



CARPET AMERICA RECOVERY EFFORTSM
Developing market-based solutions for the recycling & reuse
of post-consumer carpet

CARE Request for Proposals
PET PROJECT
June 3, 2013

Purpose of Project:

CARE is seeking an experienced and proven resource to lead the development of sustainable commercial solutions for recycling post-consumer polyester carpet. The goals of this project are to understand the North American PET polymer supply chain, develop high value recycle streams (products and processes), and identify meaningful products and substantial market outlets for this material.

Background:

Over the past decade, post consumer carpet (PCC) recycling has grown and developed its own market driven industry. With CARE's help, this industry has become very sophisticated and has developed intricate processes to recycle PCC. There are 4 basic polymer types used to manufacture carpet (both broadloom and tile): nylon 6, nylon 66, polyester (PET) and polypropylene (PP). The national recycling infrastructure has become increasingly successful solely based on the value of nylon face fibers. The entire U.S. PCC recycling industry, manufacturers and entrepreneurs alike, have developed technically and financially viable businesses based on the high value of nylon engineered resins and fibers. Nylon has always had a large and diverse base of end uses and applications from engineered plastics to fiber applications. The only barrier in broadening the deployment of high value nylon made from PCC has been the development of technology to efficiently separate nylon from the other carpet constituents and purify the resultant nylon to levels nearly equivalent to those of postindustrial scrap. Over the past 10 years, these methods have been commercialized and the result has been a robust growth in the acceptance and use of post-consumer nylon from carpet in a large variety of end uses.

Polypropylene (PP) face fiber carpets and which also contain PP backing are also being successfully recycled. Since the value of PP is much less than that of nylon, it cannot form the sole basis of a successful recycling business. It becomes accretive to the viability of any post-consumer Nylon carpet recycling system.

The other major face fiber is polyester (PET). Presently there are very few outlets for this recycled polymer.

PET Challenge:

Since the entire recycling infrastructure for recycling PCC was and is based on nylon, and to a lesser extent, polypropylene, other PCC materials, such as PET carpet in particular, have become a major negative cost factor to collectors/processors. The reason is simple: There is no readily established high value market for rPET in the normal “plastics world”, as was the case for nylon. Therefore, end uses for PET must be developed in other areas. From a technical standpoint, PET has NO “stand alone” engineered resins specifications or high volume applications due to the brittleness of PET polymer. There are a large number of other potential applications and it must be proven that PCC derived PET can be made to fit those applications.

Why has PET become such a problem so quickly? Only 6 years ago [2007], CARE data shows that approximately 4% of the PCC stream collected was PET. In 2013, the percentage of PET in the collection stream is now estimated to be 30% and growing. If no solution is found, close to half of all collected PCC will find its way back into landfills at unsustainable costs to recyclers.

Project Proposal:

Time Frame

This high impact proposal is targeted for duration of 1 year. The proposed start date is August 1, 2013 and with an end date of June 30, 2014. During this 1 year time frame, a clear path toward PET carpet recycling must be developed. While the infrastructure for the path forward cannot be built out totally in one year, demonstration of a variety of technologies, applicable products, market outlets and performance specifications will be complete.

Skills Required

CARE is looking for an individual with the following experience:

- Minimum 10 years in the thermoplastic and/or textile industries
- Solid technical training and experience in polymer performance specifications and testing
- Track record of product and process development
- Excellent networking and project management skills
- Excellent verbal and written communication skills

Program Reporting:

- Reporting and milestone checks
 - a. Monthly reports to PET committee and CARE Executive Director
 - b. Quarterly report to CARE board on milestones and progress
 - c. Prepare comprehensive final report and make a presentation on path forward at 2014 CARE National meeting in Seattle Washington.

Financial Commitment

- The PET project is a full year commitment working at a ½ time level (minimum 20 hours per week).

- Compensation is commensurate with experience and candidates should include expected compensation in their proposal.
- Candidate will be an independent 1099 contractor and responsible for providing their own insurance, computer, phone, internet connectivity and any local travel. CARE will reimburse pre-approved travel on an actual cost basis.
- Candidate will be required to sign a) a conflict of interest agreement, b) a Non-Disclosure Agreement, and c) agree that any intellectual property that might result, and not owned by another party will become the sole property of CARE.

Application

- Applications should be sent electronically in Word format and limited to 3 pages (10 point font) to:
 - Dr. Robert Peoples, Executive Director, CARE, bpeoples@carpetrecovery.org
- Submitter should outline skills, expertise, experience, along with examples of specific accomplishments
- Include a draft work plan
- Include 4 references with email and phone contact information
- Acknowledge any conflicts or prior employment with carpet industry and / or recycling industry entities.

DEADLINE FOR SUBMISSIONS: June 17, 2013 5 pm EDT