Materials Submitted

At Meeting

The following public comments
(up to and including
the petition opposing biomass)
were submitted at the October 24, 2019,
RCEA Board of Directors meeting.

Public comment on agenda item 5.1-Comprehensive Action Plan for Energy

To: Redwood Coast Energy Authority Board of Directors

Estelle Fennell, RCEA Board Member Humboldt County
Dwight Miller, RCEA Board Member City of Trinidad
Michael Winkler, RCEA Board Chair, City of Arcata
Summer Daugherty, RCEA Board Member, City of Blue Lake
Austin Allison RCEA Vice Chair), City of Eureka
Robin Smith, RCEA Board Member, City of Ferndale
Dean Glaser, RCEA Board Member, City of Fortuna
Frank Wilson, RCEA Board Member, City of Rio Dell
Sheri Woo, RCEA Board Member, Humboldt Municipal Water District

Cc: Matthew Marshall, Executive Director RCEA

Testimony by Daniel Chandler, Ph.D¹. Spoken testimony is in boldface.

As someone who has done research for forty years to test, evaluate or predict good policy—but someone new to the field of biomass—I believe there is an opportunity for RCEA to get out ahead of difficult decisions on biomass that will need to be taken when wind power makes local electricity available with much lower emissions.

I want to make two quick points, and then hope you will follow me in drawing from them two implications. Both points are made many places in the literature. I am quoting this source in particular because it was published in 2019 with authors from multiple countries. It is from the peer-reviewed journal called <u>Global Change Biology (GCB) Bioenergy</u>. The article is called, Serious mismatches continue between science and policy in forest bioenergy. [It is free online at: https://onlinelibrary.wiley.com/doi/full/10.1111/gcbb.12643]

Two facts:

Woody biomass contains less energy than coal (bio-mass pellets $9.6-12.2 \text{ GJ/m}^3$; coal $18.4-23.8 \text{ GJ/m}^3$; IEABioenergy, 2017), so that CO_2 emissions for the same energy output are higher [in biomass than in coal] (110 kg CO_2/GJ for solid biomass, 94.6-96 kg CO_2/GJ for coals in IPCC, 2006).

Second fact:

When climate mitigation policies were being developed, the delay in achieving net reductions in emissions was left out of the regulations. However, the Paris Agreement now commits 'to pursue efforts to limit the temperature increase even further to 1.5°C' (https:// unfccc.int/process-and-meetings/the-paris-agreement/ the-paris-agreement—accessed May 10, 2019). Given that the Intergovernmental Panel on

¹ Ph.D. in sociology from UC Berkeley, 1972. Since then Dr. Chandler has done policy-oriented research for the Assembly Office of Research, the County of Sacramento, and in conjunction with Lewin Associates, and the California Institute for Behavioral Health Solutions.

Climate Change (IPCC, 2018) projects that average surface temperatures are likely to exceed 1.5°C between 2030 and 2052 on current trends, payback periods of decades increase the risk of overshooting Paris Agreement targets. Even the shortest payback periods [for biomass] compare unfavourably with those of solar and wind which offer net CO₂ emission savings within months to a few years (Marimuthu & Kirubakaran, 2013).

The first implication is that the CAPE plan should build in flexibility about biomass. Biomass is obviously needed now. How much will it be needed in five years or ten years if the Terra Gen wind farm is implemented? We don't know. So please don't overcommit.

The second implication, is that while burning is the worst use of mill waste because the greenhouse gas emissions go directly into the atmosphere, there will need to be a transition to a better way of using mill waste in which carbon is sequestered for long periods of time.

So my suggestion is that the Board instruct the RCEA staff to use the next three to five years to obtain a Life Cycle Assessment of the greenhouse gas emissions of alternative uses of mill waste. These should include burning for electricity, composting, recycling into new products, and gasification and biochar. We are lucky to have Schatz Energy Research Center in our community. Using existing RCEA consultant funds they could do a preliminary study that includes developing the kind of detail that would be necessary to put into an RFP for a full-fledged study.

Both these actions have minimal costs but a big potential for reducing large amounts of greenhouse gases in the critical next thirty years.

Thank you for considering these suggestions

From: <u>EnergyPlan2019@RedwoodEnergy.org</u>

To: <u>Lori Taketa</u>

Subject: FW: Addendum to comments submitted to RCEA Board of Directors October 24, 2019

 Date:
 Tuesday, October 29, 2019 12:05:45 PM

 Attachments:
 Addendum to RCEA Board testimony.docx

From: Daniel Chandler

Sent: Monday, October 28, 2019 9:17 PM **To:** EnergyPlan2019@RedwoodEnergy.org

Subject: Addendum to comments submitted to RCEA Board of Directors October 24, 2019

Please accept this addendum to the short presentation I made to the Board on the 24th. It includes other points that were not possible to fit into the oral comment format. There is also tangential overlap with comments made to the RCEA Community Advisory Board. All comments pertain to biomass energy.

Again, thank you very much for your very open planning process.

Dan Chandler

Daniel Chandler, Ph.D. Research and Evaluation Consultant

Addendum to statement on biomass submitted October 24, 2019 to RCEA Board of Directors

Submitted by Daniel Chandler, Ph.D.

Context

- 1. The RCEA Board has committed itself to 100% clean and renewable energy by 2025. Biomass energy from burning mill wastes is not "clean" or, in a scientific sense, renewable (carbon neutral).
 - a. Humboldt County's biomass plants are among the county's top stationary sources of air pollution. Data from 2014 through 2017 (the latest) are shown in below, as is comparable data from the PG&E Humboldt Bay Generating Station. The maximum metric tons of greenhouse gases emitted in any of these four years for each stationary source was:

DG Fairhaven: 230,000 Humboldt Sawmill: 235,500 PG&E Humboldt Bay: 199,500

However, due to plant closures at both sites, it has been highly variable by year over these four years.

b. The power plants in Humboldt are classed by the state as providing "renewable" energy. The Scotia plant also provides steam to an adjacent sawmill. Although mill wastes and other "feedstock" used in biomass power come from forestry many scientists argue that the emissions and sequestration of GHG must be calculated separately for the biomass generation of energy, not incorporated into the overall equations of sustainable forest management. This would mean the emissions from biomass energy are not carbon neutral and not renewable. The mills have no independent way of sequestering carbon, and trees planted as part of sustainable forestry do not offset mill wastes.¹

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¹ This is a fraught issue and elements continue to be controversial. While fossil fuels by definition are not renewable, the EPA under Trump has announced that by definition biomass is carbon neutral. The policy seems designed to further the biomass industry as do California biomass policies. But the fact that European energy plants that burn wood pellets are also officially considered carbon neutral has become something of a scandal. (Booth, Mary. 2018. Not carbon neutral: Assessing the net emissions impact of residues burned for bioenergy. Environmental Research Letters; Millward-Hopkins, J., & Purnell, P. 2019. Circulating blame in the circular economy: The case of woodwaste biofuels and coal ash. Energy Policy, 129, 168 - 172. doi:https://doi.org/10.1016/j.enpol.2019.02.019) Locally, the Humboldt Climate Action Plan does not classify emissions from biomass power as emissions because the state has the official position that biomass is carbon neutral. (email from Conor McGuigan of the Humboldt County Planning Department). The preferred method of studying emissions and sequestration is Life Cycle Assessment. In general, it proceeds from the basis that if a secondary use (in this case burning mill wastes) provides more than 1% of the total market value it should be analyzed separately. In this case, that means the mill waste cannot ride the coat tails of forest management. (Millward-Hopkins, ibid.). This is not academic because the method of accounting for carbon, that is whether it is deemed neutral, in biomass analyses has a large effect on the GHC impact of alternatives. (Morris, J. 2017, Recycle, Bury, or Burn Wood Waste Biomass?: LCA Answer Depends on Carbon Accounting, Emissions Controls, Displaced Fuels, and Impact Costs. Journal of Industrial Ecology, 21: 844-856. doi:10.1111/jiec.12469) See the first figure in Appendix 2 of this document to understand how much difference the assumption makes. While burning of some waste, e.g. construction debris of clean milled wood, has been studied mill wastes such as used in Humboldt has not yet received a Life Cycle Assessment. (One torrefaction option was

As a consequence, the desirability of biomass power with regard to greenhouse gas emissions becomes one of how much greenhouse gases would be released if the waste were *not* being burned for electrical energy.² There is no perfect solution, but the diagram below shows the equation we have to solve. We could replace biomass power (with natural gas) tomorrow but the emissions from mill waste do not just disappear. Unfortunately there are not now Life Cycle Assessments that would allow us to fill in these boxes reliably.

Biomass power emissions

Emissions if natural gas replaces biomass

H
Emissions from alternative uses of mill waste e.g. recycling or trucking to Anderson

Conservation and controlled peak use would reduce emissions used to generate electricity, but don't change the equation: mill waste emissions still go somewhere.

studied in 2014 in a HSU Master's Thesis: http://humboldt-dspace.calstate.edu/handle/10211.3/123998. The preliminary finding was that "timber harvest waste" emitted less GHG if torrified and then used as an alternative to coal in coal-burning power plants.)

² The main existing options are putting the waste in landfills to the extent this is compatible with the law (and perhaps capturing some of the methane released), composting, several types of gasification (which can be captured while producing residues, like charcoal, which can be used for fuel or soil amendment), or reuse/recycle such as in particle board or pet bedding. At one plant, the steam used to generate electricity is also used to dry wood. So loss of a market for the electricity could conceivably not result in reduced emissions if the plant is still run for wood drying. All of these options have a net impact on GHG emissions. In 2017, John Anderson, director of forest policy at Mendocino Redwood Co/Humboldt Redwood Company said that HRC would sell most waste as a soil amendment, animal bedding, or similar use if not burning it to create electricity. See the white paper by Katy Gurin, Colin Fiske and Greg Gaiera, 'Biomass Energy in Humboldt County, available at https://world.350.org/humboldt/campaigns/local-clean-energy/

Proposed Recommendation³

Since a scientific answer regarding the environmental impact of alternative uses of mill waste is not yet clear, 350 Humboldt urges RCEA to contract with an energy analysis firm for a life cycle assessment of the use of mill wastes and other raw biomass for electricity generation in Humboldt County. Ideally, RCEA would seek supplementary funding so that the analysis would cover all 34 powerplants in California that burn biomass for electricity.

