



Chris Foran <c.j.foran@gmail.com>

Green Suggestion Question

Katie Wallace <KWallace@newbelgium.com>

Fri, Nov 19, 2010 at 5:50 PM

To: nbb <nbb@newbelgium.com>, "c.j.foran@gmail.com" <c.j.foran@gmail.com>

Hi Chris,

Thanks so much for reaching out to us! We have certainly considered these questions in detail, so below are some responses.

Regarding aluminum: Aluminum is much easier to deal with later in its life cycle as it is easier to recycle than glass and also lighter to ship. However, looking at only a portion of the life cycle of a product does not tell a complete story. The beginning of the life of aluminum (mining of bauxite and smelting of aluminum) is far worse than that of glass and certainly counters its benefits later in its life cycle. The big question is "HOW MUCH does it counter the benefits?". I have seen a few studies on this, but none of them are transparent with their scope and their data. Therefore, in 2011 we are commissioning a Life Cycle Assessment of cans versus bottles – stay tuned! That said, we do offer a few of our beers in cans. Check out this website to see where you can find them near you: <http://www.newbelgium.com/beer/finder.aspx>.

Regarding returnable bottles: Returnable Bottles are a hot topic these days, both here at the brewery and with our beer drinkers. It is THE most common question we get regarding sustainability at NBB, so I have a long list of points below that will provide perspective.

A couple years ago, we commissioned a Lifecycle Assessment (LCA) measuring the greenhouse gas footprint of a 6-pack of Fat Tire. Glass bottles were #2 on the list! You can check out the full study here: <http://www.newbelgium.com/sustainability>

It generated a lot of press (a WSJ article being the main one: <http://online.wsj.com/article/SB122304950601802565.html>) which has spurred good conversation in our industry.

As with most environmental topics, the solution for reusable bottles is much more complex than most people might expect. Here are a few of the hurdles we've encountered:

- Thicker glass. Returnable bottles require more raw materials because they must be durable. So they are heavier and take up more space on a truck (requires more fuel than disposable for shipping the same amount of beer)
- Cooperation among Distributors, Retailers & Consumers. Many bottles are not returned by consumers (sending that extra glass to the landfill or recycling). When the bottles are returned, the retailers & distributors need to have extra space to store them until they are picked up. This can be messy and problematic in their stores and warehouses. Facilitating the return also requires extra labor on their part. While they must offer more space and more labor to aid in this process, they are not receiving payment for their effort. In fact, while visiting one distributor who carried returnable bottles from another brewery, they told us they purposefully try to sell fewer of them because they are such a hassle.
- Transportation. As mentioned above, the beefier bottles require more fuel & more transportation on their way out. They also require a trip back to the brewery that wouldn't exist otherwise. This could, however, be mitigated by the industry adopting a generic bottle so that the bottles could be returned to a local facility rather than making the trip back to their brewery of origin. We have yet another hurdle here in convincing brewers to give up their unique bottles that they believe help to distinguish their brand.

- Sanitization. Washing a bottle requires caustic, water and energy. It also requires a bottle washing machine that is estimated at \$1 million. A machine must check the quality of every single bottle to ensure it is not chipped, does not contain random objects like cigarette butts, for example, along with hundreds of other possible problems. If returnables were to be introduced to the U.S., we would prefer that this step happen in a separate location through a 3rd party. They could collect & sanitize the bottles and then sell them back to us for a few cents a bottle. It would make sense that our bottle supplier provide this service, however we have been approached by other companies wanting to start a business like this (although nothing has materialized yet).
- Equipment. We would have to have to make modifications to our packaging line to fill returnable bottles as they are larger than non-returnables.

With all of that said, a returnable bottle can still be environmentally superior to a nonreturnable bottle depending on the following criteria:

- Distance Traveled. Certainly the greater the distance traveled, the more fuel required to transport the larger bottles back and forth, and the smaller the environmental benefit. Craft Brewers combining resources and adopting a generic bottle could help reduce distance traveled.
- Trippage. Trippage is defined as the number of times the bottle is actually reused before it is lost, damaged or discarded. There is a break-even point, where a trippage less than "x" states that a non-returnable bottle would be environmentally superior and a trippage greater than "x" considers a returnable bottle a better choice. This will vary according to location as it depends on distance traveled. Trippage is greatly dependent on the efficacy of the infrastructure that facilitates its return. Other countries who are assisted by the proper legislation, see trippages up to 10 or 15.

