

IP2.02: Reduced impact of plastics and other materials (led by UNSW & Curtin)

Research in IP2 focuses on reducing the impact of plastics and other waste materials. This research aims to find solutions for waste materials included in the national waste export bans and other problematic materials identified as priorities during co-design in 2021: plastics, textiles, glass, and rubber.

IP2 researchers are guided by national priorities "*The National Waste Policy 2018*" and the "*National Waste Policy Action Plan*" and supported by further plans including modernisation of recycling and manufacturing capability; and sustainable protection of national materials supply (critical materials).

The low participation of Indigenous researchers in the RP1 process of IP2 revealed a mandate for increasing the engagement of Indigenous researchers in waste discussions and research.

For 2022, researchers will collaborate with industry and community groups, including both Indigenous and government, to find "*fit for purpose*" solutions addressing three key objectives:

- 1) To develop a monitoring protocol informing national policy on microplastics, investigating material properties and characteristics for different waste materials contributing to the issue, examining environmental impacts and current performance, undertaking trials and evaluating viable alternatives.
- 2) To trial practical technological solutions to waste management challenges across regional and remote communities and provide ready access to information for stakeholders.
- 3) Inform policy development regarding the utility of plastic in artificial reef construction.

To address these issues, IP2 proposes three multiyear projects.

Project outcomes

The ultimate outcome of this research over the course of the NESP program will be an increase in materials circularity in Indigenous, remote, regional and urban Australian communities. This outcome will contribute to the delivery of the "*National Waste Policy 2018*" and the "*National Waste Policy Action Plan*", particularly the goals of "*Helping to reduce total waste generated by 10% per person by 2030*" and "*Significantly increase the use of recycled content by governments, consumers and industry*".

The project will advance recycling and plastic related policies, providing a framework to develop and promote new and sustainable national supply chains, reducing the impacts of waste materials subject to the export ban as well as the effects of microplastics on the environment, and inform the Department's policy design and decision making via community co-designed solutions and on-ground success. The research will also provide innovative recycling solutions for waste streams, including plastics, tyres, textiles, and glass.

This new knowledge is expected to inform future policy discussion and considerations at all levels of government on addressing waste management, including microplastics in regional and remote communities and strengthen the capacity to implement fit for purpose solutions. The project's outcomes will catalyse supply chains and create new markets. This work will lead to opportunities for Australian Indigenous, remote, regional and urban communities to embrace circular economy solutions to drive social and economic benefits.

IP2.02.01: Understanding Microplastics

Project	Milestones - Outputs	Timeline (from Jul 2022)	Due date	Responsible person
IP2.02.01	IP2.02.02 inception meetings/discussions		30-Jul-22	Veena Sahajwalla / Arthur Wilson
	Plastic additives report		30-Sep-22	Veena Sahajwalla / Anirban Ghose
	A progress report of findings to predict microplastic risk for EPBC Act-listed threatened species		30-Oct-22	Veena Sahajwalla
	A progress report on a nationally consistent monitoring system (protocol) and national database for microplastic pollution		30-Oct-22	Veena Sahajwalla / Anirban Ghose
	Preliminary RP3 Plan		23-Sep-22	Veena Sahajwalla / Arthur Wilson
	RP2 Draft report submission		30-Dec-22	Veena Sahajwalla / Arthur Wilson

IP2.02.02: Finding Fit for Purpose Technological Recycling Solutions for Regional and Remote Communities Across Australia

Project	Milestones - Outputs	Timeline (from Jul 2022)	Due date	Responsible person
IP2.02.02	IP2.02.02 inception meetings/discussions		30-Jul-22	Veena Sahajwalla / Arthur Wilson
	Yearly progress report for the Department and other research users summarising progress and results		30-Oct-22	Veena Sahajwalla / Arthur Wilson
	Preliminary RP3 Plan		23-Sep-22	Veena Sahajwalla / Arthur Wilson
	RP2 Draft report submission		30-Dec-22	Veena Sahajwalla / Arthur Wilson

IP2.02.03: Plastic-Reinforced Artificial Reef Structures; Improving Understanding

Project	Milestones - Outputs	Timeline	Due Date	Responsible Person
IP2.02.03	A report provided to the Department outlining the key findings for Plastic-Reinforced Artificial Reef Structures		21-Oct-22	Veena Sahajwalla / Arthur Wilson