



BMS

Battery Management System board
for light electric vehicles

**TASSANAI
SAWAENG SUP**

CEO

NEXTERE CO.,LTD.

+66 81 363 4029

info@nextere.co.th

www.living.keyspace.life

Background

- **Master of business administration (MBA)**
National Institute of Development Administration (NIDA), Thailand
- **Bachelor of engineering (IE)**
Kasetsart University, Thailand

Experience



Electronics manufacturing services and PCB assembly



Manufacturing hard disk components.

SONY

Sony Device Technology (Thailand) Co.,Ltd

Semiconductor manufacturing, plastic parts, molds and machine components, R&D in semiconductors



Computer distributor



Semiconductor RFID IC design & NFC solutions



TASSANAI SAWAENGSUP

ทัศนัย แสงทรัพย์

CEO

NEXTERE CO.,LTD.

 +66 81 363 4029

 info@nextere.co.th

 www.living.keyspace.life

Business overview



Smart IoT for office/condo/building

- IoT platform
- Line beacon
- Well-being sensors
- Office & home automation
- AI & data analytics
- Hotel self-check-in
- Indoor map



Smart furniture

- Smart parcel locker
- Smart mailbox locker
- Smart keydrop locker
- Smart warm locker
- Smart cold locker
- Smart uv sterilize locker
- Smart parcel weight sensor locker
- Smart farm shelf
- Individual lock
- Smart sport locker
- Smart vaccine locker



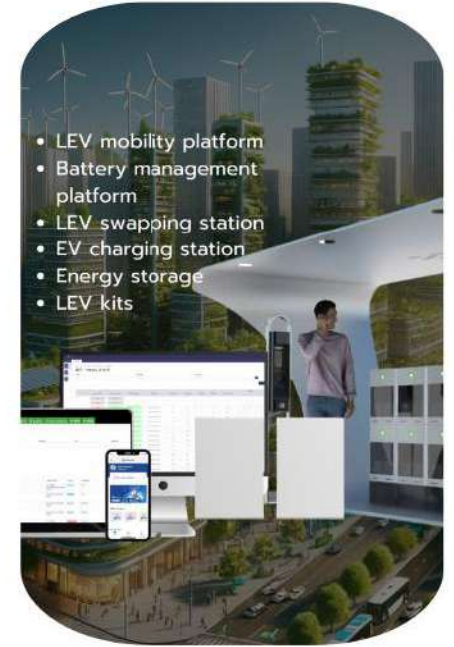
Premium furniture

- Premium smart locker
- Premium smart furniture



Recurring business

- Recurring platform
- Event smart locker
- Nekodeli
- Self-storage
- Coworking space
- Advertising digital signage
- Self-service laundry



- LEV mobility platform
- Battery management platform
- LEV swapping station
- EV charging station
- Energy storage
- LEV kits

Green energy mobility

- Battery swapping station and platform
- Application / Web app (LINE OA)
- Battery management platform and app
- Nextere's BMS board
- Nextere's battery
- Battery distributor
- Battery repair and lifespan extension



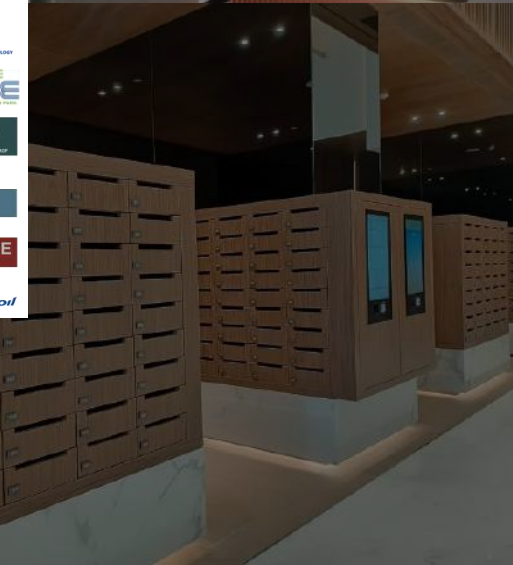
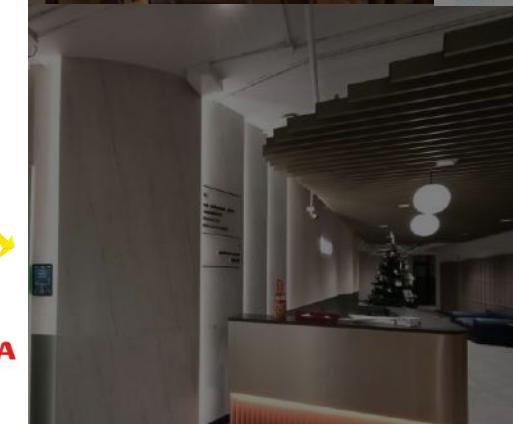
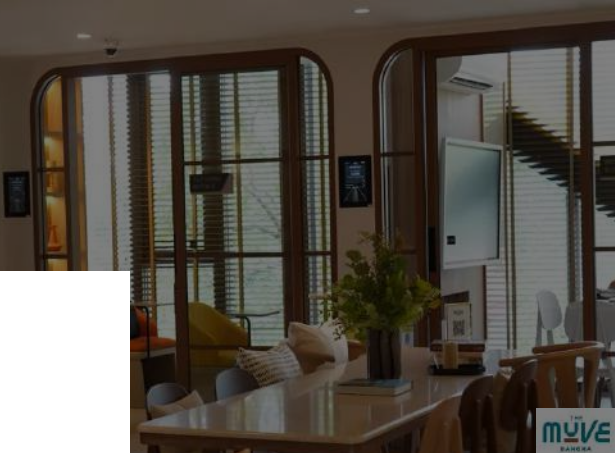
IoT for smart building, office, condo

