

wasteline

ISSUE 3 FEBRUARY 09



arc21

CEO FOREWORD



John Quinn

arc21 has come a long way since it was established in 2003 and our partnership approach with Government and the private sector is starting to have an impact. Recycling rates have increased to over 30% and individual household waste levels have fallen for the second consecutive year.

We've also successfully awarded and are managing waste contracts valued at over £200m which, due to economies of scale, have resulted in annual savings of over £7m for councils - clearly good news for ratepayers. Autumn 2008 marked the next stage as we began the process of consulting and tendering for Energy from Waste and Mechanical Biological Treatment facilities - sustainable renewable energy technologies that recover electricity and heat from waste.

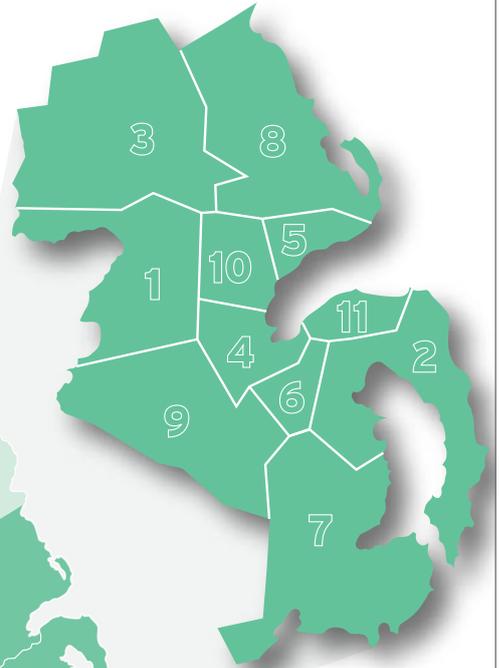
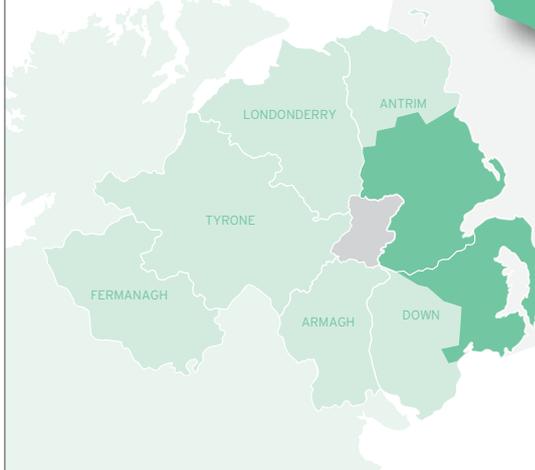
Although this is new technology for Northern Ireland, it will be similar to that used throughout Europe. We've included some information in this edition of Wasteline and revamped our website to include all the relevant details.

Later this year we plan to hold a public consultation exercise relating to potential sites for the facilities. We want to hear what you think so please come along to one of the consultation days or visit us at www.arc21.org.uk

ABOUT ARC21

arc21 Councils

1. Antrim Borough Council
2. Ards Borough Council
3. Ballymena Borough Council
4. Belfast City Council
5. Carrickfergus Borough Council
6. Castlereagh Borough Council
7. Down District Council
8. Larne Borough Council
9. Lisburn City Council
10. Newtownabbey Borough Council
11. North Down Borough Council



Representing 11 councils in the east of Northern Ireland, arc21's area accounts for almost 60% of the Province's municipal waste output, about 580,000 tonnes a year.

Environmental concerns and new EU regulations mean that we simply can't keep sending our waste to landfill sites. Failure to address the problem could lead to potentially huge EU infraction fines (up to £500 in extra rates per household every year).

arc21's aim is to encourage households and businesses to reduce, re-use and recycle as much as possible, and to deliver new waste infrastructure to manage waste efficiently and in an environmentally friendly manner.



TENDER PROCESS UNDER WAY

The clock is ticking to meet the EU deadline for new landfill diversion targets. Environmental reasons aside - landfill sites are major producers of greenhouse gases - there's also a strong financial incentive to address the problem given that councils (and ratepayers) that fail to meet the new obligations will be fined. With that in mind, arc21 has begun the lengthy and complicated process of procuring new facilities to help manage our waste more effectively.

