Recycled Content Verification Challenge

2022 NSW Small Business Innovation & Research program

Background

The NSW Small Business Innovation and Research (SBIR) program is a NSW Government initiative that provides competitive grants to small and medium-sized enterprises (SMEs) to find and commercialise innovative solutions to well-defined challenges identified by NSW Government agencies. This document sets out the Recycled Content Verification Challenge for the 2022 SBIR Program.

Challenge summary

The Office of Energy and Climate Change is seeking a solution that could trace and verify recycled material to help NSW Government agencies procure local recycled products.

Technologies involved might include, but are not limited to:

- A centralised materials database with product tagging and tracing
- Digital engineering solutions such as digital twins and material passports
- Smart sensors
- Blockchain

Challenge details

The *NSW Waste and Sustainable Materials Strategy 2041* introduced a new requirement for NSW Government agencies to preference recycled content in their procurement where there is no significant additional cost or negative impact on performance and the environment. To support this requirement, a system is needed to trace recycled materials and verify whether purchased materials contain local recycled content.

There is currently no reliable way for NSW Government agencies to verify whether recycled content was sourced from NSW, a different jurisdiction or from overseas. Available tools that identify the presence of recycled content in a product, such as ecolabels, have limited uptake and offer poor data-mining options. Without this verification, the environmental impacts and the effect of the initiative on the local recycling industry cannot be accurately measured.

The recycled content verification solution would help NSW agencies maximise the impact of their procurement by addressing local waste issues and supporting local businesses. Agencies would use this solution as an important reference tool when procuring products containing recycled content.

Solution requirements

The solutions should deliver cost-effective technologies or methodologies for the traceability and verification of local recycled materials.

Proposals must:

- Demonstrate the scientific basis of the technology to address the problem
- Demonstrate that the technology can provide the following information:
  - the percentage of recycled content in a material or product
  - the jurisdiction in which the recycled content was originally generated as waste
  - the jurisdiction in which the recycled content was recycled
- Demonstrate how the solution could be used in the following environments:
  - Click-and-buy (catalogue-based) procurement, directly by NSW Government agencies
  - Delivery of large construction projects, via contractors to NSW Government agencies
- Demonstrate that the solution is scalable beyond the needs of the NSW Government
- Demonstrate that the solution could integrate with other materials tracking systems being developed through NSW Government programs (further detail to be provided through applicant briefings)
- Specify, as much as possible:
  - Limitations in terms of markets, product types or materials that the technology might not be applicable to
  - Likely mechanisms for data acquisition and management requirements by the operators and the users of the technology

This challenge is agnostic to the type of technology used and is seeking the most effective and efficient ways to trace, identify and verify recycled content.

The solution would ideally translate into a commercial opportunity for the proponent and be a system that is operated independently to the NSW Government.

Benefits of the solution

The NSW Government spent approximately $34 billion on the procurement of goods, services and construction in 2020-21. Hence, the requirement for NSW Government agencies to procure recycled content will create sizable markets for recycled products. A practical recycled material verification technology will be well placed to capitalise on this new demand.

A solution to the verification challenge is also scalable across Australia, with demand for the solution likely generated by the following initiatives:

- The Australian Government's *National Waste Policy Action Plan* contains a target to significantly increase the use of recycled content by governments and industry. This includes adopting sustainable procurement policies, targets and guidance for the use of recycled content and supporting government agencies to improve their recycled content procurement practices.
- The Australian Packaging Covenant Organisation's 2025 National Packaging Targets strongly promote the use of recycled material. They have been widely endorsed by government and industry and include a target for an average 50% recycled content in packaging.

- The Victorian Government's Recycled First policy promotes the use of recycled and reused materials within major transport projects and aims to better understand the supply chain of recycled and reused material.

The verification system would not just be useful to public sector procurement, but could also be used by businesses, organisations and consumers seeking to improve the sustainability of their purchasing and buy Australian-made products. The system would also support local recycling, reprocessing and manufacturing sectors to strengthen the credibility of their sustainability claims for using recycled material and provide a competitive edge for their products.

The solution could also be adapted for use internationally, as many international jurisdictions are dealing with the same challenge as they transitions to a more circular economy.

How to apply

Applications to the NSW 2022 SBIR Program will be made through the smartygrants platform, online applications forms can be found at https://chiefscientist.smartygrants.com.au/SBIR2022Round.

For more information, please visit chiefscientist.nsw.gov.au/sbir