Chapter 14: Energy

A. INTRODUCTION

The 2012 *City Environmental Quality Review (CEQR) Technical Manual* recommends a detailed analysis of energy impacts for projects that could significantly affect the transmission or generation of energy or that cause substantial new consumption of energy. Because the proposed project would not result in any of these conditions, a detailed assessment of energy impacts is not necessary. Nevertheless the *CEQR Technical Manual* recommends that a project's energy consumption be calculated and disclosed. Therefore, this chapter projects the amount of energy consumption required by the proposed project.

PRINCIPAL CONCLUSIONS

The proposed project is projected to generate demand for approximately 252,000 million British Thermal Units (BTUs) of energy per year. This energy demand represents the total incremental increase in energy consumption between the future without the proposed project (the No Build condition) and the future with the proposed project (the Build condition). As explained in the *CEQR Technical Manual*, the incremental demand produced by most projects would not create a significant impact on energy capacity, and detailed assessments are only recommended for projects that may significantly affect the transmission or generation of energy. The proposed project would generate an incremental increase in energy demand that would be negligible when compared to the overall demand within Con Edison's New York City and Westchester County service area. Therefore, the proposed project would not result in any significant adverse energy impacts.

B. EXISTING CONDITIONS

ENERGY GENERATION

Within New York City, electricity is generated and delivered to most users by Consolidated Edison (Con Edison) as well as a number of independent power companies. Electrical energy in New York City is drawn from a variety of sources that originate both within and outside the City. These include non-renewable sources, such as oil, natural gas, and coal fuel; and renewable sources, such as hydroelectricity and, to a much lesser extent, biomass fuels, solar power and wind power. Electricity consumed in New York City is generated in various locations, including sites within New York City, locations across the Northeast, and places as far away as Canada.

Con Edison distributes power throughout New York City and Westchester County. Transmission substations receive electricity from the regional high voltage transmission system and reduce the voltage to a level that can be delivered to area substations. Area substations further reduce the voltage to a level that can be delivered to the distribution system, or the street "grid." Within the grid, voltage is further reduced for delivery to customers. Each substation serves one or more distinct geographic areas, called networks, which are isolated from the rest of the local

distribution system. If service is lost at a specific substation or substations, the network functions to isolate any problems from other parts of the city. Substations are also designed to have sufficient capacity for the network to grow.

In 2011 (the latest year for which data are available), approximately 58 billion kilowatt hours (KWH), or 198 trillion BTUs were delivered in Con Edison's service area. In addition, Con Edison supplied approximately 129 trillion BTUs of natural gas and approximately 22 billion pounds of steam, which is equivalent to approximately 26 trillion BTUs.[1] Overall, approximately 353 trillion BTUs of energy are consumed within Con Edison's New York City and Westchester County service area annually.

PROJECT SITE ENERGY CONSUMPTION

For this analysis, existing energy consumption was calculated for the building sites, or the area to be redeveloped as part of the proposed project (i.e., the Eastern and WF Parcels and the sites of Buildings 6, 7, and 8). The existing energy consumption does not include areas where no project development would occur, i.e., on the Hallet's Cove Playground, Whitey Ford Field, or portions of the NYCHA Astoria Houses Campus not located within the sites of Buildings 6, 7, or 8, since the proposed project would not result in any change in use or waste generation at these locations.

Existing uses on the building sites that generate demand for energy include an electronics and ink toner manufacturing company and construction and telecommunications storage space. For analysis purposes, these uses are assumed to consume energy at the industrial building type rate (554,300 BTU/sf/year) as defined in Table 15-1 of the *CEQR Technical Manual*. Therefore, the existing energy consumption on the building sites is 40,748 million BTUs per year (see **Table 14-1**).

Table 14-1
Existing Energy Consumption

Use	Size (gsf)	Rate (BTUs/sf/year)	Energy Consumption (Million BTUs/Year)
Ink and toner manufacturing	27,413	554,300	15,195
Construction and telecommunications storage	46,100	554,300	25,553
Total Energy Consumption			**40,748**

Notes: sf = square feet
Source: 2012 *CEQR Technical Manual*, Table 15-1, "Average Annual Whole-Building Energy Use in New York City."

C. THE FUTURE WITHOUT THE PROPOSED PROJECT

In the No Build condition, land uses on the building sites would remain as described above under "Existing Conditions," and there would be no change to energy consumption compared to the existing condition.

[1] Consolidated Edison Annual Report, 2011.

D. PROBABLE IMPACTS OF THE PROPOSED PROJECT

As described in Chapter 3, "Land Use, Zoning, and Public Policy," the proposed project would redevelop the building sites located on the Halletts Point peninsula with residential, retail (including a supermarket), parking, and open space uses.

The proposed project would result in the addition of a total of approximately 2.2 million gsf of residential space and approximately 68,663 gsf of retail space. For analysis purposes, the proposed project's residential use is assumed to consume energy at the large residential building type rate (126,700 BTU/sf/year) and the retail space is assumed to consume energy at the commercial use rate (216,300 BTU/sf/year) as defined in Table 15-1 of the *CEQR Technical Manual*. Overall, the proposed project would generate an estimated total energy demand of 292,978 million BTUs of energy per year (see **Table 14-2**). Con Edison or another power company would provide electricity or gas to heat, cool, and light the proposed project.

Table 14-2
Projected Future Energy Consumption of the Proposed Project

Use	Size (gsf)	Rate (BTUs/sf/year)	Energy Consumption (Million BTUs/Year)
Residential	2,195,159	126,700	278,126
Retail	68,663	216,300	14,852
		Total Energy Consumption	**292,978**

Notes: sf = square feet
Although the proposed waterfront open space would generate some energy demand for lighting, the amount would be negligible and these components were not included in the calculations.
Source: 2012 *CEQR Technical Manual*, Table 15-1, "Average Annual Whole-Building Energy Use in New York City."

The total incremental energy use between the No Build and Build conditions would be 252,230 million BTUs per year. This calculation was derived by subtracting out the existing (and No Build) energy consumption on the building sites (40,748 million BTUs per year) from the total project energy consumption. Compared with the approximately 353 trillion BTUs of energy consumed annually within Con Edison's New York City and Westchester County service area, this incremental increase would be considered a negligible change (approximately 0.07 percent of Con Edison's annual consumption).

Therefore, the proposed project would not have any significant adverse impact on energy. ✷