Installed projects

400+

Active users

100K+



taka HAUS SANSIRI

KEYSPACE

Space management technology for all area types



01

Well living

- Smart parking
- Smart access control
- Visitor management
- Smart locker & mail box
- Smart booking
- Well-living solutions
- Environment sensors

02

Food delivery

- Food delivery locker

03

Hotel

- Self check in kiosk
- Digital door lock
- Luggage locker

04

School

- Class check-in
- Smart food court
- Student tracking system
- Student locker

05

Factory

- People & asset tracking
- Smart warehouse
- Access control
- Time attendance
- Smart food court

06

Attraction

- Ticket management system
- Car sharing
- Travel locker

07

Well working

- Smart parking
- Smart access control
- Visitor management
- Smart locker & mail box
- Smart booking
- Meeting room conference
- Office automation
- Well-working solutions
- Environment sensors

08

Hospital

- Vaccine locker
- Clinic management system

09

Franchise

- Franchise platform

10

Repair shop

- Booking service
- Tracking repair progress

11

Transit

- Keydrop locker
- GPS telematics

KEYSPACE



We provide well-thoughtout solutions for your daily space, whether it be an office, factory, fitness, or living space. Making improvement for daily touchpoints in your life.



Effortless well-being. Automated for work, optimized for life.

KEYSPACE



We provide well-thoughtout solutions for your daily space, whether it be an office, factory, fitness, or living space. Making improvement for daily touchpoints in your life.



Factory



Condo



Hotel



Showroom



Village



Office

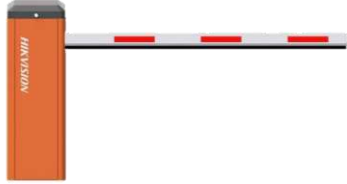
Effortless well-being. Automated for work, optimized for life.

Smart parking

Barrier gates



Barrier Gates



Digital barrier gate

ANPR - Automatic Number Plate Recognition



2MP Entrance & Exit ANPR camera



4MP ANPR Video Units



Coming 2024

4MP ANPR Intelligent Entrance Video Unit

Sensor detector



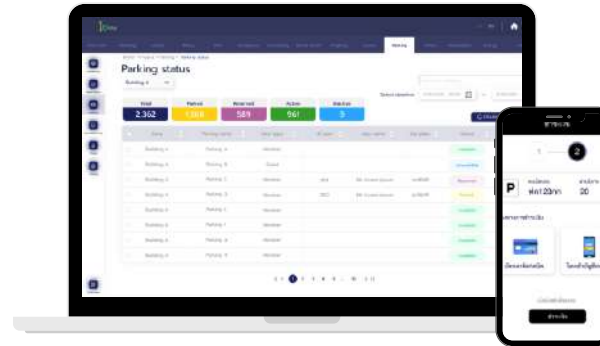
Radar detector (Capture-trigger and Anti-fall)

Parking kiosk



- RFID, QR, LPR, Lidar, Printer
- Cashless payment

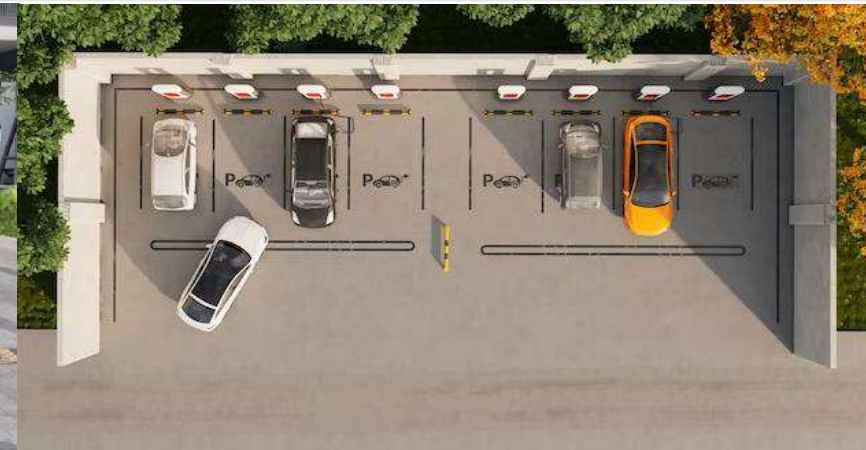
Timestamp & parking management software on-cloud



- time stamp แยก member / visitor
- ชำระเงินด้วย cashless payment แบบรายเดือน / รายชั่วโมง

EV charging station

- หัวชาร์จ Type2
- มีทั้งแบบ DC และ AC
- รองรับการทำงานผ่าน app
- เชื่อมต่อการรับชำระเงิน



EVENTS
& NEWS



DIGITAL SIGNAGE
Show promotion and event

SELF CHECK-IN



SELF CHECK-IN KIOSK
Check-in and get key card

RENTAL LOCKER



LOCKER VENDING MACHINE
POS for extra amenities such as pillow,
blanket, towel, bath amenities etc.

