LOVE OUR PLANET

Battery and Energy Storage System Boots EV Industry in Post COVID-19 Era

Amita Technologies, Inc.
有量科技股份有限公司

THE PARTNER YOU CAN TRUST

The Impact of COVID-19 to Mobility

- Over the long term, COVID-19 could have a lasting impact on mobility as it drives change in the macroeconomic developments, consumer behaviors, regulatory developments and technology.

It's all about –
Social Distancing

Credit: Getty Images

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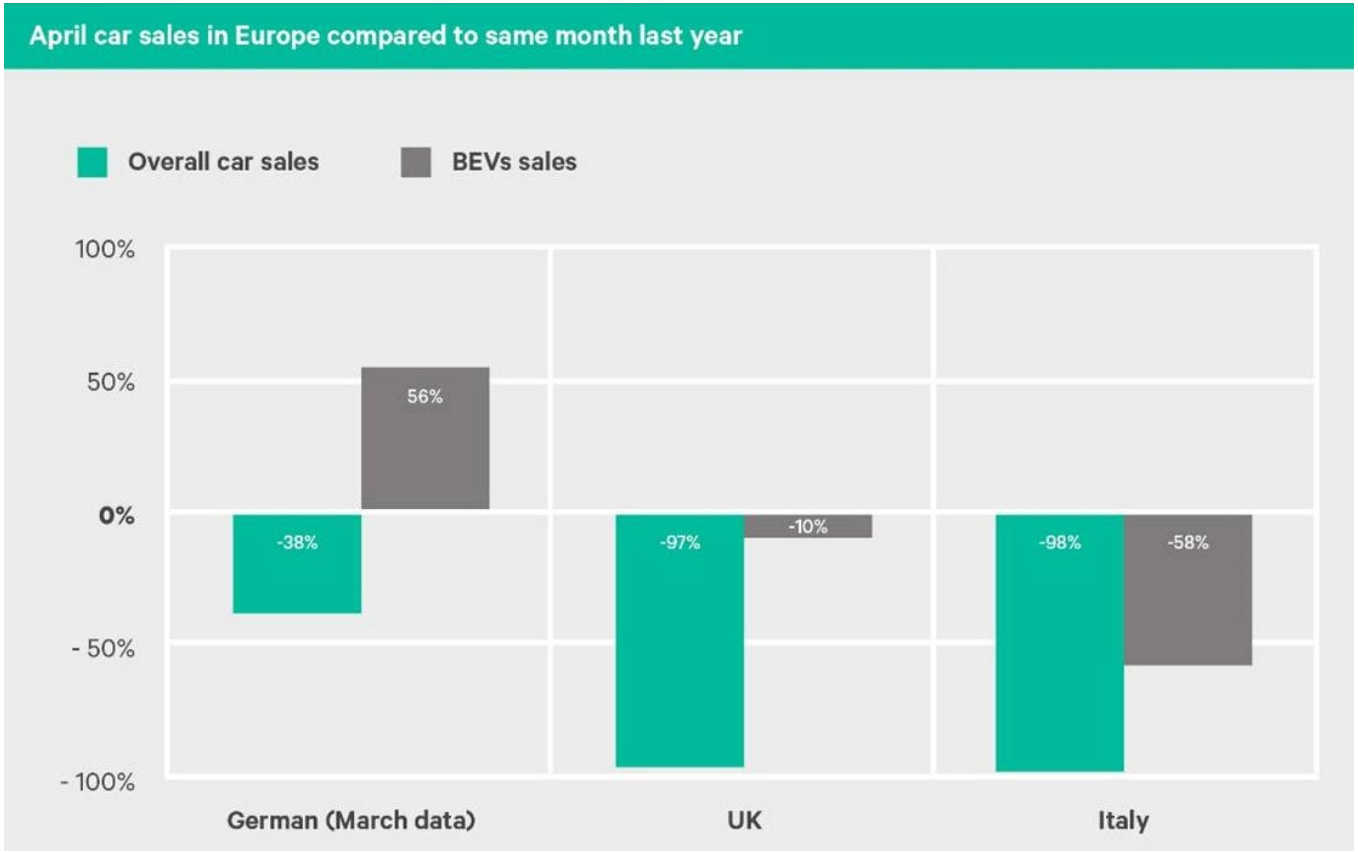
- Macroeconomic Environment
  - At the height of the crisis, over 90 percent of the factories in China, Europe, and North America closed. Overall car sales dropped tremendously.
  - Public-transit ridership has fallen 70 to 90 percent in major cities across the world.

