

Special Report: Failure of Irish households to recycle properly is a massive waste of time

KMK

METALS · RECYCLING

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38% of the mountain of refuse at Panda's huge Dublin facility is not recyclable and has to be filtered by hand, says Caroline O'Doherty.

AFTER a few moments inside one of the country's largest recycling facilities, confusion sets in.

Towering above is an 80-tonne mountain of mixed waste, with a tangle of torn plastic shopping bags and black



Des Crinion, Panda Irish Packaging Recycling, managing director, standing among bales of recyclables ready for shipping. Picture: Moya Nolan

sacks threading through it. Mouldy food, toilet wipes, soggy cotton pads, aerosol cans, broken toys, old socks, worn shoes, ragged jumpers, cat poo, an iron, a lamp, a long, twisted, jagged metal strip, of the type used by carpet-layers, a car's wing mirror, a burst basketball, and nappies — lots of nappies — cling to just a few square feet of the mountain (a few years ago, a dead labrador was found within the mountain).

The next few feet are much the same. And the next. And soon it's clear that the whole mountain is riddled with rubbish.

But where are the contents of the green bins?

"This is it," says Irish Packaging Recycling managing director Des Crinion, coiling the trailing cable of the iron as he speaks. "And it drives us doolally, every hour of every day."

Undoubtedly, the Chinese have their own word for 'doolally', but, whatever it is, they were driven there, too.

The world's largest importer of recyclables has had enough of the low-grade, poorly segregated and contaminated materials, which have been coming into its ports. It has shut the gates until further notice, maybe, even, forever. Ireland is not alone in causing the

problem, or in suffering the consequences, but the action has put a spotlight on both our addiction to packaging and our less-than-impressive recycling practices.

At the IPR facility in Ballymount, Dublin, the green-bin collection from 300,000 homes provides ample illustration of the problems.

Des begins the tour of the 7,000 sq. m depot in the tipping area, where the collection trucks add to a mountain that feeds 300 tonnes of waste into the operation every day.

The arrival of a large flock of seagulls, only briefly interrupting the toing and froing of crows and other scavengers,

tells you what you don't want to know: That despite the constant pleas to householders to only place clean, recyclable packaging in their green bin, the message is falling on apathetic ears.

A half-full tub of hummus tumbles down the mountainside. It might once have been tasty, dipped with the pizza crusts protruding from a torn black sack nearby — a sack it shares with one of those foil-lined bags used for taking away cooked chickens from supermarket deli counters.

The bag is bulky, so it seems likely the chicken carcass is inside. The seagulls look hopeful. Des picks out a filthy, two-litre plastic milk bottle and sighs.

"Here's a lovely bottle," he says, for he sees lovely in a different way to most. "Somebody has gone to the bother of washing it and squashing it and putting it in the green bin, and now it's covered in bits of somebody else's food and that will make it difficult to sort."

He places it back in the pile, almost tenderly, with a look that says he hopes he makes it to the other side. There's a long way to go.

"A lot of the big stuff is taken out here," Des says. "The guys will pull out the mattresses, the bicycles, the wheelie bins, the shopping trolleys...."

They missed the labrador on the day when someone decided it constituted recyclable material.

"That got picked up here," says Liam Dunne, plant manager, as he continues the tour at the first stretch of the 1.3km of conveyor belt that carries the waste through the sorting process.

"Here" is where oversized pieces of cardboard, and other awkwardly sized or shaped objects, are caught. It is also, unfortunately, where they sometimes catch the machines.



The Panda Irish Packaging Recycling plant on Ballymount Rd., Dublin. Picture: Moya Nolan

Despite the sharp eyes and speedy hands of the pre-sorting crew, the belts can be brought to a halt by a fugitive plastic sheet, textiles, the baling wire that holds briquettes together, or electrical cables that get caught on cogs and jam the machines.

“Paper till-rolls and the transfer rolls that stickers come on are awful,” says Liam. “They’re like ribbon, running up and down every conveyor, and if it ends up in the plant, we have to get in, literally, with bread knives and cut it out.”