After much consultation and Government approval, the strategy, as outlined in arc21's Waste Management Plan, is to utilize Mechanical Biological Treatment (MBT) and Energy from Waste (EfW) technology. Costing between £220m and £500m, the new facilities represent one of Northern Ireland's largest ever Public Private Partnership projects.

In parallel to the procurement process, arc21 is also running a site selection exercise to help identify potential locations for the new facilities. The shortlisted sites will be the subject of a public consultation exercise during 2009. Belfast City Council is also planning its own specific consultation exercise to help decide if the North Foreshore can be considered as a potential shortlisted site.

Welcoming the news, Alderman Hubert Nicholl, Chairman of arc21's Joint Committee, said:

"In September we published a contract notice in the Official Journal of the European Union which marks the start of a procurement process to provide the arc21 region with modern waste

management facilities that use MBT and EfW technology.

"arc21's aim is to deliver waste infrastructure facilities that not only help our constituent local councils meet EU landfill diversion targets, but also provide best value for ratepayers. For that reason this procurement process includes a degree of flexibility for both the cost of the project and the timeframe of the contract to provide potential bidders with a level of freedom to develop an optimum solution.

"The need for EfW and MBT technology is part of arc21's wider waste management plan to deal with approximately 580,000 tonnes of municipal waste produced annually throughout its region."

Although arc21's focus to date has been on the '3Rs' of reduce, re-use and recycle, with a target of increasing recycling rates to 50% by 2020, there will always be an element of residual waste.

MBT combined with EfW will allow councils to meet their European obligations and manage residual waste efficiently and in an environmentally responsible manner.



countdown to
2020



GREEN LIGHT FOR ARC21



As part of arc21's ongoing commitment to deliver an efficient and effective waste management strategy, the procurement process for new MBT and EfW technology has been subjected to external scrutiny by an independent panel of UK experts. Known as a 'Gateway Review', it provides an evidence-based snapshot of how the project is progressing.

We're pleased to report that the review found that the procurement project to deliver MBT and EfW technology is "well-structured, well-managed and informed by a good, detailed awareness of issues that impact on its successful delivery", and in several areas suggested the approach could represent good practice for other projects.

The Review also suggested a number of steps to take as the project moves from the planning stage to actual delivery. There will be further Gateway Reviews as the procurement process proceeds.

INDICATIVE TIMETABLE

OJEU Notice Published	September 2008
Appoint Preferred Bidder	Spring 2010
Award Contract	Winter 2010
Planning Permission (1st MBT)	Early 2011
Planning Permission (EfW)	Summer 2012
1st MBT Operational	Spring 2012
EfW Operational	Spring 2014

A NEW APPROACH TO WASTE

arc21's strategy is laid out in a Waste Management Plan* which assesses how best to manage the region's waste for the next 15 years. Approved by Government, the plan has already been the subject of a public consultation and sets challenging targets to reduce and recycle waste.

PRIMARY TARGETS

Household waste recycling and composting targets

- 35% by 2010
- 40% by 2015
- 50% by 2020

WASTE DIVERSION TARGETS

Reduce biodegradable municipal waste going to landfill

- 75% of 1995 levels by 2010
- 50% of 1995 levels by 2013
- 35% of 1995 levels by 2020

In future months, meeting these targets will require an integrated approach to waste management that includes:

1. prevention
2. re-use
3. recycling
4. biological treatment
5. mechanical biological treatment (MBT)
6. energy from waste (EfW)
7. limited use of landfill

To date the focus has been on recycling and good progress is being made - recycling and composting of household waste has jumped from 7.5% in 2000 to over 30% in 2007. While the campaign to reduce, re-use and recycle is working, not all our waste can be managed in this way.

Having assessed all the options in light of public interest, technology, environment and economic considerations, it was concluded that Mechanical Biological Treatment (MBT) and Energy from Waste (EfW) technology should form one part of the overall waste strategy (known as the Residual Waste Treatment project). MBT is a widely used process that helps separate out materials which could be recycled from waste to produce a more biologically stable material that can be landfilled or used as refuse derived fuel for EfW. EfW is a proven technology compliant with UK and EU best practice that uses waste to create renewable energy.

arc21 has begun the procurement process for the new facilities and is also conducting a site selection process to identify potential sites. As part of a wide trawl we've asked Central Government, the private sector and all of our constituent councils if they had any sites that they wanted to make available as part of the site selection process. Once a shortlist of sites has been identified we'll be conducting a major consultation process.