The Impact of COVID-19 to Mobility



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  - Mobility players are also suffering. Public-transit ridership has fallen 70 to 90 percent in major cities across the world.
- Consumer Behaviors

AUSTIN WOOD Manager of Corporate Development, Wallbox, 21 May 2020

The Impact of COVID-19 to Mobility

	Macroeconomic developments	Consumer behavior	Regulatory developments	Technology readiness
2020–21: crisis years	• Auto factories closed, with some automotive workers losing jobs • Stocks and oil prices plummet	• Shift away from shared mobility and public transit to reduce risk of infection • Uptake in single-occupancy modes • Decrease in vehicle miles traveled due to remote working	• $2 trillion economic-stimulus package may help some OEMs and mobility players • Corporate Average Fuel Economy regulations may be weakened	• Autonomous-vehicle testing temporarily suspended • Demand drop, and shortage of capital puts pressure on start-ups
2025: potential scenario for "next normal"	• Auto industry recovered and plants reopened • Car sales back to precrisis levels	• Road-based mobility dominates; adoption of electric vehicles might level off	• Policies to reduce private-car ownership are dropped • Weakened emission regulation slows down e-mobility transition	• Players double down on investment in autonomous vehicles • Market consolidated; healthy market winners emerge

Source: McKinsey & Company, McKinsey Center for Future Mobility

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- Consumer Behaviors
  - Shifting to mode of non-public transport (social distancing)
  - Conscious of ESG (Environmental, Social, Governance)
  - Spend less time in public area (social distancing)

    → Affordable EV (less battery capacity/higher energy density), Fast Charging, Safety

Introduction of Amita Technologies, Inc.

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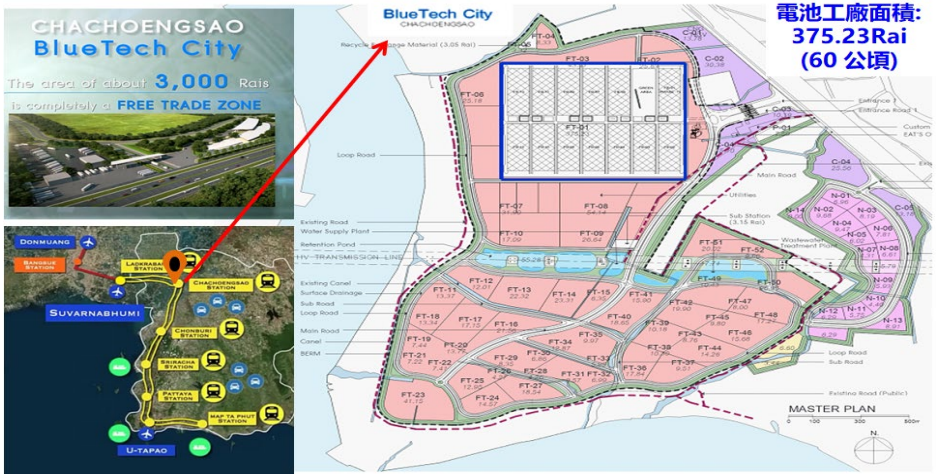
- Amita Technologies, Inc. was established in March 2000 for lithium-ion power battery with primary focuses on,
  - Pouch type (polymer)
  - Material science research with long test data accumulation (NCM, LFP, LTO etc.)
  - In-house expertise of turn-key production facility
- Current production capacity and capability
  - 44Ah (Power)/48Ah (Energy) battery cell
  - 200MWh (Taiwan) ⟹ 50GWh (Thailand)
- ISO 9001, IATF16949, UL certified
- Member of MIT ILP
- Shareholder
  - Energy Absolute PCL



