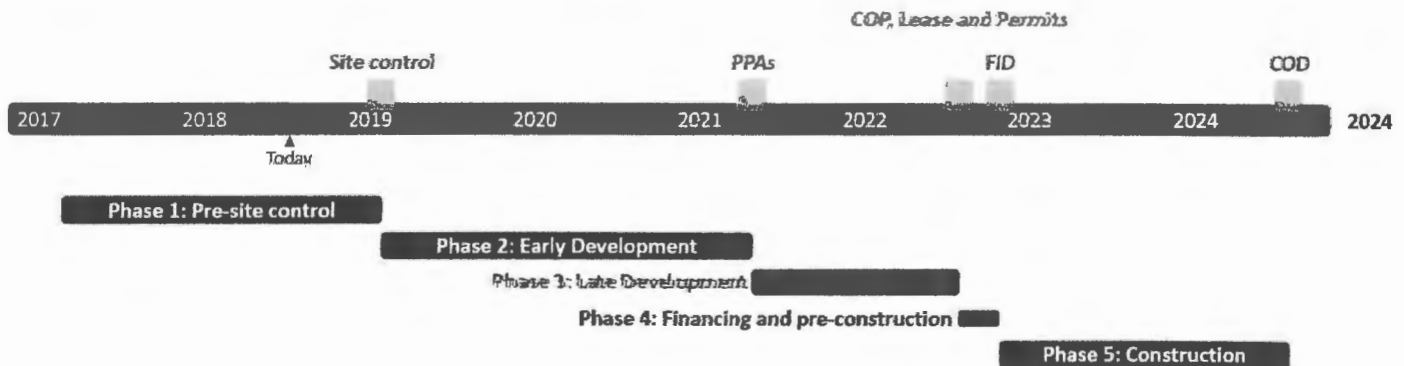


Figure 6. Key Milestones for the Humboldt project

2.4. Renewable Energy Resource and Environmental Conditions in Area of Interest

2.4.1. Energy Resource

The offshore wind resources of the United States were first estimated by the National Renewable Energy Lab (NREL) in 2003 (Musial and Butterfield 2004). Offshore wind mapping has been updated since then, most recently in 2016. A wind speed map for California (Figure 7) is available at an adjusted reference height of 100 meters above the water. Table 4 show the estimated wind speeds at different distances from shore based on these calculations.

As next steps, RCEA and Project Partners will conduct a meteorological campaign in order to collect relevant information from wind and metocean conditions. The dataset will be compiled from existing historical sources as well as project-specific measurements. As part of the project's metocean modeling effort, RCEA and Project Partners propose a dual- or multi-Doppler LIDAR field campaign in order to make comprehensive measurements of winds in the near-shore and offshore regimes. Detailed wind resources will be characterized using floating scanning LIDAR.

Table 4. California Offshore Wind Resource by Wind Speed Interval, Water Depth, and Distance from Shore within 50 nm of Shore (EERE, WINDEXchange, 2015)

| Depth Category Wind Speed at 90 m (m/s) | Distance from Shore (nm) | | | | | | | | | | | |
|--|------------------------------|------------------------------|------------------------------|------------------------------|------------------------------|------------------------------|------------------------------|------------------------------|------------------------------|------------------------------|------------------------------|------------------------------|
| | 0 - 3 | | | 3 - 12 | | | 12 - 50 | | | | | |
| | Shallow (0 - 30 m) | Transitional (30 - 60 m) | Deep (> 60 m) | Shallow (0 - 30 m) | Transitional (30 - 60 m) | Deep (> 60 m) | Shallow (0 - 30 m) | Transitional (30 - 60 m) | Deep (> 60 m) | Shallow (0 - 30 m) | Transitional (30 - 60 m) | Deep (> 60 m) |
| | Area km ² (MW) | Area km ² (MW) | Area km ² (MW) | Area km ² (MW) | Area km ² (MW) | Area km ² (MW) | Area km ² (MW) | Area km ² (MW) | Area km ² (MW) | Area km ² (MW) | Area km ² (MW) | Area km ² (MW) |
| 7.0 - 7.5 | 266 (1,331) | 236 (1,181) | 257 (1,287) | 101 (504) | 457 (2,284) | 4,554 (22,770) | 8 (38) | 23 (115) | 5,537 (27,684) | | | |
| 7.5 - 8.0 | 239 (1,195) | 257 (1,285) | 190 (948) | 79 (394) | 596 (2,978) | 3,855 (19,273) | 0 (0) | 33 (165) | 19,616 (98,080) | | | |
| 8.0 - 8.5 | 125 (625) | 178 (891) | 282 (1,409) | 7 (36) | 106 (529) | 4,539 (22,695) | 0 (0) | 0 (0) | 17,822 (89,111) | | | |
| 8.5 - 9.0 | 43 (215) | 142 (708) | 176 (882) | 1 (3) | 38 (190) | 4,560 (22,799) | 0 (0) | 0 (0) | 17,892 (89,460) | | | |
| 9.0 - 9.5 | 2 (10) | 19 (94) | 15 (74) | 0 (0) | 1 (4) | 988 (4,940) | 0 (0) | 0 (0) | 12,160 (60,801) | | | |
| 9.5 - 10.0 | 0 (0) | 6 (30) | 14 (69) | 0 (0) | 0 (0) | 656 (3,280) | 0 (0) | 0 (0) | 14,555 (72,774) | | | |
| >10.0 | 0 (0) | 0 (0) | 0 (1) | 0 (0) | 0 (0) | 288 (1,441) | 0 (0) | 0 (0) | 6,638 (33,188) | | | |
| Total >7.0 | 676 (3,379) | 838 (4,189) | 187 (937) | 187 (937) | 1,197 (5,985) | 19,440 (97,198) | 8 (38) | 56 (279) | 94,220 (471,098) | | | |

