



**GREEN ENERGY
TO THE WORLD**

Our Origin



Established in Vietnam, VinES is positioned as a transformative energy solutions provider, offering **batteries and high quality energy solutions with competitive costs and excellent services.** VinES is a part of VinGroup, playing a vital role in realizing the Group's mission of **Net-Zero-Emission** and **creating a better life for all people.**

About Vingroup



Founded in 1993, Vingroup is the **largest private conglomerate** in Vietnam with a combined market capitalization of USD 21.2bn¹. Vingroup has created a respected, well-recognized and comprehensive ecosystem of **dominant businesses** addressing all consumer needs.

Vingroup focuses on THREE core pillars



INDUSTRIALS
& TECHNOLOGY



REAL ESTATE &
HOSPITALITY



SOCIAL
ENTERPRISES

“To create a better life for people”

Note: 1. Combined market capitalization across Vingroup and all of its listed subsidiaries (Vingroup (VIC), Vinhomes (VHM) and Vincom Retail (VRE) as at 31 Dec 2022)

Transformative Energy Solution Provider



ADVANCED TECHNOLOGY - INTEGRATED SUPPLY CHAIN - COMPREHENSIVE COMPETENCIES ACROSS ALL MANUFACTURING ASPECTS

WORLD-CLASS R&D CAPABILITY

In-house team of experts from 14 nationalities combined with a **global network of peers, investees, university labs and technology partners globally** to who deliver innovative and competitive energy solutions and products

HIGHLY AUTOMATED PRODUCTION

Digital smart factories with automated lines for battery cell, module and pack manufacturing

FULLY EQUIPPED TESTING & VALIDATION CENTER

ISO-certified Testing and Validation center that can perform different types of test **from cell to pack levels** following **international standards**

DESIGN & MATERIAL ANALYSIS CAPABILITY

In-house design & analysis capability leveraging **40 state-of-the-art battery analysis and simulation systems** to support high performance and safety

QUALITY MANAGEMENT SYSTEM

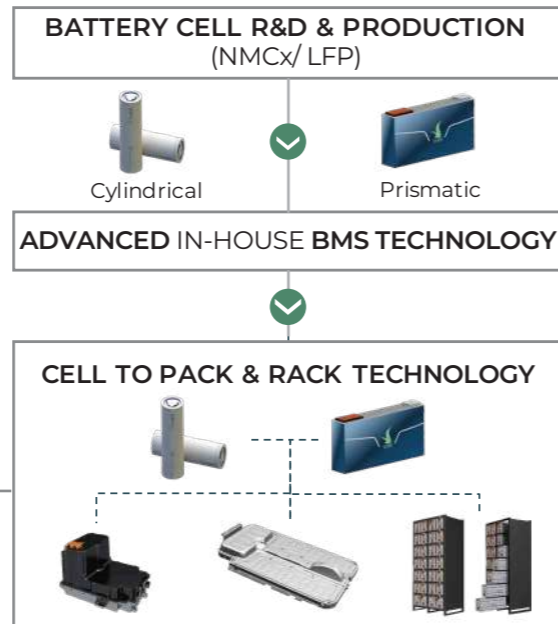
ISO 9001 certified; 8 mega quality assurance including Critical to Safety and Voice of Customer

END-TO-END SUPPLY CHAIN AND ESG

Supply chain developed including second-life and end-of-life with **clear targets for CO2 emission reduction**

SMART PRODUCTS, HIGH QUALITY, COMPETITIVE PRICING, and EXCELLENT SERVICES

PRODUCT OFFERING



ELECTRIC VEHICLES



and other EV OEMs
and other Medium/Heavy duty OEMs

ENERGY STORAGE SYSTEM



POWER TOOLS



Global power tools manufacturers

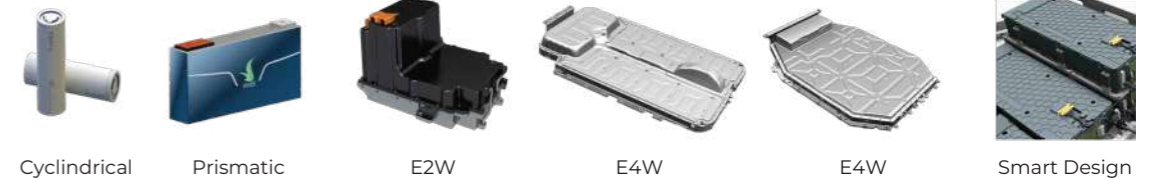
SERVICE OFFERING

- Technology transfer & Consulting
- Production Setup Consulting
- Operation Consulting Services
- Supply Chain Development Consulting
- Testing and Validation services (IS-certified)

