Recycling Technologies®

Cost-effective solutions
for Residual Plastic Waste

Recycling Technologies provides a machine and a service to recycle unsorted plastic waste.

Our flagship machine, the RT7000, utilises our advanced Fluidised Bed Reactor, the WarwickFBR™. This system converts unsorted Residual Plastic Waste – that is currently disposed of in landfill or incinerators – into a valuable low sulphur hydrocarbon we call Plaxx™. Our system offers the lowest cost environmentally responsible solution for Residual Plastic Waste.

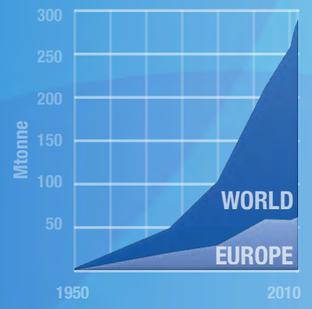
Global AWARDS Highly Commended 2015 IChemE

Rushlight *Awards* Winner 2015/16

Rushlight Awards: Resource Recycling Award, Resource Innovation Award and overall winner demonstrating a key contribution to addressing environmental issues.

The problem of Residual Plastic Waste

Plastic



Plastic is a truly versatile and valuable material, so it's not surprising that its production and use is growing exponentially.

Waste

However, the acute problem of plastic waste is forcing companies to use less than ideal methods to discard it. They either bury it, burn it or in some cases, dump it. At Recycling Technologies, we offer a recycling system that is an environmentally beneficial and commercially attractive alternative.

Requires a commercially viable solution

We are drowning in the plastic waste that is accumulating on land and in our oceans. Recycling Technologies helps turn waste plastic into a valuable resource for today's and future generations.

Recycling Technologies' machine, the RT7000, produces a valuable hydrocarbon product called Plaxx™. Solid at room temperature, Plaxx™ is easily transported for multiple uses.

Introducing the RT7000

Recycling Technologies has developed an innovative modular solution which converts Residual Plastic Waste into Plaxx™.

The practical approach to recycling plastic

MODULAR CONSTRUCTION

The modular design allows assembly and testing in our factory, which is less costly and disruptive for clients than on-site construction.

This concept also facilitates financing/leasing as systems can easily be relocated.

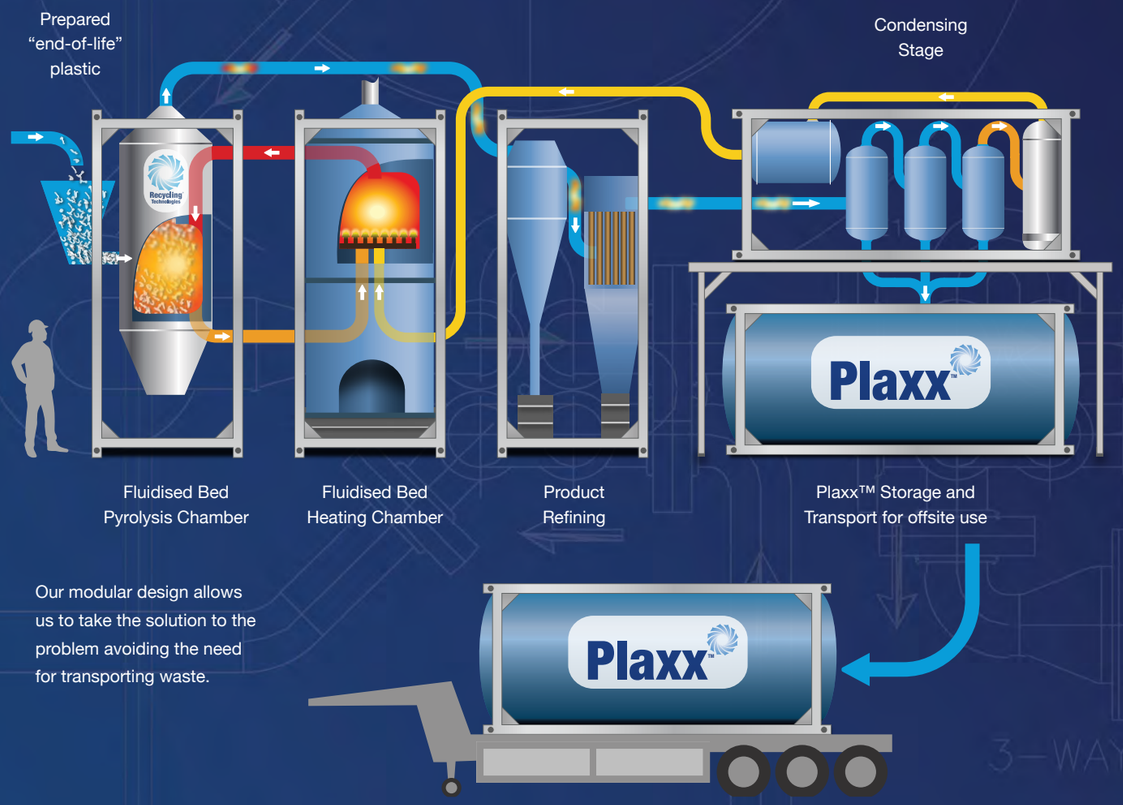
PATENTED TECHNOLOGY

This unique approach to Residual Plastic Waste has been patented in the UK and international applications have been filed.

