

Community Recycling Opportunities in Keith

Research for
Keith & Strathisla Regeneration Partnership

February 2010



Keith Recycling Centre

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Executive Summary

Background

REAP has conducted a primary research project for Keith and Strathisla Regeneration Partnership to investigate opportunities to 'close the waste loop' in the Keith area. This report is financed by The Moray Council, The Scottish Government and the European Community Moray LEADER 2007-2013 Programme. The report looks at:

- What waste Keith produces
- What existing recycling/waste enterprises there are in the area
- What materials currently wasted could be reused or recycled
- What are the opportunities and barriers for potential waste enterprises

Methodology

The Moray Council Waste Team was contacted to provide baseline waste figures and information for Keith community. Face-to-face questionnaires were used to gather in details of what waste they produce, how the waste is disposed of or recycled and ideas enterprises using recycle in Keith. Web research was also conducted on potential links with National and Moray organisations to promote reuse and recycling.

Results

The information from the Council and the traders' survey revealed a wide variety of waste products produced in Keith, although many businesses merely produced office waste – tea bags, plastic cups, paper etc – and a small amount of plastic packaging. Waste amounts are rising and the Moray Council landfill site at Nether Dallachy only has 15 years' capacity left.

Larger volumes of waste are dealt with through the council's weekly collections of trade waste and card/paper. A few businesses were unaware of the Council's recycling service for cans and glass uplift as part of this collection.

There are also several special waste disposal services in Keith for hazardous or special waste such as raw meat and out of date drugs, often driven by legislation on health and safety or security issues. Some businesses in Keith that are part of larger enterprises are participating in their company waste initiatives.

Closing the Waste Loop in Keith

Some of the opportunities identified include:

- continued campaigning to reduce packaging and other waste going to landfill
- promotion of more reuse and recycling – much of what is currently landfilled could be recycled
- small amounts of waste from specialist businesses (such as mill waste) are difficult to separate for recycling or diverting from landfill in Keith due to low volumes
- legislation on some specialist waste has led to opportunities for businesses collecting this waste

- many traders in Keith extend the business/ customer and inter-business relationships through provision of waste products to customers and other businesses
- existing Moray and Grampian waste-based enterprises have made failed attempts to operate in the Keith area but in the current economic climate and waste framework have had to concentrate on their local area and contracts
- some businesses in Keith are happy to put staff time into preparing items for recycling or reuse
- businesses identified some products they reuse or recycle themselves within their business or on an inter-business level in Keith

Options/Recommendations

Some informal recycling and diversion from landfill occur in Keith as part of ongoing business, individual and customer relationships. Existing sharing networks could be extended to include paper offcuts for card and ticket making, for example.

KSRP and other Keith businesses and organisations can work with existing waste-based businesses to help extend their reach. Most of these are social enterprises which have a social and/or environmental remit. A good start would be the Creative Waste Exchange's Schools enterprise packs.

Any new waste business based in Keith would do well to be based on improving and building on existing networking opportunities and providing information to and between businesses and individuals. This is building on systems that work in Keith already and could improve confidence in recycling and new ways of closing the waste loop.

A system for combining some of the waste paper and card with food waste in a composting venture would have a good environmental and waste reduction impact, removing some of the farthest travelled waste and bulkiest, methane producing elements of Keith's waste. A Master Composter post could be developed for Keith to encourage local household composting, raise awareness and feed into other waste initiatives.

A project could include a community noticeboard and a 'swap shop', virtual or otherwise. This could include information about current opportunities to recycle, some of which are still not widely known or subject to 'urban myth' (see Appendixes 2 & 3). This work would be unlikely to bring in any profit, but could work with volunteers and would need to be grant funded on a 2-3 year project to set sustainable systems up. It would build on existing Keith informal networks and would need to be sensitive to legislation and local requirements.

Funding for a part-time job could be sought through landfill tax or through the INCREASE programme. REAP would be willing to be a partner in this venture and could provide a high street presence through rented office space and the existing community notice board.

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- What waste Keith produces
- What existing recycling/waste enterprises there are in the area
- What materials currently wasted could be reused or recycled
- What are the opportunities and barriers for potential waste enterprises
- Recommendations and Conclusions

Keith Background

Keith is a small town in Moray with a ward population of 2969 divided between 1317 households (average size 2.17 people) (*All figures 2001 Census Moray Council*). Rurality figures for Moray of average drive times to key services, especially to shops, petrol and secondary schools are notably longer than the Scottish average. (*www.sns.gov.uk 2006*)

Keith provides a shopping and amenities centre for the outlying small villages of Newmill, Drummuir, Mulben, Aultmore and Grange. 29% of Keith residents have no car. 62% of Keith residents are owner occupiers. Retired people comprise 18% of the population; the unemployment rate is 4.2%, slightly higher than the Moray average (3%). There are 3 industrial estates in Keith at Isla Bank Mills near the station, Newmill Road and Westerton Road.

Current Waste Systems

Keith has a Council kerbside collection within the town boundaries for residual waste and garden waste on alternating weeks; glass, cans and paper are collected every week. Keith traders can sign up for trade waste collections which collect residual waste twice weekly and recycled waste once a week. Council collections are taken directly to Moycroft baling and processing plant in Elgin

Keith has a recycling centre which collects waste and recycle for delivery to Moycroft. This includes self-delivery by individuals. Commercial premises can deposit recycle if they hold a recycling pass. Residual waste can be deposited but a minimum charge for 1 tonne is chargeable. From Moycroft, residual waste is baled for landfill, while paper & card, wood, metal, card, plastic bottles, glass, cans, furniture, green waste, engine oil and batteries get amalgamated and sent off for recycling.

