UNTHA
shredding technology

A buyer's guide to shredding technology

How to make the perfect investment

Contents

Foreword

Whether buying a machine for the first time, upgrading incumbent technology, or expanding an existing materials processing facility, procuring an industrial shredder is a time consuming and potentially complex process for many.

Evolving legislation, increasingly stringent supply chains, tougher environmental targets, green pressures, mounting costs, and the search for more efficient materials handling strategies, are just some of the reasons why a growing number of firms are considering a shredder investment. And this changing landscape presents new questions for organisations that want to make the perfect choice.

For many waste *processors,* shredding is nothing new. Such equipment has long been considered a valuable asset that can improve organisations' commitment to sustainability, operational efficiencies, and their bottom line. But given the tougher external environment, shredders must now achieve more than ever before, and investments must generate a greater return. Machinery that doesn't tick all the boxes, is therefore being re-evaluated for its ROI potential.

At the same time, the market is witnessing a marked uplift in the number of waste *producers* thinking about shredding for the first time. These often self-proclaimed 'novice' buyers are acknowledging the role that in-house shredding could play. But having never operated such machinery before, they are naturally faced with a myriad of questions when it comes to drawing up the correct shredder specification.

With a vast array of equipment available in the marketplace, it can be difficult to work out which shredding technology will best satisfy a company's specific needs. However, 'knowledge is power', as the age-old saying goes.

This straight-talking guide therefore combines decades of experience to help you make best-value decisions, as you embark on your next procurement journey.

Gary Moore
Shredding specialist, UNTHA UK

Define your input material

Thinking about exactly *what* you want to shred, may sound like an obvious starting point. But don't just describe the overall material stream. You may require a WEEE shredder, for example, but a diligent shredder supplier will want to know more about the composition of your materials. A key question to answer here is, *what is the largest bulky item I need to shred?* This helps to define the cutting chamber size that will successfully 'accept' the material. Width, length and depth dimensions are required.

If your input material is likely to be interchangeable, that's no problem – many shredders are now designed for application flexibility.

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Understand your output requirements

Before beginning your marketplace research, be clear on what the new shredder must be capable of. Start by considering the furthest point in the supply chain and work back from there. Whether you're producing a commodity and need to take 'end user requirements' into account, or you simply have to ensure the compliant size reduction and disposal of materials, the final output criteria will prove a key factor in your shredder purchase. This is your "why".

Think about particle size and the need – or not – for fraction homogeneity. Also consider throughput requirements, as knowing the amount of material you wish to process, will help determine the motor drive power (kW) required.

Discover how Textek is diverting 100% of a mattress from landfill.

Consider ancillary equipment

How will input materials be fed into the shredder? This is an important consideration when it comes to operator safety, efficiencies, space requirements, and the need for any ancillary equipment. This conversation could be the difference between you purchasing a stand-alone shredder or a more turnkey system.

Shredders can be fed manually, or with a grab, front end loader, conveyors, forklift or bin-lift, for example, to name just a few options. And when it comes to output material, mechanical or pneumatic extraction is typically required, unless relying on gravity discharge into a suitable container.

Additional upstream and downstream equipment may also be required, depending on the complexity of the product and the sophistication of the output requirements.

If you are uncertain about the right design for your shredding solution, ask. This exploratory discussion will ensure optimal performance, accurate budgeting, and adequate space planning.

Do you have sufficient power?

What power is required to run the machine and do you have enough supply? This is often overlooked, so add this to the list of questions for discussion, when you begin your dialogue with potential suppliers.

Define timescales

It is important not to rush a shredder procurement process, but sometimes timescales dictate the schedule that must be adhered to. Define the ideal date for commissioning – inclusive of acceptance testing and operator training – and work back from there. With careful planning – and by working with a supplier who has stock machine availability – it is possible to accelerate the process, if necessary, without cutting corners.

Understand the procurement options

Decide on a budget and if you need to protect cashflow, consider leasing the shredder or spreading the cost with a hire purchase agreement. A range of flexible finance packages now exist throughout – with the ability to wrap service agreements into a fixed monthly fee – to ensure your investment is as affordable and manageable as possible.

