



February 2021

## Corporate Presentation

01 **Executive Summary**

02 **Trusted By Customers Worldwide**

03 **Creating A Technology Leader**

04 **On a Clear Path To Deliver Profitable Growth**

# Leclanché, the 111-year-old Startup, is at the Heart of the Energy Transition

Energy transition to reduce the overall Greenhouse Gas Emissions is being driven primarily by the changes in the management of electricity networks and the electrification of transport systems.

Leclanché's strategy and business model is at the heart of the convergence of these drivers.

## Electrification of transport systems

- We deliver integrated Battery Packs for Electric Vehicles of all sizes, with intelligent interface to the charging infrastructure.

## Renewable energies integration

- We deliver Energy Storage Systems that reliably add intermittent solar and wind energies in the electricity network as dispatchable power on an as needed basis.

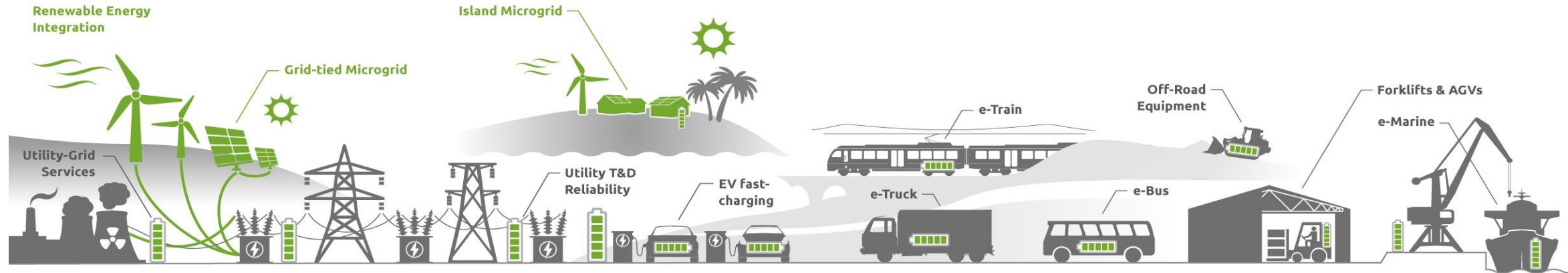
# Our Value Proposition- Full Range of Technologies and Engineering



- Grid Ancillary Services
- Solar/Wind + Storage
- Microgrid Systems
- C&I Solutions
- Community Storage
- EV Charging Stations



- Electric Buses
- Electric Ferries
- Warehouse Equipment
- Industrial Marine
- Electrification/Hybridisation
- Fleet Trucks
- Rail & Off-highway



## Analysis & Optimization

- System Modeling and Opportunity Analysis
- Project Optimization
- FEED

## Flexible Sales Structure

- Turnkey EPC
- Supply & Commissioning
- PPA & Project Finance

## System Control & Operation

- Multi-Application Energy Management System (EMS)
- System Degradation and Replenishment
- Remote Monitoring and Service

## Total Integration

- Full process control: from in-house cell production to complete packs
- Infrastructure such as chargers and connectivity
- Fully integrated electric drive trains
- Homologation & Certification

## System Engineering

- Scalable lithium-ion battery packs with thermal management
- State-of-art DNV-GL type approved battery racks for marine applications
- Battery packs engineered to operate faultlessly on majority of vehicles

## Fleet Management

- Dynamic route simulation
- System planning
- Remote monitoring of all system components via a cloud service

# Executive Summary- Current State of the Business (1 of 2)

**Focused on high-growth Energy Transition Markets: addressing US\$ 10B market growing at 37% CAGR**

- **eTransport Solutions** focused on Fleet Electric Vehicles (Fleet-EV) with inhouse technologies designed to maximize the TCO
  - Track record of having completed nearly One-Million-Km runtime since 2019.
  - Poised to expand into adjacent high growth markets including Automotive and Fleet Asset Optimization Services.
- **Stationary Storage Solutions** focused on Renewable Energies Integration and Grid Services based on inhouse Energy Management Software and Systems Integration expertise
  - More than 57GWh of energy throughput in 120 MWh of Systems installed.
  - Poised to expand into adjacent high growth markets including Fast EV Charging and Energy-as-a-Service (EaaS).

TCO\*- Total Cost of Ownership

# Executive Summary- Current State of the Business (2 of 2)

## World leading portfolio of in-house technologies: the key differentiator from larger Asian competitors

- More than US\$ 250M investment to transform the Company to a leading Battery-based Energy Storage System Provider
  - The full value chain ownership from Cells, Modules, Battery Packs & Racks, Energy Management Software, to IoT-enabled Fleet EV Asset Optimization Software Platform.
- More than 200 Patents over 13 families.

## Winning in the marketplace

- World leading customer references in electrification of Marine and Ground Transport vehicles including Bombardier/ Alstom Transport, Kongsberg Maritime, Siemens, Damen, Wasaline, ...
- Major industrial endorsements of Leclanché IP and Knowhow through licensing agreements
  - Joint Venture with Exide Industries Limited, India's largest Lead-Acid Battery Manufacturer.



# Executive Summary- Going Forward Priorities

## On a clear trajectory to deliver profitable growth

- Recurring revenue base through
  - Framework Supply Agreements with world leading customers in the eTransport business;
  - Long-term Power Purchase Agreements/ Offtake Agreements in Build-Own-Operate Stationary Storage Projects.
- COGS established to leap-frog competitor's cost-base to ensure long-term competitiveness-validated by Umlaut AG, by a reputed German engineering firm.