We're keen to hear from as many people as possible so please come along to the public consultation days in your local area, details of which will be published in your local press nearer the time.

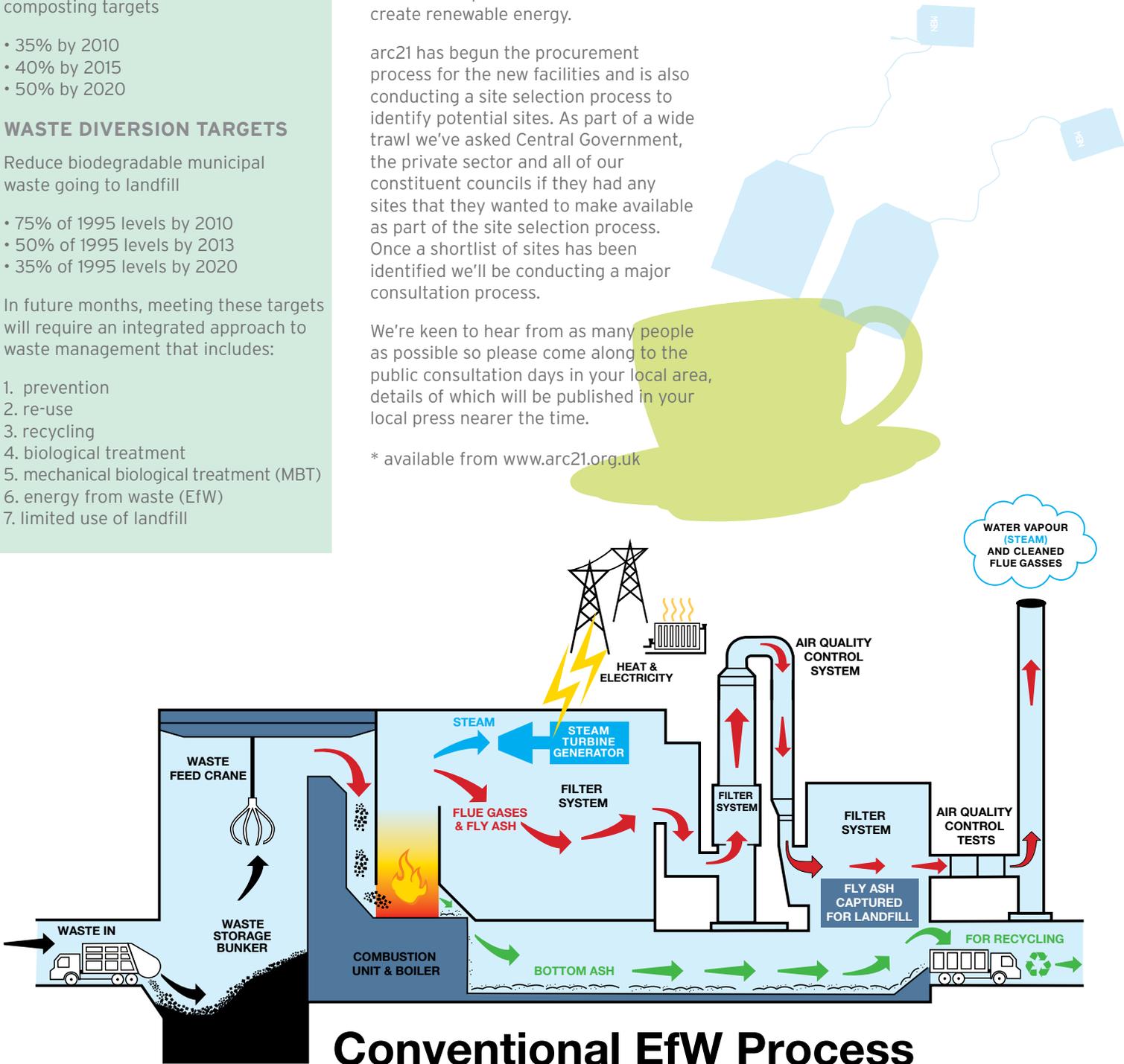
* available from www.arc21.org.uk

A BEGINNERS' GUIDE TO EfW

EfW technology is used widely in Europe, particularly in Holland and Scandinavia (see pg 5). It works by burning waste at very high temperatures, in turn creating pressurised steam that can be turned into renewable electricity using a turbine and generator.

