Introduction

Pursuant to the Florida Electrical Power Plant Siting Act (Sections 403.501 – 403.539, Florida Statutes) the Solid Waste Authority of Palm Beach County (Authority) has submitted to the Florida Department of Environmental Protection (FDEP) a Site Certification Application for the Palm Beach Renewable Energy Facility No. 2 (Proposed Facility). The proposal is to construct the new facility adjacent to the Authority’s existing Palm Beach Renewable Energy Facility No. 1, which is known as the North County Resource Recovery Facility. As the coordinating agency, FDEP has requested that Council review the application and submit a report to FDEP. Council’s report is due by January 24, 2011.

Council’s report is to contain recommendations that address the impact upon the public of the proposed electrical power plant, based on the degree to which the power plant is consistent with the applicable provisions of the Strategic Regional Policy Plan adopted pursuant to Chapter 186, Florida Statutes and other matters within its jurisdiction.

Summary of the Project

The Authority is proposing to expand its solid waste processing and electrical generation capacity by constructing a new renewable energy facility on an approximately 24 acre site that is centrally located within the Authority’s existing 1,320-acre Palm Beach County Renewable Energy Park. The Energy Park is located in the City of West Palm Beach, Palm Beach County, Florida. The Energy Park is bounded by the Beeline Highway and Ironhorse Country Club to the north and northeast; Grassy Waters Nature Preserve to the west and south; Dyer Park, Winding Waters Natural Area, and commercial warehouses to the east; and the Gramercy Park residential community on the north side of the southeast portion of the Energy Park.

The Energy Park was certified as a power plant site under the Florida Electrical Power Plant Siting Act in 1986. The Site Certification Application filed by the Authority is requesting a modification of the existing Conditions of Certification to allow the construction and operation of Energy Facility No. 2 in the Energy Park. The Proposed Facility will have three 1,000 ton per day mass-burn municipal waste combustor units and associated equipment. The three units collectively will be able to process 3,000 tons per day of municipal solid waste. Energy extracted from the combustion of municipal solid waste will be converted into electricity by a highly efficient steam turbine generator, which will have a rated capacity of approximately 100 megawatts (MW). The Energy Park is currently certified to generate 75 MW. The Authority is
currently seeking new certification from the Florida Public Service Commission for an ultimate site capacity of 185 MW.

The Proposed Facility will consist of an enclosed tipping floor and refuse storage pit, three municipal waste combustor units, air pollution control systems, stack, air cooled condenser, a metals recovery and ash storage building, turbine generator, switchyard, maintenance building and warehouse, administration building, stack, ancillary equipment and structures, and interior roadways. There will not be any significant preprocessing of wastes at the Proposed Facility. Recyclable materials will be separated from the solid waste at the source of generation, and the source separated recyclable materials will be taken to the Recovered Materials Processing Facility for processing. The Proposed Facility will only receive the municipal solid waste that remains after recycling is completed. The municipal solid waste includes non-hazardous residential, commercial, and industrial wastes. Hazardous waste will not be accepted or disposed of at the Proposed Facility. Ash and other solid waste will be removed from the Proposed Facility and taken to the Landfill or other facility for disposal.

The municipal solid waste will be delivered to the Proposed Facility by transfer tractor-trailers and packer trucks. The waste will be unloaded into a pit located inside the refuse storage building. No waste will be unloaded, stored, or processed outside. Three overhead bridge cranes will mix the waste in the storage pit and load the charging hoppers of the three combustor units. The municipal solid waste will be reduced by the combustion process to less than 10 percent of its original volume and 30 percent of its original weight. Ferrous and non-ferrous metals will be removed from the bottom ash. Recovered metals will be processed at the ferrous processing facility in the Energy Park. The ash will be stored in the ash management building until it is removed from the Proposed Facility and taken to the Landfill or other facility for disposal.

Electrical transmission lines from the Proposed Facility will be connected to the FPL substation in the Energy Park. Water, wastewater and other utilities are located within the right-of-way adjacent to the Project Site. No new transmission line corridor will be required for the Proposed Facility. All necessary roads and utilities (e.g., potable water, sanitary sewer, natural gas, and telecommunications) already exist in the Energy Park adjacent to the Project Site. The Proposed Facility will only need to interconnect to these existing facilities.

Emissions from the combustor units will be minimized through a combination of good combustion practices and advanced air pollution control systems. The Proposed Facility will use Best Available Control Technology to comply with emissions limits for Nitrogen Oxides (NOx), Sulfur Dioxide (SO2) and Mercury (Hg) that are lower than the permit limits for other municipal waste combustor unit operating in the United States. Continuous emissions monitors will be used to demonstrate on-going compliance with federal and state air quality regulations.