For more detailed breakdown of final destination of recycle, see diagram 1 (page 5)

Methods

The Moray Council Waste Team was contacted to provide baseline waste figures and information for Keith. The team have a wealth of knowledge on waste and recycling issues and anyone looking to develop waste- based business in Keith would do well to make them the first port of call. Information was provided on:

- the tonnage of recyclate and waste passing through the Keith Recycling Centre
- waste and recyclate tonnages processed in Elgin from Keith rounds, both domestic and commercial
- the types of waste being processed/collected
- the final destination of different recyclate in Keith
- health and safety, and cost implications of dealing with different recyclate

Face-to-face questionnaires were used to gather in details of how local businesses recycle. These businesses, which included Mid Street shops and those on the industrial estates in Keith, were surveyed about what waste they produced and how it was disposed of or recycled. Businesses were also asked about any products made from recycled materials that the business might use/ be able to use, any problems with moving to recycled products or with trying to recycle waste currently landfilled, and ideas from the business community for enterprises using recyclate in Keith.

Web research was also conducted about enterprises in, and outwith the area that are based on recycling, reduction and reuse of waste. Information was gathered on:

The Green Home in Buckie

Waste watchers

Waste Busters

The Creative Waste Exchange in Aberdeen

Shetland Glass recycling

An opportunity for a case study arose during the course of the research with a request to help with a recycled garden at Keith Primary School. This provided a practical 'what if' example for businesses to think about when identifying opportunities for waste recycling through their business. It also provided an opportunity for the community of Keith to provide a practical outcome for this initial research.

Results

What waste does Keith produce?

The different materials and their tonnages over the year (Jan-Dec 09) collected from the Keith Recycling Centre are summarised below:

Type of waste	Total tonnes	Tonnes per household
<u>Recycled</u>		
CARD	75.5	0.057
PAPER-MIXED	68.2	0.052
GREEN WASTE	166.88	0.127
METAL-MIXED	86.56	0.066
PLASTIC	13.54	0.010
TEXTILES	8.74	0.007
WOOD	133.88	0.102
WEEE goods	85.6	0.065
OIL FILTERS	0.48	-
MINERAL OIL	0.9	-
Total weight of recyclate	640.28	
BATTERIES – AUTO	3 batteries	-
<u>Landfilled</u>		
MSW (residual waste)	526.48	0.40
RUBBLE	324.14	0.25

Waste collected in Keith by the Council from its weekly household kerbside collections and trade waste services are taken directly to Elgin and are weighed by vehicles on different rounds in Keith or including Keith. For 2009 the resulting tonnages were:

Material	Round area	Tonnes
<u>Households</u>		
Dry recyclates ¹	Keith, Newmill & rural Keith	598.37
Green Waste	as above	360.92
Mixed Solid Waste	as above	1,309.20
<u>Commercial</u>		
Cans	Buckie/Keith/rural areas	9.10
Paper & Card	Keith/Dufftown/Aberlour/Rothes	208.30
Mixed Solid Waste	Keith, Newmill, Keith rural	84.32

(source for all above figures TMC Waste Services)

Totals for glass and cans are not available as a separate total for Keith from the Council. However, the figures for Moray can recycling tonnages are available from Moray Waste Watchers' cans recycling project. These are, for 2009:

- 100 tonnes aluminium cans
- 300 tons steel cans
- 50 tonnes aerosols
- 10 tonnes other metals (copper/brass etc)

¹ This includes paper & card, cans and glass collected in the orange and blue boxes from households.

Where does waste currently end up?