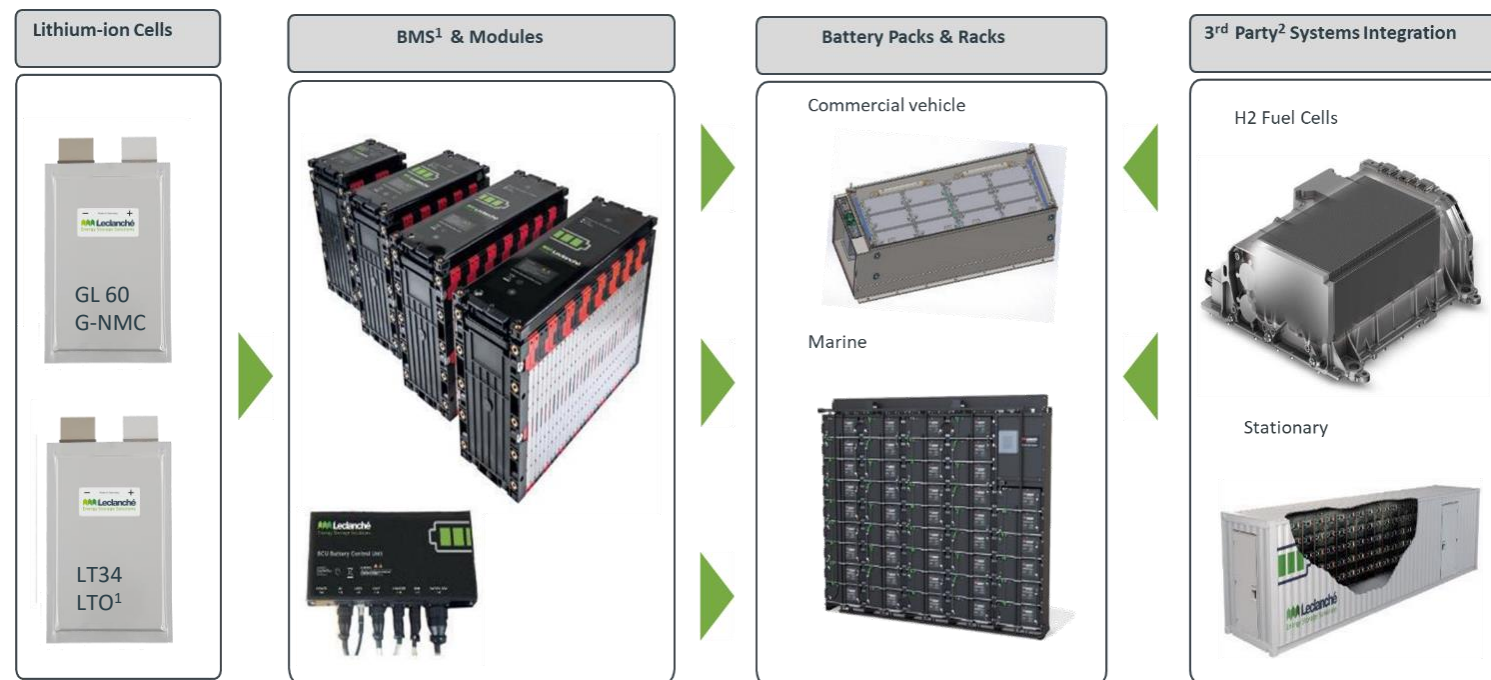
## Solid fundamentals to deliver ROI to the Shareholders

- Strategic reorganization into two Operating entities, to be carved-out in due course, to offer clear and attractive investor value proposition.
- Monetize technology investments through licensing to the Automotive sector.
- EBITDA positive in 2022-23 underpinned by: a Strong Order Book; Positive Gross Margins through competitive product cost-base and the ongoing plans to reach Giga-scale production.

COGS: Cost of Goods Sold; RoI: Return on Investment

# Vertically Integrated In-house Energy Storage Technologies

- Greater than US\$ 250 million investment over 2007-17 to build Lithium-Ion based battery technologies.
- More than 200 Granted Patents which have received major industrial endorsements including by Exide Industries Limited in India.
- State-of-the-art manufacturing facilities: automated lithium cells manufacturing facility in Germany; Battery Modules assembly line in Yverdon-les-Bains, Switzerland.
- A complete set of certified Systems designs: Packs and Racks for Marine, Trains, Trucks, Buses, AGVs, Off-highway Vehicles.
- World leading Energy Management System Software Platform.



¹LTO was in production by 2014. BMS = Battery Management System. ² Toyota hydrogen fuel cell (system used in Toyota Mirai car & Kenworth T680 truck); LG Chem/ SDI Battery Systems.



# Highest Level of Certifications

## Corporate Certifications

- **ISO 9001:2015**  
Quality management System
- **ISO 14001:2015**  
Environmental management System
- **ISO 45001:2018**  
Occupational health and safety management system



## Industry Certifications

- **Marine type approvals**



- **Railways applications**



02

# Trusted by Customers Worldwide

.....Greentech Software and Systems  
Leader Enters the Market in 2018....

