

Your Refuse

The current journey from collection to landfill

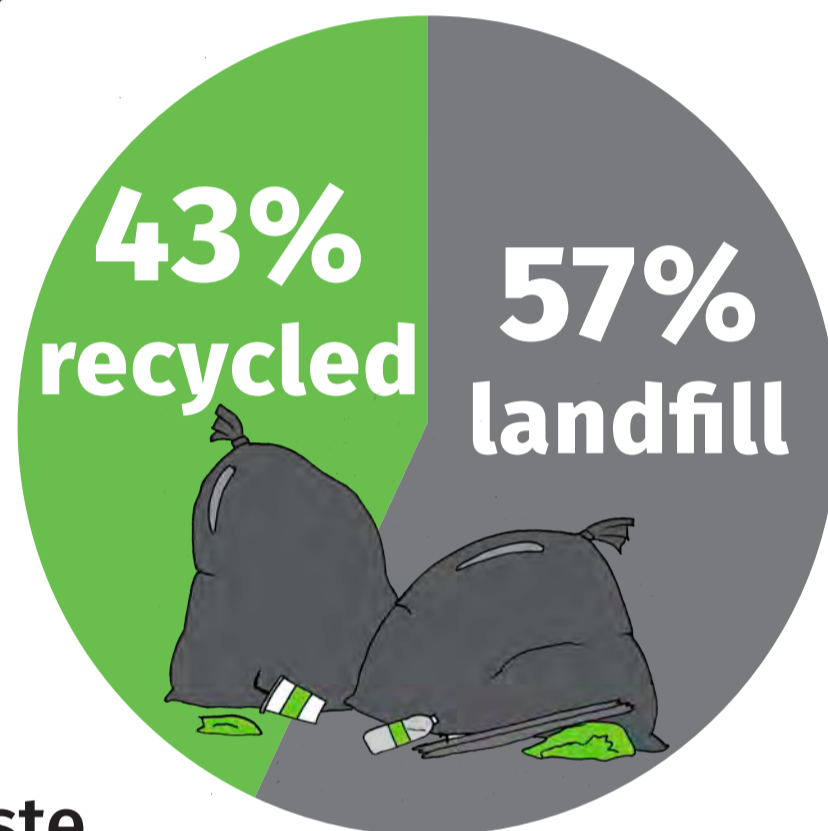
1. Your waste:



Around 140,000 tonnes of waste are produced by Highland households and Highland Council Business Waste customers each year.

At present 43% of your waste is recycled.

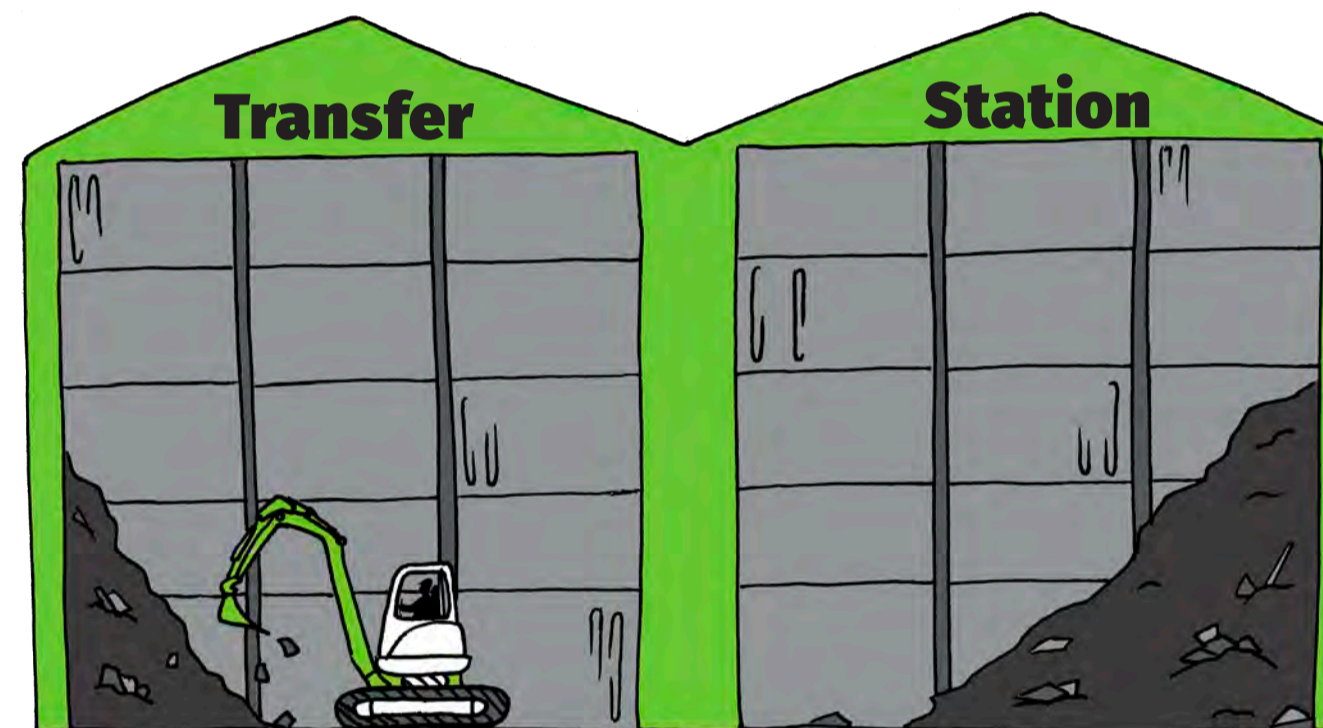
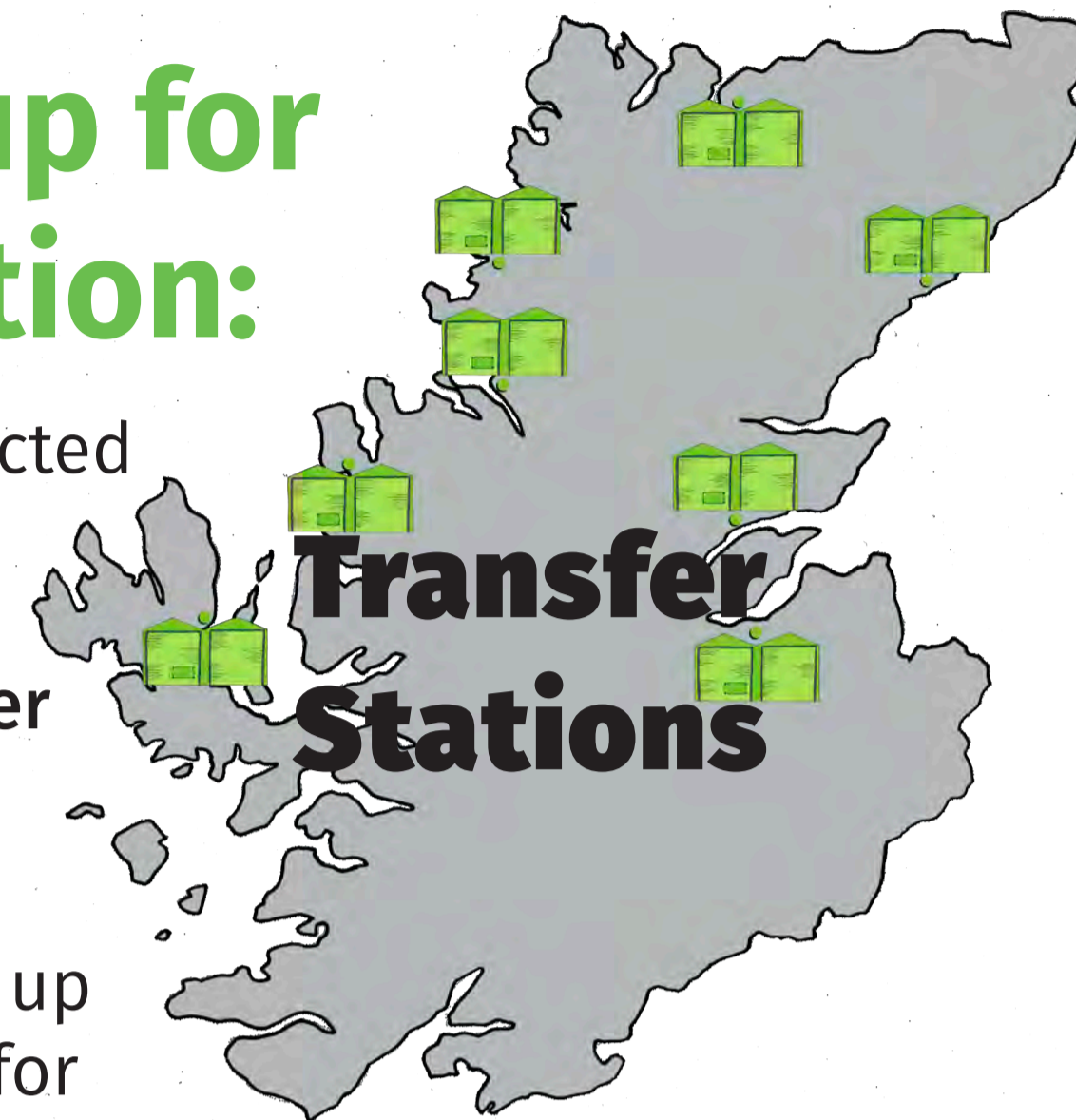
The majority of the remaining 57% is currently destined for landfill.