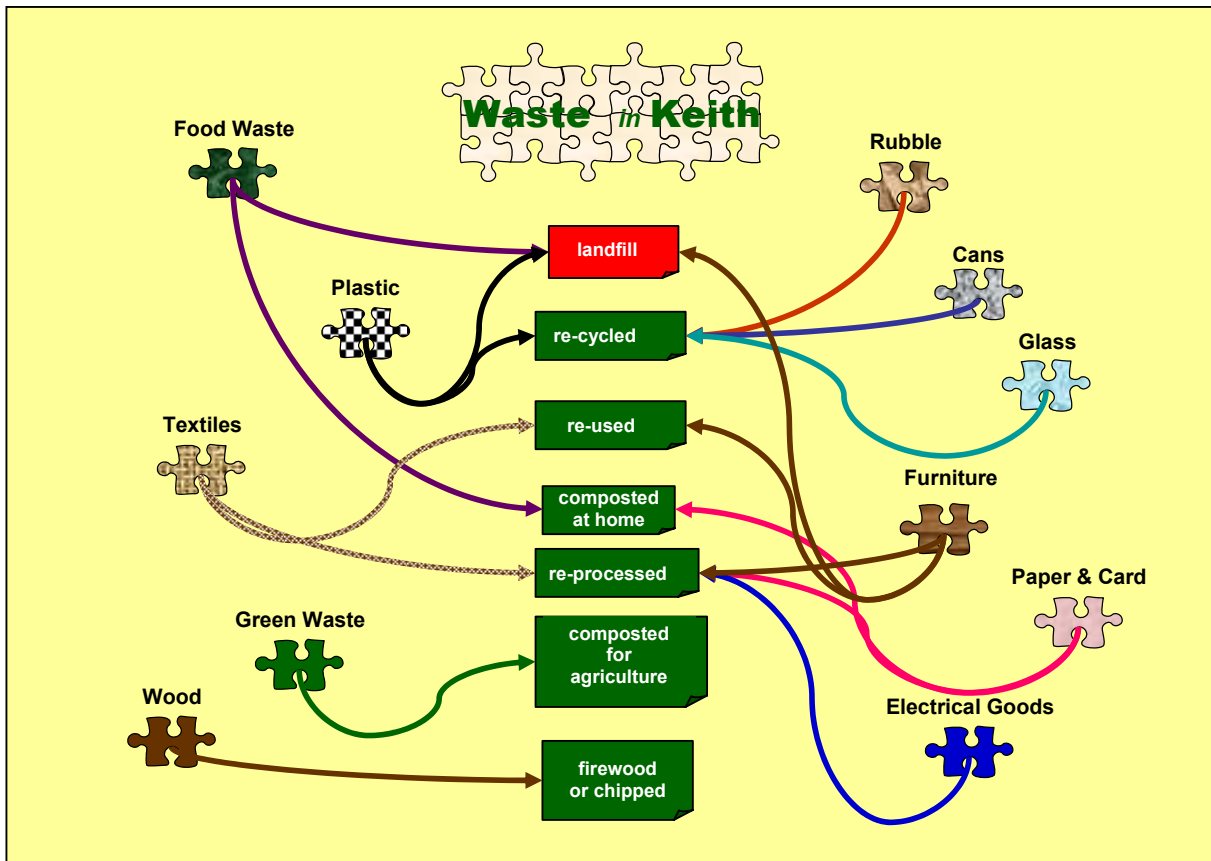


Diagram 1: The final destinations of Waste in Keith

Card and paper

Baled separately and recycled with Securecycle Scotland Ltd – a paper mill in Fife. The paper and cardboard get made into new paper based products, including tissue paper and newsprint. Some of the mixed product stays in the UK for board manufacture, but more is exported.

Green Waste

Collections from all the brown bins, plus self delivered green waste at recycling centres is shredded at Moycroft Recycling Centre Elgin. It is then transported to Keenans Recycling in Aberdeenshire to be composted. This is the largest such plant in Europe. The compost generated is used for land restoration and to cap the council landfill site.

Cans and foil

All Moray's kerbside collections, self-deliveries at recycling centres, plus collections from pubs and clubs etc are processed at Moray Waste Watchers cans recycling project in Buckie. This social enterprise and charity provides work and training places for those with support needs. Steel cans, foil and aluminium are separated and baled, then sold to metal reprocessing companies. Novelis in Alloa reprocess the aluminium into new cans and JR Adams in Glasgow take and reprocess the steel into new products.

Metal

Scrap metal of all kinds - aluminium, steel and copper - are separated and sent to firms to be smelted down for reuse. Sources include washing machines, dishwashers, lawnmowers, ironing boards, bed frames, bikes.

Plastic Bottles

Plastic bottles of type 1 & 2 (PET & HDPE) brought into Keith recycling centre (preferably washed and squashed first) are recycled with Connorco, based in County Durham. Their state of the art, innovative plastic separation plant produces high value, single stream granulates for re-introducing into the manufacturing process for products like outdoor furniture, fencing, cable protection and packaging in the UK. Other plastics are landfilled.

Wood

Collected and considered either as clean or mixed. The mixed will contain woodchip, laminates, MDF, painted and treated timber. Both streams are passed on for shredding and recycling. Some of this recycling takes place at TEAM wood recycling project based in Elgin which is a charity and social firm employing trainees with support needs.

Glass

Glass bottles and jars from recycling boxes, bins and banks is collected together at Moycroft in Elgin, then taken to British Glass in Alloa and made into new products there. Glass is particularly important to recycle as it lasts so long in landfill – indefinitely as far as is known. Many types of other glass contain sulphur or are in other ways contaminated - and therefore can't be recycled this way. This includes greenhouses, window panes, vehicle glass, Pyrex dishes, ornaments, vases and mirrors all of which have to be landfilled

Lightbulbs

Commercial quantities of fluorescent tubes can be disposed of at Edmundson Electrical, Edgar Rd, Elgin 01343 551122. There is a charge for this service. Householders can deposit fluorescent light tubes at Moycroft in Elgin.

Books, Furniture, Appliances

People with unwanted items can:

- Use the 'Book Banks' at recycling centres – these are donated to charities
- Use Freecycle, an independent recycling website where you are able to offer, and look for, various items. www.freecycle.org.uk (Moray has a local branch)
- Donate them to charity, or contact the Green Home (Buckie) or Wastebusters (Forres), charities which refurbishes/resell furniture where possible for resale, or separates out recyclable components (wood, metal etc) for further recycling. The Green Home also takes appliances.
- Take broken items to the nearest recycling centre or arrange for a special uplift from the Moray Council. These items are landfilled.

Electrical goods (WEEE)

Following the Waste Electronic and Electronic Equipment Directive implementation, these items are sorted into 4 categories: equipment; cooling; TV's; and small electrical (toasters, tongs etc). All are taken as part of the national take back scheme and recycled.

Fridges/freezers for example are taken through a special process to extract the refrigerant gases and foam for safer disposal. The shell is then shredded and recycled.

Textiles

A number of banks are supplied across the county either by Northern Textiles or the Salvation Army. All materials are collected and split into categories for resale, processing as rags or shredding for pet beds etc.

Batteries/Oil

Lead acid car/small van batteries are accepted for recycling and broken into component parts with lead and acid recovered, cleaned and reused, as is the oil which is filtered and reprocessed. Household batteries (AA, AAA) are now accepted at recycling centres for recycling as well as car batteries through the Battery Directive/take back schemes.

Rubble

Rubble is now recycled by a local business. A small amount is reused at the council landfill site after crushing for daily cover or to build access roads on the site in order for trailers to reach the tipping face of the waste mass. The use of recycled collected rubble avoids the use of new materials.

Landfill

MSW (Municipal Solid Waste)

This includes everything that either doesn't fit the other categories available or is not segregated by the householder. This includes food waste, plastic pots, mattresses, ornaments, crockery, plastic etc. This stream ends up in landfill.

It can be seen from the above that none of this waste is recycled in Keith itself. The table below shows how far waste travels outwith the area.

Red cross denotes landfill

Black cross denotes recycled

	Within Moray	within Scotland	within Britain	Abroad
Food waste	x x			
Cans	x	x		
Metal	x	x		
Plastic bottles			x	
Plastic waste	x			
Paper		x		x
Card		x		x
Green waste		x		
Textiles			x	
Electrical goods			x	
Wood	x			
Mattresses	x			

What waste do Keith businesses produce?

