Public Comment

Received
at November 12, 2019
RCEA Community
Advisory Committee
Special Meeting

November 12, 2019

Matty Tittman, RCEA CAC Chair and Members of RCEA CAC

RE: RePower Humboldt (CAPE 2019 Update)

As a RCEA CCE ratepayer, I attended two CAPE 2019 workshops held in Eureka. At the first workshop the overwhelming majority of attendees were against biomass energy, as am I. The CAPE 2019 written following this workshop contains even more reliance on biomass. I strongly urge the RCEA CAC to reject continuing and increasing use of biomass for the following reasons:

1. Biomass is not clean; it is more polluting than coal or natural gas;
2. It is much more expensive than other clean, renewable energy sources (solar, wind, geothermal, small hydro);
3. The Scotia and Fairhaven biomass plants are old and more polluting than newer plants and the for-profit corporate owners will not spend the money to clean the combustion output;
4. The Scotia plant is close to an elementary school and children are more susceptible to air pollution;
5. Our ratepayer money is a welfare check to Humboldt Sawmill Corporation (Humboldt Redwood Corporation) and EWP Renewable Corporation (parent company based in South Korea); mill waste and timber harvest slash can be disposed of in ways that slow the release of carbon into the atmosphere compared to burning 24/7;
6. The extra ratepayer money that goes to biomass could go toward developing more energy storage and solar micro-grids which we sorely need to reduce impacts of PG&E's PSPS practice.

As a REA CCE ratepayer, I want to be able to choose an energy mix that does not contain biomass – but I'm stuck with 23% or 12% biomass. The state-wide power mix is only 2% biomass. I don't want to give more money to PG&E, but this for-profit corporation does offer a 100% solar choice. The down side to this choice is money leaves our area into the pockets of investors and the CEO. I am also a CCE ratepayer for MCE based in Marin County and I have 3 choices: 100% local solar or 50% wind + 50% solar or a mix that contains only 4% biomass. Why doesn't RCEA offer a 0% biomass choice? Fear of displeasing power players in the local timber industry?

Thank you for considering my comments.

Diane Ryerson
[redacted]
Arcata, CA 95521

From:	Information
To:	Dwight Winegar; Information
Cc:	Lori Taketa
Subject:	RE: Comments to the RCEA-COC and Organization
Date:	Monday, November 18, 2019 11:21:35 AM

Hello Dwight,
We will include your comments, our apologies for the delay in responding. We have been talking about the issues you brought up, so stayed tuned for updates to these ideas.

Also, the easiest link to RePower is from the front page "Quick Links" section, the first line.
https://redwoodenergy.org/

Thank you for your contribution,
Nancy

Nancy Stephenson
Community Strategies Manager | Redwood Coast Energy Authority
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From: Dwight Winegar [redacted]
Sent: Tuesday, November 12, 2019 3:28 PM
To: Information <info@redwoodenergy.org>
Subject: Comments to the RCEA-COC and Organization

Since I'm just getting ready to leave for work doing swing shift this evening, I will not be able to attend tonight's big meeting, otherwise I'd love to be there and present input comments and questions in person.

Therefore I'm sending you those thoughts now at this time by way of eMail.

1) I want to know about why we could not (or if CAN - "how?") become a rate-payer "Energy Co-op", like Coos-Curry Electric Coop serving those two counties north of us. 2) If the discussion is for a county-wide "micro-grid" what then about "sub-micro-grids" such as City of Arcata (like Sebastopol) through the same infrastructure as their Water/Sewer? 3) IF WE become our own "micro-grid" how would we interface with the regional grid for being "supplementary" in backup receiving or giving? 4) What does the CPUC have to say about all of this? Yeah, I know - BIG questions.

And just today after reading the item on Lost Coast Outpost, but not finding the link for "RePower Humboldt" on the RCEA Website, I'd also like to know where we are with an update of that whole study, recommendations and comment period - so end of 2019 Follow-Up for that idea of a Sustainable (need we say "Resilient") "Strategic Plan for Renewable Energy Security and Prosperity."