Also, when thinking about the numbers, don't simply consider the initial shredder cost. Ongoing operational efficiencies, energy consumption, uptime, ease-of-maintenance, and the longevity of parts, will all affect long-term cost efficiencies and your profitability.

If in any doubt, ask potential shredder providers to help build a business case for the machine. Not only will this bring clarity to the decision-making process, it will also evidence the likely payback period. Potential revenue yield from the output material should also be taken into account.

Not only have we reduced our waste footprint, but the financials stack up too. With the savings we're making, the machine will pay for itself in 3-4 years. It is also economical to run and keeps our site tidy.

Murray Carvell
Managing director, MC Refrigeration Ltd

Be clear on the project 'driver'

While most organisations have to prioritise an investment that stacks up financially, some businesses are now evaluating shredders for more altruistic reasons. Designing a solution that prevents surplus materials from ever becoming a waste, or boosts the circularity of an organisation's business model, is also important for a growing number of firms.

Be open and honest with shortlisted suppliers, about what you want to achieve as an organisation. There is little point investing in a shredder to tick an environmental box, for example, if the technology is diesel hungry – especially when there are cleaner, greener, electric-driven solutions available. It is now even possible to power heavy duty shredders using solar energy!

Read about PSH's pioneering solar panel project.

Agree the internal decision making process

At the earliest feasible stage, be clear on who will be involved in the procurement process, especially when it comes to the final buying decision. Consult the right people, at the right time, so as not to delay the outcome or undo hard work.

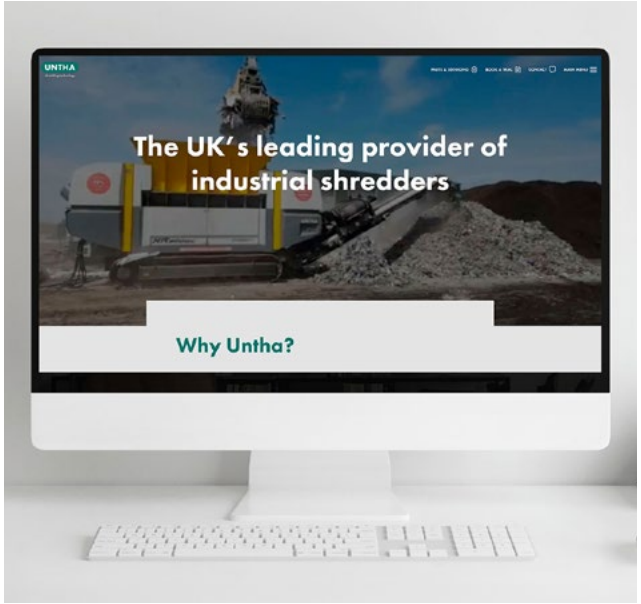
Everything about UNTHA conveys the brand's commitment to engineering a sustainable future, from the capability and quality of the shredders themselves, to the knowledge, support and passion within the UNTHA team. We know we have found the right partner for the ongoing progression of PSH Environmental.

Daniel Parker
Director, PSH Environmental

Find potential shredder suppliers

Carry out online research, attend relevant trade conferences, and/or look for suppliers that are frequently highlighted in journals and magazines that you trust. Also, think about who you know in the industry – other equipment suppliers, peers, and industry bodies could all prove helpful sources of information.

Utilise websites and other printed materials that are already available, but don't be afraid to pick up the phone or send an email with questions bespoke to your needs. A reputable provider should respond within 24 working hours, to take the conversation forward.



Don't be afraid of detail

Ask detailed and specific questions relevant to your business model and your materials handling scenario, to understand the shredder's true performance capabilities and the supplier's ability to meet your needs. For example, confidential waste shredders benefit from being slow-running, as they can shred classified material to an agreed specification without destroying the fibre and consequent recyclability of the commodity. You should also seek peace of mind that you'll achieve DIN compliance without fail.

