

# Success factors to deliver competitive Gigafactories on time

Webinar – Information material

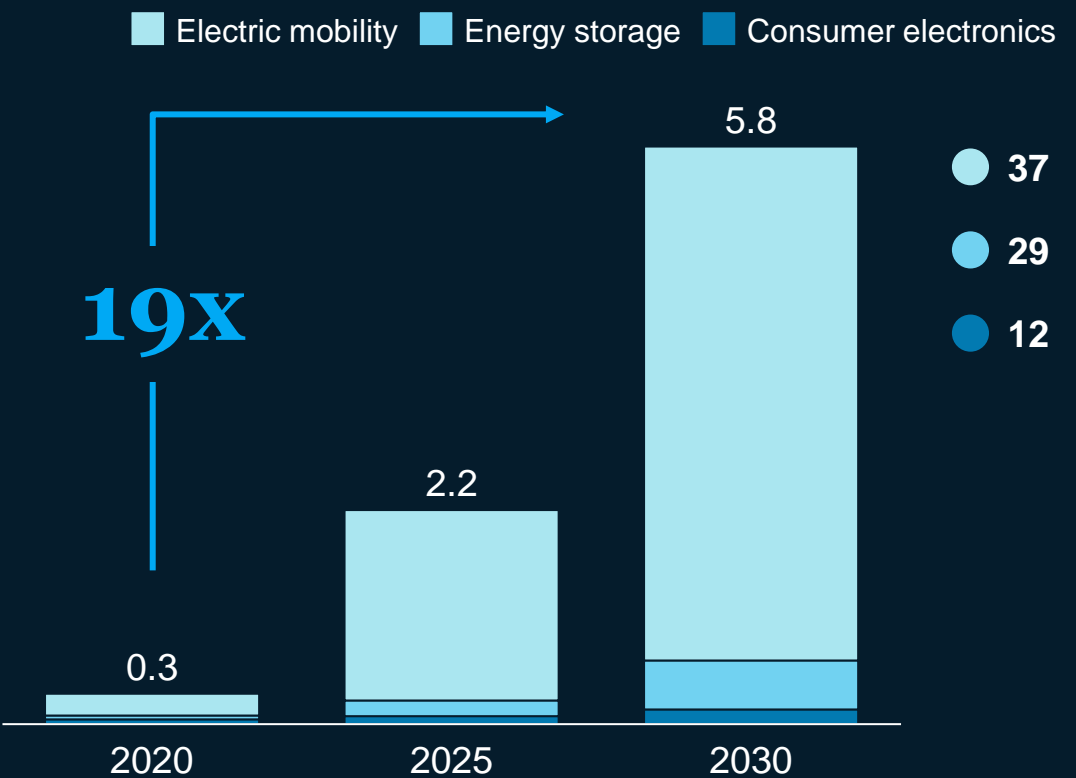
June 16<sup>th</sup>, 2023



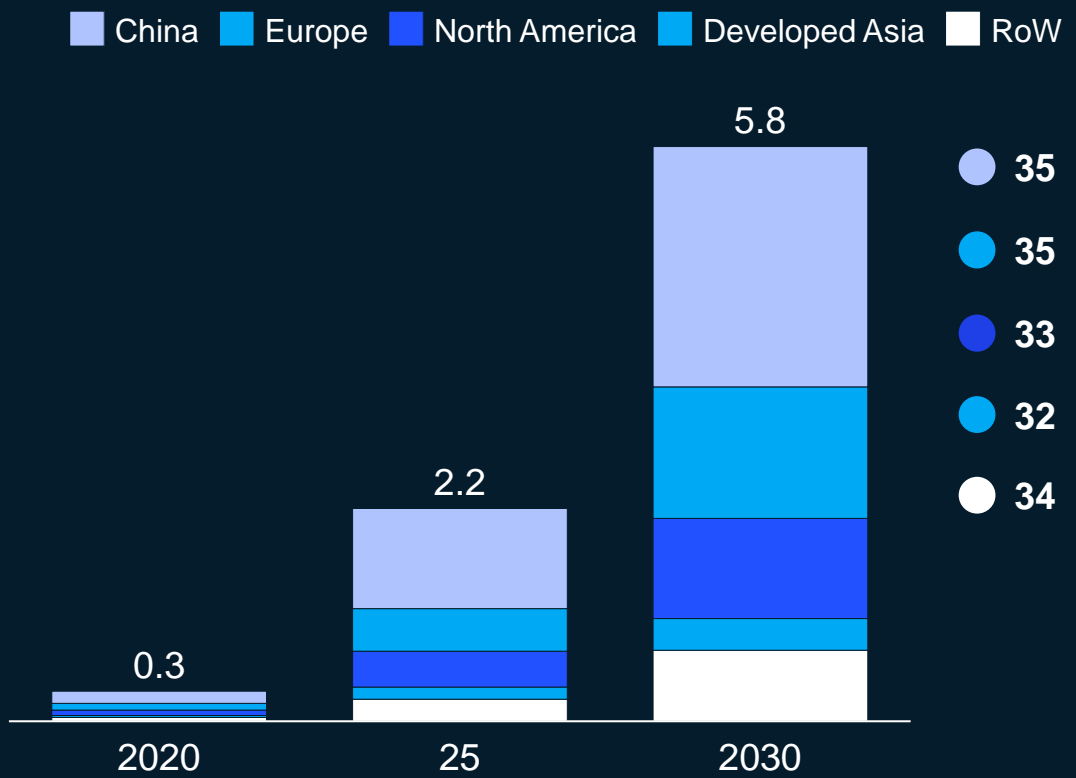
# Battery demand will grow to ~5.8 TWh in 2030, with >30% growth across all regions

○ CAGR, %

## Global battery demand... by application, TWh



## Global battery demand... by region, TWh



# Implications of the accelerated demand

**>60%**

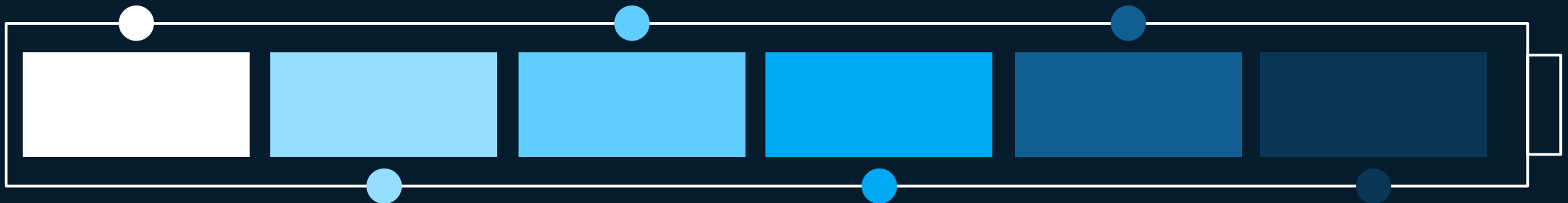
Global EV sales  
by 2030

**30%**

CAGR in BESS<sup>1</sup> installed  
capacity until 2030

**~150**

New gigafactories  
needed by 2030



**~\$380B**

Cumulative global CAPEX  
investment by 2030<sup>4</sup>

**Up to 10x**

Raw material supply  
ramp-up (2020-2030)<sup>2</sup>

**~1.0TWh**

Cumulative battery  
production scrap till 2030<sup>3</sup>

1. Battery Energy Storage System
2. Based on announced new production for AAM/CAM/Electrolyte
3. Assumes average 5% scrap rate on production (from demand) between 2020-2030
4. Investment into new cell production capacity (building and equipment), globally, between 2018-2030

# Our proprietary benchmarking shows that CAPEX efficiency and ...

The industrialization challenge is a significant risk to profitability

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**7+ months**

SOP delays on average

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**60%**

typical gigafactory production output in Year 1 of design capacity

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**~\$2M**

profitability impact for each lost day of production (50 GWh)

