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U.S. Environmental Protection Agency
October 2011

**Responses to Public Comments on the Proposed Prevention of Significant
Deterioration Permit for the Palmdale Hybrid Power Project**

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standpoint throughout the community, not get built as a result of it? Does additional manufacturing not get built as a result of this selling of this credit or selling of this increment? What manufacturing facility can't come here because the threshold of significance has reached beyond the air quality standards?"

Response: The commenter does not explain how the issues raised by the City of Lancaster in the CEC proceeding relate to the CAA criteria applicable to EPA's proposed PSD permit action for the PHPP. To the extent these issues concern increment consumed by the PHPP and associated economic issues for the local communities, please see Responses 2 and 6.

We also note that the City of Lancaster submitted comments directly to EPA on the proposed PSD permit; please see Responses 1-4 above.

37. **Comment:** The commenter stated that the CO₂ sequestration analysis that determined CCS to be technically infeasible for this project was actually an issue of cost and not technical feasibility. The commenter states that the natural gas industry is familiar with pipeline construction and so it is unlikely that the logistics of constructing a pipeline are beyond the industry. The commenter provides information from the CEC describing the construction of 8.7 miles of natural gas lines through existing right of ways (ROWs) that will be designed and constructed by the Southern California Gas Company. The commenter also provides information from the CEC regarding the construction of 35.6 miles of transmission lines that would be constructed on new and existing ROWs, which would travel through and near a mixture of disturbed and undisturbed areas, which include desert areas, agricultural properties, industrial and residential areas. The commenter states that these routes extend into the mountains that are claimed to be insurmountable for a CO₂ line.

Response: As noted by the commenter, the natural gas pipeline and power transmission lines needed for the Project will be built on new or existing ROWs. Despite the potential for CO₂ sequestration as part of enhanced oil recovery (EOC) in the lower San Joaquin Valley, there are currently no CO₂ pipelines in California. In order to build the CO₂ pipeline the applicant would need to obtain the ROWs for approximate 50-100 miles to a sequestration site. It is not clear that the applicant could obtain the necessary ROWs.¹³ The power to obtain ROWs is usually limited to "public utilities". The proposed facility will not operate as a public utility, so it is not clear that the applicant has the authority to obtain the needed ROWs outside the city limits. The barriers referenced in the Fact Sheet were not intended to imply that building a "long" pipeline through "mountains" was the logistical barrier.

However, given that there is limited data in EPA's record concerning potential logistical barriers relating to the building of CO₂ pipelines for the PHPP or other technical or logistical barriers to implementing CCS for the Project, we are revising our BACT analysis to assume, for purposes of the analysis, that potential technical or logistical barriers would

¹³ See "Carbon Dioxide Pipelines", California Carbon Capture and Storage Review Panel, August 10, 2010. Available at: http://www.climatechange.ca.gov/carbon_capture_review_panel/meetings/2010-08-18/white_papers/Carbon_Dioxide_Pipelines.pdf

not make CCS technically infeasible for the PHPP. As a result, CCS would be the top-ranked control option, and we proceed to Step 4 of the top-down BACT analysis to consider CCS. Our analysis assumes that 90% of CO₂ emissions would be captured.

GHG BACT Analysis – Step 4 - CCS Cost Analysis

As provided in the CEC’s PMPD, the estimated capital costs for the PHPP are \$615-\$715 million dollars. For comparison purposes, if these capital costs were annualized (over 20 years) they are about \$35 million. In comparison, the estimated annual cost for CCS is about \$78 million, or more than twice the value of the facility’s annual capital costs.

| Estimated Annual Cost for CCS¹⁴ | |
|---|------------------------|
| | \$/year |
| CO ₂ Capture and Compression | \$75,944,187.00 |
| CO ₂ Transport | \$1,566,747.00 |
| CO ₂ Capture Storage | \$878,067.00 |
| Total Annual Cost | \$78,389,001.00 |

Accordingly, based on these costs, CCS is being eliminated as a control option because it is economically infeasible. BACT for this project remains the thermal efficiency associated with a natural gas-fired combined cycle power plant.

38. **Comment:** The commenter stated that EPA would create a no build zone near potential carbon sequestration sites if it chooses to exclude polluters who chose to develop away from sequestration sites or who chose not to prepare adequate studies for their projects. The commenter states that the analysis should be real, with real numbers on cost and polluters that choose to locate away from sequestration sites should not get a free ride.

Response: The commenter’s first remark is unclear and as a result EPA does not understand how it relates to EPA’s BACT analysis for GHGs for the PHPP. EPA believes that each PSD permit applicant must seriously consider all available technologies. As described in Response 37 above, EPA has fully considered CCS as part of the BACT analysis for the PHPP, and CCS was eliminated in this case due to economic infeasibility.

39. **Comment:** The commenter questioned whether tree planting could be a control technology. Additionally, the commenter questioned how many trees the applicant would need to plant to offset the GHG emissions from the Project. The commenter questioned whether algae ponds or changed forestry and farm practices could be used as GHG control technologies. The commenter questioned whether GHG controls can be located in another

¹⁴ The cost were estimated by using EPA’s GHG Mitigation Strategies Database and The Report of the Interagency Task Force on Carbon Capture and Storage (August 2010). This information is available at <http://ghg.ie.unc.edu:8080/GHGMDB/> and <http://www.epa.gov/climatechange/downloads/CCS-Task-Force-Report-2010.pdf>, respectively. In each case, the lowest cost between the two sets of information was used for this analysis.

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