BEVERAGE



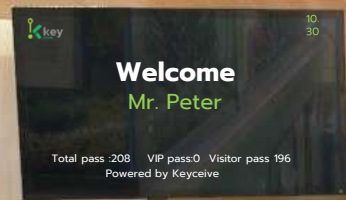
**FOOD AND BEVERAGE
VENDING MACHINE**
POS for food and beverage

AUTOMATE LOBBY
self-service | compact | cashless payment



11:00 AM
Thursday 30 July 2020

SIGNAGE WELCOME SCREEN



FACE RECOGNITION AND TEMPERATURE SCAN

Registration with face scan

SELF CHECK-IN KIOSK
Self register/WIFI/access card

SMART LOCKER
Verification by passcode, passport, ID card, QR, face scan

SMART LOBBY
self-service | automated | smart function

VISITOR MANAGEMENT

สร้างความมั่นใจให้แก่ลูกบ้านด้วยการให้ Visitor เช็คอินและลงทะเบียนล่วงหน้าก่อนเข้าพื้นที่ โดย visitor สามารถยืนยันตัวตนด้วยตนเองอีกครั้งหน้าตู้และยืนยันตัวตนด้วยบัตรประชาชนหรือพาสปอร์ต พร้อมถ่ายรูปเก็บไว้ในฐานข้อมูล สามารถทำการจ่ายคีย์การ์ด และพิมพ์สลิปพร้อมรหัส WIFI เพิ่มความปลอดภัยให้กับพื้นที่ได้อย่างสมารถ

KIOSK

Face camera record

Touch screen monitor

Insert passport

ID card reader

Card dispenser
(Access card or QR card)

Changeable decoration



DESK

QR reader

Passport reader

ID card reader

Card dispenser

Tag slot

Touch screen monitor

POS

Storage

VMS kiosk



Floor stand kiosk 24"



Desk kiosk 15"



Co-working space

Office

Hotel



SMART SIGNAGE KIOSK

ออกแบบเพื่อเน้นการแสดงผล ข้อมูลประชาสัมพันธ์แบบตั้งพื้น Slim and seamless design พร้อมเครื่องพิมพ์สีลิป รองรับการชำระเงินแบบไร้เงินสด เหมาะสำหรับตั้งบริเวณพื้นที่สาธารณะ

SELF CHECK-IN DESK

เช็คอินอัตโนมัติด้วยตนเองหน้าเครื่อง โดยใช้ Booking ID ยืนยันตัวตนด้วยบัตรประชาชนหรือพาสปอร์ต พร้อมถ่ายรูป เครื่องจะทำการจ่ายคีย์การ์ด และพิมพ์สลิปพร้อมรหัส WIFI เชื่อมต่อกับระบบ POS จ่ายเงินด้วย cashless payment



THE OVAL KIOSK

ยืนยันตัวตนด้วยการสแกน QR, บัตรประชาชน, password และการเปรียบเทียบใบหน้าจากกล้อง รูปทรงโมเดิร์นสำหรับแขวนผนังลอยตัวจ่ายต่อการ service

UNIVERSAL DESIGN

นอกจากดีไซน์ที่สวยงามโดดเด่นกว่าใคร เรายังคำนึงถึงผู้ใช้งานทุกกลุ่มให้สามารถเข้าถึงและใช้งานได้อย่างสะดวก เพราะสมาร์ทเฟอร์นิเจอร์ที่ดีควรช่วยให้การใช้ชีวิตปกติดียิ่งขึ้นไปกว่าเดิม

ON WALL VMS KIOSK

universal design ออกแบบเพื่อผู้ใช้งานทุกกลุ่ม ยืนยันตัวตนด้วยการสแกน QR, บัตรประชาชน, password และการเปรียบเทียบใบหน้าจากกล้อง สำหรับแขวนผนังลอยตัวจ่ายต่อการ service



SMART SIGNAGE KIOSK

KIOSK สำหรับงาน outdoor เพิ่มฟังก์ชันด้วย built-in IoT



TOP UP & RETURN POS KIOSK

TOP UP ONLY POS KIOSK

เพิ่มความสะดวกรวดเร็วแก่ผู้ใช้งาน รองรับ การเติมเงินทั้งธนบัตร, เหรียญ และ cashless payment ผ่าน QR code, mobile banking, prompt pay หรือ e-wallet



SMART SIGNAGE

ป้ายบอกทางดิจิทัล พร้อมอุปกรณ์ระบุตำแหน่ง ใช้นับจำนวนและแยกกลุ่มบุคคล เหมาะสำหรับตั้งบริเวณ sales gallery หรือ meeting hall สามารถปรับดีไซน์และวัสดุให้ดูกลมกลืนกับสถานที่ได้อย่างอิสระ

