

**Florida Department of Environmental Protection
FY 2007-08 INNOVATIVE GRANT APPLICATION FORM**

- 1) Applicant Name:** Polk County
- 2) Primary contact person:** Betty Henderson
- 3) Complete Address:** 10 Environmental Loop
Winter Haven, FL 33880
- 4) Telephone Number(s)
(including SunCom number):** 863-284-4319
- 5) E-mail address:** bettyhenderson@polk-county.net
- 6) Project Title:** Market Enhancement for Densified
Expanded Polystyrene (EPS) Waste
- 7) Grant Request Amount:** \$207,500
- 8) Length of project (months):** 12

Authorizing Signature

Title

PROJECT ABSTRACT

(No more than 20 lines. Every word over 20 lines will constitute a one point deduction.)
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This proposed project will build on the existing Polk County Expanded Polystyrene (EPS) project that was recently completed under a previous State of Florida Innovative Grant. The project would involve the purchase of additional equipment (a grinder and a EPS pellitizer) to further process the densified EPS into pellet form. Adding this step to the process would enable the existing EPS recycler in Polk County (Recycle Tech) to market and sell the resulting product in North America (to various plastic extruders/manufacturers) as opposed to shipping densified EPS to Korea as is currently being done.

PROJECT DESCRIPTION

(1 page)

Expanded polystyrene (EPS) foam packaging is the familiar white material that cushions, insulates and protects all types of products during distribution. This includes custom shaped material used to package electronic equipment and appliances, loose fill packaging often called "peanuts", blocks of foam which protect furniture and appliances and shipping containers used to help preserve perishable foods and medicines.

In 2005-2006, Polk County partnered with the Southern Waste Information Exchange (SWIX) and Recycle Tech (an EPS / other plastics recycler/processor) to provide for Florida's first Expanded Polystyrene, EPS (i.e., Styrofoam) densification and recycling pilot project utilizing large quantities of locally generated commercial EPS waste. This project has now processed over 1.3 million pounds (or 650 tons) of waste EPS, densified this material, and shipped it overseas where it is used to make new products (like picture frames and indoor/outdoor homebuilding products).

This project would provide for equipment and processing which would allow for the palletizing of the densified EPS and enhance the marketability of the processed waste EPS by selling palletized EPS to North American markets for new product manufacture.

The existing operation at Recycle Tech's facility in Polk County would be expanded through the addition of the proposed equipment/processing system. The necessary grinder would be physically located in the process line just after the EPS material coming out of the existing densifier (to grind the densified EPS back down to about ½ to ¼ inch size) and the pelletizer would be placed just after the grinder to pelletize the ground up EPS to an even smaller and more uniform size. This pelletized EPS could then be shipped to end use markets after loading in appropriate containers and into trailer trucks or rail cars.

In summary, this project proposes to add two major pieces of equipment at Recycle Tech's existing EPS processing facility in Polk County: a grinder and a pelletizer. Both pieces of equipment have a proven track record for EPS and other plastic processing in North America.

Criteria 1: TECHNOLOGIES or PROCESSES

(1 page)

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(20 points) The range of scoring is between 0 and 20 points, with up to 10 points for meeting one of the following sub-criteria, up to 15 points for meeting two, and up to 20 points for meeting all three. Note: applicant may adjust space used to address each sub-criteria.

Sub-criteria 1 – Not in common use in Florida.

The Polk County EPS recycling project, begun through an Innovative Grant funded project last year, remains the only expanded polystyrene or Styrofoam processing/recycling project in the State of Florida.

Sub-criteria 2 – Novel application of an existing technology or process.

This project will take advantage of an existing process for EPS recycling in Polk County. It would enable the project partners to add needed equipment to this existing process in order to enhance the marketability of the densified EPS now being produced by grinding and palletizing it.

Sub-criteria 3 – Overcoming obstacles to recycling/waste reduction in new or innovative ways.

Obstacles to recycling to be overcome in new or innovative ways from this project include:

- Demonstrating the technical soundness of processing as received EPS through the new machinery.
- The difficulty of achieving sustainable private / public sector partnerships to meet or exceed State and local recycling goals and to increase the recycling of EPS.
- The lack of commercially available end use markets for used/waste EPS.
- The creation of more recycled content products for purchase and use by both public and private sectors.

This project will help to overcome these obstacles by:

1. Creating new domestic markets for EPS material (as opposed to sending most of the processed EPS to international markets where it is made into new products that are shipped back to this country for sale).
2. The resulting data and information from this project will be made available through public documentation, on-site visits, public presentations, and Internet web sites. This information will then be available to be utilized by other businesses/industries and governments throughout Florida.

Criteria 2: TARGETS

(1 page)

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(10 Points) Demonstrate innovative processes to collect and recycle or reduce these targeted materials/sectors: Construction and Demolition Materials, Commercial/Institutional Sectors, Hurricane Debris, Pay-As-You-Throw and Waste Tires. Note: if the proposed project also includes materials/sectors other than those targeted by this criteria, the project will receive less than the maximum 10 points allocated for the criteria.

This project targets a commercial/institutional waste stream (EPS or Styrofoam) which has previously not been recycled in Florida. While waste polystyrene is not a significant environmental problem, it does however represent a lightweight item that can take up large amounts of space by volume. The material is difficult to manage because it is lightweight and burdensome to move and dispose of. The recovery of this material will help save landfill space.

Criteria 3: BENEFITS/ COST-EFFECTIVENESS

(1 page)

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(25 points) Demonstrate the potential economic, environmental, and cost-effectiveness of the program's approach. Note: applicant may adjust space used to address each sub-criteria.