# Leclanché eTransport Solutions

## Current Markets

### Marine, Rail and Specialised Commercial Vehicles

#### Trains



Bombardier

Superior Battery  
Cycle Life  
8,000 – 20,000 cycles<sup>(1)</sup>

#### Bus



Skoda Transportation

Superior Charge /  
Discharge Rates  
1C to 6C (= 10 minute  
charge)

#### Truck & LCV



FCC

High Energy Densities  
70 – 225 Wh / kg  
(270 Wh/kg by 2022)

#### Marine



Kongsberg / Grimaldi

High Calendar  
Life  
10 to 20 years <sup>(2)</sup>

### Automotive

#### Passenger Cars

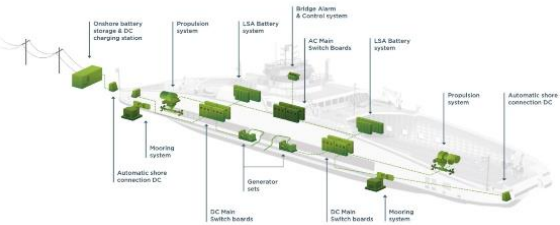


High energy density and cycle life cells and  
Functionally Safe Battery Management System

High Energy Densities  
196 - 225 Wh / kg  
(270 Wh/kg by 2022)

Superior Battery  
Cycle Life  
Up to 2,000 cycles\*

### Fast EV charging and Storage



#### Combined Onboard and Onshore Energy Storage solution for the first fully electric passenger/car ferry in North America

- The 2 ferries have integrated shore charging and mooring systems to recharge the onboard batteries during loading and unloading.
- To support the local grid while fast charging the electric ferries, each onshore charging station is supplied with a dedicated Leclanché battery energy storage system (BESS) of 3.0 MWh.

## Adjacent Markets Expansion

### Charging Infrastructure

#### Port

Marine: Ongoing discussions with key passenger ferry operator in Switzerland to implement charging infrastructure.

#### Automotive

Seeking partnership opportunities for integration of battery systems into fast charging stations.

# Leclanché eTransport Customers

## Long-term Strategic Partnerships with Leading OEM Customers

### Marine Customers



### Ground Transport Customers



### Research Partners



Karlsruhe Institute of Technology



Kansai Research Institute, Inc.

**ETH** zürich

Eidgenössische Technische Hochschule Zürich



University of Applied Sciences Landshut



- Contracts signed for supply of Leclanché MRS marine battery systems for 13 large vessels and semi-submersible drilling rigs.
- Total energy capacity to be supplied of 57 MWh with either 55Ah or 60Ah cells.
- Delivery completed of 7 complete systems, and vessels undergoing sea-trials.
- 6.7 MWh system supplied to 3200 ton Yara Birkeland, the world's 1<sup>st</sup> autonomous container vessel.



### BOMBARDIER

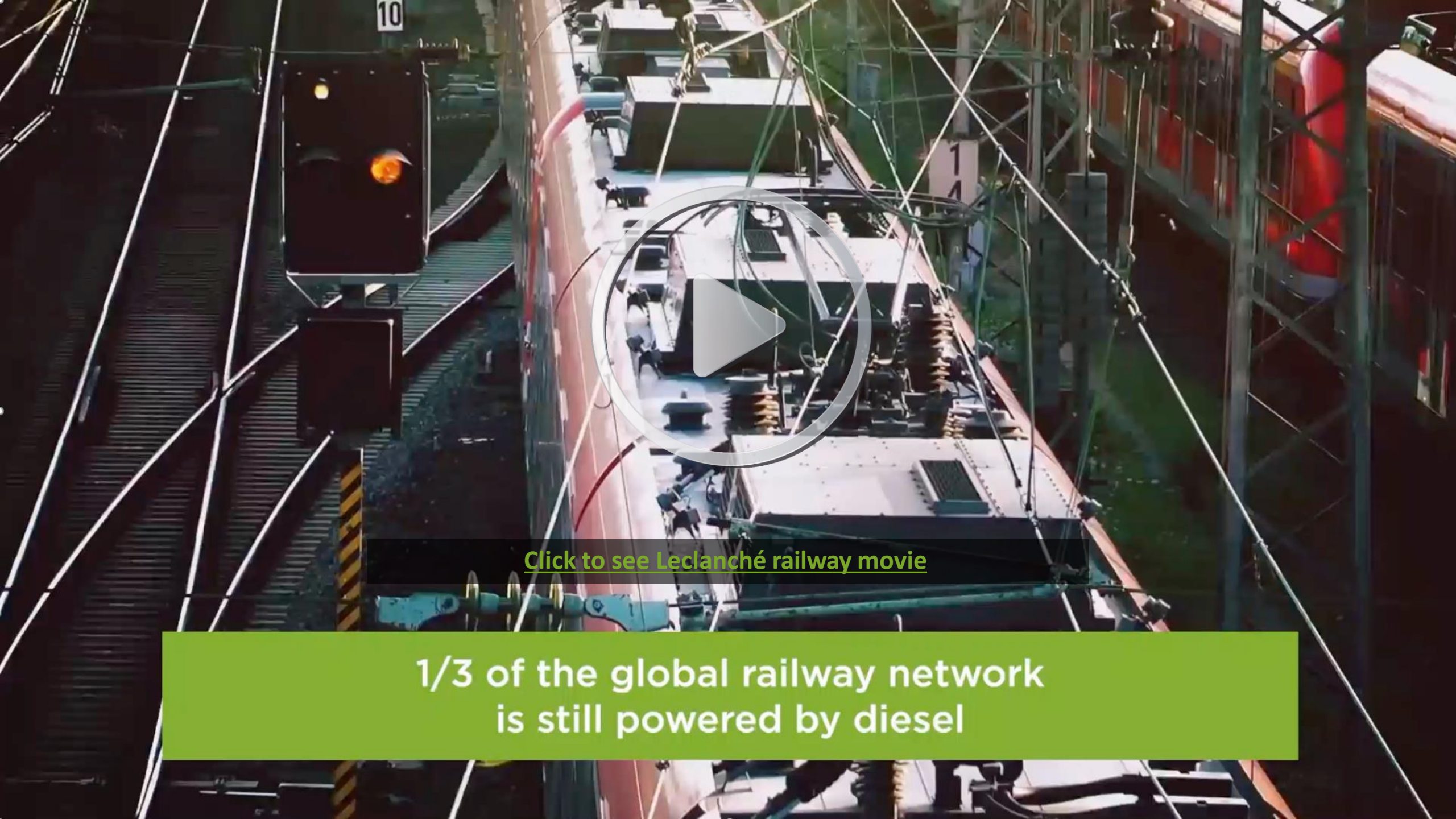
- MOU signed with Bombardier as preferred supplier of Lithium-ion battery systems with potential revenue of 100 M€ over 5 years.
- Supply of 53 kWh INT-53 Energy battery packs for train traction applications.
- New Leclanché Functionally Safe BMS developed to meet stringent rail certifications.
- Battery packs to be fitted with new generation Leclanché M3 Module produced on new automated production line in Switzerland.





