Request for Proposals: Feasibility Study for a Greenfield Plastics Recycling Facility in Java, Indonesia

Version August 12, 2025

This document serves to provide an overview of the underlying project relevant to the Subnational Climate Fund (SCF), context on data availability and goals of the mandate, as well as an estimated scope of work requested from the consultant. Final details of the mandate should be covered by the subsequent proposal submitted by the consultant.

1. The Subnational Climate Fund

The SCF is a blended finance impact fund formed to pursue attractive risk-adjusted returns for private investors while generating measurable and certified environmental and social impacts. The Fund is focused exclusively on pursuing investments in mid-size climate infrastructure with nature-based solutions in various developing countries across Latin America and the Caribbean, Africa, the Mediterranean, and Asia. The Fund is managed by Pegasus Capital Advisors, a commercial Private Equity impact fund manager and further benefits from a separate, grant-funded Technical Assistance facility managed by The International Union for the Conservation of Nature (IUCN) and implemented by Catalytic, IUCN, and Gold Standard.

2. Context of the Potential Study Agreement

In Indonesia, an estimated 165 million people lack access to formal waste management services, resulting in millions of tons of waste leaking into the environment annually. The national government has set ambitious targets to reduce waste generation by 30% and ensure 70% of waste is properly managed by 2025, alongside a goal of reducing marine debris by 70%. Achieving these objectives will require additional support and investment.

Since 2017, a public-private initiative has been piloting circular waste management systems aimed at preventing waste leakage at the source. One such pilot has expanded into a regional programme targeting full waste service coverage across an entire regency by 2028. The initiative ultimately aims to provide services to 2 million people, prevent 250,000 tonnes of waste (including 25,000 tonnes of plastic) from entering the environment each year, and create over 1,000 stable local jobs.

A complementary initiative was launched in late 2022 to establish an integrated circular economy ecosystem with global commercial reach. Its first phase, implemented between Q3 2022 and Q4 2023, focused on building early-stage partnerships with recycling actors and developing an end-to-end supply chain from material recovery to recyclate production.

The second phase, launched in early 2024, is now focused on deepening integration with existing market actors and solution providers across Indonesia. This includes identifying viable joint business models and financing frameworks to accelerate the co-development of a fit-for-purpose, commercially scalable circular economy system.

Objectives

The objective of this consultancy is to conduct a feasibility assessment for the establishment of a new plastics recycling facility in East Java, Indonesia. This assessment shall focus on the integration and technical feasibility of key process components, including OSBL systems (Outside Battery Limits), to ensure an optimized and economically viable recycling operation. The OSBL scope shall cover utilities (water, air, electricity, chemicals), pipelines, underground works (drainage, cabling), instrumentation and electrical systems, layout planning, and all civil works such as foundations, roads, platforms, fencing and buildings. The study shall cover the full process chain—from the sorting of incoming mixed plastic waste feedstock to its conversion into recycled resin products, also known as recyclate.

The consultancy shall be focusing on:

- **Covering the full process chain** from incoming mixed polyolefin rich plastic waste feedstock to the production of recycled polyolefin resin (recyclate).
- **Developing a Process Flow Diagram (PFD)** that integrates key steps such as sorting, washing, drying, extrusion, and other relevant production components, along with overall material flow rates.
- **Providing a high-level mass balance** to assess material inputs, outputs, and losses across the recycling process.
- **Highlighting techno-economic aspects** by providing a preliminary CAPEX estimate with an expected accuracy range of -30% to +50%, in line with standard early-stage project evaluations. This will support a comprehensive analysis of techno-economic factors such as investment costs, operational efficiency, staffing expenses, and safety parameters.
- **Conducting a CAPEX benchmark** to evaluate the cost of recycling equipment/technologies, assess the availability of local alternatives, and identify opportunities to reduce CAPEX intensity through local sourcing.
- **Developing a high-level business case** to assess the financial feasibility of the recycling plant, including:
    - Identification of key economic and financial drivers (e.g. feedstock cost, product pricing, utility consumption)
    - Estimation of capital and operating expenditures
    - Sensitivity analysis on critical variables (e.g. resin yield, energy cost, product pricing)
    - Evaluation of potential revenue streams and return on investment (ROI)
- **Identifying the most suitable location for the proposed greenfield recycling plant** among three proposed options. The selection process will be guided by several key parameters, including proximity to feedstock sources, access to utilities and infrastructure, logistics and transportation efficiency, cost implications such as land acquisition, construction, and operational expenses, as well as the availability of skilled labor.