3. Bulking up for transportation:

Once it has been collected your refuse is taken directly to a landfill site or to 1 of 8 Transfer Stations in Highland.

Transfer Stations are used to hold and bulk up larger loads of refuse for more efficient transportation.



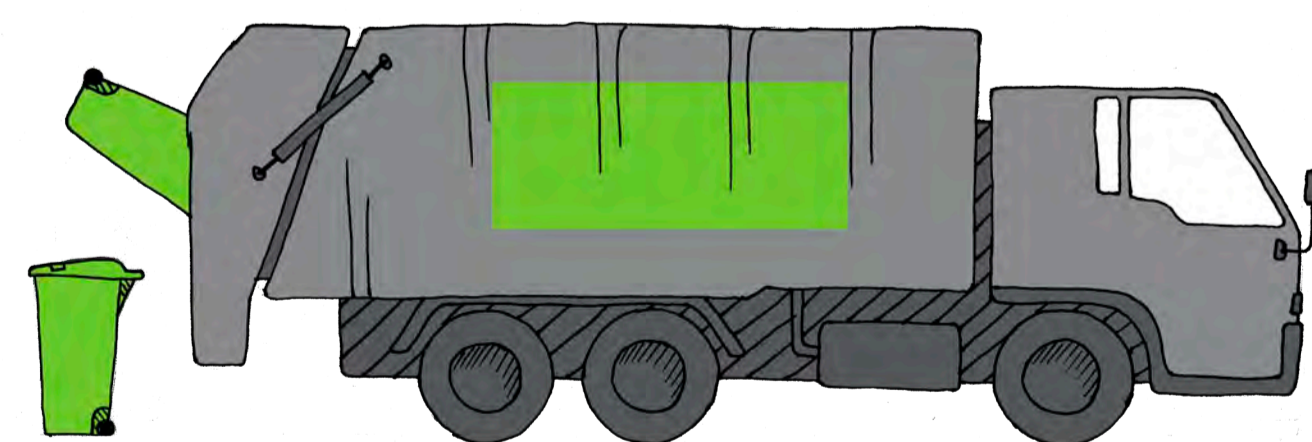
5. Landfilling your refuse:

83,000 tonnes of Highland refuse is landfilled each year.

The annual cost of transporting and landfilling Highland refuse is around £11 million.



2. Refuse collection:



Highland's 108,000 households receive fortnightly refuse collections.

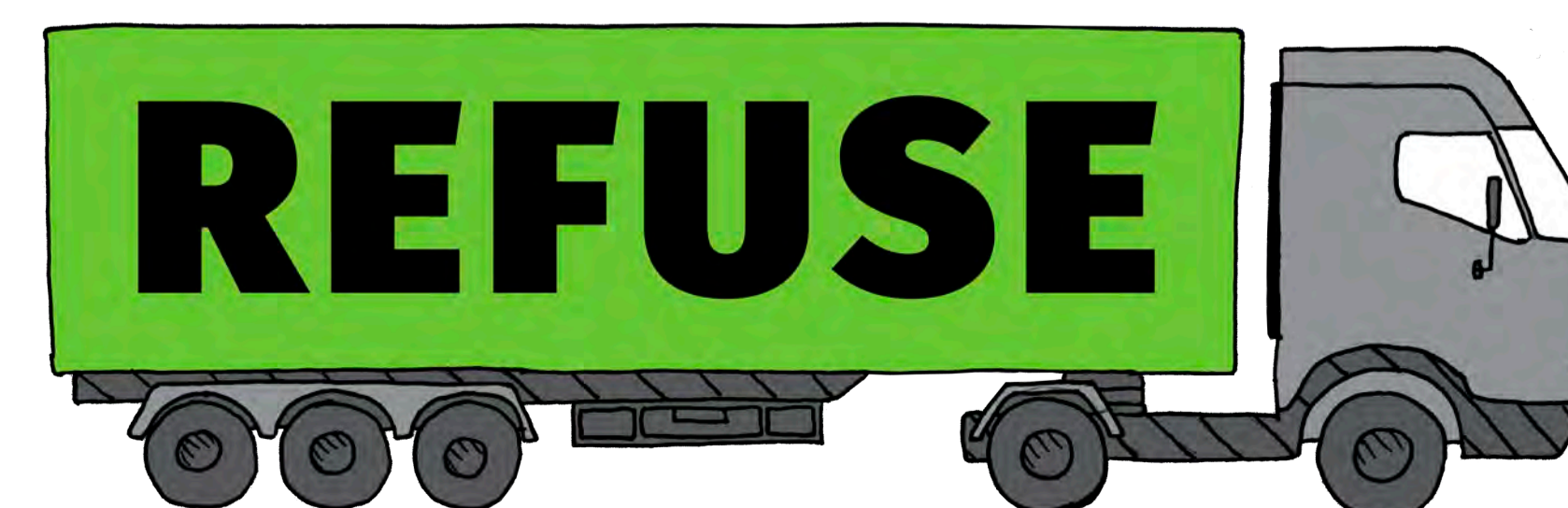
Around 80% of Highland refuse is collected by our bin lorries.

Approximately 20% of your refuse comes into Highland Recycling Centres.



4. Transport to landfill sites:

Highland refuse is sent to 4 landfill sites located in Wick, Aviemore & Fort William within Highland or Stoneyhill in Aberdeen-shire.



WHY WILL HIGHLAND WASTE NO LONGER BE LANDFILLED?

