



BRENMILLER
THERMAL ENERGY STORAGE

Company Presentation

SEPTEMBER 2023

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ABOUT **Brenmiller Energy**

Nasdaq: BNRG +

We are a clean-tech company that develops, manufactures and sells our Thermal Energy Storage (“TES”) solutions to decarbonize heat in industrial and power plants

\$100M Capital Investments since inception to date

60 Employees

2012 Founded

4 Installed Projects

4 Strategic Partnerships

Equity & Finance Overview

(as of September 1, 2023)

Stock Price (Nasdaq: BNRG)

~\$.76

Market Capitalization

~\$15 M

Shares Outstanding

20.24 M

Trading Volume (90 Day Avg.)

94 K

Cash & Equivalents (06/30/23)

\$6.74 M





Decarbonization of heat is the low-hanging fruit of fighting climate change

GLOBAL ENERGY USE BY SECTOR

Heat for industry, homes and commercial buildings is the largest energy end-use

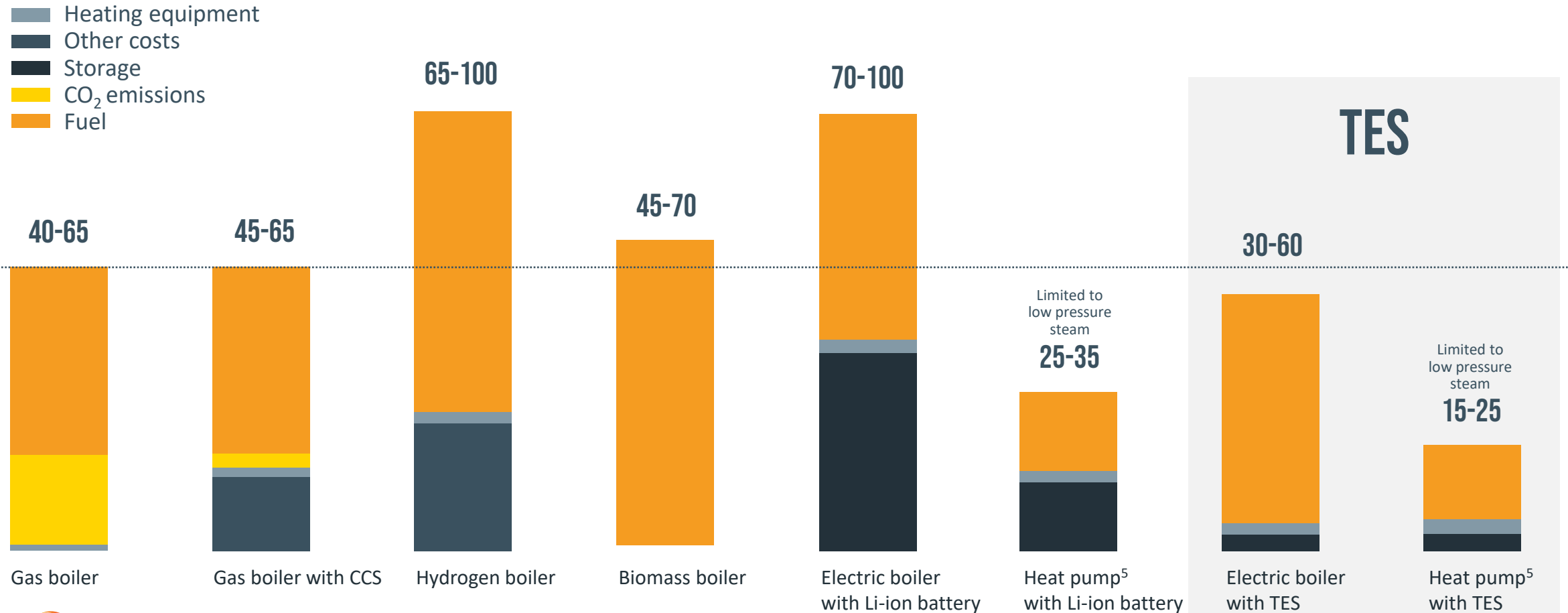


ELECTRICITY - 17%

HEATING & COOLING - 51%

TRANSPORTATION - 32%

ACCORDING TO MCKINSEY, TES WITH ELECTRIC BOILERS OR HEAT PUMPS, IS THE MOST COMPETITIVE WAY TO REPLACE NATURAL GAS AND DECARBONIZE INDUSTRIAL PROCESSES



