Circular Economy business models enabling low carbon lifestyles

merging leadership from Asia-Pacific's entrepreneurs

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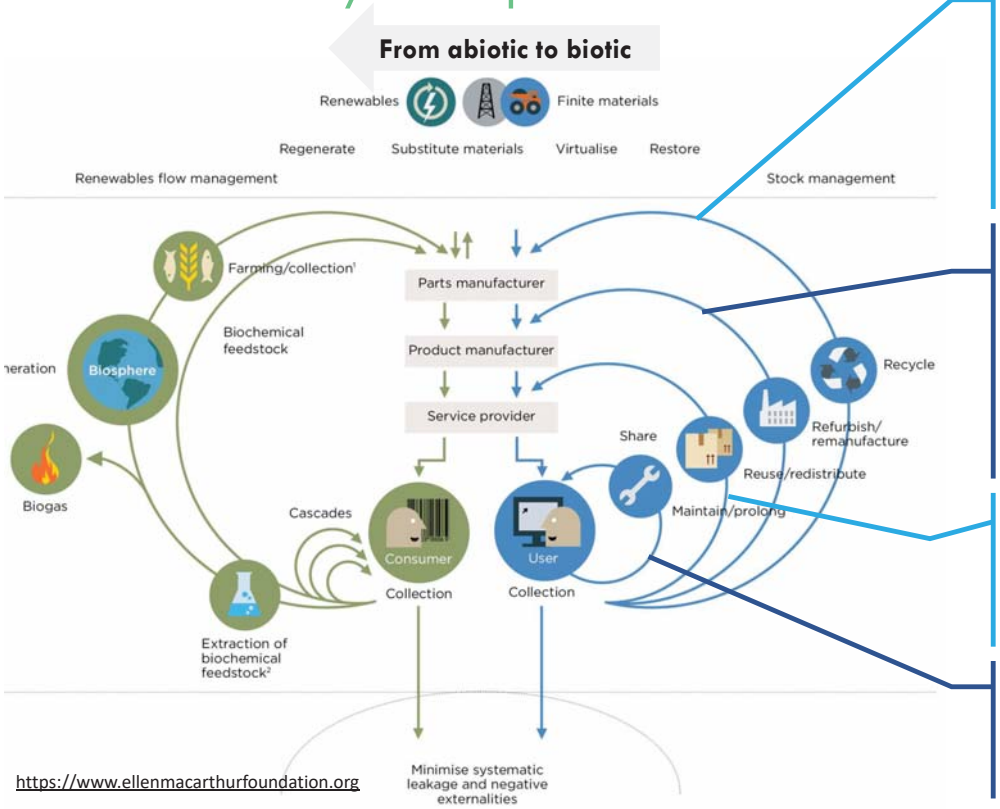
Circular Economy Concepts



https://www.ellenmacarthurfoundation.org

4th loop:
Recycling – Recovering materials to be used for same purpose
Downcycling – convert to a lesser quality/function
Upcycling – higher quality or function

3rd loop:
Refurbish – Repair or replace components to restore product to good working condition.
Remanufacture – Recover components whole and reuse them in new products.

2nd loop:
Share, rent, redistribute, secondhand, donate

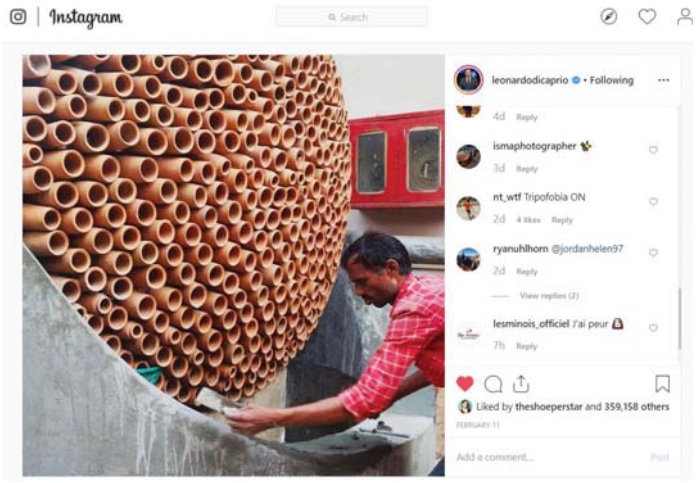
1st loop:
Maintain/Repair, multifunction, extend **lifespan**


UN environment
環境省
Ministry of the Environment
Government of Japan
The Asia Pacific
Low Carbon Lifestyles Challenge
switchasia
POLICY ADVOCACY
One planet
handle with care
IGES
Institute for Global Environmental Strategies


UN environment

Overview

- Reach: 200 applications, 12 winners from 9 countries
- Criteria: Contribution to low carbon mobility, waste prevention, energy efficiency
- Startup Clinic: sustainability (environment, lifestyles, gender, inclusive business, communications and marketing, carbon footprint, business skills
- Communications: partner with filmmakers, films had over 1 million views, retweets by Leonardo d Caprio
- Recommendations: Policy recommendations, carbon footprint data, business data



Name: Monish, Ant Studio

Country: India

Title: Natural cooling

Carbon footprint reduction: 66% reduction in CO2 compared to air conditioning.

Circular economy approach: Switch to biomaterials, design out harmful chemicals

Business model: Sale and maintenance of cooling devices, integration into building design, decent jobs for artisans.

