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STATE OF CALIFORNIA

State Energy Resources
Conservation and Development Commission

In the matter of	)	
Eastshore Energy Center	)	Docket Number 06-AFC-6
	)	Opening Brief of
	)	Robert Sarvey

1-11-08

Date

Signature

Introduction

The evidence in the record demonstrates that impacts from the Eastshore project are the largest air quality impacts that have been modeled in a CEC proceeding. The mitigation provided is inadequate to properly mitigate the projects local air quality impacts. There are feasible and cost effective mitigation measures and alternatives that would reduce the projects local impacts but they have not been incorporated in the current permit. The project has the potential to violate the State PM 2.5 annual standard, the State PM-10 annual standard and the newly promulgated State NO2 standard. This is unprecedented in CEC siting cases and all this will be borne by a minority community that the CEC has just sited another facility the Russell City Energy Center within 3,000 feet of the proposed project.

Particulate Matter Impacts

In CEC siting cases since 2000 no project has demonstrated an ambient air quality impact for PM of this magnitude. (Exhibit 800 page 3, RT 12-17-07 p. 100) Projects as large as 1100 MW have not generated anywhere near the PM 2.5 impacts of the EEC. A recently approved peaker plant in San Francisco the 149 megawatt San Francisco Electrical Reliability Project (SFERP) although 30 MW larger only produced an ambient PM 2.5 concentration of 1.2 ug/m3 for 24 hour PM Impact and .1 ug/m3 for it annual PM 2.5 impact. (Exhibit 800 page 3) The Eastshore equipment has the potential to produce a PM impact of up to 27.5 ug/m3 , 22 times greater than the average 24 hour PM impact of the SFERP. The Eastshore annual PM 2.5 impact is 3.1 ug/m3 which is 31 times greater than the annual ambient concentrations projected for the SFERP. The extremely large impacts are due to the poor choice of generating equipment which consists of 14 Wartzilla reciprocating engines. Reciprocating engines are primarily used to compress natural gas in pipelines and storage facilities. (Exhibit 802 page 3.2-1) Reciprocating engines are ill suited for producing electricity in urban

environments much less an urban environment that contains a minority community that has demonstrable health impacts that already exists. (RT 12-17-07 page 368) The project has the potential to exceed the State Annual Standards for PM-10 and PM 2.5 when combined with background levels. (Exhibit 200 p. 4.1-23, RT 12-17-07 p. 102,103) This is the only project permitted by the CEC since 2000 to have that distinction.

Unlike most projects that have come before the CEC the projects maximum PM impacts will be located in heavily populated areas and not in some remote uninhabited place. "Maximum modeled impacts are predicted to occur directly across Clawiter Road (Life Chiropractic College). The highest PM10 impacts predicted for the fence line with Fremont Bank's Operations Center would be about two-thirds of the overall maximum modeled impact (or 18 μg/m**3**) at the eastern end and less than one-third (or under 9 μg/m**3**) at the western end of the property boundary. At the closest residential receptor, the maximum modeled PM10 and PM2.5 concentrations will be somewhat lower than those shown in **Air Quality Table 16**. The maximum daily PM10 and PM2.5 impacts caused by routine project operation would be under 10 μg/m**3** at the nearest residence, some 1,100 feet northeast of the site. At Ochoa Middle School and Eden Gardens Elementary School, approximately 3,000 and 3,500 feet away, respectively, the maximum daily PM10 and PM2.5 impacts would be between 4 and 8 μg/m**3**." (Exhibit 200 p. 4.1-23)

The mitigation proposed for these impacts are SO**2** emission reduction credits. These ERC's will not mitigate these extremely large impacts. Evidence in the record demonstrates that the SO**2** reductions that are located miles from the project site will reduce particulate formation not at the site but many miles away. (RT 12-18-08 p. 146) Particulate formation from SO**2** emissions takes many hours and sometimes days to happen. (RT 12-17-07 p. 147) Reducing SO**2** emissions in the Bay area would result in negligible particulate reduction in the Bay Area. The reduction would occur many miles away from the Bay Area as a typical conversion rate for SO2 to sulfate is about one percent per hour. (RT 12-17-07 p. 147)