nm = nautical miles
m = meters
m/s = meters per second
km² = square kilometers
MW = megawatts

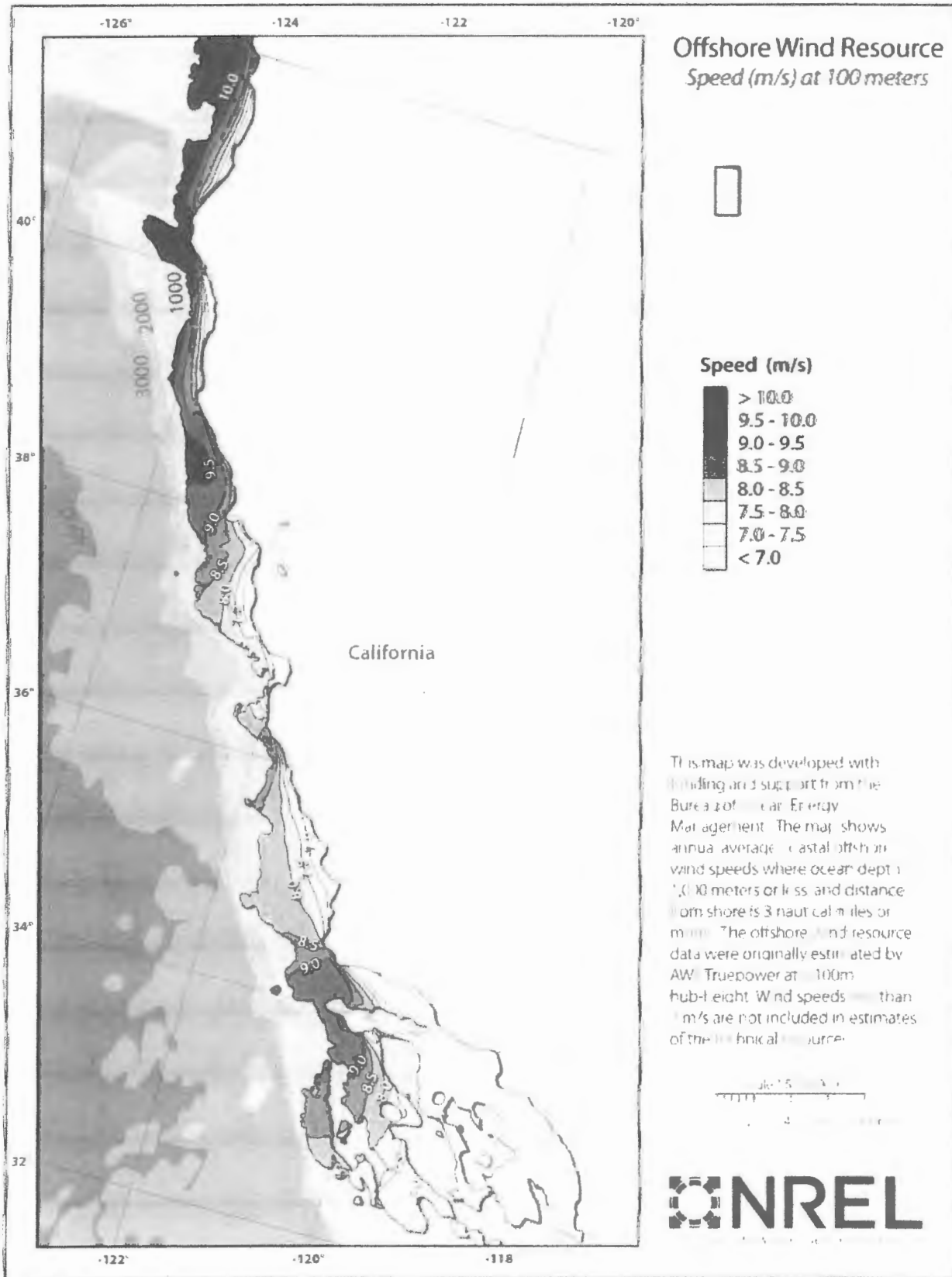


Figure 7. Wind Speed Map of California Offshore Technical Wind Resources Calculated at a 100-Meter Elevation Above Water (NREL 2016)

2.5. Conformance with State and Local Energy Planning Initiatives

The California Legislature has adopted a requirement that 50% of all retail electric energy sales in the state must come from renewable sources by the end of 2030 (State of California, 2015) - the California Renewable Portfolio Standard ("RPS"). SB100 was signed on September 10, 2018, which will increase the RPS to 100%. California greenhouse gas (GHG) programs and requirements are also strong drivers for increased availability of renewable energy.

Three California authorities administer RPS and GHG programs.

- 1. California Public Utilities Commission (CPUC) administers the RPS compliance required under SB 107, SB 2 and SB 350 for IOUs, ESPs and CCAs.
- 2. CEC administers the RPS compliance required under SB 107, SB 2 and SB 350 for Publicly Owned Utilities (POUs).
- 3. California Air Resources Board (CARB) is responsible for implementing the GHG reductions required under AB 32 and SB 350.

With easily accessible onshore wind sites largely exhausted, the opportunity for out-of-state wind limited by the transmission delivery requirements associated with Portfolio Content Category 1 ("PCC 1") of the California RPS, and supported by material declines in technology costs, the vast majority of new renewable projects that have been constructed in California in recent years have been solar photovoltaic. While solar has been able to provide an increasingly cost-effective path towards meeting the CA RPS, its dominance has also given rise to several issues, chief amongst them the so-called "duck curve".

Due to the relative homogeneous nature of the solar resource, most solar in the state shares a similar production profile during daylight hours. With increasing supply to meet demand, sometimes decreasing due to factors such as energy efficiency, pricing in CAISO has decreased significantly during prime production hours, trending negative in an increasing number of hours over the year. Moreover, lacking sufficient energy storage or gas to provide the requisite ramping capabilities, the state is having increasing difficulty in meeting its late afternoon and evening demand as solar production precipitously drops-off with the sun's setting. While energy storage and energy imports can and have assisted California in addressing this and related problems, offshore wind can also be an important part of the solution.