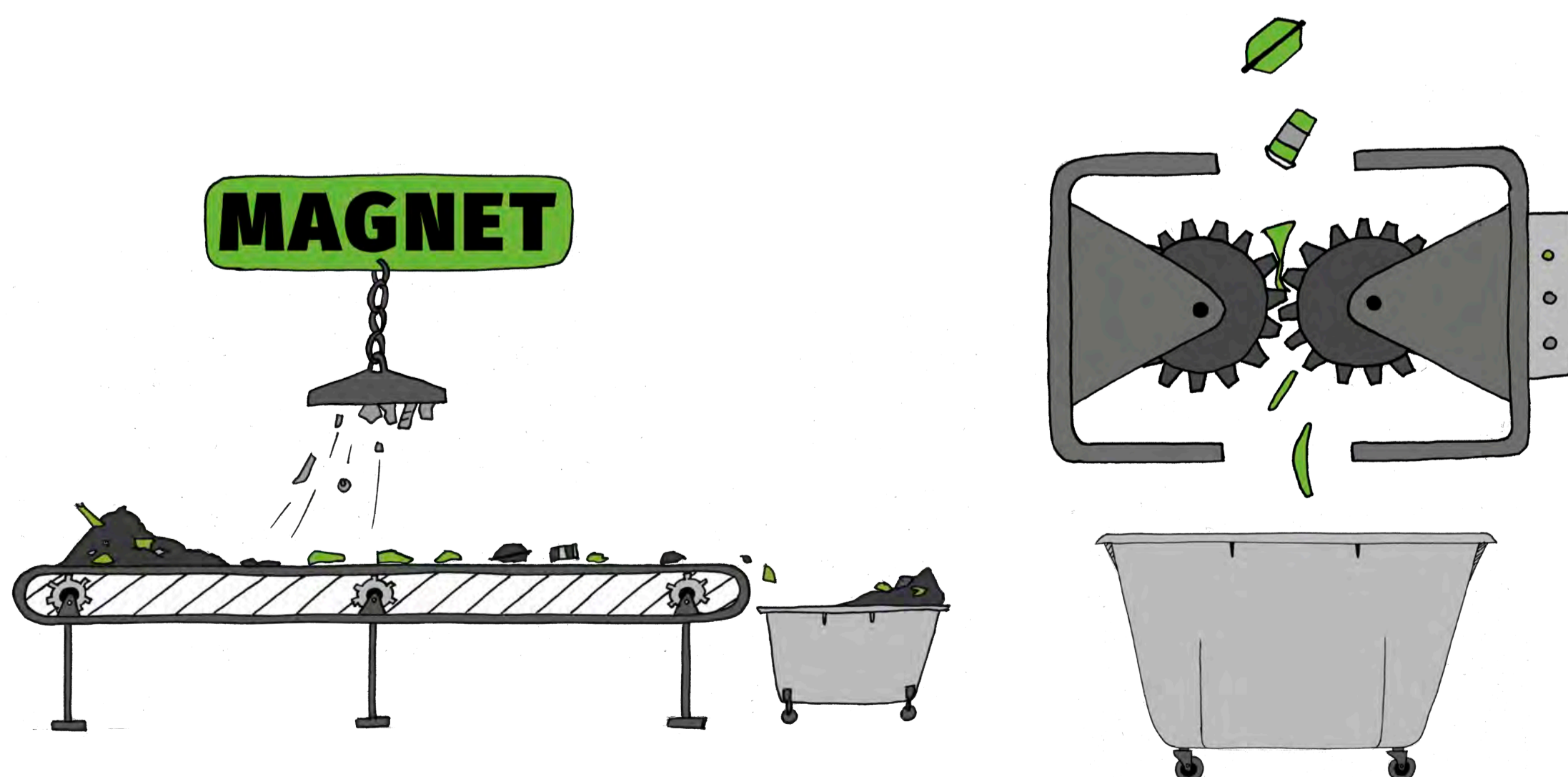
A ban commencing on the 1st of January 2021 will prohibit the Highland Council from disposing of household and business waste in landfill. The ban is one of a number of measures set out in the Waste (Scotland) Regulations 2012 to **promote more sustainable resource use and waste management throughout Scotland.**

Landfilling refuse is financially costly, wastes valuable land and material resources and requires careful engineering, managing and monitoring to limit negative environmental impacts. Reducing, reusing and recycling as much waste as possible will continue to be the most effective ways to manage Highland waste. However, the 2021 landfill ban also requires a new approach to managing Highland refuse. The Longman Materials Recovery Facility will play a significant role in helping the Highland Council to meet this commitment, providing an opportunity for your refuse to become a valuable resource instead of being landfilled.



WHAT IS A MATERIALS RECOVERY FACILITY (MRF)?

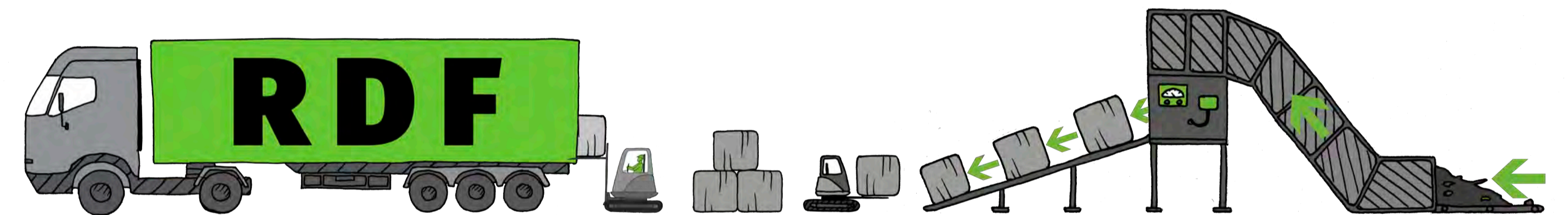
Materials Recovery Facilities are **specialist premises where waste is processed to recover valuable resources.** Some facilities are designed to sort large volumes of mixed recyclables (for example, the items in your blue bin) into separate material streams before they are sold for recycling. Others, such as the proposed Longman Materials Recovery Facility, specialise in **reclaiming value from your refuse by producing Refuse Derived Fuel.**



WHAT IS REFUSED DERIVED FUEL (RDF) AND HOW IS IT PRODUCED?

