



Venture - Hyginech Ltd

Institution - University of York

Social science

discipline - Sociology, Education, Built Environment

Sector - Energy, Environment

Route-to-market - Start-Up

**Revolutionising
sanitisation whilst
tackling energy poverty**



hyginech

Abdul Azam Rajper

Role - Co-Founder, CEO

Degree - 3rd Year Medical Student,
University of York, expected
graduation date 2023

Contact - founders@hygienech.com



Mahmoud Shehab

Role - Co-Founder, COO

Degree - 3rd Year Medical Student,
University of York, expected
graduation date 2023,
previous degree BSc Medical
Physiology

Contact - founders@hygienech.com



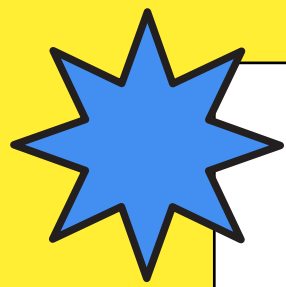


A start-up seeking to tackle sanitation and energy poverty in developing countries is improving health and driving social change on a global scale

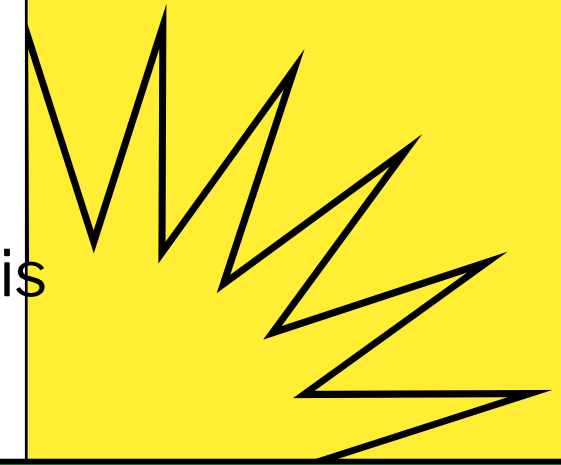


473 million people die a year of diarrhoea related deaths. Globally, 2 billion people do not have basic sanitation facilities. Of these, 673 million still defecate in the open. Inadequate sanitation is estimated to cause 432,000 deaths (World Health Organisation, 2020). Hyginech is a York based start-up that works within the Water, Sanitation and Hygiene (WASH) industry. It started in March 2020 after its founders read startling statistics around the rate of open defecation and the harmful effects this has on individuals in low-middle income countries.





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The founders are 3rd year University of York medical students Abdul Azam Rajper and Mahmoud Shehab, who are seeking to develop the EnergyLoo, a toilet that generates electricity from faeces and urine. Driven by the company's social mission the pair want to improve sanitation issues and reduce the alarming statistics on related deaths and disease in developing countries. The idea for the toilet is innovative in waste management engineering, with the concept of using waste to make a useful bi-product and requires the development of a new system by mechanical, electrical and WASH engineers.

The idea for EnergyLoo, their innovative toilet product, was triggered by the COVID-19 outbreak. Realising the vicious circle of poor sanitation and poverty, leading to poor health, the social need for the product became alarmingly clear. With backgrounds in medicine, they are driven by a need to bring about social change and to help people. They seek to revolutionise sanitation and contribute towards the United Nations Sustainable Development Goal of good health and wellbeing, clean water and sanitation and renewable energy. Recently joining the Aspect Student Accelerator Programme, they are integrating social science concepts into their research, such as behavioural science, with the product driven by user need.

THE I M P A C T

In the very early stages of the start-up journey, a key impact has been the founders' work in increasing the knowledge base around sanitation – so many people don't realise the vicious circle of poor health, poor sanitation and poverty especially in the western world.



Hyginech are in the process of raising funds to start prototyping the EnergyLoo and hiring key engineering individuals to help with full time product development. Simultaneously, they are working with the University of York to start an engineering internship, where engineering students will be helping with the early-stage product development and proof of concept experiments.



The founders are working with the UNICEF water sanitation hygiene team on the field testing of the EnergyLoo and the development of the product prototype. UNICEF rarely meets with companies before the prototype stage but acknowledge the innovation and impact Hyginech is driving forward; they are very supportive and keen to be involved with the development process.

The start-up journey

The University of York has been very helpful during their start-up journey so far. Their support ranges from access to funding via their Venture One fund, guidance to new initiatives such as the Aspect Accelerator and engineering endorsement from their engineering Professors and Research associates.

Aspect have added a different dimension to the start-up, allowing them to develop pure business skills which has enabled progress at a very fast pace. Following ever7 meeting with their mentors on the programme, the business timeline changes drastically, but in a positive way. They credit the condensed programme with helping to learn things quickly and propel the business in a different dimension.

“ There is a large interest at UNICEF and in the development and humanitarian sectors regarding Faecal Sludge Management innovations and waste to value... EnergyLoo fits right there, and we are very excited for the impact it will have on sanitation worldwide. ”

Franklin Golay, Technical Officer (WASH), WSEC Supply Division, UNICEF

Key Advice

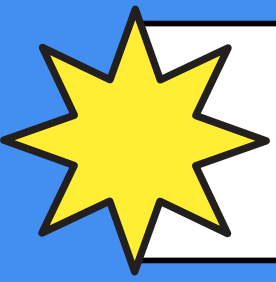
- ◆ Get stuck in - you can gain so much experience from starting your own business.
- ◆ Don't be afraid to fail – we've had a number of failed ideas for business which have only made us better equipped for the next idea.
- ◆ Have paid people on your team - you can't drive high tech with just volunteers.
- ◆ Fall in love with the problem and not the solution. Go out there and speak to your users – so you learn from them.
- ◆ Develop a product/service that fulfils a need in the market– clarify the need before you go any further.
- ◆ Don't be afraid to contact high network stakeholders or organisations, like the saying goes, fortune favours the bold. Practice cold emailing/messaging as this is how you will often build your contacts until people start introducing you. Make a big list of people you want to contact, send them a message and do not give up if they do not respond immediately or after your first attempt. After that be professional and punctual with any deadlines, large organisations will always have a lot on, so to stay at their forefront of their minds always deliver on time and to an outstanding value.



The biggest mistake people in academia do is try to process the risk/time, try to understand everything before they jump into it – don't overthink it or you'll never go into business. Entrepreneurship is about continually evolving, taking risks and changing your thought process.



Mahmoud Shehab, Co-Founder, Hyginech



What's next for Hyginech?

Due to the innovative engineering required and number of prototypes that may be required for the final version, the founders will need to secure additional funding to support the prototype development and are currently exploring funding streams including competitions. They will also employ more engineers via the internship programme at the University of York. Once the prototype is finalised, they will look for investment opportunities, to take the product to the manufacturing stage.

The aim is to have a functional prototype toilet which can produce electricity within the next 3 months. Working with UNICEF, they will be continually testing the toilet and developing it until it is the perfect prototype.

With regards to longer term aims, as the company grows, they would like the awareness of the social problem to organically grow through working with schools and engaging with younger generations and increase their knowledge of the issue. Measuring impact is a critical component of determining success and the founders will be conducting a series of research studies within areas where the EnergyLoo is being introduced and presenting findings in both journal papers and at conferences. One example includes measuring the cleanliness of water before and after the introduction of the EnergyLoo. Another includes the prevalence of open defecation before and after the introduction of the EnergyLoo. They will be looking to measure key metrics such as energy produced and used, which will allow them to assess the usage and energy efficiency of the toilet.