According to the applicant he should be allowed to use SO2 ERC's from all over the BAAQMD because the wind flows from different directions at different times and during stagnant episodes it flows from the San Joaquin Valley. (Exhibit 15 p. 2) According to staff's AQSC-8 the SO2 ERC's must originate from sources in the areas of Oakland, Hayward, Fremont, San Jose, and San Francisco, what staff defines as upwind. (Exhibit 200 p. 4.1-45) So no matter whether you listen to the staff or the applicant the effectiveness of the mitigation depends on which way the wind blows. The evidence in the record indicates that the wind is variable coming from all directions (Exhibit 15 attachment 1 page 2) so the mitigation is effective only if the wind is blowing from the areas where the ERC's are located. According to staff And applicant there is also different amounts of SO2 ERC's necessary to mitigate the project the only problem is neither one of them has the local information to determine what that amount should be. Staff testifies that its 5.3:1 ratio is the correct ratio because it is derived from the "most locally relevant data" (RT 12-17-07 p. 162) but staff does not have local data from the project area to determine the correct interpollutant ratio. The applicant relies on data from locations even farther away than staff's data but there is no locally available data to determine which party is right. Staff and applicants mitigation proposals are both speculative and do not meet the requirements of effective CEQA mitigation.

The fact is there is no evidence in the record that demonstrates that SO**2** ERC's will mitigate the high PM 2.5 local ambient air quality impacts that will occur in the project area. No modeling has been demonstrated that shows that reducing SO**2** in some other part of the BAAQMD will lower ambient PM concentrations in the project area which is the significant impact that requires mitigation. The fireplace program and other emission reduction programs listed in exhibit 806 do have the potential to mitigate significant local PM 2.5 impacts and should be required as the efficacy of the SO**2** ERC's is disputed and their contribution to reduction in PM levels near the project site has not been demonstrated. The woodstove program has demonstrated success in reducing

local impacts. In the Los Esteros project the applicant was able to achieve a 6.8 ton reduction in woodstove PM emissions with an investment of about $500,000. (http://www.energy.ca.gov/sitingcases/losesteros2/documents/2004-11-15_FSA.PDF Page 4.1-2) Another proposed program in the SFERP proceeding is an advanced street sweeping program implemented in the affected community which has estimated reductions of 3 tons of PM 2.5 per year and over 20 tons of PM -10 per year all local emission reductions in the affected community. (http://www.energy.ca.gov/2005publications/CEC-700-2005-021/FSA-files/Part-02_SFERP_FSA.PDF p. 4.1-20)

A more complete review of local real time emission reduction programs and the estimated particulate matter reductions of these programs are contained in the mitigation plan for the East Altamont Energy Center. (http://www.energy.ca.gov/sitingcases/eastaltamont/documents/applicants_files/02-07-19_EAEC_PROPOSAL.PDF)

Since the local particulate matter impact is so high a regional mitigation strategy of SO2 reductions will be ineffective in reducing the PM impacts of the EEC to a level of insignificance. The emission reduction credit program is effective tool for the BAAQMD in balancing region wide emission reductions and allowing new sources to be permitted but it is not designed to mitigate local impacts like the ones caused by the EEC. To mitigate this project to a level of insignificance would require a coordinated effort involving the community and the BAAQMD and the CEC staff. First they would have to identify the possible reductions and then BAAQMD and the CEC would have to implement the real time emission reductions programs starting in the areas with the highest modeled impacts. This is the only method that will mitigate the projects local PM-2.5 impacts.

NO2 Impacts

The project has the potential to violate the recently approved State NO2 standard. The projects maximum ambient NO2 concentration is 314.2 ug/m3. (Exhibit 200 p. 4.1-23) When that maximum concentration is combined with

background concentrations of 143 ug/m3 it will exceed the newly approved NO2 standard of 332 ug/m3 which is awaiting approval by the office of administrative law. The ARB instituted the new standard because high NO2 concentrations are a concern for infants, asthmatics and children. (Exhibit 701) The OAL has until February 20, 2008 to make a determination on the new NO2 standard well before this project will be licensed. The project provides no NOx emission reduction credits only POC ERC's are offered for the projects NOx emissions. (PDOC p. 22) No other mitigation is provided for NO2 impacts. Since this is an environmental justice community that has a demonstrated prevalence of asthma and air pollution related disease (RT 12-17-07 page 368, 369) mitigation should be provided to reduce the high NO2 ambient air concentrations. All parties agree that increasing the stack height will lower ambient air concentrations. (RT 12-17-08 p. 96) The record demonstrates that good engineering practice stack height is 120 feet (Exhibit 6 p. 2) and increasing stack height will lower NO2 and PM ambient air concentrations