Videotapes used to be a big issue, too. Not only are they not recyclable, but, if they broke, the stringy tape would spill out like Spiderman’s web, entangling everything in its reach. Now, they only make an occasional appearance, but mental alarm bells ring just as loudly.

As he speaks, a mop head whizzes by, deftly extracted by a member of staff, followed by a sock, an aerosol can, a bag of garden waste, a sheet of polystyrene, a quarter of a sliced pan, several potatoes, and the ever-present nappies.

Des holds aloft a toilet brush. “It’s like the Generation Game,” he says.

And yet they’re not fazed or frustrated. Their main concern is danger.

“Anything that gets hot is a priority — a camping gas-cylinder, a laptop battery. Anything that could cause a fire hazard has to come out of there,” says Liam.

The next phase of the sorting is automated and, to the layperson,

highly technical, although Liam says it is just a more sophisticated version of the plant that is used by agri-companies to sort produce by size and type.

Currents of air are used to whoosh away paper, card, and plastic film on to separate conveyor belts, while whirling discs which measure size delve closer to sort flat items from three-dimensional objects. Other screens separate the lightweight paper from the larger, fibre or cardboard.

Overhead magnets pull out metal items and an eddy current shakes out the aluminium cans, which are high-value, although they make up just about 1% of the total waste here.

They also pull out Pringles crisp tubes and other interlopers, because, although they’re mainly cardboard, the bottoms are shiny metal.

It’s disconcerting to see an otherwise neatly packed, five-foot square bale of compressed aluminium cans ready for dispatch to a new life abroad, with a bright green tube of sour cream and onion strapped in for the ride.

“Composite packaging is a big problem,” says Liam. Blister packs of tablets are a particular bugbear. Plastic on one side, aluminium foil on the other, they might get picked up as metal or as plastic.

Either way, they are not recyclable, and they are classified, worldwide, as medical waste, so if a customs officer thousands of miles away spots one during an inspection, the shipment gets turned away as fast as if said waste was someone’s extracted tonsils.

Window envelopes are another example of composites that cause grief. Predominantly paper, but with a plastic film window, they contaminate whichever bale they end up in.

Some of the best-known brands cause some of the biggest headaches. Big-name soft drinks may be popular choices in the supermarket aisle, but they have fewer fans here. Their bottles are often made of PET plastic, which is then enclosed in a wrapper made of LDPE. There’s no better way to confuse machines whose job it is to sort one from the other.

The machines are optical separators, which blast objects on the conveyor belts with light, gauge how it is reflected, and segregate the plastics



Des Crinon holding a side mirror from a car and an iron, just two of thousands of items that should not be in household recycling bags. Picture: Moya Nolan



Liam Dunne, plant manager, Panda Irish Packaging Recycling. Picture: Moya Nolan

accordingly. Like one of those electronic fly zappers, it hisses each time it hits the plastic it has been programmed to detect, prompting air nozzles beneath to blast the chosen object and eject it onto a dedicated belt.

A perforator punctures any plastic bottles that are not squashed, so any that contained liquid — there was at least one full water bottle beside the iron at the tipping floor — should have been manually extracted before then.

Broken glass and ‘fines’ — the too-nice name given to the small bits and bobs of debris that get shaken, blown, and tumbled loose from the rest of the waste — get filtered out through yet another, separate chute.

Somehow, despite all the various sorters, screeners, and separators, nappies still elude capture, thumbing their smelly noses at Liam and Des, as they watch them ascending another belt, having cleared yet another hurdle.

A final manual sort may save the day, but, inevitably, some sneak by, even here, and make it into the baler, usually mixed with paper. Sometimes, they’re visible and can be pulled out before loading.

Des removes one at the corner of a bale that had drawn his eye, because a bright-purple sachet of cat food and a red crisp bag also squeezed through into this particular collection.

Liam outlines the consequences.

“If there’s a nappy in the bale, it’s going on a six- to eight-week journey,” he says. “It passes through three

different climates. It’s sweating. You can only imagine what it’s like when it gets to China.”

Wet paper and cardboard may seem small, but they mushroom with time and temperature.

“The damp paper seeps into the dry and if it’s nice and warm, you get fungus growing in the middle of the bale. Imagine what that’s like to open up,” says Des.