[Click to see Leclanché eMarine movie](#)





[Click to see Leclanché railway movie](#)

1/3 of the global railway network  
is still powered by diesel



# Trusted by Utilities and Transmission System Operators Worldwide

- Full Battery Energy Storage System provider.
  - In-house Energy Management Software (EMS) and Systems Integration expertise.
  - Turnkey EPC\* model for project delivery.
  - More than 120MWh of projects commissioned.
- 
- Build-Own-Operate (BOO) model for Energy-as-a- Service.

\* EPC: Engineering, Procurement & Construction.



# Strategy is Working, Winning in the Stationary Storage Marketplace

Consolidating the learning and experience- Caribbean's largest Solar+Storage Microgrid project in St. Kitts

Experience to quickly conduct network- and grid studies for a variety of applications



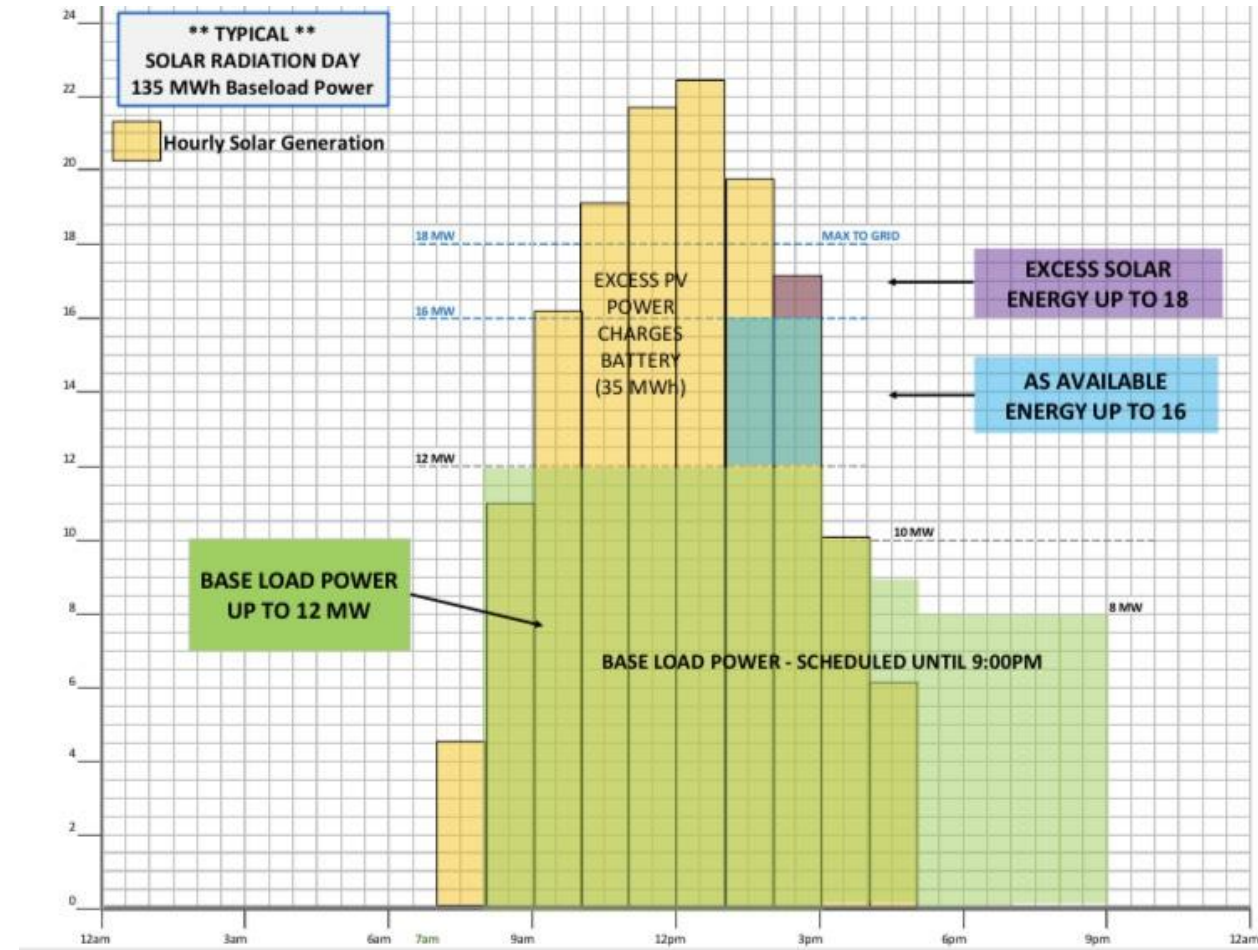
Know-how to use in-house EMS- and simulation tools to adequately size and dimension the BESS



