



**DATE:** FEBRUARY 22, 2007

**FROM:** PLANNING AND RESEARCH

**SUBJECT:** LEVEL II COASTAL DEVELOPMENT PERMIT NO. 06-02 FOR THE CITY OF LOS ANGELES BUREAU OF SANITATION TO CONSTRUCT THE TERMINAL ISLAND RENEWABLE ENERGY PROJECT

**SUMMARY:**

The City of Los Angeles Bureau of Sanitation is proposing to construct the Terminal Island Renewable Energy Project at the Terminal Island Treatment Plant. This is a proposed demonstration project that injects bio-solids underground to produce methane gas, a renewable energy source. It is recommended that the Board of Harbor Commissioners approve a Level II Coastal Development Permit (CDP No. 06-02).

**RECOMMENDATION:**

It is recommended that the Board of Harbor Commissioners:

1. Hold a public hearing for the proposed Level II Coastal Development Permit; and
2. Upon closure of the public hearing, approve an appealable Level II Coastal Development Permit (CDP No. 06-02) for the Terminal Island Renewable Energy Project, subject to the standard conditions and Special Condition Nos. 1, 2, and 3 as set forth in the permit, and direct the Director of Planning & Research to issue said permit.

Special Condition No. 1: The expiration date of the coastal development permit shall be three years from the beginning of operations for the demonstration project. The Bureau of Sanitation must apply for a new coastal development permit for operation of the Terminal Island Renewable Energy Project beyond the three-year demonstration period.

Special Condition No. 2: The Bureau of Sanitation shall (1) offer the Port methane gas generated from the proposed project in excess of their 1.4 megawatt requirement to power the Terminal Island Treatment Plant (TITP), at the rate of \$1.90/million British thermal units (MBtu), and (2) allow the Port to construct fuel cells for its own use within the TITP at no compensation to the Bureau of Sanitation.

Special Condition No. 3: In the event the Bureau of Sanitation decides not to continue with the long-term operation of the Renewable Energy Project, it shall submit an Application for Discretionary Project (ADP) to the Port for the removal of all improvements relating to this demonstration project.

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**DISCUSSION:**

1. The City of Los Angeles Bureau of Sanitation has applied for a coastal development permit for the Terminal Island Renewable Energy Project, a demonstration project for the subsurface thermal biodegradation of bio-solids and creation of renewable energy. Bio-solids, the treated organic material left after wastewater treatment, would be injected into one of three interchangeable injection/monitoring wells to a depth of approximately 6,000 feet. The high temperature and pressure at this depth would biodegrade the organic compounds and generate methane gas and carbon dioxide. The methane gas would be recovered and used as a fuel. The carbon dioxide would be sequestered in a solution and permanently remain underground. Construction activities include the receiving tanks for the bio-solids, mixing units and associated transfer pipelines and pumps, three injection/monitoring wells made of steel pipes encased in concrete, and the fuel cells to convert the recovered methane into energy.
2. The proposed project is to demonstrate the feasibility of subsurface bio-solid injection and generation of renewable energy. The Bureau of Sanitation will concurrently install the bio-solid injection portion of the project and two fuel cells to generate one megawatt of electricity. This first set of fuel cells will provide for approximately 80% of the 1.4 megawatt electricity requirement for the operation of the TITP. Once the first megawatt of power generation is demonstrated, additional fuel cell capacity of up to a total of 3.5 megawatts is planned for installation. This is projected to begin approximately one year after installation of the initial set of fuel cells, and assessment of the renewable gas production.

The Bureau of Sanitation estimates that up to 504,000 standard cubic feet/day of methane gas would be generated from the proposed project, providing approximately 3.5 megawatts of electricity. After the power needs for the TITP of 1.4 megawatts are met, approximately 302,000 standard cubic feet/day of methane gas would be available for purchase by the Port at \$1.90/MBtu. Should the Port elect to proceed with the installation of fuel cells, their location would be either at TITP or at a location of the Port's choosing. The available fuel would provide approximately 2.1 megawatts of electricity. At the current market rate of approximately \$8/MBtu for natural gas, the \$1.90/MBtu rate offered by the Bureau of Sanitation, which is their estimated cost of production, represents a purchase discount of over 75% to the Port. Transmittal No. 4 presents the cost savings.

Subject to Special Condition No. 1, upon the conclusion of the three-year demonstration project, anticipated in December 2010, the Bureau of Sanitation must apply for the appropriate permits, including a new coastal development permit, and complete a new environmental assessment to continue the long-term operational phase of the project. The

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measures referenced in Special Condition No. 2 will also be addressed in the new lease for the TITP, to be considered by the Board in a separate action.

3. The proposed project, located in Master Planning Area 7, is a Level II appealable project in accordance with the definitions set forth in the *Guidelines for Implementation of the Port of Los Angeles Certified Port Master Plan*. A Level II permit is one of three levels of permits that the Board can issue. Level II permits are issued for developments that involve potentially minor changes in land and/or water uses and minor environmental impacts that can be mitigated.
4. The proposed project has been found to be consistent with the Port Master Plan as the proposed development is an Institutional Use, which is an allowable use in Master Planning Area 7. An Institutional Use pertains to those activities relating to federal, state or city governments. The proposed project has been found to be consistent with Chapter 8 policies of the California Coastal Act of 1976, as amended. Specifically, the proposed project is consistent with Section 30708 that provides for beneficial uses consistent with the public trust.
5. Under Section 30715 of the Coastal Act, coastal development permits issued by the Board of Harbor Commissioners are appealable if they involve a wastewater treatment facility. An appeal to the California Coastal Commission may be filed within ten working days of the closure of the Proposition 5 City Council review period. Should an appeal be filed, the Coastal Commission shall hear the appeal and approve, modify or deny the proposed project unless the Commission determines that no substantial issue exists as to conformity with the port master plan.

**ENVIRONMENTAL ASSESSMENT:**

The Board of Public Works adopted a Negative Declaration for the proposed project on November 27, 2006 and it was approved by the Los Angeles City Council on January 24, 2007. As such, the Director of Environmental Management has determined that the proposed activities are exempt from the requirements of CEQA in accordance with Article II, Section 2(i) of the Los Angeles City CEQA guidelines.

**FINANCIAL IMPACT:**

The construction cost of the Terminal Island Renewable Energy Project is estimated at \$7.5 million, to be borne by the Bureau of Sanitation and its project partners. There are no cost impacts to the Port at this time, nor is the Port a partner in this demonstration project. The Bureau of Sanitation has leased the land for the Terminal Island Treatment Plant from the Port to operate a water reclamation facility since 1955.

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CITY ATTORNEY COMMENT:

The City Attorney's office has reviewed this project and has no comment.

TRANSMITTALS:

1. Site Location Map
2. Terminal Island Treatment Plant Aerial View
3. Terminal Island Renewable Energy Project Diagram
4. Estimated Energy Production Cost Savings
5. Coastal Development Permit No. 06-02
6. Negative Declaration and Initial Study for the Terminal Island Renewable Energy Project

  
DAVID L. MATHEWSON  
Director of Planning & Research

  
KATHRYN McDERMOTT  
Deputy Executive Director

APPROVED:

  
GERALDINE KNATZ, Ph.D.  
Executive Director

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