Note that if RCEA decides biomass power can be replaced by 2025 with clean and renewable power from another energy source this study is not needed. An example of the kind of study that would be useful is in Appendix 1, although it focused on construction waste rather than mill waste.

To be clear, since we need a study to fill in the values for GHG emissions in the chart above, it is not possible to <u>scientifically</u> advocate for either supporting biomass electricity or opposing it at this point. However, there are a number of proposals that might increase our knowledge or move us toward clean and renewable electricity that stop short of advocacy either direction. For convenience some of these are listed below. These, and perhaps others, would all be compatible with the primary recommendation that RCEA have an LCA study completed.

Related Recommendations

• Wendy Ring has pointed out that the source or amount of local peak energy need not be assumed to be fixed. The overall equation might be modified by writing into the CAPE plan that RCEA will investigate reducing the need for local peak power in ways similar to other communities using strategies that include reducing peak demand (peak shaving) with battery storage at large customers, shifting the time of electricity use by large customers by means of financial incentives, remote control of smart devices like electric water heaters and EV chargers to turn reduce power demand and even feed power into the grid at peak times, and planned increase of peak power conservation through energy efficiency. In the same vein, a Humboldt-only *Ohm Connect* could help conserve energy at peak hours. (The 150,000 Ohm Connect participants reduced power this

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³ This is not a new recommendation. The 2017 position paper by Gurin, Fiske and Gaiera mentioned earlier states: "RCEA should support ongoing research into the full life-cycle carbon impacts of local biomass power production and fund its own research if necessary. If other feasible modes of mill waste management show substantial greenhouse gas emissions savings over raw biomass incineration, or if research reveals other significant GHG impacts of local biomass power production, RCEA should phase out biomass from the CCE grid mix."

⁴ A preliminary step could be contracting with Schatz Energy to do a literature review in order to clarify what is known and what needs additional data collection. This could be done by use of a non-competitive consultant contract: https://redwoodenergy.org/wp-content/uploads/2019/08/RFQ_19_601_Energy-Assessment Professional-Services.pdf

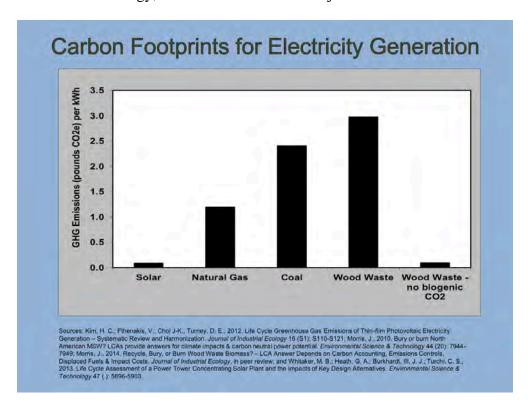
⁵ http://www.calbiomass.org/facilities-map/

- *summer* equivalent to shutting down four dirty power plants or planting 1.5 million trees.)
- EPIC has suggested removing any fixed megawatt target tied to local biomass. While the
 powerplant operators need some information to plan on, removing the fixed target
 would provide RCEA the flexibility it may need if an LCA study shows feasible lower GHG
 alternatives.

APPENDIX I

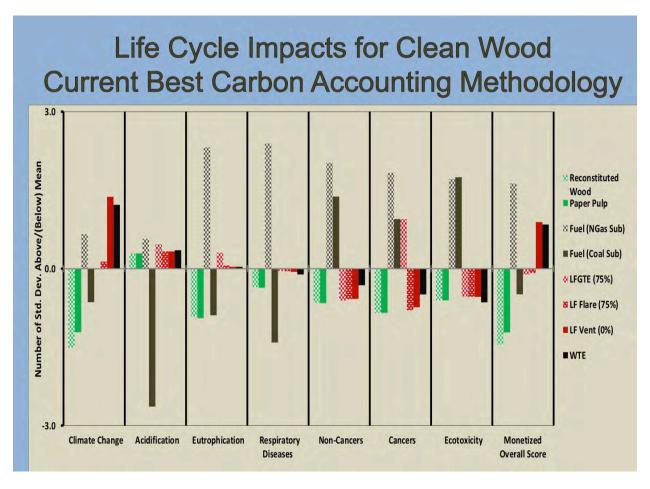
AN EXAMPLE LCA STUDY

Two graphs from Morris, J. 2017, Recycle, Bury, or Burn Wood Waste Biomass?: LCA Answer Depends on Carbon Accounting, Emissions Controls, Displaced Fuels, and Impact Costs. Journal of Industrial Ecology, 21: 844-856. doi:10.1111/jiec.12469



NOTE: Results in this study are shown to depend greatly on the carbon accounting method used. The "best" method shown below includes the assumption of biogenic CO². That is, emissions of CO² are attributed to the method of using waste wood rather than assuming CO² is neutral (just because it is not a fossil fuel). Morris gives several technical reasons for this assumption, but the most basic is that the environment is affected by the CO² emissions in the same way whether it is from fossil fuels or wood products.

The calculations in this article are for clean wood from construction or demolition sites, so the conclusions cannot be assumed to be true for mill waste (according to the author in conversation with Wendy Ring). The graphs are shown as an illustration of what a well-done LCA that is based on mill wastes would look like. In the table below WTE stands for Waste to Energy (e.g. burning trash for energy) is included for comparison purposes.] [In the graph below being over the mean (above the midline) is a negative outcome. Recycling, which includes the first two methods, demonstrated a positive finding for all outcomes and substituting biomass power for natural gas demonstrated a negative finding for all outcomes.]



Eight management options are assessed: recycling into reconstituted wood products or papermaking pulp; combustion for heat energy displacing natural gas or coal; landfilling with 75% methane capture for electricity generation or flaring, or with zero methane capture; and waste-to-energy (WTE) facility combustion for electricity generation.

Author's conclusion: "Recycling (the first two or green options) ranks better than burying (land fill) or burning in the base case under two of the seven environmental burdens analyzed in this LCA, as well as for monetized overall score. Substitution of wood for coal in industrial boilers ranks first for the climate, third overall, and ahead of high CH4 capture rate landfill options. Substitution of wood for natural gas in industrial boilers ranks at the bottom overall and for five of the seven environmental impacts. For monetized score, WTE and landfilling without CH4 capture rank sixth and seventh, respectively, out of eight."

**As shown in the first graph of Appendix 1, results in this study are very sensitive to whether the biogenic CO² produced is attributed to the method or discounted, assuming that biogenic CO² is not possible.

For a copy of the Morris paper please ask Dan Chandler

Thank you for the opportunity to express my opposition to biomass as an energy source. I urge the RCEA Board not to renew the current biomass contracts and not enter into any additional biomass contracts.

Biomass energy costs more than solar and wind energy as shown by the California Energy Commission diagrams and graphs comparing costs. Operation and maintenance of our biomass plants, which will be over 40 years old by 2030, costs more than operation and maintenance of solar and wind infrastructure. Solar and wind don't have fuel costs; biomass does. Biomass fuel cost can vary with unforeseen problems. Conflict in the Middle East can raise the price of diesel for biomass fuel transport. Economic recession can reduce the demand for lumber and the associated waste.

The timber industry already benefits from subsidies in the form of lower property tax rates and schedule T tax write offs for timber harvested. RCEA ratepayers should not have to provide an additional subsidy by paying the timber industry to get rid of the waste it generates. The Institute of Political Economics at Utah State University in the report *Reliability of Renewable Energy: Biomass*, states: "biomass subsidies increase the cost of electricity for tax payers [and rate payers] and redistribute wealth to biomass producers."

Regulation defines the level of damage allowed; it does not require no damage. Cleaner is not clean.

The judge who ruled on the consent decree EPA vs Blue Lake Power stated: "the reduction in carbon monoxide and nitrous oxides will provide pollution reduction benefits to the surrounding community." If/when the Blue Lake biomass plant starts up, the community will experience the "allowed amount of pollution". The Intergovernmental Panel on Climate Change discussion on atmospheric CO2 has no special category for biomass CO2. Carbon dioxide molecules have the same capacity to capture long wave radiation regardless of whether California labels them as biogenic or non-biogenic. The time required for carbon sequestration according to the IPPC is 50 to 500 years. A study that I submitted in Oct., 2016 from Oregon State University showed that, for a variety of timber thinning scenarios, more than 50 years were needed to sequester the equivalent amount of carbon that existed in the timber before harvest. A timber rotation time of less than 50 years contributes to atmospheric carbon totals.

10/24/2019 Walt Parish

MAY 2019 Estimated COST of NEW Utilities

power plants. In addition, the availability of incentives such as federal tax credits can also affect the cost of a particular technology and lower project financing costs.

Levelized Cost of Generation Estimates

Figure ES-1 shows the mid case levelized cost estimates for a selection of technologies studies in this report; biomass, combined cycle, geothermal flash, solar tower, wind, and solar PV (single axis). The mid case is as assessment of the cost that is most likely to occur. It is bounded by a high case and a low case, which use simultaneous highest cost and lowest cost factors.

