

State of California
California Energy Commission

DOCKET

08-AFC-12

DATE DEC 08 2009

RECD DEC 08 2009

Re: Solar 1 & 2 AFC

Docket Number 08-AFC-12

Status Report

December 8, 2009

Association of Irrigated Residents
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In AIR's last status report we asked the following questions which are copied at the end of this status report. We did not make these questions into a formal data request because we were a couple days late in submitting them. We note at this time that the applicant has not bothered to answer any of these questions. We still feel these questions need to be answered and with or without input from the applicant AIR will soon provide answers to most of these questions in order to help the Commission make their decision on this project.

We continue to feel this project is not feasible in terms of the biomass incineration. Mainly, the associated air pollution from the biomass incineration and the trucking of the biomass and ash cannot be properly and fully mitigated and will therefore, certainly worsen the air quality of the southern part of the San Joaquin Valley.

Since the electricity for this project is being defined as "renewable" and since electricity will play a major role in the Low Carbon Fuel Standard under AB 32, it seems reasonable that a full cycle analysis of how the energy is derived in this project be performed. There is little to consider with the solar trough technology except perhaps the energy for pumping the water. But, the biomass cycle has many areas of intensive energy inputs which need to be analyzed and fully accounted. The state cannot afford to approve renewable energy projects that purport to be 100% renewable but are realistically only 50% renewable or less. This goes against the rules for the LCFS which apply in this case.

In a similar vein, it behooves the Energy Commission to look at alternative uses of the biomass which also involve renewable energy and energy efficiency that may reduce more green house gases than what is supposed with this project.

Nearly every ounce of the biomass which will be incinerated by this project can also be returned to the soil as a wood chip mulch, where ground cover would be useful, or composted for direct application to growing crops. This is done already with much of the pruning from orchards because of the ban on burning and it is incorrect for this project to assume that biomass from orchard pruning is readily available to them. Even the tremendous amount of wood chips available from orchard removal may be composted, especially with the tremendous amounts of cow manure available locally, and returned to the soil.

This is not rocket science to realize the possibility of tremendous amounts of carbon that can be added to local soils instead of being incinerated. This gives a far more beneficial green house gas reduction and must be considered as the environmentally preferred scenario when looking at renewable energy.

The return of all biomass to the soil should be mandated and incentives provided instead of approval of more biomass incinerators as a short term solution to the renewable energy mandates. Without returning this biomass to the soil, more fossil fuel based fertilizer must be used. It also must be considered that when soil receives organic matter in larger

quantities the quality and quantity of production increases which is also an energy savings, including the need for less water per unit of production. All of these are energy savings that show a better return than massive trucking and then one-time incineration give us. Now is the time to look seriously at these issues.

A lot of the landfill waste such as the demolition timber and used pallets which will be burned by this project can also be recycled into timber projects. The added benefit of jobs from recycling, and the energy efficiency plus the trees not harvested because of the recycling should be analyzed and compared to the realistic renewable energy benefits of this project.

AIR intends to prove, beyond a reasonable doubt, that the energy savings and green house gas reductions from returning the biomass to the soil, and the recycling of wood waste products, are greater than the associated renewable energy aspects of this project where the biomass and wood waste is incinerated. It will be interesting to see what the Commission does with this information.

Air pollution from the trucking and biomass incineration cannot be ignored. Of course, this project will insist that the air pollution is all being mitigated. But, even if this were true (which it is not because much of the mitigation is in the form of irrelevant and illegal emission reduction credits) how can we approve energy projects that pollute so much in this heavily polluted region? This project will put more particulates into the air than a coal burning power plant per unit of energy produced. The San Joaquin Valley can do without that added pollution. AB 32 demands that renewable energy projects not harm the environment. This project goes directly against that mandate. It is also an environmental justice issue to add this much pollution to such an economically disadvantaged area.

Here are the questions submitted with AIR's previous status report.

