

Center for Integrated Manufacturing Studies
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February 22, 2005

Jaclyn A. Brillling
Secretary
New York State Public Service Commission
3 Empire State Plaza
Albany, New York 12223-1350

Dear Ms. Jaclyn A. Brillling:

On January 28, 2005 the New York State Public Service Commission (PSC) issued a 'Notice for Soliciting Comments' under CASE 05-M-0090 - In the Matter of the System Benefits Charge III. The Rochester Institute of Technology's (RIT) Center for Integrated Manufacturing Studies (CIMS) respectfully submits this letter of support and endorsement for the continuation and expansion of the 'System Benefits Charge' (SBC) program, as administered by the New York State Energy Research and Development Authority (NYSERDA).

The funding for the SBC program has been collected through a System Benefits Charge (SBC) on electric utilities since 1998, and has been used to further the New York State Public Service Commission's (PSC) public policy goals to: (1) Improve system-wide reliability and increase peak electricity reductions through end-user efficiency actions; (2) Improve energy efficiency and access to energy options for underserved customers; (3) Reduce the environmental impacts of energy production and use; and (4) Facilitate competition in the electricity markets to benefit end-users.¹

We submit that NYSERDA has efficiently and effectively administered the SBC program since its initiation in 1998. In addition, we believe that the SBC program has, through NYSERDA and PSC leadership and oversight, made progress in achieving the PSC's public policy goals established for the program. Over the past six and a half years the SBC has evolved into an effective market-based program that has translated its investment into quantifiable economic, energy, environmental, and societal benefits for New Yorkers.

CIMS has had direct experience with NYSERDA programs, and their benefit to NYS businesses. Between 2001 and 2004, CIMS partnered with three companies that participated in NYSERDA projects. CIMS provided technical assistance to each company, as they identified and implemented energy savings measures. To date, each company has shown excellent energy and cost savings from implementation of purchased equipment. For all companies, the following benefits and impacts were obtained, as updated through January 2005:

- ◆ Total reduction in annual electricity use of 3,735 KWH (11.01% reduction)
- ◆ Total reduction in annual consumption of propane of 936 million BTU (100% reduction)
- ◆ Total reduction in annual energy costs of \$11,173 (78.73% reduction)
- ◆ Total annual savings in productivity of \$78,014 (73.92% savings)
- ◆ Total annual savings in materials of \$12,853 (52.85% reduction)
- ◆ Total annual savings in operating costs of \$102,040 (70.84% reduction)
- ◆ Total annual reduction in non-hazardous waste is 513,987 gallons (99.34% reduction)
- ◆ Payback period for installed equipment is less than 3 months
- ◆ The 5-year internal rate of return for installed equipment is 409%

¹ New York Energy SmartSM Program Evaluation and Status Report. "Report to the System Benefits Charge Advisory Group". Final Report - May 2004.

Each company improved their energy efficiency, reduced energy costs, and enhanced operational productivity as a direct result of NYSERDA incentives and CIMS technical assistance. In addition to the benefits of the SBC program, CIMS also submits that the SBC program has leveraged a significant amount of investment in energy efficiency, energy technology deployment, and energy-related training and development across NYS. In addition, the SBC program has leveraged an additional 30-40% of total project costs in the form of direct cost match and in-kind technology and staff contributions.

CIMS supports the continuation of the SBC program, as administered by NYSERDA, in NYS. As an applied research and development (R&D) and technology commercialization entity, CIMS has had, over the past twelve years, direct experience with energy-related technologies and processes that hold great promise for market adoption. CIMS has worked with industry, government, not-for-profits, and the community on sustainable products, technologies, and practices. Relevant CIMS projects include:

- ◆ Partnered with a fuel cell manufacturer in NYS, to help design, test, validate, and implement processes that will extend the life of fuel cells in the market, and has capacity to reuse, recycle, or remanufacture products made with this emerging energy technology. In doing so, CIMS has helped this manufacturer enhance product reliability while lowering total production and product life-cycle costs to the consumer.
- ◆ Collaborated on the NYSERDA sponsored, Renewable Energy Network of Entrepreneurs in Western New York (RENEW-NY), a partnership between the Rochester Institute of Technology, Greater Rochester Enterprise (GRE), and High Tech Rochester (HTR) to inventory the alternative and renewable energy technology companies in Western, NY, while providing business and technology incubation services.
- ◆ Partnered with other universities to build a state-of-the-art curriculum and public outreach center on hydrogen energy and technology. CIMS is one of four university centers nationally that comprise the Hydrogen Technology Learning Center (HTLC) initiative. Created through a U.S. Department of Energy program, the HTLC will, once fully developed, help train K-12 and college students, public/civic leaders, and industry on hydrogen fuels, infrastructure, technologies, and viability for a hydrogen based economy.
- ◆ Provided direct engineering support and technical assistance to NYS companies on energy efficiency improvements; energy technology and equipment upgrades; process efficiency improvements; clean energy and environmental technologies; and waste reduction and pollution prevention. CIMS has received SBC funding over the past five years that has been instrumental in extending engineering and technical assistance services to NYS companies that simply do not have the financial resources to achieve energy benefits on their own.