Dwight Winegar
[redacted]

Nov 12, 2019

RCEA CAC

Re: CAPE 2019

I'm opposed to any contract extensions with the 2 biomass plants. The energy is too expensive. The US Energy Information Agency shows an NP15 (NorCal) wholesale hub price of between$ $ 4O to $50 in August.
I requested The Energy Authority price for non-biomass energy from RCEA and I was denied the information because of contracting issues. That is the reason for a summary total.
HSC will receive 3 Percent increased next year followed by cost of living increases. After 10 years with normal inflation the fee could be around 75.00 per MWh. When I compare past payments to net energy generated it appears that at least in several months RCEA is taking all the energy output.
I don't think that this leads to competitive bidding . Who contracts for 30 year old machines at a premium price. There is a claim of spending millions in upgrades. Actually the rate payer is paying for that. Let the Energy market decide.
Long terms contracts should follow the lowest price, most efficient or truly cleanest. These contracts are anything but that. We would loose the opportunity cost for a greater financial reserve, or for aiding the truly needy or adding new technology when you spent too much.
The rates are the same for both plants. How can that be ; the distance from the Scotia mill to the plant is a few hundred yards but Fairhaven is miles from the nearest sawmill.
These plants are an inefficient source of power; however, they are a great source of revenue while forcing rate payers to supplement the revenue of a privately heard company in one case. The other plants' parent company is EWP a South Korea energy conglomerate whose US holding includes EWP Renewable Corp..It owned 3 power plants in Ca. They are Fairhaven 16 MW and 2 Natural Gas plants totally 98MW.
PG&E 's 100% solar is looking good!

Walt Paniak
Arcata

To: Redwood Coast Energy Authority Community Advisory Committee

From: Daniel Chandler, Ph.D.

Subject: Getting empirical about biomass greenhouse gas emissions

On October 24th I presented the Redwood Coast Energy Authority Board two facts and two suggested actions. Today I would like to discuss the idea of carbon neutrality, a different so-called "fact," but the suggested actions will be the same as proposed to the Board but with added detail.

Current California law assumes that burning biomass for electric power is carbon neutral. The law exempts biomass from cap and trade restrictions. And it incentivizes burning dead and dying trees from high hazard fire zones. In the face of a climate crisis, is assuming biomass to be carbon neutral reasonable? And should RCEA's projections be based on this assumption?

From a theoretical perspective it is true that unlike fossil fuels, which add carbon to the atmosphere that was previously buried, using forest products for energy maintains a steady state, or as UC Extension's Yana Valachovich would say, a "closed system" as long as the forest is managed for sustainability. However, in the past few years misuses of these ideas have gotten so common that scientists have started calling them "myths."[1] Instead scientists are reframing the goal and method as investigating the "net climate change effects of bioenergy, assessed in the specific context where bioenergy policies are developed and bioenergy is produced."[2]

The idea of "carbon neutrality" is dependent on at least two questionable assumptions.

Look first at the assumption that forests will be managed for sustainability.

a. In the midst of the climate crisis, we are losing forests and their capacity to sequester CO_2. World Bank data show world forest cover as a percent of all land decreased from 31.6% in 1990 to 30.7% in 2015. https://data.worldbank.org/indicator/AG.LND.FRST.ZS[3] Thus there is approximately 3% less forest cover than 35 years ago.
b. Also, we don't know that California forests will be sustainable long term in the face of fire.[4]

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[1] Ter-Mikaelian, Michael T., Stephen J. Colombo, and Jiaxin Chen. "The Burning Question: Does Forest Bioenergy Reduce Carbon Emissions? A Review of Common Misconceptions about Forest Carbon Accounting." Journal of Forestry 113, no. 1 (2015): 57–68. https://doi.org/10.5849/jof.14-016.

[2] Göran Berndes, Bob Abt, Antti Asikainen, Annette Cowie, Virginia Dale, Gustaf Egnell, Marcus Lindner, Luisa Marelli, David Paré, Kim Pingoud and Sonia Yeh. 2016. Forest biomass, carbon neutrality and climate change mitigation. From Science to Policy 3. European Forest Institute. "Forest carbon neutrality is an ambiguous concept and its debate distracts from the broader and much more important question: how European forests and the associated industries can contribute to climate change mitigation while serving many other functions. Rather than debating the carbon neutrality of bioenergy, we should be concerned with the net climate change effects of bioenergy, assessed in the specific context where bioenergy policies are developed and bioenergy is produced."

