

CHALLENGER CARBON ZERO INSTITUTE OF TRINIDAD & TOBAGO



Main point of contact:

- Claudette Pustam (Marketing)
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Industry sector:

- Technological development and innovation.

Annual revenue:

- TT\$1 Million

Open innovation experience:

- Technological development and innovation.

CHALLENGE DESCRIPTION

Sargassum for innovative skincare

Description: This sargassum for Innovative Skincare Challenge is a valuable initiative that aligns with CZITT's strategic objectives of promoting sustainability, innovation, economic development, and environmental stewardship. By addressing this challenge, CZITT can contribute to a more sustainable and prosperous future for Trinidad and Tobago.

OBJECTIVES

Objectives:

- Develop sustainable skincare formulations using locally sourced sargassum, which is rich in bioactive compounds beneficial for skin health.
 - Address the challenge of effective extraction and utilization of these compounds for skincare.
 - Develop an efficient and sustainable method for the extraction of the bioactive compounds of sargassum.
1. Product Formulation-Conduct experiments with different formulations.
 2. Business Development
 3. Sustainability & Environmental Impact
 4. Compliance & regulation
 5. Collaborate with Academia (UWI/UTT)

IMPACT OF CHALLENGE

- **Source of Issue:** Focus on innovation and sustainability, aiming to transform sargassum, an environmental nuisance, into a valuable resource.
- **Key Processes Affected:** Research & Development, product formulation, business development, environmental impact, compliance, and partnerships with academic institutions.
- **Consequence of Inaction:** Potential worsening of sargassum's environmental impact, economic disruption, and missed innovation opportunities

PREVIOUS ATTEMPTS TO ADDRESS CHALLENGE

- Basic research and development with limited equipment, identifying the extraction process as a key hurdle requiring advanced technology.

OBSTACLES TO INNOVATION

Medium-level challenges include limited profitability of innovation and difficulty accessing external financing.

INTELLECTUAL PROPERTY

Employs confidentiality agreements (2 with other companies, 6 with employees) but lacks formal intellectual property management policies. No technology licensed for commercial use.

DESIRED SOLUTION FOR CARBON ZERO INSTITUTE OF TRINIDAD & TOBAGO

TIME FRAME FOR EXECUTION – 8 TO 10 MONTHS



DESIRED SOLUTION

- **Expected Fit:** A successful solution to the sargassum-based skincare challenge can be integrated into the processes described above in several ways mainly:
 1. Innovation & Entrepreneurship.
 2. Sustainable Development.
 3. Research & Development.
 4. Compliance with Policy & Regulation.
- **Expected Outcomes:** Focus on validating the extraction and formulation of Sargassum-derived compounds for skincare applications. They will seek solvers capable of advancing the technology from the lab to a simulated environment.

INNOVATION RECORD

Introduced new goods/services to the national market and implemented new organizational methods within the company.

IMPLEMENTATION EXPECTATIONS: INNOVATION RECORD

Product Development:

CZITT expects a laboratory-validated prototype within 8-10 months, providing proof of concept in extraction and formulation.

Process Integration:

Effectiveness and consumer satisfaction. Market penetration: Tracking growth in sales, market share, and customer.

Key Requirements:

Solution must align with CZITT's strategy, be resource- and cost-effective, scalable, compliant with regulations, and achieve stakeholder support.

Expected Outcomes:

TRL 4, which involves experimental validation of the concept in a lab environment.

EXPECTED TECHNOLOGY READINESS LEVEL – TRL SOLUTION BY THE CHALLENGER

TRL 1

TRL 2

TRL 3

TRL 4

TRL 5

TRL 6

TRL 7

TRL 8

TRL 9

TRL 4: Technology validation in laboratory environment:

At TRL 4, CZITT will focus on validating carbon-neutral and carbon-reduction technology in a controlled laboratory setting. This includes testing materials, systems, or components intended for carbon reduction under laboratory conditions that simulate realistic challenges in the energy and industrial sectors.

TRL 5: technology validation in relevant environment

At TRL 5, the focus shifts to testing the validated laboratory prototype in an environment relevant to its intended application. This means implementing carbon reduction technologies in pilot sites or field settings where environmental factors more closely resemble operational conditions.



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