Survey results

A simple and quick questionnaire was devised to capture information about the business' waste types and where it ended up after leaving the business, any products made from recycled materials that the business might be able to use, any problems with moving to recycled products or with trying to recycle waste currently landfilled, and ideas from the business community for enterprises using recycle in Keith

Businesses surveyed included:

Shops

Newsagent
Food shops
Café/restaurants
Hairdressers
Butchers
Bakers
Bank
Hotel/ pub
Charities
Hardware
Gifts
Framers
Sewing machines
Chemist

Businesses

Electronic Design
Laundry
Haulage
Builders merchant
Motor repairs
Tyres and exhausts
Metal engineering
Furniture makers
Storage and removals
Printing
Textiles

Survey Results

The survey revealed a wide variety of waste products produced in Keith, although many businesses merely produced office waste – tea bags, plastic cups, paper etc – and a small amount of plastic packaging.

Larger volumes of waste are dealt with through the council's weekly collections of trade waste and card/paper. A few businesses were unaware of the Council's recycling service for cans and glass uplift as part of this collection.

There are also several special waste disposal services in Keith for hazardous or special waste. This is often driven by legislation on health and safety or security issues:

- Raw meat - this is disposed of via specialist uplift to Douglasbrae Abbatoir just outside Keith
- Out of date drugs - disposed of via specialist delivery after being collected in special containers by a national disposal company
- Bank documents/ prescriptions - these are collected for specialist shredding / disposal by a national company

Some businesses in Keith that are part of larger enterprises told us about their company waste initiatives. These included Wisemans Dairy, which has committed to zero waste to landfill by the end of 2010, and the Royal Bank of Scotland which uses recycled paper wherever possible and is aware of the effect of online banking and chip and pin on reducing paper use.

Closing the Waste Loop in Keith?

Having looked at the facts about waste in Keith, what are the opportunities, issues and greatest benefits for improving Keith recycling? The destinations for separated items recycled through the Council make reasonable sense in environmental terms, making use of nation-wide recycling networks developed over many years. The economic conditions (large scale closure of British paper mills) that lead to some of Keith's paper and card being exported to China means that the more paper and card that householders compost at home in Keith, the better. There is room for continued campaigning to reduce packaging and other waste. Moray's Dallachy landfill site has only 12 years of capacity left, and waste amounts are rising (see Appendix 2). There is also a role for promotion of more reuse and recycling – much of what is currently landfilled could be recycled:



Current local solutions

Considering the residual waste currently landfilled by the Council, which at 526 tonnes per year in Keith almost equals recycled waste (640 tonnes excluding rubble); there are some interesting local solutions to thorny waste problems already being practised in Keith. Some of these solutions involve diversion from recycling to re-use before recycling; others involve diversion from landfill

Reuse/reconditioning within and between companies

Several businesses co-operate to use waste from one to benefit another. As with providing waste for re-use by customers (see below), this helps to extend the trading relationship between businesses in Keith. This relationship is always built up between small local businesses where business people know each other. Managers of branches of larger businesses, who may of course change with time, are unlikely to be a part of this network. The exchange of waste is just one part of the trading network that local small businesses rely upon.

Examples found included:

One firm uses another firm's concertina packing to wrap awkwardly shaped objects
One shop uses offcuts of material from another business to make cards

There are also several examples of businesses paying for disposal/transport of waste, thus providing an income for other local and national companies. Examples include:

Scrap metal weighed in at Moray scrap yards
Cans recycled by Moray Waste Watchers
Computers paid for disposal at Moray Reboot
Fluorescent light tubes disposed of by an Elgin firm

Some businesses have found a way to benefit financially from their own waste. This includes using wood offcuts to run a stove to reduce heating bills and charities which move clothing and goods around different branches of their stores to gain maximum income.



Cards and items made from recycled tartan offcuts

Reuse by customers

Three examples below show how small businesses re-use or recycle some of their waste through existing customers. Customers and business people get to know each other through trading. Where waste can be used by people already in that trading relationship, business people will make the effort required to extend that relationship to reusing waste. This provides three benefits:

- The trading relationship is extended – the customer is more likely to continue coming into the business
- The trader gets rid of waste - though sometimes in a less convenient and more costly way (in time) than would otherwise be the case
- The customer gets a free resource for an activity of their own

1. Food waste

The problems of disposing of food waste were well described by a café proprietor: 'We produce food waste every day. If we separated it into a separate bin, it would have to be disposed of every day otherwise it would begin to rot – we can't have that!' However, another food business has an arrangement with a customer who collects food waste daily for their hens. The waste is removed from landfill, the business solves its waste problem and the waste provides an 'input' to another enterprise.

2. Packaging materials

Bubblewrap – reused/ given to customers for reuse on request

3. Wood

Waste pallets – reused until broken, then given to customers by several Keith businesses
Small pieces of offcuts – distributed to elderly customers for kindling

Re-using waste within a business/ with another business

Sometimes a business has seen and made use of an opportunity to reuse waste within the business itself to reduce costs

1. Re-use of packaging materials

Many Keith firms used to strip and dispose of packaging such as card, boxes and bubblewrap on delivery. Now most firms using such materials reuse them until they are no longer of use (either worn out, spoiled or cut into too small pieces). As well as donating to customers, there is also some evidence of inter-business recycling: one firm uses specialist card packaging from another local business to wrap awkwardly shaped items for dispatch

2. Reuse of pallets

All firms using pallets reuse them until broken, when they are given to existing customers for firewood. One storage firm uses a system of double pallet stacking to increase the life of pallets (and incidentally protect against flooding)

3. Use of wood offcuts

One firm runs a woodburning stove to heat the business. This has reduced the firm's heating costs and is more cost effective than selling the offcuts for firewood

Opportunities identified by businesses

Large plastic 5 gallon drums, non-food waste. One Keith business has these strong plastic containers that are currently landfilled. The management there thought they might be useful to another business

Metal waste. An engineering company suggested that if they were asked for specific waste – a list of requirements – they could easily divert this from the main skip to save it for recycling. The example of the Keith Primary School's recycled garden was used. Scrap metal pipes of a small diameter could be used for windchimes for example. However, care would need to be taken that rough edges were sanded off before use.

