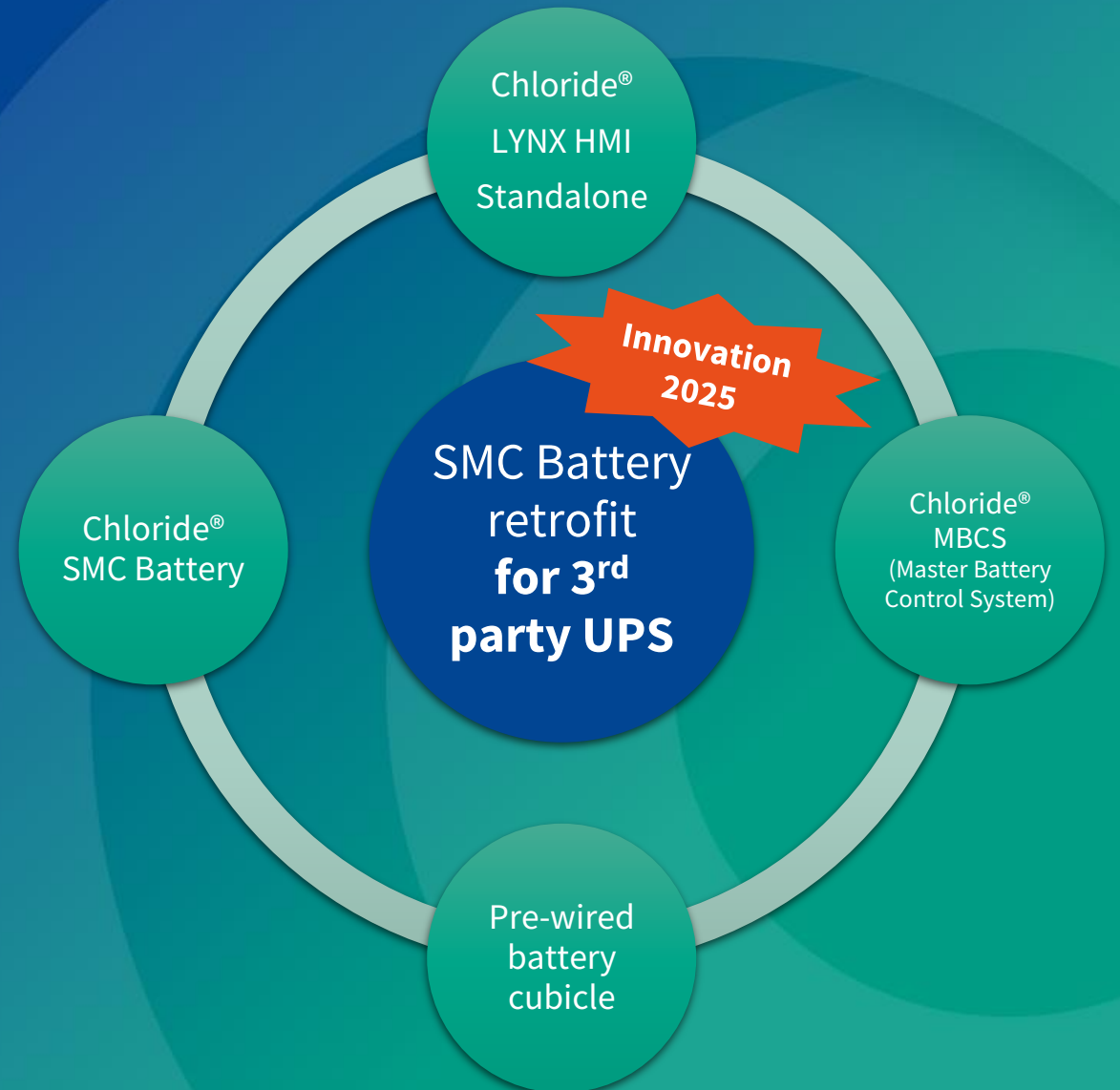


# SMC Battery Retrofit Solution by Chloride®

## Chloride® SMC-3P Retrofit

“Born with Chloride. Now Available to all.”



