



Open Innovation x Grand Challenge (for Sustainability)

OFFICE OF TECHNOLOGY DEVELOPMENT (OTD)



Overview

- With over 3,700 successful projects and 900 industry partners, RP is a well-established institution in Singapore, supporting local companies in driving innovation through R&D and industry collaboration.
- Since 2019, six Grand Challenges have been launched in the fields of agrifood, health & wellness, supply chain, environmental sustainability and GenAl.
- This round of Grand Challenge follows an open innovation model, inviting companies to submit problem statements based on real-world challenges in the focus area of **Sustainability**.
- RP will review and shortlist the submitted problem statements.
- We will collaborate with the companies behind the shortlisted statements to develop the solutions. Funding will be provided by RP for approved projects. Project contribution may be required from the collaborator.

Open Innovation Model





Key Features

(i) Demand-Driven Innovation

- Problem statements sourced from industry partners, ensuring alignment with industry needs
- Maximise potential for adoption and commercialisation.
- (ii) Comprehensive support from RP
 - Collaborate with RP's domain experts in sustainability, technology and innovation
 - RP leads project proposal and solution development, involving industry partner at critical stages.

(iii) Driving adoption and commercialisation

• Facilitate the transition of lab-based innovations to the market, enabling industry partners to adopt and commercialise the solutions.

Benefits for Industry Partners



- Innovative Sustainability Solutions: Collaborate with RP staff domain experts to develop cutting-edge solutions tailored to your business and innovation goals.
- Accelerate product innovation and mitigate commercialisation risks: Leverage RP's domain capabilities, access to funding opportunities, and research facilities to speed up your go-to-market efforts and to minimise commercialisation risks.
- **Priority access to the project Intellectual Properties (IPs):** Option to acquire a license for the solution and IPs, giving you the first-mover competitive advantage.

Participation Timeline



Items	Timeline
Submit Your Problem Statement Industry partners provide real-world challenges in the area of Sustainability	Mar 2025
Problem Review and Shortlisting RP reviews the submissions and shortlists those with the best alignment for solution development.	Apr-May 2025
Proposal Development with RP's Sustainability project teams RP experts will work closely with the shortlisted partners to develop the proposals (i.e. project scope of work, timeline and deliverables)	Jun 2025 – Aug 2025
Approval for project funding and completion of collaboration agreement RP seeks internal approval for project funding. Upon approval, RP and partners to complete Research collaboration Agreement (RCA), if required.	Sept 2025 – Oct 2025
Solution Development Sustainability solutions are developed and refined through iterative collaboration (i.e. project duration of up to 1 year)	Nov 2025 – Oct 2026 (estimated)

Key Areas



Carbon Reduction & Sustainability Assessment

Energy Storage System and Microgrid, Environmental Product Declaration (EPD), Product Life Cycle Analysis, Product Carbon Footprint

Waste Valorisation

Resource Circularity & Sustainable Packaging

SMART Agriculture

Sustainable Agriculture & Sustainable Aquaculture

Green Materials & Urban Cooling Solutions

Low Embodied Carbon for Building Materials, Technologies to Mitigate Urban Heat Island (UHL) Effect

Examples of Sustainability related Problem Statements

Precision Agriculture

Organic Waste conversion

products like bio-fertilizers or animal feed.

Urban farms struggle with high operational costs making it challenging to achieve profitability. Precision agriculture technologies such as crop monitoring tools or smart irrigation systems could optimize resource use, reduce costs, and enhance crop yields, helping farms to be more sustainable and economically viable.

Managing organic waste/by-products from farming and

contributing to greenhouse gas emissions. Need scalable

solution to upcycle this organic waste into sustainable



Supply Chain

Reduction of Carbon Footprint

Need to reduce carbon footprint of logistics operations but face challenges with inefficient routing and fleet management. Seeking solutions such as route optimization algorithms, real-time monitoring systems, and Al-driven predictive maintenance to enhance efficiency and minimize emissions.

• Sustainable supply chain operations :

Challenges including high resource consumption and waste generation. Technologies like AI for demand forecasting, blockchain for supply chain transparency, and smart logistics systems can enhance resource efficiency and reduce environmental impact.

Sustainable construction materials:

which often ends up in landfills,

Alternatives to traditional cement-based concrete, which can contribute to reduction of CO₂ emissions, by developing sustainable materials like geopolymer concrete or bio-based composites



food processing,

Urban Heat Island (UHI) mitigation solutions:

Urban infrastructures struggle with energy efficiency and durability due to rising temperatures, harsh weather, and pollution. Many existing coatings lack multifunctionality, compatibility with various materials, and long-term resilience, resulting in higher cooling costs and frequent maintenance.

Sustainable Packaging

Seeking solutions to enhance barrier performance using recyclable and bio-sourced materials to align with sustainability goals.





Next Steps

- Submit your problem statement via our submission portal provided in the email.
- Deadline: 28th March 2025
- Contact us: <u>help-OTD@rp.edu.sg</u>



Thank you