



SMART SUSTAINABLE PLASTIC PACKAGING CHALLENGE PROGRAMME

#MakingPlasticsFitForASustainableFuture 2021 Programme Update

Never before has plastic been under such an intense spotlight. Blue Planet II in 2017 brought the message about the plastic pollution crisis in the oceans to a huge global audience. Even before that, however, the environmental impacts of plastic waste were becoming clearer, from the growing evidence on the proliferation of microplastics in our air, water and soil through to hard hitting media coverage about questionable exports of UK plastic waste to less developed countries. While highly effective and safe as a packaging material, around 35% of plastic waste escapes into the environment with a range of negative consequences for health, biodiversity, amenity, resource use and climate change.

Read Challenge Director Dr Paul Davidson's [recent blog](#) exploring in more detail some of the main issues and challenges around plastic packaging.

Across the board, UK governments have made commitments and are driving through a raft of policy reforms to improve the way that all packaging waste, including plastic packaging, is managed and recycled, as well as legislating to curb some single use plastic, and imposing a tax to drive up the use of recycled plastics. WRAP's UK Plastics Pact also unites signatories across the retail and packaging supply chain to deliver on four ambitious reduction, re-use and recycling targets by 2025.



The £60 million Smart Sustainable Plastic Packaging (SSPP) Challenge, the largest ever UK Government investment in sustainable plastics research and innovation, underpins and supports these measures and initiatives by:

- driving research and innovation to develop more sustainable plastic packaging materials and designs, enable new recycling processes and infrastructure, and support meaningful reductions in plastic packaging by tackling barriers to reuse and refill supply models;
- encouraging collaboration and innovation in integrated circular supply chains, addressing key barriers to change and using insights into consumer behaviour to reduce the environmental impacts of plastic packaging; and
- sharing knowledge and the learning from funded projects to inform and underpin the development of a more sustainable plastic packaging supply chain.



It also builds on the knowledge and learning from UKRI's previous track record in plastics research and innovation, including funding to assess the viability of bacteria-based recycling of plastics, develop biodegradable biopolymers, and explore new methods of removing micro-plastics in water waste.

Progress so far...

Support and intervention are needed in a number of different areas to support a step-change in plastic packaging. To date, the SSPP Challenge has:

- Invested £20 million in cutting-edge demonstrator plants to support innovative new recycling processes, including hydrothermal liquefaction and thermal cracking processes to convert waste plastic into chemicals and oils for use in the manufacture of new plastic and other materials.
- Invested £8 million in 10 university-led, collaborative, Enabling Research project to find solutions to existing issues with plastic packaging in order to reduce plastic pollution and unlock barriers to create fundamental changes in the industry.
- Invested almost £2 million in 14 projects to address consumer problems with plastic packaging. These projects will develop better options for future plastic packaging, whether in the kitchen, the bathroom or on the move.
- Awarded £235,000 to support projects that aim to reduce plastic waste and improve the UK's recycling capability to help them take their first steps to becoming future demonstrator projects – from a seaweed-based alternative to plastic laminates in the paper and board packaging industry to trialling the feasibility of commercial scale re-use and refill systems.



Credit: Notpla. Take away box with seaweed-based alternative to plastic

- Awarded £175,000 for feasibility and industrial research studies that are intended to lead to larger scale projects for future plastic packaging solutions, including digitally-enabled reusable lunchboxes and an Open Data Standard (ODS) for a digital passport for packaging items.
- Supported the development and delivery of the India Plastic Pact, the first Asian country to develop a plastics pact of this kind, with £250,000 of funding.



Case study: ReNew ELP

An advanced plastic recycling solution that could divert difficult-to-recycle plastic packaging from landfill and incineration into recycling.

ReNew ELP is developing the world's first site to use the hydrothermal upgrading process HydroPRS™ (Hydrothermal Plastic Recycling Solution). This innovative process has been developed to convert any plastic packaging waste – even packaging formats that have traditionally been difficult to recycle such as flexible and multi-layered films – into shorter chain hydrocarbons that form the building blocks for new plastics and other products.

This innovative process offers a better end-of-life outcome for plastic packaging that would otherwise be consigned to disposal in landfill or incineration and offers the opportunity for the recycled polymer to go back into the production of new food-grade packaging, a limitation of most mechanical sorting processes due to food contamination.

The project, led by ReNew ELP, received £4.4 million in funding from the SSPP Challenge which is supporting the building of a commercial-scale plant in Teesside where, in the longer term, the aim is to process up to 80,000 tonnes per annum of waste plastic.



Coming soon...

There will be exciting news in the next issue on the results of two recent SSPP competitions:

- £16 million [Demonstrator Projects Round 2](#) competition: funding large-scale commercial demonstration projects including first-of-a-kind infrastructure and trials of new packaging concepts across key themes including:
 - reuse and refill approaches
 - solutions for film and flexibles
 - creation of infrastructure for food grade recycled polypropylene (rPP)
 - behavioural change to encourage packaging reduction, refill uptake and recycling
- £7 million [Business-led research and development](#) competition: for research and development projects with the potential to significantly support the delivery of the 2025 UK Plastic Pact targets.

More information:

Read more about SSPP on the [UKRI](#) and [UKCPN](#) websites

Watch out for the first SSPP Newsletter coming out early in 2022