# 5 years of continuous innovation

*“ Your UPS may not be a Chloride, Keep enjoying the SMC solution no matter your UPS brand ”*



3<sup>rd</sup> party UPS

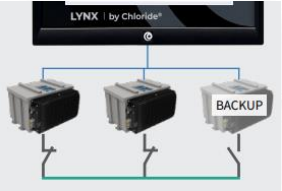


Chloride<sup>®</sup> SMC Retrofit

# All-in-one product, stand-alone and turnkey solution

Cubicle RAL 7035 | IP21

HMI LYNX by Chloride® Touch Screen 7"



Chloride® MBCS (Master Battery Control System)

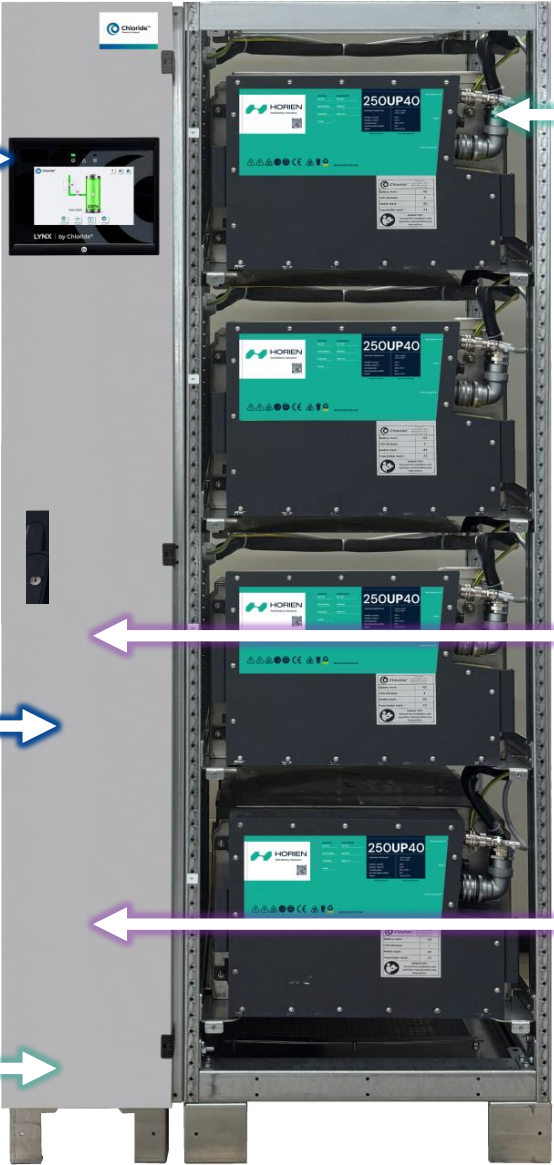
Remote communication access  
MODBUS RTU / TCP-IP / IEC 61850 / SNMP / Profibus  
(Optional)

**COSONI PCB:** Communication interface between  
Lynx HMI and every SMC blocks

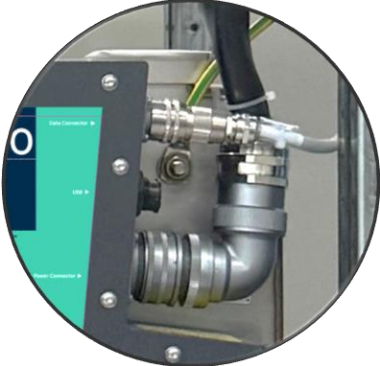
Redundant supply for HMI and **COSONI PCB:**  
DC from battery circuit & AC from auxiliary supply  
(with galvanic insulation) + fuses protection  
Battery common fault – 1 dry contact alarm (NO/NC)



Power and auxiliary terminal blocks



Communication & Power cables with fast-on connectors



**Innovative Chloride® system allowing modules hot swapping :**  
1) In case of maintenance, no need to switch-off the main battery breaker (100%availability)  
2) no risk of arc  
3) no live parts

Breaker MCCB Q5: Battery protection  
Individual disconnecter switches (fuse holders) for each SMC blocks

Since battery rooms are no longer necessary, we designed these cabinets to match the look and feel of your UPS units, for when you want to place them next to your UPS units.

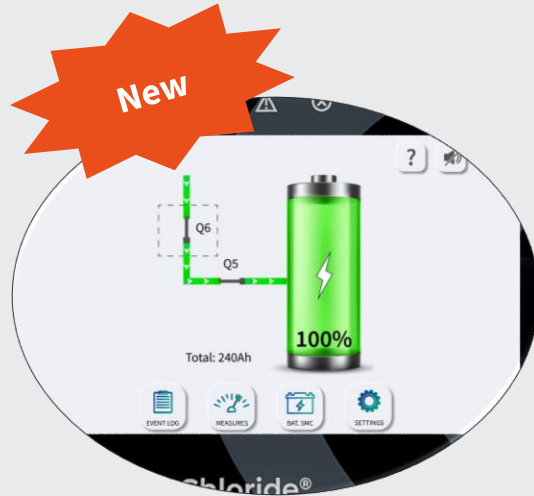


# All-in-one product, stand-alone and turnkey solution

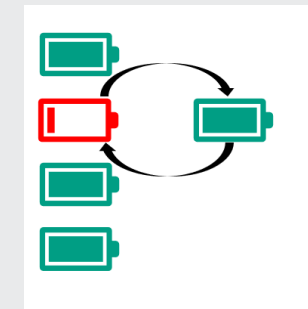


# All-in-one product, stand-alone solution

## Chloride® Master Battery Control System (MBCS)



- Chloride® MBCS allows monitoring and management of all connected SMC battery modules (Linux OS for greater reliability)
- N+1 automatic connection, hot swap manage (Chloride® innovation)