SMART PRODUCTS FOR e-MOBILITY APPLICATIONS



NMCx
LFP



<p>HIGH Energy density</p> <p>More than 270 Wh/kg</p>	<p>LONG Cycle life</p> <p>Up to 2,500 cycle</p>	<p>XTREME Fast-charging</p> <p>From 0-80% Under 10 mins</p>	<p>HIGH Efficiency & Safety</p> <p>Advanced system design with UL 2580:2020</p>
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TAILOR-MADE ENERGY STORAGE SYSTEM - TO SERVE WITH EXCEPTIONAL WARRANTY AND CUSTOMER SERVICES

- 01 BEST-FIT PRODUCT**
VinES offers ESS solutions tailor-made to the serves all the needs of our customers
- 02 OUTSTANDING WARRANTY SERVICES**
VinES commits to offer a comprehensive warranty package, together with excellent customer services
- 03 FULLY INTEGRATED & MULTI-APPLICATION**
VinES ESS supports Frequency Regulation, Peak Shaving, Renewables Integration, and Load Balancing using either an integrated or central PCS
- 04 MODULAR DESIGN FOR EXPANSION**
VinES ESS delivers smart product design which can be directly shipped to site, offers ease of plug-and-play for installation as well as scalability for large scale projects
- 05 COMPETITIVE AND FLEXIBLE OFFERS**
VinES commits to deliver the best price-to-value solutions, fully supporting our customers' commercial project needs by balancing CAPEX and OPEX costs, providing in world-class project ROI

SINGLE TOWER SOLUTION



CONTAINER SOLUTION



BASIC PARAMETERS		BASIC PARAMETERS	INTEGRATED PCS	CENTRAL PCS
Cell type	LFP 3.2V/300Ah	Nominal energy [MWh]	3.4	3.7
Configuration	144s1p	Nominal voltage [V]	717	1,382
Nominal voltage [V]	460.8	Charge/discharge ratio [C]	≤ 0.5C	≤ 0.5C
Nominal energy [kWh]	138.2	IP rate	IP55	
Charge/discharge ratio [C]	≤ 0.5C	Container size	40ft	
IP rate	IP55	Weight [MT]	35	36
Dimension [mm]	1,200 x 1,115 x 2,200			
Weight [MT]	1.45			



END-TO-END QUALITY PROCESS INCLUDING IN-HOUSE VALIDATION CAPABILITY TO MAKE SURE ALL PRODUCTS GO THROUGH THE MOST STRINGENT TESTS BEFORE DELIVERED TO CUSTOMERS

VinES BATTERY TESTING CENTER

- Comprehensive capability of conducting numerous test **from cell to pack level** with **ISO 17025 management standard**
- BOA accreditation for various international standards including **UN 38.3, UL 1642, UL 2580, SAE J2464, IEC 60068, IEC 62133-2, IEC 62660, ISO 19453-6 and ECE R100**
- Fully compatible to perform testing** following ECE R136, UL 2580, IEC 600068, ISO 12405-2, ISO 16750 and **other international standards**

UN38.3



CELL

- Able to perform testing for **400 cells simultaneously**
- Able to conduct in house Performance, Safety, Reliability/ Durability, Cycle life test and Cell characterization as per various Voltage and C rate mapping requirement

MODULE

- Able to perform testing for **20 modules simultaneously**
- 05 performance systems
- 04 systems for mechanical durability and safety

PACK

- Able to perform testing for **04 full EV-size packs simultaneously**
- 03 performance systems
- 12 systems for mechanical durability and safety