General Questions on biomass:

1. What is the moisture content of the biomass?
2. What is the total mass of the trucked biomass if the bone dry mass is estimated at 450,000 tons per year?
3. The moisture in the biomass represents how many acre-feet of water?
4. What is the total energy required to transport the biomass?
5. What energy is required to remove moisture from the biomass during or before incineration?
6. Where does the steam or evaporated water from the biomass combustion end up?

7. What is the comparative energy value of the biomass as compost (which can be returned to the soil thus decreasing fertilizer and water use) when compared to the energy produced from combustion minus the energy used in transporting the biomass, removing the moisture, and removing the ash?
8. Is it not true that the San Joaquin Valley produces thousands of tons of manure from its millions of cows and that this manure could be mixed with the biomass proposed for this project and produce an excellent compost which, when applied to agricultural soils, would replace huge amounts of imported fossil fuel based fertilizer and decrease massive amounts of fossil fuel based electricity used for pumping water and finally, store thousands of tons of carbon in these soils instead of releasing CO₂ and methane into the atmosphere?

Questions on Alternatives:

Background: One viable alternative is to compost the large majority of the biomass with cow manure and return the carbon and nutrients in the wood chips to the soil. An energy value for the value of this compost in the soil needs to be calculated. The amount of soil CO₂ sequestration from the application of this compost also needs to be estimated. It could be that this form of renewable energy is more valuable than the proposed incineration in light of the amount of CO₂ that is actually sequestered compared to it being released into the atmosphere. This alternative use of the biomass has to be adequately compared to the project proposal of trucking the biomass to the plant and incinerating it, thus releasing immediately the CO₂ and the nutrients into the air or into the ash.

9. What are the energy values, as described above, on the composting as an alternative use of the biomass?
10. How much energy will be in the heat supplied to the prison hospital?
11. Will this be 100% of the heating needs for the hospital?
12. Are there other nearby facilities or residents (like in Coalinga) who could benefit from this heat?
13. Is a contract in place to sell this heat or is it speculation?
14. Since the solar troughs, which occupy the vast majority of the acreage, are elevated off the ground, what is the problem with taking nearby land that is not cultivated and doing some simple mitigation for native species?
15. Is this the only reason for destroying hundreds of acres of farmland where the native species have supposedly already been destroyed?

Background: The HRFC alternative site is feral land. Feral land should be significantly easier to mitigate for native species than unplowed land.

16. Why is this land really not viable as an alternative? The topography does not seem any more sloping than the proposed site.
17. Cannot the solar troughs be arranged on sloping soil?
18. Is it the stink, dust, and flies of the feedlot which really make this site unviable?
19. Is it the health effects on cows from the air pollution from the biomass incineration that makes this site not viable?
20. Any excess biomass could easily be composted with the nearby mountains of cow manure, so isn't that an advantage for this site?
21. Does the project not consider the mountains of manure a potential biomass source for incineration?
22. How much further would the transmission lines need to go with the HRFC site? There seem to be high powered transmission lines already on the site.

Concerning the alternative fuel and incineration technologies:

23. Why would coal or pet coke ever be mentioned as an alternative since it is such a dirty fossil fuel?
24. The follow-up question is why is natural gas not a viable alternative since the biomass incineration proposal will pollute the air far more than either a natural gas or a coal fired plant?
25. Since the efficiency is estimated for different alternative technologies we need to see the efficiency of the proposed biomass incineration?

In the water alternatives discussion, the project claims the local groundwater to be used is brackish.

26. This seems to imply it has no use as irrigation water but is that also the assumption elsewhere in the AFC?
27. Is this same groundwater used for irrigation of crops currently?
28. The Coalinga waste water is definitely used for growing crops currently. How will that crop loss be mitigated?