EfWs are consistent with high levels of recycling (up to 50% in some countries) and the majority of existing facilities are based in urban areas. Operations take place within an enclosed area and no waste is stored on site.

EfW is a safe, but highly regulated process that does not create odours or exceed air quality guidelines. It's expected that the arc21 facility will generate enough electricity for up to 40,000 homes.



Conventional EfW Process



CALLING ALL TETRA PAKS!

Tetra Paks can finally be recycled thanks to the launch of a new initiative by arc21, Tetra Pak Ltd and ACE UK (Alliance for Beverage Cartons). Over 50 special collection banks have been placed throughout the region to help further boost recycling levels.

It's estimated that the average person uses 54 Tetra Pak cartons a year, that's over 200 cartons a year for a family of four.

Annually the UK produces 55,000 tonnes of paper-based cartons for everything from milk to juice and even wine. Instead of ending up in landfill sites, the cartons can now be recycled into a number of different products such as plasterboard liner, high strength paper bags and envelopes.

Ricky Burnett, Policy Director of arc21, said:

"This scheme is a significant development representing the first time that a member of the packaging industry is directly supporting councils' efforts to convert more waste into a resource. We knew that there was a lot of frustration that it wasn't possible to recycle these cartons, so it's great news to be able to provide this service and further increase recycling levels."

Richard Hands, Environment Manager at Tetra Pak Ltd and chairman of ACE UK, added:

"Whilst cartons have been successfully recycled in large volumes for many years throughout Europe, the UK has a long way to go. It's therefore fantastic news that arc21 is taking a lead by adding cartons to the list of materials collected for recycling and we very much hope that the initiative is successful.

"We and our industry partners are committed to increasing the level of carton recycling in the UK with the aim of reaching a national network of carton collection by the end of 2008. Our work

with arc21 takes us and households in the area one step closer to achieving that."

Before taking your 'empties' to the collection banks, please remember to wash out and squash your cartons. Only paper-based liquid food and drinks cartons should be placed in the recycling banks.

In the ten months since the banks were introduced, over four tonnes of Tetra Paks have been recycled - the equivalent of over 30,000 one litre cartons.

Contact your local council for details of your nearest Tetra Pak Bank.

Pictured above is a council worker at one of over 50 new Tetra Pak Banks available throughout arc21's region



ENERGY FROM WASTE

Although Northern Ireland's Waste Management Plan has identified the need for an Energy from Waste (EfW) facility within arc21's region, the technology isn't that new in the rest of the UK or Europe. Indeed, there are over 400 EfW plants in 16 countries across Europe and 22 facilities in Great Britain. As Northern Ireland gets ready for its first EfW, we thought Wasteline should take a look at how similar technology is already working.

SOUTH YORKSHIRE

Like Belfast, Sheffield's wealth was built during the Industrial Revolution - it's also a city which has had to reinvent itself as traditional manufacturing jobs have made way for more hi-tech and service-based occupations. And like arc21's councils, Sheffield City Council was faced with the same problem of how to manage its waste.

The focus in both Sheffield and arc21 is to encourage the public and businesses to reduce, re-use and recycle as much material as possible. For that waste, however, which isn't recycled, the Council decided that the best environmental and technical solution was to recover energy and heat from it by using EfW.



The Sheffield facility was officially opened last year. Based in a residential area near the city centre, it will process 225,000 tonnes of waste every year, generating enough electricity for 22,000 homes and up to 60MW of heat which is supplied to over 140 buildings including Sheffield City Hall, an International Sports Centre and the Sheffield Theatres. It's estimated that this low carbon energy source prevents 12,000 tonnes of CO₂ from being released across the city every year.

HOLLAND

The Dutch are well known for their pioneering approach to environmental policy and waste management, achieving the highest levels of recycling in Europe (64% of municipal waste is recycled).

EfWs are a well established, integral part of Holland's approach to waste and one of the largest and newest plants is in Alkmaar, a town in the Noord Holland province. The facility processes 660,000 tonnes of waste a year which is unsuitable for recycling, generating 68MW of

Alkmaar, Holland

Paris, France



electricity, enough to meet the needs of a city with 130,000 residents. It also produces enough heat for 16,000 homes and other by-products such as ash are re-used by the construction industry.