Bales of recyclables ready for shipping at Panda Irish Packaging Recycling plant in Dublin. Picture: Moya Nolan

Clearly, some householders have no imaginations.

Nationally, according to Repak, green-bin contamination runs at 30% in urban areas, though it falls to 18% in rural areas.

But it’s not just parents who cause problems for the green-bin system.

Adult incontinence pads frequently turn up and nursing homes and other care facilities are regular offenders.

“Those pastel-green and blue disposable gowns — the ones that look like paper and feel like paper?” Liam says. “They’re not paper.”

Areas where flats are rented by students are notorious. Yes, they’re our best and brightest and most well-educated, but Liam gives them a fat fail for waste-separation.

Apartments present another major challenge, because of the shared bin sheds.

“Wherever there’s sharing, there are problems. You get fly-tipping and people who do use the bins, but put the wrong stuff in them and then the whole thing is messed-up.

“You need estate-management companies to be really on the ball — to check that if the black bin is full before collection day, that people have somewhere to put their rubbish other than the green bin.”

The result of this failure to properly recycle at household level is more costly and time-consuming at commercial level than it should be.

The belts here run almost continuously, from 7am to midnight most days, but with frequent overtime required, and it is labour-intensive work.

Even with €3.2m worth of new and more precise optical screens due for installation here, during March and April, Liam doesn't envisage full automation anytime soon.

"It's very difficult to see a way out of the human element," he says. "The optical separator will only see what you teach it to see and you can't teach it to see everything, because you can't anticipate what's coming down the belt. How do you teach it to see a ball of hair from a Hoover bag or a half-eaten sandwich?"

About 38% of the waste received at the plant is unrecyclable. By the time it makes the bales, it's down to 2%-5%, an impressive achievement, given what was dumped on the tipping floor.

The bulk of the unrecyclable waste is sent to another of the company's facilities, at Slane, Co Meath, where it is dried and shredded into something resembling mattress stuffing. This SRF (solid recovered fuel) is then sold to cement kilns in Ireland for burning.

"Every four tonnes of SRF we produce replaces three tonnes of imported coal, so we're replacing fossil fuels, which is a good thing," says Liam.

What remains — the pizzas, cat poo,



Visitors to the Panda Irish Packaging Recycling plant are dwarfed by an enormous mound of material collected from Dublin households. Picture: Moya Nolan

mouldy textiles, 'fines', and other such delights — goes for incineration, which is costly.

"I have a favourite saying. If you're happy enough to empty your recycle bin on the kitchen floor, we're happy enough

to take it, but I don't think there's many people would do that," says Des.

"I don't get too disheartened. People are recycling more, so they have got their heads around the concept of it. They just have to learn to do it better."

Recycling problems

Black plastic trays

They're often made of good quality plastic but the colour makes it difficult for optical screeners to identify and segregate them because they rely on light reflection to tell them what kind of plastic they're dealing with. Yet black serves no purpose other than to make the food contained within stand out — and to hide the blood in raw meat from squeamish carnivores.

Blister packs

The little sealed trays of pills are made of aluminium and plastic which can't be separated so they can't be recycled. But much worse, if they are found in a bale of plastic, they are classified as medical waste — even if they've contained something as innocuous as Rennie's or Panadol — and the whole bale will be rejected.

Russian dolls

The careful recycler who puts a clean, dry cardboard toothpaste box inside a clean, dry cardboard tea box inside a similar cereal box may think they're saving space and matching like with like but in fact the boxes all have to be manually separated or else the automatic segregators that measure for size and density get confused.

Nappies

Nappies get everywhere. They can be hard to manually spot on a fast-moving sorting conveyor belt because, rolled up they can look like plastic wrappers, and their mixed composition — and contents — mean optical separators have difficulty deciding what they are. Most often, those that escape manual detection end up in paper bales. No wonder the Chinese got fed up.

Batteries

Yes they're recyclable but not as part of the green bin. If they're missed by the sorters and get battered, the acid leakage contaminates the bale while lithium ion batteries get hot during the baling process and so can pose a fire hazard during storage and shipping.

