



INVESTORS DECK

Clean Decentralized Power Generation



The European Regional Development Fund and Wallonia invest in your future. Under grant agreements; No. 1910237 & No. 8289.



This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 946903.

LET'S CHANGE THINGS TOGETHER ...

89%

of global CO₂ emissions come from fossil fuels and industry.

\$10,9_{Tn}

is the yearly estimated cost* fossil fuels have on our planet globally.

-0.4_{GtCO₂}**

Required emissions by 2050 to meet World Energy Transitions Outlook 1.5°C pathway

Join us on our journey to create new, sustainable, clean and local energy converters.

* Production and nasty effects

** IRENA (International Renewable Energy Agency)

OUR VISION & MISSION

Contribute to the energy transition away from fossil fuels



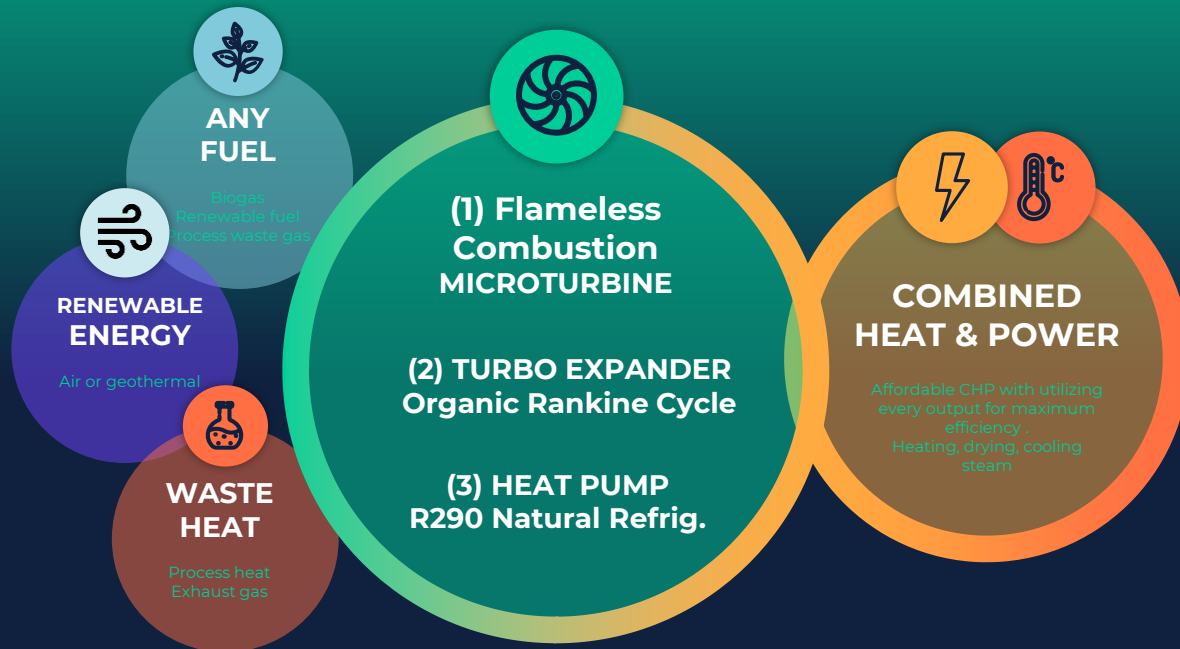
Provide clean, efficient and low emission combustion



Enable affordable, local power generation



ENERGY CONVERSION: AS GREEN AS CAN BE



Local energy conversion (10-100 kWe) reduces costs, complexity, emissions and transport losses.

IMPACT

MITIS responds **directly to goal 7** of the 17 UN Global Sustainable Goals to reach a sustainable future of all life on planet earth!



By creating innovative solutions for clean and cheap energy we are also contributing to an overall impact on the environment and economy, touching in **9 more goals of the UN**.



