

MITIGATION MONITORING AND REPORTING PLAN

FOR

Hyperion Treatment Plant (HTP) Digester Gas Utilization Project (DGUP)

Power and Steam Generation

Final Environmental Impact Report
State Clearinghouse Number 2011041032

Prepared For

**CITY OF LOS ANGELES
DEPARTMENT OF PUBLIC WORKS
BUREAU OF ENGINEERING**

Prepared By

**ENVIRON INTERNATIONAL CORPORATION
LOS ANGELES, CALIFORNIA**

August 2013

Introduction

This mitigation monitoring and reporting plan contains the elements required by CEQA for the Hyperion Treatment Plant (HTP) Digester Gas Utilization Project (DGUP).

The California Environmental Quality Act (CEQA) requires public agencies to adopt a reporting or monitoring program for the changes to the project that have been adopted to mitigate or avoid significant effects on the environment. The program must be adopted by the public agency at the time findings are made regarding the project (Public Resources Code Section 21081.6). The State CEQA Guidelines (Section 15097 (c)) allow public agencies to choose whether its program will monitor mitigation, report on mitigation, or both.

The proposed modifications were determined to be a “project” as defined by the CEQA and Public Resources Code (PRC) §21000 et. seq. The City of Los Angeles (City) is lead agency because it has primary approval authority over the project and therefore, has prepared a Final Environmental Impact Report (Final EIR) pursuant to CEQA Guidelines §15080 through §15097.

To fulfill the purpose and intent of CEQA, the City, as the lead agency for the proposed project, prepared and released a Draft EIR, Notice of Completion (NOC), and Notice of Availability (NOA) for the proposed project. The NOC, NOA, and Draft EIR were circulated for a 45-day comment period from June 7, 2013, to July 22, 2013. The NOA and Draft EIR were circulated to neighboring jurisdictions, responsible agencies, other public agencies, and interested individuals in order to solicit input on the environmental analysis to be included in the Final EIR.

Three comment letters were received on the NOC and Draft EIR during the public comment period, and responses to these comments are provided in the Final EIR.

The NOC and Draft EIR concluded that there would be no significant adverse impacts on aesthetics, agricultural resources, biological resources, cultural resources, geology and soils, hazards and hazardous materials, hydrology and water quality, land use and planning, mineral resources, noise, population and housing, public services, recreation, transportation/traffic, and utilities/services systems. The NOC and Draft EIR stated that the proposed project (1) results in potentially significant project-specific and cumulative impacts related to air quality; and (2) results in cumulatively significant impacts related to greenhouse gas (GHG) emissions and construction-related noise. The greatest source of greenhouse gas emissions from the proposed project is digester gas combustion emissions, which are considered to be biogenic and not a contributor to a net increase in atmospheric carbon dioxide (CO₂).^{1,2,3}

The non-biogenic emissions are less than the AQMD’s cumulative significance threshold. If total greenhouse gas emissions are considered, the greenhouse gas

¹ See http://www.ipcc-nggip.iges.or.jp/public/2006gl/pdf/2_Volume2/V2_2_Ch2_Stationary_Combustion.pdf

² See <http://www.epa.gov/climateleaders/documents/resources/stationarycombustionguidance.pdf>

³ See http://www.theclimaterestory.org/downloads/2013/03/TCR_GRP_Version_2.0.pdf

impacts of the proposed project could possibly be considered cumulatively considerable. For the purposes of this project, greenhouse gas cumulative impacts are considered potentially significant, and, per CEQA Guidelines, an EIR was prepared, and mitigation measures were assessed.⁴

A copy of the NOC and NOA are included with the Final EIR.

The Final EIR includes the following: an Executive Summary (including a summary of the public process, public comments, and final determinations), Response to Comments, and revisions to the Draft EIR (based on the Response to Comments).

The Final EIR and related documents for the proposed project are available at:

City of Los Angeles, Department of Public Works
Regulatory Affairs Division
Bureau of Sanitation
1149 S. Broadway Street, 10th Floor
Los Angeles, CA 90015

These documents can also be obtained by accessing the City's CEQA webpage at http://eng.lacity.org/techdocs/emg/hyperion_plant.htm.

Project Description

The proposed project will consist of installing and operating a digester gas/natural gas-fueled combined cycle cogeneration system at HTP. The cogeneration system will include the combustion of digester gas (or digester gas/natural gas mixture) in three combustion turbine generators (combustion turbines, or CTGs) to generate electricity, the recovery of heat to generate steam in three heat recovery steam generators (HRSGs), the generation of power from a steam turbine generator train (two steam generators or STGs), and the extraction of a portion of the steam to meet the steam demand of the digesters.

The proposed project will offer efficient utilization of the digester gas and improve operations for BOS. DGUP will consume all digester gas produced at HTP, address energy needs by providing up to 34 megawatt (MW) electrical generation, and provide up to 70,000 pounds per hour (lb/hr) of steam.