# Technical data : Cubicle

## Mechanical (Standard):

- Textured Powder coating 50 microns RAL 7035
- Frame structure 2mm thickness
- Door thickness 2mm
- Panel 1.2mm
- Internal covering for anti contact : translucid plexiglass (personal protection)
- IP21
- Foot height 100mm
- Foot cover
- Bottom cable entry or top entry

## HMI (Standard):

- 3 languages : English, French, Spanish

## Mechanical (optional)

- Specific thickness
- Panel thickness 2mm
- Specific feet height (200mm or 300mm)
- TOP entry
- IP protection up to 42.
- Specific lock
- Door stop
- Other adaptations as per CP range (please consult)

## HMI (Options):

- UPS internal battery breaker displayed (will be untitled “External switch”)
- Remote communication access  
MODBUS RTU / TCP-IP / IEC 61850 / SNMP / Profibus. (No redundancy)

# Technical data : Battery

## General Data

Operating temperature	-20°C / +60°C    -4°F / +140°F continuous -40°C / +75°C    -40°F / +167°F peak <sup>1</sup>
Storage duration	Indefinite (-40°C / +60°C)
Design life	20 years
Recharge time	<7h (90% SOC <sup>2</sup> ), <12h (100% SOC)
Max charging current	Self-limited to 0.2 C
Short circuit current	6C limited to 100ms
External protection	IP55 (IP65 as option)
Power connector <sup>(3)</sup>	MS3102 to MIL -DTL 5015 Series I
Data connector (3)	MS3110 to MIL -C-26482 Series I

*(1) Tested for up to 16 hours continuously*

*(2) State of charge*

*(3) 48UP200: M8 power terminals - RJ45 data connector*

## Standards

EN 61000-6-2 / EN 61000-6-4

CE Mark

UL9540A (Safety)

