



Middle East
Energy Dubai

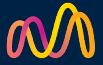
16 – 18 April 2024 | Dubai World Trade Centre

From Mine to Megawatt Large Scale Energy Storage Solutions for the Middle East



Thomas Gebauer, CEO
Redox One





From Mine To Megawatt





A world transformed by safe,
sustainable, cost-effective energy
storage solutions

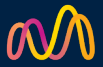
Making clean energy universally
accessible 24/7 to accelerate the
world's transition to 100% renewables

Deploying the safest, cheapest, most
durable long-duration energy storage
technology:

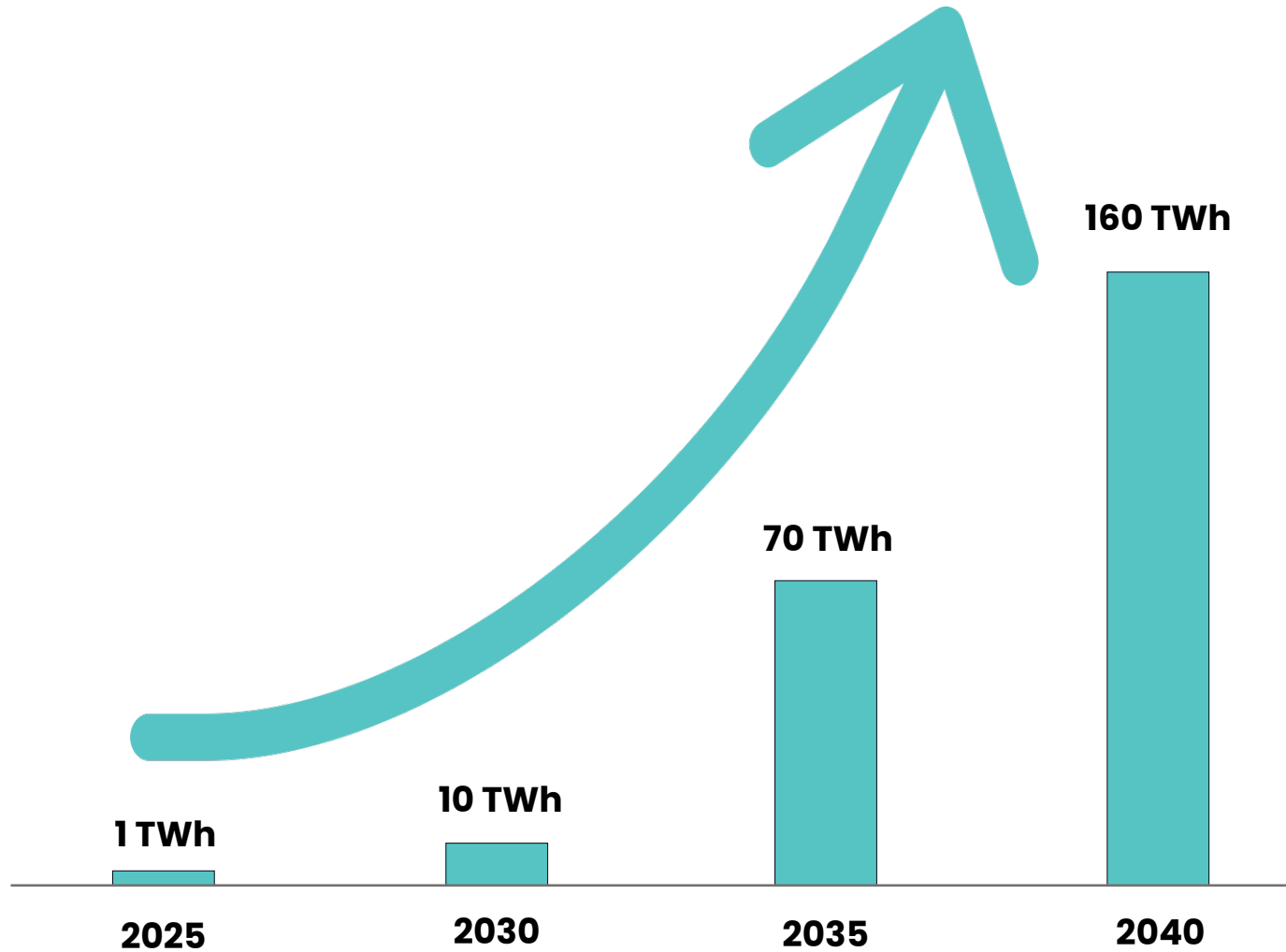
From Mine To Megawatt Iron-Chromium Flow Batteries

VISION





Cumulative global LDES capacity needed Forecast in TWh



Unprecedented market pull

Source
McKinsey, LDES Council, BNEF



tharisa

REDUX ONE


KARO
mining holdings

CYPRUS


tharisa **ARXO**
METALS

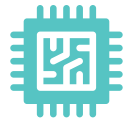
SOUTH AFRICA

REDUX ONE
Always switched on

GERMANY


KARO
platinum

ZIMBABWE



PROVEN
technology



HIGH-TEMPERATURE
stable



LOW
cost



UNPRECEDENTED
market opportunity



STRONG
investment partners



STRATEGIC
partnerships

WHY REDOX ONE MATTERS



Fe-Cr flow battery technology proven and demonstrated on MWh scale



Proprietary manufacturing process for Fe-Cr electrolyte straight from ore



Proprietary stack design for Fe-Cr flow batteries



High-temperature stable solution batteries operate up to 60C temperature without cooling.