Symbols

The new 'definitive' recycling list recently published cites yogurt cartons as an example of a recyclable yet many of them do not carry the recycling symbol. They're not the only culprit. Many recyclable containers don't carry the symbol so confused householders either throw good quality plastics in the general waste bin or put non-recyclable ones in the green bin.

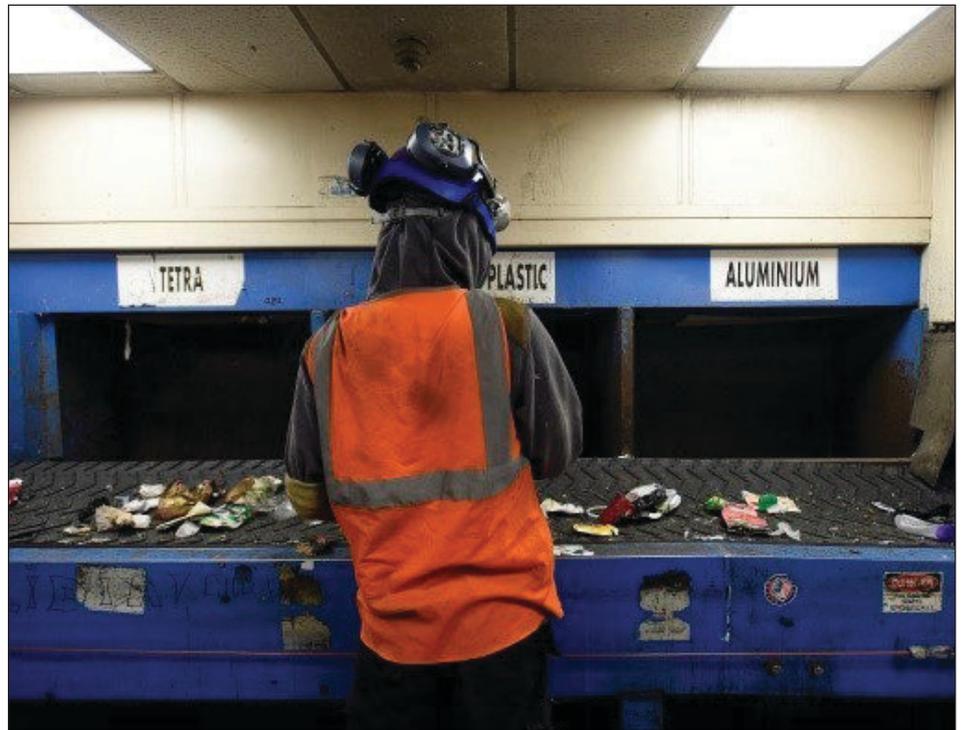
Neighbours

One household may sort their recycling perfectly but if it's picked up in a collection with that of a neighbour who has thrown in leaking toiletry bottles, plastic trays containing food remnants or soggy papers, the whole collection can get contaminated.

Marketing geniuses

In a competitive retail environment, marketing departments will go to great lengths to make their brand stand out so a coloured plastic mineral water bottle might have advantage over a shelf full of transparent rivals.

But without advance notice so that optical screens can be programmed to recognise the new shade, that bottle will dodge detection when it hits the sorting facility.



A Panda Irish Packaging Recycling worker separates waste material at the facility in Dublin. Picture: Moya Nolan

Waste policy urgently needed

Amid all the fanfare surrounding the launch of the Ireland 2040 framework for the future growth of the country, Seamus Clancy was looking for just one word — waste. If he'd blinked, he'd have missed it.

The document contains the briefest of references to the need for investment in waste management infrastructures. It says this is "critical" but it only devotes two paragraphs to the subject and speaks in the most general terms.

"There is very little recognition within it that while we expect to have 550,000 new homes and a million new people, that means lots of extra people producing extra waste," says the chief executive of Repak, the State recycling body.

"Twenty years ago when Repak started, there were 126 landfills. We're down to four now and that's heading to two. And we've only two incinerators.