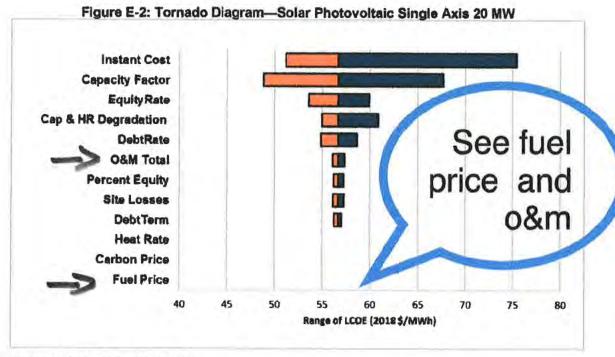
Source: California Energy Commission

Figure ES-1: Levelized Cost of Generation Estimates by Technology (Real 2016 \$/MWh)

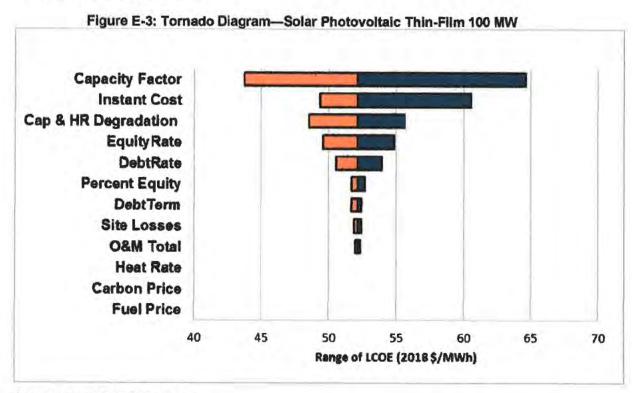
Levelized cost estimates are lowest for solar PV, with the lowest of those being the 100 MW single axis type using crystal silicon technology, at \$49 per MWh in 2018. Wind technology is most competitive before the expiration of the production tax credit, with an estimated levelized cost in 2018 of \$54 per MWh. A traditional combined-cycle plant is estimated to have a levelized cost of \$114 per MWh, while geothermal flash technology is \$132 per MWh, solar power tower is \$153 per MWh, and biomass is \$159 per MWh.

Levelized Cost Trends and Implications

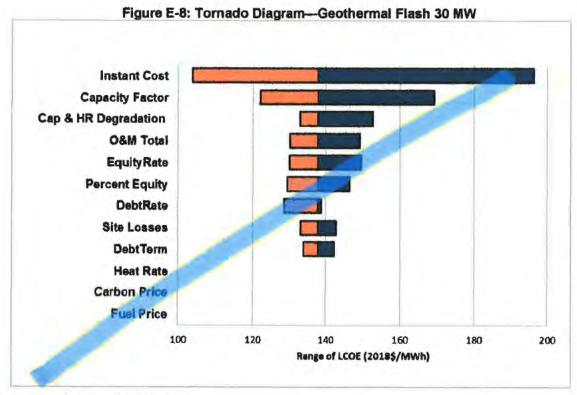
Solar PV has experienced dramatic price declines in recent years, exceeding previous estimates. While declining module costs have exhibited the largest cost decrease, inverters, other hardware, labor, overhead, and financing costs have all contributed to the cost decline. Tax credits were important in making solar PV more costs competitive and were a significant driver of development. The phaseout of this credit is expected to have only a temporary cost increase on solar PV projects as their levelized cost is anticipated to continue to decline. Solar PV is the least costly and most likely technology to be developed in California. The generation profile of solar resources poses challenges



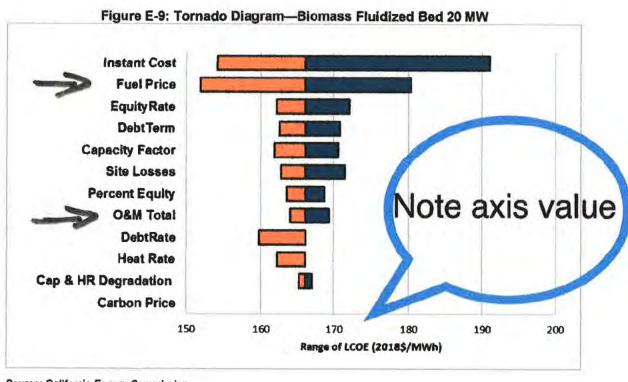
Source: California Energy Commission



Source: California Energy Commission



Source: California Energy Commission





Oct 24, 2019

Redwood Coast Energy Authority (RCEA) Board 633 3rd St Eureka CA 95501

RE: Agenda 5.2, Wiyot Tribal Opposition to Terra Gen Wind Project and RCEA Support

He'bla'lo (Greetings) RCEA Board,

Thank you for giving the Wiyot Tribe the opportunity to speak regarding the fate of one of its most high prayer sites, at Tsakiyuwit, or what we call today, Bear River Ridge and the Cape Mendocino ecological transect. We live in one of the most diverse landscapes in North America, in part because it was shaped and tended by Indigenous peoples, making Humboldt County and other parts of California a rich mosaic of vegetation types, which drives diversity and ecological stability. The proposed Terra Gen wind project, which RCEA appears to have blindly endorsed, is the aerial equivalent of damming up the Smith River, and will forever impact not just the spiritual connection of the Wiyot and other individuals, but the biology of this ecological transect. For example, survey efforts for the project found not just an array of artifacts, including Tuluwat barbed projectiles and plant processing tools, but verified the diversity of the area, identifying 81 different vegetation communities, with 38, or roughly 50% being rare or sensitive and even some newly described communities that may likely have ethnobotanical origin. The prairie system on Tsakiyuwit can be seen from outer space as one of the most intact coastal prairies in northwest California, rivaling Bald Hills in Redwood National Park. I would hope that RCEA wouldn't suggest putting a wind farm on Bald Hills, sacred land to the Yurok, so it's ok to put one on Tsakiyuwit, out of site and mind from Eureka and Arcata, in a more rural part of the County with less resources to resist? We could go on and on about the biological and cultural impacts, and inadequate mitigations, not to mention the tons GHG's that it would be emitted during construction and maintenance and the 10,000 heavy truck trips in geologically unstable soils? And, as Wiyot elder Leona Wilkinson has said to the Terra Gen reps, "This is not your wind to take! This is the birds, the bats, the Earths, the the redwood tree's wind!" A recent study by Harvard revealed the truth that wind turbines really do affect the local mircro-climate and humidity, which may be devastating here, where complex interactions along our edge of the fog belt are critical to summer fog, our local biodiversity, and persistence of the redwoods.

Of equal impact to the wind turbines themselves, is the near 30 mile-long new transmission line corridor, continuing a swath of destruction, over 900 acres of forest to be cleared, along the ecological transect from coastal prairie through redwood, grand fir, Doug fir, and tanoak

forests, and finally to the oak woodlands and glades of Bridgeville. What will RCEA rate payers say when this new transmission line, in very remote timberlands, causes a wildfire that rips either into Pamplin Grove, Grizzly Creek, or Humboldt Redwoods State Park? How much carbon will be at increased risk of release through wildfire? Who will make the decision to deenergize these new lines when catastrophic wildlife conditions exist? RCEA, Terra Gen, Humboldt County? How can we make educated decisions on such maters when we haven't even seen the Final EIR? As a public trust agency, it is premature to give input or support for such a impactful project prior to release of the FEIR and the Tribe urges RCEA to reconsider its PPA with Terra Gen and abandon this project which would only contributes to vulnerable centralized grid-based power and more energy consumption. RCEA should be working toward investing in community solar micro-grids, like its project at the Arcata Airport, rather than giving money to a few wealthy corporate elites from out of the area.

Finally, given both the Wiyot Tribe's endorsement and RCEA's commitment to developing offshore wind by 2025-2030 with a similar MW project, it is nothing less than criminal and ludicrous to develop *Tsakiyuwit*, a premier cultural and biodiversity hot spot, and ignore the requests and wisdom of the Wiyot Tribe, who have been here since time immemorial. Impacts from off-shore wind are a fraction of the long lasting impacts we would see from developing *Tsakiyuwit* and the surrounding area. We ask the board to please reconsider and revoke its support and backing of the Terra Gen wind project and respect the Tribe's concerns and suggestions of working toward more truly resilient energy independence for Humboldt County. Thank you for your time and consideration.

Rra'dutwas (with kindness)

Adam N. Canter,

Tribal Botanist, GIS, and THPO Cultural Assistant

Table Bluff Reservation

1000 Wiyot Dr.

Loleta, CA 95551

adam@wiyot.us

707-733-5055



TELL REDWOOD COAST ENERGY AUTHORITY THAT BIOMASS IS NOT CLEAN ENERGY

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Andrew Turner	95540		
W.M. HUNTER	95170		
Courtney Ladika	45503		
DEEMY Stilles	95302	2	
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Jake Whiteley		95521		TRIDENT YCHTNING
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EllenRobnett		95503		FAZIM STED
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Petition

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Chris Hall		95521					
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Susan Roching		195521					
YOUTH STONER		95521					
Emilie Lanning		95503					
Taylor Yarbroug		95521			D		
Cina Barris		95521					
Sowanna Alves		95521	3/0				
Lucas Campbell		95521					
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TELL REDWOOD COAST ENERGY AUTHORITY THAT BIOMASS IS NOT CLEAN ENERGY

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LINDA PETERSON		95525	
LAURA NOTEULA			
Lorenzo Fassi			
VALOND ANGU			V.
GEOFFREY ROBINSO	4	95525	
SARAH PETERS JAMES PECK		95561	
JAMES PECK	c	95507	
oliviaBrock		95521	

TELL REDWOOD COAST ENERGY AUTHORITY THAT BIOMASS IS NOT CLEAN ENERGY

NAME PRINT	SIGN	ZIP	EMAIL	PHONE
Phiannon Miramontes		95501		
Galorelle Smith		94403		
Andrew Khechp		95524		
Will Draft		95521		
Kyrstie Obiso		95521		
Kennedy Fox		95524		
Justin Salazar		92082		
Jake Knolle		95521		
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ISAAC WEGS		95521		

TELL REDWOOD COAST ENERGY AUTHORITY THAT BIOMASS IS NOT CLEAN ENERGY

NAME PRINT SIGN	ZIP	EMAIL	PHONE
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Innie Drown	95570		
ADRIENNE OUT	95501		
Carlotta Clark	-95525		
Mi chelle Fuller	95521		
AMYLENNOX	95501		
Sharon Hafne	95503		
Denny Dorsell	9552/		
Patricia Bender	95521	_	
Emeral of Garder	95501		