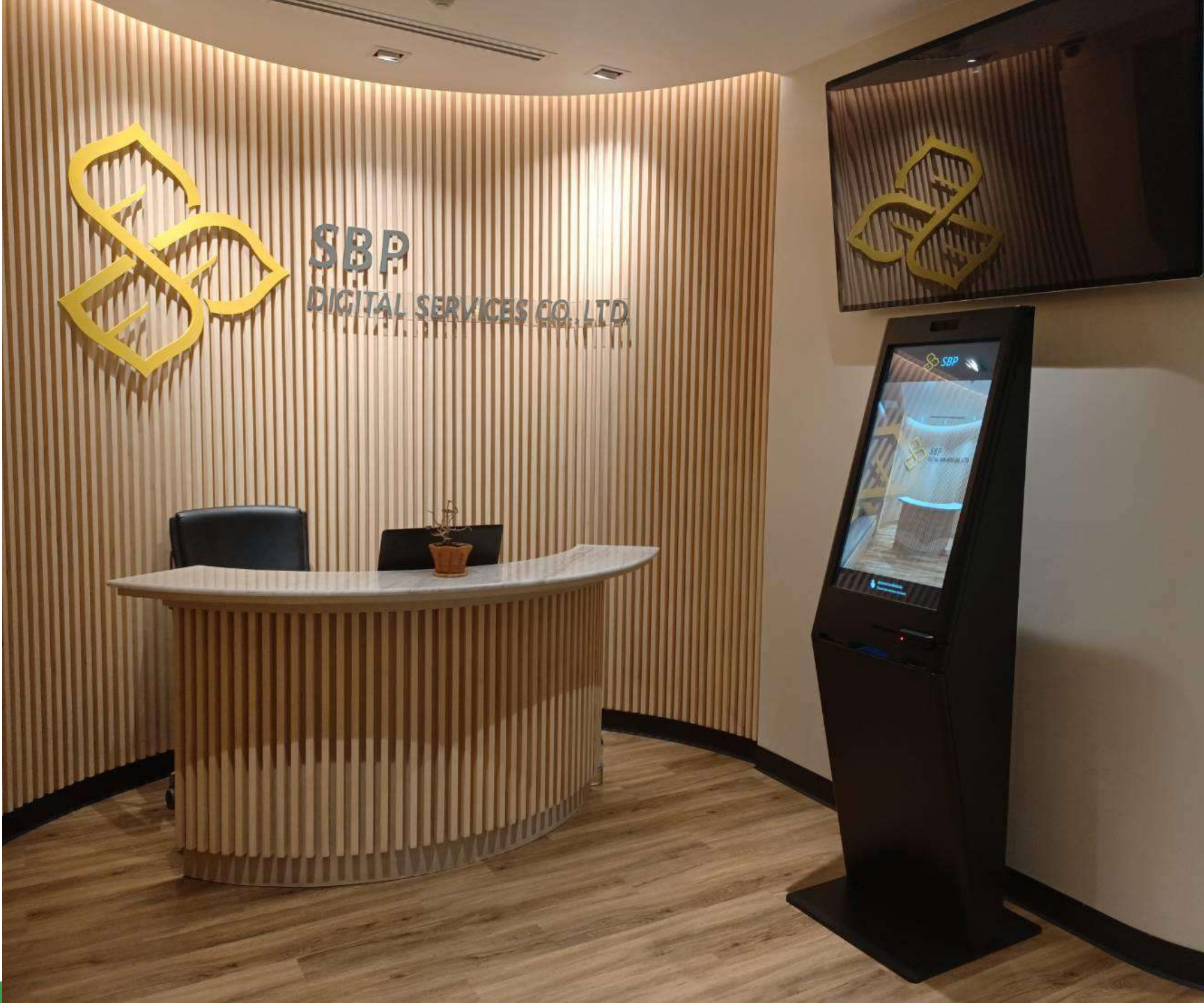






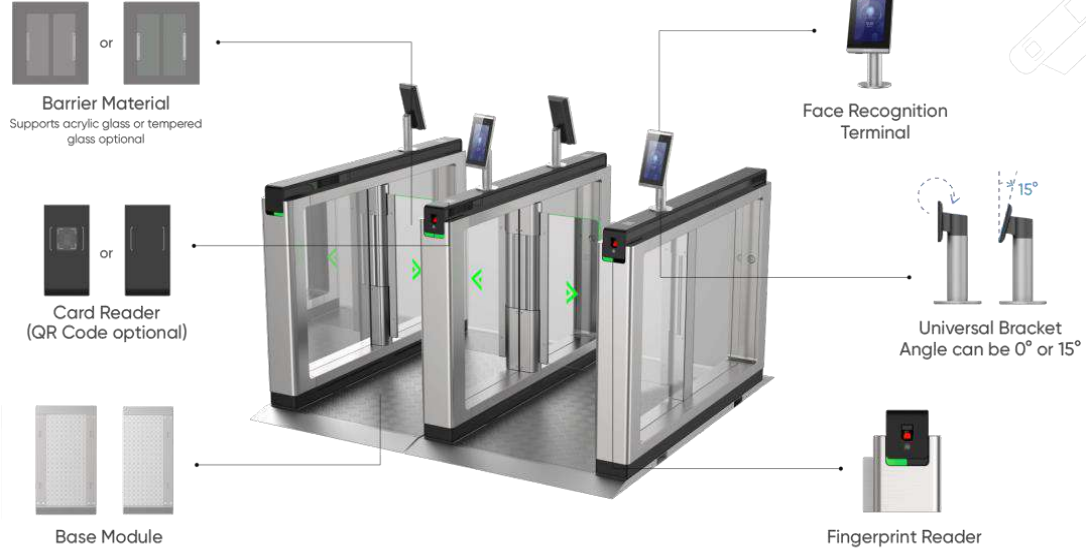
Nextere
The next level of sustainable IoT