Designed to comply with UL1973 ed.2

IEC62984-1, -2, -3 / IEC60529

## Manufacturing

More than 15MWh deployed in 50 countries

Manufactured in Switzerland

ISO 9001 - Quality Management System

ISO 14001 - Environmental Management System

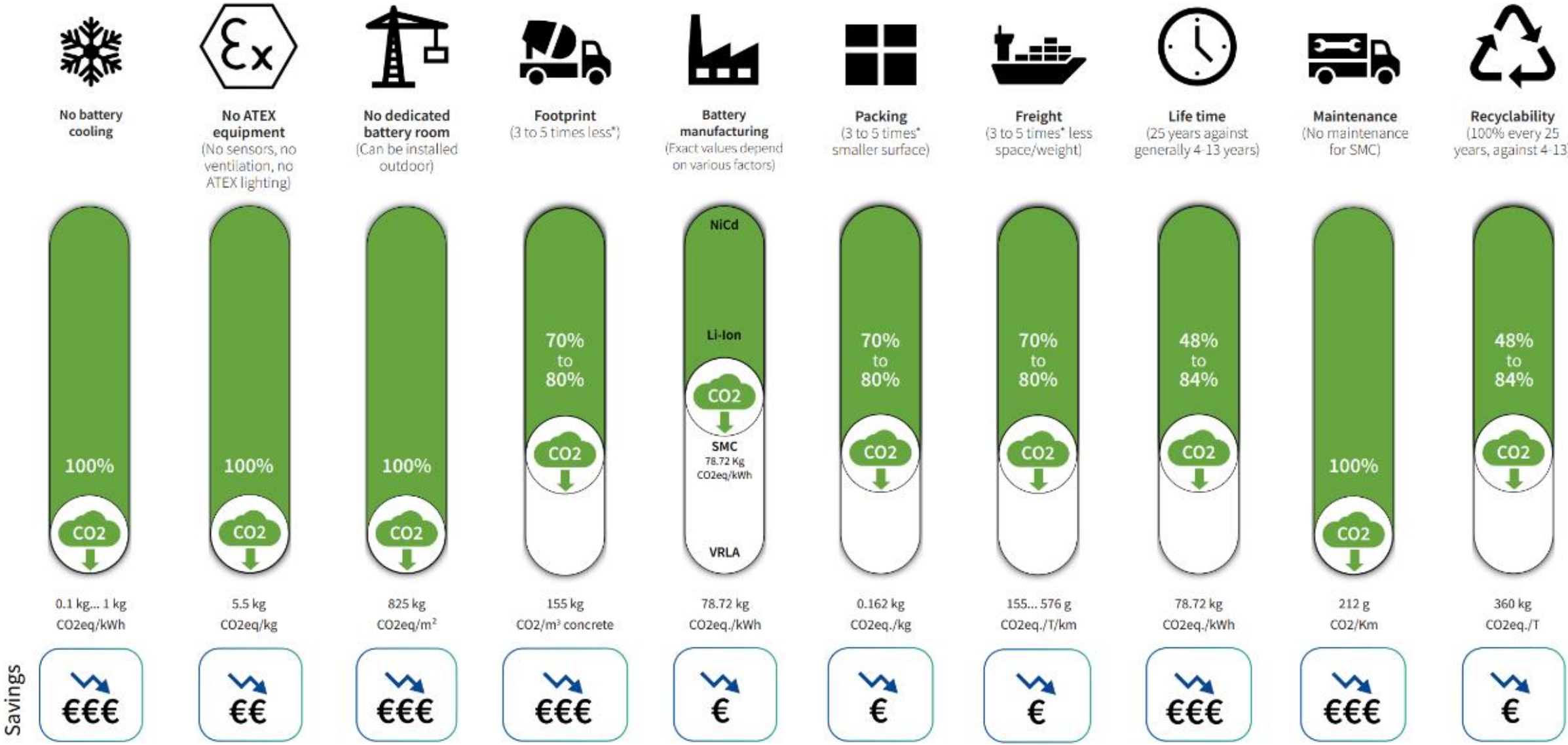
# SMC basics : module ratings

New!  
400Vdc  
40 Ah

New!  
400Vdc  
40 Ah

	48TL200*	110UP80	125UP80	220UP40	250UP40	2x380UP40H	2x450UP40H
Nominal Voltage (VDC)	48	110	125	220	250	380	450
Charge Voltage Range (VDC)	54-59	121.6-160	135.1-160	243.2-300	270.2-300	250-700	250-700
V <sub>min</sub> (VDC)	40	90	100	180	200	258	306