# ... deployment speed are key to meet performance targets

The best players significantly outperform the rest

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**2X**

faster time to market

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**3X**

More CAPEX efficient

CAPEX deep-dive next

**>30%**

less OPEX

# We see a downward trend of CAPEX towards under \$60M/GWh

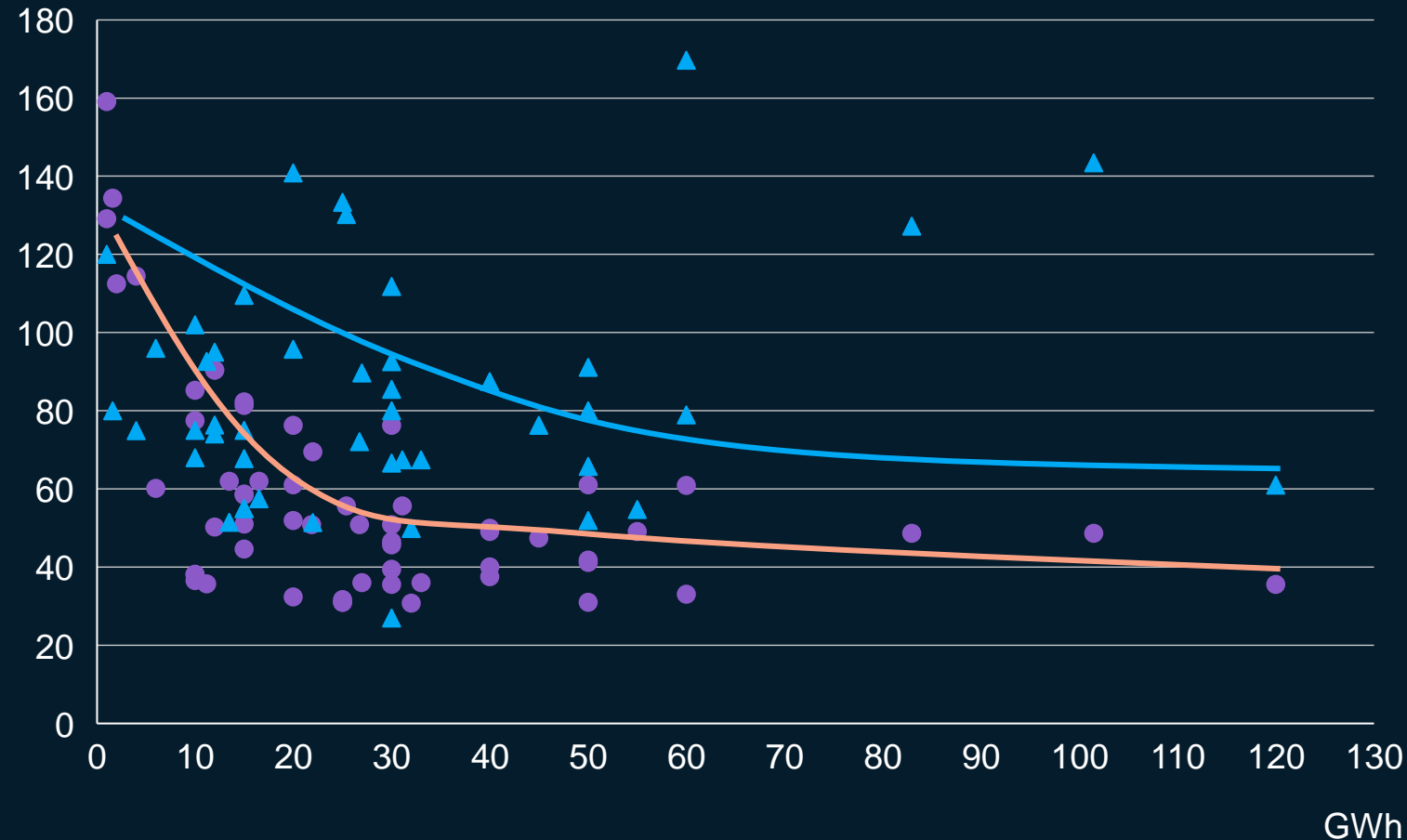
## Observations from industry

Total capex \$M/GWh

\$M/GWh

● China  
▲ Outside China

--- China  
--- Outside China



## Insights from discussions with industry experts and executives



*Aggressive players in greenfield in NA and EU set **targets below \$60M/GWh***

*Best practice realized in US and Western Europe around **\$50M/GWh***

*Top players are already below **\$20M/GWh** on their **building today** [outside of China]*

# Leading cell players master key success factors along six key dimensions



**Design, Construction & Equipment**



**Time-to-market**



**Ramp-up**



**Enablers/Digitization**



**Talent and Labor**



**Building Raw Material and Component Supply Chain**

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**Thank you**

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