Chapter 15: Energy

A. INTRODUCTION

This chapter describes the potential effects of the proposed project on energy consumption. The 2001 *City Environmental Quality Review (CEQR) Technical Manual* recommends performing a detailed assessment of energy impacts 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).

All new structures requiring heating and cooling must conform to the New York State Energy Conservation Code, which reflects state and City energy policy. Any action that would result in new construction or substantial renovation of buildings, such as the proposed project, would not create adverse impacts, and therefore would not require a detailed energy assessment. Because the proposed project would not trigger any of the *CEQR Technical Manual* thresholds, this chapter simply discloses the proposed project's energy consumption using the energy use index averages provided in the *CEQR Technical Manual*.

As detailed in this chapter, the proposed project (either scenario) would not result in significant adverse impacts on energy.

B. EXISTING CONDITIONS

ENERGY SUPPLY

Con Edison delivers electricity to all of New York City (except the Rockaway area in Queens) and almost all of Westchester County. The electricity is generated by Con Edison, as well as a number of independent power companies. In 2006 (the latest year for which data are available), annual electricity usage totaled approximately 57 billion kilowatt-hours (kWh), or 196 trillion British Thermal Units (BTUs), in Con Edison's delivery area. In addition, Con Edison supplied approximately 108 trillion BTUs of natural gas and approximately 23 billion pounds of steam, which is equivalent to approximately 23 trillion BTUs. Overall, approximately 327 trillion BTUs of energy are consumed within Con Edison's New York City and Westchester County service area.

In 2001, New York State began implementing measures to address the increasing electrical power capacity needs of the New York City region. The Governor's Executive Order No. 111 (EO 111) was introduced in June 2001, directing state agencies, state authorities, and other affected entities to address energy efficiency, renewable energy, green building practices, and alternate fuel vehicles. EO 111 identified the New York State Energy Research and Development Authority (NYSERDA) as the organization responsible for coordinating and assisting agencies and other affected entities with their responsibilities.

ENERGY DEMAND

The development site is currently occupied by the 1,700-room, approximately 1.4 million gross-square-foot, Hotel Pennsylvania, which also contains approximately 46,400 gross square feet (gsf) of ground-floor retail uses. The existing hotel and retail uses demand approximately 206,289 million BTUs per year (see **Table 15-1**).

Table 15-1
Existing Energy Consumption: Development Site

Use	Size (Square Feet)	Rate (BTUs/Square Foot/Year)	Consumption (Million BTUs/Year)
Hotel	1,400,000	145,500	203,700
Ground-Floor Retail	46,400	55,800	2,589
		Total Energy Consumption	**206,289**
Source: 2001 *CEQR Technical Manual*, Table 3N-1 "Energy Use Index Averages."			

C. THE FUTURE WITHOUT THE PROPOSED PROJECT

The demand for electricity is expected to increase by approximately 1.5 percent a year in New York City. To meet that demand, a number of power plant construction projects are planned or currently under way. In addition, a number of electric transmission projects are proposed to bring electric power from outside New York City into the city. While not all of the projects will likely be constructed, sufficient additional generating capacity is expected to be built to meet New York City's projected future energy demands.

In June 2002, the New York State Energy Planning Board released the *New York State Energy Plan and Environmental Impact Statement*, which was updated in March 2006. This plan and its updates establish New York State energy policies and objectives. The plan's policy objectives are to support safe, secure, and reliable operation of the energy and transportation systems; to stimulate sustainable economic growth through competitive market development; to increase energy diversity; to promote a cleaner and healthier environment; and to ensure fairness, equity, and consumer protection. These objectives continue the policies developed in earlier energy plans. No large-scale changes in energy generation and consumption policies are foreseen at the present time. In the future, Con Edison and other energy providers are expected to continue to deliver energy throughout New York City.

As described in Chapter 2, "Procedural and Analytical Framework," absent approval of the proposed actions, the project sponsor will develop the development site with an as-of-right building (the "No Action" building) permitted under existing C6-6 and C6-4.5 zoning. This No Action building will contain approximately 1.6 million gsf, of which 1.3 million gsf will be for office use and 40,600 gsf will be for retail use. The remaining space will be occupied by mechanical space, lobby area, and amenity space. These proposed uses will create a demand for 105,086 million BTUs per year (see **Table 15-2**).