"Where is the additional half a million tonnes of waste going to go in 2040? We're not going back to landfill. Will it be incinerated? The Government has to take a lead in relation to pulling together a proper waste planning strategy to deal with population

growth and the infrastructure deficit." He gives an example of the ground Ireland has to make up when it comes to investment.

"We have one bottle bank for every 2,480 people here. The average in Europe is one for every 1,000. That's only the very smallest, most basic form of infrastructure and we're behind even in that."

Mindy O'Brien, co-ordinator of environmental group Voice Ireland, has another small, but telling, example. In the current kerfuffle over disposable coffee cups, the idea of making them only from compostable material has been aired.

"That's great," she says. "But where are you going to put them when you're walking down the street?"

"You put your compostable cup with the drop of coffee left at the bottom or your compostable sandwich wrapper with salad stuck to the inside of it into a recycling bin and all the recyclables are contaminated and they all go to landfill or incineration.

"You need dedicated on-street bins to take only compostable packaging. I don't see too many of those."

But while Ms O'Brien has plenty to say about the role of the Government, true to her organisation's name she is conscious of the voice of the consumer and says it needs to be used.

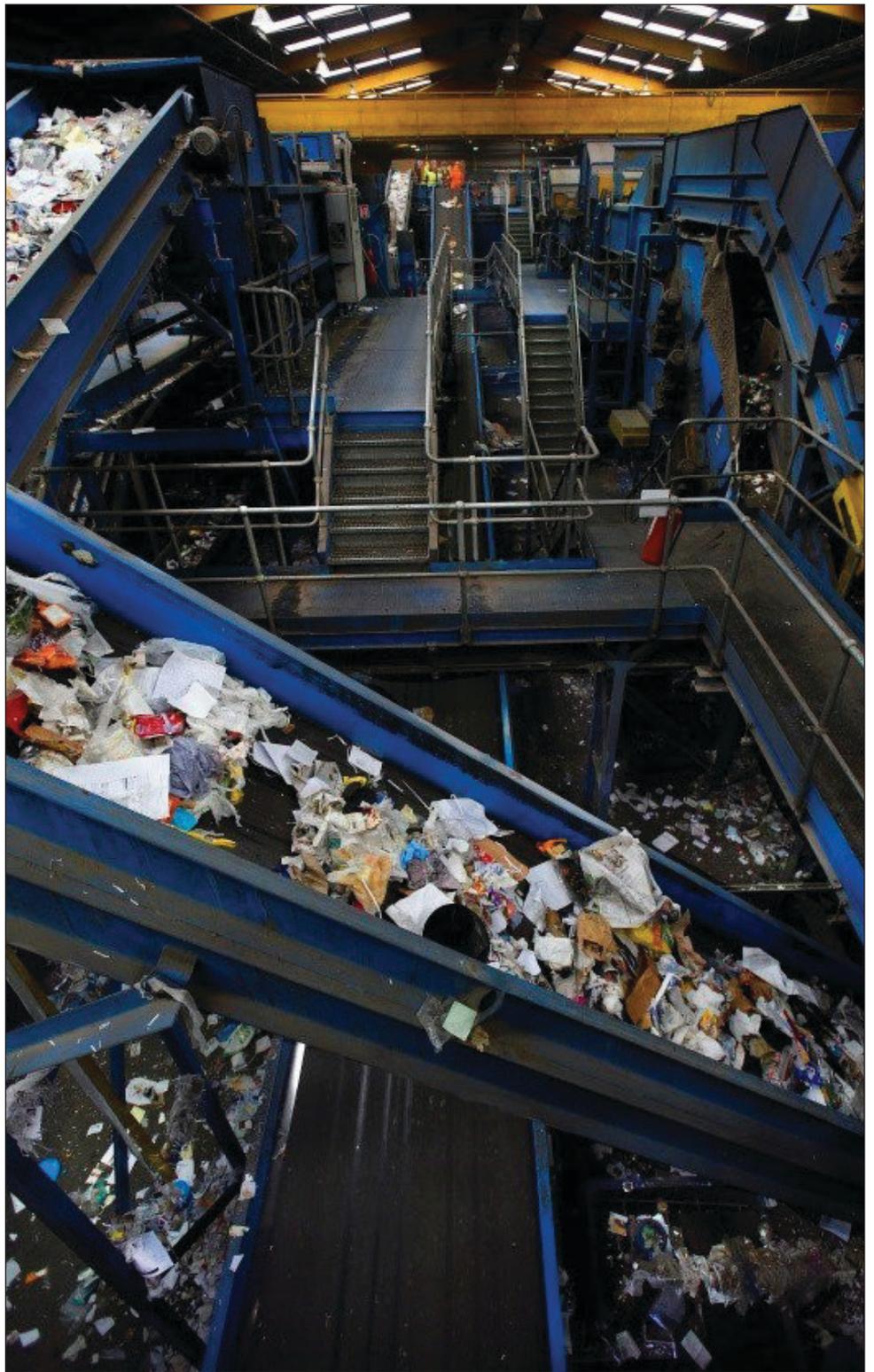
"We know industry has a role to play because they're putting all the packaging on the marketplace and a large part of that packaging is non-recyclable and non-compostable so the only thing we as consumers can do with them is throw them away," she says. "But we as consumers need to be more savvy shoppers. We need to say when we shop, do we need the bag of carrots with the unrecyclable bag or can we buy them loose? Can we ask our shops to provide us with a zero packaging aisle?"

