

**Sessione pitch:  
spazio alle idee**



**MAGALDI**®  
DEPENDABLE ENERGY STORAGE

# Decarbonized Industrial Heat

Lorenzo Romagnoli

Magaldi Green Energy



**Horizon Europe e il  
bando orizzontale  
Clean Industrial Deal**

**11 DICEMBRE 2025**



# Indicazioni generali per la preparazione del pitch- *da rimuovere nella versione finale*

- Slide preferibilmente in inglese, presentazione in italiano
- Durata: 3'-5'
- Obiettivo: presentare le proprie competenze , e/o idea progettuale, in vista della prossima call Clean Industrial Deal
- Indicare se si ha interesse a coordinatore o ad essere partner
- Cercare di essere sintetici e di non condensare troppe informazioni nella struttura slide
- È preferibile rispettare la struttura di pitch data, ma avete la possibile di aggiungere/rimuovere slide pur rimanendo nei tempi di presentazione previsti
- Evitare di inserire video/audio/gif che possono appesantire la presentazione
- La selezione dei pitch, in caso di numeri elevati di sottomissioni, avverrà da parte di APRE e Confindustria in base alla completezza delle informazioni inserite e al principio “ First comes, first served)
- Una volta completata, la presentazione può essere caricata nella seguente cartella: [CARTELLA](#)

# Company/Organisation

- Type of company/organisation: LLC as part of a larger industrial group.
  
- Contact Details
  - Name Giulio Lolli
  - Email: giulio.lolli@magaldi.com
  - Telephone/Mobile: +39 342 121 5758
  
- Topic of interest
  - Thermal Energy Storage
  - Decarbonization
  - Renewable Energy

# Expertise of your organisation

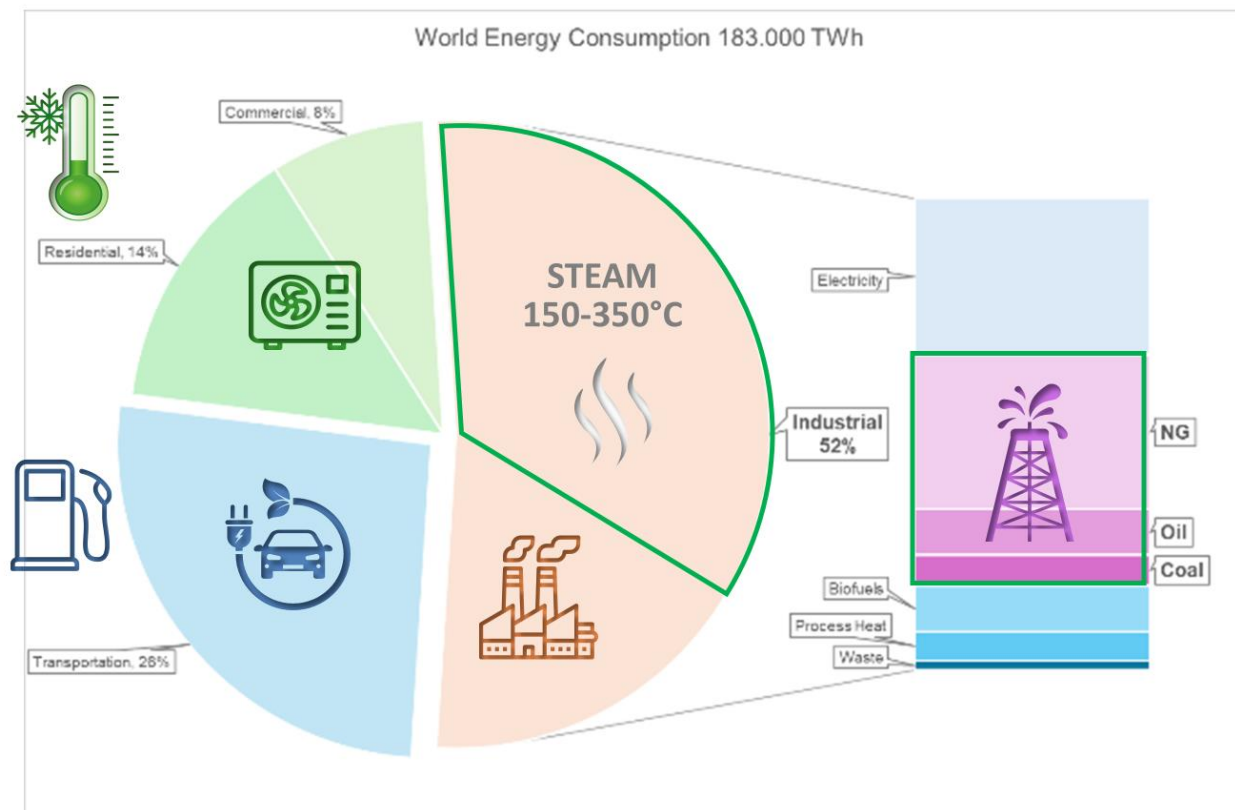
Describe:

1. MGE is a technology provider for **thermal energy storage** equipment. With our patented **sand battery** we convert the renewable electricity (i.e. from photovoltaic) into renewable heat. This is stored and delivered to the industry in form of process steam 24/7 and on demand.
2. We have experience in H2020 as **partner** in projects normally driven by the **final user** of the technology, so the industry that needs to optimize and decarbonize their processes.



## The elephant in the room

Industrial heat demand must be **decarbonized!**  
**But How?**



A cartoon illustration featuring a large elephant labeled "Heating" in the center. Several people are standing around it, each with a speech bubble:

- One person says: "Sigh."
- Another says: "I've launched my third DAC startup!"
- A third says: "Green H<sub>2</sub>"
- A fourth says: "Solar's the future!"
- A fifth says: "I'm saving the planet with EVs."
- A sixth says: "Batteries, man, batteries."

Below the elephant, a person is lying on the ground, with the text "Energy security" and "Climate goals" written near them. At the bottom, the text "HAVE YOU NOTICED IT, TOO?" is written. The cartoon is signed "Cliff + Innova Partners".

**50.000 TWh** of energy (fossile) used for the production of steam for industrial purposes.

- **3.500 bn€/y (70€/MWh)** market value
- MGTES is the electric car of the industrial heat
  - Electrification of steam production
  - Storage of renewable energy