PARIS

In December 2007, Paris opened a new €90m EfW on the banks of the River Seine just one kilometre from the Eiffel Tower. The facility is designed to handle 460,000 tonnes of waste produced annually by one million Parisians and will generate enough energy to supply 180,000 people.

The plant is notable because over half of it has been built underground (31m beneath the surface ground / 21m above) and includes a recycling centre that will process 55,000 tonnes every year. Built on the site of an old concrete works, the facility took seven years to complete.

Sheffield, England





INTO THE MIX

Recycling rates across arc21 are on the up with over 30% of all household waste now being recycled or composted. There's still plenty of room for improvement if we're going to match countries such as Holland or Sweden, but we're moving in the right direction. Have you ever wondered, though, what happens to the contents of your recycling bin?

You've collected your old newspapers, washed out all those empty plastic milk containers and dispatched all those old cereal boxes to your recycling wheelie bin, content in the knowledge that you're doing your bit to help stop Northern Ireland sinking under a deluge of unwanted waste.

You may not give it a second thought, but once the council bin lorry has carted off the fruits of your labour, just where does it go?

The short answer is that it all ends up (150 tonnes everyday) at what's known in the business as a MRF (Materials

Recovery Facility), run by Bryson Recycling at Mallusk. The MRF separates out the paper, cardboard, cans and plastic bottles before they're transported onto various reprocessors.

In the next edition of Wasteline we'll take a look at where the waste goes beyond Mallusk.

Back in 2005 arc21 signed an eight year contract with Bryson Recycling, giving them the task of sorting mixed waste collected from eight local councils. Formed in 1993, Bryson is a social enterprise, which means that environmental and social aspects of the business are as important as its financial performance. The company is part of Bryson Charitable Group, Northern Ireland's oldest community-based charity.



MRF SORTING PROCESS



1

DELIVERY: Mixed recycling materials are delivered from Councils on a daily basis



2

TRANSFER TO MRF: Materials are transferred onto a conveyer



3

PRE-SORT CABIN: Materials such as plastic bags which could damage the MRF are removed



4

LUBO SCREENS: Paper is separated from the mix and sent to the Sorting Cabin. Plastics and cans fall through the screens to continue their journey on a lower conveyer



5

MAGNET: Steel cans are removed using a magnet running across the top of the conveyer



6

EDDY CURRENT: Aluminium cans are removed using an eddy current, which works on the opposite principle to a magnet - repelling the aluminium onto a separate conveyer. Plastics carry on into the main Sorting Cabin



7

SORTING CABIN: There are four conveyors; three for paper and one for plastics. Staff handpick contaminants from the material



8

SORTED MATERIALS: Sorted waste is baled and forwarded for recycling

WHAT'S BEEN HAPPENING NEAR YOU?



GET YOUR HANDS DIRTY!

Last April we asked the public to get their paws mucky during Compost Awareness Week. You don't need to be born with green fingers to produce high quality compost, anyone can do it. Home composting bins are not expensive and can be found in your local gardening centre or by contacting your local council.

All you need is a bit of patience and the right mix of waste to make your very own 'black gold'. Maintaining a compost bin is also a relatively simple process as it will begin to look after itself once you get it started.

As an environmentally sound way of getting rid of your rubbish, a well made compost pile is a real investment for the garden and if cared for properly will create high quality compost in a few months. Compost bins should not, however, be used as a dumping ground for all household waste as compost piles cannot take cooked meats, fish, dairy products, cat and/or dog litter. These materials will not decompose properly and will ruin any attempt at home composting.

Benefits

- Reduce waste going to landfill
- Improve the quality of the soil in your garden
- Longer lasting, brighter blooms from compost-enriched soil
- Prevent the digging up of declining peat bogs
- Save money on garden centre compost



Tips for Home Composting

Place your compost bin on either soil or grass, not concrete.

Add nitrogen-rich materials (dried leaves or shredded newspapers) and those containing both carbon and nitrogen (kitchen scraps, pea straw, green garden prunings).

Build your compost in thin layers (3-10cm) and alternate kitchen waste (high nitrogen) and garden waste (low nitrogen) layers.

Use a range of materials

Make sure your compost is moist, but not wet, warm and placed in a sunny spot.