"If I want one leek, I have to buy three. I don't want three leeks and so I have spoken to some of the stockers and eventually they say, go ahead, break it open and take what you want and then I weigh it. So it's probably messing things up for them but it's sending a message that I don't want that packaging. Consumers need to be more definitive and forceful. If we all spoke up, we could get the message out more loudly."

Loose leeks and bottle banks are just one part of the equation, however. Ms O'Brien and Mr Clancy are in no doubt that what we're dealing with is a complex model of essential public service provision, i.e., waste management, against a backdrop of influential packaging-loving international retail giants and a volatile commodities market for recyclables.

"There needs to be a coordinated strategy across Europe for dealing with waste because as a bloc we have more influence," says Mr Clancy.

"The Circular Economy Package [legislative proposals recently published by the EU] is a step towards that but we need to move quickly. The Chinese issue has been a wake-up call. We need not to go back to sleep."

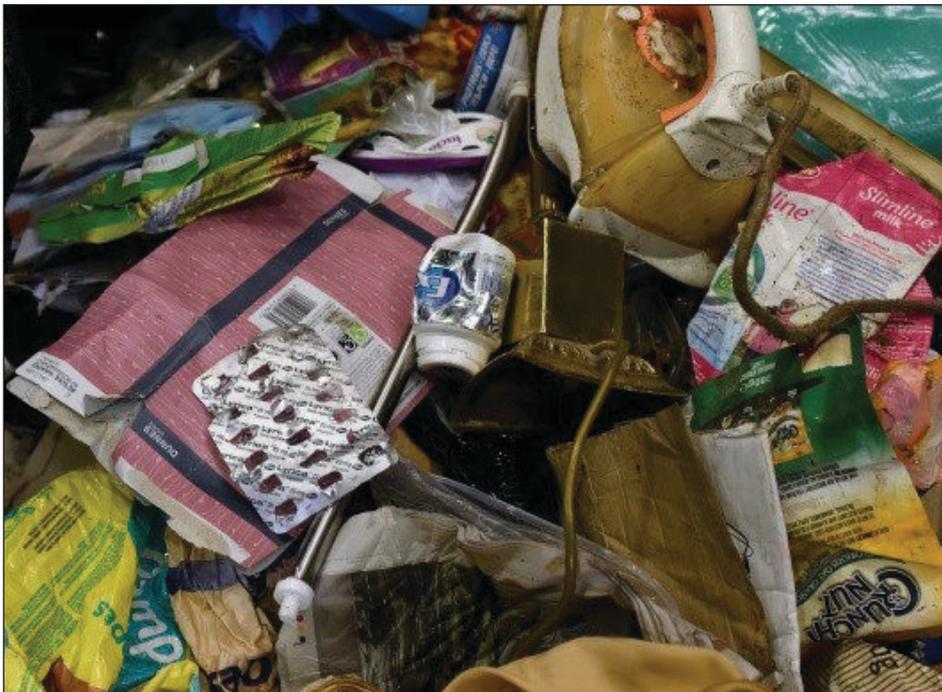


A complex system of conveyor belts at the Panda Irish Packaging Recycling facility sorts household waste. Picture: Moya Nolan

China clampdown changes landscape for recycling business

It is 20,000km away by sea, seven time zones ahead, and the language and business culture are complex to navigate but China had one big attraction over European destinations as a market for recyclables — cost.