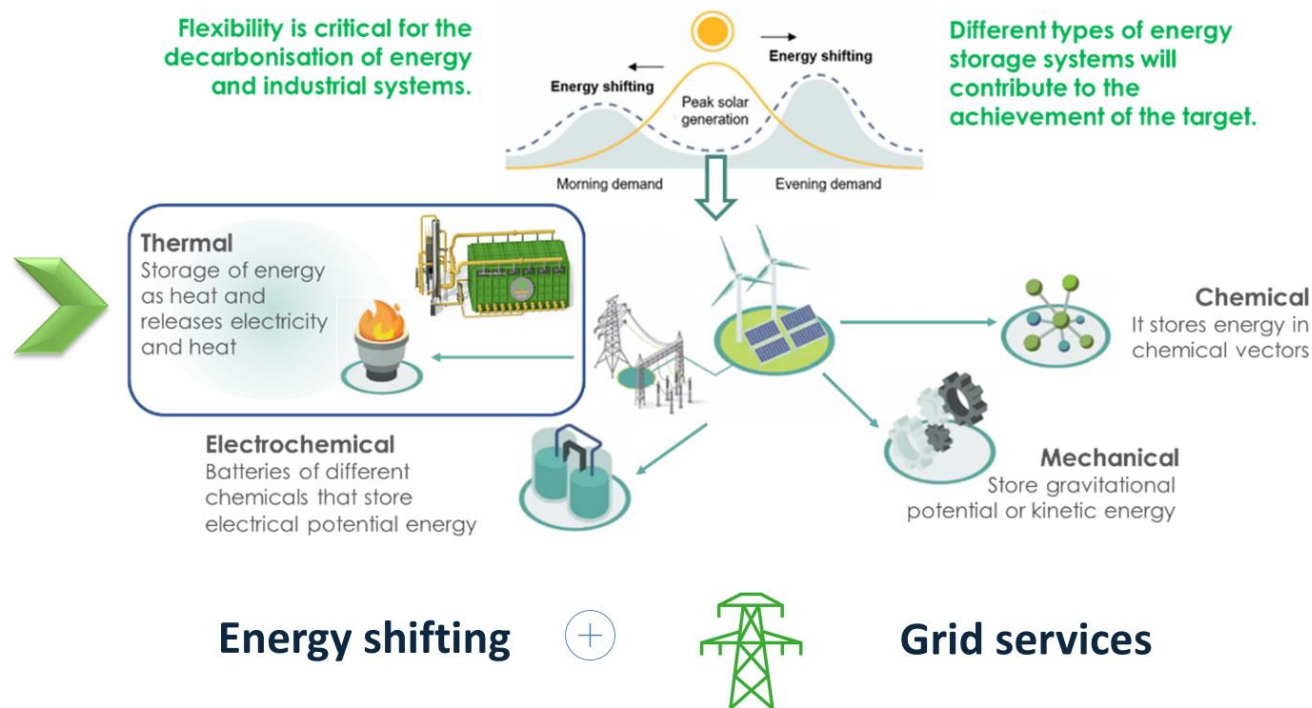
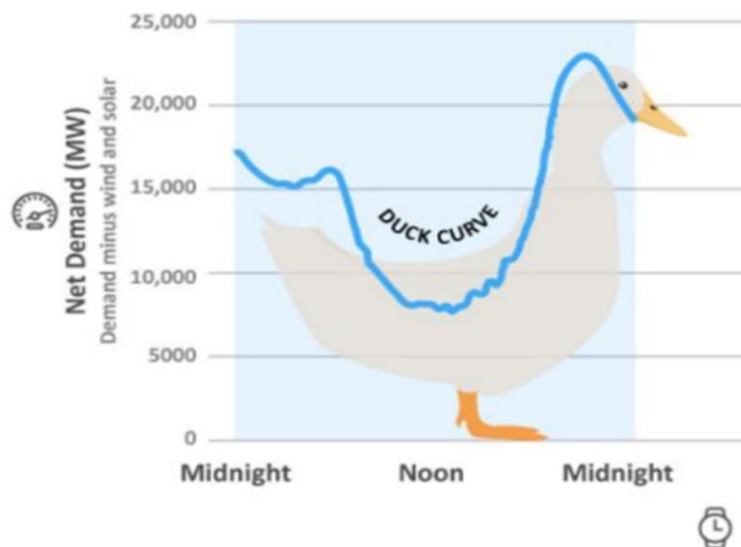




## MGTES – Magaldi Green Thermal Energy storage



MGTES competes to get **low-cost green electricity** and transform it into **green heat** to decarbonize industrial processes and give flexibility to the grid.

