CHALLENGE STATEMENT | *Powering Food Systems*

Context

In Nigeria and across Africa, food and energy systems are deeply interconnected, playing a pivotal role for sustainable development. Agriculture is a major energy consumer, with food production, processing, and distribution all relying heavily on reliable energy sources. Conversely, agriculture holds untapped potential for producing sustainable biofuels among other bioproducts. The challenge is to design solutions that optimize both food and renewable energy systems, ensuring food security while minimizing environmental impact.

Challenge Overview

Participants will explore how renewable energy can transform food systems across production, processing, distribution, and consumption. Solutions might address energy-efficient farming methods, renewable-powered food processing and preservation, sustainable transportation of food products, reducing food waste through smart energy systems or utilizing agricultural waste to create useful bioproducts.

At the core of the challenge are three critical realities to address: lack of energy access, reliance on non-renewable energy sources, and inefficient energy usage. Proposed solutions should either enable access to renewable energy, facilitate the transition from non-renewable to sustainable energy systems, or improve energy efficiency across the food supply chain.

The challenge invites innovative, scalable ideas that leverage renewable energy to create a more sustainable, resilient, and equitable food system for Africa's future.

Key Challenge Areas

1. Energy for sustainable agriculture

Design solutions that integrate renewable energy into agricultural practices, such as solar-powered irrigation, smart farming technologies, or energy-efficient machinery, to improve yields and reduce environmental impact.

2. Renewable-powered food processing

Develop renewable energy solutions for food processing, including drying, milling, refrigeration, and packaging, ensuring energy-efficient preservation and reduced post-harvest losses.

3. Food distribution & cold chain innovations

Create solutions for renewable energy-powered transportation or refrigeration that ensure food products, especially perishable goods, reach markets while maintaining quality and minimizing spoilage. Distribution systems should utilize minimal energy to maximize food availability and accessibility, especially in underserved areas.

4. Bioproducts from agricultural waste

Propose innovative solutions that convert agricultural waste into bioproducts such as biofuels, bioplastic, biomaterials, etc. While reducing waste, these solutions must contribute to demonstrable increase in affordable energy access for underserved communities, reduce reliance on non-renewables and support the transition to renewable sources, and/or improve energy efficiency in agricultural systems.

What you'll be expected to present:

Over the course of three weeks, you will work with your team (if applicable) and consult your mentor in creating the following, and preparing to present it to judges:

- **Pitch deck**: a presentation that effectively and persuasively showcases your idea and anticipated startup, with particular focus on (in no particular order):
  - Problem: a well-researched and clearly defined problem
  - Solution: how do you propose to address the problem?
  - Value proposition: what unique value or benefits will your solution offer?
  - Market opportunity: how big is the market you'll be operating in and is there growth potential?
  - Business model: how do you expect to earn from this and will it be viable?
  - Competitors: who's offering similar solutions and how will you stand out?
  - Team: what training or skills do you have to make this a success?
- **Demo**: a prototype or model (either computer-aided or physical) that demonstrates how your solution will work

What we will be looking for:

- Emerging technology (20%): Innovative use of cutting-edge technologies such as IoT, AI, or blockchain to enhance food and energy systems
- Economic potential (20%): Projects that can stimulate job creation, entrepreneurship, new market opportunities, or access to finance to target populations (eg smallholder farmers)
- Sustainability (15%): Ideas that drive environmental protection, reduce emissions, and promote circular or regenerative approaches
- Scalability (15%): Solutions that can be implemented across regions or countries, ensuring long-term impact
- Creativity (10%): Solutions that challenge existing food-energy practices though locally nuanced (hence creatively borrow from or build on indigenous knowledge)
- Feasibility & accessibility (10%): Solutions that are technically and economically viable and relevant within the chosen market. They should also be cost-effective, user-friendly, and easy to maintain solutions that can be readily adopted and operated by your everyday Kenyan
- Collaboration (10%): Teams or individuals who demonstrate an understanding of interdisciplinary approaches at the food-energy intersection.

What you will get:

- **Monetary prize**: this is equity-free and debt-free pre-seed capital to start you off on your entrepreneurial journey; the prizes will be awarded.
- **Incubation sponsorship**: green entrepreneurship training, mentorship, networking opportunities, and resources to move your project from concept to startup launch.
- **Exposure**: opportunity to showcase your skills and innovativeness to industry practitioners who can provide career growth opportunities (whether employment or entrepreneurial in nature).

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