



P2 Bulletin

the newsletter of the New York State Pollution Prevention Institute (NYSP21)

Special Edition!

A P2 Bulletin Special Edition: GTAC and SSC&T

The New York State Pollution Prevention Institute (NYSP21) is proud of the success that we have seen with both the Green Technology Accelerator Center (GTAC) and the Sustainable Supply Chain and Technology Program (SSC&T) over the last year working with New York State businesses in developing green technologies or enhancing their supply chain. As NYSP21's two newest programs, both GTAC and SSC&T have been warmly received by the New York State business community. Seven GTAC projects have been initiated and 55 company applications screened. As a result of this work, it is expected that 88 jobs will be retained and 24 jobs created, with a revenue increase of >\$4.9 million. SSC&T has engaged in projects with 8 companies, which are expected to help retain 532 jobs and create 19 jobs.

These two programs focus on environmental opportunities while also considering the economic impacts of environmental decisions. "NYSP21 is excited to see the early success of these two new programs in working towards making NYS more sustainable. Both the Green Technology Accelerator Center and Sustainable Supply Chain & Technology Program align with New York State's mission to increase and continue to grow jobs. These programs will fill the gaps and provide technical assistance to start-up and established companies wanting to develop, accelerate, and compete in the greener and cleaner national and international markets. They will assist New York State's supply chain in becoming more competitive." says Anahita Williamson, Director of NYSP21.

GTAC Case Study: Food Waste to Fuel — Epiphergy, LCC

Epiphergy, LLC (Pittsford, NY) has developed and demonstrated a unique (patent-pending) bioprocess that enables the conversion ("upcycling") of a wide variety of compostable materials and organic wastes, including food/beverage waste, into ethanol fuel, animal feed and organic fertilizer. NYSP21 was asked to evaluate Epiphergy's pilot process to determine the ethanol producing capability and the environmental impacts of the process. NYSP21's evaluation was structured to document the process yields and identify process improvements which could lead to commercialization, market expansion and job creation.

The findings of the evaluation showed significant environmental benefits in Epiphergy's pilot process to "upcycle" solid and liquid organic waste including:

- Ethanol produced from food waste using Epiphergy's pilot process was determined to be "carbon negative." This ethanol production process represents a significant reduction in Green House Gas (GHG) emissions as compared to landfilling the food waste material.
- Ethanol produced using Epiphergy's pilot-scale process achieved net GHG reductions as compared to the production of both corn-based ethanol and gasoline.
- Energy efficiency improvements identified by NYSP21 could further increase the net ethanol production and commercialization potential of the bioprocess.

Epiphergy plans to construct three new "upcycling" facilities in the Rochester, NY, region and create approximately 40 direct, full-time jobs.

SEE

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Supply Chain Sustainability Forum

Sustainability as a Supplier: What Your Customers Want

NYSP2I's Green Technology Accelerator Center &

Green Technology Accelerator Center

The Green Technology Accelerator Center (GTAC) program is designed to help companies bring their new environmentally friendly product idea(s) to market. This can take different forms. The GTAC team works with the company to identify the product technology gaps and type of assistance needed to bring the new product(s) closer to commercialization. To date, NYSP2I has assisted seven different companies and redirected 13 more companies to other appropriate resources such as regional technology development centers. Successful commercialization of these green technologies has the potential for significant NY State job creation by these companies.

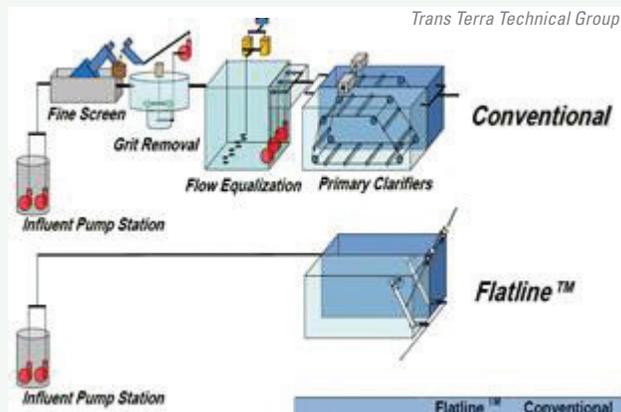
The GTAC team recently completed a project with Trans Terra Technical Group, as described below. Trans Terra Technical Group, Inc., (now ClearCove Systems, Inc.) of Rochester, NY, has developed a new front-end wastewater solids separator technology called Flatline™. The patented new system is designed to replace the preliminary steps of wastewater treatment. The suggested benefits of the system, which include improved performance over conventional wastewater systems leading to greater reduced aeration energy requirements (for secondary wastewater treatment), reduced sludge generation (also from secondary treatment) and lower total operational cost.

NYSP2I, in partnership with Clarkson University, performed an independent technology evaluation of the Flatline™ system to evaluate its environmental performance. During the evaluation, the GTAC team and Clarkson University sampled and analyzed wastewater and sludge samples to determine the reductions in oxygen-demanding organics, solids and nutrients achieved by the Flatline™ system. Additionally, software simulation was used to estimate reductions in aeration energy requirements and sludge generation from subsequent wastewater treatment steps.

NYSP2I was able to determine that as a result of improved solids recovery by the Flatline™ system (compared to conventional preliminary wastewater treatment technology) sludge extracted early on by the Flatline™ system will be improved by 55% (on a dry mass basis). Greater upfront solids recovery can lead to:

- Reduction in aeration energy requirements for secondary wastewater treatment processes by approximately 65%
- Reduction in sludge generation by 81% from secondary wastewater treatment processes (compared to conventional wastewater treatment technology on a dry mass basis). This is directly related to the improved solids recovery achieved early on by the Flatline™ system.