SO2

The conditions of certification do not require testing for fuel sulfur content and the FDOC adopts an extremely low fuel sulfur limit of .182 gr/100 scf. SO2 emissions will likely be understated since many power projects have adopted or amended their permits to allow a fuel sulfur limit of .33 gr/100scf. Most recently the Los Esteros Critical energy Facility applied for an amendment to increase their fuel sulfur limit to .33 gr/100scf from .25 gr/100scf claiming that PG&E cannot guarantee even a .25gr/scf limit. (http://www.energy.ca.gov/sitingcases/losesteros2/compliance_phase_1/2005-07-01_AIR_CONDITIONS.PDF) The CEC should establish a realistic fuel sulfur limit for this project and provide a condition to test for fuel sulfur content. The SO2 emissions estimates for this project have been calculated using unrealistically low fuel sulfur content. (Exhibit 201 appendix A p. 1) The SO2 emissions estimates should be based on a higher fuel sulfur limit and mitigation

should be provided for these emissions since staff has committed to offset all precursor emissions to mitigate ammonia emissions.

Ammonia Emissions

The project has a 10 ppm ammonia slip limit which will lead to 27.5 tons per year of ammonia emissions. No mitigation is being provided for these emissions other than a strategy to offset all precursors. This strategy is a failure as it ignores the fact that PM 2.5 precursors are already in abundance in the BAAQMD. The strategy also fails to consider that no ERC's are being provided for the projects NOx emissions since the applicant has chosen to substitute POC emissions reduction credits for NOx credits. The primary compound in secondary formation of particulate matter is the NOx concentrations in the ambient air. Without mitigation for the 27.5 tons of ammonia there is the potential for secondary PM 2.5 formation from the ammonia emissions. The contribution from ammonia to nitrogen deposition can also be a significant impact. CEC biology staff has incorrectly assumed that the contribution from ammonia emissions to nitrogen deposition is the equal to the deposition form the projects 54 tons of NO**2.** The contribution of the ammonia emissions to the nitrogen deposition would be much higher than the contribution of the NOx emissions to nitrogen deposition at Lake Chabot Regional Park.

Best Available Control Technology

The project does not comply with the federal standards or BAAQMD requirements for Best Available Control Technology (BACT). The District is allowing a particulate matter emission rate of 1.3 to 1.9 pounds per hour per turbine. Facilities with similar equipment have achieved much lower emission rates. Evidence in the record includes source tests on identical equipment that demonstrate that the facility could reach a much lower particulate matter emission rate of .33 pounds per hour. (Exhibit 804 p. 11) A facility in San

Joaquin Valley has been permitted with an emission rate of .75 pounds per hour. (Exhibit 804 p. 11) CARB staff obtained emissions testing data that demonstrated compliance with the more stringent limit of .02 9 g/bhp-hr or .75 pounds per hour at the San Joaquin Facility. (Exhibit 703) A Lower Emission Rate of .029 g/bhp/hr for Particulate matter was recommended by CARB in comments on the PDOC. (Exhibit 703) Energy Commission staff recommended a lower PM limit in their comments on the PDOC (Exhibit 704) and confirmed under oath they think it is achievable. (RT 12-18-08 p. 116) The .029 g/bhp/hr per turbine is achieved in practice and similar facilities have been permitted at that level. (RT 12-17-08 p. 116, Exhibit 804 p. 11)

Regulation 2-2-206 of the BAAQMD defines BACT as the more stringent of

206.1 The most effective emission control device or technique which has been successfully utilized for the type of equipment comprising such a source; or

206.2 The most stringent emission limitation achieved by an emission control device or technique for the type of equipment comprising such a source; or

The type of BACT described in Regulation 2-2-206.1,2 must be demonstrated in practice at an actual facility and approved by a local Air Pollution Control District. It is clear that both requirements have been met and the project does not comply with Best Available Control Technology.

