



8577 Bader Road,
Elk Grove, CA 95624
916-647-3773

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ATTN: Fareed Faridoon
Department of Resources Recycling and Recovery
1001 I Street Sacramento, CA 95812
Submitted via email: Faridoon.Ferhut@calrecycle.CA.gov

SUBJECT: CARE'S 2015 ANNUAL REPORT: Retention of CARE for California Carpet Recycling

Dear Mr. Faridoon:

This letter is in regard to the discussion about whether to retain CARE that took place at the recent CalRecycle board meeting about CARE's 2015 Annual Report.

From January 2011 through June 2014, oil prices averaged around \$110 per barrel. Over the next year and a half, the price went down to \$30 a barrel. This year, the price has risen briefly above \$50 per barrel and is now in the mid \$40s.

The new raw materials produced by recycling carpet have a a more or less fixed price. Technical innovation has helped somewhat, but not enough to offset the decrease in raw material price. Add in the material variability of recycled feed stock, and recycled carpet has not competed with newly manufactured nylon and PET. It is more dependable and equal or less price to use newly manufactured raw materials to make new carpet. That horse has died; kicking it now will not help.

In an attempt to increase carpet recycling in this circumstance, CARE has increased the amount of incentive capital available from carpet sales by increasing the surcharge from \$0.05 to \$0.20 per yard, and has greatly increased the amount of subsidy available for companies that use PET, PP, and calcium carbonate. This has resulted in a new direction for carpet recycling; rather than returning carpet back into its constituent raw materials, post-consumer carpet is now being made into new products. This should be considered a large step in the direction of resiliency in the carpet recycling industry. Commodity prices have proven to be volatile. In general, the prices of new products are not. Carpet padding and plastic wood, some of the new commodities under development, have analogs in the market, for which the price is already established.

The process of developing a new product goes through several stages:

- Innovation: developing the product concept, chemistry and testing
- Manufacture: finding ways to make the product in a cost effective manner, and
- Scaling up: Being able to make the product in on a market scale.

These stages take time, typically years. At the end of that period, when looking to make the leap into the market, substantial investment is needed – in the range of millions of dollars. Instability is the enemy here. CARE has a known and dependable process for accounting, verification, and fund disbursement.

Investors or companies looking to expend millions of dollars will be hesitant if there is even the appearance of instability in cash flow.

Next year, several products that I am aware of will have gone through the product development cycle and be ready to launch. Each of these products believes that they will use a substantial percentage of California's carpet. A change in leadership at this time would increase hesitancy and likely have a great dampening effect on the amount of carpet recycled next year.

My firm is launching two such products: ReFiber and CARB (Carpet Augmented Road Base). Between these two products, at least 95% of the carpet material that comes in is directly recycled into materials that have a strongly positive effect on greenhouse gas reduction, use the properties of the constituent materials to produce infrastructure that is better and less expensive than what is currently on the market, and can beneficially use most of the post-consumer carpet available in the state. We have two projects installed so far using 277,000 pounds of material, and have another seven projects planned for the next year using around 5 million pounds of post-consumer carpet material. Based on our knowledge of demand for these projects, we expect this is the tip of the iceberg.

In June, the Central Valley Regional Water Quality Control Board (see accompanying ordinance, page 1 for timing and page 6 Low Impact Development Standards and Hydromodification) instituted a requirement that future development use infiltration methods of which ReFiber is the best available known technology where soil conditions allow.

CARE staff have been helpful for our product development.

Bob Peoples: Bob Peoples is one of the brightest and most knowledgeable people around regarding carpet composition and chemistry. After every meeting with him, I have learned something of vital importance to my own product development. He has also been an able communicator translating the product jargon of carpet recycling to me in terms of hard chemistry and engineering and then translating our science back into terms understandable to the CARE Sustainability Committee.

Brennan Jensen: Brennan is an able communicator to a large audience. Programs that she has organized and led were informative and helpful.

Mike Tinney: Mike Tinney is trustworthy, dedicated, experienced in recycling implementation, well connected, and wants to be helpful.

Abbie Beane: Abbie has infectious enthusiasm and has been very helpful answering questions about grants. Abbie's positions reflect the general pattern of CARE's approach to new product approvals. Some of the questions she's asked are:

- ✓ Does the new product beneficially use post consumer carpet because of the inherent properties of carpet material or is it a filler.
- ✓ Is the material safe in the environment. Show me the tests.
- ✓ Can this material be made at scale; we will fund experiments and demonstrations before we fund manufacturing infrastructure.

July 28, 2016
Fareed Faridooon

This approach has no doubt caused some consternation, but it demonstrates the position of a responsible steward of public funds.

Conclusion

At ReFiber, we strongly urge CalRecycle to stay with CARE for one more year. The increased incentives that CARE has implemented are very close to bearing fruit. We believe a change in leadership at this time will be more likely to diminish recycling than to augment it.

Sincerely,

Robert Lilly, PE 55812
ReFiber