BLAZE TEC

STORE THE HEAT.
POWER THE FUTURE.

Next-generation
thermal batteries
for high-efficiency
energy storage

THE CHALLENGE

Renewable energy is abundant.
But not always when we need it.

The energy transition needs storage solutions capable of delivering clean electricity when renewable sources are unavailable.
BLAZETEC is developing ultra-high-temperature thermal batteries designed to store energy for more than 10 hours and release electricity on demand.

>30%
HIGH CONVERSION EFFICIENCY



1200–1600°C
ULTRA-HIGH TEMPERATURE

ZERO EMISSIONS
DURING OPERATION

BLAZETEC



BLAZETEC Concept

BLAZETEC stores renewable energy as extreme heat and converts it back into electricity when needed.



RENEWABLE ENERGY

EXTREME TEMPERATURE





THERMAL BATTERY

SOLID-STATE CONVERTERS



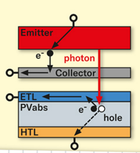


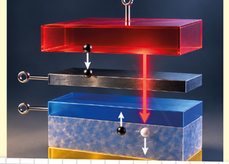
ELECTRICITY ON DEMAND



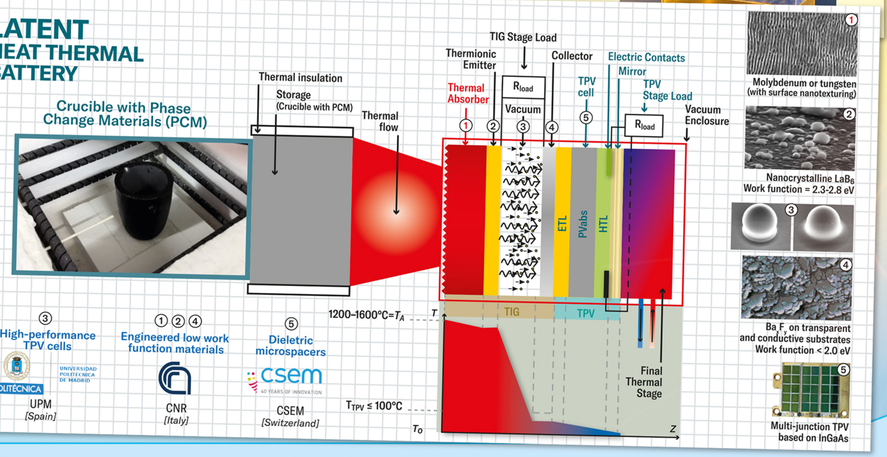
TIPV

4-terminals thermionic- photovoltaic
as a solid-state thermal energy converter





LATENT HEAT THERMAL BATTERY

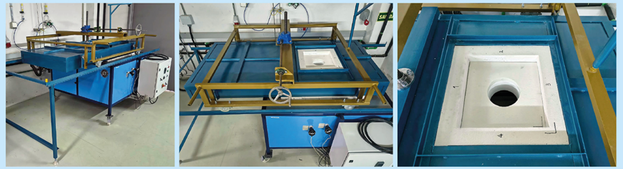


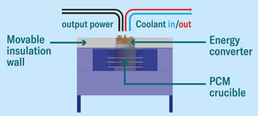
③ High-performance TPV cells
UPM [Spain]

①②④ Engineered low work function materials
CNR [Italy]

⑤ Dielectric microspacers
CSEM [Switzerland]

Electric-to-heat-to-electric latent heat thermal battery





WHAT MAKES BLAZE TEC DIFFERENT?

01 EXTREME TEMPERATURES
Thermal energy storage operating at 1200–1600°C

02 SOLID-STATE CONVERTERS
Static, scalable technologies designed for reliability and long operating life

03 HYBRID CONVERSION
Combining thermionic, thermoelectric and thermophotovoltaic technologies

04 HIGH PERFORMANCE
Targeting >30% conversion efficiency and highpower density

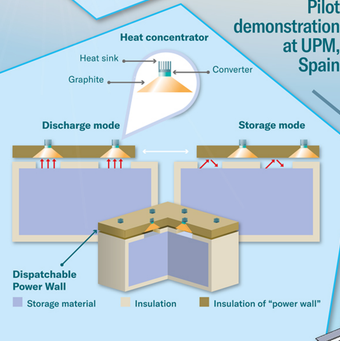
PILOT SYSTEM 1

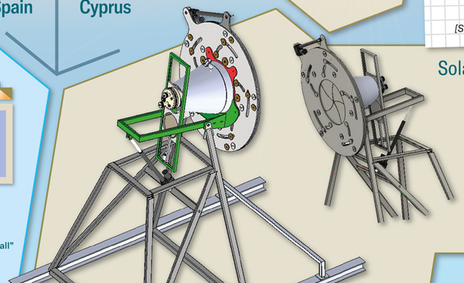
TWO ENERGY PATHWAYS. ONE BREAKTHROUGH PLATFORM

Pilot demonstration at UPM, Spain

Pilot demonstration at PROTEAS Solar Tower, Cyprus

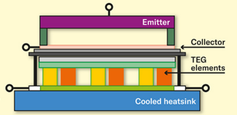
PILOT SYSTEM 2





TITEG

Combined thermionic-thermoeletric
as a solid-state thermal energy converter

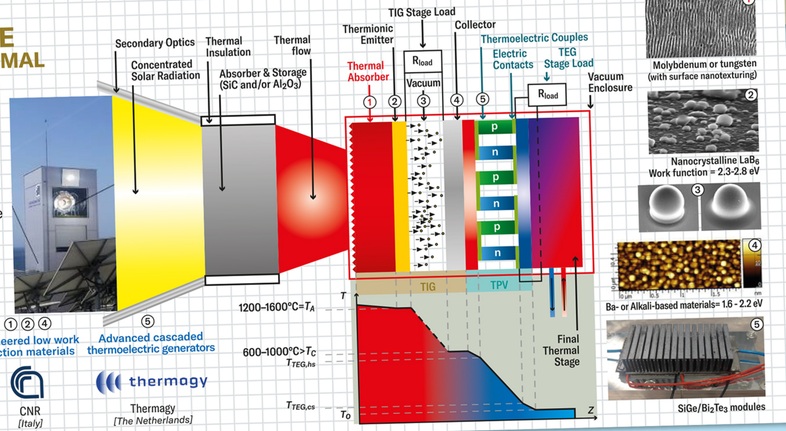




SENSIBLE HEAT THERMAL BATTERY

PROTEAS

The Cyprus Institute [Cyprus]



③ Dielectric microspacers
CSEM [Switzerland]

①②④ Engineered low work function materials
CNR [Italy]

⑤ Advanced cascaded thermoelectric generators
Thermagy [The Netherlands]

Solar-to-heat-to-electric sensible heat thermal battery





TOWARDS DISPATCHABLE ELECTRICITY

BLAZE TEC

is turning extreme heat into clean, flexible and reliable energy.

PARTNERS

CNR–ISM
[Italy]

UPM
[Spain]

Thermagy
[The Netherlands]

Ionvac Process SRL
[Italy]

The Cyprus Institute
[Cyprus]

ASSOCIATED PARTNERS

CSEM
[Switzerland]

Thermophoton
[Spain]

CONTACT & INFO

WEB SITE - SCAN ME

PROJECT WEBSITE
www.blazetec.eu

EMAIL
info@blazetec.eu

COORDINATOR
Dr. Daniele M. Trucchi [CNR-ISM]

SOCIAL MEDIA

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