Pyro-degrade Energy

Introduction

- In December 2018, Great Britain's Royal Statistical Society estimated that only 9% of all plastic ever made has likely been recycled
- According to the manufacturers association of Kenya, 600,000 metric tons of plastic is produced each year.
- 400,000 metric tons of the plastic is used in Kenya and only 9% of this ends up being recycled. The rest ends up in dumpsites and our water bodies.

What are we doing about it?

- At Pyro-degrade Energy we buy plastic waste from dumpsites and convert it into usable energy in the form of pyrolysis oil.

- Pyrolysis oil is an affordable diesel substitute that works well in powering up stationery Engines; i.e. generators, industrial boilers and furnaces etc.

Who do we do it for?

- In Kenya there is 125,000 hectares currently under irrigation. Small holder farmers represent 43%, public at 18% while the private large scale farms represent 39% of these.
- We have currently identified over 100 farmers already practicing irrigation, who we intend on engaging in our pilot.
- Your average small scale farmer (1-10 Acres of land) practicing irrigation spends from $200 per month to as high as $1000 on fuel alone.
- The costs are largely influenced by the terrain, distance from water source and kind of generator used.
- This results in high production costs which discourages farmers from venturing into this irrigation, however the current unpredictable weather patterns are leaving them with not much of a choice.

Who is doing what we do

- Alternative Energy Systems Ltd

They provides a similar product but the main difference is our target market and the process of production.

- ✓ Their main target market is industrial use, while our main target market is the agricultural sector.
- ✓ Our process also differs on the model we use for production; We build our machinery from the ground up and is designed it to be self sufficient, very compact and production rate can be modified when need be thus increasing efficiency and reducing wastage.
- ✓ We intend on not just selling the fuel, but also plant construction for private/domestic prospective clients.

Substitute Products

- Solar Energy Pumps

This is gaining traction in the Kenyan market, however our advantage here is the high initial costs associated with installation of solar equipment. We are also in a very strong position since our target farmers already have generators and Pyro-diesel works just like normal diesel no modification is required.

The large scale farms who can afford to invest in solar will also be inclined to invest in our technology since it will give them a solution for their high plastic waste outputs which they are normally forced to pay other institutions to dispose.

- Ordinary Diesel

Our strength here is our price point. The costs of production in our process are very low thus enabling us to have a projected price that will be at a minimum of 30% lower than ordinary diesel and will be constant.

Pyro-diesel is also cleaner than ordinary diesel since it has very low Sulphur levels.

What do we need?

$ 300,000

The funds will go towards;

1. **Plant construction & Equipment – 60%**
2. **Logistics – 38%**
3. **Licensing – 2%**

Our Revenue Streams

1. Sale of Fuel

The current market price of a Kilogram of plastic waste is 0.08 USD.

From a kilogram of plastic we extract an approximate of 700 milliliters of fuel, which then intend to sell at 0.7 USD per litter which is 30% lower than the current market price for diesel in Kenya.

