

# RE Circularity

A futures-led innovation agenda for a just and regenerative energy transition



## What is Circular RE Futures?

As renewable energy deployment accelerates in the Philippines, a new and largely unaddressed challenge is emerging: **the growing volume of waste from solar PV, wind turbines, batteries, and grid equipment.** Limited data on material flows, weak or absent standards for reuse and certification, and underdeveloped after-life industries risk turning the clean energy transition into a future environmental, social, and fiscal liability.

Circular RE Futures is a **futures-led learning and innovation workstream under the Responsible Energy Initiative Philippines.** It brings stakeholders together to **anticipate renewable energy waste before it becomes systemic**, and to co-design transition pathways toward a circular, just, and regenerative renewable energy system. Rather than reacting to end-of-life problems, the workstream focuses on **shaping decisions today**—in policy, investment, technology, and design—that determine how renewable energy systems will perform across their full lifecycle.

## Circular RE Futures' functions and process

Circular RE Futures combines technical evidence, systems thinking, and futures practice to support early, coordinated action across the RE value chain.

### Situational awareness and evidence building

The workstream develops a shared understanding of future RE waste flows and the implications of inaction through technical research, including materials flow analysis and assessments of standards and certification gaps for reuse, recycling, and second-life applications.

### Systems diagnosis and sense-making

Stakeholders collectively examine why the current system behaves as it does—surfacing structural barriers, feedback loops, and mental models that prevent circularity. This process identifies leverage points where targeted interventions can unlock change.

### Futures and pathway design

Through scenarios, backcasting, and collaborative design, Circular RE Futures enables decision-makers to “feel the future” and explore the consequences of inaction, partial action, and transformation. These insights are used to co-create adaptive policy and innovation pathways aligned with national energy goals.

### Innovation agenda and implementation readiness

The process culminates in the Circular RE Futures Innovation Agenda—a futures-informed roadmap that guides policy reform, investment priorities, and pilot initiatives such as innovation challenges, second-life deployments, and circular procurement models.

## RE CIRCULARITY VISION

A Philippine renewable energy system that reduces waste, extends technology lifespans, strengthens resource security, and delivers a just transition—ensuring that the benefits of clean energy are shared equitably, while environmental and social risks are minimized long-term.

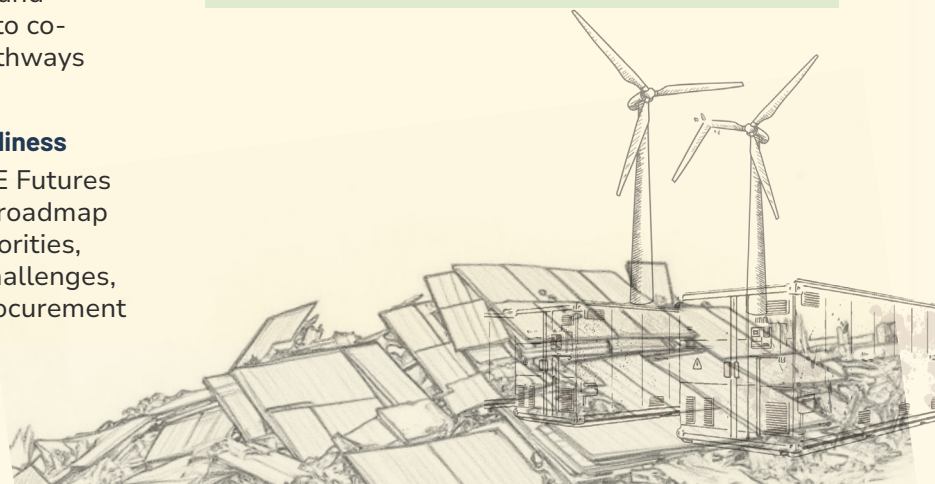
## KEY OUTCOMES

Improved situational awareness of future renewable energy and battery waste flows

Shared systems understanding of the barriers and leverage points for circularity

Futures-informed policy and innovation pathways integrated into government and industry strategies




An actionable Circular RE Futures Innovation Agenda guiding pilots and investment toward a regenerative energy transition



# Scanning early. Steering wisely. Preventing tomorrow's renewable energy waste crisis.




## Detect Emerging System Risks

As renewable energy scales rapidly, new risks are surfacing

-  Solar PV waste surge
-  Wind blade end-of-life challenges
-  Weak reuse and certification standards
-  Battery after-life and recycling gaps
-  Fragmented governance and unclear accountability






## Make Sense of the System

We combine evidence, systems thinking, and futures practice to understand what is happening — and what could happen next

-  **Technical Evidence**
  - Materials Flow Analysis
  - Standards & Certification Gap Study
-  **Systems Insight**
  - Structural barriers
  - Feedback loops
  - Leverage points
-  **Futures Exploration**
  - Scenario building
  - Backcasting from 2050
  - Pathway design

## Design the Course Correction

The Circular RE Futures Innovation Agenda is a futures-informed roadmap that

-  Aligns policy reform (2026–2050)
-  Identifies high-leverage actions (e.g., EPR, second-life markets)
-  Recommends standards reform
-  Launches innovation pilots
-  Embeds circularity into energy planning

 **From Reactive Deployment  
To Anticipatory, Circular Energy Systems**