

Getting from A to B... Sustainably

HOW MASH IS FUELLING THE
GLOBE WITH WASTE



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Rough seas ahead?

The shipping industry is projected to emit 17% of global CO2 emissions by 2050.

Emissions reductions have been effectuated on sulphur and NOx, but the "big one" has yet to come...

Carbon emissions regulations are on the horizon.



The solution Hiding in plain sight: Use Waste!

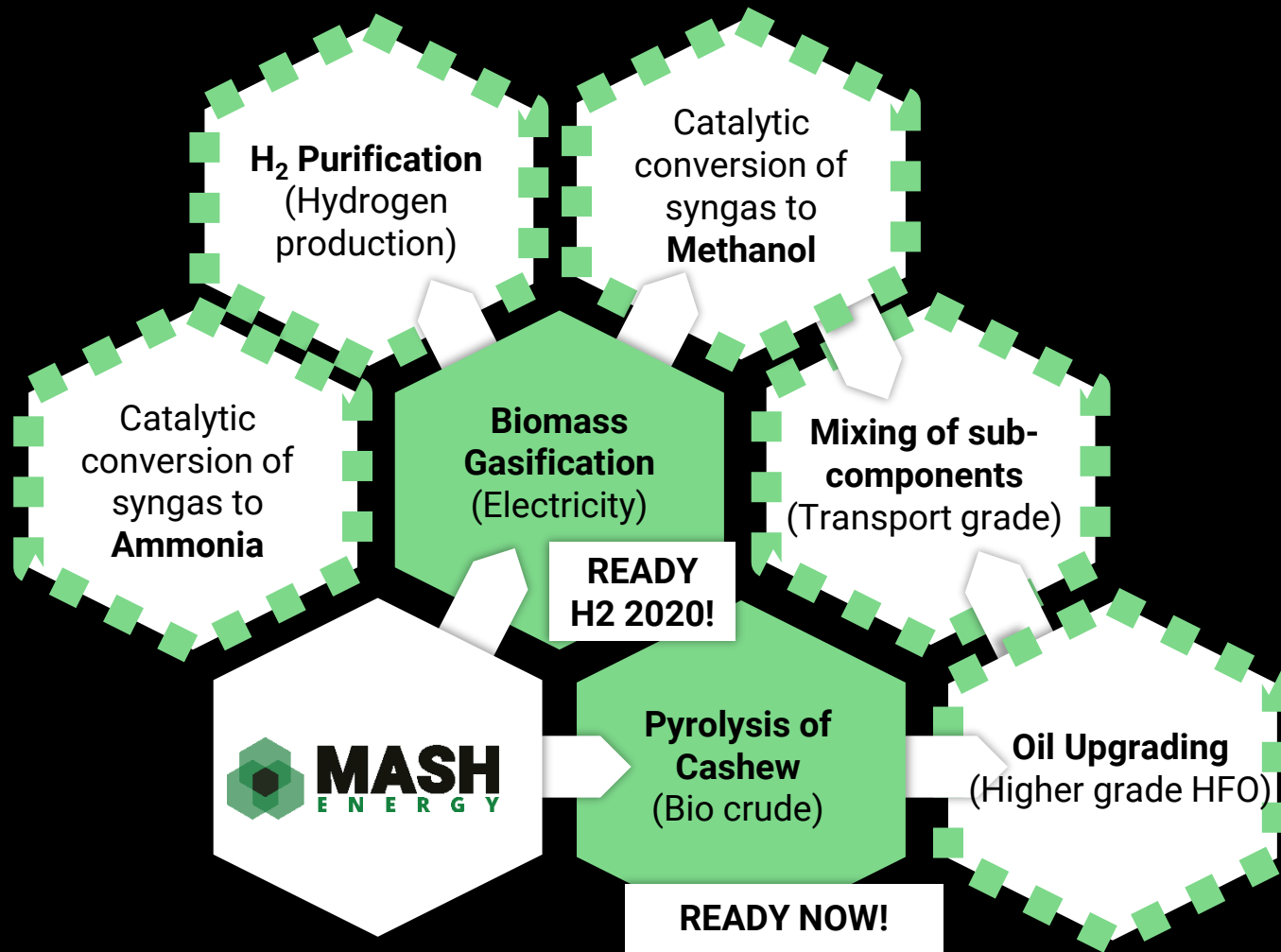


**Convert waste biomass
into energy products
using thermochemistry!**

The viking TwoStage gasifier, developed at DTU CHEC has an equivalent of 14 years running time logged.