REGULATORY SUPPORT

SUBSTANTIAL INCENTIVES AND AGGRESSIVE STEPS TO REDUCE GAS CONSUMPTION

Funding Notice: Industrial Demonstrations

Office of Clean Energy Demonstrations

Office of Clean Energy Demonstrations » Funding Notice: Industrial Demonstrations

Office: Office of Clean Energy Demonstrations

FOA number: DE-FOA-0002936

Access the FOA: [OCED eXCHANGE](#)

FOA Amount: Approximately \$6 Billion

Background Information

On March 8, 2023, the U.S. Department of Energy (DOE) Office of Clean Energy Demonstrations (OCED) issued a Funding Opportunity Announcement (FOA) for approximately \$6 billion to significantly reduce greenhouse gas emissions in energy-intensive industrial subsectors through transformational, commercial-scale demonstration projects. This FOA seeks to demonstrate the technical and commercial viability of industrial decarbonization approaches to promote widespread technology implementation and help the U.S. lead in low- and net-zero carbon manufacturing. DOE will provide financial assistance through cooperative agreements to fund up

The New York Times



New York to Ban Natural Gas, Including Stoves, in New Buildings

Gov. Kathy Hochul announced a state budget deal on Thursday with the first statewide ban on the use of natural gas in new buildings.



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NEWS

Spain launches €280 million grants for standalone energy storage, thermal and PHES

By [Jonathan Tourino](#)

July 24, 2023

Europe Grid Scale Business, Policy



Saverio Zefelippo
Fabio Ranghino

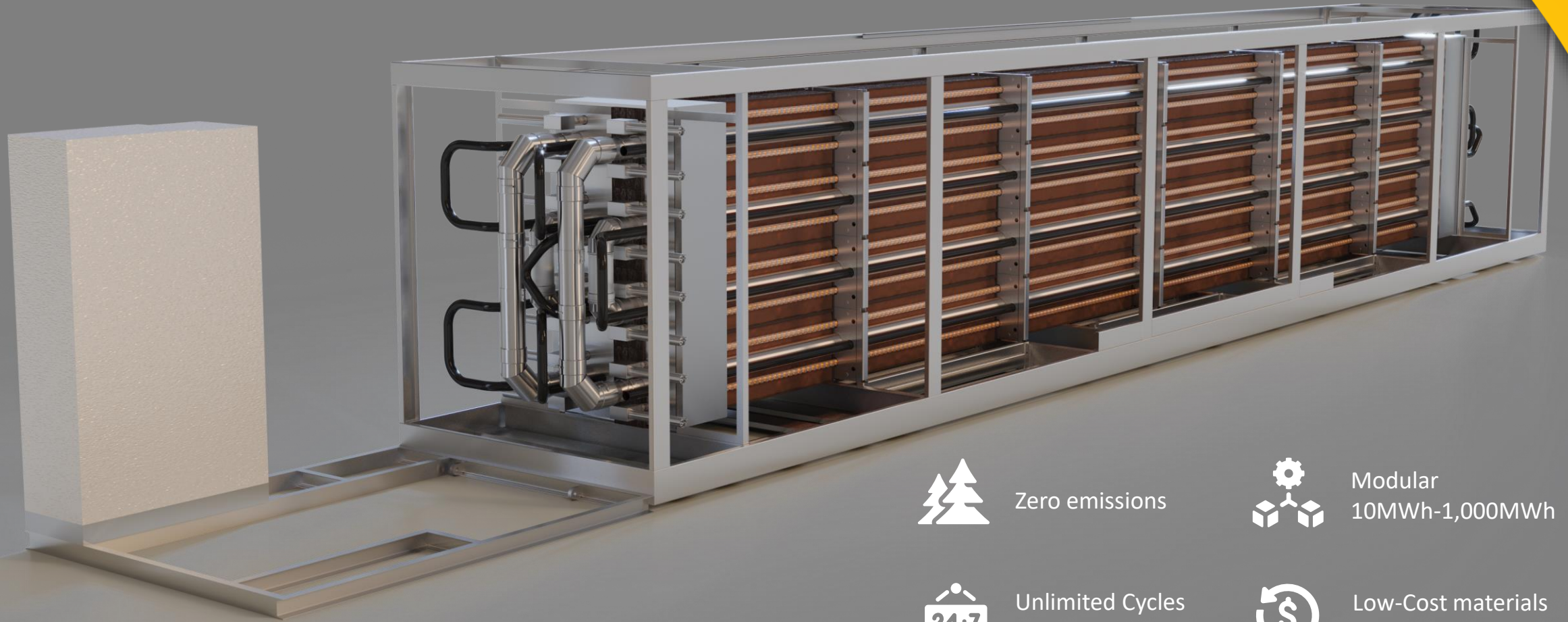
Electrifying Industrial Heat: A Trillion Euro Opportunity Hiding in Plain Sight