[3] The November 5th report by over 11,238 scientists lists loss of tree cover world-wide as the third largest effect of human activity. (WJ Ripple, et al., World Scientists' Warning of a Climate Emergency, Bioscience, 2019.) During 2018 it amounted to a global tree cover loss of 24.8 million hectares, or 61.3 million acres. Contained in the data supplement from https://academic.oup.com/journals/pages/open_access/funder_policies/chorus/standard_publication_model

[4] Op cit, Berndes. "Events such as storms, insect infestations and fires can cause forest damage and losses of some of the carbon that was sequestered into forests as compensation for GHG emissions, which can further hamper the fulfillment of longer-term objectives." https://www.efi.int/sites/default/files/files/publication-

> Second, the carbon neutrality assumption *presumes* the current land use of logging for wood products with electricity from mill waste as a byproduct. But compared to the year 1800, we have already lost an immense amount of forest capacity to store carbon. Compared, to the "baseline" alternative use of growing forests as a carbon sink, lumber plus burned mill waste hastens rather than slows global warming.[5]

Current power plants burn mill waste, but there is nothing in the RCEA draft CAPE plan that requires bioenergy to come from "waste." Other options are even less likely to be anything close to neutral.

> 1) There is currently a good deal of debate among foresters and biologists about the role of dead and dying trees in fire prevention and doubt about the value of logging them. But there are no agreed upon standards for when going beyond utilizing mill waste could become a racket, as it has in Europe and in US southern states.[6]
>
> 2) If whole trees, "thinnings" for example, are burned the "payback" period for carbon sequestration is 100 to 200 years in some models.[7] So we put carbon into the air immediately and wait until 2120 or later to have sequestered it again.
>
> 3) Even the immediate burning of "forest residues" for energy, instead of gradual decomposition if left in the forest, can have a large greenhouse gas effect.[8]

Considering these "biomass" alternatives, the CAPE plan should specify mill waste, not "biomass."

The UN and Project Drawdown, among others, assume that bioenergy will be a transitional source of power. At this point, in Humboldt it seems likely that wind power will make it possible to drop or greatly minimize biomass power in a few years. Continuing with biomass electricity when wind or solar is possible would be counter-productive. *The CAPE plan should make it explicit that if and when Humboldt County's local power generation needs can be met by solar and wind power biomass will be phased out.*

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bank/2018/efi_fstp_3_2016.pdf; The WJ Ripple report in footnote 3 states that between 1985 and 2015 loss of forest to fires increased on average by 44.1% each decade in the United States.

[5] "The basic error in the carbon neutrality of biomass assumption is the failure to count the production and use of biomass that land would generate if not used for bioenergy (the counterfactual)." Helmut Haberl, et al., Correcting a fundamental error in greenhouse gas accounting related to bioenergy, Energy Policy. 2012 Jun; 45-222(5): 18–23. And forest used for conservation sequesters much more carbon than forest used for wood products: Keith H, Lindenmayer D, Macintosh A, Mackey B (2015) Under What Circumstances Do Wood Products from Native Forests Benefit Climate Change Mitigation? PLoS ONE 10(10): e0139640. doi:10.1371/journal.pone.0139640

[6] In Britain and Europe a flaw in the UN carbon accounting has permitted coal plants to substitute wood chips, altogether dirtier than coal, and claim *no* emissions.

[7] Zanchi, G. , Pena, N. and Bird, N. (2012), Is woody bioenergy carbon neutral? A comparative assessment of emissions from consumption of woody bioenergy and fossil fuel. Glob. Change Biol. Bioenergy, 4: 761-772. doi:10.1111/j.1757-1707.2011.01149.x

8 Anna Repo, Mikko Tuomiand Jari Liski, Indirect carbon dioxide emissions from producing bioenergy from forest harvest residues. GCB Bioenergy (2011)3, 107–115, doi: 10.1111/j.1757-1707.2010.01065.x

ORAL COMMENTS (IN BOLD)

Most biologists now recognize that "The extent to which the CO2 emitted from bioenergy use is balanced by CO2 uptake is an empirical question."[9] The method used to answer this question in any given situation is Life Cycle Assessment, which accounts for all carbon in a set of alternatives "cradle to grave."

