

# Redefining ESS

## with the Next-Generation Mr.Big & Mr.Giant

**Alice FENG, BESS Application Manager**





**40.9 billion tons**

Global carbon dioxide  
emissions in 2023

Source: Carbon Brief

**1.5°C increase in the average temperature**

Source: C3S



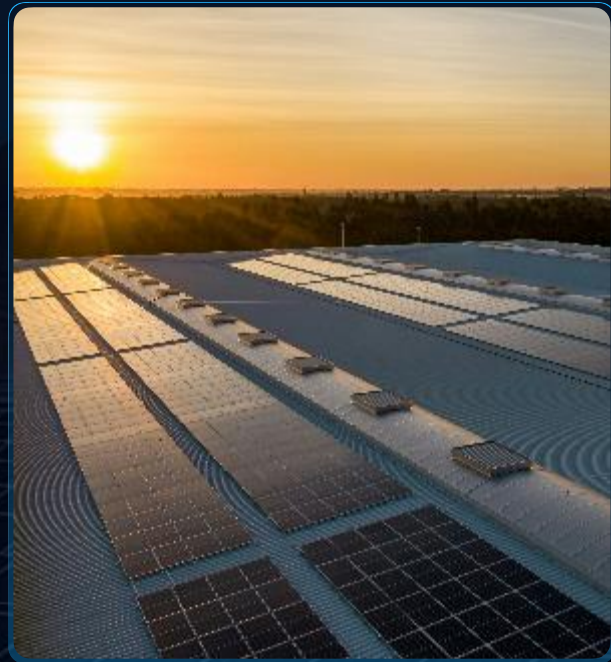
**The use of firewood**



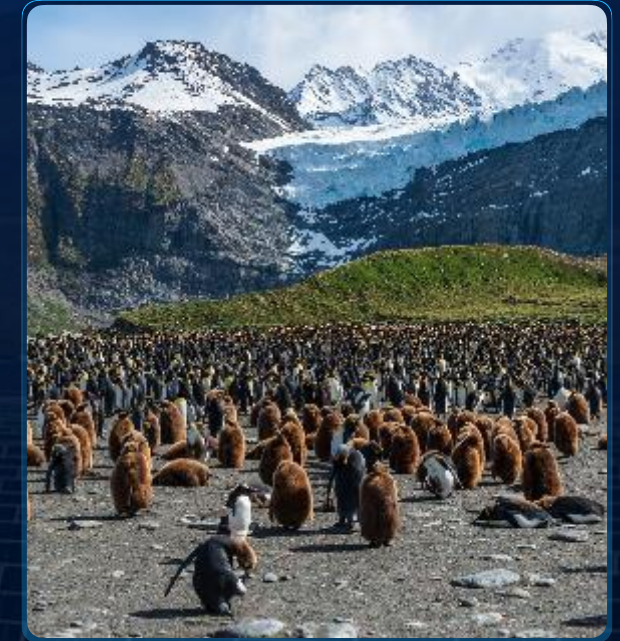
**The outdated energy structure**



## Renewable energy



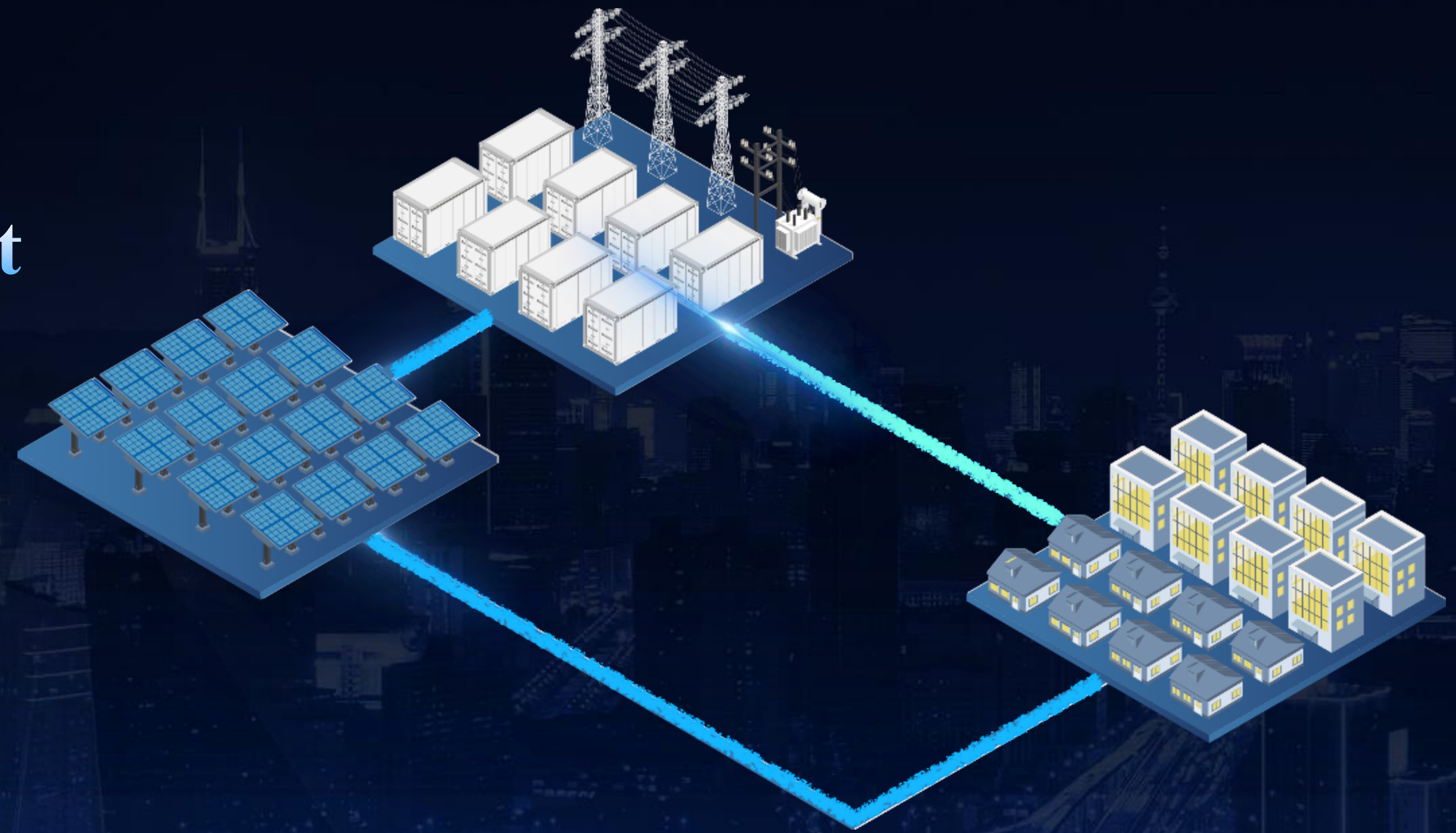
## The restoration of our planet





**Energy storage brings vitality to sunlight  
and ensures power supply at any time.**

Each round of photovoltaic energy charge and discharge is  
a step towards restoring our planet.





**5436GW**

**Large-scale installed photovoltaic capacity**

The global cumulative installed photovoltaic capacity in 2030



**1420GWh**

**Large-scale energy storage power stations**

The global cumulative installed capacity of energy storage in 2030



**CTT Technology**

**Large batteries**

EVE Energy



## Mr.Big

628Ah

Stacking technology 3.0