TELL REDWOOD COAST ENERGY AUTHORITY THAT BIOMASS IS NOT CLEAN ENERGY

Print Name	Sign	Zip	Email		Phone
			The state of	ila Si obsessione	
Jenny Finc	h	95503	4		
Claime Perric		93501	+		
StraRShar		95521	1		
Grik Ringer			18		
Nathanier inclu		95521	+		
Motas Va Fren		95501	+		
Jeremy Hara		95519	+		1
Hayley Country-L		95524	1		
Charles Than	ne o	1-021	1		*
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TELL REDWOOD COAST ENERGY AUTHORITY THAT BIOMASS IS NOT CLEAN ENERGY

NAME PRINT SIGN	ZIP	EMAIL PHONE
NARMI MCCUMP	95521	
Jonathan Manshide	95521	
Asox Givens	9452	
Jule Covityr	22891	
Construe La Chaine	95521	
Kevin vandenadl	45521	
Eric Southard	95521	
Gliova ni Taylor	95567	
Judi Rose	95524	
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TELL REDWOOD COAST ENERGY AUTHORITY THAT BIOMASS IS NOT CLEAN ENERGY

Print wane	Sign	Zip	Email	Phone
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Tayler Mar	<u> </u>	DEC 40		
Sean Rowe		95501		
Mar Konson		20029		
Kancy Thara		955.21	12	
JOHN MCGIBBON	1	95501	5	
Brandi Solomo		95501	6	
Brandonkomen		95503	+	
Koxannetartman	un.	95501		

TELL REDWOOD COAST ENERGY AUTHORITY THAT BIOMASS IS NOT CLEAN ENERGY

NAME PRINT S	SIGN	ZIP	EMAIL	PHONE
Forest Juralo		95525		
An qui costo.		95821		
Alex Galeone		95303		
Grace Jema		95519		7.00
soma w.		95519		
Slan Specche		95521		
Graciana Ortega		95501		
mhetto.		95521		
Daniel Erb		95521		
Melanie Bryd		95570		
Krustal Magner		95521		
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TELL REDWOOD COAST ENERGY AUTHORITY THAT BIOMASS IS NOT CLEAN ENERGY

NAME PRINT SIGN	ZIP EMAIL PHONE	
Emily Potter	95521	
ridian Cascue 84	95503	
ALEXANDRACU FOR	95521	
Amanda Beeman	95501	
Alexandra Gonzalez	95521	
Patricia Bloget	9552	
Samplas	95800	
Eresa McGinnis	95503	
Sabrina Ott	95521	
Mark Konkler	95501	
Tray Morgan	95519	

TELL REDWOOD COAST ENERGY AUTHORITY THAT BIOMASS IS NOT CLEAN ENERGY

NAME PRINT SIGN	ZIP ON THE STATE OF	EMAIL PHONE
Kris Diamond	95521	
Paul Culovich ; C.	95576	
Kyler Conrige	9552	
Masha Gulak	95521	
Nora hendoza	93521	
Prejandra V.	75521	
Alyssa P.	95518	
O Emily We	95521	
Paulo Matin	95521	
Curl Baster	95521	
Sam Rempon-Hair	95521	

TELL REDWOOD COAST ENERGY AUTHORITY THAT BIOMASS IS NOT CLEAN ENERGY

NAME PRINT	SIGN	ZIP	EMAIL PHONE	
Kylie Brown		95521		
Isabella Norton		95521		
Trent Johns		95521		
Skyler Mingo		95521		
Taylor Reco		95321		
LILY worthing	/	95521		
Fiona Flores		95521	A control of the cont	
Carlos Varquez		95521		
Vausaria Penanza		95521		
Rosmary Torres		95521		
John Chernott		95721		



TELL REDWOOD COAST ENERGY AUTHORITY THAT BIOMASS IS NOT CLEAN ENERGY

NAME PRINT SI	CR ZIP	EMAIL PHONE
Melanie Johnson	93342	
MARA Freedman	-95570	
Catherine Reacook	95501	
Starton Wood	95503	
Breany Burgess	95519	
Annika young	95521	
RICHAR BENG	85521	
Sophia Escudero	- 95521	
Harmony Tryon	95519	
LOSE Alber	95524/974077	
Portia Herger	95571	

TELL REDWOOD COAST ENERGY AUTHORITY THAT BIOMASS IS NOT CLEAN ENERGY

NAME PRINT SIGN	ZIP.	EMAIL PHONE
VW Ian MITCHELL	won asran	
Yannet Plascencia	95521	
Kaila Gilbert	95521	
Albrahan Sanchez	95521	
Scarlett Trippsman	95521	
Timothy Wets	95521	
David Alvaro	9552)	
Stephanie Ferking	95521	
Judith Escapar =	9552	
Abby Daviel	95521	
Eve Ashbrook	95521	

TELL REDWOOD COAST ENERGY AUTHORITY THAT BIOMASS IS NOT CLEAN ENERGY

NAME	PRINT	SIGN	ZIP	EMAIL	PHONE
Esa	Villamor .		95521		
TGX64	Mary Gardine		9552		
The second second	Dours		45519		
Hone	ic MacRa		95522		
×	12 Lomeli		95570		
1	for Medlin		95521		
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Alis	sa Ibyadu)		95521		
Alexa	de Acción		9552		
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TELL REDWOOD COAST ENERGY AUTHORITY THAT BIOMASS IS NOT CLEAN ENERGY

NAME PRINT SIGN	ZIPANA	EMAIL PHONE
Shirley was	te 95519	
Fhyre Phoenix	95519	
NATHAN DAVIS-FLOYD	95521	As a second of the second of t
LOSE CASILIO	95551	
Taspersit	95521	
Levin Lennox	95501	
Lonce Noles	95503	C ₁
Canthia Noel	95563	
Jane RIGGA	95521	ra de la companya de
Seri Corsic	95501	
Gwen Snernock	95503	
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TELL REDWOOD COAST ENERGY AUTHORITY THAT BIOMASS IS NOT CLEAN ENERGY

NAME PRINT	SIGN	ZIP	EMAIL PHONE
Tahjah Pleasant		72553	
Monica Avtegga		92553	
Angelica Arnuzo		15521	
Kit Albertifile		95503	
Erica Davis		95521	
Taylor Harrington		95519	
John David		95501	
Babparen		95521	
Stuphen	9	95521	
Samantha Nichles		95521	
Rebecca Wood		95871	

TELL REDWOOD COAST ENERGY AUTHORITY THAT BIOMASS IS NOT CLEAN ENERGY

		r		ion . \
Name	Signature	Zip Code /	E-mil Address	Phone
Calle Pettier-o	Ison	Fortuna		
ROSEMANUS STU	ルキ	FEERING		
Kelsen Reed	4	95502		
Zoë Reiss		95524		
Jade Trylor		95521		
Melissa Horne	ટ	95519		
Alex Riggs		95501		
Daniel Noel		95521		
Lily Price		95521		
Ives Morale	05	95521		
Jenna Franguelin		95503		

TELL REDWOOD COAST ENERGY AUTHORITY THAT BIOMASS IS NOT CLEAN ENERGY

NAME PRINT	IIGN ZIP.	EMAIL PHONE
mes Morgies	95821	
Cal Lierheimer	-95521	
Moreey OBoven	95503	
Stophen Kepics	95501	
Sandra Hanner	95501	
Tim RICE	95501	
Alice Pitt (95540	
KON HARPER	95503	
Celene Molina	9550	
Jun James No	9501	
Cysel dnerl	95551	

TELL REDWOOD COAST ENERGY AUTHORITY THAT BIOMASS IS NOT CLEAN ENERGY

NAME PRINT SIGN	ZIP	EMAIL PHONE	
SHARON HUNTER	95570		
Mina Jafanga	95519		
Daryl Bolling	95523		
Laurene thesels	95519		
liftenglere	95521		
Turner love!	99521		
Jan Olson	95524		
Taylor Day	95521		
Layla Can	95525		
Elizabet L. Herre	95501		
MIKE WALKHEA	95519		
Elizabeth Herrey	95521 95525 9550/		

TELL REDWOOD COAST ENERGY AUTHORITY THAT BIOMASS IS NOT CLEAN ENERGY

NAME PRINT SIGN	ZIP	EMAIL PHONE
THE RICHARDS	95519	
LIZKimura	95501	
Hannah Josang	95521	
John Peterson	95521	
Carolynhalka	95519	
Teremy c. Shellhas	75521	
Kelsey Rancoretta	95521	
Katie Reid	95521	
Keowand	25521	
Stella Jones.	98521	
Kerima Forniss a	95521	

TELL REDWOOD COAST ENERGY AUTHORITY THAT BIOMASS IS NOT CLEAN ENERGY

NAME PRINT SIGN	ZIP	EMAIL	PHONE
SHERRY HULL	95501		
FED KEISSHAN	N. II	/	
Janice Coates	95521		
Jan ¿Andrews	-95525		
Kry2+a6junti	955-21		
Indi Ginn-tria	95505		
Dans Boss.	9750		
Angela Johnston	95503	to the state of th	
Elizabeth Barro	95503		
Melissa Mamas	95501		
a a M	95-501		

TELL REDWOOD COAST ENERGY AUTHORITY THAT BIOMASS IS NOT CLEAN ENERGY

NAME PRINT	SIGN	ZIP	EMAIL PHONE
Lee Lesanie		95570	
Jada LeJanie		95570	
Lindy Elliott		95562	
TREOT H:11		95521	
penge rinchart		95521	
Ton Peters		95562	
Viotoria		95544	
Abigail Hoshing-		95524	
Isabel Diplanter		95521	
Jack Miklik		95571	
ALEX TEX AR		95521	