ELECTROCHEMICAL ANALYSIS



BATTERY ABUSE TESTING



ENVIRONMENTAL TESTING

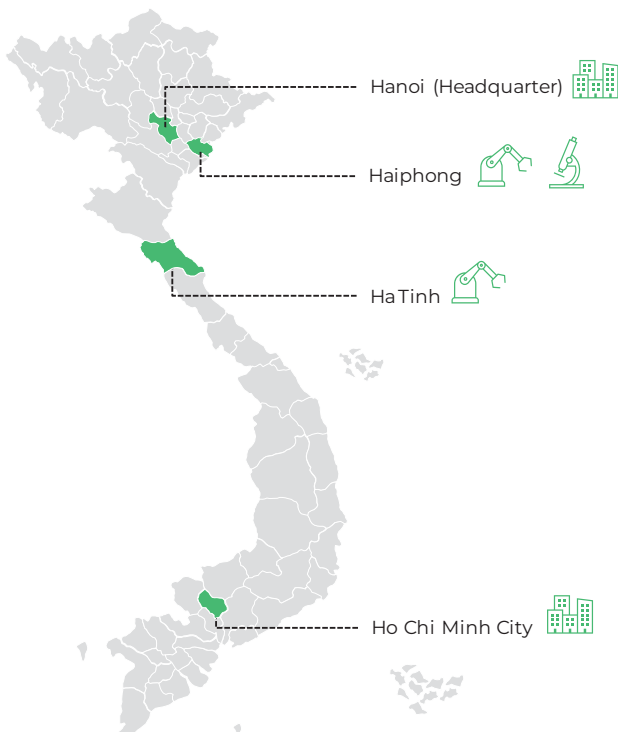
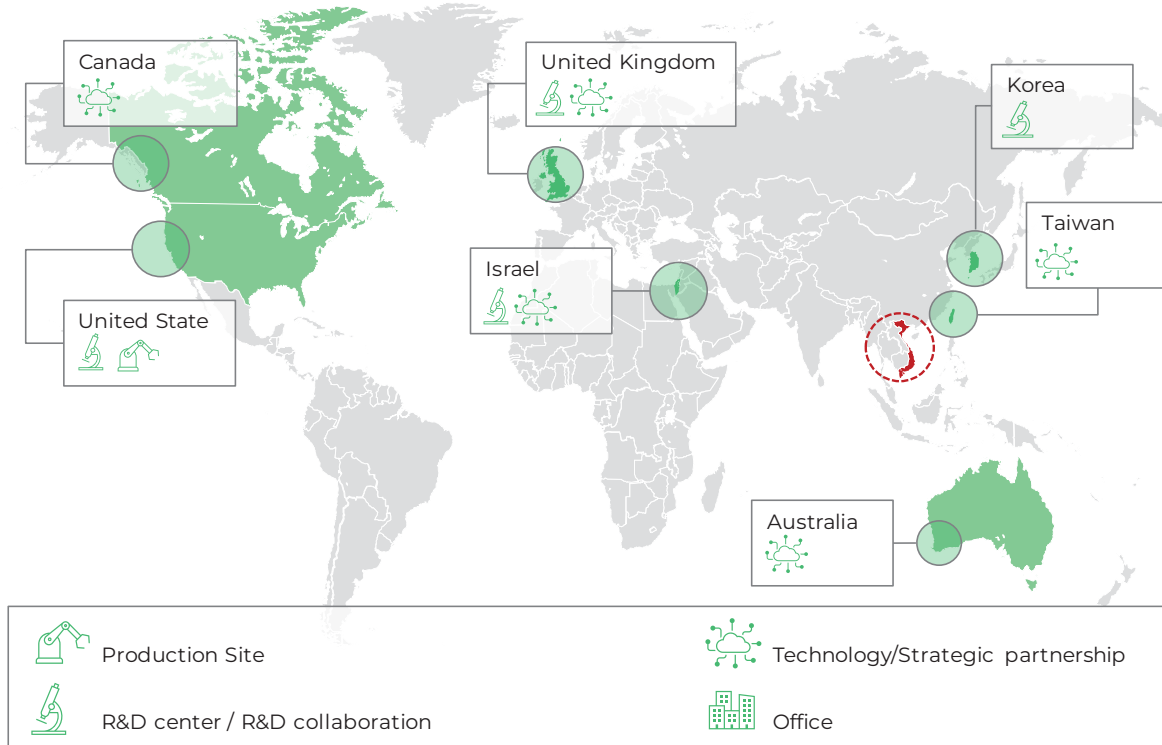


TRANSPORT TESTING

Global Presence

SOUTH EAST ASIA ORIGIN with GLOBAL REACH FOR R&D, TECHNOLOGY ACCESS AND BUSINESS ADVANTAGES

Favorable location with no risk of geo-political uncertainties, multiple FTAs, low operating costs, manufacturing sites adjacent to deep seaports, ability for quick expansion within and outside of Vietnam



Contact Us

Find out the tailor-made solutions for your business

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