Environmental Justice is'

"*"The fair treatment and **meaningful involvement** of all people regardless of race, color, national origin, or income with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies. Fair treatment means that no group of people, including racial, ethnic, or socioeconomic group should **bear a disproportionate share of the negative environmental consequences resulting from industrial, municipal, and commercial operations** or the execution of federal, state, local, and tribal programs and policies."*

The Environmental Justice process begins with the demographic screening analysis which the CEC staff has performed and concluded that the majority of the community surrounding the EEC is indeed minority. There is no dispute amongst the parties on that fact. The next step is to define the impacts to the community. In this case the record shows that this project has the highest particulate matter ambient air concentrations for both PM-10 and PM 2.5 of any project licensed by the CEC (Exhibit 800). The project also has the potential to violate the State of California's Annual PM-10 standard and the annual PM 2.5 standard. The project also will violate the newly promulgated NO2 standard which was approved by the ARB in February of 2007. At that point in the analysis the public participation process should have been used to define and evaluate environmental justice concerns. Community leaders and community stakeholders should have been consulted to identify their concerns. The applicant and staff should have consulted with officials in local government agencies (Alameda County and City of Hayward) over the environmental and human health concerns within the community. We know there are disproportionate impacts as the County has testified that the community already has a high rate of asthma and respiratory illnesses. (RT 12-17-07 page 368). Once the minority community was identified the CEC and the applicant should have consulted with the county health agencies to identify existing health concerns. Then the CEC and the applicant should have examined the synergistic effects of existing pollution that already exists. This issue is even more important in an urban environment where the pollution from urban activities is compounded by industrial emission as in this case. In this community there are multiple environmental stresses. There is a railroad which passes though the area there are truck terminals and other heavy industries and a sewage treatment plant in the affected community. The CEC and the applicant have refused to identify and examine existing local sources of criteria pollutants and toxic emissions and evaluate their impacts in conjunction with the siting of the EEC. They have testified that these steps were not necessary.

Environmental Justice includes notifying community groups and educating them on the impacts of the project and taking their input on the mitigation measures and the alternatives. This has not been done. In this proceeding both the County of Alameda and the City of Hayward have objected to the effectiveness of the mitigation measures but they were not consulted in the process of developing the mitigation strategy. Environmental Justice Guideline's emphasize the importance of reaching out to the community and involving them in the development of the mitigation measures and alternatives. A good example of how this process is done is the community outreach that was performed by the CCSF in the SFERP proceeding. In that proceeding over 20 community meetings were held and the community was engaged in deciding appropriate mitigation measures and alternatives. Public advocacy groups were consulted and included in the decision making. Air Quality Monitoring stations were set up in the community to examine existing air quality in the affected community. (http://www.energy.ca.gov/sitingcases/sanfrancisco/documents/applicant/data_response_1A/2004-07-08_DATA_RESPONSE.PDF) No equivalent effort has been attempted in this proceeding. Environmental Justice Guidelines have not been followed in this proceeding.

Conclusions

This project has the highest ambient air quality impacts of any project approved by the CEC. The conditions of certification provide no meaningful local mitigation for these impacts other than an optional fireplace retrofit program. There are mitigation measures that are available (Exhibit 806) to reduce the ambient air quality impacts and mitigate adverse air quality impacts on the community. Increasing the stack height of the project would lower ambient concentrations of both NO2 and particulate matter. The project does not comply with the BACT requirements for particulate matter emissions that would lessen the extremely large and unprecedented particulate matter impacts. The

applicant and CEC Staff have failed to follow environmental justice guidelines and principals required in the 1998 EPA Guidelines

BEFORE THE ENERGY RESOURCES CONSERVATION AND DEVELOPMENT COMMISSION
OF THE STATE OF CALIFORNIA

APPLICATION FOR CERTIFICATION FOR THE EASTSHORE ENERGY CENTER IN CITY OF HAYWARD BY TIERRA ENERGY	Docket No. 06-AFC-6 PROOF OF SERVICE (Revised 1/18/2008)

INSTRUCTIONS: All parties shall either (1) send an original signed document plus 12 copies or (2) mail one original signed copy AND e-mail the document to the address for the Docket as shown below, AND (3) all parties shall also send a printed or electronic copy of the document, which includes a proof of service declaration to each of the individuals on the proof of service list shown below:

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