



Retour Matras foam baling equipment. (All photos by Brajesh Dubey.)

Going Dutch

Highlights from a tour of waste facilities in the Netherlands

Recently I had the opportunity to help organize a waste management themed trade mission to the Netherlands as presented by the Netherlands Consulate (Toronto).

While comparing it to Steinbeck's *Travels with Charley* would overstate its poignancy and comparing it to the movie *Road Trip* would (significantly) understate its seriousness, 12 Canadians bundled onto a tour bus to visit 15 waste management facilities and a major recycling conference over five days in September.

Many in North America look at Europe and countries like the Netherlands as a shining light when it comes to progressive waste management. The Dutch are pointed to as an aspirational beacon for our own waste management systems, but from afar somehow seem to be just beyond our reach.

A critical aspect of this tour, in my mind, was to help demystify Dutch waste management in a way that could help inform North American possibilities.

The Dutch struggle, almost literally, with keeping their heads above water. With much of the country below sea level, this existential threat is kept at bay with Water Boards that provide governance and a network

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by Paul van der Werf

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of dikes and pumps. This constant state of "red alert" has given them a talent to take very direct and decisive action in the face of crisis.

And it was in fact a crisis that propelled them towards their progressive waste management system. In 1988 the Dutch were diverting only 16 per cent of their household waste from disposal, while they had 157 landfills with only four years of remaining capacity. Exacerbating that was the dioxins-induced issue of insufficient thermal treatment capacity.

To combat this crisis, a national waste policy was created to move wastes away from landfilling to diversion and thermal treatment through a combination of measures, including landfill bans and landfill taxes. Strict environmental standards were also enacted to, among other things, improve thermal treatment from pollutant and efficiency perspectives.

This top-down national policy, combined with public and private sector ingenuity, led to the innovation required to change their waste management system.

Trip highlights

HVC (hvcgroep.nl) is a public waste management cooperative that encompasses 48 municipalities (and more than one million people) in



Bundled foam at a Retour Matras plant. Cloth is also bundled and sent to India for recycling.



HVC waste-to-energy facility in Doordrecht, the Netherlands.

a number of provinces. This has allowed the critical mass to develop large-scale waste management infrastructure. For instance, they have about a million tonnes/year in incineration capacity at two locations.

The electricity produced is sold back to partner municipalities at a reduced rate and onto the grid. Ultimately the cooperative generates enough electricity for 280,000 households. It also uses some of the heat for district heating at one location (and developing it at the other). It separates and recycles about 950,000 tonnes/year and composts about 150,000 tonnes/year.

The VAR (var.nl/en/home/home.html), just outside of Apeldoorn, manages the city's organic waste as well as providing other waste management services such as C&D recycling and the recycling of artificial turf. It operates a number of facilities in the Netherlands.

Organic wastes are processed using a combination of (dry) anaerobic digestion and outdoor composting. The VAR currently manages about 240,000 tonnes/year (15 per cent of all organic waste processed in the Netherlands) of organic waste on-site, of which 60,000 tonnes/year is digested. Interestingly, it has been converting and retrofitting some of its tunnel composting facilities into dry AD facilities.

Orgaworld has two composting facilities in Ontario. Its Green Mills facility (orgaworld.nl/en/greenmills.html), while still in development, represents a future model of how to manage organic wastes. When completed, the facility will act as a one-stop shop for organic waste, with a processing method based on where the greatest value can be extracted. This will include a future de-packaging facility and processing options that include AD, bioethanol production, biodiesel production and composting (at one of their facilities such as the one we visited in Lelystad).

Waste management in the Netherlands sometimes makes for some unlikely partners. Sortiva (sortiva.com) is a C&D recycling company that's jointly owned by the municipal waste management cooperative HVC and a private waste management company. It has a fully automated C&D sorting facility that was commissioned in 2010. Large excavators feed the waste onto conveyor systems that leads into a system of trommel screens, optical sorters, magnets and eddy currents to break the materials clean wood, biofuel (wood), metal, plastic and aggregate materials. There's no manual picking of any materials.

Other notable facilities visited included Coolrec (coolrec.com) that processes about 300,000 tonnes/year at a number of facilities in
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VAR, near Apeldoorn, operates a C&D recycling facility and re-processes some of these wastes into new products.

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Retour Matras facilities feature a modular design that can be replicated. Production is ramped up by adding shifts.

the Netherlands (and beyond) and Retour Matras (retourmatras.nl) which has developed a mostly automated facility for the recycling of mattresses.

The humanizing part of this story is that the Dutch are not super-human and still face real challenges.

I bet you'd be surprised to hear that Amsterdam only diverts about 18 per cent of its wastes (with the balance incinerated). They face the same challenges that any large and very densely populated city faces, with little to no room for containers to divert SSO or paper wastes.

A common refrain throughout the week was that there was an oversupply of incineration capacity (about a million tonnes) as a result of overdevelopment and the current economic downturn. This has led to

the importation of wastes from other countries (e.g., the UK, Italy) and is creating waste diversion worries because of the downward pressure on incineration tipping fees (from past highs of 120 euros/tonne to possible new lows of 40-50 euros/tonne). Without intervention there is a distinct possibility that recyclables could be pulled into the excess incinerator capacity.

The Dutch realize they may be heading towards another waste crisis that could impact their carefully crafted policy of prevention and diversion first, and then incineration. There's now some discussion about implementing a tax on incineration.

What has set the Dutch apart when it comes to waste management is central planning and enforcement. Their policies, which include quantitative drivers such as landfill taxes and landfill bans, have been so successful

that they had to suspend their landfill tax! (So little waste is being land-filled that it costs more to administer the tax than revenues coming in.)

This, in turn, has sent strong signals to the marketplace to innovate and invest; the market responded in kind by developing facilities and new technologies and processes that have helped the Dutch achieve their current successes, and which should see them through current and future challenges. 

NOTE: Please see blog posts for additional details at solidwastemag.com

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