The Proposed Facility will minimize the use of potable and industrial process water and reduce the need for disposal of wastewater. No increase in the Energy Park’s allowed surficial aquifer withdrawal or potable water supply from the City of West Palm Beach will be needed for process water by the Proposed Facility during normal operations. The air cooled condenser will significantly reduce the amount of water required for the generation of electricity. Process water will come from 1) cooling tower blowdown wastewater from the Existing Facility; 2) reuse of
process wastewater from the Proposed Facility; 3) existing industrial supply wells; and 4) rainwater harvested from Existing and Proposed Facility building roofs.

The stormwater management system for the Proposed Facility has been designed in accordance with applicable FDEP and South Florida Water Management District regulations. A dry retention system will provide the required water quality treatment and retention for the direct runoff resulting from a 25-year, 72-hour storm event. The proposed system will maintain the current capability to route stormwater overflow from the Jog Road drainage system through the Project Site to the Authority’s conservation area in the western part of the Energy Park.

Construction of the Proposed Facility is projected to take approximately 36 months. Construction will require employment of more than 2,000 construction workers during the three year construction period. After construction, the new facility is expected to employ about 75 personnel.

Evaluation

The Proposed Facility is designed to be constructed within the existing site boundaries of the Palm Beach County Renewable Energy Park. The Proposed Facility is expected to more than double the certified generating capacity (185 MW versus 75 MW) of the Energy Park. The Proposed Facility will generate electricity from renewable resources, which is expected to displace the use of about 985,000 barrels of oil per year and reduce greenhouse gas emissions from fossil fuels. Operation of the Proposed Facility is projected to extend the life of the Landfill by more than 20 years and postpone the time when the Authority must construct a new landfill at a location outside the Energy Park.

The new facility is not expected to have significant environmental impacts on or off the project site. The specific location where construction is to occur has already been disturbed. The Proposed Facility will not have any direct withdrawals from or discharges to any surface water body. Air dispersion modeling demonstrates that the Proposed Facility will comply with all applicable standards and criteria, including Florida and National Ambient Air Quality Standards, which are designed to protect human health and the environment. All of the major equipment, except the air-cooled condenser, will be located inside enclosed buildings, which will minimize potential noise from the operation of the Proposed Facility. The overall sound level from the Proposed Facility will be below applicable guidelines and standards.

The Proposed Facility is not expected to have any adverse traffic impacts. The trucks that will deliver municipal solid waste to the Proposed Facility are currently delivering the waste to the Landfill. The Proposed Facility will not require changes in traffic patterns or roadways. The Proposed Facility will result in some additional traffic associated with new employees, and the delivery of supplies and removal of ash, but this traffic will be negligible. The Florida Department of Transportation will address the need for any specific transportation improvements during the Certification process.

The height of the air emissions stack of the proposed facility is expected to have a visual impact on the community to the north. The Authority has been working closely with residents of the
Ironhorse County Club to reduce the visual impact of the stack. The Authority has agreed to restrict the height of the stack to 310 feet, while still complying with air pollution requirements. The Authority also has agreed that the stack will be oval, rather than round. The oval design will be more expensive, but it will have less visual impact when viewed from the Ironhorse community.

As part of this review, Council solicited comments from nearby jurisdictions, including Palm Beach County, City of Riviera Beach, City of West Palm Beach, Town of Lake Park, Town of Mangonia Park, Village of North Palm Beach, and City of Palm Beach Gardens. As of the date of this report, Council did not receive any comments from these local governments or any other party concerning the Proposed Facility.

Council has not identified any regional issues of concern with the Proposed Facility. The project is consistent with the following goals and strategies contained in the Strategic Regional Policy Plan:

**Goal 6.3:** Protection of water quality and quantity.

**Goal 13.1:** Maintenance of acceptable air quality levels

**Strategy 1.1.2:** Promote compatibility of urban areas, regional facilities, natural preserves and other open spaces.

**Strategy 9.1.1:** Reduce the Region’s reliance on fossil fuels.

**Conclusion**

The proposed Palm Beach Renewable Energy Facility No. 2 is consistent with the goals, strategies, and policies contained in the Strategic Regional Policy Plan, provided that the project is constructed and operated in compliance with the conditions of certification approved by the State of Florida. Council recommends approval of the project.