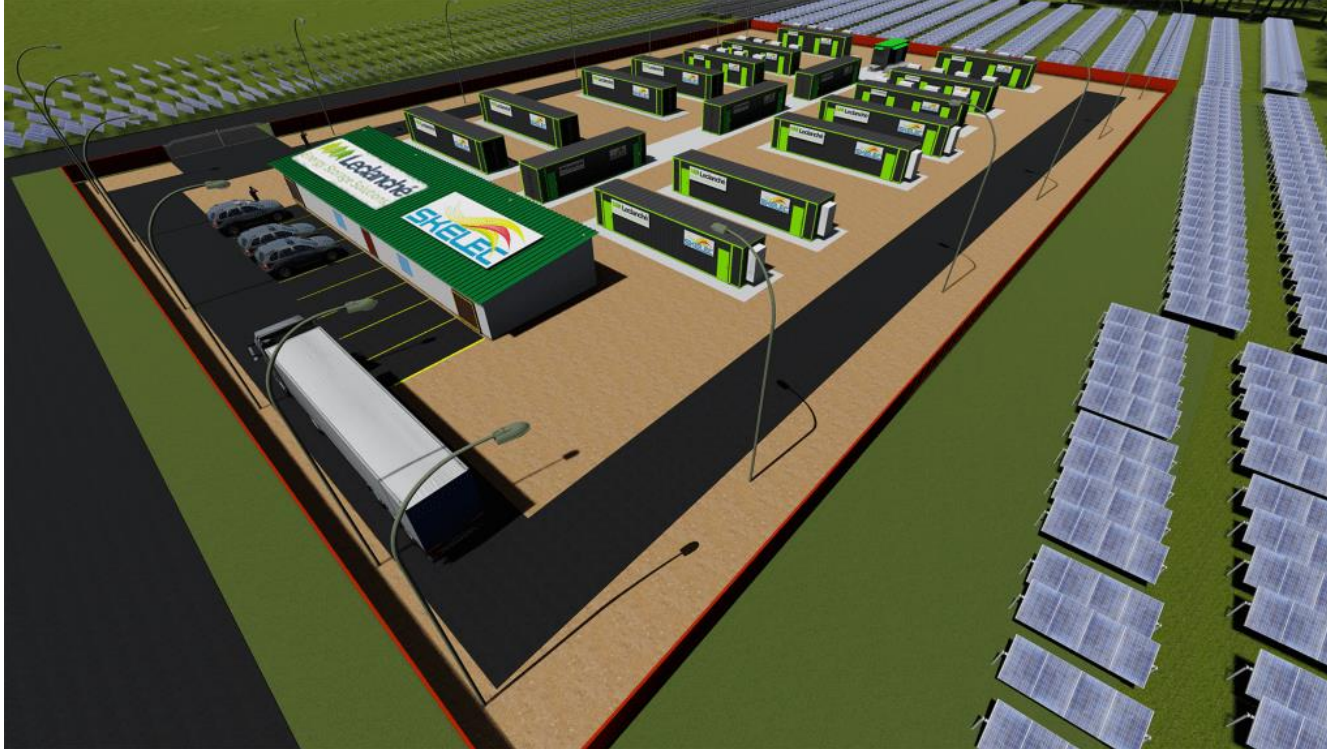
Expertise to create innovative design and perform front-end engineering



Capable to structure competitive customer PPA's and offer Energy Storage-as-a-Service (ESaaS) based on Build-Own-Operate model (BOO model)



# St Kitts – the Largest Solar + Storage Project in the Caribbean



- Solar PV 30 MW peak / 45 MWh
- 30% of the Island's baseload
- \$70 M capitalization / 20-year PPA



*St Kitts prime minister Timothy Harris and Leclanché Bryan Urban at the groundbreaking December 15, 2020*





# Creating a Technology Leader

...A European leader in Energy Storage Solutions built on 100+ years of heritage



# Technology Ownership from Cell to System Software

## Cell Manufacturing

Multichemistry- G/NMC and LTO  
Solvent free electrode manufacturing (Water based binders)  
Low energy consumption in production

## Engineering Modules and packs

Thermal and Mechanical designs and simulations  
High volumes modules production to automotive standards  
Packs and racks for marine and road/Off-road applications

## In House Technologies

## BMS hardware and software





BMS for low voltage to 1200 V systems  
Master and slave configurations  
Functional safe BMS for 1200 V  
In house algorithms for SOX







## EMS and IOT

Energy Management Software Platform: drivers for multiple Battery systems and Invertors; enhancement from Stationary applications to In-Vehicle Energy Management solutions  
CANopen System Monitoring GUI interface- BMS agnostic  
Edge devices (Ethernet, WiFi or GSM) with AWS IoT Cloud Services

# Leclanché eTransport Technologies

## Leclanché Battery Technology – Main Attributes

 Energy Density (Wh/kg)	 Charging Time	 Cycle Life	 Safety	\$\$\$ Total Cost of Ownership
--	---	--	--	--------------------------------

