



## Mark Smith looks at issues facing the industry and the factors determining the right baling equipment choice

### ■ MAKING THE ENVIRONMENT A BETTER PLACE, WITH LESS WASTE TO LANDFILL,

brings opportunities for innovative companies to process more 'resource' and grow. But the industry, including recycling equipment manufacturers, has its work cut out to keep up with the pace of change and Government targets. It also has to manage issues such as quality, especially in the areas of waste for export, and the growing cost of transportation and storage.

Added to this is a dawning realisation that waste is a resource with real value, whether it is used as waste to energy or for the recovery of important raw materials. British manufacturers, for example, are already seeing damaging shortages of raw materials on world markets and are lobbying for clearer Government initiatives on the recovery of scarce resources.

As experiences and procedures mature, the waste and recycling industry is starting to tackle more difficult materials. We are seeing the growth of new waste streams such as waste electrical and electronic equipment (WEEE) and hard plastics. This is set to become an enormous area fuelled by the rising tide of consumer electronics around the world – more than doubling by 2025.

Dealing with these materials requires new

### AT A GLANCE

The best balers process waste more quickly and efficiently, and can help to cut other costs such as transportation

### THE RIGHT CHOICE

Mistakes made when choosing and operating balers can easily be avoided:

- Understand the materials you are dealing with
- Ensure you plan for changing workloads and increased volumes
- Get accurate running costs including power, maintenance, parts and downtime
- Be clear how the final product will be used
- Decide which is more important: bale density or throughput
- Ensure staff are properly trained and understand the correct feeding method to maximise bales
- Avoid downtime by following simple service routines, and check that parts are readily and quickly available

flexibility in terms of the plant machinery used. Baling equipment in particular requires the ability to cope with the widest possible waste streams, including hard plastics and printed circuits. Many older machines are not able to achieve the compression required to produce suitable bales without costly pre-processing or shredding. And the industry is moving to bale more commercial and industrial waste, which requires more robust machinery. →

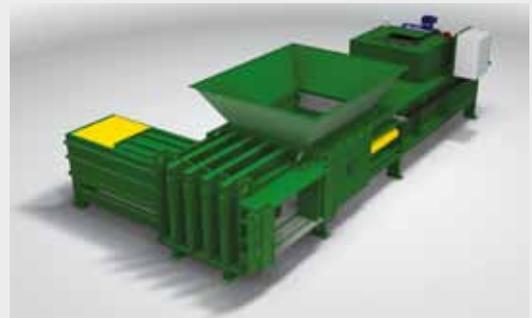
## FLEXIBILITY IS KEY TO TWIN-RAM BALER

The Middleton Engineering twin-ram baler (pictured) is typical of a new style of flexible baler designed to compact hard plastics and difficult to handle waste streams to produce dense, mill-quality bales, with a high degree of uniformity.

The machine is designed to need fewer compression strokes and faster cycle times, making it more energy efficient than most other balers. Instead of producing bales that combine to weigh 18 tonnes or less in a sea freight container, its compression results in a container load of bales weighing more than 23 tonnes.

Across the industry, further development will eventually enable this type of baler to match the throughput of a channel or shear baler. But it is an ideal solution where a very dense bale is required, allowing companies to optimise storage and transportation costs, which is now a significant issue across the industry.

Stirling Council Waste Services took delivery of the first



ME2R80 twin-ram baler for its new Polmaise recycling and baling facility in Scotland. The council, which already achieves waste recycling of 57.4%, expects the machine to contribute to further reductions in waste to landfill, with the flexibility to bale a range of waste materials.

Few balers are created equal, so taking the time to assess your requirements is important to ensure operational efficiency for your MRF installation. Density of products to be baled and the tonnage to be processed will dictate the type and size of baler or balers that you need (see box page 16).

Speed of processing is also important, especially if there is limited storage capacity for incoming waste. If your baling equipment cannot keep up, you will quickly find the operation backing up.

Operational constraints also need to be considered. Power limitations and space requirements should be checked, and you may even have time restrictions for

running equipment to minimise nuisance to neighbouring communities. Above all, a proper test to trial your materials is crucially important – check that your supplier offers this facility.

The final destination for baled products will dictate whether wire or alternate tying is required and whether wrapping is needed. For refuse-derived fuel (RDF) and solid recovered fuel (SRF) bales, string or plastic ties are essential, and before long this is likely to be the norm on most balers. Because this material begins to break down almost immediately, losing its calorific value in a very short time, wrapping with a good UV-protected polythene film is vital. This also makes it cleaner to store and transport.

Perhaps the biggest issue facing the industry is the rising cost of transportation and storage, especially if exporting waste for processing overseas. Between 2002 and 2009, this sector doubled in the UK to 14 million tonnes and is still growing.

Bale size and density are the crucial factors here. Amazingly, these have not yet been optimised for containerised transport until now, and the industry has been wasting money because it has not been possible to obtain maximum payloads in a container. Most balers today still produce bales that do not fit efficiently in a container. We expect bale size and improved compaction to dominate the agenda across the industry in the next few years.

Lack of maintenance and servicing of equipment is another major issue. Downtime and costs can be significantly reduced if a simple routine is followed. After all, a baler should last 20 years if well maintained and a further 15 years following complete refurbishment. ■

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→ [WWW.MIDDLETONENGINEERING.CO.UK](http://WWW.MIDDLETONENGINEERING.CO.UK)

## REFURB BALER RAISES THROUGHPUT

To improve the amount of resources that could be recycled at its waste facility in Plymouth, waste management company Viridor wanted to automate the site and improve throughput. It wanted a fully automatic baler that could deal with all waste streams and was robust enough to ensure minimal downtime (pictured).

Middleton Engineering provided an 'as new' refurbished model, which had been stripped down to the chassis, received a new pump and had all worn or broken parts replaced. Middleton also adapted the baler to work with the existing conveyor, and engineered it to meet Viridor's health and safety requirements.

The old baler had run for eight hours a day and required



staff to hand-sort the material, 'feed' the baler and then insert the wires to hand-tie the bales. The new equipment can bale the same amount in one hour. It has an automatic tie, which further speeds up the process so the facility consolidates more waste, uses fewer staff, has better tonnages and the compaction ratio is twice as

good as with the previous baler.

Kevin Bishop, regional recycling manager for Viridor, says: "We can now look at bringing in a lot more recyclables. As everything is baled so quickly, we need less storage space on-site and the machine's versatility means we can handle more waste streams."