Keep your compost aerated! If you are composting with a tumbling composter, make sure you turn it whenever you add new materials. If you are composting with a pile, or in a static bin, be sure to mix up the contents so that the pile gets oxygen and can break down effectively.

Hot (fast) compost takes 3 - 6 months and you need to turn the compost every day. Cold (slow) compost takes 6 - 12 months and you need to keep adding waste, especially kitchen scraps.

SPEAK UP!

Children from across Northern Ireland took part in the 10th annual Environmental Youth Speak competition last May which was compered by ex-Blue Peter girl, Zoe Salmon.

The competition, open to 9 - 12 year olds, gives pupils the opportunity to research and speak their mind on topical

environmental issues, including themes such as 'How reducing my waste will benefit the polar bear' and 'How tackling waste can help people reduce their carbon footprint'.

Over 50 schools throughout Northern Ireland took part with Caitlin McManus, a year eight pupil at Our Lady and St. Patrick's College, Knock, picking up the top prize for the arc21 region.

The competition is sponsored by the Environment Agency and Northern Ireland's three waste management groups, including arc21.



Youth Speak winners Caitlin McManus & Megan Gordan with Zoe Salmon

WASTE TARGETS

Since it was formed in 2003, arc21, in partnership with its constituent councils and with the help of the public, has started to see the benefits of a strategy focused on the '3Rs' of reduce, re-use and recycle.

As the tables opposite show, household recycling rates have increased from just 7.5% in 1999 to over 30% today.

In addition to recycling more, households are also producing less waste, falling from a high of 1.4 tonnes on average per year to just 1.33 tonnes in 2007.

Together this has meant that much less Biodegradable Municipal Waste (BMW) produced by arc21 households is ending up in landfill - 35,000 tonnes (11%) less since 2005.

More needs to be done to reach a target of recycling and composting 50% of household waste by 2020, but we're on the right track.

arc21's residual waste treatment project will further ensure that that waste which can't practicably be recycled will be put to good use rather than going to landfill.

RECYCLING RATES PER HOUSEHOLD

ANNUAL H/h RECYCLING RATE



AMOUNT OF INDIVIDUAL HOUSEHOLD WASTE PRODUCED ANNUALLY

ANNUAL TONNES PER H/h



ARC21 - LANDFILL DIVERSION TARGETS

Year	BMW Landfilled*	BMW Allowance Target
2005/06	316,732 tonnes	380,427 tonnes
2006/07	301,988 tonnes	353,773 tonnes
2007/08	280,735 tonnes	345,244 tonnes

* BMW = Biodegradable Municipal Waste

'WASTING' TIME

Waste Week is now into its 10th year and it's bigger and better than ever. In June special events were held by all of arc21's partner councils to encourage more people to take responsibility for their waste and to 'reduce, re-use and recycle' as much as possible.



Although recycling levels in Northern Ireland have improved dramatically over the last decade, the average home in Northern Ireland generates about 1.33 tonnes of waste a year. Of this, about 70% still ends up in landfill, something which is bad for the environment and could possibly lead to a breach of EU regulations and hefty fines for ratepayers.

Several councils ran eco-challenges for councillors and provided highly popular 'Green Butlers' (complete with smart outfits and green bowties) at collection centres to take recycling materials straight from vehicles without the need for drivers to even get out of the car!

The Forgotten Five

During Waste Week arc21 and WRAP published a survey highlighting those items people are most likely to forget to recycle...

1. Aerosol Containers (62%)
2. Biscuit & Sweet tins (53%)
3. Plastic shampoo & toiletry bottles (32%)
4. Plastic detergent bottles (31%)
5. Glass jars (20%)

The survey also found:

- Only 34% remember to recycle items from bedrooms compared to 62% for kitchens
- 59% know that cans, plastic bottles, glass and card can be recycled, but only 26% realised that magazines, aerosol cans and biscuit tins could also be recycled

NEW FACILITIES

North Down

North Down Borough Council has invested £18m in an impressive drive-through Recycling & Environmental Education Centre and an Enclosed Waste Transfer Station - the most advanced facility of its kind on the island.

Both facilities are also energy self-sufficient, using solar panels, photovoltaic cells and a 900kw wind turbine that will help reduce the Council's energy bill by £150,000 every year.

While the Recycling & Education Centre is open to the public, the Waste Transfer Station will be used to compact waste collected directly from businesses and households. The compacting process means that fewer lorries are needed to transport waste from the site, reducing carbon emissions by 300 tonnes annually.