Amita & Energy Absolute

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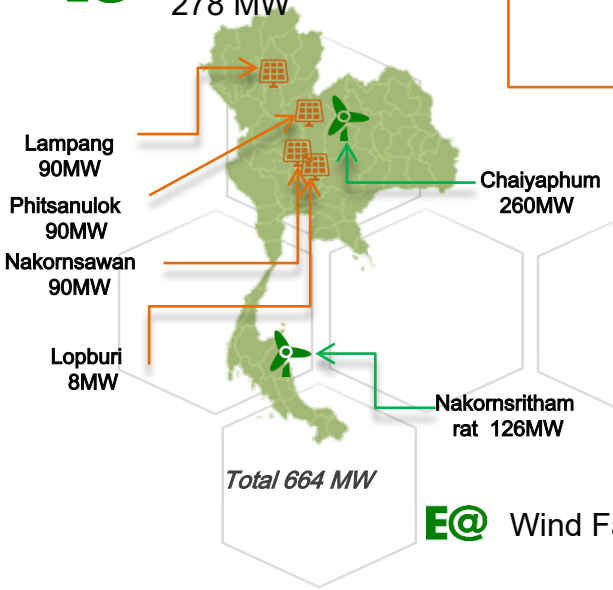
E@ Bio Diesel & Glycerin

E@ Solar Farm 278 MW



E@ Wind Farm 386 MW

Amita Technologies, Inc.

50GWh
Multi Types Battery
Manufacturing Plant

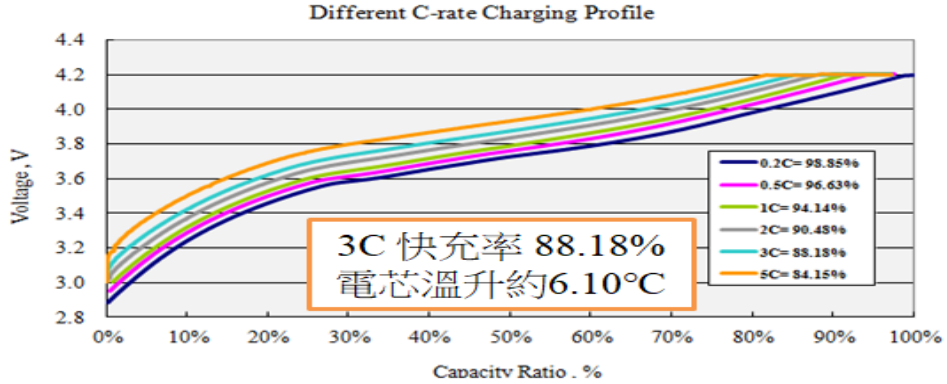
Design
Develop
Engineer
Produce
Various types of EV.