Turnstiles

Option 1: pole



Option 2: built-in Recommend



Pro



Ultra



Pro



Ultra

Access control

Face recognition terminal



4.3" Touch screen
M1, Face, QR code



7" Touch screen
M1, DESFire card, Felica card, Face, QR code (option)



8" Touch screen
M1, DESFire card, Felica card, Face, QR code (option)



RFID card



QR



Face scan



Passcode



Application



Digital door lock

Lift access Control

Readers/Biometrics are used to access customized floor lifts



Elevator control panels enable you to design floor-by-floor elevator access control to the card holders/biometric

People counting with deep Algorithm



Dual-Lens people counting network camera



4 MP IR Varifocal dome network camera



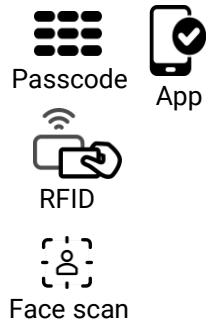
Network/Digital video recorder

Digital door lock

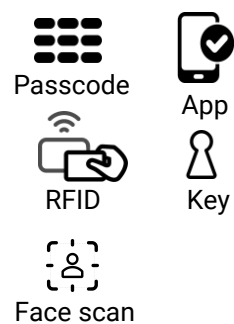
Home digital door lock



Model HL-01



Model HL-02



Hotel digital door lock



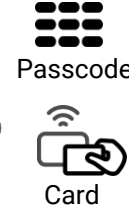
Model DL-01



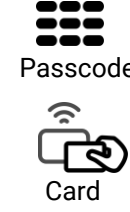
Model DL-02



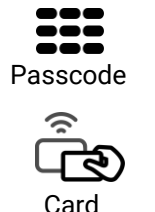
Model DL-03



Model DL-04



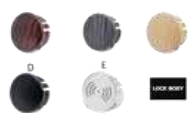
Model DL-05



Individual lock



Model 1



Model 2



Model 3



Model 4



Model 5



Model 6



Model 7



Model 8



Model 9



Model 10



Booking



8" Touch screen



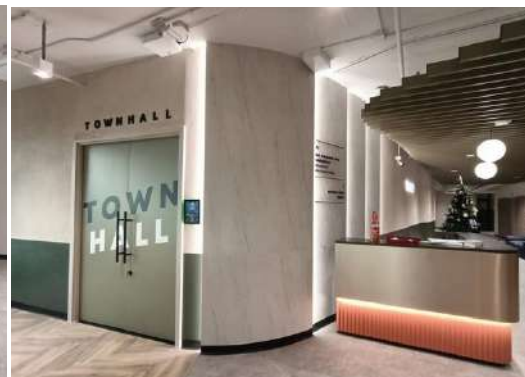
4.2" Touch screen



4" Electronics paper



Meeting room booking



Co-working space booking



Bedroom booking



Gym booking



Desk booking



Desk booking (low energy)



- Booking check-in
- Ease of use via Line OA
- Sensors for well-being
- Control lighting and door
- Support payment module

Well-being sensors



9 in 1 Indoor Air Quality sensors



- PM 1.0 | PM2.5 | PM10
ฝุ่นพิษขนาดเล็ก
- Temp
อุณหภูมิ
- RH
ความชื้น
- LUX
แสงสว่าง
- CO2
คาร์บอนไดออกไซด์
- VOCs
สารระเหยอินทรีย์
- HCHO
ฟอร์มัลดีไฮด์
มาทกบสี ทาว เฟอร์นิเจอร์ไม้