**This technology can be used
to cover most of the world's
primary energy demand!**

Renewable Electricity and Transportation Fuel



We have two commercial products ready in the primary energy supply market:

- CO₂ negative ISO8217 compliant bio fuel for e.g. shipping
- A CO₂ negative electricity producing gasifier.

Both solutions provide renewable power at prices below fossil alternatives!

Projected market value: **USD 8 trillion.**

Pyrolysis (general purpose)



ME-P2C



HIGH CAPACITY CONTAINERISED 1 MW PYROLYSIS SYSTEM

The MASH Energy ME-P2C pyrolysis reactor is designed based on a simple idea: Create a flexible platform for feedstock pyrolysis that is at the same time modular and easy to place and move. As such, the P2C constitutes the largest possible reactor that could be mounted in a 20 foot shipping container, meaning an unprecedented amount of processing capacity is available in a very compact form factor.

ADVANCED TECHNOLOGY MAKING A DIFFERENCE

Taking point of departure in world-record beating technology stemming from decades of research at the Technical University of Denmark, MASH has developed a pyrolysis solution, which fundamentally changes the general assumptions on the feasibility of decentralised waste management and valorisation.

Our uniquely compact pyrolysis machine is built to produce energy products such as combustible gas, heat and char or other valuable outputs such as activated carbon and biochar. The machine design means that a wide range of hydrocarbon rich feedstocks can be used – both in terms of composition, but also in terms of particle size and type.

A MODULAR SOLUTION – IN AND OUT

The ME-P2C is itself a module, which can be installed in parallel to achieve true scalability, redundancy and ease of maintenance.

Furthermore, the internals of the ME-P2C are modular and placed on wheeled skids, allowing for quick disassembly and maintenance of whole sections of the process. This for instance is highly useful if feedstocks are used that cause clogging in the gas handling components (heat exchangers, cyclones etc.). The modular setup allows for quick switching of process modules, allowing for continued operation by exchanging modules and allowing for cleaning / re-configuration of the process.

With the above in mind, examples of applications include:

- **Production of heat and biochar from agricultural residues:** For instance, using sugar cane residues collected from fields and returning biochar to soils for improved fertility.
- **Production of transportation fuel and carbon black from used car tires:** Using tractor tires for production of a diesel-like fuel and carbon black, which are both known commodities.
- **Reduction of sewage waste:** Dried sewage sludge can be converted into heat that can be reused for drying, and biochar – which can then be utilized for non-agricultural lands as a soil remediation agent.
- **Reduction and sterilisation of abattoir waste and production heat production:** Reduction of gate fees and savings in abattoir processes.

Many other, more advanced applications exist, requiring more extensive development efforts. These include:

- **Production of medium grade fuel oil from waste**
- **Production of electricity**



The Team (key staff)

We currently employ 4 full time staff in Denmark and around 20 full time in India.

FOUNDERS (DENMARK)



Jakob Bejbro Andersen

CEO, M.Sc. Eng., Ph.d. in tech startups from DTU

Tech entrepreneur with B2B cleantech background.



Krishna Hara Chakravarty

Head of R&D, Ph.d. in chemistry from DTU

Oil and pyrolysis specialist.



Thomas J Howard

CTO, M.Sc. Engineering, Associate Prof. at DTU

Product development and manufacturing specialist.



Jon Skovgaard-Petersen

Head of Legal, M.Sc in Business Law

Compliance, service agreements.

INDIA

Rohit Nagargoje

CEO, India

MSc. In Environmental Engineering from DTU



Bobby Choudhary

Reactor Development & Production – North India



Follow-up investment

We are currently looking to fund our continued production scale up and global sales effort.

We are inviting equity investors (corporate, VC and otherwise) to participate in a coming round totalling EUR 3M at a EUR 10.8M *pre-money* valuation.

In return, we project a 152% IRR based on a 5 year horizon.

Several investors have already expressed an interest in participation, including our existing investor.



Thank you!

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