Industrial heat is largely invisible to consumers but represents about 20% of global final energy demand and 10% of the world's CO₂ emissions. That is 2.5 times more than air and maritime transportation emissions combined and not far off those of road transportation. Switching from fossil-based heating systems to those directly powered by renewable electricity in industry can eliminate 100% of CO₂ and air pollutants emissions and reduce primary energy demand by up to 70%. It can also deliver a € 1 Tn investment opportunity.

But things are starting to change. Barriers to adoption for industrial electric heating are becoming anachronistic. On one hand, geopolitics and carbon prices are making cheap, reliable fossil fuel supplies a thing of the past. As industry leaders and engineers inevitably embrace decarbonization, fossil fuels will tip into permanent decline. On the other, renewables are on a fast track to growth and affordability, which will lower the emission intensity of grids and simplify access to clean energy.

bGen ZERO

POWER-TO-HEAT THERMAL ENERGY STORAGE



Zero emissions



Modular
10MWh-1,000MWh



Unlimited Cycles
30+ years



Low-Cost materials
Simple O&M

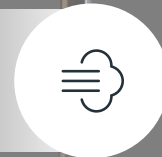
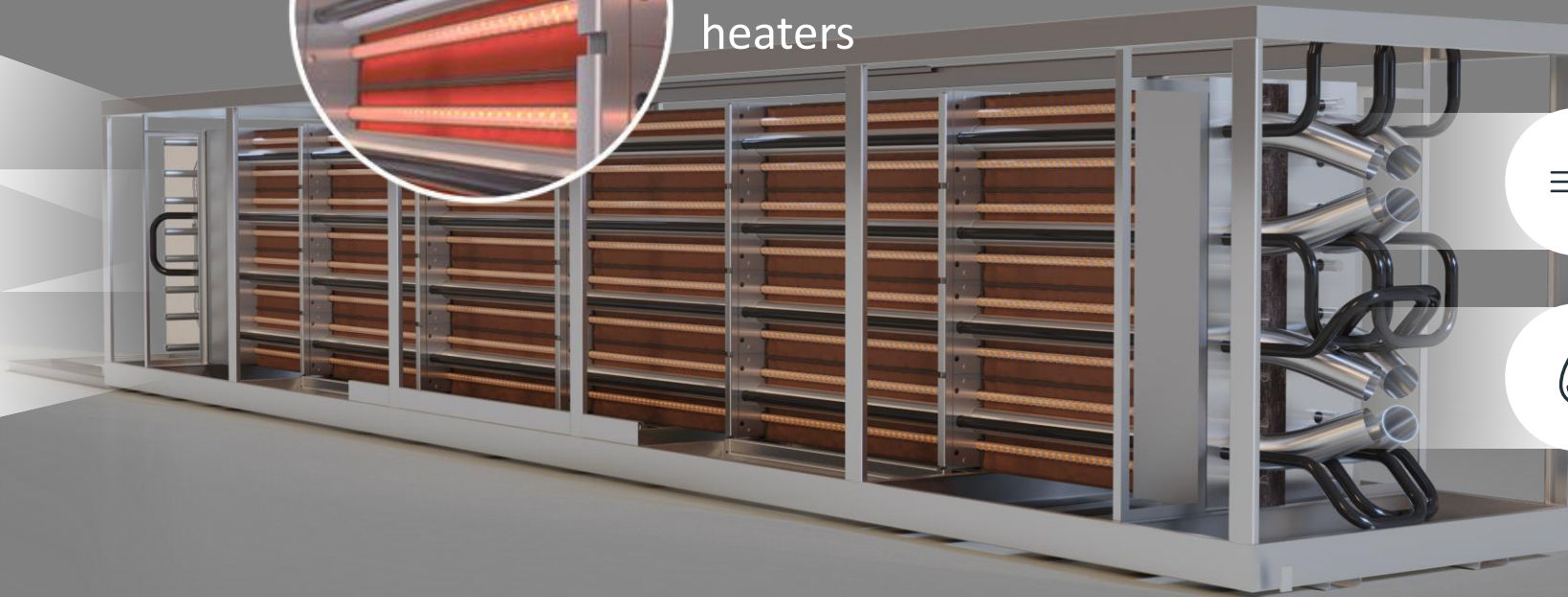
ELECTRIC HEATING & STORAGE IN ONE