First, the production profile of offshore wind serves as a natural complement to solar. Not dependent on the sun, offshore wind produces output around the clock and can deliver a much-needed local source of production to assist in meeting the evening ramp and other peak demand periods that can't be adequately addressed by solar. Relatedly, offshore wind has less exposure to negative price risk due to its significantly more diverse generation profile.

Secondly, offshore wind can deliver a PCC 1 product under the RPS. Most new onshore wind seeking to serve California load must assume costly transmission to meet the PCC1 delivery requirements and even then, can only achieve PCC1 status for a fraction of plant output.

Offshore wind allows for 100% of plant output to assist buyers in meeting their RPS or internal renewable targets from an innovative technology that is a natural complement to solar.

Thirdly, offshore wind is positioned to deliver significant benefits locally in California—it can provide resource adequacy, it can delivery economic benefits, and it can provide significant direct and indirect employment, potentially stimulating a nascent supply chain in California.

2.6. Documentation of Lessee Qualifications

2.6.1. Legal Qualifications

Table 8 summarizes legal information for the Applicant and Project Partners.

Table 8. Summary of Applicant and Project Partner Organizations

| Organization | Role | Headquarters | State of Incorporation |
|---------------------------------------|-------------------------------|----------------|------------------------|
| Redwood Coast Energy Authority (RCEA) | Applicant: Project partner | Eureka, CA | California |
| Principle Power | Project partner | Emeryville, CA | Nevada |
| EDPR Offshore | Project partner | Houston, TX | Delaware |
| Aker Solutions | Project partner | Houston, TX | Delaware |

RCEA is authorized under the operating rules of its business to hold and operate leases, right-of-way grants, or right-of-use and easement grants for activities that produce, or support production, transportation or transmission of, energy from sources other than oil and gas, on the Outer Continental Shelf (OCS), and right-of-use and easement grants for the alternate use of OCS facilities for energy or marine related activities.