PROVEN TECHNOLOGY & PRODUCTS



PIONEERING TECHNOLOGY SINCE 1970'S





Fe-Cr electrolyte cost a fraction of vanadium flow battery electrolyte cost (20 USD/kWh vs 200 USD/kWh)



Low-cost stack components and simplified system components



Covering the whole manufacturing process from raw material mining to MW storage solutions



Low-cost storage solutions for renewable energy
at 200 USD/kWh Full System Cost

LOW COST



tharisa

kenera

CHARIOT
TRANSITIONAL POWER 



Multi-generational Fe & Cr supply for electrolyte manufacturing (GWh)



System integration partners for MWh storage projects

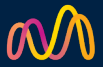


Demo customers signed up for MWh installations

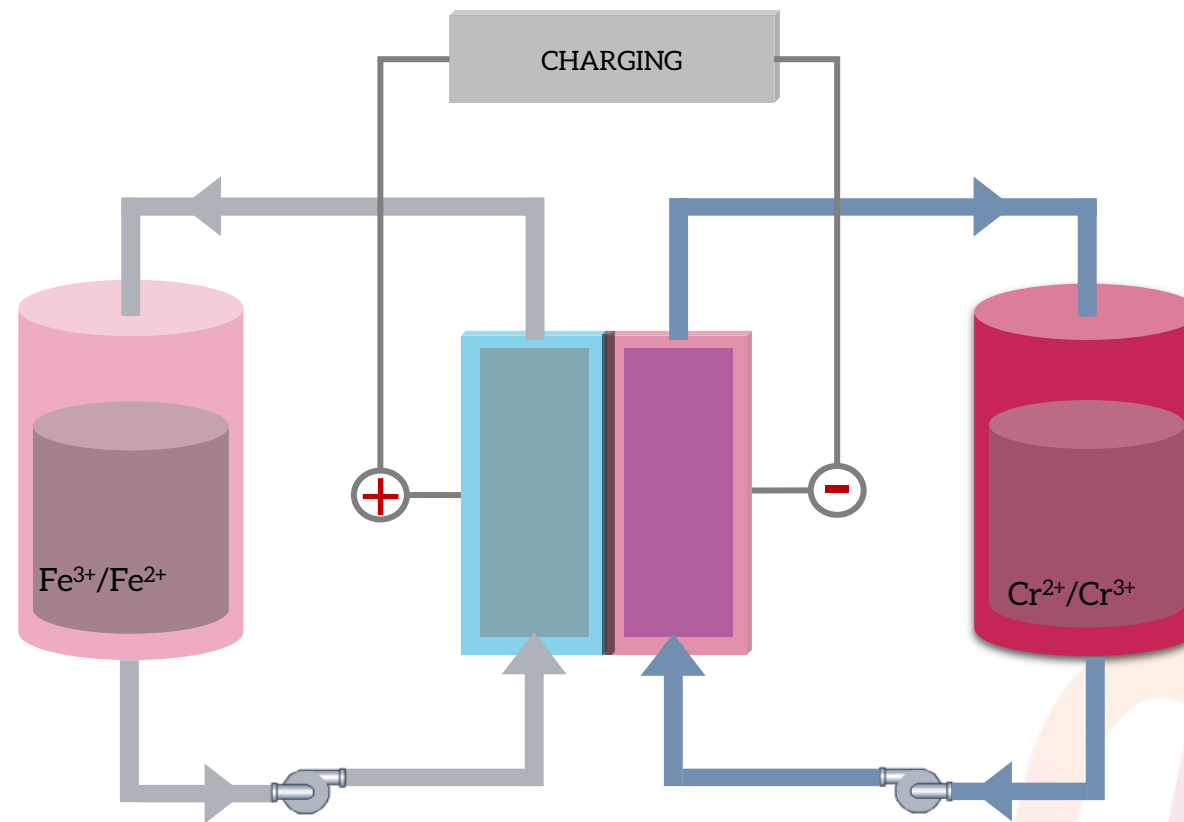


Well-connected in the MENA with Demo installations planned

STRONG PARTNERSHIPS



Fe-CR Flow Batteries



From Mine To Megawatt

Mining



Crushing & Separation



Concentrate



Smelting



Purification



Electrolytes
used in
batteries





Lifetime

20 years

High-temperature stable

Operating temperature up to 60 C