	Typical Application	Energy Density	Cycle Life	Charging Time
<b>High Power</b> <b>LTO</b> Introduced 2012	  <b>e-TRUCK</b> <b>e-EXCAVATOR</b>	75 Wh/kg	20,000 (to 80% DoD)	10 mins
<b>High Energy</b> <b>G/NMC</b> Introduced 2020	  <b>e-RAIL</b> <b>e-MARINE</b>	225 Wh/kg	8,000 (to 80% DoD)	20 mins
<b>Ultra High Energy</b> <b>G/NMC</b> Planned for 2022	  <b>e-BUS</b> <b>e-CAR</b>	270 Wh/kg	2,000 (to 80% DoD)	20 mins



# Leclanché eTransport Technologies

## Leclanché Vertical Integration Enables Control of the Full Process

Unique R&D and Design Capabilities Across the Complete Battery System

Highest Quality Raw Materials



Lithium-ion Cells



Modules



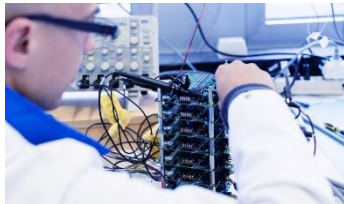
Electronics



Battery Packs



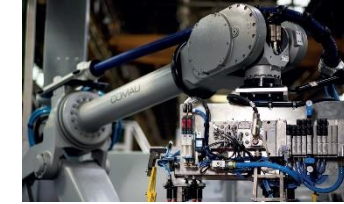
In-House R&D, Manufacturing and Assembly Facilities



Research & Development  
Yverdon, Switzerland



Cell Production Line  
Willstatt, Germany



Module Assembly Line  
Yverdon, Switzerland



Key Benefits of Vertical Integration

Clear technology roadmap

Control of the full process

Solutions that exactly match customer specifications

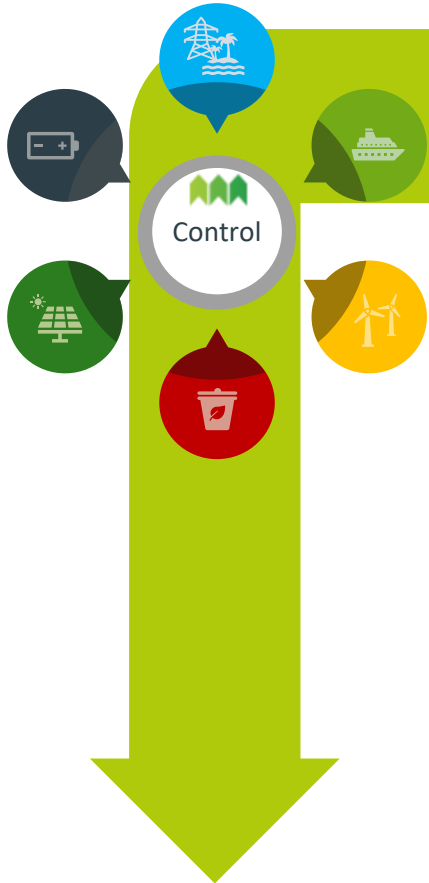
Tighter cost control & higher margins

# Leclanché Stationary Storage Technologies enabling Energy-as-a-Service

## Leclanché Energy Management System (LEMS)

SOFTWARE

- AI Driven - IOT Connected - Industrial Grade - Fleet Controls - Multiple Apps



READILY APPLIED TO ALL MARKETS

HARDWARE

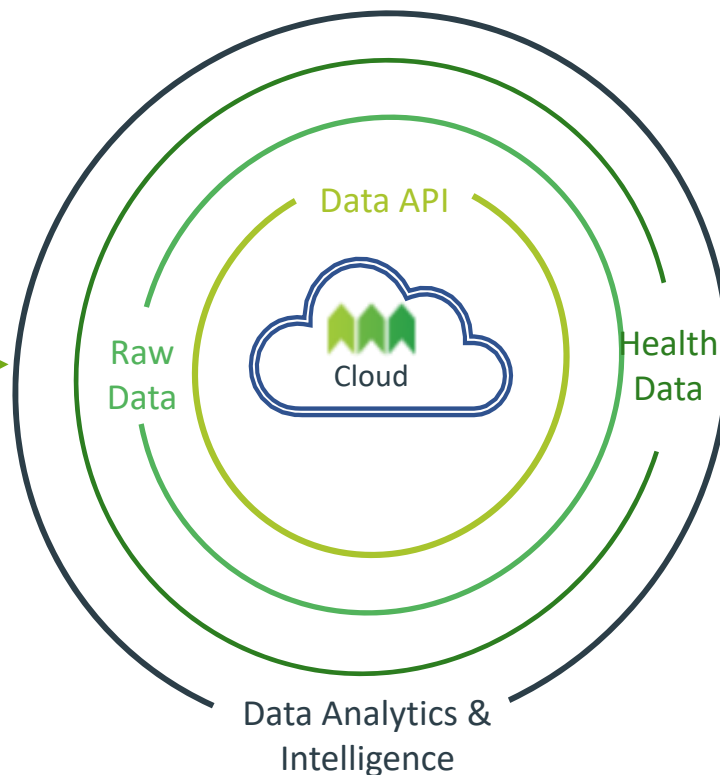
## Advanced Battery Solution (LeBlock™)