CORE TECHNOLOGY

MICRO-10

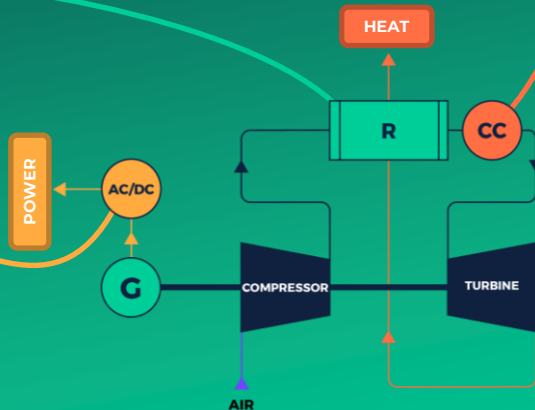


HIGH-TEMP RECUPERATOR

Our patented micro-channel design maintains high efficiencies at high temperatures, with minimal pressure loss.

SIC AC/DC CONVERTERS

High frequency and efficiency with adaptive output voltage.



FLAMELESS COMBUSTION (1ppm NOx)

Our patented combustion method minimizes emissions, while enabling our multi-fuel capability.

ULTRA COMPACT TURBOGENERATOR WITH FOIL BEARINGS

Our unique design ensures super-efficiency and maintains our small form factor solution.



Patents: EU n°3254028, B n°2020/5775 (pending)

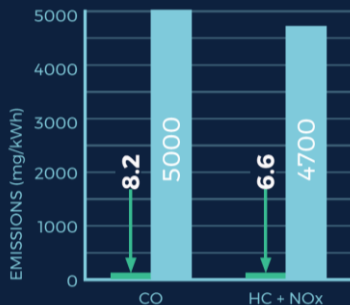
Innovative two shafts IRRGT cycle for the micro-20

VALUE PROPOSITION

As alternative to internal combustion engines (ICE)



MORE THAN 10x LESS EMISSIONS



> 100 x LESS NOISE



10x LESS MAINTENANCE



TRULY MULTI- FUEL (LIQUID & GAS)

Biodiesel / Diesel
Biogas / Natural Gas
Biomethane
Diesel
Ethanol
Gasoline

- < 5 ppm NOx emissions
- 12 000 h maintenance
- High grade heat (280°C)
- 50% less weight

- MITIS MICRO-20
- EU STAGE V EMISSION LIMIT
- TYPICAL ICE DIESEL GENERATOR

OUR SOLUTIONS

Modular technologies embedded in multiple solutions.

Solution	Products	Power	Heating	Cooling	Applications
Off-Grid Power <ul style="list-style-type: none">Flameless Combustion Microturbine	MICRO-10 MICRO-20	++			Off-grid power Range extenders for EVs
CHP (Combined Heat & Power) <ul style="list-style-type: none">Flameless Combustion MicroturbineExhaust Gas to Water Heat Exchanger	MICRO-10 CHP MICRO-20 CHP	++	+		Micro-biomethanisation Collective building heating
Trigeneration CCHP (Cooling + CHP) <ul style="list-style-type: none">Flameless Combustion MicroturbineExhaust Gas to Water Heat ExchangerAdditional Heat Pump (R290) – 40kW	MICRO-10 CHP²	+	+++	+	Collective building heating Industrial heat
Biogas Boiler <ul style="list-style-type: none">Flameless Combustion Boiler	BIOBOIL-50		++		Biomethanisation
ORC Microturbine (under development) <ul style="list-style-type: none">Organic Rankine Cycle Turboexpander	MICRO-ORC	+	++		Industrial waste heat recovery

MODULARITY

Combine solutions based on your desired output.

SCALE TO YOUR REQUIREMENT

Combine our products to provide exactly the outputs you require. This inherent modular design provides the upmost flexibility.