Nominal Capacity (C4)	200 Ah / 9.6kWh	80Ah/ 8.6kWh	80Ah/ 9.6kWh	40Ah/ 8.6kWh	40Ah/ 9.6kWh	40Ah/ 14.6kWh	40Ah/ 17.4kWh
Cells per Module	100	90	100	90	100	-	-
Cells in series	20	45	50	90	100	-	-
Strings in parallel	5	2	2	1	1		
Max Recharge Current (0.2C)	40 A	16 A	16 A	8A	8A	4A	4A
<i>Max Recharge Current per String</i> (excluding 400V : 0.1C)	8 A	8 A	8 A	8A	8A	4A	4A
Max Discharge Current	150 A	120 A	120 A	60 A	60 A	60 A	60 A
<i>Max Discharge Current per String</i>	30A	60 A	60 A	60 A	60 A	60 A	60 A
Thermal Dissipation at 25°C	110 W	110 W	110 W	110 W	110 W	2x110 W	2x110 W

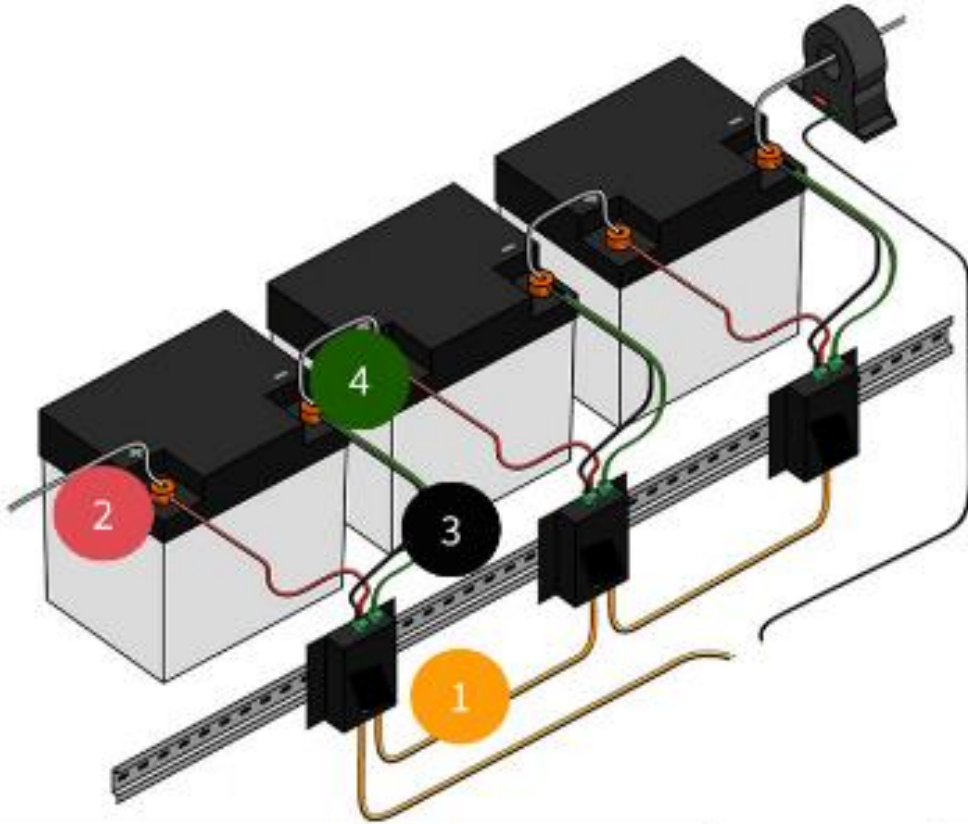
# 1<sup>st</sup> low carbon UPS solution