Energy efficiency: 96%



## Mr.Giant

20-foot 5MWh

Minimalist integration

Energy efficiency: 95%



# Mr. Flagship Series Redefining ESS

Efficient

Simple

Safe





# Efficient

## The pursuit of superb efficiency

Enabling minimal heat loss between charging and discharging cycles

$$E_{\text{charging}} = E_{\text{discharging}} \uparrow + I^2 R t \downarrow$$

(Law of conservation of energy)



**An increase of 1% ↑ = An increase of RMB 3.6 million ↑**

Energy efficiency of  
the battery cell and the system

Improvement of the operational benefit  
for customers throughout the lifecycle

(Based on the economic calculation of the 100MWh energy storage system)







**Innovative current  
collection technology**

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**96%**

**Energy  
efficiency**



**Invention of the  
3T technology**

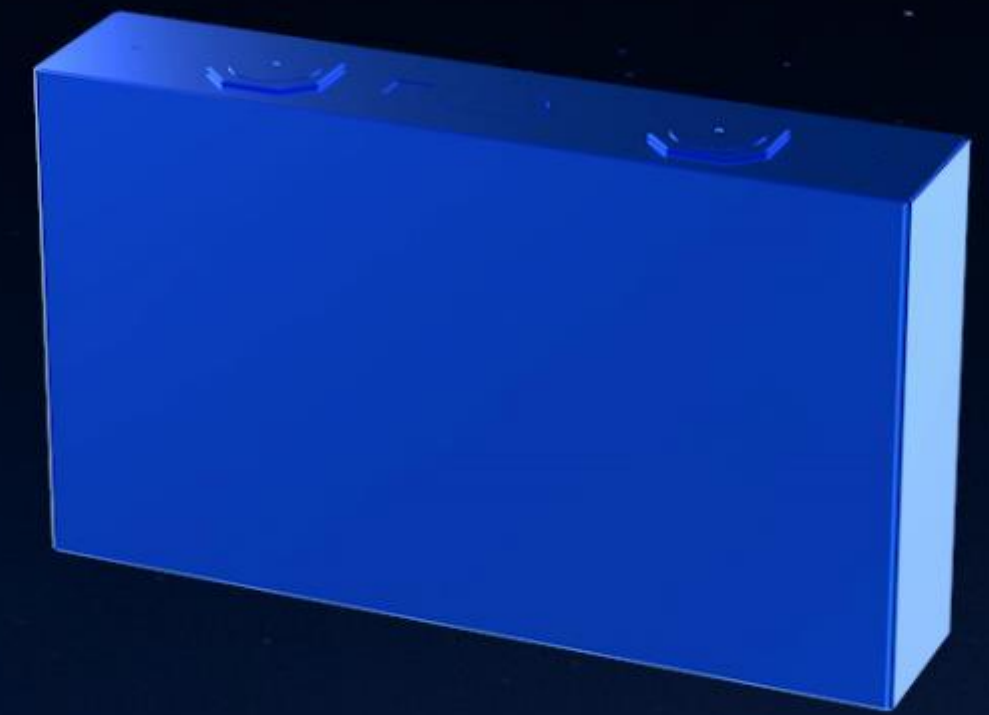
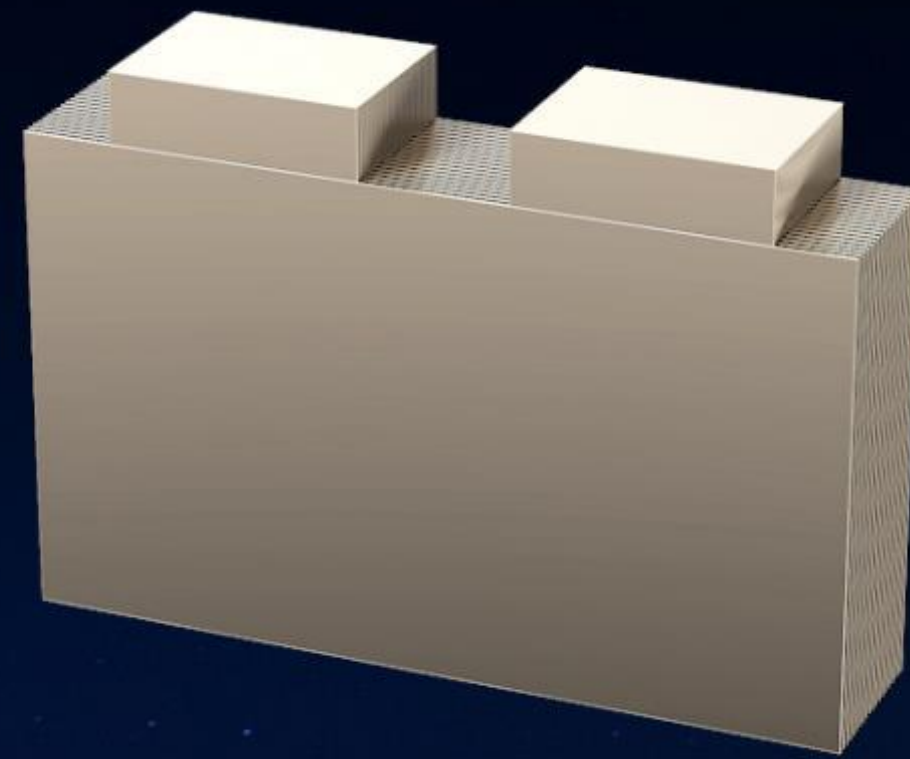
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## Innovative Current Collection Technology