- Cost Competitive - Fully Integrated - Scalable - FAST Deployment



# LEMS: Leclanché Proprietary EMS

## LEMS Control



- AI Driven - IOT Connected - Fleet Controls

## LEMS Monitoring

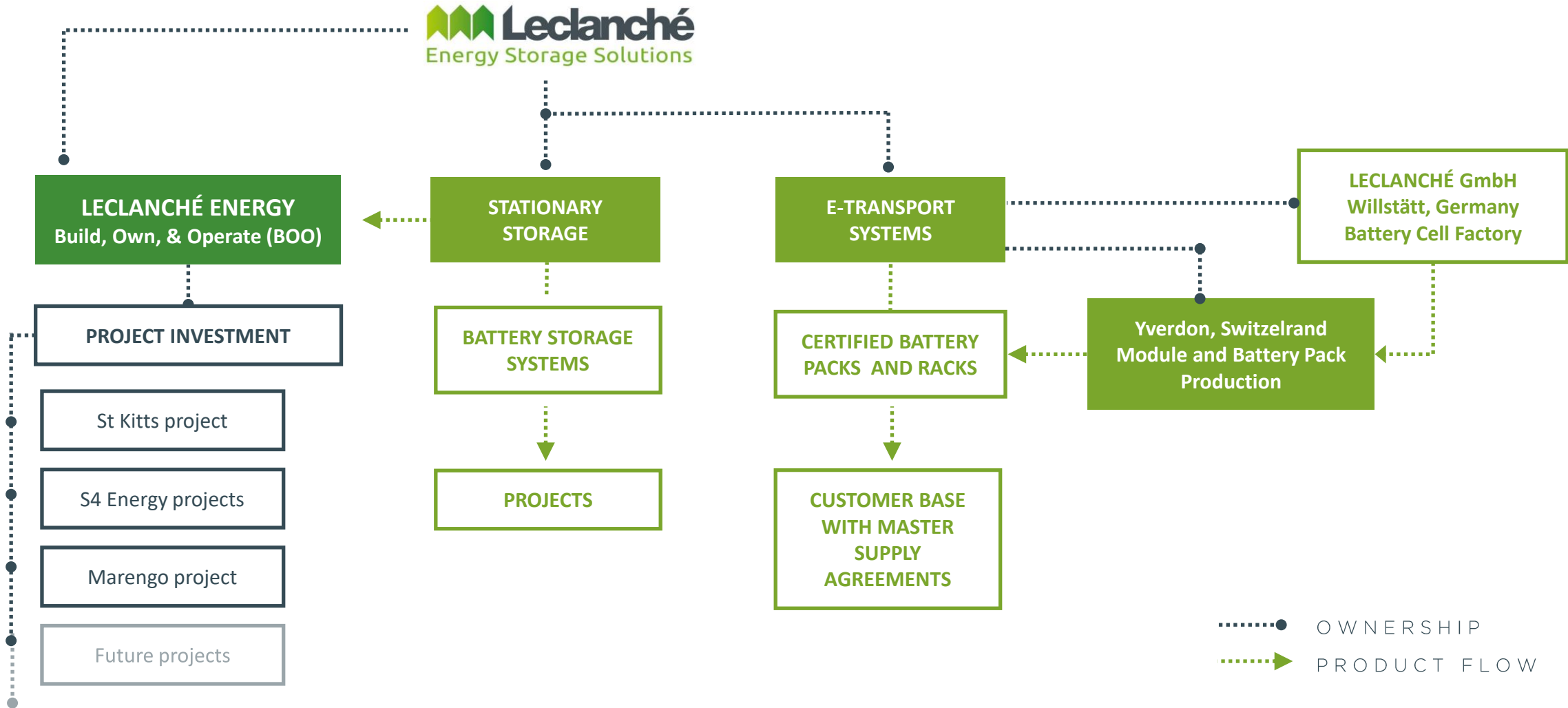


4

# On a Clear Path To Deliver Profitable Growth

.....Strategic Reorganization of the  
Business Model....

# A Clear and Efficient New Operating Model: to Operating Entities



# Solid Base to Deliver Sustainable Profitability

... more than US\$ 250M investment to reach a critical-size for cost competitiveness

Technology Leadership:  
simultaneous investment in  
Product Portfolio Expansion and  
Organizational Resources

