



Recycling Technologies, on behalf of the project's partners, today announces the publication of the results of Project Lodestar. This case study shows the potential for waste site operators to recycle 'all plastics' by combining state-of-the-art mechanical and feedstock recycling in an advanced Plastics Reprocessing Facility.

Lodestar is a Pioneer Project initiated and run by participant organisations of the Ellen MacArthur Foundation's New Plastics Economy initiative. Project Lodestar was led by Recycling Technologies, joining forces with leading global stakeholders, including petrochemical companies and consumer brand companies. Partners from across the plastic value chain collaborated on researching and designing a blue-print for an advanced Plastics Reprocessing Facility (aPRF) utilising mechanical and feedstock recycling in a single combined facility. The participant group consisted of representatives from Borealis, Coca-Cola, EcoldeaM, ExcelRise, Danone, Impact Solutions, Mars, NexTek, The Canadian Stewardship Services Alliance, NatureWorks, Re-Poly, Swire Beverages, Recycling Technologies, Unilever and Zero Waste Scotland.

The Scottish and UK Government announced on 22 November 2018 a £300m investment in the Tay Cities region which included a commitment to invest up to £5.2m, following agreement on a robust business case, to support the development of a two-phase project to build the world's first aPRF in the Tay Cities Region. Phase 1 will be the development of the world's first demonstration aPRF (project Beacon), a major integrated waste facility in Tayside, and Phase 2 will be the development of a next generation advanced plastic sorting facility as a global blueprint for best in class recycling to recycle 90%+ of all household plastics.

Using commercial market prices and published waste data from Scotland, Lodestar modelled an aPRF where residual plastic waste rejects from advanced mechanical recycling are sent to innovative feedstock recycling and diverted from incineration, increasing significantly plastic recycling rates. The feedstock recycling converts the residual plastic waste into an oil suitable to remanufacture into plastic or other chemical feedstocks, allowing plastics to be kept in the circular economy.

Significantly, the research found that, compared to mechanical recycling alone, an aPRF has

the potential to increase waste operators' revenue by 25% and improve the payback on investment in the facility's equipment by 11%. This level of performance could be further enhanced by improving packaging design and the elimination of PVC in packaging.

Finally for residential households and local authorities, the research highlighted how the volume of plastics collected can be increased by making collection systems more convenient and allowing residents to put all their waste plastics into one bin – 'if you think it's plastics, put it in' - as an aPRF is able to sort all the plastic material at a single site.

Adrian Griffiths, Chief Executive of Recycling Technologies, said:

"The Lodestar project shows the commercial and environmental value of combining state-of-the-art mechanical and feedstock recycling. It shows waste plastic has significant commercial and citizenship value for recycling companies, local government and packaging companies. Lodestar provides a valuable reference and guide to help waste businesses and governments meet their targets to recycle plastic to reuse again in packaging made out of recycled plastic and help prevent waste plastic damaging the environment."

The results from Lodestar are helping to guide and develop Project Beacon, in Scotland, working with Zero Waste Scotland (ZWS), the Scottish Government's delivery body on resource efficiency. In its initial phase, Project Beacon is combining Recycling Technologies' first commercial RT7000 plant with mechanical processing for large rigids provided by Pi-Polymers. Planning permission has been granted for the initial phase at Binn Ecopark in Perthshire.

Rachel Goldstein, Global Sustainability Senior Manager at Mars Incorporated, Lodestar partner said:

"Mars is committed to making our packaging recyclable. Project Lodestar has brought multiple industries together in a collaborative effort to design a blueprint for a recycling facility that combines the best of existing technologies and new technologies to make all plastics recyclable. This is exactly the kind of ambition we are working to advance as a core partner of the New Plastic Economy."

Gavin Warner, Director Sustainable Business, Unilever said:

"Project Lodestar is an excellent demonstration of industry-wide collaboration to prevent plastic leakage. The fact that a facility is now being built in Scotland is testimony to this. We hope to see a time when all the outputs from such a facility can be remanufactured and used to close the loop on plastic."

John Ferguson, Managing Director at Eco ideaM, said:

“Lodestar supports the foundations for Project Beacon in Scotland, where best in class mechanical and chemical plastic recycling technologies will sit side by side to accelerate the process of halting the unnecessary leakage of waste plastic into the environment by significantly increasing its ability to be recycled successfully. It is particularly encouraging that this project has also just gained the offer of £5.2m support from the Tay Cities Deal to develop the advanced plastics sorting facility concept as Phase 2 of Project Beacon.”

Iain Gulland, Chief Executive, Zero Waste Scotland said:

“Project Beacon has the potential to be a truly ground-breaking step forward in the battle to reduce plastic waste, not just for Scotland but globally. Aside from the clear environmental benefits, it would also simplify recycling for householders and create significant business opportunities in the circular economy. We're delighted to be able to support this pioneering work and hope the research published today will drive further business innovation.”

For more information about Lodestar, please visit Recycling Technologies' website: www.recyclingtechnologies.co.uk