The "golden ratio" current collection design  
The "expressway" for electrons



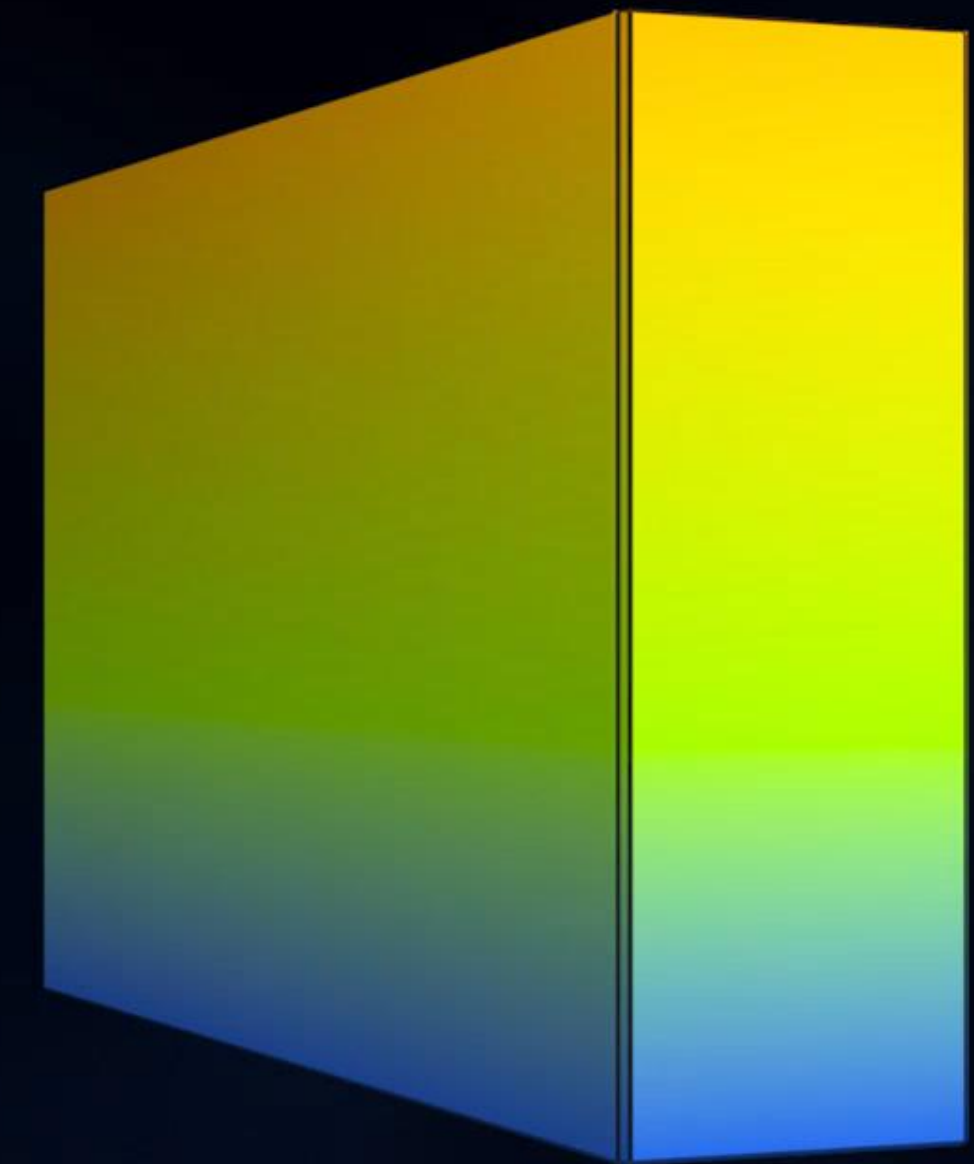




## Invention of the 3T technology

Temperature uniformity in large batteries

Three-dimensional  
heat diffusion → Two-dimensional  
heat conduction