Paper offcuts. The printing business in Keith produce some scrap card and paper. These are mostly long, thin strips which are trimmed from larger sheets. These could be diverted from the recycling skips to order, but this would need to be carefully managed with an efficient pick up time to avoid storage problems for the printers. It would also be easier for the company to deal with a few customers rather than a lot of individuals.

Opportunities investigated but rejected by businesses

- Cloth thread offcuts
- Material offcuts – both can be recycled in areas of large scale cloth manufacture (such as Yorkshire where the manager used to work) for cloth waste etc, but low density of such businesses in this area mean that it's not economic to divert this waste from landfill in the Keith area.

Local social enterprises already using recycle

The Green Home

This is a social enterprise and charity based in Buckie, which reuses furniture and household goods. It is the only place outside Aberdeen where electrical goods (WEEE goods) can be tested and reused/resold. Their large display area and shop offer pre-owned items for resale to the public, with a discount for those on benefits. They used to operate an outreach warehouse at a Keith industrial unit, but this had to close in 2008 due to a change in contracts and lack of funding. People from Keith can take advantage of free delivery/collection in Moray and North Aberdeenshire. Tel: 01542 839600

Reboot

This social enterprise and charity is based in Forres, and provides the only centre between Inverness and Aberdeen providing computer re-use facilities, and recycling for households and businesses. They make a small charge for this service to businesses, but there is a discount for charities, and for bulk disposal. They can collect in the area for a mileage charge, and can also securely erase your hard drive for reuse for £1.50. Tel: 01309 671681

Wastebusters

Based at the Council's recycling centre in Forres, this social enterprise resells waste household items excluding electrical goods, runs educational and training programmes and makes items for resale out of recycled materials. They can pick items within Moray for a fee. Telephone: 01309 676056

The Creative Waste Exchange

This reuse project based in Aberdeen signs businesses up as corporate members for a fee to uplift their waste at a charge lower than landfill disposal. They also do one –off pick ups by arrangement. Other members sign up to buy items – schools, individuals, art students etc who buy from the Exchange’s online shop or occasionally in person. They have been looking into outreach shops to solve the problems of people accessing their premises in Aberdeen. They have also School Enterprise Kits for purchase, where the children get a selection of items for sale and keep half the proceeds (other half to CWE). The kit also provides help with marketing etc. Tel: 01224 213736

Moray Reach Out

Recycles all of Moray’s Cans at this social firm and charity Waste Watchers in Buckie which employs trainees with special needs. Cans are collected directly from high-use businesses including hotels in Keith and from all Moray Council’s recycling centres. Cans are separated, baled and sold to reprocessors in southern Scotland. Tel: 01542 835533

Salvation Army

The UK’s leading textile and clothes recycling company has a depot in Keith, processing clothes, shoes and household linens from its textile recycling banks and delivering to its shops or for reprocessing into mattress fillings etc. Proceeds fund the salvation army’s centres and community work. Tel: 0845 458 1999.

Recycling business ideas examined

Plastic

Removing plastics (high volume) and food waste (high weight, high environmental pollution) from the landfill waste stream would be beneficial. Plastic bottles of type 1&2 can now be recycled at Keith’s council recycling centre, and there is a lot of reuse of plastic packaging going on. However, once plastics such as bubble wrap, plastic sheeting and shrink wrap are too worn to use it is difficult and costly to recycle. Children at Keith Primary School took 20 minutes to identify 7 different sorts of plastic in the average weekly rubbish from a household. This highlights the sorting problems, plus plastic is so light (high volume per tonne of recycle) that there are transport issues.

There are businesses recycling plastic into garden furniture such as Connorco in Durham and British Recycled Products based in Hebden Bridge, Yorkshire where the council currently sends its plastic bottles for recycling. A similar firm in Aberdeenshire folded about 10 years ago.

Food Waste

Food waste involves problems of collection, storage and composting (as opposed to garden waste which is easier to handle). Food businesses must clear their premises of even small amounts of food waste daily, making it a high cost activity. TMCWT advised that composting waste other than garden waste can be difficult biologically – for instance if a supermarket has an offer on pineapples, the resulting sharp rise in peel can upset the balance of bacteria in compost, leading to smells, excess liquid etc. There are also problems with vermin where food scraps are openly stored.

One Keith solution – feeding to a customer’s hens or pets – is a good way of daily, secure disposal for small amounts. Some businesses have their small amount of office compost taken home by employees with home compost bins. Aberdeenshire Council have recently started kerbside collection of food scraps for composting. A Master Composter project such as the one just developed by Forres Transition Towns could be developed in Keith to

include community initiatives mentioned in this report as well as encouraging home composting. This would raise awareness and encourage local action.