29. Since water is such a valuable commodity in the SJV, what value is placed on these sources of water when considering the economic cost of air cooling and the consequent dramatic decrease in water use?
30. Should not the price Los Angeles or other Southern California municipalities are currently paying for agricultural water contracts be considered in the analysis?
31. In can be estimated how many acre-feet of water are in the biomass. Most of this water would be returned to the soil if the biomass is composted. Should not the moisture in the biomass, estimated at 30 to 40 %, be considered in the alternatives somewhere?
32. How big is the evaporation pond and how many gallons will be evaporated out of this pond annually?
33. What are the potential air emissions, such as VOC's, from the evaporation of this water?
34. Is there any mitigation for lost farmland or lost ag water proposed with this project? What is that mitigation?
35. Why is it not an alternative to go with solar mirrors and natural gas in a hybrid plant of this sort and then get renewable energy for 50% of the energy produced?

This kind of biomass incineration has been proposed to the PUC for a conversion of a coal/pet-coke incinerator in Stockton to one that is 50% biomass. They are asking for recognition that 50% (false assumption and bad idea) of their energy will be renewable energy.

36. Why can't this project produce up to 50 MW of renewable energy and use relatively clean natural gas for the other 50%?
37. Explain why the pollution from this project is not giving renewable energy a bad name? Stockton is a very bad example of a renewable energy proposal but it is current example of a 50% renewable, 50% fossil fuel proposal.
38. Is not an alternative analysis necessary to see why this kind of mixture of fossil fuel and renewable solar is not viable (reference previous question)?
39. Why is it an absolute requirement of this project that it appear to be 100% renewable?
40. Doesn't the trucking of the biomass and ash at least call for an analysis of the fossil fuel energy being used which must be deleted from the total energy produced by the plant?

41. Does not the massive trucking of the biomass automatically make this project not 100% renewable energy?
42. After an analysis of the fossil fuel energy in trucking the biomass is there not also a requirement to analyze the fossil fuel energy saved by composting the biomass and returning it to the soil in the areas of water and fertilizer saved plus the additional benefit of more carbon being stored in the soil?
43. Do the proposed partial conversion of the Stockton power plant to biomass and the complete conversion of Mt Pose Cogen to biomass affect the proposed availability of biomass to this project?

Concerning Technical area-alternatives page ALT-1 of AFC

Quote: "In summary, due to the lower energy efficiency, increased equipment and operating cost, and undetermined redesign required by air cooling, this alternative was eliminated."

When analyzing air cooling vs. wet cooling, there also needs to be an analysis done which compares the different amounts of water used with the different systems and how that relates to the increased equipment and operating cost.

44. Does air cooling save significant amounts of water and, if so, how much water?

Water should be valued appropriately at a minimum \$200 or \$300 per acre foot in order to properly incentivize and minimize excessive water use when comparing the cost of the equipment that and the cost of the lowered efficiency.

It also seems logical that water should be valued at the average rate that Los Angeles metropolitan water suppliers are paying for water when they purchase it from water districts in the San Joaquin Valley.

45. What would be the value of the water saved if air cooling were implemented?
46. Would the value of the water saved make up for the lower energy efficiency and higher cost of air cooling such as was done with the proposed Avenal natural gas plant 10 miles to the south?

Concerning Air emissions

47. How do the criteria air emissions from this plant, per megawatt produced, compare to a plant like the proposed Avenal Energy natural gas plant a few miles away? Please include in the comparison all mobile emissions.
48. How do the criteria air emissions from this plant, per megawatt produced, compare to a coal and pet coke burning plant such as any one of the three cogeneration plants in Kern County?

Background: The San Joaquin Valley, from Stockton to Arvin, has the worst air in the nation according to many measurements. The cost of this poor air in health problems affecting work and school attendance, in premature death, in health care costs, in crop losses, and in many other areas is over \$10 billion per year in this valley. Projects that will add to this air pollution should not be allowed in this situation.