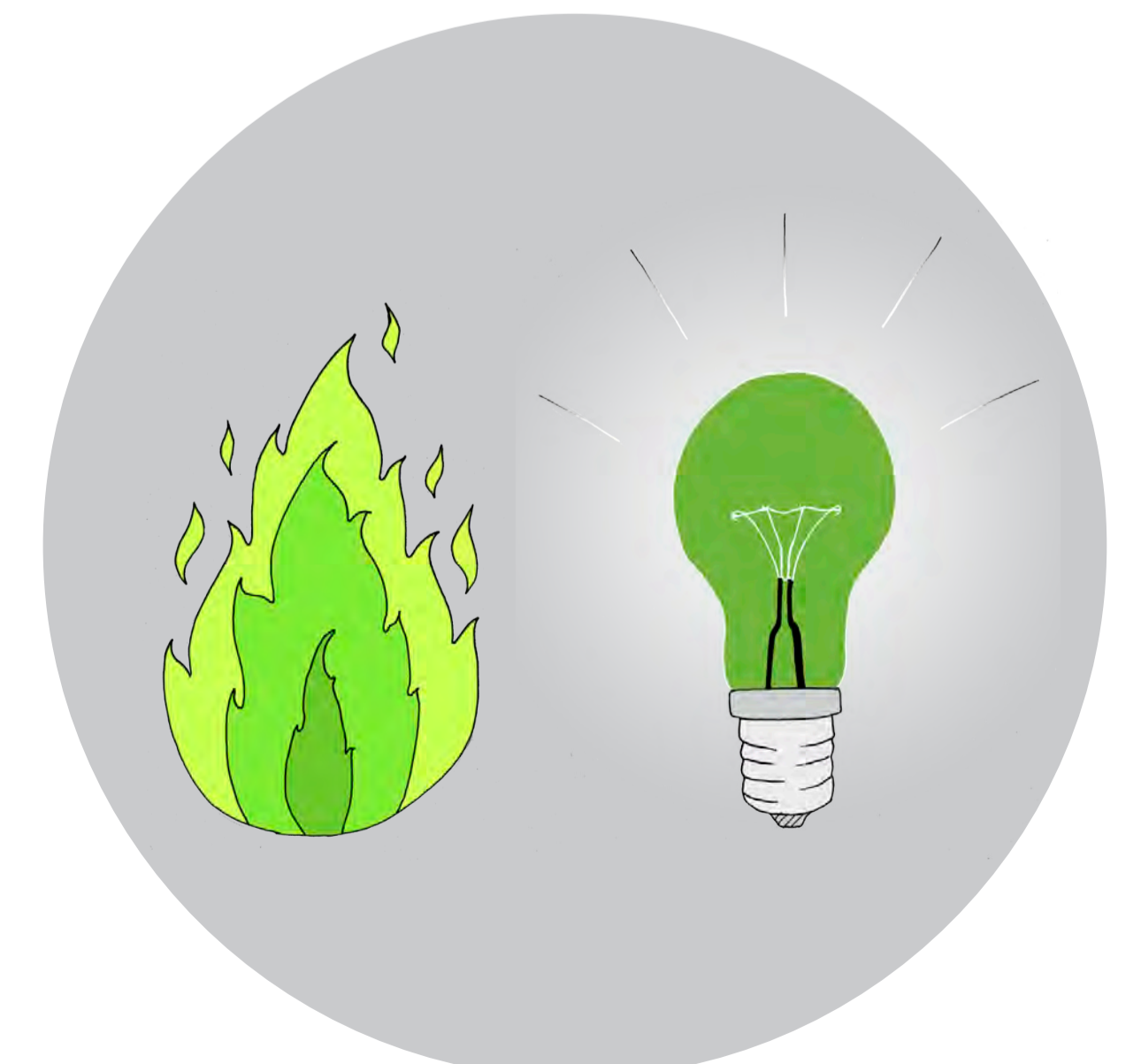
Refuse Derived Fuel is a **resource produced from refuse** (the waste you cannot recycle in your blue bin) which can be used in **thermal treatment facilities including Energy from Waste plants**, to generate electricity and heat. To produce Refuse Derived Fuel some non-combustible and recyclable material first needs to be removed from your waste.

When refuse arrives at the Longman Materials Recovery Facility the waste will be inspected and larger items of non-target material will be removed. Following bag splitting/shredding, recyclable material will be recovered from the waste stream using mechanised screening and sorting methods. For example, ferrous metals will be removed using magnets, whilst an Eddy Current Separator will remove non-ferrous metals (such as aluminium, copper, lead, tin and brass). Rigid plastics (such as tubs, pots and trays) are also expected to account for a significant proportion of the material that will be recovered for recycling. Once processed the RDF material will be compacted into dense bales and wrapped to prepare it for transportation and use in Energy from Waste plants elsewhere in Scotland, the UK or Europe.



WHAT IS ENERGY FROM WASTE (EfW)?

Energy from Waste technologies convert waste, such as the Refuse Derived Fuel to be produced at the Longman Materials Recovery Facility, into useful forms of energy. Rather than being landfilled, the waste is cleanly and efficiently burnt at high temperatures to produce steam, which can then be used to **generate heat or electricity.** Energy from Waste plants are highly regulated and outputs from the process are carefully monitored and controlled. There are currently over 300 Energy from Waste plants operating throughout Europe.



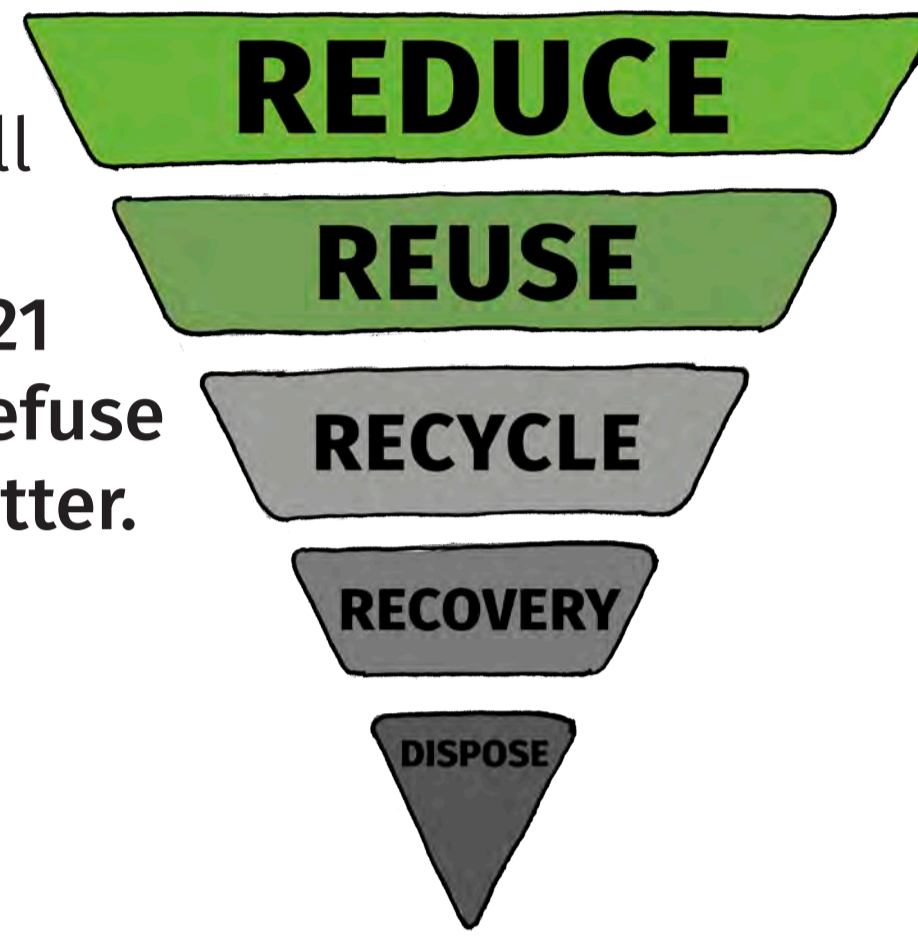
The Longman Materials Recovery Facility

Reclaiming value from your waste

Reduce, Reuse, Recycle:

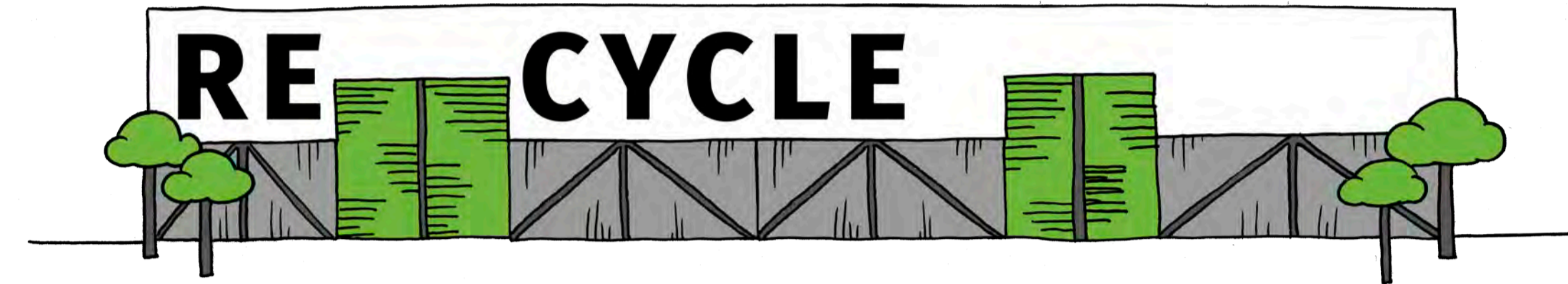


By continuing to **reduce, reuse and recycle** as much as possible, we can all contribute towards better waste management in Highland. By 2021 the way we dispose of your refuse will also change for the better.