If shredding food waste and packaging, on the other hand, look for purposefully-designed sealing systems that will protect the machine's gearbox and bearings from this potentially aggressive material. And if your goal is the production of alternative fuel, output precision matters, as does the whole life running cost of the machine – both will affect the future profitability of an RDF or SRF manufacturing plant.

Whatever your shredding scenario, ensure the advice you seek is tailored to you and your business.

"The people at UNTHA UK have done exactly as they said, and it's been a seamless process from the first point of contact through to installation and commissioning."

Jason Goddard
General manager, Grassroots Recycling

Learn about Grassroots' mission to responsibly recycle plastic waste.

Increase resistance to foreign objects

Where possible/relevant, ensure the shredder has foreign object protection. The contents of waste streams can never be fully guaranteed however rigorous any pre-sorting processes. In-built protection mechanisms can auto-stop a machine if a foreign object is detected, preventing shredder damage, minimising downtime, ensuring the longevity of parts, and upholding end product quality.

Seek safety, as standard

Operator safety is non-negotiable when it comes to industrial shredding, so look for design features that ensure safe and ergonomic working conditions. From low noise levels and the ability to conduct routine maintenance tasks in an upright position, to slow speeds that minimise dust, and touchscreen control panels that fault find from a distance, safety should be integral to how the shredder has been engineered.