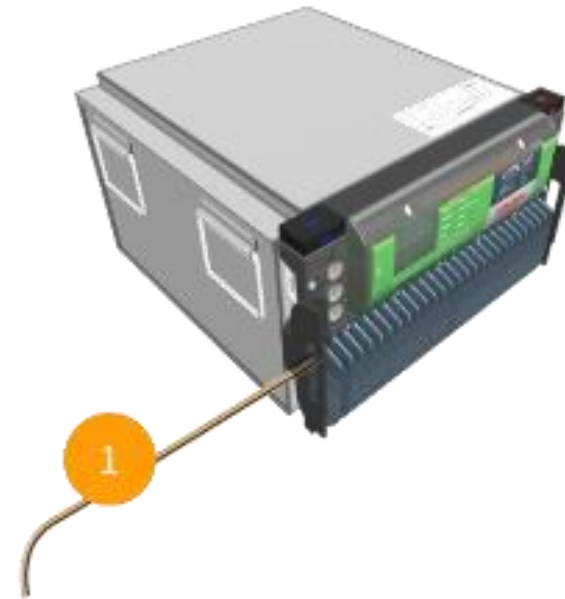
\* 6 to 10 times less thanks to the Chloride® MCBS, where battery redundancy is needed

Disclaimer: Data provided for guidance purposes only and is not contractual and may vary according to the type of installation.

# SMC battery is truly a change in technology: wiring savings



From **4 wires** (traditional BMS)...



to **only 1 cable** (Smart Batteries)

SMC Batteries have their own BMS for control and for monitoring.

# Sodium Metal Chloride (SMC) vs Nicad & VRLA Battery Comparison

Energy density 3 to 5 times more → Foot print and Weight = 3 to 5 times less



Footprint  
(3 to 5 times less)



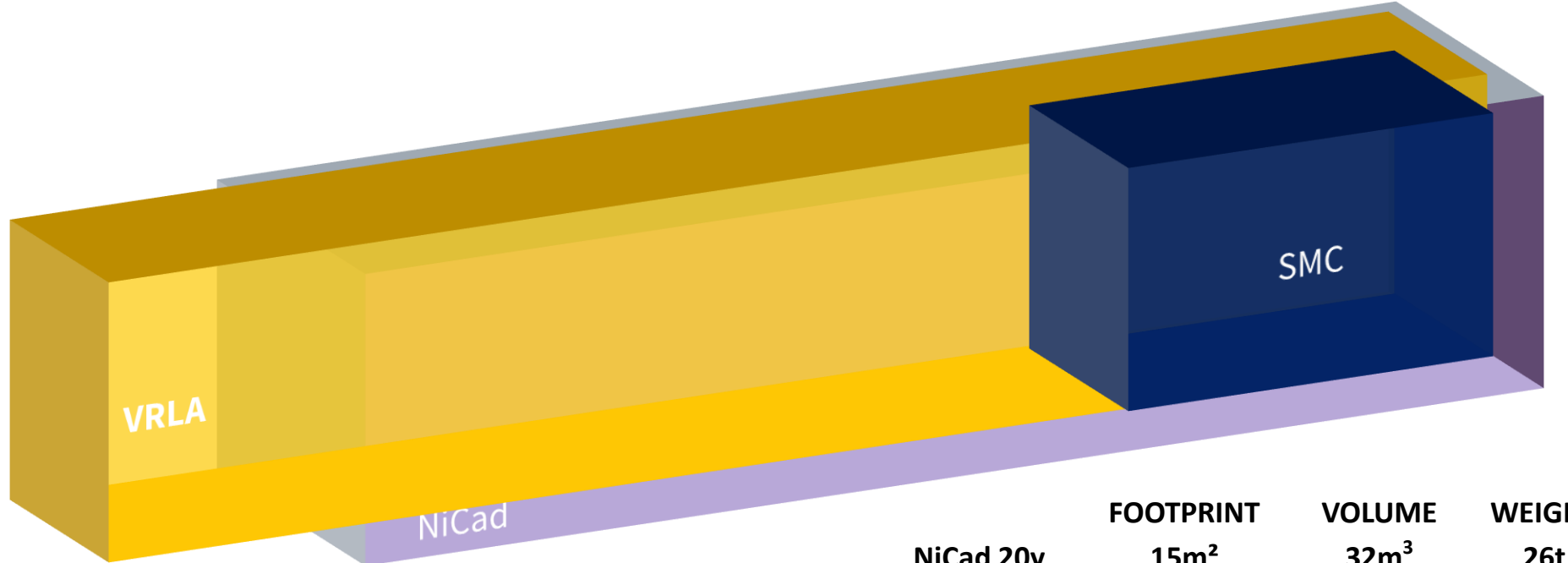
Freight  
(3 to 5 times less space/weight)