SMALLER SCALE – A DISTRIBUTED SOLUTION

The RT7000 is sized to allow it to be located at sites with Residual Plastic Waste, e.g. a Material Recovery Facility [MRF].

This distributed approach removes the need for costly transportation to centralised facilities.



Our modular design allows us to take the solution to the problem avoiding the need for transporting waste.

Ticking timebomb, or opportunity to clean up?

A report released by the World Economic Forum, the Ellen MacArthur Foundation and McKinsey, entitled the *New Plastics Economy: Rethinking the Future of Plastics*, has warned that by 2050, oceans are expected to contain more plastic than fish (by weight) if the plastics value chain doesn't change its current modus operandi.

Given projected growth in consumption, the plastics industry is expected to consume 20% of total oil production and 15% of the annual carbon budget.

"In this context, an opportunity beckons for the plastics value chain to deliver better system-wide economic and environmental outcomes, while continuing to harness the benefits of plastic packaging," said Adrian Griffiths, CEO, Recycling Technologies, which collaborated in the report. "The report envisages a new approach based on creating effective after-use pathways for plastics; drastically reducing leakage of plastics into natural systems, in particular oceans; and decoupling plastics from fossil feedstocks."

Dame Ellen MacArthur *founded the Ellen MacArthur Foundation, with the aim to accelerate the transition to a regenerative, circular economy – a vision actively shared by Recycling Technologies.*

Introducing a revolutionary new product

Plaxx™

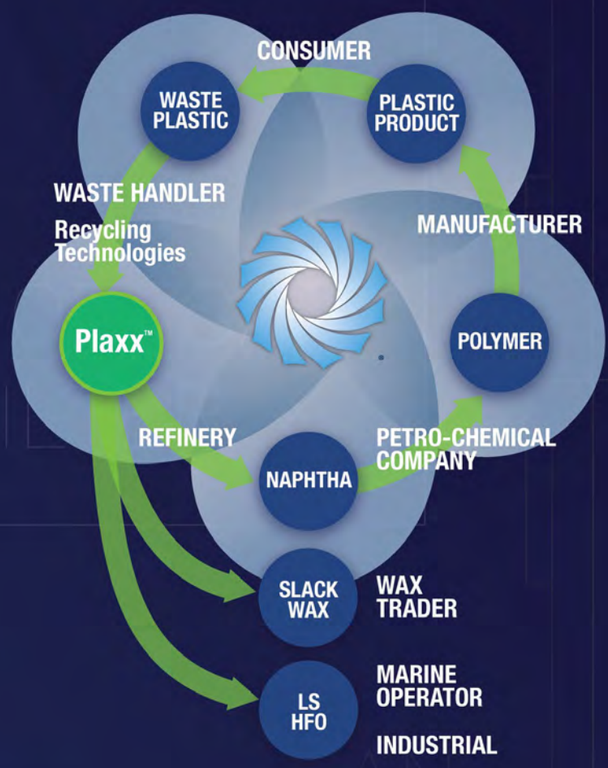
Plaxx™ is a valuable hydrocarbon product. Solid at room temperature, it is easily transported for multiple uses.

Plaxx™ can be used as a feedstock for more plastic, closing the virtuous circle. Alternatively, it is a Slack Wax equivalent and can be sold globally for this purpose. In making Plaxx™, a valuable commodity product, Residual Plastic Waste (RPW) has been recycled.

Alternatively, Plaxx™ is a Low Sulphur Heavy Fuel Oil, which can be used for heating, power generation or marine propulsion.

This flexibility allows RPW to be recycled in the most commercially and environmentally beneficial way.

Plaxx™ offers a new cost-effective approach to the problem of plastic, turning it from a liability into a valuable resource.



How does it work

SUSTAINABILITY AS A SERVICE

Recycling Technologies is working with companies that currently have the problem of Residual Plastic Waste. We will provide an RT7000 on suitable customer sites and the personnel to recycle Residual Plastic Waste as a service, removing the need for our customers to worry about the operations.

Our aim is to make **recycling** Residual Plastic Waste the easy and profitable option for our customers.

Who is this solution for?