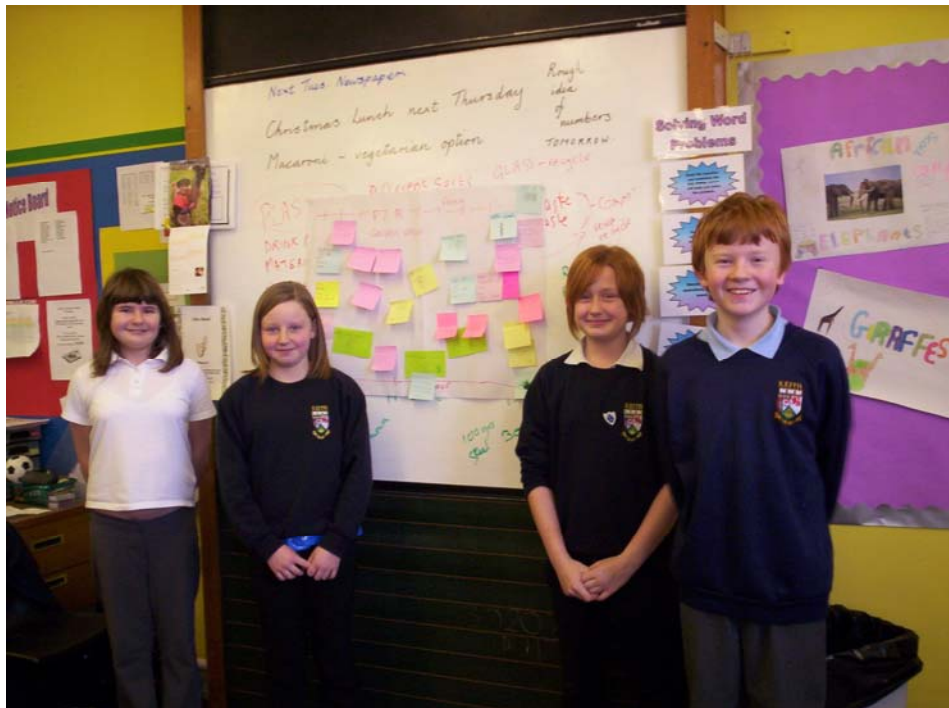
A system for combining some of the waste paper and card with food waste in a composting venture would have a good environmental and waste reduction impact, removing some of the farthest travelled waste and bulkiest, methane producing elements of Keith's waste. Licenses for setting up such a site would prove expensive.

Glass

In Shetland, the waste glass is processed by Shetland Islands Glass Recycling – Deocrete. Due to the large costs involved in either transporting Shetland's glass recyclate to processing centres, or setting up a plant in Shetland, the Shetland Council helped support a local business to recycle Shetland's glass on the Islands through developing a fine silica sand. This is now used for high quality decorative concrete, water filtration for fish farms, shot blasting and even furniture. TMCWT advise that the economics of glass recycling on mainland Scotland in Keith would make such a project difficult to run here.

Case Study: Keith Primary School Recycled Garden

An approach from Keith Primary School to help them create a recycled garden was used as an opportunity to give an example to businesses about recycling. Three sessions were conducted with P7 pupils and those in the special unit to raise awareness of recycling issues and plan out their ideas for using recycled materials to create a recycled garden. Suggestions for planters, wind chimes, insect houses and bird feeders made from recycled materials were made for pupils to take forward. It was suggested that a list of recycled requirements was made that could be circulated to local businesses. This suggestion was popular with businesses too, who were very willing to supply items. This project is an example of something that could be possible through a recycling initiative in Keith.



Pupils at Keith Primary School with their ideas for a recycled garden

Conclusions

Small amounts of waste from specialist businesses are difficult to recycle or divert from landfill in Keith due to low volumes. One business actually conducted a feasibility study into this before rejecting this option. An example is mill thread waste. However, it would be possible to separate this waste out for recycling through current charity rag collections.

Legislation on some specialist waste has led to opportunities for businesses collecting this waste. These are mostly firms operating nationally. Examples are secure paper disposal, meat waste, drug waste, tyres, engine oil, reconditioned engine parts and prescriptions disposal.

Many traders in Keith extend the business/ customer and inter-business relationships through provision of waste products to customers and other businesses. This relationship is informal, productive to both parties and to the environment and essential to maintaining the customer base for local businesses and shops in Keith. Examples include bubble wrap, food waste, broken pallets, different types of paper packaging and wood offcuts

Existing waste-based enterprises have attempted to operate in the Keith area but in the current economic climate and waste framework, have had to concentrate on their local area and contracts. However, these innovative enterprises are very willing to look at approaches and new ideas that may emerge in the Keith area. Examples include the Green Home collections and Creative Waste Exchange Schools enterprise packs

Goodwill and willingness to give time and resources to reducing waste and waste costs are very common in Keith. Some businesses (mostly branches of large national firms) have made a commitment to various formal environmental targets. Small businesses put staff time into preparing items for recycling or reuse (computer cases, card, plastic wrap).

Businesses identified some products they reuse or recycle themselves within their business or on an inter-business level in Keith. Examples include using wood offcuts in a wood stove, reuse of pallets, reuse of packaging, use of waste packaging from one business by another and tartan cloth offcuts used for making cards.

Businesses identified products they produce as waste that might be of use to others. Here, using the recycled school garden as an example was useful to provide a focus. Some businesses suggested that they were happy to provide waste – they just needed to know what was required by individuals, projects or charities, possible on a circulated list and they would 'recycle to order'. For many, this was simply an extension of current practice. Business people see this as an advantage to their businesses by extending contacts and community involvement. Examples include plastic 5 gallon drums, metal waste, office furniture and paints.

Barriers to new waste enterprises, expansion of existing waste businesses and increasing recycling and use of recycled products within business were identified and are mostly based on health and safety and cost of providing more local options over current waste disposal services. These include the limitations of recycled paper quality (perceived or actual), problems with food waste disposal, lack of awareness of council trade collections for metal and glass and business set-up costs for large scale waste enterprises in Keith.

Options/Recommendations

Much informal recycling and diversion from landfill occur in Keith as part of ongoing business, individual and customer relationships. It is important to allow these to continue to flourish and not place barriers in their way and to use opportunities like this research to encourage it to continue and develop. Existing sharing networks could be extended to include paper offcuts for card and ticket making, for example.

KSRP and other Keith businesses and organisations can work with existing waste-based businesses to help extend their reach. Most of these are social enterprises which have a social and/or environmental remit. A good start would be the Creative Waste Exchange's Schools enterprise packs.

Any new waste business based in Keith would do well to be based on improving and building on existing networking opportunities and providing information to and between businesses and individuals. This is building on systems that work in Keith already and could improve confidence in recycling and new ways of closing the waste loop.

A system for combining some of the waste paper and card with food waste in a composting venture would have a good environmental and waste reduction impact, removing some of the farthest travelled waste and bulkiest, methane producing elements of Keith's waste. A site would be required for this activity making it an 'option 4' project (see below). A Master Composter post could be developed for Keith to encourage local household composting, raise awareness and feed into other waste initiatives.

