

## **8.0 ENERGY RESOURCES COMMENTS AND RESPONSES**

### **8.1 Introduction**

Based on input received during the public review process, among other things, the Applicant has chosen to move forward with the As-of-Right, Residential and Convenience Retail Alternative presented in the DEIS/DGEIS. Under this development plan, the commercial component of the project would be reduced from 480,000 square feet to 60,000 square feet (87.5 percent) while the number of residential units would be increased from 1,340 to 1,613 households (24.8 percent). As a result, the annual consumption of energy has been recalculated. The adjusted numbers follow.

The 1,613 dwelling units would be inhabited by households that would place demand on various energy sources. In a residential dwelling, energy is consumed for space heating, air-conditioning, water heating, refrigerators, appliances and lighting. According to data published in the 1997 Residential Energy Consumption Survey (Source: U.S. Department of Energy), approximately 123 million BTUs are consumed per household annually in New York State. It is expected that 1,613 households would consume approximately 205.8 billion BTU<sup>1</sup> of energy annually.

Likewise, the 60,000 square feet of commercial space would consume electricity and gas, and the amount of consumption would depend on the specific tenant that would occupy the space. In a commercial building, energy is consumed for space heating, air-conditioning, water heating, and lighting. Natural gas and electricity are the predominant fuel sources for commercial uses. According to data published in the 1995 Commercial Buildings Energy Consumption Survey (Source: U.S. Department of Energy), retail space consumes approximately 61,700 BTUs per square foot annually. It is expected that 60,000 square feet of retail space would expend 3.7 billion BTU of energy annually.

### **8.2 Comments and Responses**

**Comment 8.1 (Letter #17: Michael Merriman, NYSDEC, January 23, 2009):** The DEIS presents only a very limited discussion of this important environmental issue. The DEIS commits the developer to meet only three building envelope design standards and only three indoor/outdoor lighting standards. There is no commitment to analyzing and then estimating the total energy use by the construction and occupancy of this residential and commercial development. There is also no discussion of the use of new technologies to reduce energy consumption.

**Response 8.1:** *The requirements set forth in the 2007 Energy Conservation Construction Code of New York State (the Code) include guidelines and standards which must be met for residential and commercial buildings as well as for lighting. The text of the DEIS/DGEIS summarizes requirements and standards for which all buildings in New York State must comply. As noted in the DEIS/DGEIS, all Rock Hill Town Center buildings will comply with all the requirements and standards identified in the Code.*

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<sup>1</sup> BTU, or British Thermal Unit, is a unit of heat equal to the amount of heat required to raise one pound of water one degree Fahrenheit at one atmosphere pressure; equivalent to 251.997 calories.

*The Applicant will consider the implementation of new technologies that are documented to increase energy efficiency in some or all of the buildings proposed in order to comply the laws of New York State. As energy efficiency technologies are continually evolving, new technologies are continually brought to the market, and since the build out for the project could extend from 15 to 20 years, the use of such technologies will be developed as part of the final plans for each phase of the project.*

**Comment 8.2 (Letter #17: Michael Merriman, NYSDEC, January 23, 2009):** A more detailed description of the effect of the proposed action on the short and long term use and conservation of energy resources should be provided. This must include ways to reduce inefficient or unnecessary consumption during construction of the residential/commercial portions of this project and the long term operation of water and sewer facilities. The discussion should include applicable residential and commercial building codes and consideration of Leadership in Energy and Environmental Design (LEED) Green Building Rating System certification criteria in developing building plans for this project. The size, location, orientation and compactness of all structures (residential or commercial) should be considered in the design of the development. Additionally, the DEIS should include a discussion of the Department's recently released "Draft Guide for Assessing Energy Use and Greenhouse Gas Emissions in Environmental Impact Statements". Applicable sections of this document should be considered and discussed relative to the project design for such things as direct & indirect emissions from stationary sources; emissions from mobile sources; total emissions & mitigation.

***Response 8.2: Response 8.0-2:*** *As documented in the DEIS/DGEIS, "Energy consumption will occur during construction and occupancy of the proposed residences and commercial space. During construction, energy will be used to power equipment and construction vehicles. The residences and commercial space will consume energy for space heating, air conditioning, lighting, household appliances and other electrical devices once occupied."*

*The Project would incorporate a number of green building practices that would conserve energy and offset potential adverse impacts associated with energy consumption related to the construction and operation of the Proposed Action. The U.S. Green Building Council's (USGBC) Leadership in Energy and Environmental Design (LEED) standards for new construction have been considered during the development of the project plan including the site layout and building design to minimize impacts on energy consumption. While the Applicant intends that this project will have LEED compliant components, they will not seek LEED certification.*