ENTITIES WITH PLASTIC WASTE FEEDSTOCKS

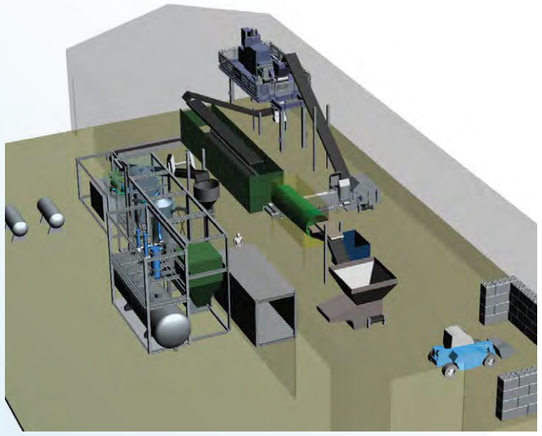
- Entities with plastic waste feedstocks with streams of residual waste plastic currently being landfilled or blended into RDF or SRF for Energy to Waste plants, and wishing to improve from recovery to recycling rates.
- This includes but is not limited to landfill sites, materials recycling facilities (MRFs), plastics recycling facilties (PRFs), mechanical biological treatment plants (MBTs), paper and glass recyclers, anaerobic digesters (AD) and industrial processes with waste plastic.

ENERGY USERS

- Large heat and energy users wishing to improve both their cost and carbon positions.
- Marine operators interested in a low sulphur, higher viscosity product to reduce cost and improve carbon footprint over Marine Gasoils.
- Petrochemical plants looking to add recycled content into end products.

“ We are witnessing a sea change in the economic case of this conversion and Recycling Technologies is at the forefront of delivering commercial solutions.

PETER JONES OBE
ENVIRONMENTALIST



RT7000 TECHNICAL PARAMETERS

Parameters	Value
Annual capacity	7000 t/a
Throughput	1 t/hr
Waste type	Residual plastic waste
Technology	Thermal Cracking
Yield	75 %
Energy efficiency	85 %
Overall Equipment Efficiency	80 %
Plaxx™ production	5250 t/a
Footprint	850 m2
Technical lifetime	25 years
Residues Ash	Gas treatment residue

CARBON SAVINGS

Each tonne of Plaxx™, when used as a replacement for HFO, saves approx 1.5 tonnes of CO_2e when compared to energy from waste alternatives.

SUITABLE SITES

Ideally, customers need to have space to incorporate a layout such as above within a covered area.

“ It is evident that this technology should have financial, environmental and economic benefits, not only for Swindon Borough Council but further afield as well.

BERNIE BRANNAN
BOARD DIRECTOR – SERVICE DELIVERY, SWINDON BOROUGH COUNCIL

“ We believe your technology, with its ability to recover aluminium from the waste fraction in addition to energy, will meet our aims to benefit our members and the environment.

RICHARD HANDS
CHIEF EXECUTIVE, ACE LTD

Technology Partners

Recycling Technologies has taken a university project into a proven process and commercial product. Now, working with a range of university and industrial partners, the RT7000 is the definitive solution for Residual Plastic Waste.

The Market

Recycling Technologies directly addresses a massive market, solving financial, practical and environmental problems. We are currently in advanced discussions with over thirty sites, including public, private and municipally owned, together with off-takers for hydrocarbon products globally.

Financial Support

In addition to Recycling Technologies’ own substantial investment and resources, our drive to recycle Residual Plastic Waste is shared by a range of government bodies and institutions who have provided financial assistance for the development of the RT7000 and Plaxx™. The process offers a very attractive financial proposition, eliminating costly landfill use and disposal, with a sustainable recycled product.

“ We are really excited that the RT7000 will allow plastic to enter the Circular Economy.

ADRIAN GRIFFITHS
CHIEF EXECUTIVE
RECYCLING TECHNOLOGIES

THE RT700 IS OUR COMMERCIAL SCALE PILOT PLANT

“When I was rowing across oceans, I was in a unique position to see how much plastic pollution is making its way to the remotest parts of our planet – and it’s scary. Around 80% of it comes from land, so it’s tremendously good news that Recycling Technologies has a solution that can help the full spectrum of communities recycle plastic waste into something useful. And the oceans need good news.”

ROZ SAVAGE, MBE

FOUR WORLD RECORDS FOR OCEAN ROWING, INCLUDING FIRST WOMAN TO SOLO ROW THREE OCEANS: ATLANTIC, PACIFIC & INDIAN

AUTHOR OF “ROWING THE ATLANTIC” AND “STOP DRIFTING START ROWING”

NATIONAL GEOGRAPHIC ADVENTURER OF THE YEAR 2010

YALE WORLD FELLOW 2012

Recycling Technologies provides sustainability as a service.

A novel solution that allows all plastic to be recycled.

A commercially attractive solution to the problem of plastic waste.

Recycling Technologies®

Innovative solutions for waste

www.recyclingtechnologies.co.uk
info@recyclingtechnologies.co.uk
telephone: +44 1793 827 965

Unit 6 Woodside, South Marston Park SWINDON SN3 4WA

RT01-091-1 PRODUCED BY CONNEXXIONS.ME