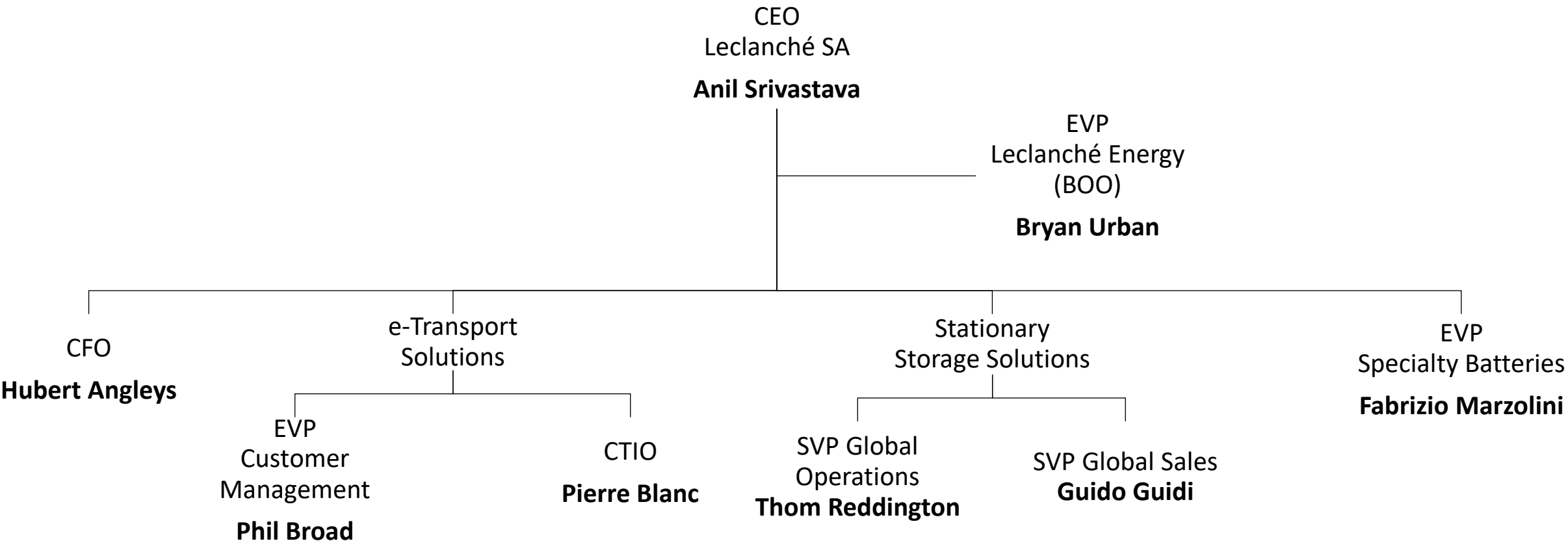
- One of the highest breadths of inhouse technology ownership in the Industry: from Cells, Modules, Battery Packs & Racks to IoT-enabled Fleet EV Asset Optimization Software Platform
- Industry leading Energy Management Software suite for a range of applications in renewable energy integration, grid ancillary services .....▶ extending to in-vehicle energy management unit

Competitive Cost-base: leap-frog  
competitor's cost-base to secure  
good gross margins

- Lowest cost per kWh Cells for Fleet EV combining high Energy Density and long-life Cycles
- More than tripling the production capacity to gain efficiencies
- Monetizing and gaining procurement-scale through licensing inhouse technologies to the Automotive sector



# World-class Leadership Team



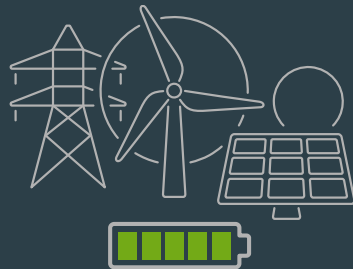
BOO: Build-Own-Operate Projects

# Leclanché

## Energy Storage Solutions

Thank you!

Leclanché is on a clear path to deliver profitable growth.



STATIONARY  
SOLUTIONS



e-TRANSPORT  
SOLUTIONS



SPECIALTY BATTERY  
SYSTEMS

# Disclaimer

This presentation has been prepared by Leclanché S.A. (the “Company”) solely for informational purposes.

None of the Company or any of its directors, officers, partners, employees, agents, affiliates or advisers nor any other person makes any representation or warranty of any sort as to, and no reliance should be placed on, the accuracy, completeness, fairness or reasonableness of the information or the opinions contained in this presentation or in any other document or information made available in connection with this presentation. No person shall have any right of action against the Company or any of its directors, officers, partners, employees, agents, affiliates or advisers or any other person in relation to the accuracy or completeness of any such information or for any loss, however arising, from any use of this presentation or its contents or otherwise arising in connection with this presentation.

This presentation contains non-IFRS measures (including certain ratios and key performance indicators, such as MWh, or megawatt hour, which means a unit of energy equal to 1MW of power being applied continuously for one hour, which the Company uses to illustrate its overall production as demonstrated through the electrical energy storage capacity of its battery systems). These measures have limitations as analytical tools and should not be considered in isolation or as substitutes for analysis of the Company’s results as reported under IFRS.

This presentation contains statements that constitute forward-looking statements relating to the business, financial performance and results of the Company and the industry in which the Company operates. Such forward looking statements in this presentation are for illustrative purposes only. These statements may be identified by words such as “expectation”, “belief”, “estimate”, “plan”, “target”, “forecast”, “pipeline”, and similar expressions or the negative thereof; by the forward-looking nature of discussions of strategy, plans or intentions; or by their context. All statements regarding the future are subject to inherent risks and uncertainties, and various factors could cause actual future results, performance or events to differ materially from those described or implied in these statements. Such forward-looking statements are based on numerous assumptions regarding the Company’s present and future business strategies and the environment in which the Company will operate in the future. Further, certain forward-looking statements are based upon assumptions of future events that may not prove to be accurate, and neither the Company nor any other person accepts any responsibility for the accuracy of the opinions expressed in this presentation or the underlying assumptions. Past performance is not an indication of future results and should not be taken as a representation that trends or activities underlying past performance will continue in the future. The forward-looking statements in this presentation speak only as at the date of this presentation, and the Company expressly disclaims any obligation or undertaking to release any updates or revisions to these forward-looking statements to reflect any change in the Company’s expectations with regard thereto or any change in events, conditions or circumstances on which any statement is based after the date of this presentation or to update or to keep current any other information contained in this presentation or to provide any additional information in relation to such forward-looking statements.

This presentation does not constitute, and should not be construed as, an offer to sell or issue securities or otherwise constitute an invitation, inducement, solicitation or recommendation to any person to purchase, underwrite, subscribe for or otherwise acquire securities in the Company or any of its affiliates or constitute an inducement to enter into investment activity in any jurisdiction.