110kWe

30 kWe + 120 kWh

Up to 180kWh

MICRO 20	MICRO 20	MICRO 20	MICRO 20	MICRO 20	MICRO 10
Micro 10 CHP	Micro 10 CHP	Micro 10 CHP			
MICRO-10 CHP ²				MICRO-10 CHP ²	

CONNECTED MICRO GRID

Embed our technology as part of your wider DC microgrid, including batteries, PVs, etc.



TRULY MULTI-FUEL

Combust whatever fuel is available, reducing waste and maximizing output.

Biogas	✓	Propane	⌚
Natural Gas	✓	Hydrogen	⌚
Diesel	✓	Ammonia	⌚
Gasoline	✓	Mixed Fuels	⌚
Ethanol	✓		

MICROBIOMETHANIZATION

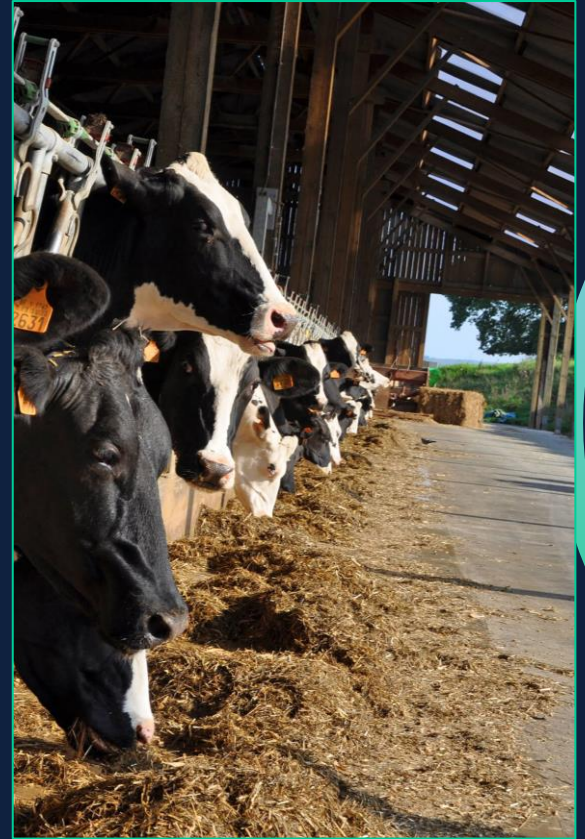
Utilizing biogas produced by digestors for renewable energy.

Combined Heat & Power micro-10

- < 5 ppm NOx emissions
- OPEX minimized
- Variable composition biogas

80 000 kWh of “free” electricity/year.

320 000 kWh of “free” heat/year.



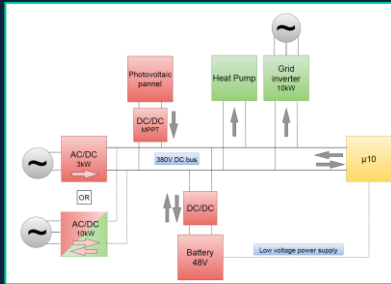
EFFICIENT HEATING

Replacing oil heating boilers with ultra-efficient gas heat pumps.

Smart combination of micro-10 CHP and R290 heat pump optimizes the COP of the electrically compressed heat pump.