A project could include a community noticeboard and a 'swap shop', virtual or otherwise. This could include information about current opportunities to recycle, some of which are still not widely known or subject to 'urban myth' (see Appendixes 2 & 3). This work would be unlikely to bring in any profit, but could work with volunteers and would need to be grant funded on a 2-3 year project to set sustainable systems up. It would build on existing Keith informal networks and would need to be sensitive to legislation and local requirements.

Funding for a part-time job could be sought through landfill tax or through the INCREASE programme. REAP would be willing to be a partner in this venture and could provide a high street presence through rented office space and the existing community notice board.

Some Potential Options for a Project

Option 1: Informal Encouragement for Waste Reduction

Description: KSRP and other local organisations take the lead in encouraging more informal swapping and reuse of waste in and around Keith.

Resources: Use only existing resources or ones that are available free – community notice board, press releases in local paper etc. Use existing volunteers. Perhaps training required to help satisfy waste legislation and dissuade fears over waste handling etc

Advantages: Cheap and quick. Retains informal spirit and avoids any worry of waste licenses etc

Disadvantages: Limited to availability of volunteers – may be requirement for volunteers to know the limits of what they can advise others. Difficult to record levels of waste being reused etc.

Option 2: Online Reuse Project

Description: Encourage use of web services like freecycle or develop similar through keith website

Resources: Volunteer time. Publicity resources may be required

Advantages: cheap and easy to set up. Could be used as a starting point and build up to more tangible project.

Disadvantages: On-line projects do not engage with everyone – many people may be interested but forget about them. Still requires volunteer time to make sure it succeeds. Misses the personal touch that underlies much of the informal reuse of waste already happening in Keith. No overt demand for such a method of service has come through in the research.

Option 3: Reuse Project / Composter Project

Description: Create a staffed project to encourage the informal networking of waste reuse in Keith. Keep directory of waste availability and those looking for things – a sort of swap list. Visit premises to take note of new waste and try to connect waste with potential users. Arrange swap events for general public (popular both before and after Christmas) etc. Could be combined with a Master Composter post (cf Forres Transition Towns)

Resources: Financing for staff to take it forward. Part time person who knows Keith, Keith folk and businesses in the area. Master Composter project would need funding for PT worker, volunteer expenses and resources budget.

Advantages: No premises to store waste required. Low key. Paid time to take forward project and therefore reduce burden on volunteers. Could be used as a starting point as a way or recording evidence of waste and put together proposal for larger project.

Disadvantages: Funding required. Lack of income stream for project growth/ continuation

Option 4: Reuse Drop-off Site

Description: Create a location based project to enable people to drop off their unwanted goods and then pass them on to those looking for free/cheap goods. This could be similar to the Wastebusters project at the Forres recycling centre.

Resources: Larger project so larger amount of external funding required. Land and premises required. There is probably not space at the town recycling centre. Dedicated staff and volunteers required. Project would have to be complimentary to the Green Home and Wastebusters etc. Needs a champion and team of dedicated volunteers to take forward the project.

Advantages: Visible project with opportunities for volunteers to get 'hands on' experience. Will be able to measure amount of waste reused. Possibility to develop it as a self-funding project. Has potential to grow and develop strands like composting, sales training, taking on trainees, pick up waste from homes etc

Disadvantages: Needs substantial resources of capital and time to start project. Both Wastebusters and Green Home have struggled to make a success of project – hard work!

APPENDIX 1

Waste from Businesses in Keith Questionnaire Results

ABOUT YOUR WASTE 35 responses

Do you use the Council's waste collection service for your waste? YES 21 : NO 14**Please tell us what waste materials you produce and where it goes****Special collection**

drugs (out of date)	special collection
waste meat	collected by local abattoir
confidential financial paperwork	collected by security company to be re-cycled
waste cooking oil	collected and re-used
special waste – inks/ chemicals	collected by specialist firm
spinning cones	re-cycled or re-used

Re-used materials	Destination	Numbers
wrapping cardboard	re-use for customers	
mount card	donated to schools & art groups	
cardboard boxes	re-used until done	
paper	used as packing	
paper	shredded for compost and animal bedding	
paper	used as fuel for stove	2
bubble-wrap/ shrink wrap	re-use for customers	4
plastic duvet bags	sent back for re-use	
wood off cuts	kindling for pensioners	
wood pallets	re-used or re-cycled	
wood pallets	given to customers for firewood	3
wood offcuts/sawdust	used for firewood on site	
plasterboard	offcuts sold cheap to customers	
carpet	remnants can be sold as off-cuts	
waste clothes	collection and redistribution/re-use by the charity	2
clothes	to charity shops	
material scraps	re-used for cards	
household goods	re-cycled within the charity	
furniture	to local and national charities	
safes	taken & cleaned for re-sales	
food waste	to pet owners/ food for hens	2
milk	taken to cheese processor	
fluorescent tubes	disposed of via Elgin Electrical Supplies	

Recycled materials

paper/card	taken home & re-cycled (council)	5
card/paper	Council waste collection	17
prescriptions	shredded & re-cycled	
old newspapers/paper/card	taken to council recycling centre	2
in-house leaflets	taken back by company for recycling	
engine oil	taken to council recycling centre	2
oil	lease all our vehicles so the leasing company recycles	2
oil, filters, chemicals, anti-freeze oil & filters	Northburn Aberdeen pick up returned on contract to firm we buy from	
oil	contaminated waste to Aberdeen central base	
car parts	returned to supplier for re-conditioning	2
tyres (charge for this)	company from Carlisle collect & shred for reuse	
tyres	recycled by firm in Elgin	
car batteries	recycled through scrappage firm Elgin	
cans	to Waste watchers	2
tins and cans	to council recycling centre	13
glass bottles	taken to re-cycling centre	2
ink cartridges	to re-cycling centre	
waste steel	re-cycled via scrap metal dealer	4
metals	cleaned and/or stripped as necessary on site, recycled via scrap firms	2
scrap metal	travellers collect	
fridges	sent to Perth for gas removal	
monitors	to ReBoot	
computers	to ReBoot	
computers	if not sent to Reboot, disassembled on site into component parts/recycled	
plastic shrink wrap	re-cycled at Aberdeen	
plyboard & wood off-cuts	recycled through scrappage firm Elgin	
Waste materials		
till paper	bin	
broken glass	binned	
float glass	into bin – cannot be re-cycled	
polyethylene & bubble wrap	to council waste collection	6
plastic, polystyrene	to council waste collection	7