Cutting edge technology within the transfer station will remove dust, odours and toxins, making it one of the cleanest air facilities in the UK.



Ormeau Road, Belfast

Opened in late 2007, the Ormeau Recycling Centre is Belfast City Council's fourth new state-of-the-art recycling facility. Based on the Park Rd - just off the Ormeau Road - the centre has replaced an old civic amenity centre and is designed to provide recycling services to the south of the city.

The centre can recycle 90% of all household waste - everything from car batteries, mobile phones, books and hand tools to timber, tetra paks and even spectacles, as well as the usual paper, cardboard, glass bottles, jars and aluminium cans.

Fully-trained staff will be on hand at the site to give help and advice on recycling.

Below: State-of-the-art waste management in Bangor



**REDUCE
WASTE**

FRESH FACES

Since the last edition of Wasteline there have been a couple of new additions to the arc21 team...



KAREN BOAL: PROJECT COORDINATOR

Karen joined arc21 in February 2008, on secondment from North Down Borough Council, as Project Co-Ordinator for the Residual Waste Treatment Project.

Whilst working for North Down Borough Council Karen gained extensive procurement experience and was also involved with the Council's implementation of the Waste Management Plan. In her role Karen worked closely with arc21 and has been a member of the arc21 Steering Group since its inception.

NOEL LYONS: WASTE PROMOTIONS OFFICER

Noel joined in January 2008 as a Waste Promotions Officer to help run arc21's education programme.

In particular, it's Noel's job to tour the region in the new Waste Promotion Vehicle, visiting schools and town centres throughout the region to promote the '3Rs' of 'reduce, re-use and recycle'.

If you see him on the road, don't forget to give him a wave!

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KIDS' CORNER

Calling all 8 - 14 year-olds.
Rev up your creative juices!

We can all do our bit to make sure that we don't create more rubbish than we have to. It's not just something for Mum and Dad to do - you can help too by making sure that as much of your rubbish as possible is recycled or re-used.

To give you a hand, there's a special arc21 bus full of games and fun stuff to help you learn about why we need to recycle, and what you and your family can do. The bus is visiting schools and towns, but we need your help!

The bus is currently nameless - can you think of a catchy name that will be easy to remember?

If you can, fill in this form and send it to arc21 (address at bottom of page). The prize is a special arc21 environmental hamper made up of top-of-the-range recycled products. Closing date for entries is 6th March, 2009.

WASTE WORDSEARCH

Hidden in the wordsearch below are 15 words that we associate with waste.

Just for fun, how many can you find?

Card, Glass, Waste, Reduce, Reuse, Recycle, Soil, Tinfoil, Landfill, Batteries, Nappies, Eggshells, Compost, Junkmail, Aluminium.



NAME _____

ADDRESS _____

TEL: _____

AGE _____

What name would you give the arc21 Waste Vehicle?

A	L	G	L	A	S	S	E	R	I	A	T	C	W	Q	U	M	N
L	C	A	B	O	Y	S	E	I	P	P	A	N	H	O	B	O	A
U	G	O	S	E	D	E	S	U	E	R	R	D	F	U	A	D	P
G	L	A	M	D	E	S	Y	F	D	S	C	U	S	O	T	M	P
D	L	Z	I	P	T	I	T	O	R	L	C	I	M	N	T	Y	U
T	I	N	H	L	O	N	A	I	N	L	I	S	A	W	E	K	T
A	F	N	I	T	N	S	S	E	T	E	T	M	I	E	R	O	E
E	D	E	M	E	A	E	T	C	I	H	S	M	T	A	I	R	L
G	N	N	D	O	G	N	O	H	R	S	W	A	S	T	E	H	I
S	A	L	U	M	I	N	I	U	M	G	D	E	O	D	S	O	A
B	L	B	R	I	C	R	A	E	C	G	E	B	I	O	R	A	M
A	C	U	A	E	E	L	C	Y	C	E	R	E	L	O	I	T	K
S	T	A	R	D	A	C	A	K	N	O	D	Y	E	A	B	G	N
B	H	U	A	B	B	D	M	L	I	O	F	N	I	T	Y	W	U
A	R	R	E	D	U	C	E	Y	A	S	Z	A	L	L	M	U	J