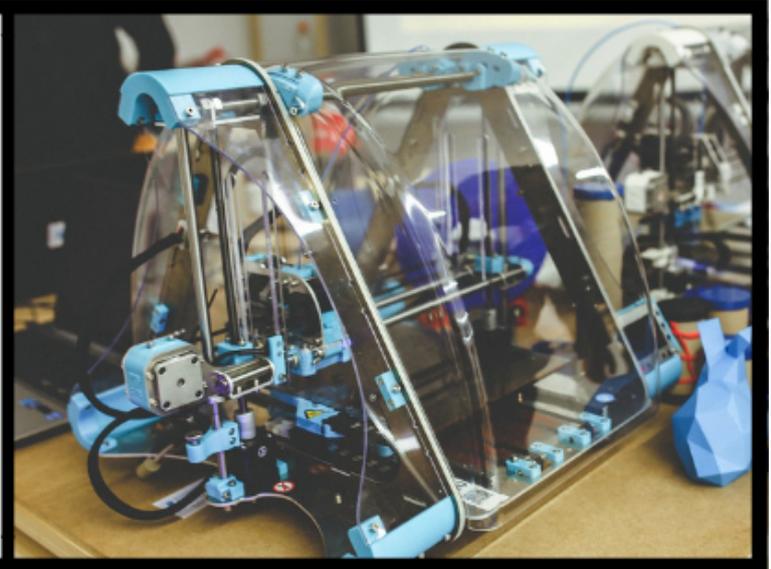
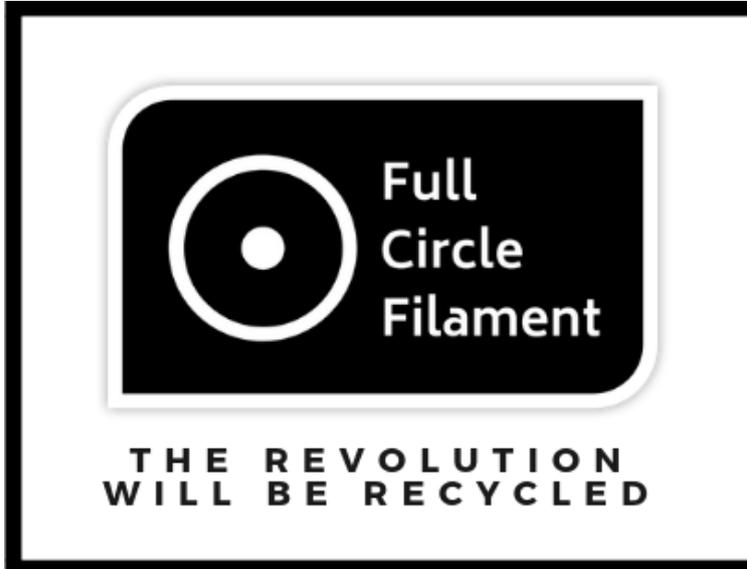


CONCEPT NOTE

Full Circle Filament



THE CHALLENGE

Realising the potential of the waste PET sector in Thailand.

The way we recycle is a dead end. Every year, more than eight million metric tonnes of plastic goes into the ocean. According to McKinsey & The Ocean Conservancy (2015), over 50 per cent of land-based plastic waste leakage comes from just 5 countries: China, Indonesia, The Philippines, Vietnam and Thailand.

To make things worse, starting January 1st, 2018, China stopped importing plastic waste in an effort to recycle more of their own. Until then, China was the world's largest plastic recycler and a major importer of recycled PET from Thailand.

Plastic waste is relatively new to Thailand and there is a limited culture of separation at source. Dirty plastic waste from dumps, streets, rivers and mixed garbage cans provide waste pickers with just 3 USD a day on average under poor working conditions. So far, existing solutions only deal with a small portion of the plastic waste. Now the problem is escalating.