All main objectives of this feasibility study will help to determine whether the proposed recycling facility is economically viable and competitive under current and projected market conditions.

3. Scope of Work for a Feasibility Study

To achieve the outlined objectives, the Consultant will undertake the following activities:

Process flow and mass balance analysis

- Develop a PFD illustrating the sorting, washing, drying, extrusion, flow rate integration and/or any other appropriate production component.
- Conduct a high-level mass balance analysis to determine material throughput, losses, and efficiency across the recycling process.

Technology and CAPEX benchmarking

- Compare CAPEX requirements of the recycling technology components, comparing international components with local alternatives.
- Analyse potential cost savings by integrating local technology and suppliers.

Techno-economic evaluation

- Assess the economic feasibility of the recycling facility, the investment costs and operational efficiency & expenditure, including evaluation of return of investment (ROI)
- Evaluate the revenue streams and demonstrate that recycled plastic can be produced at a cost that provides competitive advantage over virgin plastic pricing under base case assumptions.
- Conduct sensitivity analysis on key cost drivers including feedstock availability, energy costs, and market pricing scenarios
- Identify key safety parameters and process controls to ensure operational safety and compliance.

Economic Milestone Assessment

- Establish clear economic criteria and thresholds that determine project viability.
- Provide a structured go/no-go decision framework based on cost competitiveness analysis.
- Define specific financial metrics and benchmarks that must be achieved for project advancement.

Participation in Relevant Investment Committee / Board engagements

Recommendations/ advisory

- Provide strategic guidance on plant setup, including process integration and efficiency improvements.
- Demonstrate the configuration of modules (sorting, washing, drying, extrusion, etc.) and how they integrate into a cohesive process, highlighting interdependencies, control systems, and operational flow.
- Advise on key decision points related to technology selection, investment planning, and regulatory considerations.

- Provide clear recommendations on project advancement based on economic milestone achievement.

Method of Work

The Consultant is requi to setup Project Management Office (PMO) to provide project management support to track project deliverable status, identify and mitigate potential risks as well as manage issues and conflicts if required.

The Consultant shall rely on its experience, expertise and other legal sources of information to provide the Client with necessary analysis.

Throughout the project duration, the Consultant will be required to transfer its knowledge gained from the project to the Client and/or staff members, external syndicated partners that will be nominated to work together with the Consultant.

The Consultant is required to seek agreement with the Client on the following:

- Final selection of team member to be engaged to work on the project (if applicable)
- Substantial deviation in scope, timeline and resource requirement

The Consultant shall ensure that proper records are maintained of work-in-progress analyses, final deliverables, and key discussion points.

The Consultant shall agree with the Project Working Teams and Sponsors on the selection of any ad-hoc needed part-time resources. No part of the contract work shall be sub-contracted by the Consultant to any third parties without an express agreement with Project Sponsors.

The Consultant will be required to perform the following activities and reports:

- **Kick-off meeting** at the start of the project with the key stakeholders involved.
- **Weekly meetings** are scheduled with Project Manager to provide update on the project progress and highlight the work for the following week
- **Workshop(s)** with the key stakeholders on each deliverable will be conducted
- **Detailed and executive reports** on each deliverable will be delivered to the Client

4. Qualification and Experience

In their proposals, applicants should demonstrate that they meet the following requirements:

- Industrial Engineering degree
- Expertise in waste management, recycling technologies, and industrial process engineering.
- Demonstrated experience in designing process flow diagrams and conducting techno-economic assessments. Skilled in the integration of process systems with utility networks, including electrical power, wastewater treatment, potable and process water, and compressed air. Experienced with civil works, building design, and site infrastructure to

ensure full alignment with site-wide requirements, supporting the development of a greenfield, turnkey project.