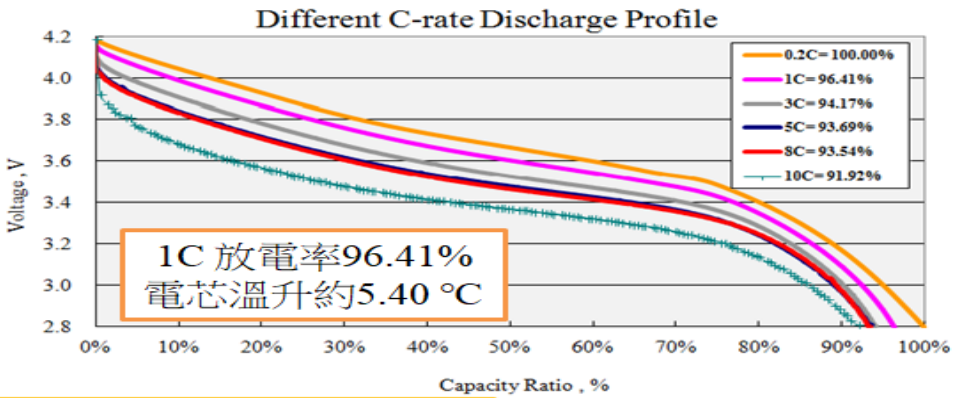
E ANYWHERE

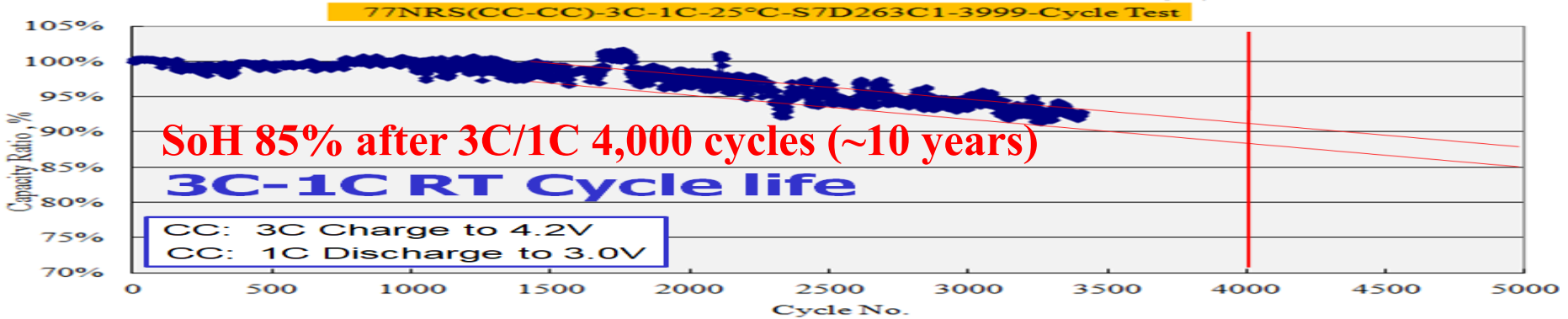
Charging station Targeting at Minimum 1,000 DC Charger stations.

