

## Attitudes Create Opportunities: Insights from a recent trade mission to the Netherlands

by / Paul van der Werf



They say that a little time away allows you to gain new perspectives. A recent trade mission to the Netherlands showed off the Dutch approach to solving universal realities, like death and taxes, of waste and wastewater generation.

The Dutch think about their waste—a lot. Viewed from afar they are often seen as a land of waste diversion opportunities, worth emulating. It becomes quickly apparent that most of this stature is a result of attitude.

It is this attitude, and the policies it spawns, that sends clear signals to the marketplace, spurring the development and implementation of new technologies, re-application of old ones, or a combination of the two. It is a sense of the policies and the implementation of technologies that we see.

The Dutch are not super human. They generate waste like the rest of us (albeit less than we do) and dispose it. Dutch consumption is, on the whole, noticeably less than North American consumption.

At the single family level they have multiple carts for various streams that they need to present at the curb for collection. They have many residents living in multi-residential households and that have to bring various waste streams to centralized bins. Their challenges are similar to our own. For instance single-family residents don't want too many carts because they can clutter their small front yards. Multi-

residential residents need to walk their various waste streams to centralized bins and this results in waste diversion challenges.

Overarching waste management policy comes from the European Union. Waste management is co-ordinated nationally with the co-operation of provincial and local governments. This differs considerably from our own waste management system where much of waste management is municipally driven, albeit with some provincial strategies and regulations of various strengths, but, with little to no enforcement.

Its important to understand that while the Netherlands may appear as a Utopia for waste management solutions it is not without its own challenges. The key again is attitude. Translated this an optimistic “state of mind” where the end goal is known, the challenges and its solutions are identified and solutions tested.

What does all this mean? For organics, for instance, the average Netherlands resident diverts 250kg/year while we divert about 70kg/capita/year. Of course our context is different with lots of wide-open spaces, without the critical mass of population to make non-landfilling options cost effective. However, the key driver is attitude. A problem, any problem, is just a well thought out solution away from being solved. Co-ordinate that mind set and

you can actually get something done.

The key unifier of all that we saw was the conflation of energy, nutrient and mineral capture. It is a trip back to first principles. We are not trying to divert waste; rather, we are trying to capture molecules. In the circular economy this is what we are trying to keep within this closed system.

Some of the key insights of the trade mission:

It is very clear that anaerobic digestion is the preferred front end to compost food and other organic wastes. We had the opportunity to see quite a few different systems including Orgaworld's Amsterdam Greenmills (part of the Shanks Group) (<http://www.shanks.nl>) facility, which turns 120,000 tonnes per year of mostly ICI organic waste into 5.5MW of electricity and heat for Amsterdam's central heating system to Omrin and Attero's digesters, which upgrade the biogas for placement on the grid and in vehicles. The technologies used continue to evolve and at the Dairy Campus in Leeuwarden we saw Averio Waste Systems ([www.adverio.eu](http://www.adverio.eu)) approach to using AD to get at longer chain carbon molecules, such as lignin, opening up the possibility of using AD to extract energy from wood. How to use the digestate produced from these systems also continues to evolve. Dorset ([www.dorset.nu](http://www.dorset.nu)) has a technology that uses waste heat to dry the digestate so it can be easily bagged and sent to clients.

There continues to be the ongoing challenge on how to deal with residual

# Let's talk trash

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garbage. With garbage to landfill virtually eliminated (although starting to creep up ever so slightly and re-taxed) and the recent tax on energy from waste facilities, solutions to capture waste for recycling and to reduce disposal are in demand. Omrin ([www.omrin.nl](http://www.omrin.nl)), in Heerenveen, take mixed residential garbage and capture 55 per cent of it. Using a series of trommels, conveyors, magnets, eddy currents, and optical sorters they manage to strip off the paper, plastic, and metal. They are left with a contaminated organics stream that is then directed to their on site digesters. The digestate from this process is directed to energy from waste. (They were very clear that the inbound organics feedstock quality was never intended to produce compost). The dry recyclables are sold as commodities. The gas from the organics has been converted into electricity. They are currently building a gas hub to turn it exclusively into natural gas and putting it to the grid.

Attero ([www.attero.nl](http://www.attero.nl)) manages some four million tonnes of waste annually. At their Wijster location, which includes clean and dirty MRFs, composting, anaerobic digestion, an incinerator and landfill they accept two million tonnes annually. They have considerable biogas upgrading capability at this facility and have sufficient capacity so that they can also import agricultural

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biogas from surrounding farms. They direct upgraded gas to the grid but also to a close by Shell vehicle fueling station. They have also invested considerably to extracting resources from their bottom ash (i.e. various metals). Apparently their bottom ash has a higher concentration of copper than “the best South African mines”. What was also quite fascinating and applicable to Canada was their “dirty MRF.” All garbage is directed to this facility to pull out available recyclables and organics prior to incineration (this is over and above recyclables and organics from source separation programs). As at Omrin, a contaminated organics stream is directed to anaerobic digestion to strip out as much energy as possible with digestate directed to their incinerator

In Canada, we often turn up our noses at the pejorative “dirty MRFs” because in the past unrealistic and opaque expectations of outcomes and outputs have been presented. As we look how to take waste diversion and the reduction of our waste’s GHG impact

to the next level this type of approach offers promise. It could work very well to manage parts of Canada’s multi residential and IC&I waste streams, which in some cases have very poor diversion opportunities or participation. Push source separation as far as you can and then sort and process the remaining garbage stream.

The essence and the real lesson learned, on this trade mission, is that attitude creates opportunity. It creates the environment where opportunities can be identified and then realized. And as Aim Environmental Group’s CEO (and trade mission delegate) Theo Van Wely reminded me it is the ability to adapt to the changes in situation, markets and regulations that has really driven the Dutch’s success in moving waste diversion forward over the last twenty-five years. ●●

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## Saltwater Brewery’s Edible Six-pack Rings the Ultimate in Sustainable Recycling

EDITOR’S PICK

We’ve all seen the photos of sealife deformed, killed, or worse by plastic six-pack rings discarded in waterways or sent there by wind or runoff.

Saltwater Brewery in Florida has decided to take action. The company has designed a six-pack ring made from wheat and barley instead of petroleum that is both biodegradable and edible. Marine life can safely snack

on the rings and the material breaks down so quickly in salt water that there is no time to trap a bird or turtle.

The product’s development is a project created in tandem with creative advertising agency We Believers, which came up with the idea.

“If our six pack ring ends up in the ocean, in a matter of hours it starts breaking down, which also addresses

the issue of anomals getting stuck in them,” says Gustavo Lauria, co-founder of We Believers.

The team originally tried seaweed as a biodegradable material, but it became too rigid out of water. The current rings are made from brewing byproducts, which minimizes their carbon footprint.

How’s that for ultimate in recycling? Bottoms up, Saltwater Brewery!