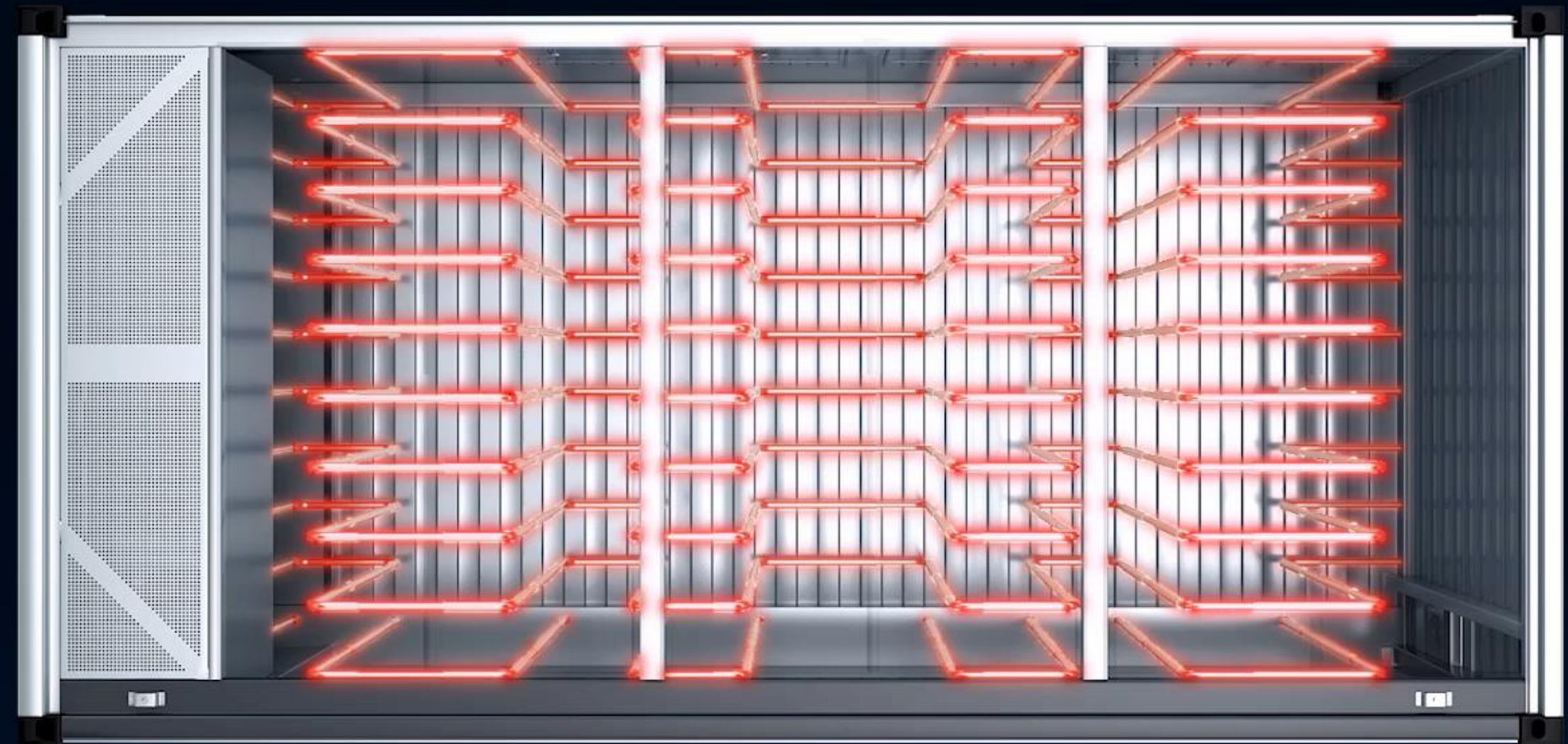
The temperature difference has been reduced from 8°C to 1.5°C.





The system's energy efficiency  
has been increased to

95% ↑



3T efficient thermal management design

The temperature difference is less than 3°C, and the maximum temperature has dropped by 5°C.