9 in 1 indoor air quality sensors

6 in 1 Well-being sensors in Desk booking panel

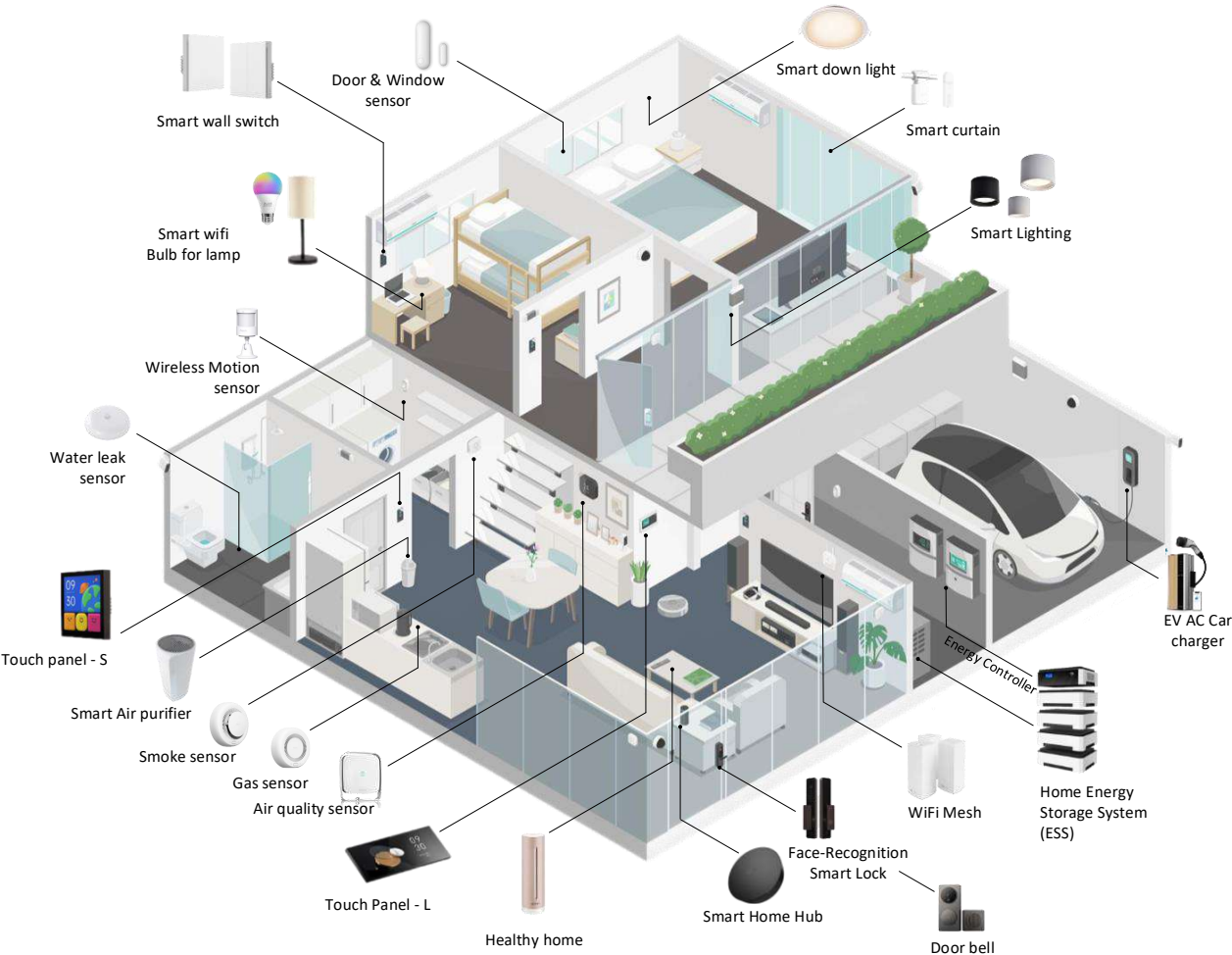


4" Desk booking
6 in 1 air quality sensors

- CO2
คาร์บอนไดออกไซด์
- VOCs
สารระเหยอินทรีย์
- HCHO
ฟอร์มัลดีไฮด์
มาทกบสี ทาว เฟอร์นิเจอร์ไม้
- Temp
อุณหภูมิ
- PM2.5
ฝุ่นพิษขนาดเล็ก
- RH
ความชื้น