TELL REDWOOD COAST ENERGY AUTHORITY THAT BIOMASS IS NOT CLEAN ENERGY

NAME PRINT SIGN	ZIP	EMAIL PHONE
michael Tega	95651	
Mario Fernandet	95501	
Christopher Large	95501	
Patricia Malad	95501	
Dan Bette	y 95521	
Fernando Paz	95521	
RETEN LOMEN	91521	
Eliza Rutlider	03	
Emanuel Everheurt	95501	
-Xandra Manns	95501	
CAROLSAUCIER	95561	
9		

TELL REDWOOD COAST ENERGY AUTHORITY THAT BIOMASS IS NOT CLEAN ENERGY

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	the state of the same of the s	EMAIL	PHONE
MARTHA DEVINE	95521	-0-	
Theresam. Devine	95519		
Lathie Spice	95521		
Braden Boss	P 95521		
melance Herrera 17	95521		
Moteo Flores	95571		
Rup Guyten 1	95521		
Phillip GAyce -	95521		
Ryan Studdert.	95521		
Michelle Winsonship	95521		
LORNA BRYANTC	95521		

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Print Name	Signature	Zip	E-mail	Phone
Swafawwlak		95521		
Shan Lingeauth	1	95521		
Even Grande		95525		
CLAPISSA OPTEGA		95521		
KARINE BRATTON		95371		
Chandra Muna		95321		
Cares Weeks		95519		
Formawiels		95519		
July Wy		1557		
Steph loker		95521		
Zachalia		95501		

TELL REDWOOD COAST ENERGY AUTHORITY THAT BIOMASS IS NOT CLEAN ENERGY

NAME PRINT SIGN	ZIP EMAIL PHONE	T. C.
DIQUE RYERSON	9554	
Joanne McGarry	95518	
Cena Marino	95501	
JenniforKing	95519 =	
Gini Collins	94903	
Ed Smeloff	95570	
Martha Hunkins	95521	
Shana Katz	95503 W	
Jerab Pino	75503	
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+a+Kanzkee	95103	

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TELL REDWOOD COAST ENERGY AUTHORITY THAT BIOMASS IS NOT CLEAN ENERGY

NAME PRINT SIGN	ZIP	EMAIL PHONE
Aleida Solis	95521	
Mike Golightly	95521	
Judy Gallayly	95519	
Kashy Sobilo	95501	
Many Ground	9556	
Cook Saucier	95501-1654	
Eva Ruttedge	95503	
Einda Richie	95303	
Avery Arbaigh	95521	
Alex Farral	95503	
TAMM Mahin	95501	

TELL REDWOOD COAST ENERGY AUTHORITY THAT BIOMASS IS NOT CLEAN ENERGY

Print Name -	Signature	- 7	ip -	E-MAIL	~	Phone	1.74
Aucheres Edución		9	15503			with the second	,
Martica Waxatis		9	5521				
Elee Ballings		95	1521	d		II.	
Oliver Seaver			503			Management of the	
Formam Gue		9	5521			7.60	
Sorshlabs		192	5521				
danielle Season		92	554				
Juan Mikolos		D 1	15540				
Savana Thamer		921	131			-	
Clarissa Candaa		953	521				
Omega Gaskill		955	524				
J		J.	Si .				

TELL REDWOOD COAST ENERGY AUTHORITY THAT BIOMASS IS NOT CLEAN ENERGY

Print Name - Signature	- Zip - E-mail	- phone
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Ana Centini	90er9	
Bellin Bly	95570	
Augus Merita	95541	
Nicholas Bra	9557	
Jett Hagery	a5521	
Joely Camacho	95521	
Christy Marks	95521	
Plaire Brown	A5521	
Reet Serve	95501	
Aldry barres	ass2)	
Manuel Sanche	95521	

TELL REDWOOD COAST ENERGY AUTHORITY THAT BIOMASS IS NOT CLEAN ENERGY

Print Name -	Signature	- Zip -	E-mail	- Phone
	national and the			
Mackenzue Roberto		95507		
Amwens		95501		
tutumn Wight		95521		140
Shalom Flercher		95515		
Joseph Aguilar.		75521		10 0
Jesse 13		95521		
VictorCarana		95521		
Kim Willard-Mace		9 5521		
· Akx Giras		0,4421		
Late Coulter		Unsey		
Marine Stem		95521		

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Luis Gonzalez		95521					
RILEYGONA	N	9552					
Zoe Powell		95521					
Hannah Cornne	n	95519					
Gabby Garza		95521					
Kaylin Jubail		a5521					
Jaura Jundgraf		95003					
Lilli Levan							
Chris Ceni		95521					
Rustel Ostrander		95521					
Banjana Gerrer		91702					
- Sary							

TELL REDWOOD COAST ENERGY AUTHORITY THAT BIOMASS IS NOT CLEAN ENERGY

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		A STATE OF THE STA	4.4	14	10000000000000000000000000000000000000
Marka Ronk		95521			
Eiteen Jennis Sa	up,	95501			
Jordan Lang		95501			
LINDA O'HA	RA	95503			
DON Swall		95501			
Tara Spenc	er	83704			
Stephan Vandi		95521			
GAIL SLAUGHTER		95521			
Lyn Scott		95503			
Hollie Klen	T	19550	/		
Carly Russell		95501			
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TELL REDWOOD COAST ENERGY AUTHORITY THAT BIOMASS IS NOT CLEAN ENERGY

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Caroline Ismacs		95551		
Jaqueline Mayra	4	95501		
Derry Martie	N.	95540		
Emryn Grove		95521		
Dara Laurens		95503		
Karen Rice	The state of the s	95549		
Cat McAdam	a a	98503		
RUSSELLY SCOTT		95501		
Landy Mayer				
OLLIE WINDER		95501		

TELL REDWOOD COAST ENERGY AUTHORITY THAT BIOMASS IS NOT CLEAN ENERGY

Print Name -	Signature	- Zil	- E	-mail	- Phone
				an and the	
SAR AH CAMPBEL		95573			
Madeline Marrott		93004			
VANESSA ARGONZ		95524			
Roser Corner		2554			
Larry Glass		95503			
Gary Falxa		95503			
Joan T. ppets		95501			
Chris Berestord		95534			
Richard Preis		95561			
Dan Sala		95507			
Alicia Hamann		95524			

TELL REDWOOD COAST ENERGY AUTHORITY THAT BIOMASS IS NOT CLEAN ENERGY

Print Name -	Signature	- Zip	- E-mail	- Phone	THE STATE OF THE S
March Charles (177)	P It To France				
Harrah McCarthy		95519			
Aviel Perez		91731			
Ray Triana		95521			
Raven Gialen		955 76) (e
Della Pautos		95570			
Celeste Jayrer		95521			
Branki Lagge		35519			
Hobello Peña-Mortin		95521			
Ara Guillen		95521			
Wendy Carranta		95521	± 10-7		
Sophia Mary		95521			

TELL REDWOOD COAST ENERGY AUTHORITY THAT BIOMASS IS NOT CLEAN ENERGY

We the undersigned residents of Humboldt County believe biomass from burning mill waste is not clean. It pollutes our air and emits far more greenhouse gases than replanted trees can absorb in the crucial next decade. Continuing to rely on biomass violates Redwood Coast Energy Authority's commitment to provide 100% clean renewable energy by 2025. We call on RCEA to create a Comprehensive Energy Plan that will focus our resources on developing clean energy.

Print wane	Sign	Zip	Email	Phone
			1.45	
21 to 3	70	9556		
Robert Bier		95360	- T3	
LYNDA MCDEU Ryan Stafsi		95570		
Stephanie Bennet		95503		
Hannah White		95573		
5, Jay Taumul	Vic	95503		
Voghua Adels		95503		
Ryker Avila		95503		
Michelle Glod		95503		
July Heather	N.C.	95501		

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TELL REDWOOD COAST ENERGY AUTHORITY THAT BIOMASS IS NOT CLEAN ENERGY

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Duringlein			9550)				10
Aida Kestel			9552	1			
BRIAN FAGULDES			955Z	1			
Erbin Brown			a5501				
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Bonnie Anthony			95521				
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Vanessa Vando			95570				
Coffee			95564				
Oliver Jones			95521				
Kaylin Jobaili			95521				
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TELL REDWOOD COAST ENERGY AUTHORITY THAT BIOMASS IS NOT CLEAN ENERGY

NAME PRINT	SIGN	ZIP	EMAIL PHONE
Audrey Dermy		95503	
Midrael Barkowitz		95903	
Ampleckoutz		95563	
Clare Josephie		95503	
Laura Cooskey		95558	
Rachel Grossman		95521	
Ellise Mather		95521	
Jesse Noell		95502	
Kyle Barny		95521	
Haven Ilysa		9552	
Lew Mille		95519	

TELL REDWOOD COAST ENERGY AUTHORITY THAT BIOMASS IS NOT CLEAN ENERGY

NAME PRINT SIGN	ZIP	EMAIL PHONE
Kathleen A. Marshall	95521	
Miana Gilkerson	95549	
Maureen Hart /	95521	
an King Smith	95521	
Ann Walance	95521	
ALEXANDRA STIC	95321	
castandra castruita c	95521	
Tania Mejia	95571	
Katherine Polik	95521	
Shasta Werthman	95521	
Elsa Baise	95521	

TELL REDWOOD COAST ENERGY AUTHORITY THAT BIOMASS IS NOT CLEAN ENERGY

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Meyan Gardner Ryan Walnut		95521		
Ryon walnut		95570		
Michael Mossinter		195521		
polarel Sey n		95527		
Many Createll		95518		
MaeveFlynn		95521		
Donna Simat		95521		
West Model Peri		95521		
Anne Holcomb		95525		3
JON FORSYTH		95521		
Krsty Demmun		95379		

TELL REDWOOD COAST ENERGY AUTHORITY THAT BIOMASS IS NOT CLEAN ENERGY

NAME PRINT SIGN	ZIP EM.	PHONE
Me chan Briston	95521	
Hannah LeWiter	95524	
Molly Houston	_ 95521	
Julianne Blandford	95521	
Maran Mdamas	95507 +	
Apigail McComas	95501	
Lucié Valentine	95521	
Jane Micallinery	95521	
LucasCampbell	95521	
GRANT JOHNSON	93442	
Keary Kenedy	7552	
		IN E PAIN