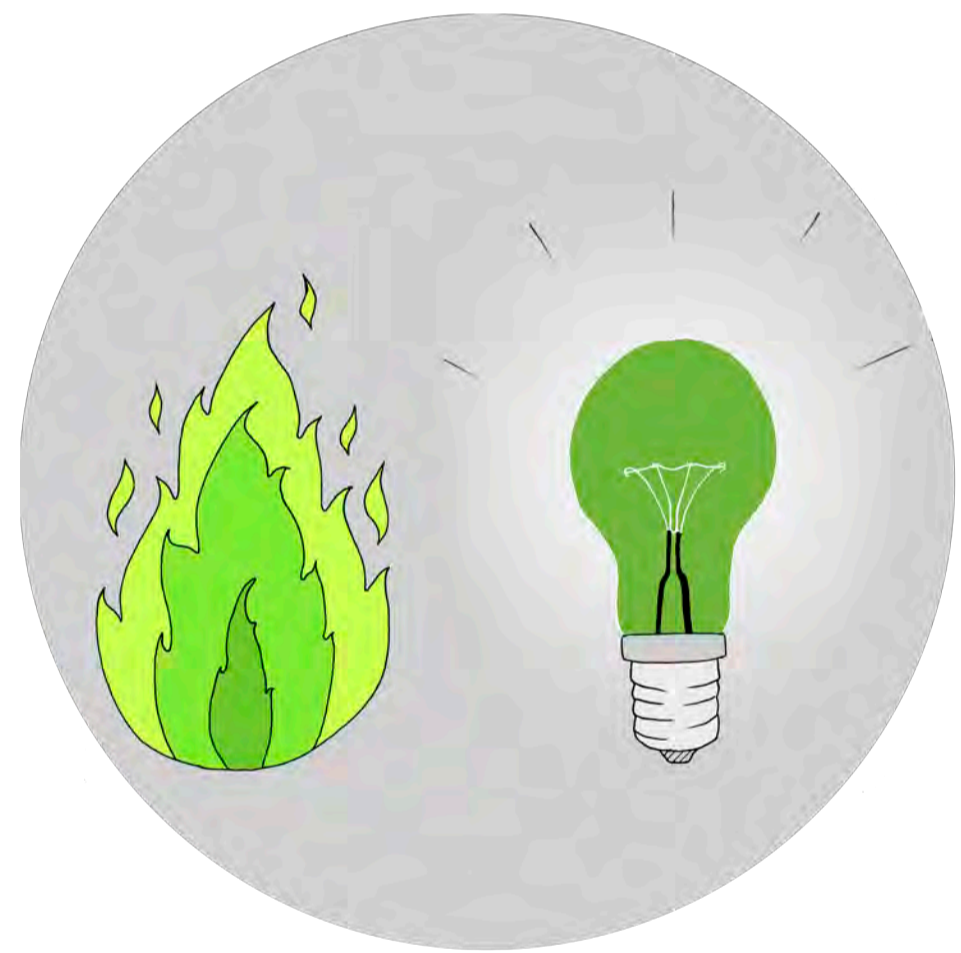


The Longman Materials Recovery Facility:

From 2021 all Highland refuse will be transported to the **Longman Materials Recovery Facility (MRF)** rather than being landfilled.



Your refuse is a resource:



At **Energy from Waste** facilities, Refuse Derived Fuel from the Longman MRF can be used to **produce energy and heat, recovering value from resources.**

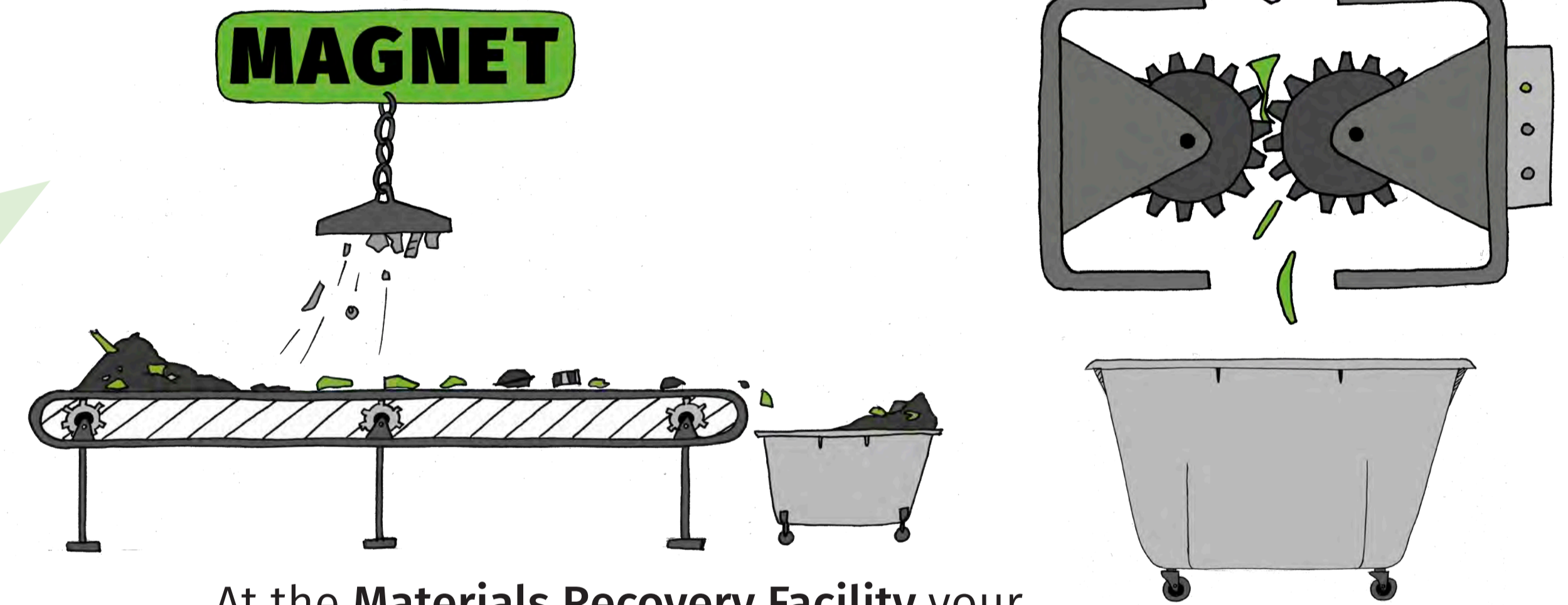
Energy from your Waste:

Refuse Derived Fuel from the Longman Materials Recovery Facility will **initially be used by Energy from Waste (EfW) plants** elsewhere in Scotland, the UK or Europe.



In the long-term, construction of an **Energy from Waste (EfW) facility** at the Longman site may also be considered.