Home Automation



Smart video doorbell



Smart home hub



Magic switch control



Magic pad switch control

Alarm sensors



Smoke sensor



Gas sensor



Water leak sensor



Motion sensor



Air quality sensor



Door and window sensor



Smart curtain



Hue bridge



LED light



Downlights



Camera hub



Camera hub pro



Welcome camera



Outdoor camera

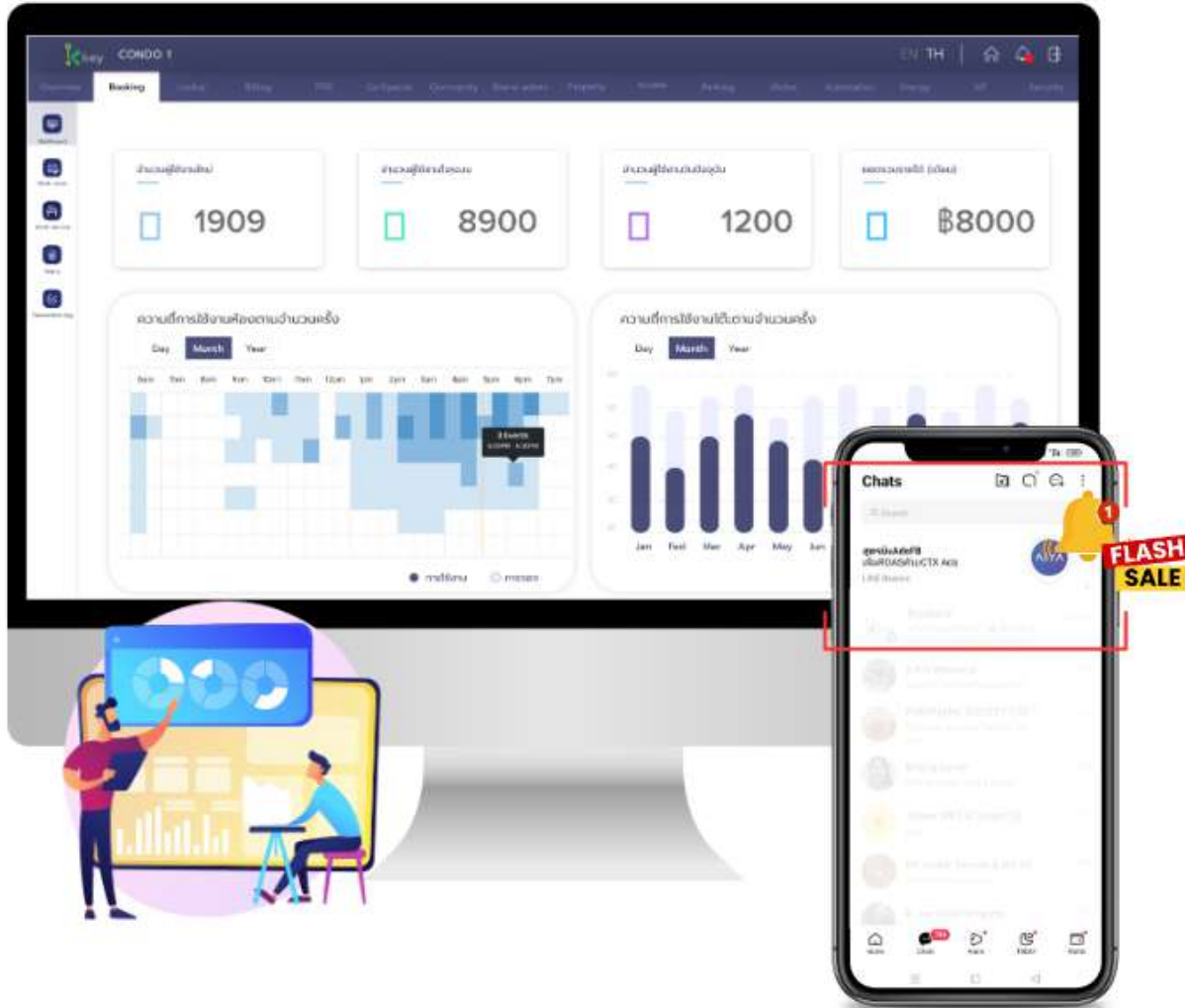


Smart remote switch



Smart wall switch

Line beacon



Extra Long Range
Broadcasting Line Beacon



Personal RFID Card
Beacon rechargeable



Card Beacon

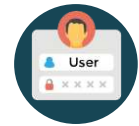


Asset Tag Beacon



USB Tag Beacon





SSO login
เชื่อมต่อ API SSO



VMS
เชื่อมต่อ Webview IPTV service



Smart parking
เชื่อมต่อ API เช็ค license plate
เชื่อมต่อ Webview IPTV service



Energy
แสดงอัตราการใช้ไฟฟ้า real-time
เชื่อม API - BMS software



Air quality sensors
แสดงดัชนีคุณภาพอากาศ
เชื่อมต่อ API AQ sensor



Locker, Mailbox
เชื่อมต่อ Webview IPTV service ของ Keyspace



Booking meeting room
เชื่อมต่อ Webview IPTV service ของ Keyspace



Promotion
แสดงข่าวสาร, โปรโมชั่นของร้านค้าที่ติดบนแอป



Maintenance service
เชื่อม line OA ของ โครงการ



Shuttle bus tracking
เชื่อมต่อ Webview IPTV service ของ

In app interface design

- ดีไซน์หน้าตาในของ app แต่ละ service ให้สามารถคุม main theme ของ super app ได้

All-in-one app for smart building

Home



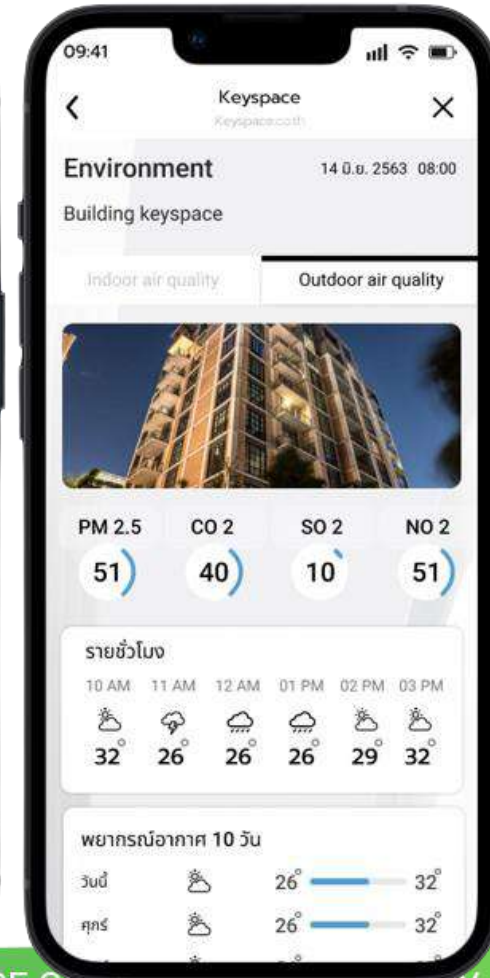
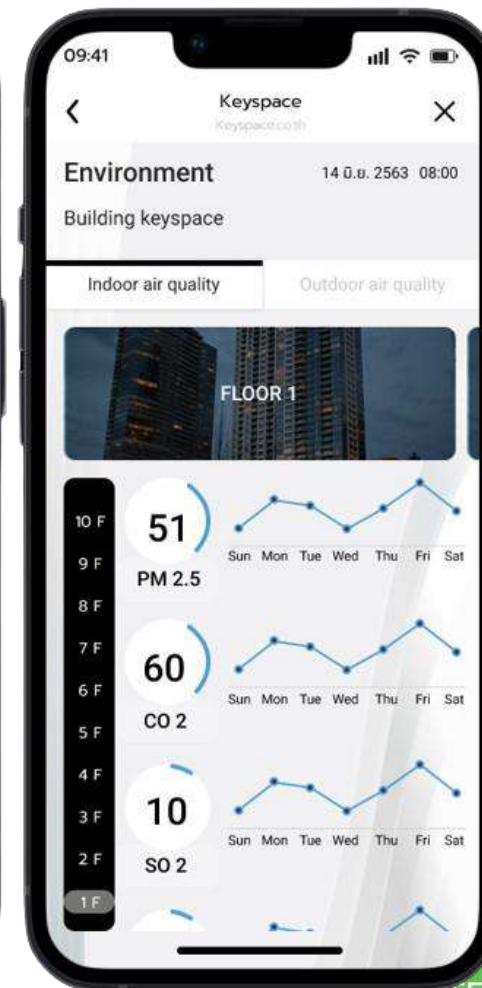
My space
ดูข้อมูลการทำงานของตึก