TELL REDWOOD COAST ENERGY AUTHORITY THAT BIOMASS IS NOT CLEAN ENERGY

NAME PRINT SIGN	J. ZIP	EMAIL	PHONE
Anikasun	95521		
ROUMELIN	95570	(
Joshua Fry	95519		
Sin Lennon	95521		
Stephan Brinkley	95521		
Patricia End	75521		
LauraMiller	95521		
Jackie Seidel	95521		
Ana O-Care	95501		
Klara Hernarder	95501		
REGINE FAMILA	5		

TELL REDWOOD COAST ENERGY AUTHORITY THAT BIOMASS IS NOT CLEAN ENERGY

NAME PRINT SIGN	ZIP	PHONE
Shavon Hyssman	955195	
FRANK TEPPER	95519 F	
PAT Mª Cut chea	95521 m	
SHAWNOW ROLLETZ	90521	
Karter Blaxsom	95521	
Melissa Saller	9552)	
Sean Belmont	95521	
Sylvia De Kog	93503 9	
Lara Ashbaya	95521	
ROBIN M. DONAL	95546	
Laurie Thater	95521 0	

TELL REDWOOD COAST ENERGY AUTHORITY THAT BIOMASS IS NOT CLEAN ENERGY

NAME PRINT	SIGN	ZIP	EMAIL PHONE
Daniel London		95501	
Byrd Lochto		95503	
Peg Gardnar		95503	
ANNE PIERSON		95503	
Angelica Taggar		1 95503	
Marion Cate		95540	
Circle Knox		95501	
Kathryn Dunning		95501	
Rudulph C Kosits		95503	
Sandra Litter		95303	
Cleo Carrino		95501	

TELL REDWOOD COAST ENERGY AUTHORITY THAT BIOMASS IS NOT CLEAN ENERGY

NAME PRINT	SIGN	ZIP	EMAIL	PHONE	We want
WENDY PING		95524			
Steve DJRA		95521			
Thea Rowan		955 21			
Michaelcianciola		95521			
nina Klehr		95521			
Should a Gompa		95521			
Antrew Schwartz		95521			
LOHANNA RMERA		95521			
Charity Freitac		95521			
Alyssa Hugh		95521			
preana Covre		95521			

TELL REDWOOD COAST ENERGY AUTHORITY THAT BIOMASS IS NOT CLEAN ENERGY

Print Name - Signature	e - Zip -	E-mail	- Phone	
			74	
Audrey Garcia	95521			
Forrest Estes	95521			
Christopher Good	9552			
Luke Aronie	95521			27
JanessaShaffer	95521			
Jewel Duplante	95521			
Lia Espinoza	95521			9
Mia Sunderlan	95824			
April Steed	95521			
Jos T Albott	95521			
Maere Flynn	19521			

TELL REDWOOD COAST ENERGY AUTHORITY THAT BIOMASS IS NOT CLEAN ENERGY

NAME PRINT SIGN	ZIP	EMAIL	PHONE
Ramona Bar B	95525		
Athina laza	9/2/19		
Janice Bear	9/2/19		
Adrian Dobson	95501		
Sara M Dobson	955\$1		
JOHN SCHAEFER	95521		
Sylvia Shaw	95521		
AnnKilly	95549		
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Anhir Mossman	95570		
Marianne Pennekan	95503		
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TELL REDWOOD COAST ENERGY AUTHORITY THAT BIOMASS IS NOT CLEAN ENERGY

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DEBRAR HARRIS		955 18		4
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ZIP STATE	EMAIL	PHONE
95521		
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TELL REDWOOD COAST ENERGY AUTHORITY THAT BIOMASS IS NOT CLEAN ENERGY

Print ware	Sign	Zip	Email	Phone
		Qt -11-	The same	
Andy Co Firey	4	9554Z	-	
det kin	000	19701	10	
		-		
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TELL REDWOOD COAST ENERGY AUTHORITY THAT BIOMASS IS NOT CLEAN ENERGY

NAME PRINT	SIGN	ZIP	EMAIL	PHONE
Gerry Tollefa	γl .	95501		
Annette Hall	X	95519		
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TELL REDWOOD COAST ENERGY AUTHORITY THAT BIOMASS IS NOT CLEAN ENERGY

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Ash Ramirez		95521		
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Supreet Bhuillar	95503			
Yasmin Reyes	95521			
Raquel Perez-Granados	95501			
Jennifer Lemon	95519			
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Brianna Poque		93292	
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Nina Eghert		9550	
Kathern Bucanski		95503	
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Laura Noel		95547	
Billian Acyman		95521	
Elizabeth Thorne		95521	
Annie Sawson		95521	
Hayley Hudson		95521	

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Melanie Zhao		95521	
Kitty Kwan		95521	
TAMMY		95521	
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Carolina		9552	
Hannah		95521	
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Kimberly Battazar		95521	

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STELLE HOETHE	95521	
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Francesca Messina	95521	
Katja Cragun-Render	95521	
Jasmine Guerra	95521	
Lorenzo Hernandez	95521	
James Stoneland	94560	
Manny Flores	95521	
Jose Moreno	95521	
Desiree Graveria	95521	
Elizabeth Sweeney	95521	

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NAME PRINT SIGN	ZIP	EMAIL PHONE
Christian Trajito	95221	
Deema Hindawi	95521	
Alexandro Ochoa	95521	
Anayeli Auza	95521	
Lesly Vasquer	95521	
Karina Coronada	15521	
Caseel Albarran	95521	
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ROBBIE SAMCHER	9554	
Daniel Krake	95521	
Nich Schuler	95521	
HaleyGraf	95521	
Madeline flotart	95521	
Brianna Velasco	95521	
Alexis Ramirez	95521	
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Esteban L.	95527
JEANNIE	95570
CONNOV	-95301.
Andyl.	95501
Carlos N.	95521
Denceli B.	95573
Desster M.	9592
SINIA De ROOY	93503
Jenny Down S	95500
Casey Kimbro	95521
Klava Hernande	95501

Public Comment

The following public comments
were submitted for the October 24, 2019,
RCEA Board of Directors meeting
on agenda item 5.2 - Long Term
Renewable Energy Solicitation Update



Rio Dell, CA 95562



Redwood Coust to

October 22, 2019

Redwood Coast Energy Association (RCEA)

633 Third Street

Eureka, CA 95501

Dear secretary to the Board of RCEA:

I am unable to attend the very important board meeting scheduled for October 24, 2019 at 1530 hours. It is my hope that you will be able to include this letter in the board's packet for the meeting and read the content to those attending.

There are many reasons that installing up to 60 over 500 ft structures (54 stories high) on Bear River and Monument Ridges an undesirable project in its current form. Anticipated impact to rare and endangered species, impact to historical native American sacred grounds, dayscapes and nightscapes (red/or white lights to be seen 20 miles for aircraft), increased fire hazard with over 26 miles of high voltage overhead transmission lines, timber removal for roads and transmission lines, and forever changing the ambiance of our community with the resulting impact to tourism to name only a few.

It is my hope that RCEA realizes that green power from the grid can be purchased from existing infrastructure. Until all solar and wind sources are fully utilized I see no reason to litter our community with these structures. Potential power generated from the Terra-Gen project would not necessarily stay in our community and from a previous RCEA meeting that I was able to attend I learned that there would not be a cost savings to RCEA.

I read an article dated June 25, 2019 authored by Peter Maloney, "Calif. Sets record for solar, renewable curtailments". The content of this article led me to believe that California is generating more renewable energy than our current grid system can fully utilize. In other words energy sources are growing faster than the infrastructure necessary to process/store it.

Please consider this view in your decision to support or not support this project with our Planning Commission. I think it more prudent for the project to move forward or not on its own merit.

It should be noted that if the Terra-Gen project moves forward on its own merit, I would fully support RCEA's purchase of power from this source as long as the power contract was equal in cost to other renewable energy sources. Fortunately there is plenty of time for this to play out before a commitment needs to be made.

Respectfully,

Beverly Chang



RECEIVED

OCT 2 3 2019

Redwood Coast Energy Authority

Carol Hoopes 2330 Monument Rd. Rio Dell, CA 95562

RCEA Board 633 3rd St. Eureka, CA 95501

October 23, 2019

Dear Chairman and Redwood Coast Energy Board:

These comments are to address Item # 5.2 on your October 24th agenda regarding "Long-Term Renewable Energy Solicitation Update". This is in reference to your "Discuss and provide guidance/authorization for potential RCEA input to the County Planning Commission on the Terra-Gen/Humboldt Wine Energy project".

As officially elected representatives of our communities in Humboldt County, your potential input letter of support for the Humboldt Wind Project without the release of a Final EIR/approval is a premature action by the Redwood Coast Energy Authority. It is also a waste of staff time. As an official and influential entity of Humboldt, it is imperative to refrain from support until a project is approved. It is inappropriate to make site specific support of projects such as Terra-Gen's Conditional Use Permit application prior to approval.