Table 15-2
Projected Energy Consumption:No Action Project

Use	Size (Square Feet)	Rate (BTUs/Square Foot/Year)	Consumption (Million BTUs/Year)
Office	1,319,914	77,900	102,821
Retail	40,600	55,800	2,265
		Total Energy Consumption	**105,086**
Source: 2001 *CEQR Technical Manual*, Table 3N-1 "Energy Use Index Averages."			

D. PROBABLE IMPACTS OF THE PROPOSED PROJECT

As discussed in Chapter 1, "Project Description," in the future with the proposed project, the development site would be redeveloped with either the Single-Tenant or Multi-Tenant Office Scenario. Both scenarios would include a commercial office building located above a podium base. The Single-Tenant Office Scenario would include five floors of trading use within the podium base. Trading activities require substantially enhanced electrical power (up to four times that required for typical office use, which must be 100 percent uninterrupted and 100 percent redundant [emergency back-up] 24 hours a day, 7 days a week, 365 days a year), 100 percent redundant mechanical and telecommunications systems, and 24-hour air conditioning. Because trading activities require more electrical power, information is presented in this section for the Single-Tenant Office Scenario, since this scenario would be the worst case in terms of energy use.

It is currently estimated that the proposed building (either scenario) would achieve the LEED Silver rating. As part of this, it is likely that the proposed project would include measures to reduce energy use; however, the potential reduction of the project's energy consumption is not accounted for in this analysis.

PlaNYC, the City's long-term sustainability plan, includes a set of energy initiatives and strategies to guide development of a reliable, affordable, and environmentally sustainable energy network for New York City. As described above, the proposed project is currently estimated to achieve the LEED Silver rating and would likely include measures to reduce energy use. Therefore, the proposed project would be consistent with the energy reduction goals of PlaNYC. Details on the measures to be incorporated as part of the proposed project are provided in Chapter 18, "Air Quality and Greenhouse Gas Emissions."

The Single-Tenant Office Scenario's total projected energy demand would be 164,810 million BTUs per year based on the energy use index averages provided in the *CEQR Technical Manual* (see **Table 15-3**). This would be an incremental increase in energy demand of 59,724 million BTUs per year when compared to the No Action building.

Table 15-3
Projected Energy Consumption
Single-Tenant Office Scenario

Use	Size (Square Feet)	Rate (BTUs/Square Foot/Year)	Consumption (Million BTUs/Year)
Office	1,534,594	77,900	119,545
Trading Floors	340,857	125,000[1]	42,607
Retail	18,266	55,800	2,658
		Total Energy Consumption	**164,810**

Note: [1]Analysis utilizes the data processing energy use index to determine the trading floors' energy use.
Source: 2001 *CEQR Technical Manual*, Table 3N-1 "Energy Use Index Averages."

Con Edison or another power company would provide electricity, gas, or steam to heat, cool, and light the proposed project. Compared with the approximately 327 trillion BTUs of energy consumed annually within Con Edison's New York City and Westchester County service area, the incremental increase from the proposed project (either scenario) would be considered a negligible increment.

Upon completion, the proposed project would comply with the New York State Energy Conservation Construction Code Act. This code governs performance requirements of heating, ventilation, and air conditioning systems, as well as the exterior building envelope. The code, promulgated on January 1, 1979, pursuant to Article 11 of the Energy Law of the State of New York, requires that new and recycled buildings (both public and private) be designed to ensure adequate thermal resistance to heat loss and infiltration. In addition, the code provides requirements for the design and selection of mechanical, electrical, and illumination systems. In compliance with the code, the building's basic designs would incorporate all required energy conservation measures, including meeting the code's requirements relating to energy efficiency and combined thermal transmittance. Additional measures to reduce energy demand beyond what is required by code are discussed in Chapter 18, "Air Quality and Greenhouse Gas Emissions." Based on all of the above factors, no significant adverse energy impacts would result from the proposed project. ✷