THE SOLUTION

Creating an inclusive & circular plastic recycling economy in Thailand.

We need to change from a linear to a circular plastic economy, that is also inclusive. The 3D printing market is taking off creating an ever growing demand for plastic. However, most 3D printing filament is made of virgin plastic resins, thus increasing the use of finite resources. At the same time, there is a growing demand for high quality recycled filament from conscious consumers. That's where we come in.

Full Circle Filament is a start-up that seeks to close the loop in 3D printing. We envision a decentralised circular economy where our hubs recycle plastic waste into 3D filament on the spot and print, collect and recycle end products for the local economy.

OUR APPROACH

Leveraging the power of social business to kick-start a circular model.

We are starting Full Circle Filament as a social enterprise that will sell inclusively sourced ethical filament. That means we will recycle existing plastic (PET from bottles and post-industrial PC) into high grade filament, and we will work together with waste picking communities to raise their income and improve working conditions.

We will sell our filament through local and international channels. In the future, we aim to expand into 3D printing as a service reusing our filament in a closed circle of use-recycle-reuse. In this phase we wish to retain our inclusive focus and develop a range of services to create benefits for people throughout the entire value chain.

PARTNERS

Collaborating throughout the value chain.

Thammasat's School of Global Studies hosts the FCF hub, includes inclusive waste sourcing and processing as well as the filament production.



Covestro advises on and blends the PET and PC to create the pellets that will become filament.



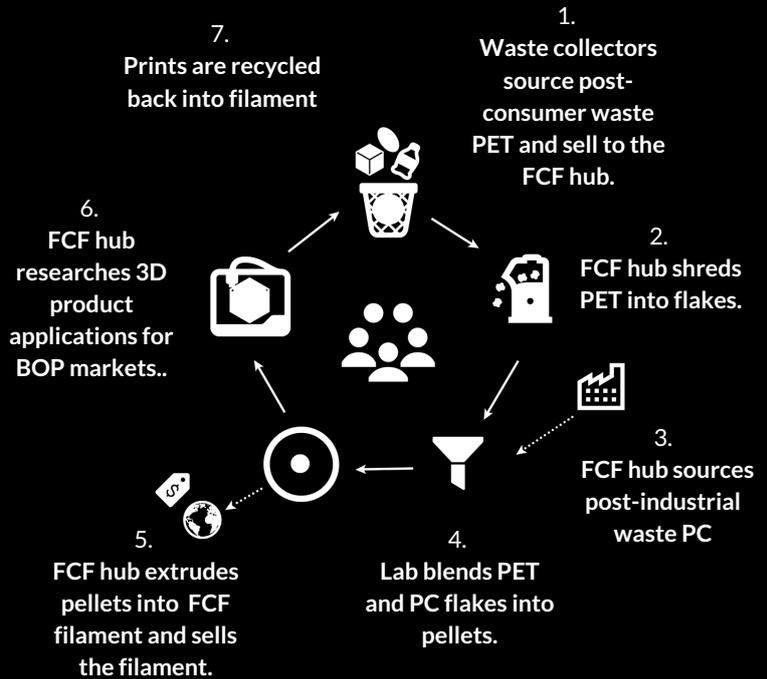
Filabot provides tech support on filament extrusion done with their machines.



Endeva supports with business model development, project management, research and relationship building.



HOW IT WORKS



NEXT STEPS

Establishing proof of concept.

So far we have made progress on all aspects of the model. In the next phase will phase will focus on getting the ethical filament to market. We will..

1

- Finalize equipment research.
- Gain seed funding.
- Setup test lab.
- Begin product development testing.

2

- Complete initial end-customer testing.
- Test production using ethical sources.
- Test filament with various end users.
- Initiate marketing efforts.

3

- Develop the supply chain/logistics.
- Begin selling filament at retail.

4

- Seek feedback from customers.
- Refine operations and marketing.



THE REVOLUTION
WILL BE RECYCLED