plastic bottles rubbish & plastic plastic washing liquid containers	to council waste collection bin at home bin	2
office waste	bin at home	2
wooden spatulas	binned	
out of date cakes cooked foodstuffs waste	binned by parent business bin	4
yarn scraps short material off-cuts	landfill - skip landfill - skip	
dust water/laundry liquids	council trade waste collection drains	
hair	council waste	
cans tins	binned bin – can't be re-cycled	2

Could some of the materials you use be replaced by recycled materials? Any problems that stop you using recycled materials?

Material	Reasons for not using/not using recycled materials
mount card	not re-cycled, has to be very pure – all from abroad
re-cycled envelopes	used already
plain white card	sometimes people want a shiny finish – not available?
polystyrene & plastic trays/cups	to replace these with cardboard & paper for tray bakes etc. would be more expensive.
paper bags	we are using paper bags already
paper	from approved suppliers only – cannot be re-cycled
re-cycled paper	used for photocopying
bank slips	have to be of a certain quality of paper so not recycled
paper	could re-use paper for jotting pads/ notepaper high quality needed for our leaflets – doesn't seem to be available recycled (see appendix 3)
paper	need high quality paper – recycled not available some customers require re-cycled paper
bubble wrap cups/spoons	asked for by a lot of customers we don't know of any available
food waste food	nowhere to compost but would have to be collected daily compost – storage issues relating to vermin. Sanitising of bins has costs implications - £45/month) Food industry hygiene issues make packaging of small quantities – sauces, sugar etc - essential
chip & pin	saves 2 million pieces of paper per year

on-line banking	saves 1 million statements per month
printer's gum solution	now environmentally friendly
Fuel – biodiesel?	But we use a lot so difficult to get supplies?
Insulation	can be from recycled materials – customers need to ask about it

As a local business person, can you see any opportunities for uses of waste materials, or recycling businesses/ social enterprises/ additions to existing businesses in the Keith area?

Reboot, the computer recycling could do more promotion in Keith
Farmers can re-cycle baling shrink wrap

We work with another Keith business and display their items in our shop
We are already recycling material scraps through cards etc in 2 Keith shops
We use concertina'd paper packaging from another Keith business for our awkwardly shaped items

Using home workers to re-use/re-cycle cloth & clothing

Transport of bottles & cans to be re-cycled

Unaware of Council trade recycling service for glass/cans/plastic 3

Plastic re-cycling – lots of milk cartons. Prefer to buy glass bottled water to re-cycle more easily.

No – most people are into waste management. The council do a good job.

We could provide some off-cuts for tickets/cards/business cards – paper tends to be long/thin. Collection would need to be arranged

Recycling yarn not feasible in this area - too little waste from mills to make economic sense. Investigated this as we'd been involved with a scheme like this in Yorkshire, but not economic in N Scotland

Laundry fluid 5 gallon containers – any use for another business?

Packaging we currently throw out could go to a craft shop
Distilleries – hot water & materials

Keith recognised as good shopping centre and has good infrastructure – lots going for it!

We could recycle/save scrap materials 'to order' if we had a list of requirements
Keith Grammar School – use off-cuts.

APPENDIX 2

Waste Statistics in Moray (source TMC website)

Recycling and composting rates are rising. However, so is the amount of total waste:

Total Household Waste Arising for 2001-2002: **49,924** tonnes
Recycled or composted: **3,184** tonnes (**6.3%**)

Total Household Waste Arising for 2006-2007: **52,764** tonne
Recycled or composted: **24,622** tonnes (**36.3%**)

Latest Quarterly Recycling Figures: **46.6%** of Household Waste – this exceeds the New National Targets for waste of 40% by 2010. However, by 2013 we need to recycle or compost 50% and by 2025 70% of our waste.

- The Council collects 0.77 tonnes of household waste per head each year.
- Each household produces on average 1.9 tonnes of waste each year.
- The proportion of Council Tax that goes towards waste collection and disposal is 2.7%.
- Approximately 38% of all waste is "green" waste i.e. garden and kitchen waste.
- The average person throws away 74kg of green waste each year, which is the same as 1077 banana skins.
- Dallachy Landfill site has less than 12 years capacity left. Current waste growth rates will result in a doubling of household waste within 37 years.
- Glass takes more than 100,000 years to decompose; aluminium cans - 80 to 100 years; steel cans - 100 years; cigarette ends - up to 2 years; fruit peelings - up to 2 years.
- Disposable nappies take between 250 and 500 years to decompose.
- 5 million nappies are disposed of every year in Moray alone.
- Green waste is the most potent source of methane, a greenhouse gas, when it is disposed of in landfill

APPENDIX 3

Urban Myth

Observable Truth

“Recycled paper is rough and crinkly”

This report is written on recycled paper and recycled paper is available in a variety of finishes

“The Council landfills all its waste”

The Council works hard to recycle as much waste as possible and has facilities to store recyclate to outide fluctuations in the waste markets

“It’s not worth recycling cans”

It’s really important to recycle cans. In Moray this is done by a great charity Waste Watchers which can’t work without your cans. New aluminium cans use one of the most environmentally damaging processes around.

I’m sure you can all think of one yourselves – it really does make sense to reduce, reuse and recycle and use recycled products where possible to create better market conditions. Ask any Keith schoolchild!

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