197Kg CO<sub>2</sub>/m<sup>3</sup>  
concrete



8...105g  
/T/km



	FOOTPRINT	VOLUME	WEIGHT
NiCad 20y	15m <sup>2</sup>	32m <sup>3</sup>	26t
VRLA	12m <sup>2</sup>	28m <sup>3</sup>	28t
So-Nick 20y	3.2m <sup>2</sup>	6.6m <sup>3</sup>	4.8t



# Foot print and Weight = 3 to 5 times less



Footprint  
(3 to 5 times less)



Freight  
(3 to 5 times less  
space/weight)



€€€

€



Before



Today

125V 1120Ah  
configuration.

Reduces  
space and weight  
by 70%.

# No H2 emissions = No ATEX equipment



No ATEX equipment  
(No sensors, no ventilation, no ATEX lighting)

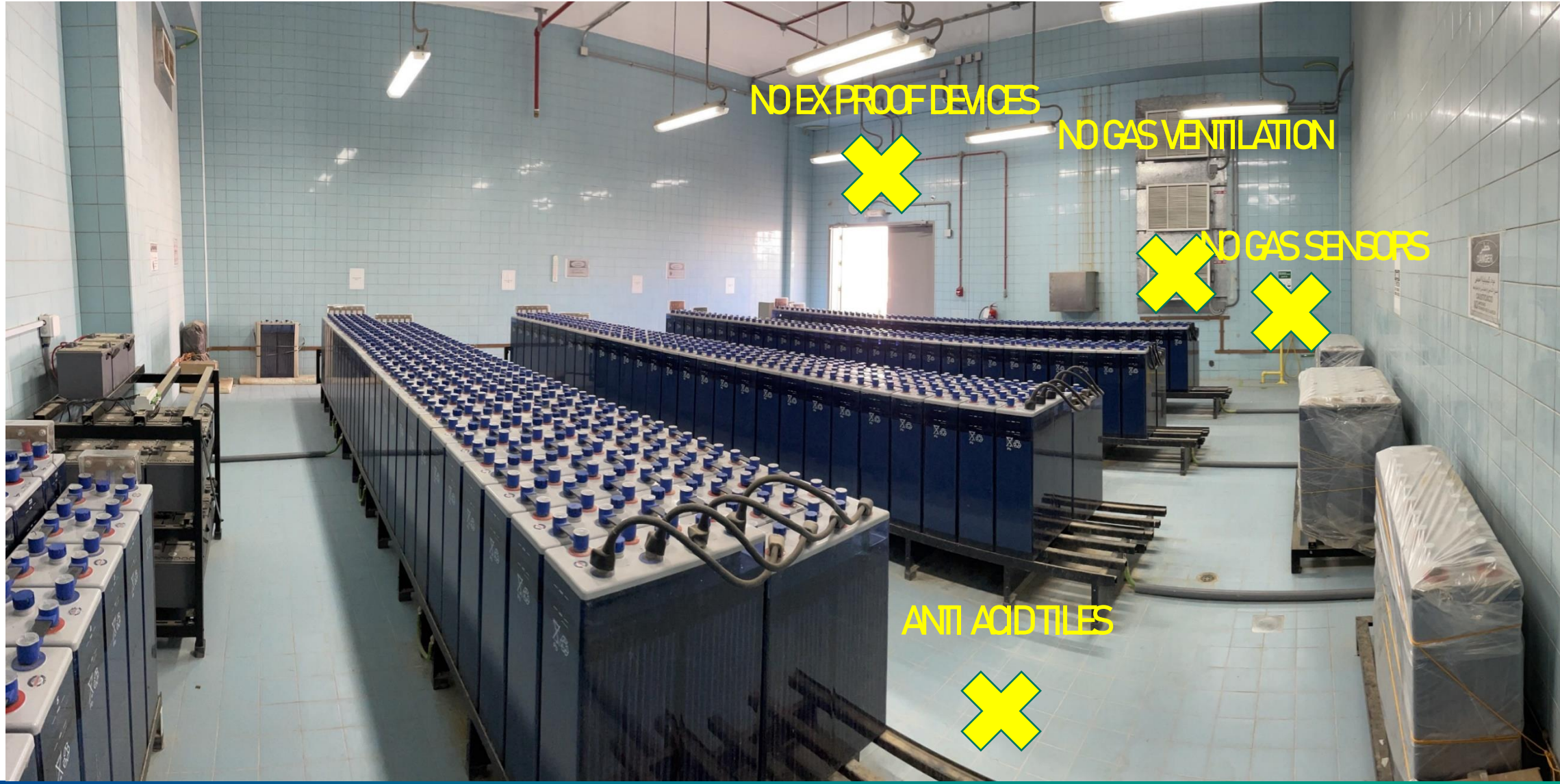
100%



5.5 kg  
CO2eq/kg



## NO GAS DETECTION An important change: true no gasing battery



NO EX PROOF DEVICES



NO GAS VENTILATION



NO GAS SENSORS



ANTI ACID TILES



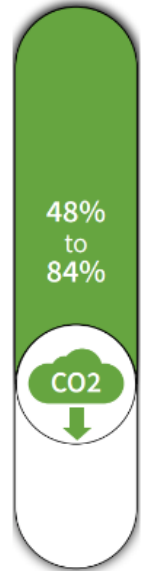
# SMC : safe & eco-friendly



**Life time**  
(25 years against  
generally 4-13 years)



**Maintenance**  
(No maintenance  
for SMC)



78.72 kg  
CO2eq./kWh



212 g  
CO2/Km

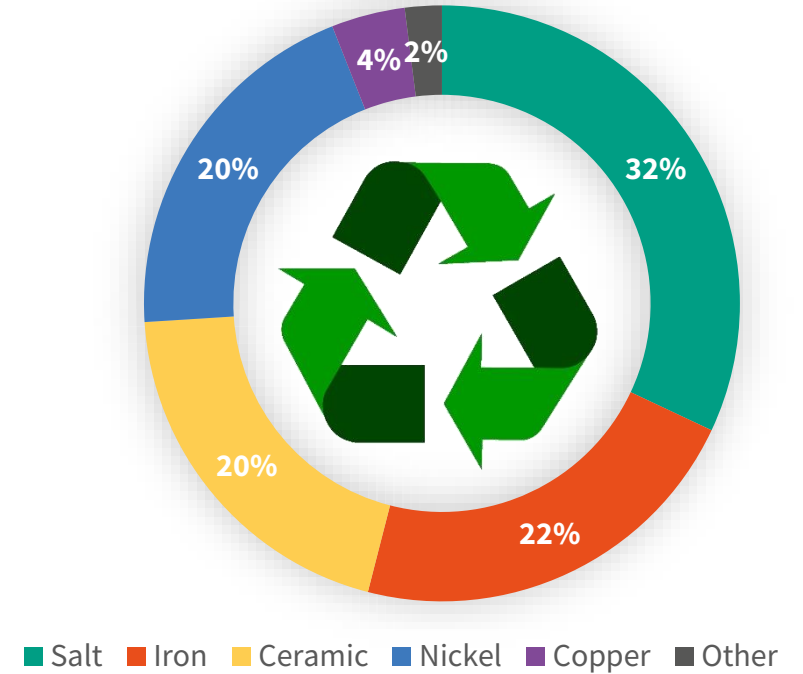


- ✓ SMC batteries are **100% recyclable** and do not contain any rare-earth materials.

*“Chloride can help you with the recycling of the batteries you want to replace”*

- ✓ **No maintenance** & no live parts
- ✓ **25 years Operational life** – No ageing (against 4-13 years for traditional batteries)
- ✓ **Indefinite storage** in sleep mode – No risk to kill the battery (deep discharge)

## SMC Battery Composition



# 1<sup>st</sup> low carbon UPS solution



No battery cooling



No ATEX equipment  
(No sensors, no ventilation, no ATEX lighting)



No dedicated battery room  
(Can be installed outdoor)



Footprint  
(3 to 5 times less\*)



Battery manufacturing  
(Exact values depend on various factors)



Packing  
(3 to 5 times\* smaller surface)



Freight  
(3 to 5 times\* less space/weight)