Design Criteria of EV – Fast Charging

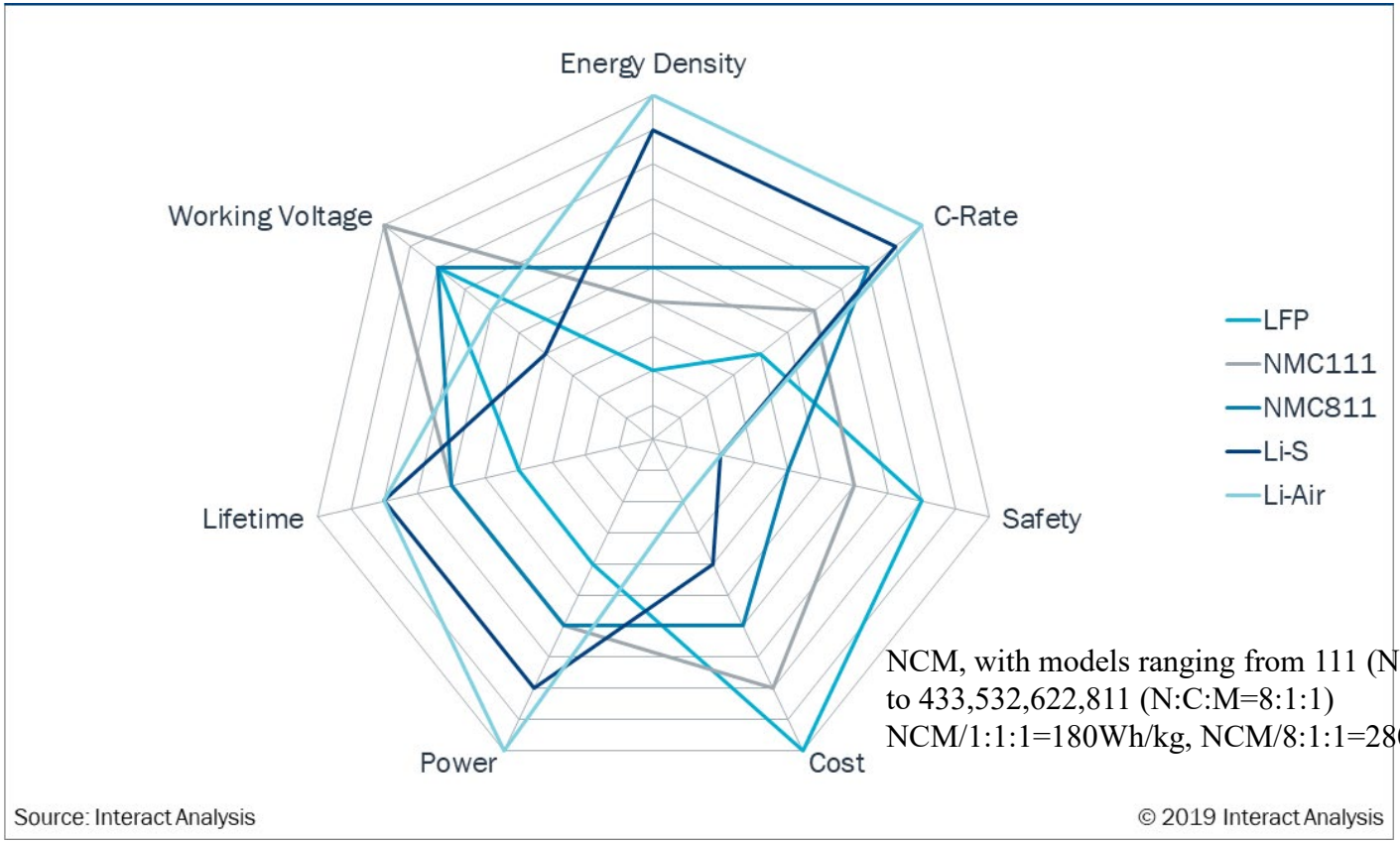
- Fast charging capability (3C, with soft carbon)