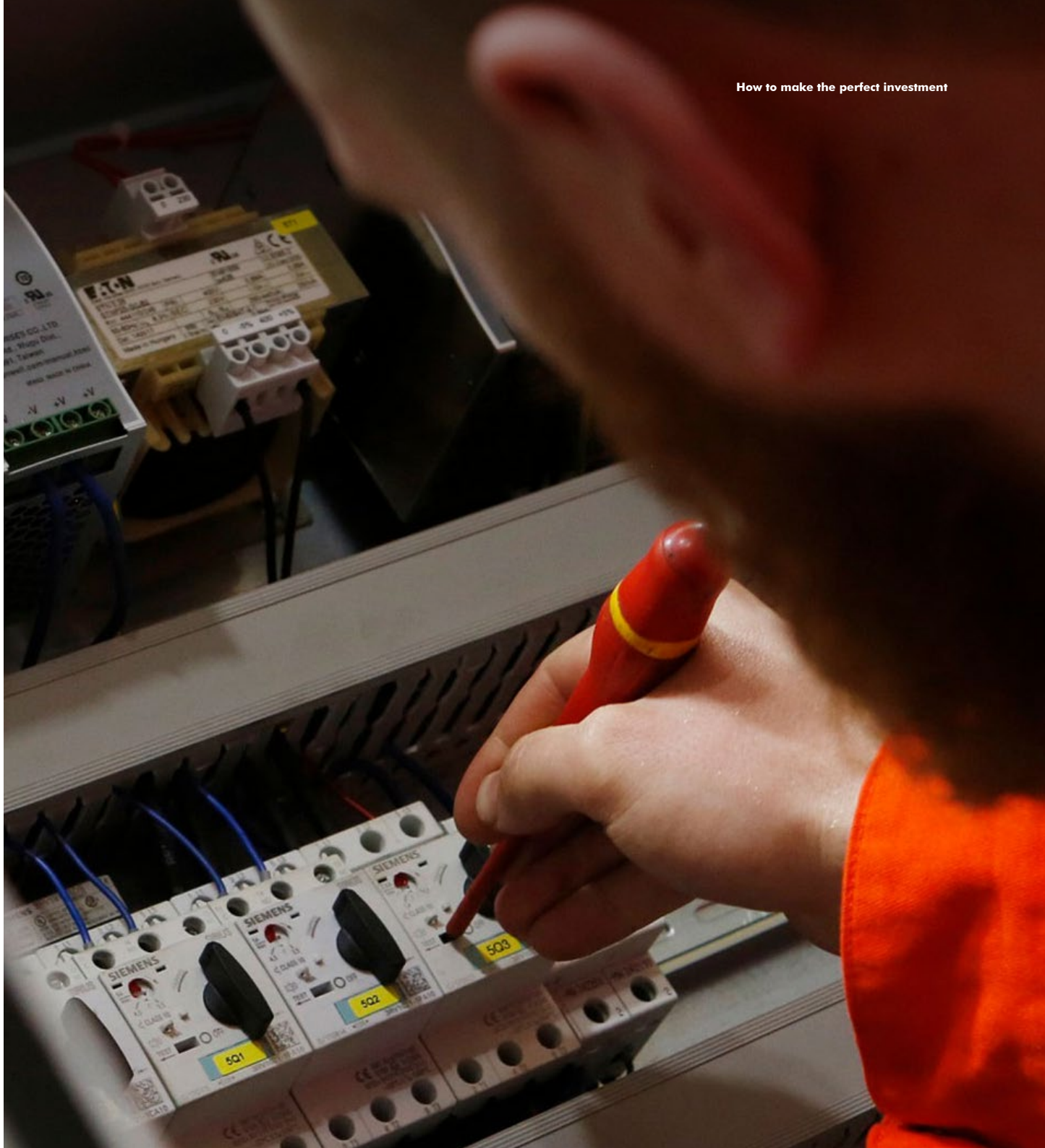
Prioritise preventative maintenance

Even if you have your own on-site engineering team, look for a provider that offers ongoing consultancy, servicing, and maintenance expertise. The support of the people who have designed, manufactured, and supplied the machine, will be hugely beneficial as you strive to work ever-smarter. And remember, prevention is cheaper than cure, so try to adopt a proactive service schedule, rather than reacting when something goes wrong.

The ease, speed, and cost of maintenance is incredibly important too, as this will have a huge impact on your future profitability. This is especially applicable in high throughput applications such as waste processing for alternate fuel production. Simple maintenance procedures and small savings in cutter change time ensure maximum uptime and shift efficiency, which significantly improves your revenue generating potential. Over a 12 month period alone, the savings could amount to hundreds of thousands of pounds.

Empower your team

Ensure that comprehensive training will be provided, however easy the shredder is to use and even if remote diagnostics are offered. It is important that your operatives understand how to use the shredder, safely, while optimising ongoing operational efficiencies.



Ask for references

After shortlisting your preferred shredders, ask to speak to other customers or visit sites where the technology is already installed – nothing beats seeing a shredder in action, outside a test environment. Watch how the equipment performs in a 'real-life' scenario and ask questions of the plant owner and operatives. You can even assess factors such as noise levels, which you may not have originally considered as important. This is an incredibly valuable part of the research process, and shows utmost transparency on the supplier's part. Certain suppliers may even offer a trial period, allowing you to truly 'test' the machine with your own materials.

Also think about whether the partner has ISO certifications or similar quality and safety assurance standards. This will provide peace of mind from the outset.

Is customer experience being prioritised?

Most shredder investments represent sizeable decisions, especially given the current economic backdrop. So look beyond purely what the equipment is capable of. Where possible, consider the shredding supplier as a 'partner', and evaluate the business on their heritage and experience, commitment to continued aftercare and support, and their desire to work with you long into the future.

From access to expertise when you have a quick question, to the provision of ongoing optimisation advice, it is usually the *people* who will help *really* maximise your ROI potential – not the *product*.

Plan for the future

Sometimes it is hard enough planning for the next three to six months, let alone the next five years. However, no organisation can afford to stand still, especially in an industry that is ever-changing. It is therefore important that the shredder is flexible, without being over-specified. It will need to adapt alongside your business, if your throughput or fraction size requirements change for instance. Otherwise, if the technology needs to be replaced when your business evolves, the investment could end up being very costly indeed.

For more information or to discuss this advice in further detail, please contact UNTHA UK on 0330 056 4455 or email sales@untha.co.uk.

UNTHA
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UNTHA UK
Excel House
Bar Lane
York
YO51 9NR
0330 056 4455
sales@untha.co.uk
www.untha.co.uk