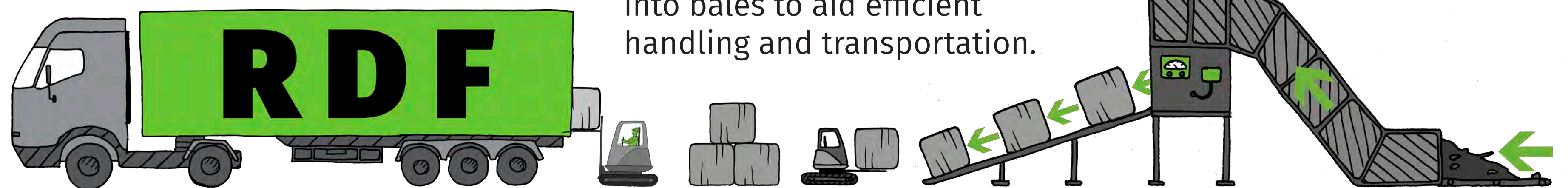
Producing Refuse Derived Fuel:



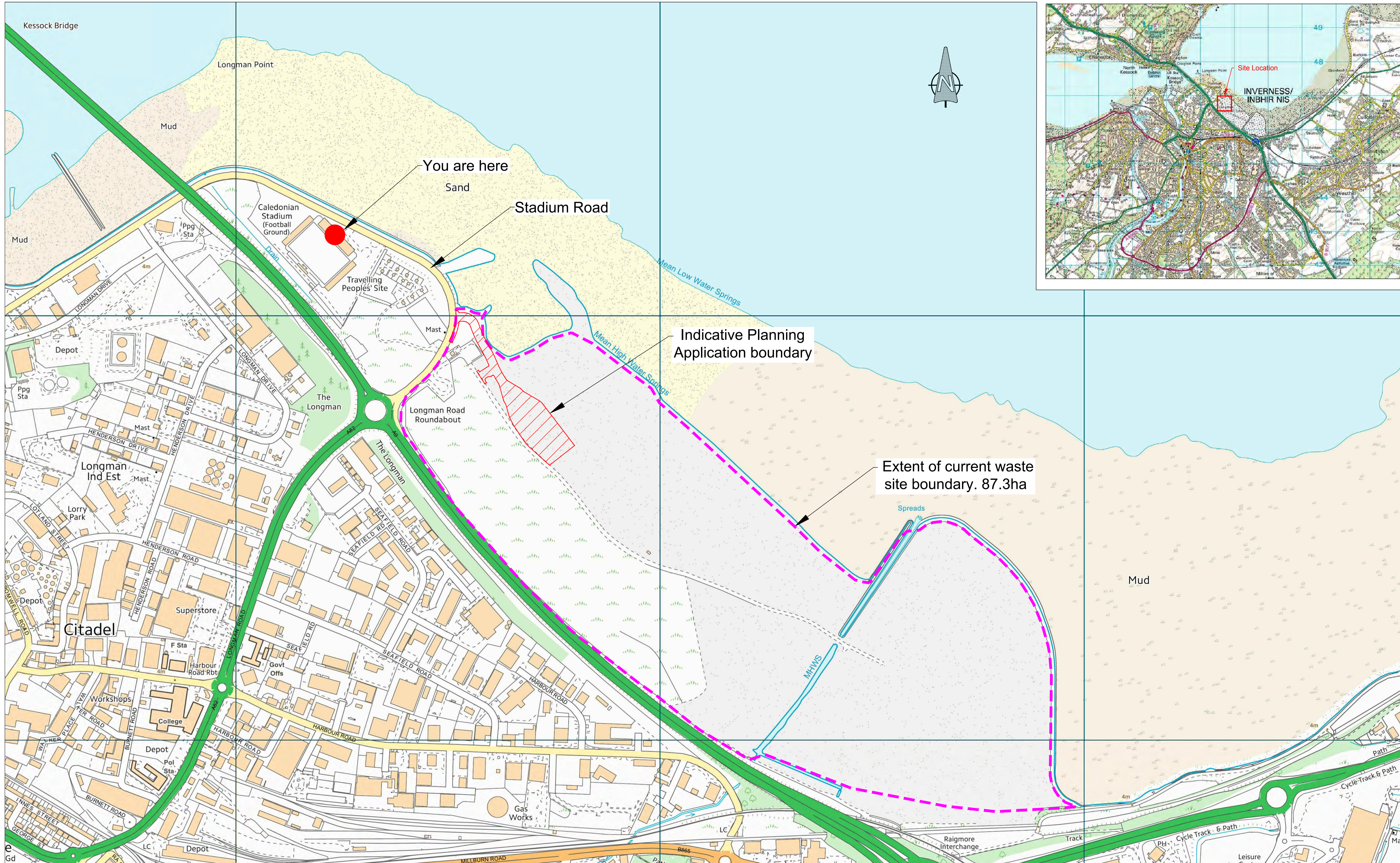
At the **Materials Recovery Facility** your refuse will be **shredded, screened and sorted** to remove some recyclable material to produce **Refuse Derived Fuel (RDF).**

Baling and wrapping

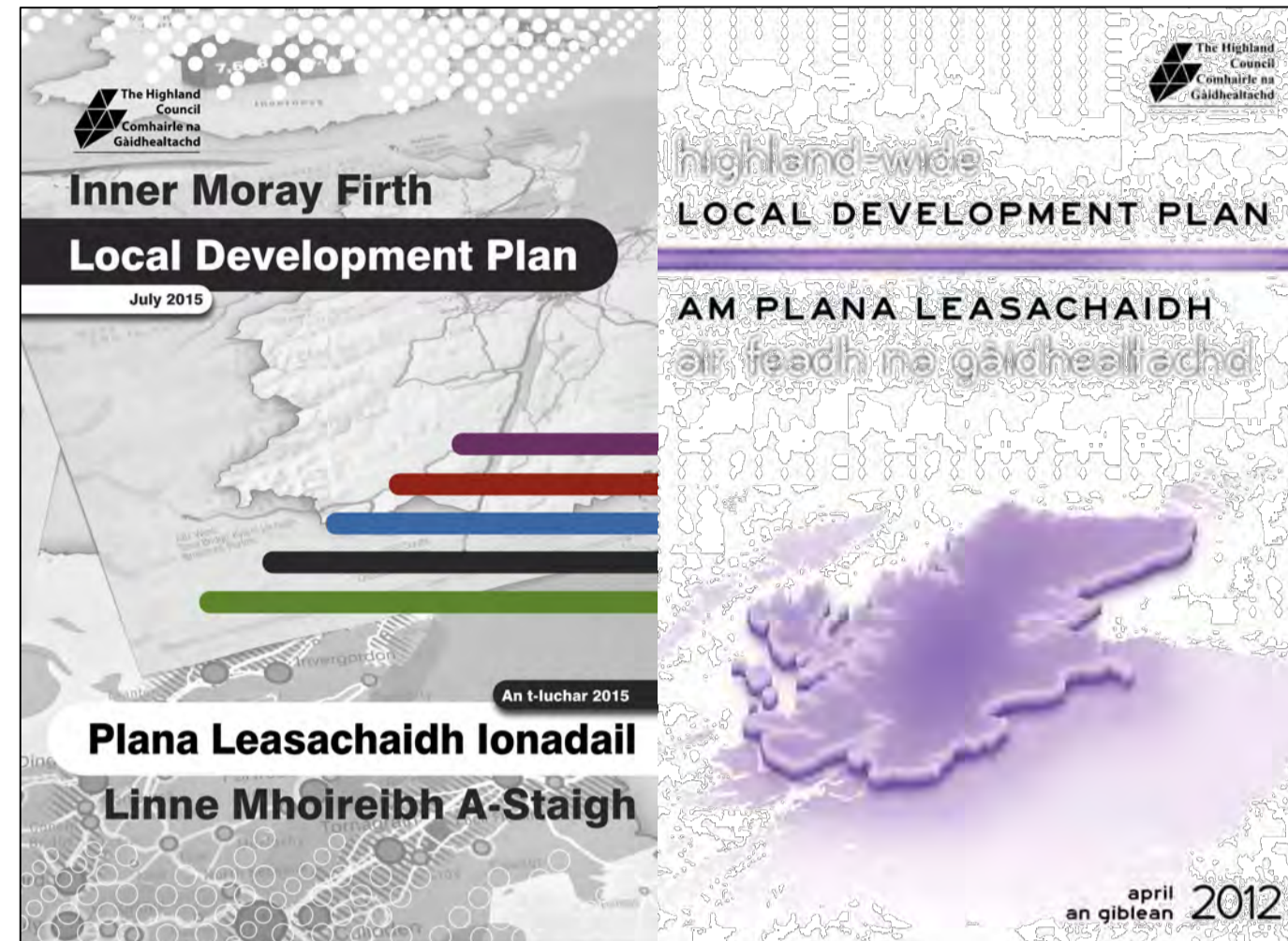
Once processed, the **Refuse Derived Fuel** will be **compacted and wrapped** into bales to aid efficient handling and transportation.