SIMPLE

Simple

Enjoying easier operation



# Mr. Giant with minimalist integration

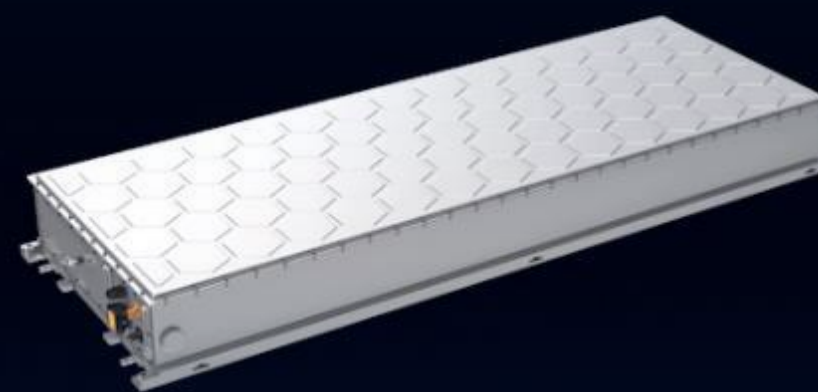
Battery cell



50% ↓

The number of battery cells

Pack



50% ↓

Welding spots

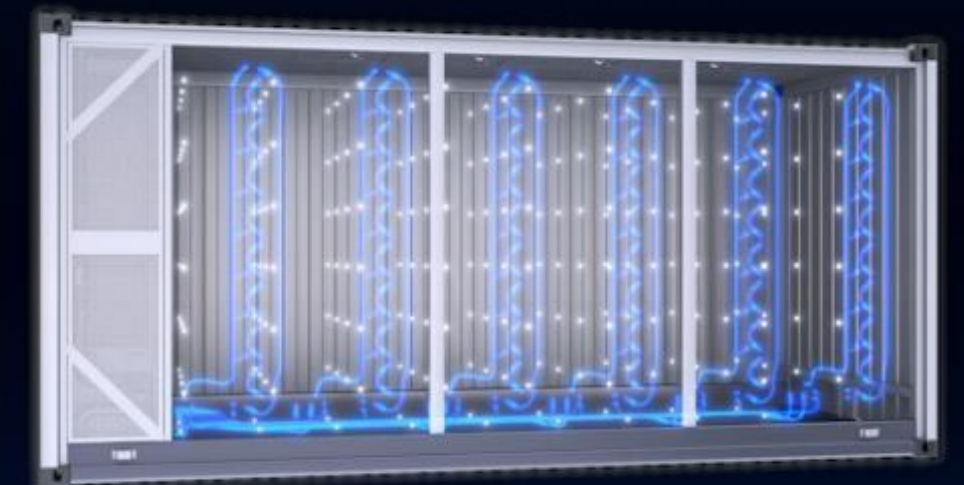
50% ↓

Steel strips

50% ↓

End plates

System



50% ↓

Information collection points

50% ↓

Cables





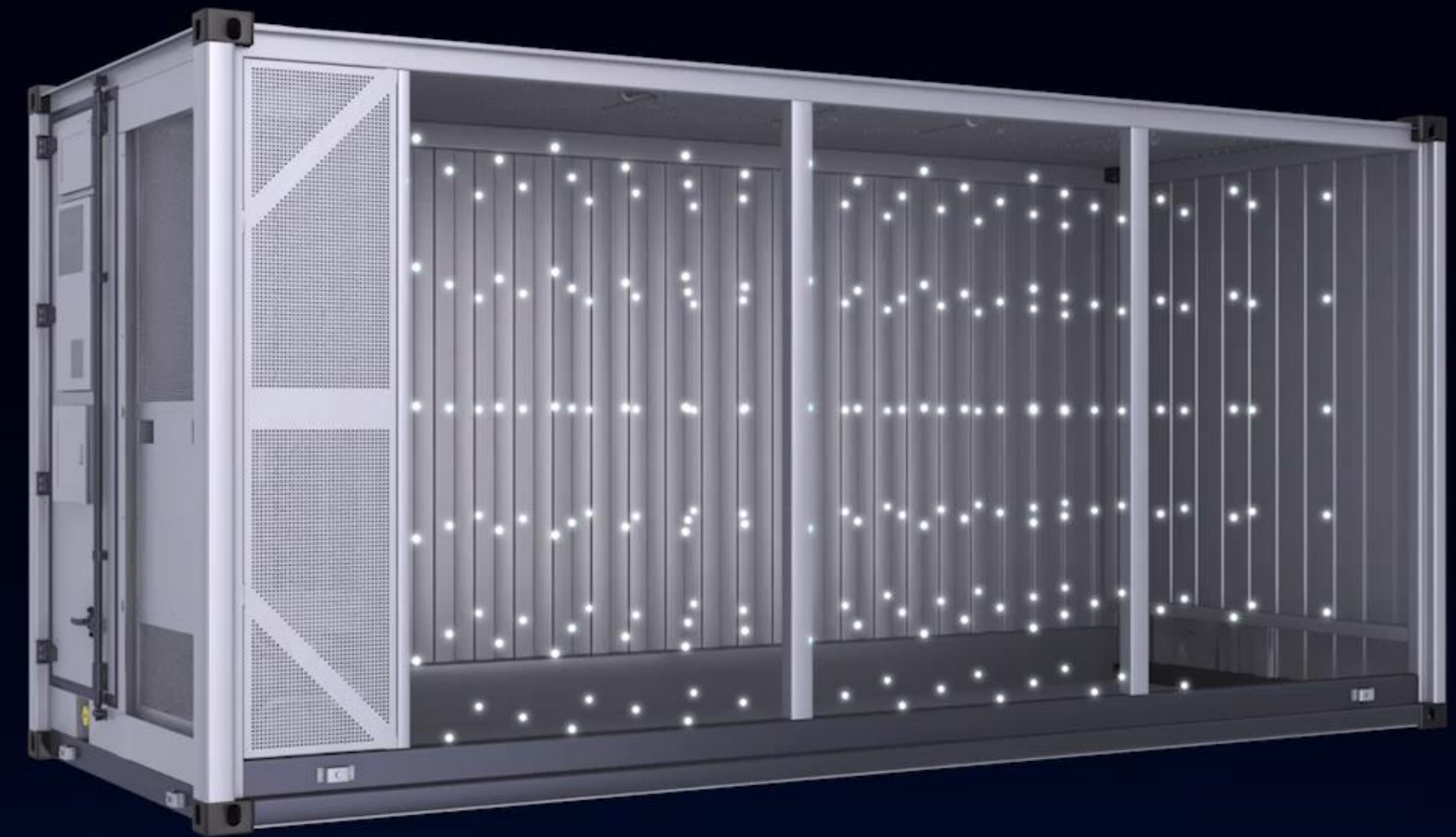
## Accessories halved for easier installation