Appendix A includes copies of RCEA’s Articles of Incorporation, Company By-Laws, Meeting minutes from latest Board of Directors Meeting, and Corporate Charter.

2.6.2. Technical Capability

The qualifications and roles of RCEA and its Project Partners are described below, and additional detail is provided in Appendix B. RCEA and its project partner’s experience spans industries from high-tech manufacturing to offshore construction and oil and gas. The proposed project will leverage RCEA’s community focus and unique position in Humboldt County, and pair it with the collective know-how and lessons learned from the Project Partners. RCEA and Project Partners are committed to the success of the project. Individual organizational staffing levels and resources will be allocated to meet project needs and will not be split across multiple projects.

Applicant and Project Partner

Redwood Coast Energy Authority - RCEA is a local government joint powers agency with member agencies consisting of the County of Humboldt, the Cities of Arcata, Blue Lake, Eureka, Ferndale, Fortuna, Rio Dell, Trinidad and the Humboldt Bay Municipal Water District. Formed in 2003, RCEA’s mission is to develop and implement sustainable energy initiatives that

reduce energy demand, increase energy efficiency, and advance the use of clean, efficient and renewable resources available in the region. Relating to the local development of floating offshore wind energy, RCEA's 2003 Joint Powers Agreement includes specific goals to:

- i. Lead, coordinate and integrate regional efforts that advance secure, sustainable, clean and affordable energy resources.
- ii. Support research, development, demonstration, innovation, and commercialization of **sustainable energy technologies by public and private entities operating in Humboldt County.**
- iii. **The Humboldt County General Plan designates RCEA as the regional energy authority with the responsibility to coordinate and facilitate countywide strategic energy planning and implementation.**

RCEA will provide project management, interconnection support, power purchasing, local stakeholder engagement, community liaison, and project financing support to the project.

Project Partners

Principle Power, Inc. – Principle Power is an innovative developer, technology and services provider for the offshore wind energy market. Our leading, proven and patented technology, the WindFloat – a floating wind turbine foundation – provides access to transitional (40-60 meters) and deep-water (over 60 meters) sites, globally – by offering an enabling technology for the development of the OFW industry as whole and opening new deep-water markets. Principle Power will provide project management, design and technology engineering, project development services, operational and health and safety services to the project.

EDPR Offshore North America LLC is a wholly owned subsidiary EDP Renewables North America LLC ("EDPR NA"). EDPR NA is a wholly owned subsidiary of EDP Renováveis ("EDPR"). EDPR NA develops, constructs, owns, and operates wind and solar renewable energy projects throughout the U.S, Canada and Mexico. EDPR NA is based in Houston, Texas, with over 500 employees and regional offices in New York, Oregon, Illinois, and Massachusetts. EDPR NA's rigorous approach has led to the successful development of more than 5GW of renewable energy facilities located in the U.S., Canada and Mexico, and the company has demonstrated a proven ability to successfully navigate complicated land, interconnection and permitting environments in order to achieve commercial operations for its projects.

EDPR NA's operational assets, 44 wind farms and 4 solar parks, are spread across 13 U.S. states, one Mexican state and one Canadian province, making EDPR NA the 4th largest owner of renewable energy in North America. EDPR NA is an industry leader in operational reliability: with nearly 3,000 turbines in operation and drawing on over 120 million turbine-hours of operational history, EDPR NA is able to maintain over 97% availability fleet-wide. EDPR NA is also actively developing a portfolio of more than 10,000 MW of additional renewable energy assets in over fifteen states in the U.S.

EDPR is a leading global renewable energy company that develops, builds, owns and operates power plants that generate electricity using renewable energy sources. With more than 11 GW of installed wind capacity and close to 28TWh generated as of YE 2017, EDPR is ranked fourth

2.6.3. Financial Capability

~~There have been no bankruptcy or other adverse financial proceedings against RCEA over the last five years.~~

Detailed descriptions of RCEA's and Project Partner's financial capability is provided in Appendix C.

Development Costs

~~Development costs have been estimated using a bottom up approach. RCEA and Project Partners have a substantial amount of insights into the development expenditures required to bring a floating project of this size to Final Investment Decision (FID). The development budget would span from 2018 through the 2022 FID. The project is expected to be fully operational in 2024). This table should be viewed as a preliminary estimate only. Additional information on project costs will be determined over the course of the early and late development phases.~~

Financing Plan

Detailed descriptions of RCEA's and Project Partner's financing plan is provided in Appendix C.