Waste Material Recovery Facility Former Longman Landfill Site

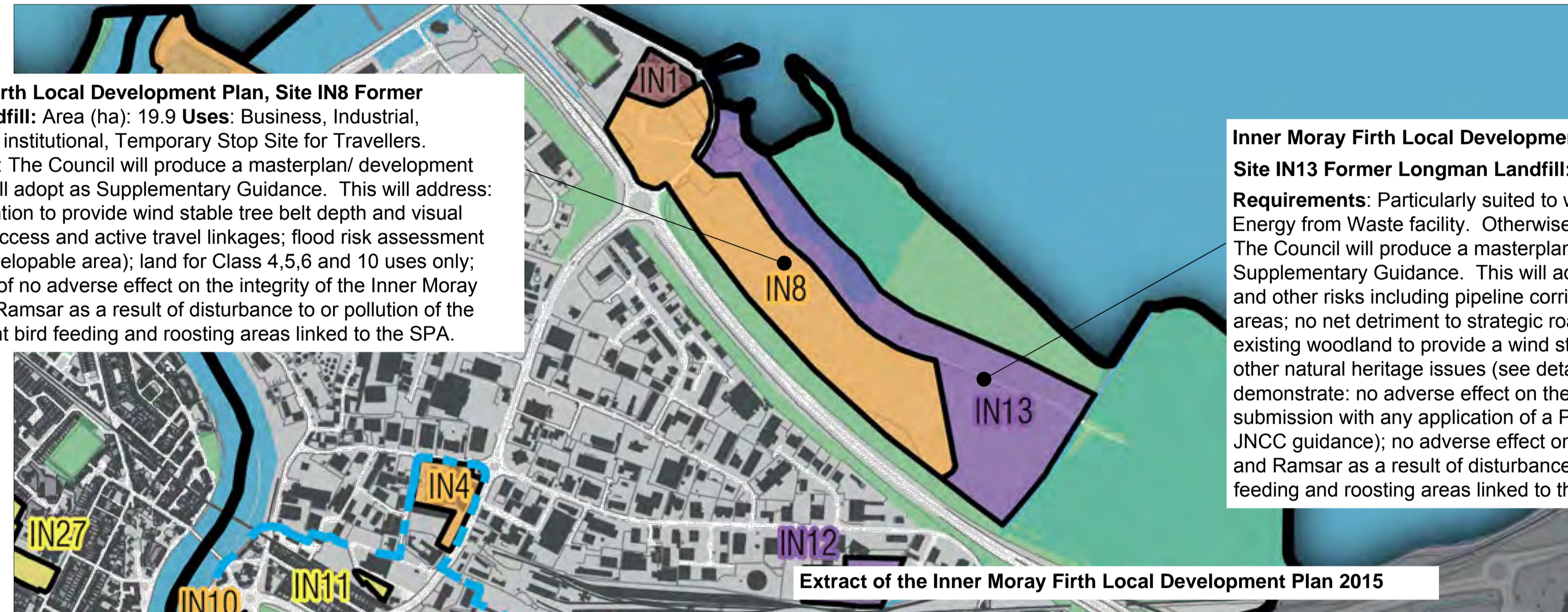


Local Development Plan



Also refer to Highland-wide Local Development Plan policies 5 and 70
Local Development Plans are available from
www.highland.gov.uk

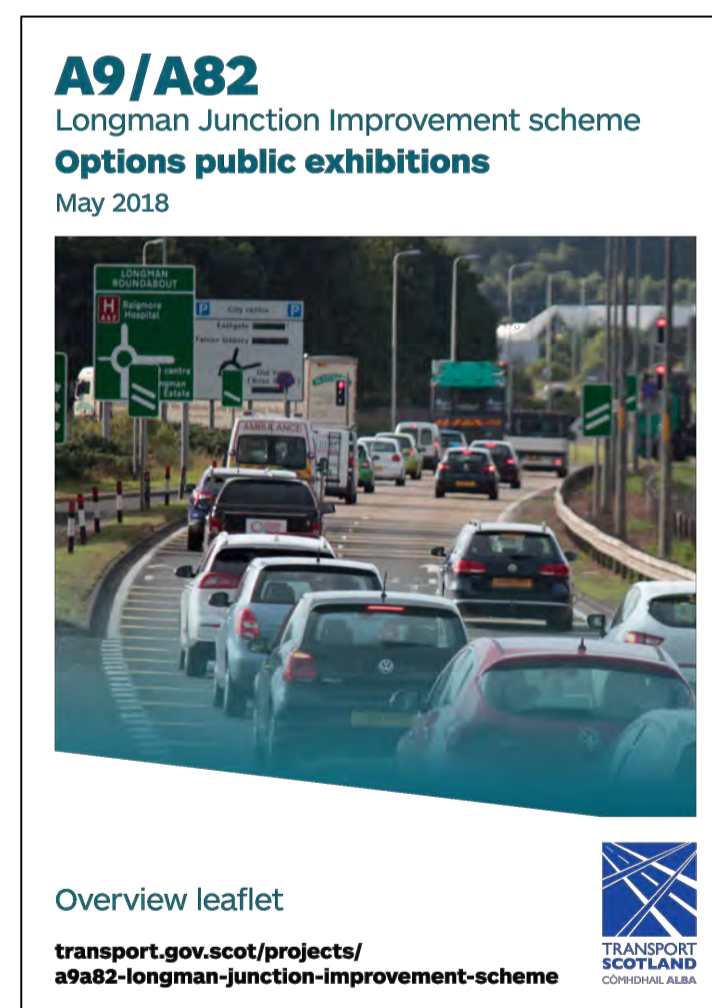
Inner Moray Firth Local Development Plan, Site IN8 Former Longman Landfill: Area (ha): 19.9 **Uses:** Business, Industrial, Non-residential institutional, Temporary Stop Site for Travellers.
Requirements: The Council will produce a masterplan/ development brief which it will adopt as Supplementary Guidance. This will address: woodland retention to provide wind stable tree belt depth and visual screen to A9; access and active travel linkages; flood risk assessment (may affect developable area); land for Class 4,5,6 and 10 uses only; demonstration of no adverse effect on the integrity of the Inner Moray Firth SPA and Ramsar as a result of disturbance to or pollution of the SPA or adjacent bird feeding and roosting areas linked to the SPA.



Inner Moray Firth Local Development Plan, Site IN13 Former Longman Landfill: Area (ha): 18.8 **Uses:** Industry.
Requirements: Particularly suited to waste management facilities including an Energy from Waste facility. Otherwise safeguarded for use Classes 5 and 6. The Council will produce a masterplan/development brief which it will adopt as Supplementary Guidance. This will address: the need to minimise landfill gas and other risks including pipeline corridors; remediation of other contaminated areas; no net detriment to strategic road network capacity; retention of sufficient existing woodland to provide a wind stable tree line and visual screen to the A9; other natural heritage issues (see detail below). Any proposal must also demonstrate: no adverse effect on the integrity of the Moray Firth SAC by the submission with any application of a Piling Method Statement (in accordance with JNCC guidance); no adverse effect on the integrity of the Inner Moray Firth SPA and Ramsar as a result of disturbance to or pollution of the SPA or adjacent bird feeding and roosting areas linked to the SPA.