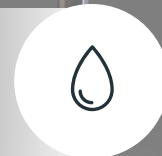
97% Round trip efficiency



High-efficiency embedded electric heaters



100°C-500°C
Steam



Hot Water

bGen ZERO

IMPROVED CHARGING PERFORMANCE, EFFICIENCY & ECONOMICS

DESIGNED FOR GRID SERVICES

100%

electricity for
charging

1

second response rate
for fast charging

99%

charging efficiency

98%

year-round
availability

90%

pre-fabricated
components

97%

power-to-heat
cycle efficiency

FROM ROCKS TO THERMAL ENERGY STORAGE

- Rocks are crushed to small bits
- Thin metal cells (“bCells”) are filled with the crushed rocks
- bCells are stacked into 40 ft. modules
- Electrical heaters are embedded
- Modules are assembled on-site to a structure
- Structure is insulated and connected to plant



WORLD'S FIRST GIGAFACTORY FOR THERMAL ENERGY STORAGE



PRODUCTION PLANT: READY TO RAMP REVENUES



- European Investment Bank credit facility funding capital expenditure for automated factory and increasing production capacity
- Plant is designed to produce storage modules with an annual capacity of up to 4,000 MWh and will be able to support orders for 2023-2024
- Production capacity is to potentially support sales of up to \$200 million per year
- Factory is planned according to industry 4.0 standards, and would help the company to meet future demand and expected to increase profitability margins



BUSINESS MODEL #1 – EQUIPMENT SALE

SALE OF THERMAL ENERGY STORAGE SOLUTIONS TO INDUSTRIAL FACILITIES AND POWER PLANTS

- Gross profit target - 30%
- After sale services - up to 5% of equipment sale
 - Warranty
 - Maintenance
 - Optimization



BUSINESS MODEL #2 – ENERGY AS A SERVICE

JV WITH LEADING GLOBAL CLEAN ENERGY UTILITIES TO PROVIDE CLEAN STEAM AND GRID SERVICES

- Brenmiller to provide the technology and integration
- Partner will provide the clean electricity and finance
- JV sells energy and grid balancing services

Customer benefits:

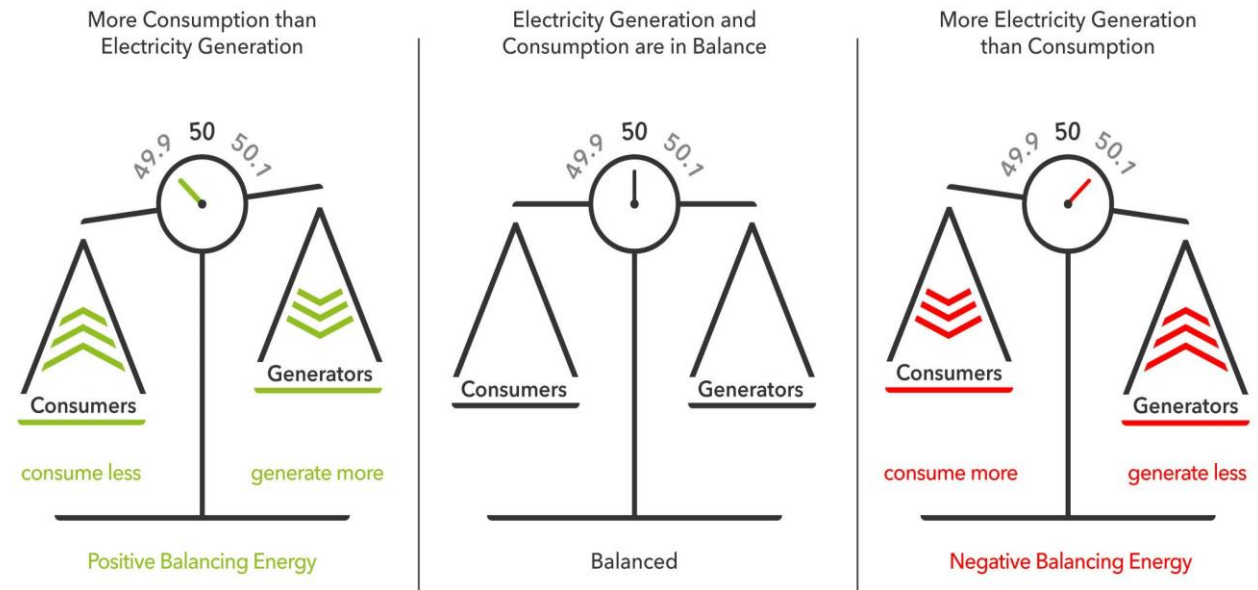
- No capital expenditures
- Reducing operational risk
- Green certificates and carbon emission savings

GRID SERVICES

SUBSTANTIAL REVENUE STREAMS FOR TES

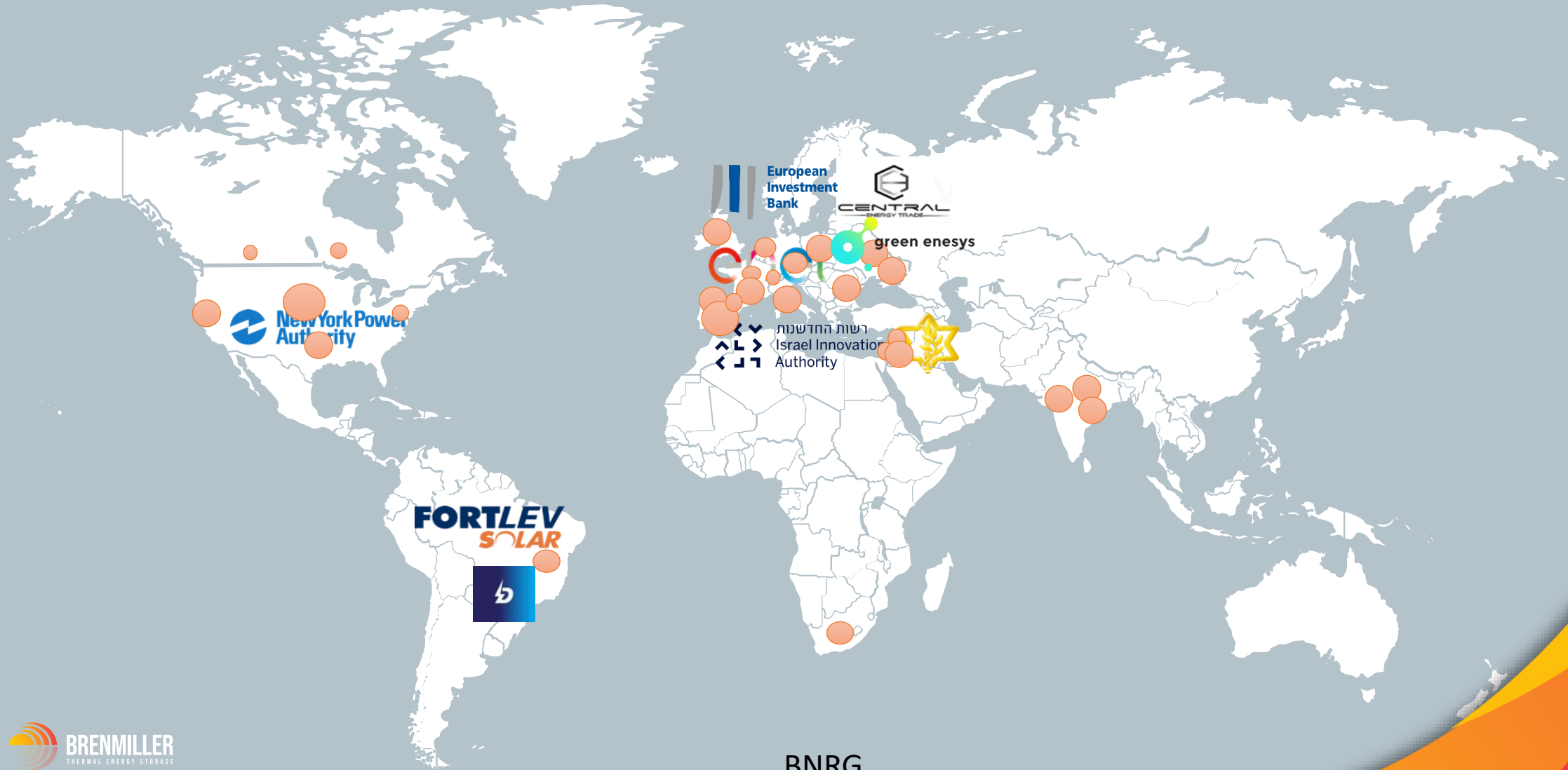
- **Grid flexibility and stabilization:**
Using excess renewable energy to generate heat
- **Demand-side management:**
Balancing electricity demand by shifting it to the heat sector
- **Utilization of curtailed energy:**
Preventing renewable energy waste