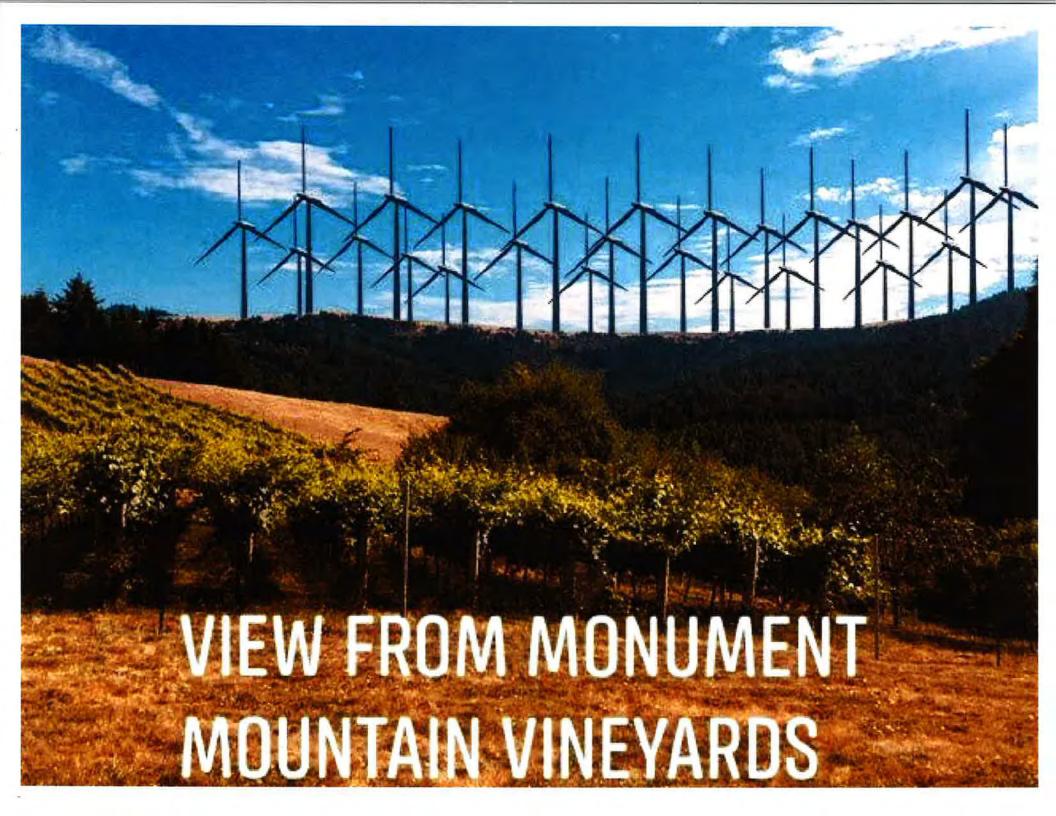
Terra-Gen has offered this RCEA Board in a public meeting last Fall 2018 a scholarship to be used at the RCEA Board's discretion in exchange for your support of this project. Could this be a conflict of interest?

Since the RCEA Board has also gone on record to initiate a Power Purchase Agreement (PPA) with the Humboldt Wind Project, the RCEA Board has already given potential support of an unapproved conditional use project that will have detrimental effects to TPZ zones and Ag areas of Humboldt County. The purpose of the Final EIR is to mitigate adverse effects to the environment.

Please be fair to the CEQA process in place and refrain from submitting a letter for this site specific project until the Final EIR has been released and the project has been approved.

Regards,

Carol Hoopes



 From:
 David Simpson

 To:
 Lori Taketa

 Subject:
 Windmills

Date: Wednesday, October 23, 2019 4:27:05 PM

Dear Ms. Itaketa,

I was just informed that if I get this letter to you it would be read at the 4:30 RCES Board meeting. Jane Lapiner and I have attended nee of the past 10 UNFCCC climate conferences and play to be in attendance in Chile in December for the next.

One element of climate change discussed in each event has been what is generally lumped under the heading of Geo Engineering. I have been forewarned by many astute observers of climate change worldwide that these projects are exceptionally dangerous and misleading. First, they are all huge projects on a sale that requires enormous output of machines and personnel. Second, they are each extremely capital-intensive requiring cash investments on a level of the largest constructions humans have undertaken. Fourth, they re all very high-tech requiring construction and measuring devices largely incomprehensible to most people. Fourth, they require complex intervention systems for when they malfunction which is often. Fifth, they are very difficult to operate successfully for long consecutive periods of time. Sixth, are well-known to do damage to the natural world around their construction. Seventh, they require regular replacement if they are expected to maintain peak capacity Eighth, their unintended consequences are almost impossible to predict but are usually extensive.

These are a couple of other common denominators but they're a good start at identifying projects we should avoid. Tera Gen's project fits most if not all of these criteria.

Thank you,

David Simpson

From: Ellen E Taylor
To: Lori Taketa

Subject: Email comment letter:

Date: Wednesday, October 23, 2019 1:54:35 PM

Dear RCEA Board,

Thank you for the opportunity to comment on the Terra Gen wind generator project.

I live in the Mattole Valley, one ridge over from where the wind project is to materialize.

We residents therefore share the same ecosystem, and we have been trying to assist its

recovery for the past 40 years.

I am Chairperson for the Lost Coast League, which unanimously opposes this project. The sacrifice is

just too great. It heavily impacts habitat due to the nature and industrial scale of the construction.

Habitat in the region has already dwindled due to human activities, such that threatened and endangered species, even those supposedly protected by the ESA, are on the verge of extinction. Even a tiny incremental cumulative impact at this point abuses the public trust.

In the context of climate breakdown: over 900 acres of forest will be destroyed in the development of this

project. This is a naturally forested area, and could grow very large trees. As you may know, the doug firs and redwoods of the northern temperate rain forests can sequester carbon at 2.5 times the rate of the tropical rain forests. Except for the few giant trees which are protected, our forests have never been allowed to grow back to a size where they can achieve their full carbon-sequestering potential. They are harvested at 60 years or so although they can live well over a thousand years.

If our motive in developing alternative energy is to assure our children's and grandchildren's safety,

to destroy these live generators of healthy air quality is seriously misguided. They do not have a short lifespan, as do the planned structures.

We are a natural-resource-rich county. If we take pride in that, it will help us not to panic and become just another example of the shock doctrine.

Very Truly Yours,

Ellen Taylor, Chairperson, Lost Coast League PO Box 60, Petrolia California 95558 629 3500 From:

Sent: Wednesday, October 23, 2019 11:52 AM

To: Lori Taketa

Subject: Public Comment Hum Wind

Follow Up Flag: Follow up Flag Status: Flagged

Dear RCEA Board:

Please accept my public comment electronically.

I am a retired University professor and author of the book "Frogs, Inside their Remarkable World" from Firefly Press. I wrote a natural history column for twenty years. I retired to Humboldt County particularly to live in an area which is relatively undisturbed by corporate enterprise and full of natural beauty. I have spent a lifetime advocating for nature, with my students, colleagues, in person and in writing.

I have many reasons for not supporting the proposed Bear River Ridge/Monument Ridge TerraGen Humboldt Wind Energy project. I recommend that RCEA also consider not supporting it for the following major reasons.

In the TerraGen DEIR, there were 26 places where they had no way to mitigate for significant impacts. They did not mention the permanent disruption to areas adjacent to Redwood Parks. They did point out their planned lack of compliance with current Habitat Conservation Plans and Timber Harvest Plans, the Headwaters Forest Agreement, the Williamson Act and other documents created by joint efforts of stakeholders and the government over a long period of time. There were an additional 34 plans and documents required by the CEQA process which were omitted from the DEIR.

At no place in the document did they specify the exact equipment to be installed, but stated it could be up to 600 feet tall - the height of the Golden Gate Bridge. This would put the exact center of the rotational energy and air disturbance at the height of the tallest redwoods - 300 feet. There are images of turbines in fog https://physics.stackexchange.com/questions/13387/what-does-the-quantification-of-causes-and-effect-look-like-for-clouds-in-offsh which clearly show the turbulance. This wind whipping happens all the time - we can only visually see it with fog. Radar can see it all the time. NOAA requests that turbine farms be situated more than 30 miles away from Doppler facilities (https://www.weather.gov/mkx/windfarm). This project is within 30-miles of the Ferndale Doppler facility.

Relatively undisturbed grasslands and timber sequester more carbon than any industrial project ever will. Bugs, birds and bats will all be negatively affected by this project. Redwood tops will be dried out by the turbulence created by the aptly named turbines. Fields Landing will be disrupted for up to six months. The route 101 corridor

will be affected for about a year initially, and again any time anything needs to be replaced. Hundreds of man trips and truck trips will occur on ridges which now may be visited a few times a year. This is serious disturbance, and should not be decided upon lightly.

Having recognized these problems, disruptions and disturbances, I was cheered to read that RCEA is aware of the difference in disturbance between onshore and offshore wind.

I would like to read into this record what Matthew Marshall, the executive director of RCEA, was quoted by the Mad River Union as saying at a Eureka meeting recently "The offshore turbines are very big - unlike on land, you don't have the constraint of moving things around by truck... So the scale of these is much larger, and with fewer turbines there is more efficiency and reduced costs." He added that the tip of the blades would reach about the height of the Golden Gate Bridge being at the 600-foot-tall range.

Since we as a county are actively working with RCEA and our elected officials for offshore wind, and since the executive director of RCEA states unequivocally that offshore turbines are more efficient and produce power at reduced costs, I feel that there is no reason to approve the TerraGen terrestrial project with its associated disruptions since the offshore project will produce the same or more power than the onshore project. There is only so much transmission electron flow availability in Humboldt. One project could preclude the other due to grid saturation. It would be wise to "take the path of least resistance," utter a great and mighty "Ohm," and let the folks who live here get back on with their lives.

Thank you.
Sincerely,
Ellin Beltz

From:
To:
Lori Taketa

Subject: Terra Gen industrial wind energy

Date: Wednesday, October 23, 2019 4:47:33 PM

The proposed plan is a waste of time and energy. Literally. The carbon footprint to build and transmit makes this a losing proposition because by the time it delivers power, offshore instillations will vastly overcompensate for renewable power. This without fragmenting the rare biodiversity found on Monument Ridge. Solar powered micro grids are a far better source and far more resilient supply of power at this time. Thanks, Howard Russell Eureka.

Sent from my iPad

Siskiyou Land Conservancy

RCEA Board 633 3rd St Eureka CA 95501

Oct 23, 2019

RE: Agenda 5.2 and 6.1 of your agenda

Dear Ms. Taketa,

I.

Sec 5.2: Based on the arguments below, the fact that a CUP has not been approved, and your conflict of interest based both on your premature PPA with TerraGen as well as a proffered scholarship offered from TerraGen to RCEA, I suggest there be no further premature and potentially illegal advocacy of this project before TerraGen's proposed permit has been finalized.