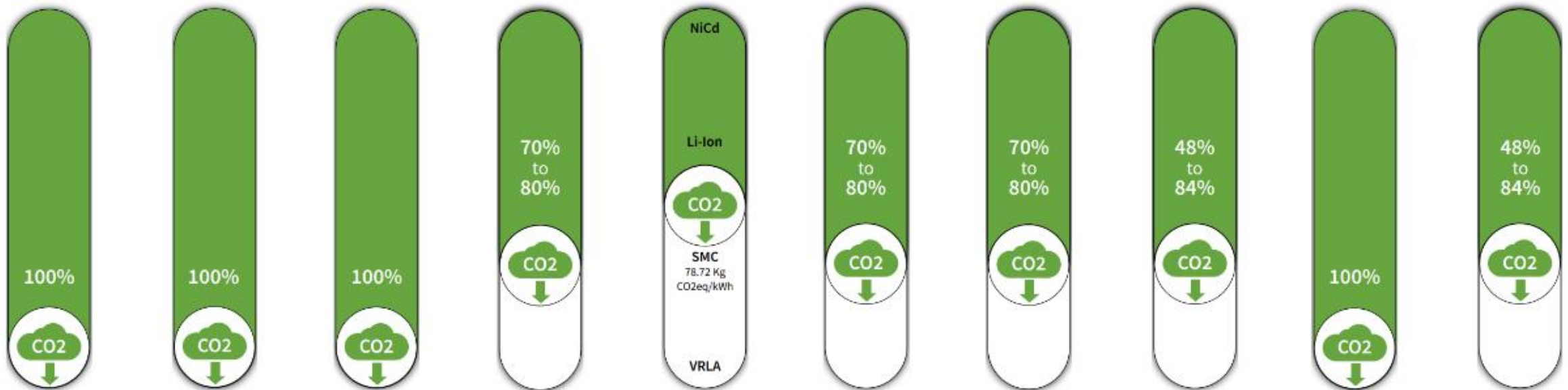
Life time  
(25 years against generally 4-13 years)



Maintenance  
(No maintenance for SMC)



Recyclability  
(100% every 25 years, against 4-13)



0.1 kg... 1 kg CO2eq/kWh    5.5 kg CO2eq/kg    825 kg CO2eq/m<sup>2</sup>    155 kg CO2/m<sup>3</sup> concrete    78.72 kg CO2eq./kWh    0.162 kg CO2eq./kg    155... 576 g CO2eq./T/km    78.72 kg CO2eq./kWh    212 g CO2/Km    360 kg CO2eq./T

Savings



\* 6 to 10 times less thanks to the Chloride® MCBS, where battery redundancy is needed

Disclaimer: Data provided for guidance purposes only and is not contractual and may vary according to the type of installation.



Source: 2023 Data Base Empreinte® ADEME energy transition agency  
Battery SMC + BMS total consumption: 100W/battery should be considered

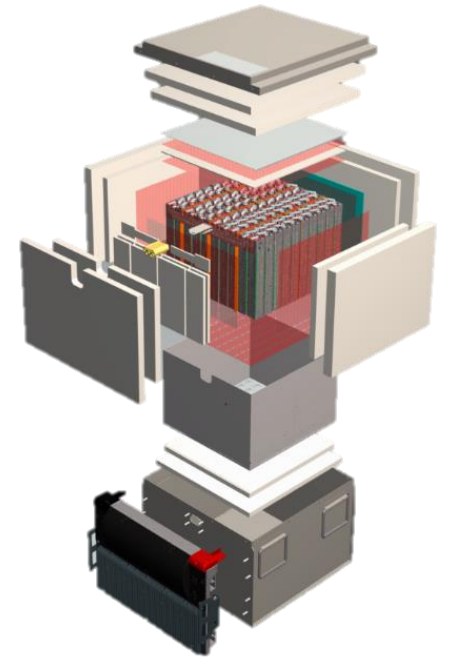
# TAKE-AWAYS

	TAKE-AWAYS
Hot swap bat. module replacement	YES
Integrated touch screen/BMS	YES Flush screen prevents theft and snagging
Communication protocols	MODBUS RTU / TCP-IP / IEC 61850 / SNMP / Profibus
Prewiring (Power + Communication)	YES (100%)
LINUX based technology	YES (no license fees)
N+1 management (redundancy)	YES
400Vdc Battery	YES : Chloride® Patent
Installed base	+15MWh
Experience	+5 years
Event log	2000 events
Event log export on USB stick (.CSV)	YES
Volt-free contacts for alarms	YES
Same look and feel than a UPS	YES
Customizable look and feel	Yes (color, thickness, feet height...)



# TAKE-AWAYS (The battery itself)

- ✓ No Gas emission
- ✓ 25 years Operational life (no ageing) and 100% recyclable
- ✓ Low to no maintenance
- ✓ Storage temperature – Indefinite storage – Stored “frozen”
- ✓ Prewired solution
- ✓ N+1 Management
- ✓ Low TCO/CAPEX/OPEX and CO2 savings, avoid battery room (no ATEX room, no HVAC), footprint, weight...





**Thanks for your  
attention**

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**Chloride™**  
Power to Protect