2.Construction of processing plant

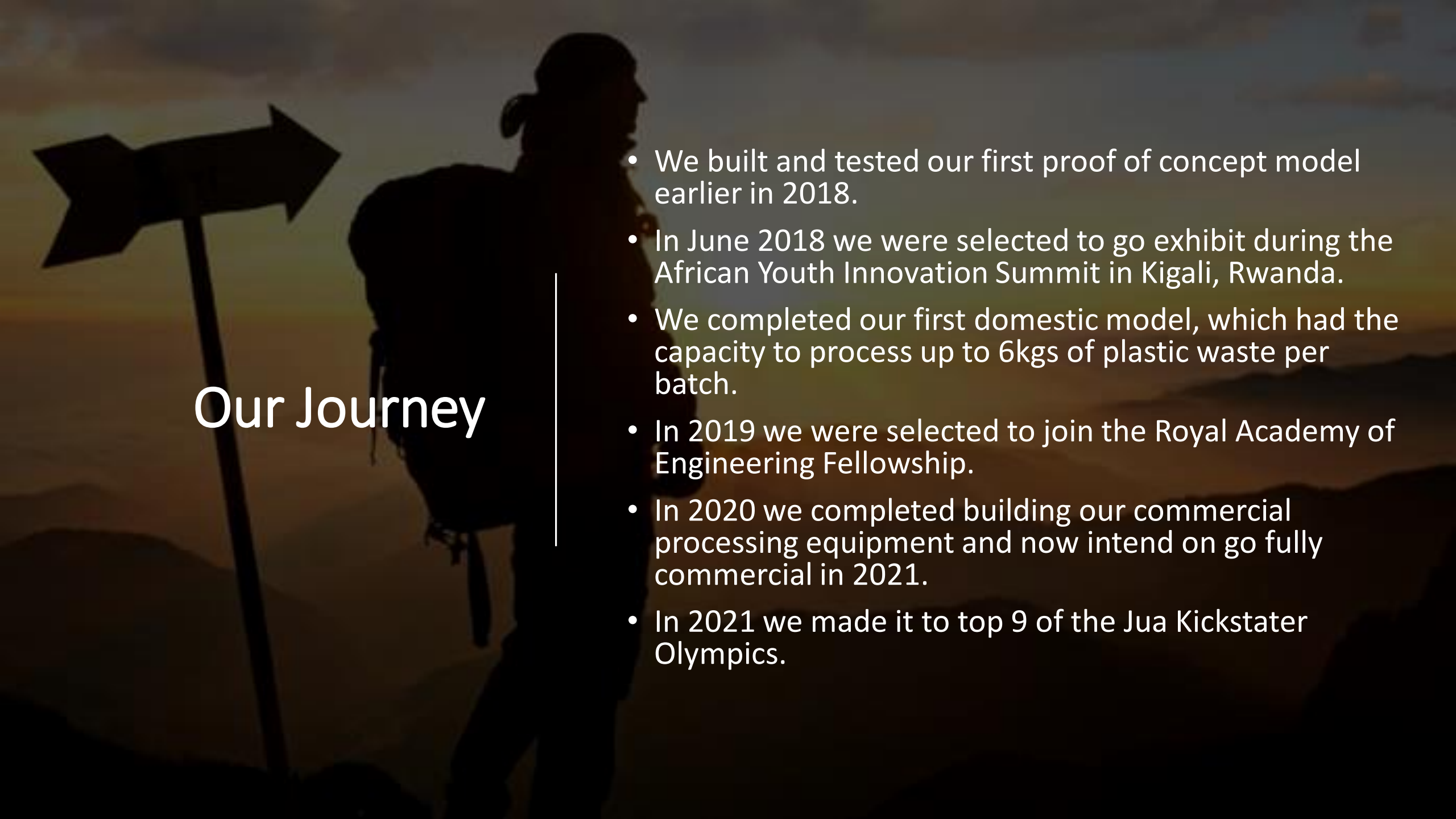
This will also be one of our core business in the foreseeable future once we have made some traction and gained public trust.

In building a simple domestic plant for a customer it would cost us an average of 30,000 to 50,000 USD depending the consumption needs of the customer.

3. Sale of Shredded Plastics

In Kenya this is a market that is growing at a very fast rate with the average price of a kilogram of shredded plastic fetching as high as 0.6 USD.

We intend on starting our own division that will be working on buying waste plastic cleaning, shredding it and baling it for our own consumption and for sale to other recyclers of plastics.



Our Journey

- We built and tested our first proof of concept model earlier in 2018.
- In June 2018 we were selected to go exhibit during the African Youth Innovation Summit in Kigali, Rwanda.
- We completed our first domestic model, which had the capacity to process up to 6kgs of plastic waste per batch.
- In 2019 we were selected to join the Royal Academy of Engineering Fellowship.
- In 2020 we completed building our commercial processing equipment and now intend on go fully commercial in 2021.
- In 2021 we made it to top 9 of the Jua Kickstater Olympics.

The Founders

Bryan Dawson Wachira Mwangi, CEO

He has over five years of experience working in the agricultural sector, and hence he understands the needs of the farmers and the dynamics in the sector. His formal training includes Bachelors in Business Administration and Management from Daystar University in Nairobi (2012), Tax Compliance for Startups course by Kenya Revenue Authority (2015), Design Thinking course (2015), and Intellectual Property Rights Training by Kenya Industrial Property Institute (2016). In 2016 he co-founded Sirius System Kenya, a startup incubated at Kenyatta University in Nairobi and backed by VC4A, that develops consumer products - automatic headlight dimming and lighting control systems

Aaron Milla Kangethe, CTO

He is a Mechanical and Industrial design Engineer from Kenyatta University (2019). In 2016 while in Campus he founded his first company Bamec Mechanics, where he developed an automated variable valve geometry system for internal combustion engines that increased efficiency and reduced emission. His strongest points are in industrial design formulation and his excellent mechanical acumen. He has also done a lot of consultancy services on several mechanical engineering and design projects.