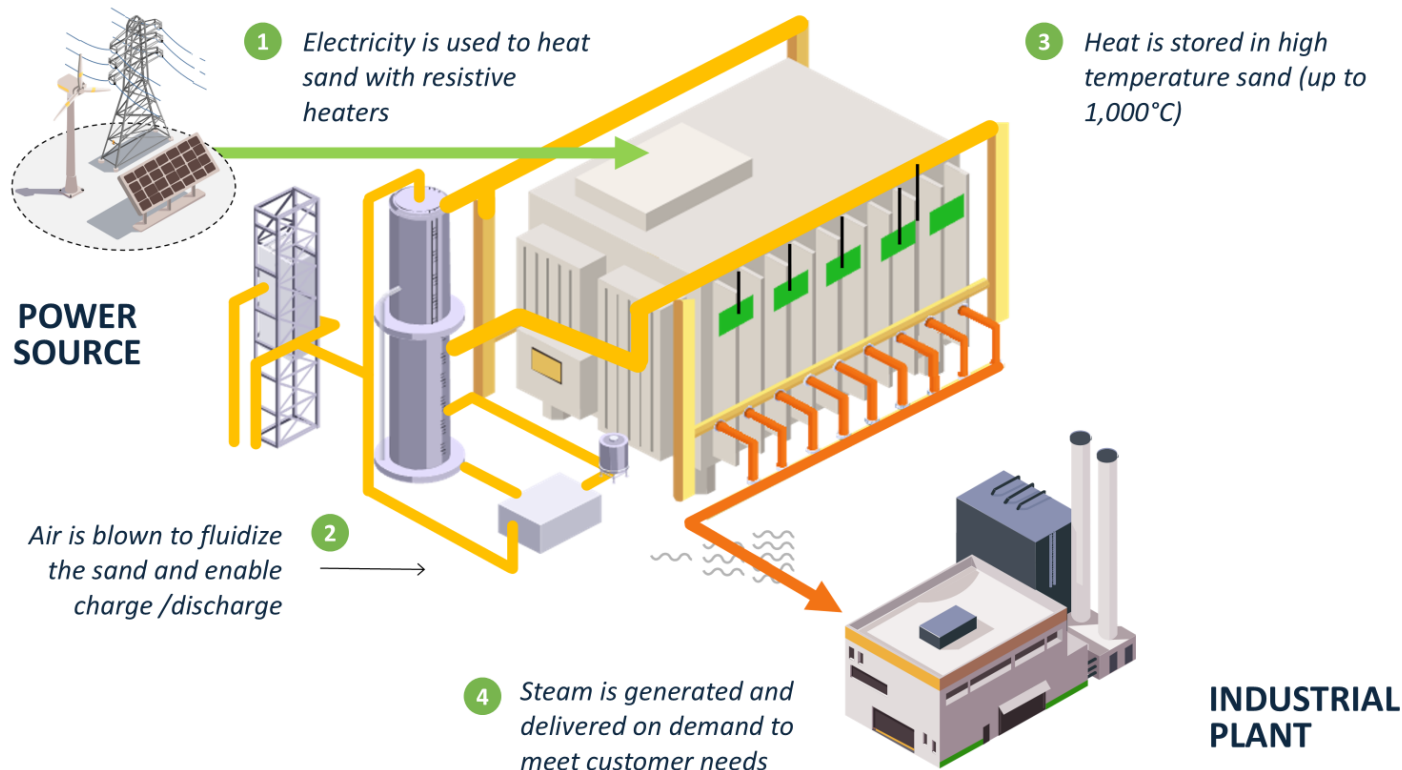




# MGTES – Overview & Highlights

## Overview of MGTES "Power to Heat" storage system

IMAGE NOT to SCALE<sup>3</sup>



1. Round Trip Efficiency | 2. Projections of LDES Council for at-scale systems | 3. Exemplary 60 MWh<sub>t</sub> MGTES would occupy ~160 m<sup>2</sup>

