

N. Energy

CEQR requires the assessment of energy consumption during environmental review. This mandate comes from the SEQRA regulations, which require that EISs include an identification of any irreversible and irretrievable commitments of resources associated with the implementation of the action and "a discussion of the effects of the proposed action on the use and conservation of energy, if applicable and significant." (The State's Environmental Assessment Form also includes a brief assessment of energy.) CEQR, under Executive Order 91, has the same requirements.

100. Definitions

Energy analysis focuses on an action's consumption of energy, and where relevant, any effects on the transmission of energy that could result from the action. The assessment is of the energy sources typically used for heating, electricity, and transportation— fossil fuels (oil, coal, gas, etc.), hydroelectric power, and occasionally, miscellaneous fuels like wood, solid waste, or other combustible materials.

200. Determining Whether an Energy Assessment is Appropriate

All new structures requiring heating and cooling are subject to the New York State Energy Conservation Code, which reflects state and City energy policy. Therefore, those actions that would result in new construction or substantial renovation of buildings would not create adverse energy impacts, and would not require a detailed energy assessment. A detailed assessment of energy impacts would be limited to actions that could significantly affect the transmission or generation of energy or that generate substantial indirect consumption of energy (such as a new roadway that could lead to a substantial increase in the number of vehicle miles traveled, and thus, fuel consumed in the City). New roadways are not typical in New York City, and their analysis is not addressed in this Technical Manual. For energy intensive facilities that could significantly affect the transmission or generation of energy, consideration of clean on-site generation alternatives is recommended.

Although significant adverse energy impacts are not anticipated for the great majority of actions under CEQR, it is recommended that the amount of energy to be consumed during long-term opera-

tion be disclosed in the environmental assessment. The methods are presented below.

300. Assessment Methods

Disclosing energy consumed by a proposed action begins with an analysis of operational energy, or the amount of energy that would be consumed annually after the activity facilitated by the action is operating. Usually, this encompasses heating, cooling, fans, water heating, lighting, power, and auxiliaries.

The measure of energy used in the analysis is usually BTUs per year. One BTU, or British Thermal Unit, is the quantity of heat required to raise the temperature of one pound of water one Fahrenheit degree. This unit of measure can be used to compare consumption of energy from different sources (e.g., gasoline, hydroelectric power, etc.), taking into consideration how efficiently those sources are converted to energy. Its use avoids the confusion inherent in comparing different measures of output (e.g., horsepower, kilowatt hours, etc.) and consumption (e.g., tons per day, cubic feet per minute, etc.). Several standard reference documents provide tables that list the factors for converting various energy measures to BTUs.

310. OPERATIONAL ENERGY CONSUMPTION

Operational energy is calculated in BTUs for each project element. The energy requirements of the different uses that would result from an action are sometimes available from the project architect or engineer. When they are not, standard reference tables can be used to estimate energy usage. Table 3N-1 provides rates that can be used for different land uses, depending on the year of construction of the building in which they will be housed. For energy-intensive facilities like data centers or web hosting facilities, a project-specific analysis would be more appropriate. Such figures are not available for manufacturing uses, because energy demands vary widely for those uses, depending on building requirements and the manufacturing activity proposed. Such information is obtained from the manufacturer.

The next step is to determine the net increase in energy consumption that would result from the action. Often this is the same as the amount of energy that would be consumed by the action. If the action would result in removal of sources of energy consumption, however, these are subtracted from the projected annual energy use

to determine the net increase. The standard references give energy consumption rates for uses in buildings constructed before 1978, when the state's energy code was promulgated.

Table 3N-1
Energy Use Index Averages (in BTUs/sq. ft./yr.)

Facility	Northeast
Data Processing	125,000
Education	76,400
Food Sales	159,300
Food Service	113,800
Health Care	196,400
Lodging	145,500
Mercantile & Service	55,800
Office	77,900
Parking Garage	27,400
Public Assembly	65,300
Public Order & Safety	102,500
Religious Worship	30,800
Warehouse & Storage	44,100

Source: Association of Energy Engineers, 1997

Once the net energy consumption has been determined, it may be appropriate to consult with the appropriate energy supplier and request confirmation that there would be no problem in providing the additional load and making service connections.

400. Regulations and Coordination

410. REGULATIONS AND STANDARDS

State energy policy is presented in Section 3-101 of the State's Energy Law. The New York State Energy Conservation Construction Code, which first became effective in 1978 (and has since been amended), sets minimum standards for the design and construction of all new buildings and substantial renovation of existing buildings throughout New York State. There is also a State Energy Plan, published every 3 years, available from the New York State Energy or the New York City Economic Development Corporation, Energy Division.

420. COORDINATION

Consultation with energy suppliers is typically appropriate to determine if a proposed action would require extension or upgrading of energy transmission facilities. The New York State Energy Research & Development Authority provides information about loans and incentives to assist businesses with initial costs associated with installing energy-efficient equipment.

Energy policy in the City is coordinated by the Energy Division of the New York City Economic Development Corporation. Guidance on energy conservation measures and techniques are available through this office.

430. LOCATION OF INFORMATION

New York City Economic Development
Corp.,
Energy Division
110 William Street
New York, NY 10038
(212) 312- 3762

NYS Energy Research & Development
Authority
286 Washington Avenue
Albany, NY 12203-6399
(518) 862-1090