### **Construction**

*Green building practices such as those suggested under the US Green Building Council's Leadership in Energy and Environmental Design (LEED) program would be incorporated in the construction phase of the project. Factors that contribute to waste such as over-packaging, improper storage, ordering errors, poor planning, breakage, mishandling, and contamination of construction materials would be minimized to the greatest extent possible. For construction waste that can be readily recycled without undue cost, an area would be designated specifically for their collection on the project site.*

*The following considerations would minimize waste impacts on the project site and would be incorporated when and where appropriate.*

*Design to Prevent Waste*

- *The design would include standard sizes for building materials where possible.*
- *Specified materials on-site would include assemblies that can be easily disassembled at the end of their useful life.*
- *Materials would be reused (on-site) where feasible.*

*On-Site Waste Prevention Methods*

- *A central cutting area for wood and other materials would be assigned for each phase of the project.*
- *Concrete forms or other reusable metal or fiberglass forms would be reused where possible.*
- *Areas that are key to waste prevention, such as material storage, central cutting, and recycling stations would be clearly marked.*
- *All materials would be stored in an assigned area and handling procedures monitored to prevent loss or damage.*
- *Salvaged, recycled, or recycled-content materials and equipment would be purchased to the extent feasible in the construction process.*
- *The amount of each material brought to the site would be checked to ensure that the correct amount is delivered.*
- *An up-to-date material ordering and delivery schedule would be maintained to minimize the amount of time that materials are on-site and reduce the chance of damage.*
- *Suppliers would be asked to deliver supplies using sturdy, returnable pallets and containers, and pick up pallets and empty containers.*
- *Subcontractors would be asked to reuse or recycle their respective materials.*

**Operation and Use**

*It is unknown what energy conservation design measures would be used as the specific design of buildings would be driven by the available technologies and State requirements for the residential portion of the development in addition to the tenants in the commercial buildings. Regardless, energy conservation is mandated at the state level. The design and plans for commercial buildings must comply with the New York State Energy Conservation Construction Code. The code specifies basic requirements that are mandatory for both residential and commercial buildings. Requirements apply to the building envelope, mechanical systems, and lighting.*

*The green building technologies anticipated for incorporation in the project design which, either directly or indirectly, would reduce energy use during operation are as follows:*

- *Use native plant species adapted to the local conditions that do not need watering from potable water after establishment thereby minimizing irrigation.*
- *Include high efficiency water-conserving plumbing fixtures and control technologies in the building design as recommended in the Energy Policy Act 1992 to reduce the use of potable water.*

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- *Eliminate HCFC and Halon use by specifying only the use of HVAC and Refrigeration systems that do not use HCFC's and Halons. Specify high efficiency HVAC units.*
- *Provide an easily-accessible and well-marked recycling area within each building dedicated to the separation, collection, and storage of materials for recycling to limit the amount of construction waste carted to landfills.*
- *Provide environmental tobacco smoke control by prohibiting smoking in the commercial buildings and locating exterior designated smoking areas away from entries and operable windows to keep indoor air quality unaffected.*
- *Utilize energy efficient, shielded Site lighting to minimize energy use, nighttime light pollution and light overspill to neighbors.*
- *Specify high efficiency interior fluorescent (T5 or T8) with electronic ballasts for greater energy efficiency in the commercial buildings.*
- *Incorporate energy efficient double-glazed windows and LowE glazing if applicable.*
- *Use durable exterior materials on the commercial buildings (e.g., split face masonry, cultured stone, hardiplank siding, etc.) which require minimal maintenance and are long-lasting, thereby minimizing the need for future replacement.*
- *Install site equipment (e.g., benches, bicycle racks, refuse containers, etc.) constructed of recycled materials wherever possible.*

*Final decisions on what components should be included in the development to comply with State Code requirements will be addressed during final site plan approval.*

*The NYSDEC's "Draft Guide for Assessing Energy Use and Greenhouse Gas Emissions in Environmental Impact Statements" has yet to be adopted. Beyond that, the Policy statement included in the document reads:*

*"This policy should be used by DEC staff in their review of an EIS when:*

- *DEC is the lead agency in a project review; and*
- *Energy use or GHG emissions have been identified as significant in a positive declaration or, as a result of scoping, are required to be discussed in an EIS."*

*The NYSDEC is not the SEQRA lead agency on this project and the policy has yet to be adopted by the State. The Applicant has not conducted the level of analysis identified in the draft document. Nonetheless, there are several aspects of the Proposed Project that have been incorporated to limit its energy consumption.*

- *The Proposed Action presented in this FEIS reduces, by up to 60 percent, the operational volume of project generated traffic and the associated mobile source pollutant load when compare with the DEIS/DGEIS plan;*
- *The Applicant will incorporate LEED principals to help minimize energy use during construction and operation of the project;*
- *The buildings will conform with all State regulations set forth in the Energy Conservation Construction Code of New York State.*