Efficient storage

70% round-trip efficiency

Virtually no capacity decay

<0.5 % per year

MWh footprint

75 m²

Discharge duration

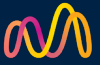
4-10 hours

Low to high voltage

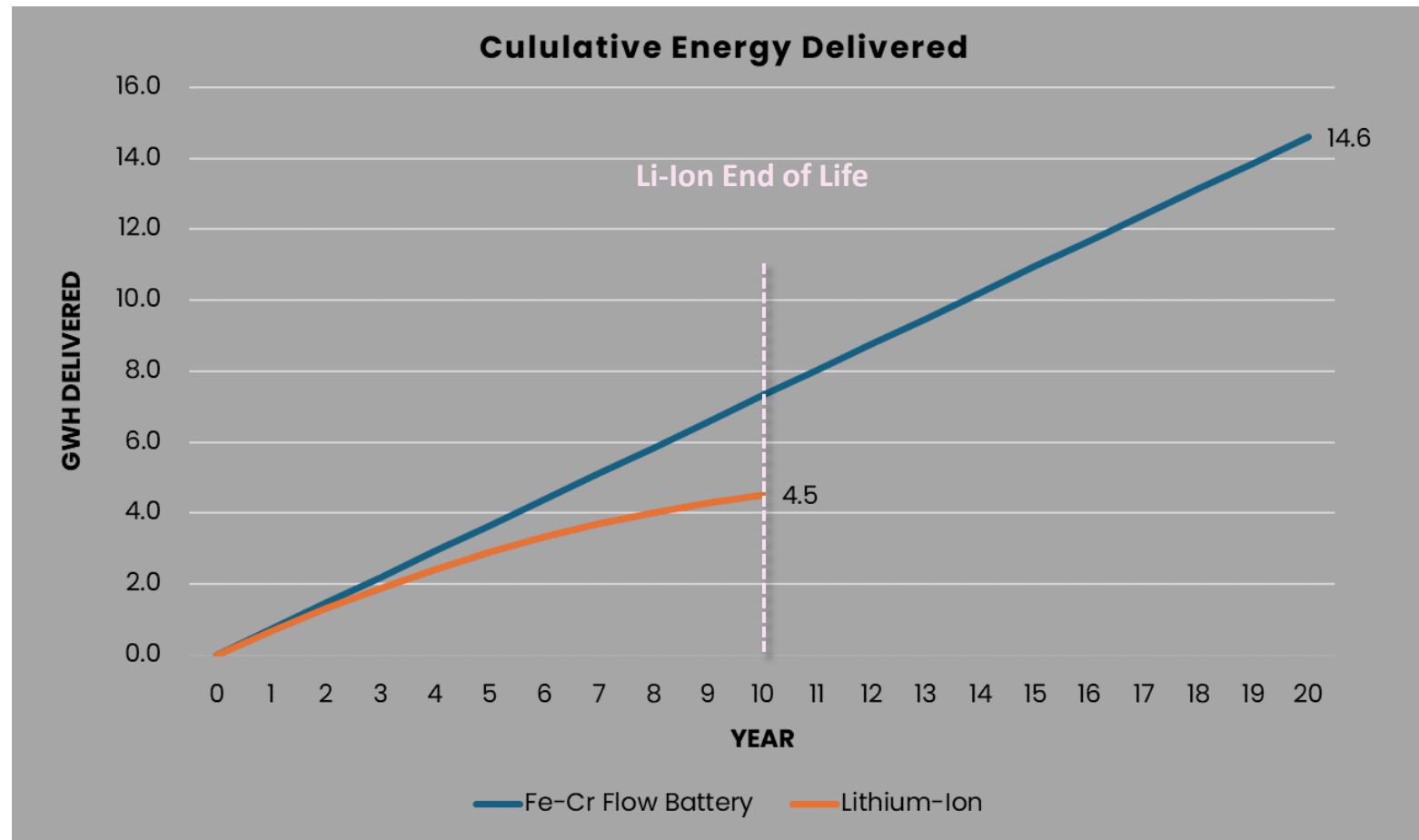
Pending on application

POWER & CAPACITY

decoupled to meet any application



More GWh for your money



Assumption: 1MWh DC capacity installed, 2 cycles per day, 100% DoD per cycle, capacity decay rate for Li-Ion batteries of around 1% per 100 cycles



LONGEVITY

Built too last

ECONOMIC EFFICIENCY

Cost effective game changer

SAFETY

Safe to operate and no fire hazard

Direct access to multi-generational

CHROMIUM

SUSTAINABLE

100% Recyclable using earth-abundant materials



REDOX ONE ROADMAP

TRIAL PHASE

2023



20 kWh to 200 kWh

DEMONSTRATION PHASE

2024 -2025



200 kWh to 20 MWh

DEPLOYMENT PHASE

2026+



50 to 100 MWh & beyond

REDOX ONE

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Redox One



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Thank you!