Balance between electricity generation and electricity consumption



BUILDING THE PIPELINE – FOCUS ON EUROPE AND US

● SALES PROCESS / PROJECT DEVELOPMENT





LARGEST TES SYSTEM IN THE WORLD CONNECTED TO A GAS POWER PLANT

- Storage capacity of up to 24MWh
- Enables shifting energy from off-peak hours to peak hours – improving revenues from energy sales
- The power plant will generate additional revenue streams by improved response times to the grid





Thermal Energy Storage (TES)

innovation serving the energy transition

MORE VIDEOS

0:03 / 2:02

YouTube



Click [HERE](#) to play video



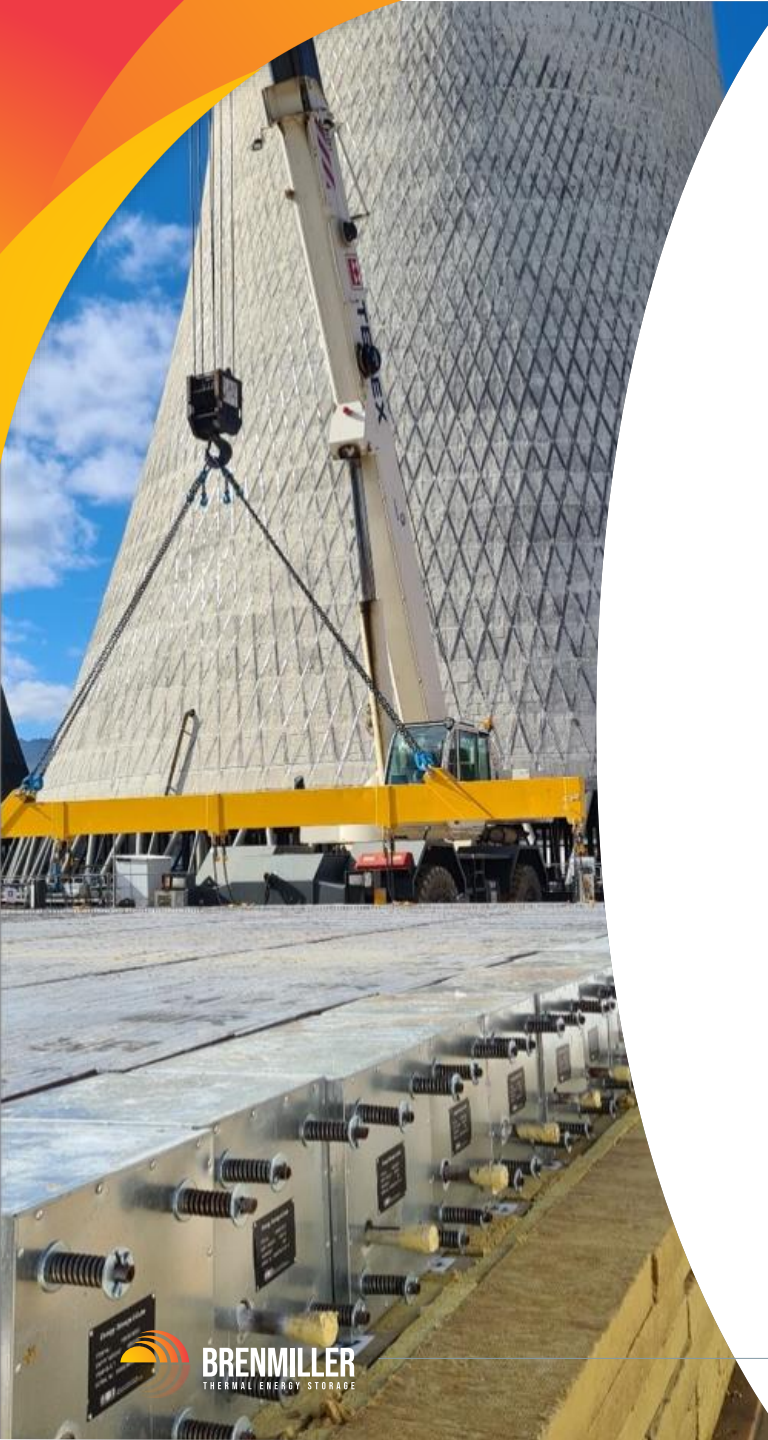
NEW PROJECTS & AGREEMENTS

Leading Beverages Manufacturer: 32 MWh bGen TES to replace fossil fuel

- One of Israel's largest beverage companies
- Partially owned by Heineken International B.V.
- Received approval for \$610 K grant from Israel Ministry of Environmental Protection

Wolfson Hospital: \$3.7 M equipment purchase approved

- Wolfson Hospital is a public medical center located near Tel Aviv in Holon, Israel
- Israeli Ministry of Finance has approved a budget of up to \$3.7 M for Wolfson Hospital to procure TES equipment from Brenmiller
- Israeli Ministry of Finance estimates use of electric heat provided by bGen™ ZERO has the potential to save Wolfson Hospital up to \$1.3 M annually & reduce the hospital's local carbon footprint by 3,900 tons per year
- Final agreement between Wolfson Hospital and Brenmiller is expected to be signed Q4 2023



JV FOCUSED ON RAMPING SALES IN EUROPE

9 Clean Energy Projects with 2 GWh Capacity

- Term sheet signed with European renewable energy developers Green Enesys Group and Viridi, leading companies that develop and deploy giga-scale clean energy projects worldwide
- JV will deliver bGen and bGen ZERO through an Energy-as-a-Service business model and provide project-level financing in high-growth markets, starting in Spain, Germany, and France
- To accelerate electrification by using renewable energies as a source and the bGen system to electrify and store heat with the aim of achieving full decarbonization
- As of the signing of the Term Sheet, 9 potential clean energy projects with a total of approximately 2 GWh capacity have been identified

INVESTMENT CATALYSTS

- \$63 B addressable market—Patented technology addresses tremendous demand for efficient, clean energy storage
- As renewable energy generation increases, the need for a reliable method to store clean energy is a major challenge facing industry and regulators
- BNRG's award-winning tech is well established—Contracts with customers including New York Power Authority, Enel, and Fortlev
- Ready for revenue ramp—Production capacity of manufacturing plant to potentially support sales of up to \$200 M per year
- Revenue models include direct equipment sales and Energy as a Service recurring revenues



TO FIGHT CLIMATE CHANGE – THERMAL ENERGY STORAGE IS CRUCIAL

The bGen™ ZERO

- Enables electrification of heat
- Enables the use of intermittent RE sources to provide stable reliable heat
- Utilizes and support the electricity grid



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THANK YOU

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