

## **Suggested Capital Project ~ 1664 – for 2003 & 2004**

### **Energy System Cost of Ownership Benchmark & Reduction Effort**

Energy benchmarking establishes the comprehensive cost of energy for a given building, including direct and indirect energy expenses. The annual cost to operate an energy system includes direct energy purchase, direct and indirect maintenance costs, and replacement costs. All too frequently, direct energy purchase commands the focus on cost of energy systems. However, maintenance and replacement costs are significant and must be benchmarked for inclusion in energy system Life Cycle Cost Analysis<sup>1</sup>.

New York State recognized the importance of total system integration (benchmarking) and life cycle analysis by including both criteria in the Governor's Executive Order 111, issued in 2001. The combination of these measures better ensures appropriate scope of energy projects and consideration of individual system's lifetime cost, as a means of overcoming higher first costs associated with more efficient technologies.

On behalf of the federal government, the Environmental Protection Agency (EPA), promotes energy benchmarking through its Energy Star program. According to the EPA, "Energy Star is a voluntary program which provides an established framework to promote the environmental and financial benefits of improved energy performance."<sup>2</sup> The program relies on benchmarking as a means of grading a building's energy performance. Across the country, most buildings evaluated with regards to this comprehensive strategy have received performance ratings much lower than expected, regardless of building age. In fact, according to the EPA, while its minimum score for achieving an Energy Star rating is 75, the average score is typically around 50 (scale of 1–100). The EPA has recently given renewed support to the Energy Star program and is an eager partner in raising awareness of building performance, for existing buildings and buildings under design.

Whereas Suffolk County incurs significant annual energy costs as a part of building ownership, an Energy Star evaluation should be undertaken under Capital Program 1664. A sample of Suffolk County Buildings (ten) should be selected that is representative of the variety of county holdings. Once the list has been established, the following is a recommended statement of work for evaluating of the cost of ownership as it pertains to a building's energy systems.

#### **Phase I: Determine the true cost of energy system ownership for the facility.**

Within a timeframe to be agreed upon: (not more than six weeks per building)

1. Establish energy benchmarks for each facility for the past 18-24 months.
2. Perform an on-site equipment audit of the current energy systems.
3. Evaluate all documented repair and maintenance costs associated with the energy systems for the past two years and outline a detailed cost effective maintenance program for each facility. (This program should be designed to achieve optimal system performance and cost.)
4. Develop an effective equipment upgrade replacement strategy, as necessary, for each facility.
5. Develop and present an Executive Summary Report outlining a cost-effective strategy for each facility. Individual recommendations should be listed separately based on projected return on investment (ROI).

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<sup>1</sup> Life Cycle Cost Analysis evaluates the total cost of equipment over a specific period, not to exceed the expected useful life of the equipment. The analysis should include cost of energy purchased, service and maintenance of direct and indirect system components, among other possible factors.

<sup>2</sup> Bob Sauchelli, US EPA, Energy Star Presentation, "Add Value to Your Program Offerings and Achieved Market Result", February 2003.

Pending Suffolk County agreement and approval of recommendations in Phase I, implement Phase II:

**Phase II: Provide on-going monitoring of established benchmarks.**

Within a timeframe to be agreed upon:

1. Provide guidance with implementation of the optimization tasks recommended in Phase I. When necessary, and where approved by Suffolk County, construction and management services should be provided.
2. Provide Suffolk County staff with appropriate training relating to direct energy appliances, energy controls, and other appurtenance devices.
3. For a period of twelve (12) months, monitor energy consumption in each facility on a weekly basis and prepare executive energy reports. The timeframe of this provision and scope of building inventory may be extended under this program at the discretion of Suffolk County.
4. Coordinate with the U.S. EPA to establish each facility as an Energy Star Building.