Trans Terra Technical Group has created 4.5 new jobs to date and is forecasting further expansion and job creation based on successful commercialization of this technology.



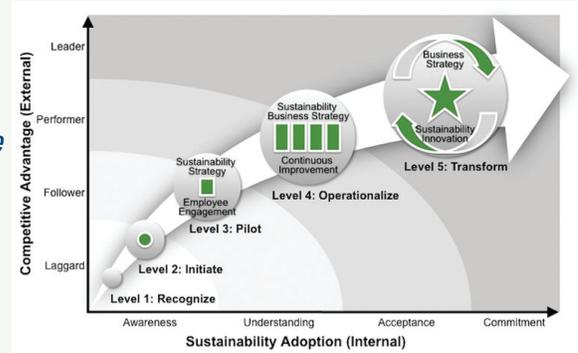
“Our Flatline™ product converts existing Wastewater Treatment Plants (WWTP) into Resource Recovery facilities. The ability to remove the organic load at the head of the WWTP reduces the energy consumption and sludge production while at the same time creating a renewable energy source that increases with population growth. The third-party (testing) by NYSP2I through the GTAC program provided a valuable tool used in technical and commercial discussions with some of the largest corporations and engineering firms in the world.”

— Terry Wright, Founder, Trans Terra Technical Group

Sustainable Supply Chain and Technology Program

Sustainable Supply Chain and Technology Program

The Sustainable Supply Chain and Technology Program (SSC&T) focuses on helping businesses achieve environmentally friendly certifications or “greening” their supply chain. To date, the program has helped eight businesses enter new markets and expand their existing customer base. When assisting a company, the SSC&T team conducts an assessment of the company’s current state and identifies improvement opportunities while providing assistance towards achieving environmental certifications or meeting customer requirements. With a growing demand for sustainable suppliers, this work enables New York State businesses to better compete on the national level and even globally.



“With assistance from NYSP21 and the Sustainable Supply Chain (& Technology) Program, we were able to validate our BELLA TERRA granite pavers to meet or exceed the standard requirements of other competing products on the market. By quantifying ASTM standards and LEED credits, MCM Natural Stone is now able to enhance our ability to market and sell our products made from 100% waste that would otherwise be sent to landfills.”

— Mike Valle, General Manager,
MCM Natural Stone

As an example, the SSC&T team worked with a local company in the food sector to assess their ability to report their sustainability practices as required by their customers. During a two-day onsite evaluation, NYSP21 used an assessment tool developed by the Institute based on internationally accepted protocols and standards such as the Global Reporting Initiative, United Nations Global Compact and Global Environmental Management Initiative. The purpose of the project was to identify opportunities to improve their sustainability program, enabling them to advance along the sustainability continuum (see Figure 1) and respond to customer inquiries.

The SSC&T team also recently completed a project with M.C.M. Natural Stone Inc. (MCM), a natural stone manufacturer of countertops, furniture, landscaping products, fireplace surrounds and accent pieces. Natural stone products, including granite, are commonly used in many applications such as countertops. However, up to 30% of the original granite slab is scrap after cutting for install and is disposed in landfills because these pieces are not large enough to be used in similar applications. MCM realized there existed an opportunity to salvage these scrap pieces of granite to be used as a new product thus diverting them from landfill. This resulted in their development of their new Bella Terra™ Granite Paver line.

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MCM requested that NYSP2I's Sustainable Supply Chain and Technology Program evaluate their Bella Terra™ Granite Pavers mechanical performance for comparison to other pavers on the market. They also wanted to determine applicability of their product to earn U.S. Green Building Council Leadership in Energy and Environmental Design (LEED) points in new building projects.

NYSP2I assisted MCM in having their pavers tested to meet the requirements of the ASTM C615 standard for granite dimension stone. Results showed the granite pavers exceeded similar requirements for brick and concrete paver products on the market.

It was also determined that these granite pavers offered by MCM may be used in projects seeking LEED certification. The pavers have the potential for contributing points towards the LEED rating system, applicable to a specific construction project, for "recycled content" and "regional materials" which come from within 500 miles. Due to this new product availability, MCM Natural Stone has the potential to retain 13 jobs and create four new jobs.

Upcoming Event

Supply Chain Sustainability Forum



New York State
Pollution Prevention Institute

in partnership with

NIXON PEABODY^{LLP}
ATTORNEYS AT LAW

Sustainability as a Supplier: What Your Customers Want

TUESDAY, JULY 30, 2013 • 8:00AM–12:00PM

ROCHESTER INSTITUTE OF TECHNOLOGY • SLAUGHTER HALL – CIMS CONFERENCE CENTER
111 LOMB MEMORIAL DRIVE • ROCHESTER, NY 14623

Join us for a dynamic presentation for NYS businesses on how to increase market share and revenue while reducing costs and environmental impacts. Our program will feature advice and best practices from major purchasers like Staples, IBM, government entities, and others with leading sustainability programs.

The seminar is being offered at no cost, but **registration is required**.

Register at: nysp2isupplierseminar.eventbrite.com. For additional information, call (585) 475-2512.

If you are interested in exhibiting your sustainable products or process details at this event, please contact us at nysp2i@rit.edu

This seminar is being offered by the NYS Pollution Prevention Institute's Sustainable Supply Chain and Technology Program designed to help position NYS businesses to take advantage of global sustainable manufacturing/green supply chain opportunities. Funding for this workshop is provided by the New York State Pollution Prevention Institute through a grant from the New York State Department of Environmental Conservation.



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