Gas Utilization Efficiency (G.U.E) up to 200%

 Collège Sainte-Croix & Notre-Dame
Hannut D2D3



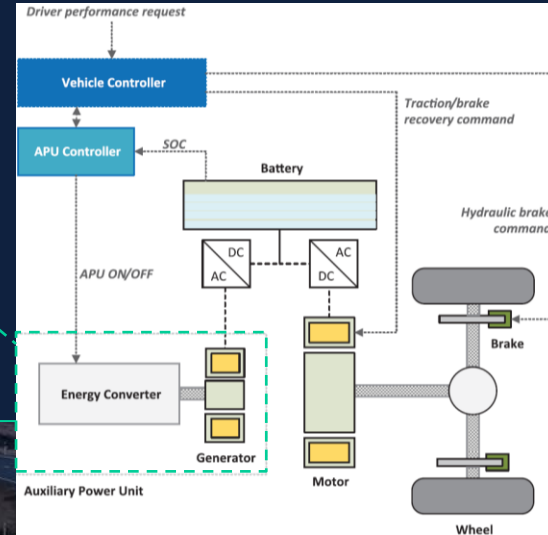
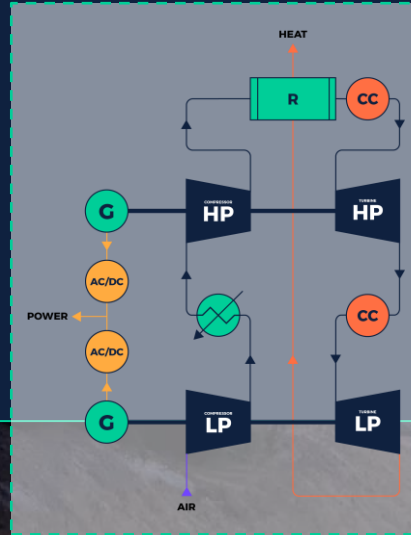
RANGE EXTENDER

Powering Hybridized Battery Electric Vehicle.

Extending autonomy using clean fuel (renewable) energy conversion.





Innovative two-spool microturbine.

- Less battery
- Less weight
- Less cost
- More autonomy
- Low NOx (Euro 7)



TARGET MARKETS

We develop versatile technologies adaptable to multiple applications.

123Bn€	10m€	 MICROBIOMETHANISATION Utilizing biogas produced by digestors for renewable energy
12,8Bn€	12m€	 COOLING, HEATING & POWER (CHP) FOR BUILDINGS Providing cooling, heat and power for private or public buildings (i.e., leisure centers) Or providing extremely high-temperature water for industrial applications (i.e., food processing)
16,8Bn€	7m€	 OFF-GRID POWER GENERATION Providing decentralized power for remote communities or infrastructure (i.e., telecoms)
45Bn€	6,3m€	 RANGE EXTENDER Auxiliary power units for EVs, UAVs and other forms of transport
TAM ~200Bn€	SOM +35m€	

BUSINESS MODEL

Manufacturing partners

80%
Supplied parts

50% Belgium
50% Germany

Pricing model

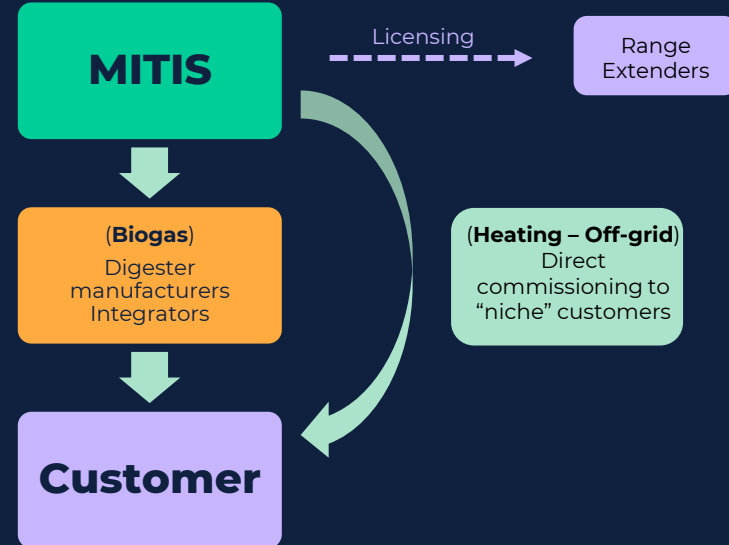
micro-10/micro-20	30 k€/45 k€
Biogas flameless boiler	20 k€
Ultra efficient gas heat pump	50 k€