Policy messages: Natural cooling should be part of building guidelines, as aligned with Paris agreement and Kigali Amendment to Montreal Protocol.

Name: Shutong (MotionECO)

Country: China

Title: Turning Waste Cooking Oil into Sustainable fuel

Carbon footprint reduction: 86% less compared to regular diesel.

Circular economy approach: waste to resources, switch to biobased.

Business model: Purchase waste cooking oil, compete with illegal reuse for food, convert and sell as green fuel for buses, boats, generators, trucks.

Policy messages: Biofuel is the missing link in the Chinese energy market which focusses on EV and renewable energy for electricity. Suggest to make it mandatory to blend biofuel in fuel (Nth America and EU). IEA also predict that biofuel will stand for about 30% of the future energy mix for the transportation sector by 2050, we will need sufficient biofuel supporting policy in the Asia-Pacific region too.

Name: Sasiranga (Green Tuktuk)

Country: Sri Lanka

Title: Electrifying tuk tuks

Carbon footprint reduction: 62% less compared to regular tuk tuks.

Circular Economy: switch to biobased energy, refurbish

Business model: Sell conversion of IC engine to electric powertrain. Low cost loan for low income drives through government program.

Policy messages: Tax concessions on the imports are needed to keep the conversion cost at an affordable rate for the tuk tuk drivers. Low interest loans for low income customers.

Name: Achmad (Green Composite Helmets)

Country: Indonesia

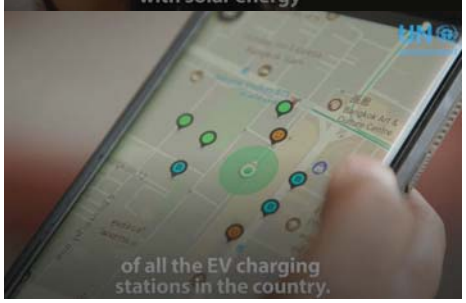
Title: Green Composite Helmets using recycled and bioplastic

Carbon footprint reduction: 40% lower than normal helmets.

Circular Economy: waste to resources, biobased, compostable

Business model: Source waste plastic from local area/plastic sector. Produced more than 1,500 helmets in 2018. Partner with Government to produce more than 2,000 helmets to be integrated with the Indonesia President election event. Expand into new business units (edible plastic from chitosan, waste for water filtration)

Policy messages: aligned with Indonesian policies on climate change, reduction of plastic waste, utilization of local materials, and establishment of green business. Policy support in harmonization of standards for sustainable plastics, as well as support for certification would further assist our company.



Name: Lathika

Country: Thailand

Title: Power electric vehicles with solar power using blockchain technology

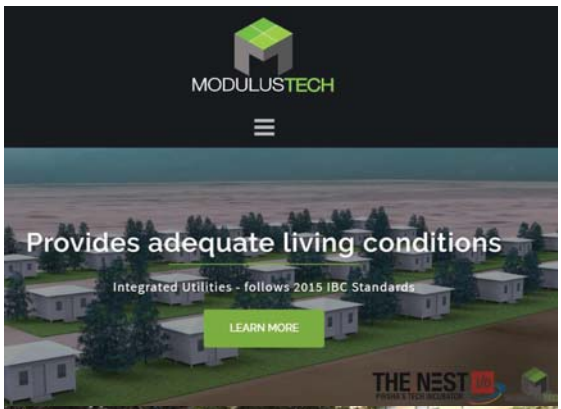
Carbon footprint reduction: 95% less than internal combustion cars; 84% reduction compared to electric cars powered by grid.

Circular Economy: switch to biobased, share electricity

Business model: Incentivize property owners to install PV, connect via minigrid to EV charging stations, charge on transactions.

Policy messages: By enabling energy trading between rooftop solar panels and nearby EV charging stations, this project also promotes clean energy by providing an economic incentive for households to invest in rooftop solar. Through the carbon footprint reduction measure we also aim to stress the importance of prioritizing charging stations powered by renewables rather than the grid when governments are setting national EV goals and policy, so as to avoid burning more fossil fuels to meet energy demands as EVs rise. Thai utilities are forward looking in terms of integrating digital technology for the grid and microgrids.

		Fuel Economy	Carbon intensity of energy	Carbon footprint	
Internal combustion engine?	30km	4.4 L per 100 km	3.4 kg CO2 per liter	4.4 kg CO2	100%
eVehicle powered by the grid? Thailand	30km	16.6 kWh per 100 km	0.47 kg CO2 per kWh	2.3 kg	53%
eVehicle powered by the grid? China	30km	16.6 kWh per 100 km	1.04 kg CO2 per kWh	5.2 kg	117%
eVehicle powered by solar power?	30km	16.6 kWh per 100 km	0.08 kg CO2 per kWh	0.4 kg	9%



Name: Saquib (ModulusTech)

Country: Pakistan

Title: Energy efficient flat pack houses for low income groups

Carbon footprint reduction: 50,864 kg CO2 saved per house, total of 1,271,675 kg saved so far.

Circular Economy: recycled materials, reusable flatpack design

Business model: We were able to raise investment, carry out public demos, set up a new factory, hire a CFO, expand production capacity, conduct an external audit of the company and carry out sales of 25 new units.

Policy messages: Housing energy efficiency is low hanging fruit for climate change mitigation and affordable housing. Possible connection to public procurement (5 million housing agenda).

THANK YOU

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