Why has New Belgium not started a pilot program?

- We were approached by a 3rd party to participate in a local pilot program. We were very excited about it, but have seen little progress. Some of the hurdles they were running up against were significant. We do favor this 3rd party approach that would create generic bottles that all brewers could use. When brewers can combine resources, it makes it more affordable. (Especially that \$1 million equipment mentioned above!) New Belgium would still be willing to participate in a program like this.
- The infrastructure in the U.S. is not conducive to a returnable bottle program. As mentioned above, the bottle needs a high trippage to make it superior. With few incentives in place (bottle bills, etc) and without the cooperation of entities in our supply chain, we are not convinced those bottles would come back as often as is necessary to be cost and environmentally effective. It's difficult to do a pilot program when the investment is so large and the expected cooperation is low. When returnable bottles were the norm (prior to 1960s), other countries put policies into place that helped to preserve these systems. Unfortunately, the U.S. hasn't. There is a National Bottle Bill in Congress right now, but it has been there for a year and a half.
- Due to our recent Life Cycle Assessment (mentioned above) where glass ranked #2 on GHG emissions, New Belgium has started thinking more about how we can foster this kind of discussion. In fact, we have had some unexpected attention from our LCA and are excitedly, yet cautiously, exploring some breakthrough ideas through collaboration.

What needs to happen for returnable bottles to become a reality again in the U.S.? We are not entirely sure, but we think some of the following points could persuade it.

- A success story from a local, collaborative pilot program.
- Introduction of policy that would encourage/require bottles to be returned.
- Clear data showing returnable bottles to be more sustainable throughout their lifecycle (and the conditions which need to exist for this to be true).

· Cooperation among & investments from our industry to make it more affordable and more likely to succeed. Of course, New Belgium can be a leader in this effort and we are certainly considering our options here. Our LCA has been a beautiful vehicle in which to drive these conversations.

I hope this information gives you a little insight to what we have learned here. We still think this discussion has a legitimate seat at the table and hope to help it evolve in the future. Ultimately, our environment will benefit from all manufacturers taking responsibility for their products at the end of their life cycles & adopting cradle-to-cradle technologies.

Hopefully that answers all of your questions, Chris.

Let me know if you need clarification on anything & thanks for speaking up!

Katie Wallace

Sustainability Specialist

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P Please consider the environment before printing this email or its attachments.

From: Chris Foran [mailto:c.j.foran@gmail.com]

Sent: Thursday, November 18, 2010 11:29 AM

To: nbb

Subject: Green Suggestion Question

Love your beer, especially Fat Tire. I keep cases in my basement as I'm a ways from case size retailers.

I'm on the board of a local (Montezuma County, Co, Four Corners) environmental group called Montezuma Climate Action Network (www.m-can.org) and am their webmaster and newsletter editor.

Local recycling efforts are having trouble breaking even on their glass or finding financing for local re-use. I think this is a problem in the industry right now.

My suggestion/questions for NBB involves:

- Standardization of bottles such that they can actually be re-used by NBB.

I know there have been efforts at standardization in the bottling industry over the years, but I think the U.S. standards have become so fragmented due to marketing demands that NBB (and others) would be reduced to collecting and re-using only their own bottles, if at all. This doesn't seem efficient enough to be economical, just from my seat-of-the-pants judgement, but that's question/suggestion one.

- Aluminum can-bottles seem to me the way to go because:
 1. There is an existing robust, generalized aluminum (especially cans) recycling mechanism which extends tentacles almost everywhere, and
 2. Aluminum (generalized) recycling is pretty darn efficient if you consider that the energy of collection is already being spent and the energy of re-manufacture is relatively small..

I enjoy your beer from glass, but would certainly drink from aluminum with equal enjoyment knowing we were contributing to greenhouse gas minimization. I hope others would as well, especially with some green marketing on your part. This might sound too trendy but I think you could overcome that.

I would be very interested in knowing your reactions to these suggestions / questions, as long term they bear on the glass recycling dilemma we have.

Thanks,

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