One pollution category is of particular concern and that is PM 10 and PM 2.5. The PM 2.5 wintertime readings in Bakersfield have been gradually getting worse the past 6 or 7 years. This fact shows the plan to clean the air down to federal standards is not succeeding. In this situation it is not advisable by EPA to use emission reduction credits for emissions causing this problem. It is hoped the project will find direct ways to mitigate all direct and indirect PM 2.5 causing emissions. These would include NO_x, SO_x, ammonia, and directly emitted PM 2.5. It is also hoped that there will be no trading of SO_x etc's for PM 10 emissions for which there is no correlation. The ratio of 1:1 trading is also something to not be allowed. Finally, all mobile emissions must be fully mitigated.

49. Would it not be more conservative to use the worst readings available at different San Joaquin Valley monitoring stations instead of the stations that are closest, but not very close, to this project?
50. Why would the analysis not use Arvin for background ozone levels since the emissions of this plant almost certainly end up in the Arvin area making their ozone levels worse?
51. Why would the analysis not use Bakersfield at California and Stockdale for background PM 2.5 levels since it is downwind of the facility site?
52. Why would the analysis not use Corcoran for background PM 10 levels?
53. Why does the project not have to generally use the worst criteria air emission values found from any monitor south or southeast of the project since that is the direction of the pollution drift from this project?
54. When traveling by the Delano Covanta biomass incinerator the traveler on Hwy 99 often experiences retching, choking gulps of particulate laden air especially during nights and when there is a high pressure system of the San Joaquin Valley. How will this similar plant be any different for the residents at the State Hospital and at the prison?
55. We already have air quality rules in the SJV either phasing out or already forbidding the burning of biomass in the fields. This forces the farmer to return a lot of this biomass to the soil as is being done with the direct chipping of prunings and clippings right onto the soil between the rows of trees. Won't projects like this encourage farmers not to return the biomass to the soil where it saves fertilizer, pesticides, and water, and stores carbon in the soil instead of in the air?

56. The biomass incinerator of this plant will emit more CO₂ and more particulate matter and more total tons of criteria air emissions than a coal fired plant per unit of energy produced. Does not this fact require that an alternative analysis of other uses for the biomass be considered before this plant is declared as clean or renewable energy?

Unfortunately, many more questions exist. AIR is also interested in seeing answers to all of the questions and data requests asked by CURE and references them here as questions AIR would like to ask as well. AIR objects to the many refusals by the applicant to answer questions submitted by CURE as the questions are valid and when the applicant questions the motives of the questioner it is not appropriate or legal.

Respectfully submitted by,

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STATE OF CALIFORNIA
State Energy Resources
Conservation and Development Commission

In the Matter of:) 08-AFC-12
)
San Joaquin Solar 1 & 2) **DECLARATION OF SERVICE**
)
_____)

I, Tom Frantz, on behalf of the Association of Irrigated Residents, declare that on December 8, 2009, I served and filed copies of the attached **Status Update**, accompanied by a copy of the most recent *Proof of Service* list with the Docket Unit. The document has been sent to the Commission AND the applicant, as well as the other parties in this proceeding (as shown on the *Proof of Service* list), in the following manner:

FOR SERVICE TO THE APPLICANT AND ALL OTHER PARTIES:

X sent electronically to all email addresses on the Proof of Service list;

AND

FOR FILING WITH THE ENERGY COMMISSION:

X sending an original paper copy and one electronic copy, mailed and emailed respectively, to the address below:

CALIFORNIA ENERGY COMMISSION
Attn: Docket No. 08-AFC-12
1516 Ninth Street, MS-4
Sacramento, CA 95814-5512

docket@energy.state.ca.us

I declare under penalty of perjury that the foregoing is true and correct.

Tom Frantz
Name

December 8, 2009
Date



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**APPLICATION FOR CERTIFICATION
FOR THE *SAN JOAQUIN SOLAR UNITS 1 AND 2*
LICENSING PROJECT**

Docket No. 08-AFC-12

**PROOF OF SERVICE
(Revised 8/27/2009)**

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