If anything, RCEA would do justice to our community by objecting to the un-mitigable fragmentation and hydro-meteorological impacts to a biodiversity hotspot, and adding insult to injury to the Wiyot Tribe, which has suffered unspeakable horrors, as powerfully articulated in the Wiyot submission to the TerraGen DEIR: "Should this development and desecration of *Tsakiyuwit* proceed, it would seem to reinforce the colonial domination and genocide associated with these persons and their atrocities, and serve as a constant reminder to Wiyots of how their lands were violently taken for the sake of profits by powerful, privileged, and elite euro Americans."

II.

Sec 6.1 of the RCEA agenda relies on "islanding" Humboldt's electricity production and supply, which does not ensure resilience.

Resilient energy production and supply are critical in these times of grid vulnerability, wildfires, and the ever-present threat of disasters and emergencies that cut us off from centralized electricity supplies, and each other.

However, this sole reliance on central utility electricity supply relegates distributed electricity generation to the status of a poor stepchild dependent upon expensive individual projects that lack the economy of scale and the diversity of innovative technological and financial opportunities available.

If RCEA put out the welcome mat to solar entrepreneurs and financiers to solarize our county, and promoted widespread distributed onsite solar minigrids with V2G capability, we could start having secure resilience and owning the systems that generate our power by the time TerraGen would come on-line in 2023, but without the immediate massive GHG emissions associated with TerraGen's construction. These emissions will nullify any advantage before offshore electricity starts in 2025-2030.

Equity ownership is ignored when these solar systems' costs include only cost per kwh; so is the priceless value of secure resilience.

Despite the added renewables to the grid in the US since the Rio Agreement over 30 years ago, electricity usage has outpaced the benefits of these renewables. Utility electricity is therefore not only increasingly expensive over time by comparison, but it's unlimited supply increases electricity use and our carbon footprint, and does nothing to incentivize electric vehicle acquisition.

Distributed solar does both: reduced PGE electricity usage is inherent in local solar systems roughly equal to that produced, and ownership of an electric vehicle and the fuel it requires accelerates the payback time for the solar system. Since transportation accounts for 60% of our local GHG emissions, electrifying our transportation is urgently necessary.

During the recent grid shutdown, the vice-chair of your CAC posted this to FB:

"Redwood Larry Goldberg Zuleika Del Pardo - Do you own or rent? If you're a homeowner, I can help you get financing that would bring monthly payments equal to or just slightly more than what you're paying to PG&E now. Message me and we can talk offline."

And Matthew Marshall's brother at Schatz installed a "nano-grid" at his home to utilize his EV battery to supply electricity to his home.

These are the sorts of services that RCEA could provide and promote, instead of blind devotion to utility scale onshore wind electricity production, a policy that divides our communities and concentrates our energy wealth in the hands of very few, leaving the rest of us captive and powerless. A solarization policy would have wide general support because it can benefit everyone in many ways, as we, not TerraGen, do our part.

Finally, it is a most arrogant and alarming position to defile these sacred Wiyot sites, which are not just confined to a small area on Bear River Ridge, as documented throughout the Wiyot's comments to TerraGen's DEIR, especially with respect to the prairie grasslands, described as "native perennial grasslands in California are among the most endangered ecosystems in the United States," and "[T]he proposed development of the coastal Prairie complex on *Bear River and Monument Ridges* would severely impact these premier and fleeting examples of this critically endangered habitat, whose origins most likely lie within the cultural burning practices of Wiyot ancestors."

A critical element of the 1992 Rio agreement was to "not to carry out any activities on the lands of indigenous peoples that would cause environmental degradation or that would be culturally inappropriate".

Now is our time to remedy our critical need for resilient energy, and honor and stand with the Wiyot People.

Ken Miller SLC

From: <u>Michael Evenson</u>
To: <u>Lori Taketa</u>

Subject: Terra-Gen is not what we need

Date: Wednesday, October 23, 2019 1:43:04 PM

Dear RCEA,

Thank you for accepting email comments. I cannot be with you today.

Terra-Gen proposal will NOT (by their own EIR) result in reduced GHGs. Do not embrace this project.

If we learned one thing from the Blackout, it's this: Humboldt County needs to use what power it can generate here and not depend on the grid.

But we knew that one. With a history of a rugged embrace of living close to the ground, within our means and independent of the over-developed south, Humboldt pioneered the "off the grid" life decades ago. (Some may say centuries ago).

Let's not fear the next step, and, following in the path laid down by the Blue Lake Rancheria, truly be responsible for our electrical needs. Roof top solar must be organized into decentralized local power grids. PG&E's one-grid-fits-all model is unreliable, vulnerable and requires hugely expensive upgrades and maintenance. Now is the time to transition out of that failing grid into something that reflects our strengths and values.

It is fitting that both Blue Lake and Wiyot people are leading the way. The Mega Wind Farm around Scotia would be a step backward: tearing up the countryside, use herbicides over the clearcut 1000 acres for transmission lines, exporting power and dollars and, with increasing frequency, leaving us powerless.

Michael Evenson

Petrolia, CA 95558

Michael Evenson

Lost Coast Ranch® Petrolia, California
 From:
 Sean DeVries

 To:
 Lori Taketa

 Subject:
 RE: Terragen Wind

Date: Wednesday, October 23, 2019 6:44:38 PM

Please add the following to public comment: [Thank you]

If we build the Terragen Wind project, there will be: decreased property values; county tax increases to pay for upgrades to roads; increases to PG&E rates for substation upgrades to handle the increased loads; and all with no incentives for the community that is being most affected.

The electricity will be going for sale on the grid -- out of the region -- which means that we will not see any benefit to ruining our environment.

The jobs will be temporary construction, most likely governed by outside experts. The 15 jobs boasted to be ongoing are all going to be specialists brought in from other areas, unless they are including janitorial.

The county is being paid \$2 million dollars per year for this intrusion, for the 30 year life of the project.

They are selling out our health, environment, and peace of mind on the cheap.

Thank you,

Sean DeVries

Public Comment

The following public comments
were submitted for the October 24, 2019,
RCEA Board of Directors meeting
on agenda item 6.1 PG&E Public Safety Power Shutoff Event

Public comment submitted on agenda item 6.1 PG&E Public Safety Power Shutoff

Dear RCEA Board

If you were discomforted without PG&E electricity for 24 hours, you should be delighted to know that you have proven, lower cost, choices to avoid such discomfort in the future.

The Blue Lake Rancheria's solar rooftop system clearly demonstrated that achieving energy independence is possible with preparation, allocation of resources, and political commitment. Solar is prudent, available, reliable, cost effective and a good investment.



Rather than prioritizing implementation of widespread solar, Redwood Coast Energy Agency has focused on expensive utility scale onshore wind with dangerous transmission lines through fire prone forests. Only local distributed solar can eliminate the need for incendiary transmission lines thru forests.

Our policy makers need to proactively deploy a variety of appropriate distributed energy strategies including installing translucent solar panel arrays on County buildings, infrastructure, equipment yards & parking lots to realize the resilience so critical to our County during emergencies.



Instead our policy makers and Supervisors are surrendering obscene profits at our expense to TerraGen rather than developing energy independence for us constituents This is not doing our part to alleviate the climate emergency, rather it is conceding to a colonizing global powerhouse whose mission is to increase, not reduce, energy use.

Electricity from biomass and TerraGen costs \$65-50 per Mwatt or over 5 times as much as my rooftop solar, and we would own nothing after decades of payments; yet RCEA has deployed far less than 8 Mwatts of solar in RCEA's 30 Mwatt goal. My solar rooftop generates at a 25 year project cost of less than \$9 per MWatt. Because solar is so cost effective and low impact and because Humboldt County must convert to electric vehicles for transportation to reduce fossil fuel emissions, RCEA's priority goal should be 300 MWatts of solar by 2025--- rather than 30MWatts by who knows when. RCEA, by contracting for unaffordable high cost biomass and wind power, is encouraging grid abandonment.

To the extent that RCEA focuses its resources on Humboldt Wind and biomas RCEA ignores its opportunity to support agriculture by placing bifacial solar panels over fields in Rohnerville, Loleta, Kneeland, and Arcata flats while conducting agriculture beneath.



As we commemorate Indigenous Peoples, and look back in horror at the genocide and ecocide committed by our local founding fathers, we can finally honor the wisdom of the Wiyot Tribe, which opposes TerraGen's industrial wind factory---and **solarize not cannibalize our precious resources.**

Jesse Noell farms in Elk River

Graduating From Blackout School

It's hard to read the PGE blackout story without appreciating this opportunity to learn to solarize our County. The day of the "blackout" was plenty sunny to keep the fridge going with a few solar panels, overnighting to the next day.

Those few with solar panels and batteries were fine, often powering one or two critical circuits. We realized that minisolar grids could serve multiple dwellings and neighborhoods, sharing energy. At least one techie with an electric vehicle lit his home with his car battery.

Social media flooded us with advice, with one solar expert offering to finance rooftop solar for the cost of a PGE bill.

We learned the crucial distinction between centralized and distributed power generation, the former coming from the grid, the latter originating close to where it is used. And we learned that over-reliance on the grid and its incendiary transmission lines, even if our local production were "islanded," leaves us vulnerable, especially in real emergencies that cut us off from services and each other. TerraGen's wind factory would not have helped.

Mad River Hospital's diesel generators consumed 10 gal/hr pumping 220 lbs CO2 per hr into our climate emergency. Multiply that by the 100 generators sold out in one day at one store, and 100x that around the county, add in all the greenhouse gasses (GHGs) from drilling, refining and barging those fossil fuels, and you have a recipe for climate suicide.

With distributed solar, we can reduce our energy consumption and GHG emissions, have secure resilience during emergencies, fuel electric vehicles affordably, and own our mini-solar systems over time. It's the best way *for us* to do our part for the climate emergency. Now that we are smarter, do we have the political will?

Ken Miller

McK 95519