The economic, energy, environmental, and societal benefits achieved through the provision of the SBC program have been significant over the past six and a half years. While there has been significant progress with regard to electricity and electric demand savings, CIMS believes there continues to be some energy-related niche areas that continue to be underserved and under-addressed in the marketplace. If addressed, we believe the State could yield even greater benefits from its SBC public investments while addressing critical statewide energy planning needs. CIMS believes three critical areas that could be addressed by future SBC funding allocations include:

1. Energy Technology Testing, Validation, Evaluation, & Certification
2. Industrial Productivity and Pollution Prevention through Energy Technology
3. Building the Workforce of the Future through Energy Education and Technical Training.

Each item is briefly discussed below.

1. Energy Technology Testing, Validation, Evaluation, & Certification

Currently gaps exist at the intersections between energy technology development, commercialization, implementation, and evaluation. In the past, there has been good federal-and-state government support for the development of the “next generation of energy technologies”. The U.S. Department of Energy (DOE), NYSERDA, and other funding agencies have proactively supported the funding of early stage energy technology development. The DOE and NYSERDA also adequately provide market-based incentives that encourage the adoption and implementation of “off the shelf” energy technologies that serve to improve energy efficiency, save energy, reduce energy expenditures, and spur additional R&D expenditure. There exists a funding gap in the area of technology testing, validation, evaluation, and certification.

- ◆ **CIMS recommends that if the SBC program is continued into the future that a portion of the research and development and economic development budget allocation be used to create incentives for “energy technology testing, validation, evaluation, and certification support”.** This will enable companies with working prototypes enhance their products, get them certified with appropriate authorities, and get them “market ready”, so that they can move their products from the prototype stage to scalable manufacturing. CIMS believes that NYSERDA could develop, through SBC funding, a network of technical centers throughout the State that serve this end for a host of energy technologies and end-use applications (e.g., emerging technologies like fuel cells, micro-turbines, DG/CHP, and renewable; power supply and applications including electric reliability technologies like superconductive transmission and distribution lines; building-integrated energy management systems and control technologies; etc.). The purpose of these technical centers would be to advance the state-of-the-art in these energy technology competency areas while closing the gap between early stage R&D and incentive-based technology implementation investments.

2. Industrial Productivity and Pollution Prevention through Energy Technology

Pollution prevention (P2) is a strategy to reduce the use and generation of pollutants at their source. P2 focuses on pollution reduction during the product design phase and in the manufacturing process, instead of at the “end of the pipe”. P2 is not a panacea for business and industry, it is however a unique tool that can help reduce the environmental impacts of their operations while increasing productivity and minimizing compliance costs. P2 can also reduce the business risks associated with environmental regulations, safety violations, and product quality.

- ◆ **CIMS recommends that a portion of future SBC budget allocation be considered for advancing the pollution prevention benefits of energy efficiency and clean energy technologies through NYSERDA’s Industrial Process and Productivity Program.**

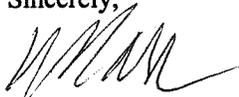
3. Building the Workforce of the Future through Energy Education and Technical Training

The success of NYS’s energy future resides, in part, with the implementation of advanced energy technologies in an open and robust market. Additionally, investments in energy infrastructure are required for a more reliable, secure, and efficient energy system in the State. Investments in New York’s transmission and distribution grid network, gas pipeline infrastructure, and portfolio of buildings and industry processes will be required to help NYS meet its goals, as outlined in the 2002 New York State Energy Plan, and set it on a path to become more energy independent. While advancements in technology, increases in “off the shelf” energy efficient product sales, and an enhanced energy market infrastructure are all needed, these solutions have their limits. To ensure the long-term health and viability of New York’s energy infrastructure we must also educate and train New York’s workforce of the future to be energy conscious.

- ◆ **CIMS recommends that a portion of future SBC budget allocation be considered for technical training, college curriculum development, and community outreach and education programs.** An integrated program that ties technology development and implementation with education and outreach would be a valuable investment in NYS’s energy future. NYSERDA, through the SBC program, has already made significant strides through the New York Energy SmartSM Schools program. CIMS recommends that this program extend throughout the community college and technical universities across NYS.

The Center for Integrated Manufacturing Studies at Rochester Institute of Technology applauds NYSERDA and the PSC on leading New York to a more sustainable energy future through the SBC program. We have valued and respected the goals and intent of the SBC Program since its inception, and fully encourage and support the continuation of the Program. Please contact me directly at 585.475.5106 if you have any questions.

Sincerely,



Dr. Nabil Nasr
Director, Center for Integrated Manufacturing Studies
Assistant Provost for Academic Affairs