The easiness of system maintenance has been increased by

50% ↑

The O&M monitoring workload has been decreased by

50% ↓







## Cloud-based diagnosis for easier O&M

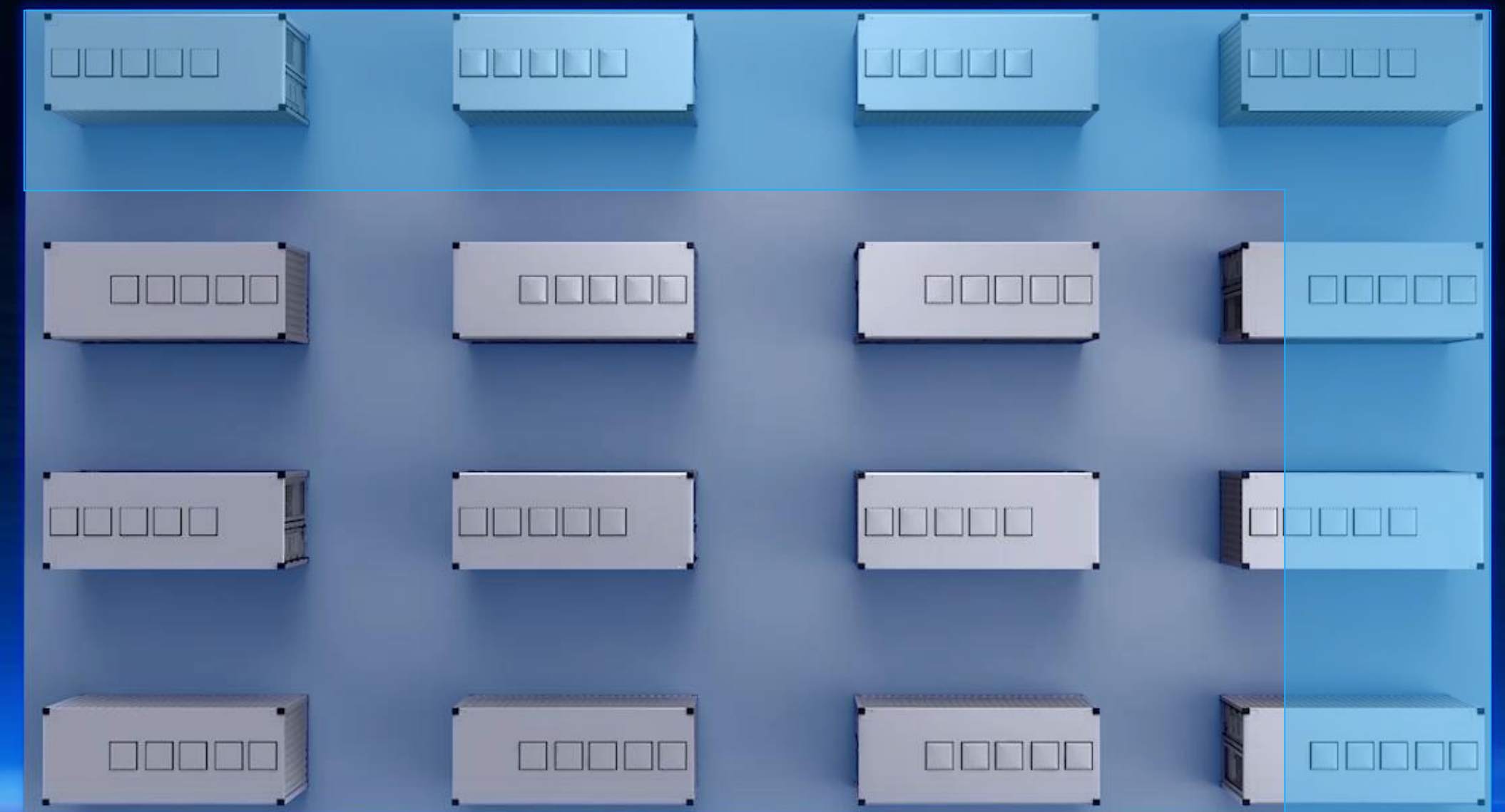
AI intelligent perception for precise management down to battery cells





