Chapter 13: Energy

A. INTRODUCTION

The 2010 *City Environmental Quality Review (CEQR) Technical Manual* recommends a detailed assessment of energy impacts only for actions that could significantly affect the transmission or generation of energy or that generate substantial indirect consumption of energy (such as a new roadway). Because the proposed action would not exceed these CEQR thresholds, this chapter simply discloses the proposed action's anticipated energy consumption.

An assessment of Greenhouse Gas (GHG) emissions generated by the project and opportunities to include design elements that minimize GHG generation (or other energy-saving and green building measures) is found in Appendix F.

B. PRINCIPAL CONCLUSIONS

The proposed action (both the proposed Flushing Commons project and the Macedonia Plaza project) would generate new demand for energy at the rezoning area, but it would not significantly affect the transmission or generation of energy. Electricity and gas is expected to be supplied by Con Edison, which would provide heating, cooling, and lighting for the proposed action. The operational consumption for the proposed action is expected to be approximately 237,923 million British Thermal Units (BTUs) per year. This increase in energy demand could be provided by Con Edison without disruption to the distribution system. Therefore, the proposed action would not result in any significant adverse impacts on energy supply or demand.

C. EXISTING CONDITIONS

Con Edison supplies electricity and gas for most of New York City. KeySpan Energy also provides natural gas to portions of New York City. The existing project site uses, consisting of lighting and equipment needs for the parking lot and structure, do not generate a significant demand for energy. The existing energy use at the project is estimated to be 5,785 million BTUs per year.

D. THE FUTURE WITHOUT THE PROPOSED ACTION

In the future without the proposed action, no known development projects are planned at the rezoning area. Therefore, future energy consumption at the rezoning area is not expected to change.

E. PROBABLE IMPACTS OF THE PROPOSED ACTION

Electricity and gas is expected to be supplied by Con Edison, which would provide heating, cooling, and lighting for the proposed action. The office scenario for the proposed Flushing Commons project was conservatively assumed for this analysis because the office scenario,

compared with the hotel scenario, would result in a greater energy demand. The proposed action's energy consumption has been determined to be 266,976 million BTUs annually (see Table 13-1). The *2010 CEQR Technical Manual* does not provide a specific energy consumption rate for parking facilities. In order to avoid over prediction of the emissions associated with the parking garage, the more specific energy consumption rate from the *2001 CEQR Technical Manual* was used. With the exception of the parking garage, energy consumption was calculated using the whole-building energy intensity factors by building type given in the 2010 *CEQR Technical Manual*. This methodology was determined to be a reasonably conservative estimate of the proposed project's energy consumption due to the fact that the default rates for city-wide energy consumption by existing buildings, as provided in the revised *CEQR Technical Manual*, were used; the new buildings associated with the Proposed Project would likely have lower energy demand.

The Flushing Commons project is pursuing five separate LEED certifications for New Construction and Core and Shell under V2.2. For Macedonia Plaza, New York City Department of Housing Preservation and Development (HPD) requires all new construction projects to achieve Green Communities certification.[1] Under this program, the proposed buildings would be 15 percent more energy efficient than buildings constructed to current code. Although the project may ultimately achieve higher levels of efficiency, the calculations below assume the minimum energy reduction required for LEED certification (10 percent) for Flushing Commons and for HPD's New Construction Program (15 percent), reflecting the incorporation of such measures into the proposed action.

Table 13-1
Projected Annual Energy Consumption

Use	Size (square feet)	Rate (Btu/square foot/year)	Energy Reduction	Consumption (Million Btu/Year)
Residential	740,000	126,700	10%	84,382
Retail	241,500	216,300	10%	47,013
Restaurant	33,500	216,300	10%	6,521
Hotel		126,700	10%	0
Commercial/Office	234,000	216,300	10%	45,553
Community Facility/ Medical Office	36,000	216,300	10%	7,008
Community Facility/ Other	62,000	250,700	10%	13,989
Loading, Public and Accessory Parking*	538,000	27,400	10%	13,267
Residential (Macedonia Plaza)	125,000	126,700	15%	13,462
Local Retail (Macedonia Plaza)	25,000	216,300	15%	4,596
Community Facility/ Other (Macedonia Plaza)	10,000	250,700	15%	2,131
Total	**2,045,000**	**NA**	**NA**	**237,923**

Note: * Rates from *CEQR Technical Manual*, Dec. 2001.
Source: Rates from *CEQR Technical Manual*, May 2010.

The proposed action would be required to comply with the New York State Energy Conservation Construction Code, which governs performance requirements of heating, ventilation, and air conditioning systems, as well as the exterior building envelope of new buildings. In compliance with the code, the proposed buildings would incorporate all required energy conservation measures, including meeting the code's requirements related to energy efficiency and combined thermal transmittance.

[1] Enterprise Community Partners, Green Communities Criteria, 2008.

As a result of the proposed action, the existing parking lot use and related energy consumption, estimated at 5,785 million BTUs per year, would be eliminated. The proposed action is expected to generate a total annual energy demand of 237,923 million BTUs per year. The additional consumption of about 232,138 million BTUs per year is virtually negligible compared with Con Edison's most recent annual energy demand estimate of 55 billion Kilowatt-hours (188 trillion BTUs per year) within its service area. This increase in energy demand could be provided by Con Edison without any disruption to the distribution system. As a result, no significant adverse energy impacts from the proposed action are expected. ✷