- Preferably familiarity with the Indonesian regulatory and industrial context related to waste management and environmental compliance, and at minimum, experience within the broader Southeast Asian region.
- Experience working with multidisciplinary teams and contributing to investment-grade feasibility studies or donor-funded technical assistance projects is an advantage.

5. Deliverables

- A detailed Process Flow Diagram (PFD) with an integrated system overview.
- A high-level mass balance report for the proposed facility.
- A techno-economic feasibility report, including CAPEX estimations and safety considerations in a calculable form, e.g. MS Excel etc.
- A benchmarking analysis of CAPEX requirements against local alternatives.
- An economic milestone assessment report with clear go/no-go criteria and decision framework.
- Competitive cost analysis demonstrating recycled plastic pricing versus virgin plastic alternatives.
- Final recommendations on plant setup and strategic implementation.
- Illustrative (not dimensionally accurate) site layout reflecting installed configuration of key production components / modules as identified in the PFD
- A clear recommendation on the optimal location for the greenfield plastics recycling plant, based on a comprehensive evaluation of the three proposed sites against key selection criteria.

Format: Reports should be submitted in **Word format**, following SCF's template for TA studies which Catalytic will provide to the consultant.

6. Indicative Timeline

The contract is expected to be awarded by end of August 2025 or early September at the latest. Work is expected to commence immediately after the consultant is appointed. It is estimated that the resources mobilization and project planning for the Consultant will start within 1 week of contract award.

The work is expected to be completed and delivered by end of 2025. The delivery of services and reporting timeframes are anticipated to be as follows:

Feasibility Study	
Activity / Deliverable	**Indicative timeline**
Kick-off meeting Establish communication channels for initial information exchanges, confirm the project schedule, confirm the	End of August/Early September 2025

reference framework, and review document availability.	
Draft report 1 provided to Catalytic.	Mid November 2025
Final report 1 provided to Catalytic.	December 2025

7. Form of Proposal & Requirements

Please prepare a brief proposal for the performance of this work, including the scope of work, project team and qualifications, and estimated costs.

1) **Scope of Work:** The scope of work should include a description of the specific activities that will be performed in order to accomplish the required tasks identified in Section 3. This should include any proposed site visits/reconnaissance, documents to be reviewed, interviews, etc. If the Consultant feels that additional tasks or components within a required task are suggested or warranted, these should be stated and delineated as "Optional Tasks".
2) **Project team and qualifications:**
   This should include the name of the principal staff members and any sub-contractors, and a brief description of their role within the project team. Qualifications of staff should include relevant technical capabilities, full CVs, specific previous experience similar to this assignment, specific in-country experience and knowledge.
3) **Estimated costs:**
   A total time and expenses cost estimate (not to be exceeded), in US Dollars, must be provided for the required scope of work. A breakdown of the estimated costs by task must also be presented in tabular format and should include Direct Labour Costs (number of hours or days per staff and their associated unit costs). If field visits are necessary, travel costs will be covered by the SCF separately from the consultancy fee under "Indirect Labour Costs". Please note that "Per Diems" are not an eligible expense under our travel expense policy. Please also note that Catalytic is exempt from VAT. Your financial proposal should therefore not include VAT.
4) **Contract & payments:**
   The contract will be based on Catalytic's standard terms of engagement, fixing a total consultancy fee on lump-sum basis in US Dollars. Catalytic will pay the consultant in 3 instalments: One advance payment of 20% upon signature of the contract, one payment of 40% after delivery of the draft report, final payment of 40% after delivery of the final report.
5) **Conflicts of interest:**
   As part of the proposal, the Consultant shall also confirm that they do not have a conflict of interest and that they are in a position to provide an adequate, accurate and objective review.

8. Submission

Please submit your proposal by 26 August, COB Central European Time to **project@catalyticfinance.org**