• Source: NREL, TTF

## Technical highlights



Produced steam  
temperature  
up to  
**350°C**



No rare materials:  
Energy stored in  
**Sand**



**5-10x**  
cheaper vs. Li-Ion  
batteries<sup>2</sup>



**90%**  
round trip  
efficiency

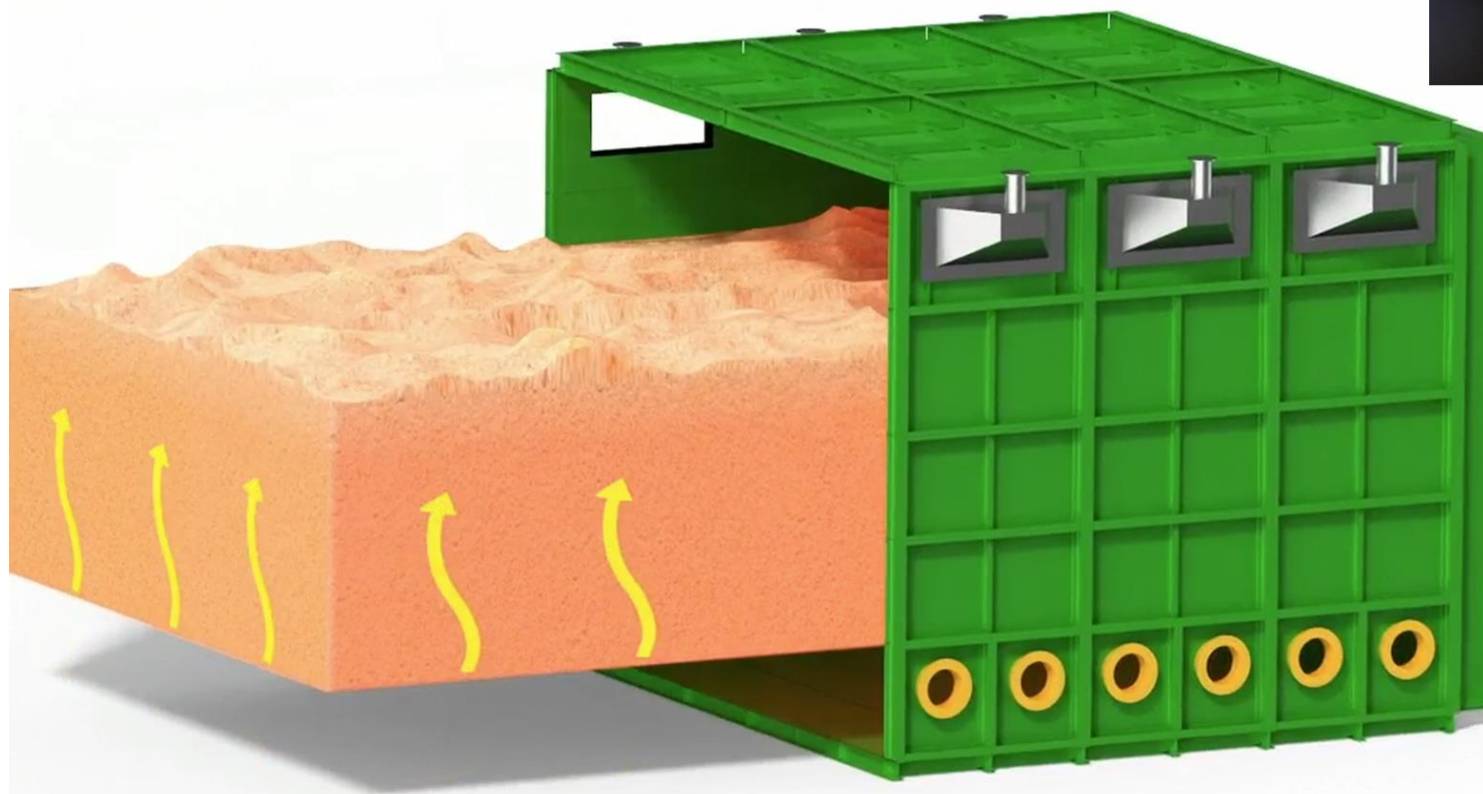


## MGTES – The patented sand battery



Fluidization is the living heart of the sand battery

- Improves orders of magnitude the heat transfer
  - Response times of «seconds», not «minutes»
  - Homogeneous and controlled temperature







## MGTES - First industrial-scale application

Enel and Magaldi have installed a **7.5 MWh MGTES** thermal storage system for continuous steam production at the **I.GI.** vegetable oil refinery in Buccino, Italy, which supplies the **Ferrero Group**.

The system was inaugurated on 16 September 2025.