“It cost us about \$1,000 (€813) to send a container to China and €2,500 to send the same to the UK or Germany. That’s despite the fact that it’s so much further away,” says Liam Dunne of Irish Packaging Recycling.



This is partly due to the economies of scale enjoyed by a country of China’s immense size. Panda Irish Packaging and Recycling (IPR) were sending 48,000 tonnes of paper and cardboard there to the world’s second-largest paper mill — but that huge delivery only kept the giant plant going for three days.

Lower wages in China were another obvious factor, but so too was the fact that the country’s enormous manufacturing sector needed empty shipping containers to export goods so those that were newly emptied of recyclables from Europe were swiftly, and cost-effectively, put back into action.

China was also generous in applying rules about the level of contamination acceptable in bales of recyclables.

Under this arrangement, China took 60% of the world’s recyclable plastic and a large percentage of its paper too along with large quantities of scrap metal. For a country such as Ireland where recycling means exporting recyclables, China was indispensable.

And then it dispensed with us and the rest of the world. Operation Green Fence marked the beginning of the end. Launched in 2013, it saw

Chinese officials carrying out more thorough inspections of shipments of recyclables from abroad to reduce the unwashed, poorly-sorted, and unwanted materials that were coming in to a maximum of 0.5%.

It was hoped that exporters would improve the quality of their bales but progress was patchy. China stepped up its clampdown and from January last year, it banned the importation of all waste paper and plastic film. The latter — mainly shopping bags and wrapping — was an obvious target or at least it was obvious to Des Crinion, IPR’s managing director, who set up a dedicated office in China, such was the level of business the company was doing there.

“We could see that coming,” he says. “It was mainly a cottage industry so you had ordinary householders who would buy a single bale, take it home and everyone, including the children, would sort it and wash it by hand and shred it and then sell it on to a local factory making cheap plastic goods. There was no talk of health and safety or environmental standards.”

But Mr Crinion admits he did not think the paper ban would be so total and, possibly, final.

“We’re still hopeful they’ll open up for paper again,” he says. “The pendulum has swung from accepting everything to accepting nothing but we think, once they’re happy they’ve addressed the standards issue, that it will swing back enough to take the high quality paper.” As for plastic, there’s no telling when, or if, the ports will open again. In the interim, the company has had to find other markets — fast. There are reports of stockpiles of plastics building up all over Britain which was similarly reliant on China, but Mr Crinion says that can not happen here.

“Our licence doesn’t allow us stockpile and, physically, we don’t have room,” he says. “Also, when you store material, it degrades so it breaks down and it’s worth less. And there’s a fire risk.

“We can stockpile for a little while. Every year there’s a blip six weeks before Chinese New Year. We didn’t load containers six weeks before Chinese New Year because that’s exactly when they’d land in China and they wouldn’t get off-loaded. “So you might have to hold off for a while and not ship anything. But that’s a cyclical thing you can plan for. What’s happened now is not cyclical. This is a closedown.”

The immediate result is that the 237,100 tonnes of waste paper and 6,240 tonnes of waste plastic were exported to China in an average year — those figures being the totals for 2016 — have had to find another home.

Those figures represented a third of everything we recycle, or in other words export, in an average year. We are currently generating around one million tonnes of glass, metal, plastic and paper packaging a year and we recycle, or export, about 68% of that.

India, Indonesia, Malaysia, and, closer to home, Holland and Germany, are now some of the main markets for Irish recyclables and IPR is also looking at Nigeria because capacity issues are arising elsewhere, but none of this shift in direction has come easy.

“You’re dealing with multiple destinations and in each destination you have different legal requirements, you’ve different shipping requirements, and within each of those destinations we could be dealing with five to ten different customers because they’re not of the scale they were in China so it’s a lot of extra work,” says Mr Crinion.