Extract of the Inner Moray Firth Local Development Plan 2015

A9 Longman Junction Improvements



A9/A82 Longman Junction Improvement Scheme
Transport Scotland's assessment of options for grade separation is currently underway with the preferred junction arrangement expected to be announced in early 2019.

Further details are available from
www.transport.gov.scot

Approaching Inverness Strategy and Design Guide
The site is at a key gateway into Inverness and therefore care should be taken regarding the design, layout and particularly the frontage of the wider Longman Landfill onto the A9. Likely to be further addressed and refined as part of future Development Brief.

Strategy and Design Plan is available from
www.highland.gov.uk

Inner Moray Firth Local Development Plan IN8 & IN13
Woodland retention to provide wind stable tree belt and screen to A9.

Local Development Plan is available from
www.highland.gov.uk

City Region Deal Project



Land remediation - Longman
The ultimate purpose of this initiative is to carry out land remediation and site servicing works to release the site for development. This would address lack of availability of appropriate land to meet the needs of both small and medium size businesses and the needs of larger inward investment companies. Encouraging employment uses to ensure the continued economic growth and success of Inverness. This business case is for site investigation works only. A pre-condition for the land remediation is site investigations that will take a year.

Latest position
ERS Ltd has been appointed by us to carry out site investigations and gas monitoring on the site. Once we have received the results of the site investigations report we will prepare a detailed business case for the UK and Scottish Government to consider for taking forward the necessary land remediation and site servicing.

Deal Funding: £10m UK Government
Project Lead: Allan Maguire

Land remediation
Both Governments are committed to ensuring an adequate supply of economic development land and the Inverness and Highland City Region Deal includes a commitment to support land remediation to the east of the A9/A82 Longman junction.
The current industrial estate in the Longman area of Inverness is at capacity with no space to expand. Once the Longman junction improvements are achieved and land remediation work has been undertaken, land will become available for industrial and commercial development. Subject to approval of a robust business case, the UK Government will provide up to £10m to support land remediation to the east of the A9/A82 Longman junction.

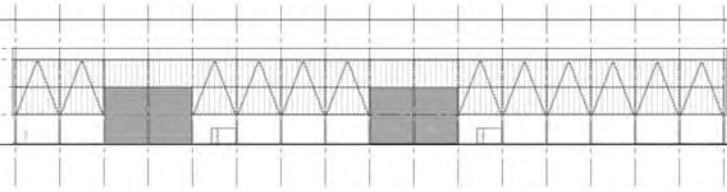
Waste Material Recovery Facility Former Longman Landfill Site



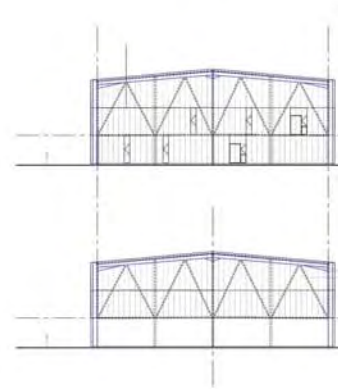
View 1 from Kessock bridge



Aerial view from behind kessock bridge

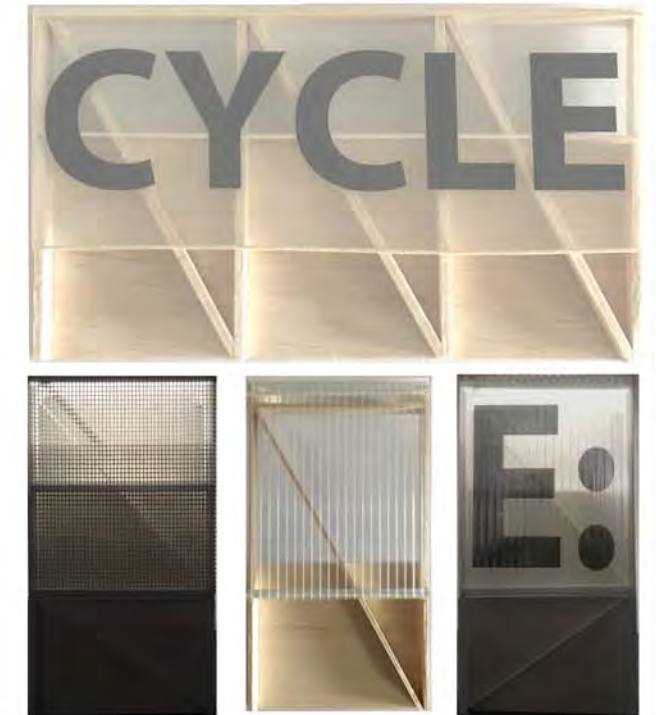


Long elevation with detail section



Timber glulam option

Steel option



facade study

The part of town adjacent to the Longman site is characterised by light industrial units of varying sizes which confidently articulate their purpose or branding. B&Q, Wickes, Halfords all unashamedly communicate what they sell, or the service they provide. 'We fit car parts' etc.

In the same manner to the commercial businesses in the area, the facility would communicate its purpose to the people of the town and wider highland region. The visualisations of the building are suggestive of the type of simple and clean branding being developed for the service as a whole.

Waste Material Recovery Facility Former Longman Landfill Site



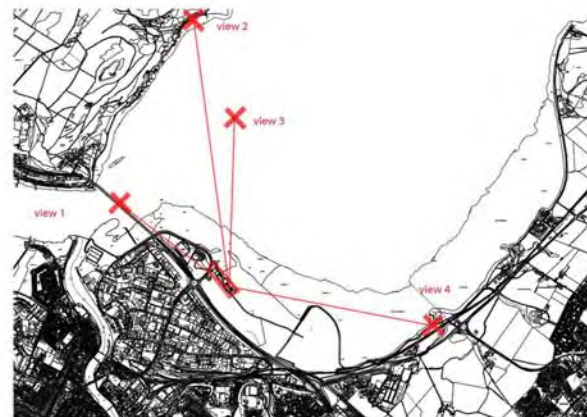
View 2 from Kilmuir



View 4 from Scretan Burn



View 3 approach by sea



Waste Material Recovery Facility

The building foot print measures approx. 32 x 98 metres. The proposal would be one of the larger buildings in the town.

A series of approaches have been taken to help reduce the 'scale' of the structure. 3 Key themes have been developed for this project:

1. Transparency/lightbox
2. Expression of structure
3. Use of branding

Conventionally, industrial buildings utilise a steel 'portal' frame which are repeated through its length. External facades are treated as a solid, insulated 'skin' attached to the outside of the steel frame. On the inside of the steel frame a pre-cast concrete lining gives the internal functions of the structure a robust surface for machinery and functional operations.

By introducing a light transparent or semi-transparent skin to the building envelope and placing this on top of a heavy solid base. The facades can be broken into separate parts.

The transparent skin opens up the opportunity to express the structure and further separate this element of the buildings construction. Two options are being investigated for the structure: as per the convention, steel portal frame, and also a timber glulam structure. Various arrangements of upright and bracing geometry are being investigated for both steel and timber glulam. (see models)

Waste Material Recovery Facility Former Longman Landfill Site



Waste facility, Lannon-Tregor, Francois Dantart



Lightbox, Birkenhead, Sixtwo architects



Lightbox, Birkenhead, Sixtwo architects



Visual representations of the building



Lightbox, Birkenhead, Sixtwo architects

Precedent