Mitigation Measures

Enforcement of the mitigation monitoring and reporting requirements described in this plan is primarily the responsibility of the City as the lead agency under CEQA. The mitigation measures discussed herein are primarily the responsibility of HTP to implement. To demonstrate compliance, documentation that mitigation measures have

⁴ Current guidance by the South Coast Air Quality Management District (AQMD) and other regulatory agencies is not definitive on whether biogenic greenhouse gases should be assessed in relation to significance thresholds.

been implemented will be maintained by HTP to ensure potential environmental impacts are mitigated to the greatest extent feasible.

Analysis of the proposed project in the Final EIR indicated that it has the potential to result in project-specific and cumulative significant impacts related to air quality and cumulatively significant impacts related greenhouse gas emissions and construction-related noise. Analyses of all other environmental topic areas indicated that impacts from the proposed project would be less than significant and, as a result, additional mitigation measures would not be required. The following subsections 1) describe the mitigation measures considered and 2) those measures imposed on the proposed project, 3) the entity responsible for implementing the mitigation measures, and 4) the entity responsible for monitoring implementation of mitigation measures.

Air Quality Impacts and Mitigation Measures Considered

Construction-related emissions of criteria pollutants do not exceed the AQMD applicable significance thresholds - no mitigation measures necessary.

Operation-related cancer and non-cancer health risks do not exceed the AQMD applicable significance thresholds - no mitigation measures necessary.

Operation-related emissions of oxides of nitrogen (NO_x), volatile organic compounds (VOC), and particulate matter (PM₁₀ and PM_{2.5}) exceed the AQMD's applicable mass daily significance thresholds. Incremental operation ambient air quality impacts are greater than the thresholds for 24-hour average PM₁₀ and PM_{2.5}.

The proposed project thus has the potential to generate significant adverse air quality impacts. The project operations are permissible under AQMD and federal requirements, which means that Best Available Control Technology (BACT) requirements have been included where required.

All mitigation measures identified were evaluated. The City reviewed similar projects and available guidelines to assess potential mitigation measures that could be incorporated into this proposed project. The AQMD guidance document⁵ identifies mitigation measures. Additional mitigation measures were suggested in the AQMD comment letter. Several mitigation measures identified, such as minimize flare days, are intrinsically included in the project objectives or are an existing practice at the facility, such as ridesharing and the use of electric vehicles and low VOC paint.

Many of the mitigation measures reviewed were found by the City not to be applicable and/or feasible to the operations as indicated below:

- a) Additional controls on the main stack to reduce normal operational emissions.
 - The currently proposed controls are Best Available Control Technology/Lowest Achievable Emissions Rate (BACT/LAER). No other potential controls were found.

⁵ AQMD. 2010. Mitigation Measures and Control Efficiencies. Available at: http://www.aqmd.gov/ceqa/handbook/mitigation/MM_intro.html. Accessed July 2013.

- b) Measures to minimize the possibility of large flaring events that yield significant short term impacts.
- The Project is designed to meet this purpose: to minimize the use of flares and use the renewable fuel biogas to create electricity replacing the demand for up to 34 MW of fossil fuel generated electricity (DEIR Section 2.4).
- c) Tier 4 on-site emergency black start diesel generators.
- The emergency diesel generators will be required to meet BACT/LAER under the New Source Review regulations. The permit application proposed BACT/LAER for this size engine as Tier 2. The PM₁₀ limit, as listed in examples from the USEPA BACT/LAER Clearinghouse, is 0.2 g/kW-hr (0.15 g/bhp-hr), which is consistent with a Tier 2 engine. The City reviewed the current USEPA engine certification website and note that this engine may not be available as certified to Interim Tier 4 standards. The City will discuss and clarify the BACT/LAER requirements and the applicability of an Interim Tier 4 engine and/or diesel particulate filters with the AQMD during the permitting process.
- d) Electric or alternative fueled vehicles for maintenance activities including field vehicles, and forklifts.
- The HTP uses electric and alternative fuel vehicles and equipment for these purposes on-site.
- e) Electric vehicle (EV) Charging Stations to offset emissions generated by new employee trips.
- There are only 10 new worker trips per day. On-road emissions from these trips are de minimus (<0.15 lbs NO_x/day) and an EV charging station is not cost effective for such impacts.
- f) Rideshare program for employees.
- The City has a ride share program for employees.
- g) Use of 2010 or newer diesel haul trucks (e.g., goods/materials delivery trucks), or if not available, use trucks that meet USEPA 2007 model year NO_x emissions requirements.
- There are only 40 vendor truck trips per year; the emissions from these trucks are negligible (< 9 lbs NO_x/year or < 0.03 lbs NO_x/day on average). This measure would not be cost-effective or result in measureable emission reductions.
- h) Use of solar energy including solar panels; installing the maximum possible number of solar energy arrays on the building roofs and/or on the project site to generate solar energy for the facility.
- No new buildings are added to the project. In addition, the project is a renewable

energy project that meets the facility's energy needs; thus there is no need to add any additional solar power components.