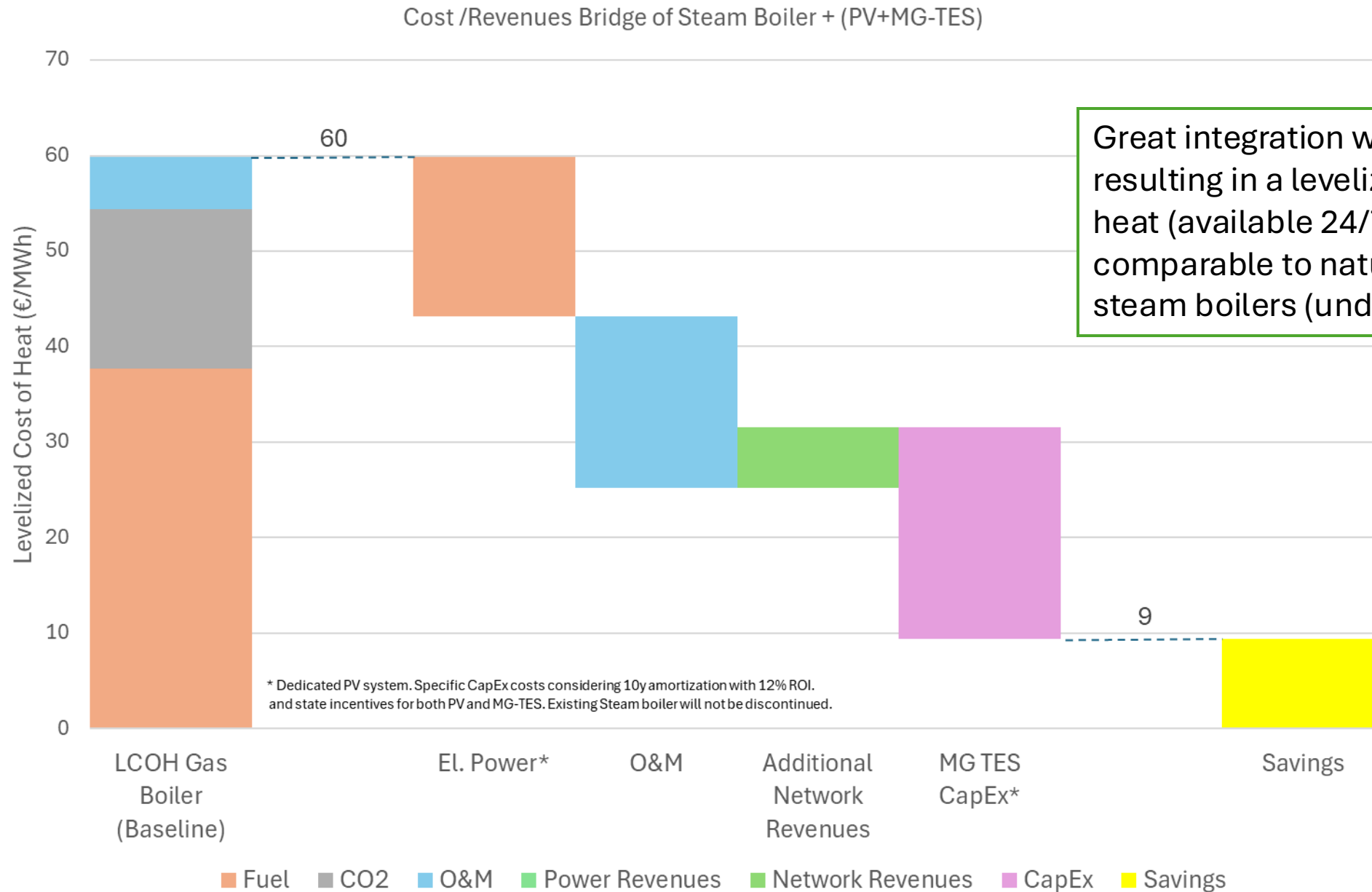
### Technical Data

Technology	Fluidized sand bed
Storage Media	Silica sand
Operating Fluid Bed Temperature	up to 620 °C
Thermal Storage Capacity	~7,5 MWh
Charging Power (Nominal)	up to 1,9 MWe
Steam Generation (required)	up to 1,08 t/h @ 184° C, 10 barg
Steam Availability	24/7
Operational Cycle (Nominal)	1 cycle per day



A pipeline of 10–15 MGTES projects is under development across Europe.





Great integration with PV plants, resulting in a levelized cost of heat (available 24/7) comparable to natural gas steam boilers (under ETS/ETS2)

# Decarbonized Industrial Heat

Horizon Europe e il bando orizzontale  
**Clean Industrial Deal**



[magaldigreenenergy.com](https://magaldigreenenergy.com)



[mgtes@magaldi.com](mailto:mgtes@magaldi.com)  
[giulio.lolli@magaldi.com](mailto:giulio.lolli@magaldi.com)