Leveraging ESCO model through 3rd Tier financing to facilitate tech deployment

MITIS

R&D
Assembly
Quality Control
Marketing
Sales

Value chain



COMMERCIALIZATION PLAN



Sales team growth

- 1 senior (Q1 22) sales & marketing director (with experience in the heating business)
- Technical sales agents to support sales in the biomethanization/collecting heating and off-grid power generation



Target business geographies

- 2023: BENELUX, France, Germany, Africa-Asia (OFF-GRID)
- 2024: UK, DACH
- 2025: Nordics, Italy, Spain, rest of EU, North America, India (OFF-GRID)
- 2026: Japan

1. Establishing strategic commercial alliances with integrators and distributors (starting 2022)
2. Attend key strategic fairs in biogas, heating, off-grid
3. Join national heating and biogas professional associations
4. Organize workshop demonstration for integrators, distributors
5. Create an ESCO business model (by collaborating with base.org <https://energy-base.org/>)

Key activities

FEW MICROTURBINE MANUFACTURERS



Market leader with machines ranging from 35kW – 2MW

Not a threat since our market is for smaller power



12kWe microturbine focused on the telco market

Considered as a competitor
Our differentiator:
Patented multifuel flameless combustor
Patented recuperator tech.



3kWe microturbine for CHP in heating

Not a threat since our market is for larger power

MTT technology does not include foil bearings which is a major shortcoming for low maintenance

OTHER COMPETITION

Piston Engines

Mostly in CHP market for natural gas and OFF-GRID (diesel gensets)

Our key advantages:

- Lower TCO
- Lower noise
- Lower weight
- Lower maintenance
- Higher reliability for biogas and biofuels

Fuel Cells

Newcomers for clean fuels (natural gas, methanol, hydrogen)

Our key advantages

- Lower cost
- Longer life time
- Higher grade heat
- Multi-fuels capability
- Simpler mechanical technology
- Less complex maintenance

Heat Pumps

Few actors on the market with gas heat pump and coupled CHP offer

Our key advantages:

- Versatility with electricity production
- Simpler technology than ab(d)sorption or Stirling
- High temperature with high efficiency
- Lower TCO
- Multi-fuels

STAKEHOLDERS

R&D Partners



ULB

Public Funding¹



€ 3.4 M received
since inception

Current Partners



€ 1.5 M
Revenues generated

PROJECT TIMELINE

2012

MITIS
inception
1st funding
Grant from
Wallonia

2016

1st Patent on
recuperator
2nd funding
Grants from
EU (Eurostars,
Marie-Curie)

2019

3rd funding
Major EU EIC
Accelerator
grant

2020

R&D
agreement
with
PSA/Stellantis
2nd Patent on
flameless
combustion

2021

R&D agreement
with ARAMCO
New customers:
GTT-Technigaz
Porsche
Motorsport

2023

Market
launch

TRL 1 - 5

TRL 6 - 8

TRL 9

A UNIQUELY SKILLED TEAM



Recognized by the
Solar Impulse
Foundation Efficient
Solution Label.



Michel Delanaye
CEO & Founder

- PhD in Computational Fluid Dynamics
- Founder of two start-ups. **1 successful exit.**
- 25 years experience in R&D, design engineering (aerospace)
- 20+ years experience in commercial field and managing research programs



Simulation | Modelling | Performance Testing | Electronics Engineering | Industrialization | Sales

INVESTMENT OPPORTUNITY

We are raising **2M€** to prepare our market launch.

Use of funds:

- Finalize the development of products with successful pilot testing, while continuing R&D activities.
- Set up Sales & Marketing team and develop strategic alliances to penetrate the market in different countries. Organize customer support.
- Consolidate the industrialization and production team. Build strong partnerships for manufacturing activities. Complete relevant certifications. Organize logistics & supply chain. Invest in equipment and infrastructure for assembling and QC activities.





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www.mitis.be