 with the compact back-to-back arrangement

**Saving 35% of land area** ↓





# Safe



**Innovation is the key to safety**  
and the solution for a risk-free system.



**Three-level protection  
from battery cells  
to the system**



Battery cell

Pack

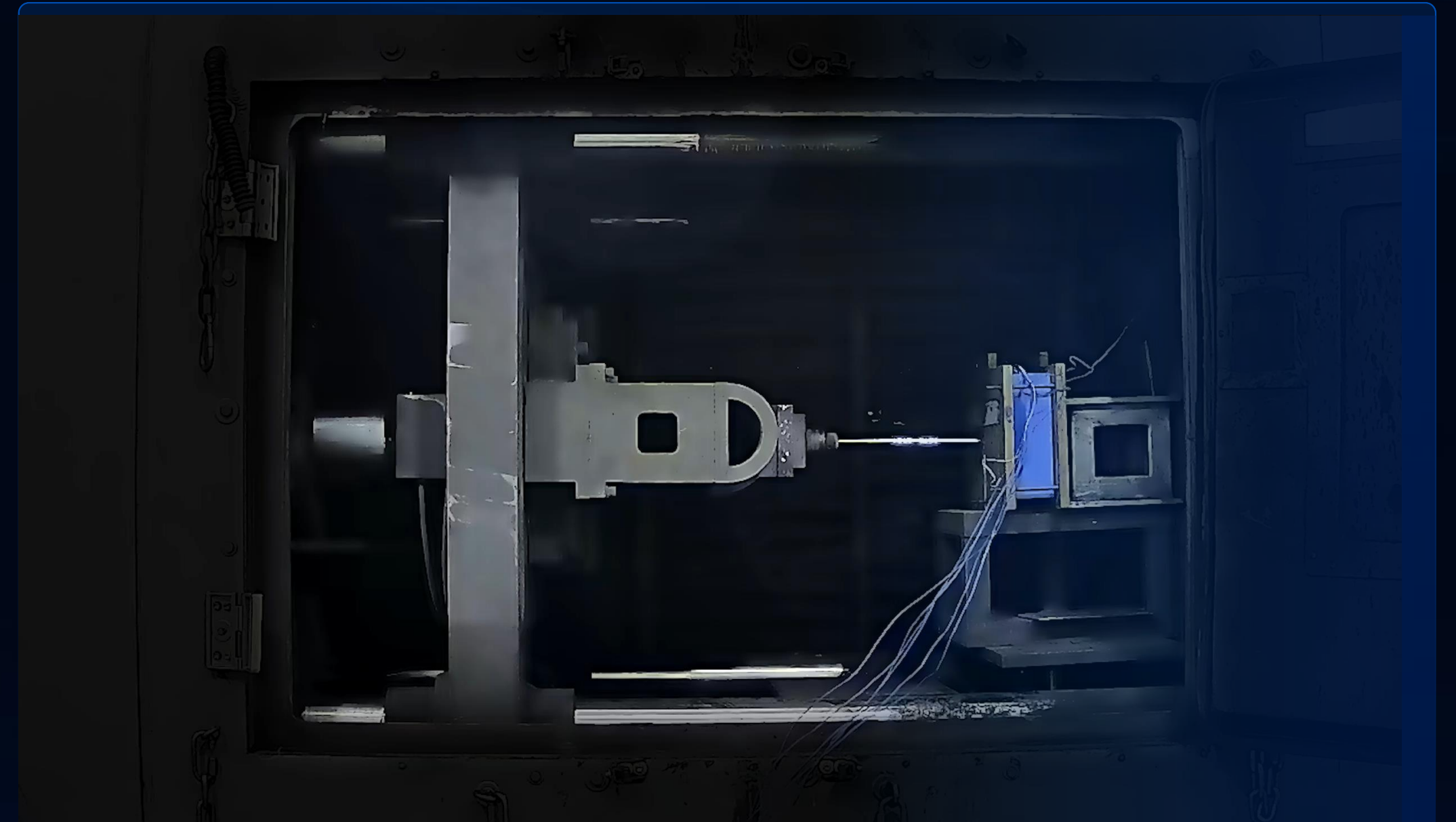
System





## **14 micron composite membrane** **Beyond the industry average**

For each additional micrometer in thickness,  
an extra layer of safety is provided.