- i) Energy efficient lighting fixtures, including signage. Where feasible use solar powered lighting.
 - More efficient lighting (e.g., LED) will be incorporated in the project.
- j) Use light colored paving and roofing materials.
 - No new buildings or paving will be done for the project.
- k) Use of water-based or low VOC cleaning products at the project site.
 - The City already uses these products as required under AQMD Regulation XI rules. Therefore, this practice is already followed and is not considered as an additional mitigation measure.

Greenhouse Gas Impacts and Mitigation Measures Considered

The analysis conservatively assumed that all construction-related emissions are from fossil-fuel combustion and thus represent an increase from the baseline non-biogenic greenhouse gas emissions.

Operation-related emissions result from direct combustion of gas in the equipment and commuter trip emissions, and from indirect emissions associated with the water needs for the proposed project. The greatest source of greenhouse gas emissions from the proposed project is biogas-based emissions, which are considered to be biogenic and not a contributor to a net increase in atmospheric carbon dioxide (CO₂).^{6,7,8}

The maximum greenhouse gas incremental change would thus be 60,052 MT CO₂e/yr; the increase is solely due to an increase in biogenic greenhouse gas emissions, which do not contribute to a net increase in atmospheric CO₂

For the purposes of this project, greenhouse gas impacts are treated as significant, and, per CEQA Guidelines, an EIR was prepared, and mitigation measures were assessed.⁹ Although the City has not adopted any greenhouse gas significance thresholds, including the AQMD's interim significance threshold of 10,000 metric tons/year CO₂e, the results are the same: greenhouse gas cumulative impacts are treated as if they are significant for the proposed project.

⁶ See http://www.ipcc-nggip.iges.or.jp/public/2006gl/pdf/2_Volume2/V2_2_Ch2_Stationary_Combustion.pdf

⁷ See <http://www.epa.gov/climateleaders/documents/resources/stationarycombustionguidance.pdf>

⁸ See http://www.climateregistry.org/downloads/2013/03/TCR_GRP_Version_2.0.pdf.pdf

⁹ Current guidance by AQMD and others is not definitive on whether biogenic greenhouse gases should be assessed in relation to significance thresholds

The City reviewed the California Air Pollution Control Officer's Association (CAPCOA) document¹⁰ the AQMD references for greenhouse gas mitigation measures to determine if any of the measures could be applied to the proposed project. The majority of the mitigation measures listed are not applicable to an industrial project; however, the proposed project inherently incorporates several of the mitigation measures as the objective is to produce renewable energy:

- AE-1: Establish onsite renewable or carbon-neutral energy systems
- AE-4: Utilize a combined heat and power system
- AE-6: Establish methane recovery in wastewater treatment plants

The Draft EIR identified a proposed greenhouse gas mitigation measure that specified that the natural gas supplement will be up to 10% of the total fuel combusted in the combustion turbines when possible. Actual digester gas flow levels depend on several operational factors (e.g., incoming untreated water flow levels) and the project must meet all of HTP's power and steam needs, which may vary over time. Thus, the actual fuel blend used at any given time is contingent upon HTP's operational needs, but not over a 40/60 natural gas/digester gas blend (by volume). The greenhouse gas mitigation measure, MMGHG-1, is described below and the following table summarizes the mitigation measure, implementation responsibility, enforcement responsibility and record of implementation.

MMGHG-1: Condition(s) will be included in the operating agreement for the DGUP requiring the following:

- Total natural gas usage by DGUP will be up to 10% by volume when possible, but can be up to 40% by volume, based on HTP's operational needs;
- Fuel flow meters will be installed for the purpose of monitoring and recording both natural gas and digester gas volumetric gas flow rates.
- The DGUP operator will provide natural gas (non-biogenic) and digester gas (biogenic) volumetric gas flow data to the City upon request.

¹⁰ California Air Pollution Control Officer's Association (CAPCOA). 2010. Quantifying Greenhouse Gas Mitigation Measures. Available at: http://www.aqmd.gov/ceqa/handbook/mitigation/greenhouse_gases/CAPCOA-Quantification-Report-Final1.pdf. Accessed July 2013.

OPERATIONS PHASE

Impact	Mitigation Measure	Implementation Responsibility	Enforcement Responsibility	Record of Implementation
Greenhouse Gases				
	<p>MMGHG-1: Condition(s) will be included in the operating agreement for the DGUP requiring the following:</p> <ul style="list-style-type: none"> • Total natural gas usage by DGUP will be up to 10% by volume when possible, but can be up to 40% by volume, based on HTP's operational needs; • Fuel flow meters will be installed for the purpose of monitoring and recording both natural gas and digester gas volumetric gas flow rates. • The DGUP operator will provide natural gas (non-biogenic) and digester gas (biogenic) volumetric gas flow data to the City upon request. 	City and HTP operators	City	Fuel Meter Readings Log (or equivalent records)