Sub-criteria 1 - Environmental Benefits (5 points).

- Methodology

While waste polystyrene is not a significant environmental problem, it does however represent a space concern by volume. The material is difficult to manage because it is lightweight and burdensome to move and dispose of. The recovery of this material will help save landfill space.

- Toxicity

This material generally has a low environmental and public health toxicity impact.

Sub-criteria 2 – Economic Benefits (5 Points).

- This project would maintain and enhance a private / public partnership (i.e., Polk County and Recycle Tech) which developed from a previous project assisted and initiated by a State of Florida Innovative Recycling Grant.
- It would enhance the development of new products from processed/pelletized EPS domestically, including the possible purchase of these new products by Florida's public and private sectors as well as add several new jobs in Polk County.

Sub-criteria 3 – Cost-Effectiveness (15 Points).

- a) This project builds on a foundation for further EPS recycling in Florida which was developed through a previous State of Florida Innovative Recycling Grant. The initial project in Polk County successfully proved, from a technical and economic basis, that waste EPS from commercial and institutional sources could be processed, densified, and shipped to international markets for manufacturing of new products. This proposed project would add two steps (that is, grinding of densified EPS and palletizing the ground EPS) to the existing EPS recycling system now operating on a continuous basis in Polk County.
- b) The existing EPS recycling project in Polk County has been very successful in relation to its original objectives and timelines. This project would build on the foundation set by the original project and would indeed enhance the "marketability" of the processed EPS and the end use of this targeted material.

Criteria 4: SUSTAINABILITY:

(1 page)

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(25 points) Demonstrate the sustainability of the proposed program.

This project enhances the sustainability of an already “sustainable” project that targets EPS waste materials. It does so by building on an existing private/public partnership, an existing EPS processing system previously established in Polk County, and by increasing the marketability of processed EPS within domestic markets (that is, North American plastic extruders and plastic product manufacturers).

Simply put, this project should increase the return on investment that the State has previously made for recycling EPS.

Criteria 4: TRANSFERABILITY

(1 page)

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(10 Points) Demonstrate transferability of technology and processes and specify how the project will promote transferability. Note: applicant may adjust space used to address each sub-criteria.

Sub-criteria 1 – Transferability of technology and processes (5 points).

The environmental and economic benefits outlined earlier in this proposal could be easily “transferred” to other jurisdictions throughout the State that are interested in investigating natural “matches” of manufacturers that use certain virgin materials for which recyclable materials (generated by residents and businesses throughout the State) could be substituted. Furthermore, for those areas in Florida that are interested in providing recycling of EPS services within their jurisdiction, the results and information gained through the previous EPS Innovative Grant project in Polk County, this proposed project should lead to increased interest in implementation of similar projects because of the enhanced marketability of a processed EPS product using proven equipment/processing systems and partnerships.

Sub-criteria 2 – How project will promote transferability (5 points).

Essential to technology transfer will be a compilation of a case study designed to outline the steps taken in establishing this particular public/private partnership as well as suggested resources that would benefit such a program in other areas. In addition, web sites will be targeted to assist with program dissemination and to provide links to the primary site that will have detailed information about the project. Potential partners in the web site information sharing will include SWIX, Polk County, RFT, SWANA, FDEP, Recycle Tech, and regional or local economic development councils throughout the State.

In addition, information exchange will be encouraged through the pursuit of article placement in recycling publications in the state such as the RFT newsletter, national trade journals and publications, and appropriate business and economic development journals, including information that can be obtained by end use markets in North America.

Summary of project transferability activities:

- Presentations after project completion to regional or local economic development councils (assuming invitations from these organizations to be placed on their meeting/conference agendas).
- Case study compilation for use in workshops, presentations, and web sites (including RFT/SWANA/FDEP/SWIX/Polk County).
- Web site posting of all information / reports related to this project by SWIX, FDEP, Polk County, local and regional economic development councils, RFT, SWANA.

Criteria 5: LOCAL SUPPORT

(1 page)

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(10 Points) Demonstrate local support for the proposed project in commitment of cash or in-kind matching funds. Please provide the name, address and phone number of ALL contributors.

- **00 points** **0% up to and including 1% of total project cost**
- **01 points** **Greater than 1% up to and including 10% of total project cost**
- **02 points** **Greater than 10% up to and including 20% of total project cost**
- **03 points** **Greater than 20% up to and including 30% of total project cost**
- **04 points** **Greater than 30% up to and including 40% of total project cost**
- **05 points** **Greater than 40% up to and including 50% of total project cost**
- **06 points** **Greater than 50% up to and including 60% of total project cost**
- **07 points** **Greater than 60% up to and including 70% of total project cost**
- **08 points** **Greater than 70% up to and including 80% of total project cost**
- **09 points** **Greater than 80% up to and including 90% of total project cost**
- **10 points** **Greater than 90% up to and including 100% of total project cost**

The total requested grant funding for this project is \$207,500. The project will generate matching (i.e., cash and in-kind contributions) of \$205,000 or 50% of the total project costs of \$412,500.

Project Contributors and Contact Numbers

| | | |
|--------------------|-----------------|--------------|
| SWIX | Gene Jones | 850-386-6280 |
| Polk County | Betty Henderson | 863-284-4319 |
| Recycle-Tech Corp. | Daniel Chung | 201-294-8942 |

BUDGET

(1 page using Budget Table Template)
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Describe the project's budget allocated by task and budget categories per the Budget Table Template available from DEP's Innovative Grants web site in Microsoft Excel digital format (www.dep.state.fl.us/waste/categories/recycling/pages/InnovativeGrants2007-08.htm).