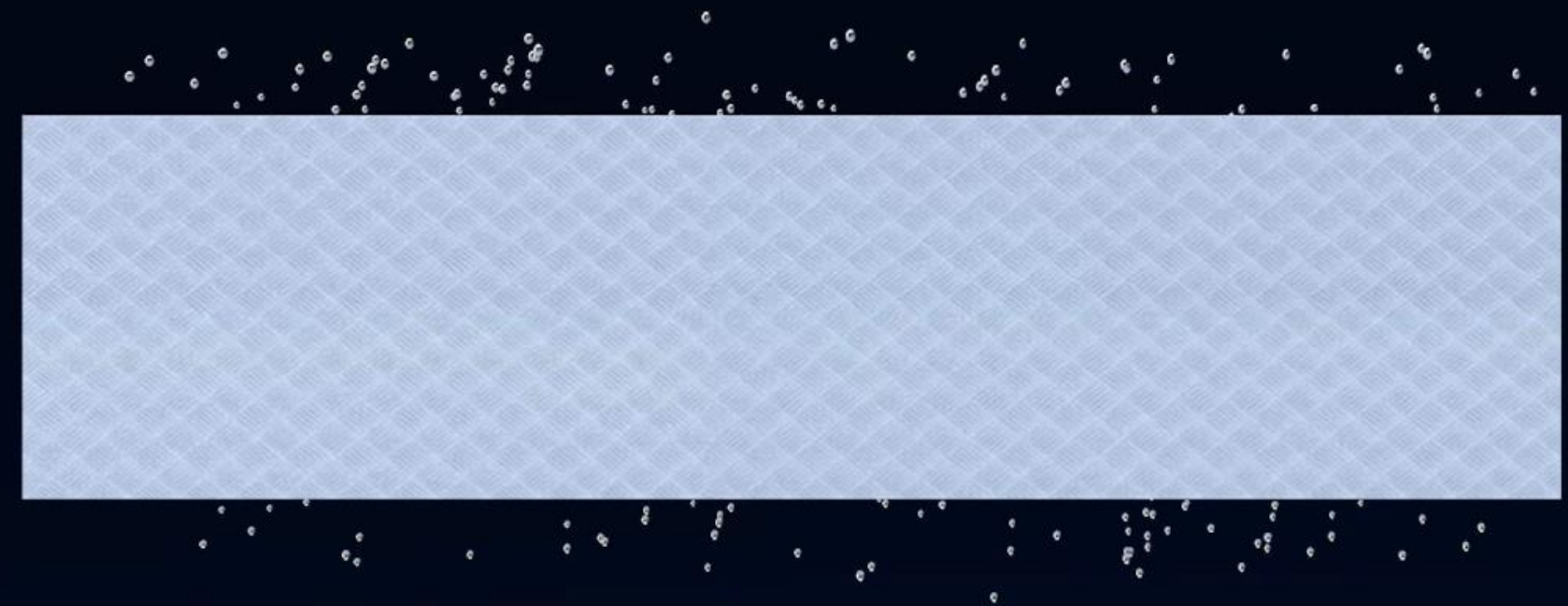




## Special coatings

Thermal shutdown

Double-sided coatings for increased safety







## Pack-level

Thermosensitive full-time temperature sensing  
Instant aerosol control

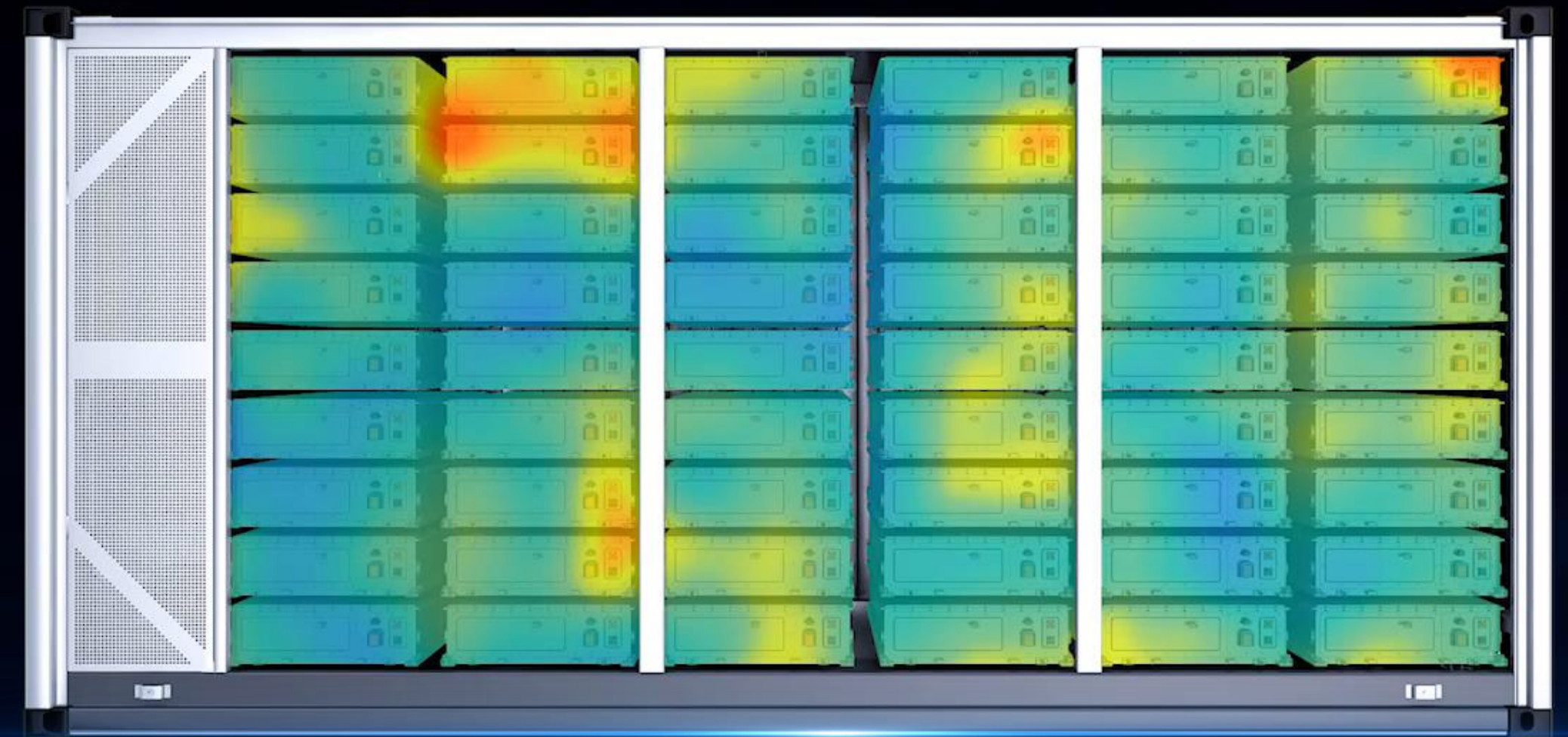






## System temperature control and monitoring design

to guarantee safety



### Integrated liquid cooling

- Combination with the 3T technology
- Realization of ultra-fast temperature equalization between the battery cell and the system
- Improvement of thermal management efficiency



# Mr. Big & Mr. Giant Flagship Series

## Redefining ESS

### Efficient

1% increase in the energy efficiency of both the battery cell and the system

Innovative current collection technology

3T efficient thermal management design

The system's energy efficiency has been increased to 95%

### Simple

Mr. Giant with minimalist integration

The easiness of system maintenance has been increased by 50%

Customers have saved 35% of land area

### Safe

Battery cell safety  
Innovative design

14 micron particle composite membrane

Pack-level thermosensitive full-time temperature sensing

The system with integrated liquid cooling



# Mr. Big & Mr. Giant

## Global mass production in 2024 Q4