a. **LCA can compare alternative uses of mill waste (or other biomass used for electrical power)[10] in terms of greenhouse gas emissions and other results (like health). What reduces greenhouse gas emissions most? Burning, recycling, composting, etc? We need to know and move in that direction.**
b. **LCA also looks at different time frames for calculating payback, including the all-important next ten to 30 years. If payback occurs after 2050 it will not help with keeping global temperatures within a 1.5 to 2.0 degrees centigrade increase**[11]
c. An LCA study can look at different analytic boundaries, ranging from two biopower plants in Humboldt to the over 25 plants in California
d. And **LCA analysis can take into account efficiency.** Even with some recent updates, equipment used in the power plants in Humboldt emit both more greenhouse gases and more dangerous particulates (less than 2.5microns) than if more modern equipment were used. **Efficiency of biomass power plants has been shown to be a major controllable determinant of greenhouse gas emissions.**[12]

In short, RCEA policy for the future should not be based on the over-simplified biological assumption that biomass energy is carbon neutral. In the midst of a climate crisis, we should not presume what we can actually discover. Urge the RCEA Board to fund a Life Cycle Assessment of biomass power and its alternatives. And advocate that in the meantime we hold off on commitments for biomass beyond 2025.

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[9]Opinion: Reconsidering bioenergy given the urgency of climate protection, John M. DeCicco and William H. Schlesinger, PNAS September 25, 2018 115 (39) 9642-9645 "The assumption that bioenergy is inherently carbon-neutral, which is based on static forms of carbon accounting, is a major error. Viewed objectively, it is quite a sweeping assumption: It asserts that a carbon flow into the atmosphere at one place and time (from bioenergy combustion) is automatically and fully offset by carbon uptake at another place and time (on ecologically productive land). Scientifically speaking, there is neither a sound basis nor a need to make this assumption."

[10]A 2017 British study summarizes the range of options if one looks at alternative uses: "[This] report suggests only biomass energy with the shortest carbon payback periods should be eligible for financial and regulatory support. The feedstocks which are most likely to reduce net carbon emissions would be primarily mill residues and post-consumer waste... Overall, while some instances of biomass energy use may result in lower life-cycle emissions than fossil fuels, in most circumstances, comparing technologies of similar ages, the use of woody biomass for energy will release higher levels of emissions than coal and considerably higher levels than gas. *However, even for waste feedstocks, it is still important to consider whether they could have been used for other, lower carbon purposes. For instance, mill residues can also be used for wood products, which would keep the carbon trapped in materials, such as particleboard, for several decades more than if it is released into the atmosphere through burning it."* https://www.carbonbrief.org/biomass-subsidies-not-fit-for-purpose-chatham-house

[11] DeCicco, J. and Schlesinger, W., Reconsidering bioenergy given the urgency of climate protection, Proceedings of the National Academy of Sciences, September 25, 2018, vol. 115 ,no. 39, 9642–9645 . "All currently commercial forms of bioenergy require land and risk carbon debts that last decades into the future. Given the urgency of the climate problem, it is puzzling why some parties find these excess near-term CO2 emissions acceptable."

[12] "The thermal efficiency of the plant has the greatest influence on LCA [estimates of GHG] results at the plant..." is the conclusion from a meta-analysis of generating power from forest refuse including sawmill waste by Electric Power Research Institute, Literature Review and Sensitivity Analysis of Biopower Life-Cycle Assessments and Greenhouse Gas Emission, 2013, Palo Alto. Also see F. Sebastián, J. Royo, M. Gómez,Cofiring versus biomass-fired power plants: GHG (Greenhouse Gases) emissions savings comparison by means of LCA (Life Cycle Assessment) methodology, Energy,Volume 36, Issue 4,2011,Pages 2029-2037, ISSN 0360-5442,https://doi.org/10.1016/j.energy.2010.06.003

And as noted earlier: ***the CAPE plan should specify mill waste, not "biomass." And it should make explicit that if and when Humboldt County's local electrical power generation needs can be met by solar and wind power and conservation, biomass will be phased out.***

Note: Copies of all articles cited are available from Daniel Chandler at [redacted]