The other problem is that these newly-found markets, knowing that exporters desperately need to move materials, can name their price.

“There has been a price crash,” says Mr Crinion. “Very good quality plastic was getting €400 a tonne — now it’s worth less than €100. Good quality paper has halved in price.

“Low quality paper, as in mixed paper, has gone from €50-60 for a tonne to zero or to actually costing us money to pay to have it taken away.

But the alternative is we don’t collect or we collect and dump. Those are not realistic alternatives and they’re not what we want. They’re not what any sane Government wants either. Waste policy has dramatically reduced the use of landfill over the past decade and incineration is a touchy subject so the only acceptable solution both from a public and environmental perspective is to keep recycling.”

In 2012, the then Department of the Environment acknowledged that world markets for recyclables could be “volatile” and began formulating a policy aimed at developing an indigenous recycling sector.

In 2015 it launched a public consultation on the issue, stressing that Ireland was “heavily reliant on export” and

questioning whether we were “exporting a resource opportunity”. Various industry and business groups and environmental concerns made submissions but the process never concluded.

The department, now the Department of Communications, Climate Action, and Environment, said the work had been overtaken by the EU’s ‘Circular Economy’ strategy which proposes binding legislation to deal with packaging waste. The department said it had, and would continue to, “engage with stakeholders” on the strategy.

There are obvious barriers to retaining and reprocessing recyclables in Ireland — economies of scale being the most often cited.

“We looked at the possibilities of paper and we’re still looking at it but a paper mill is a massive infrastructure,” says Mr Crinion. “The smallest paper mill needs a couple of hundred thousand tonnes to be viable and it’s not an efficient or environmentally-friendly process. For every tonne of paper we would want to recycle it would take seven tonnes of water to pulp it down.”

Another current barrier is that much of the recyclable plastic exported from here can not by law be used in manufacturing here because it is still classified as waste rather than as a raw material.

Even if it is shredded, washed and made into pellets for use in making new products, most of it has to be exported. The Environmental Protection Agency (EPA) is working to apply EU ‘end of waste’ classifications to plastic pellets produced in Ireland but it is happening more slowly here than in other EU countries.

IPR has applied to the EPA to have pellets made specifically from granulated plastic film granted end of waste status and Mr Crinion expects positive news on that front soon.

“We’re looking at spending anything up to €10m on a facility to process film and we did that, we could sell the end product to any manufacturer here or worldwide so that’s a value-added approach to waste,” he says. “We want to do more of that.”

Even if Ireland was to develop a domestic waste reprocessing industry, Des says commercial and consumer mindsets would need to change. Packaging made from recycled materials will rarely look as pristine as those made from virgin materials. Maybe the colour is not so vibrant, maybe there are blotches or other imperfections. Mr Crinion says they should be considered a badge of honour.

“There should be an acceptance that it’s not going to be perfect,” he says. “I’m a farmer and I feel the same about agricultural produce — that we need to stop always wanting the perfectly-shaped potato or the bag of identical vegetables. Organic vegetables aren’t perfect but they’re seen as a prestige product. Recycled plastic or paper should be seen as the organics of packaging.”

Ultimately, however, he’s at one with the environmentalists who say the first step is to reduce packaging.

“I’d love to see people going into a supermarket with their own containers,” he says. “People say: ‘Sure you must love all this packaging, you’d be out of business otherwise.’ But even if we reduced packaging to a minimum, once we ensured it was all recyclable, we would still be in business.

“As it is, it’s like farming — it’s high volume, low value and it’s smelly. We could reduce the volume, increase the value and, if we ever drive the ‘clean, dry, and loose’ message home, we might even get rid of the smell.”

O’Doherty, C. (2018). Special Report: Failure of Irish households to recycle properly is a massive waste of time. [online] Irishexaminer.com.

Available at: <https://www.irishexaminer.com/breakingnews/views/analysis/special-report-failure-of-irish-households-to-recycle-properly-is-a-massive-waste-of-time-829833.html> [Accessed 27 Feb. 2018].