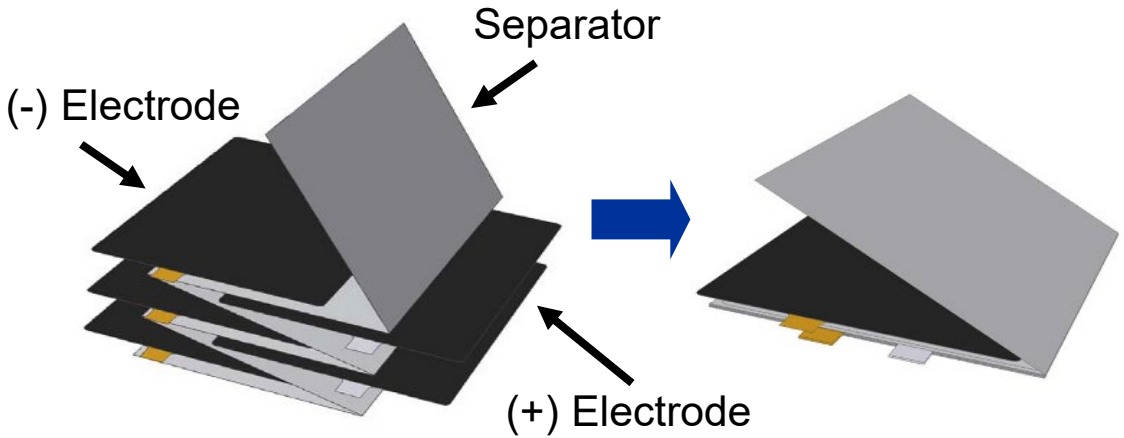


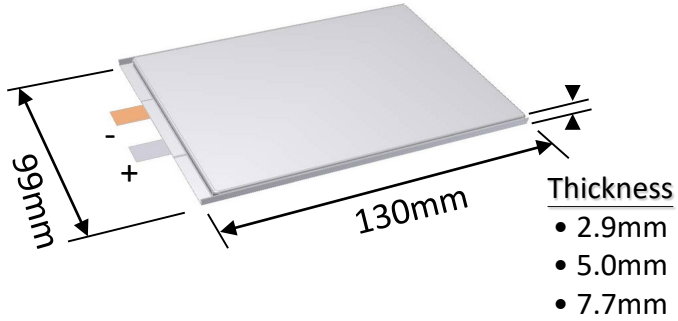
Improved Energy Density – Cathode Material



NCM, with models ranging from 111 (N:C:M=1:1:1) to 433,532,622,811 (N:C:M=8:1:1)
NCM/1:1:1=180Wh/kg, NCM/8:1:1=280Wh/kg

Amita's Battery Cell – Lamination/Stacking





Pros:

1. Compact laminate film enable a large capacity.
2. The simple structure, being lightweight and maintain a competitive advantage from a cost perspective as well.
3. A laminated cell shape that enables excellent heat dissipation, with a compact design which benefit to EV.

Battery Cell – Lamination/Stacking vs. Winding

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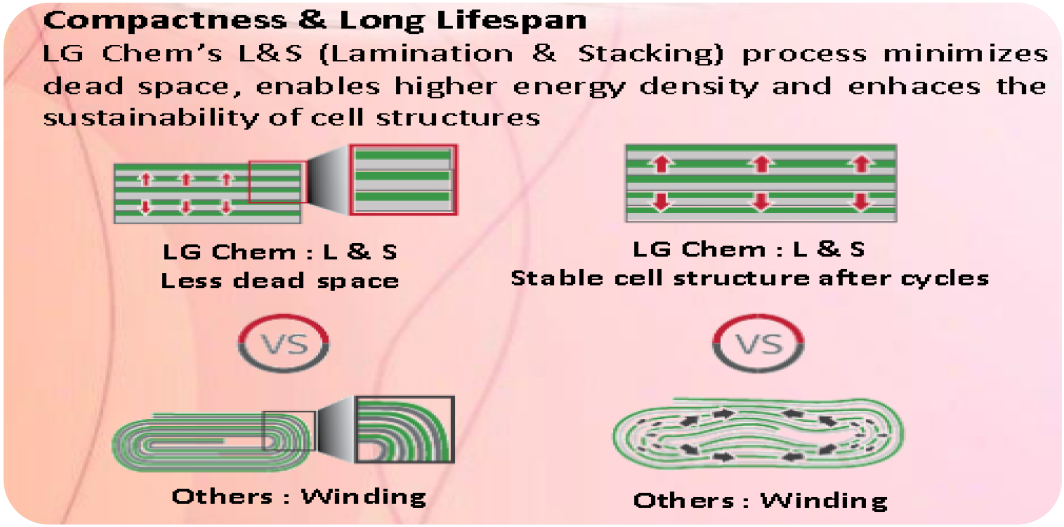
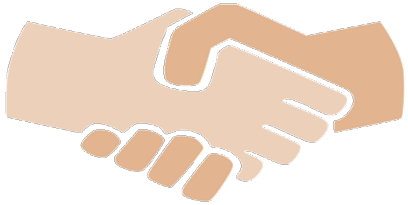


Material reference: LG Chem DM M4860P2S

	Stacking	Rolling
Process	Slow	Fast
Cycle Life	Long	Short
Safety	High	Low
Energy Density	High	Low
C Rate Charge/Discharge	High	Low

Advantages

- High specific energy and high load capabilities with Power Cells
- Long cycle and extend shelf-life; maintenance-free
- High capacity, low internal resistance, good coulombic efficiency
- Simple charge algorithm and reasonably short charge times
- Low self-discharge (less than half that of NiCd and NiMH)



Thank you!

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