My ID
เชื่อมต่อการทำงานออก
ลิฟท์, turnstile



My environment
เช็คค่าอากาศ indoor/outdoor แบบ real-time



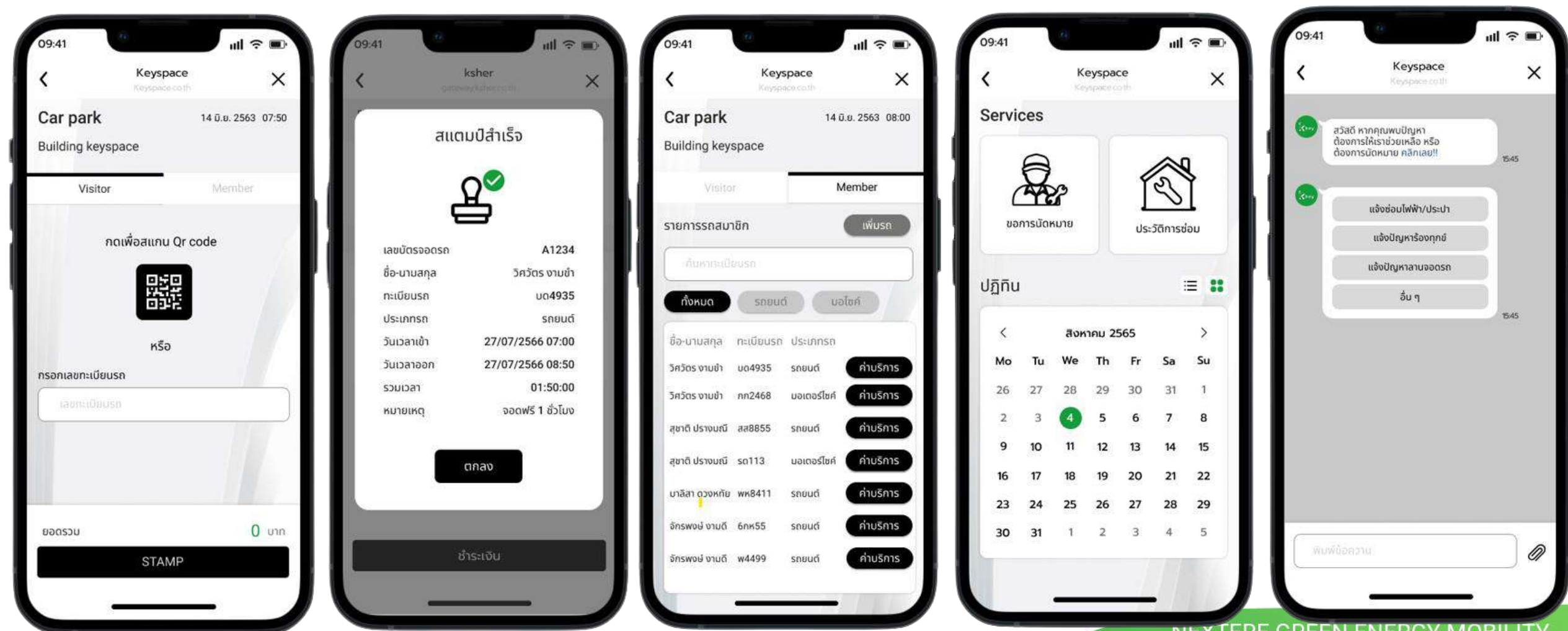
All-in-one app for smart building

Car park

ระบบ time stamp, สรุปร และชำระค่าใช้จ่ยค่าที่จอดรถของสมาชิกภายในตึก

My service

เชื่อม LINE OA เพื่อแจ้งซ่อม



KEYSPACE

We provide well-thoughtout solutions for your daily space, whether it be an office, factory, fitness, or living space. Making improvement for daily touchpoints in your life.



Effortless well-being. Automated for work, optimized for life.

Smart locker ในคอนโด

ติดตั้งและดูแลโดยเรา

97%



Smart locker **มี patent!** เจ้าเดียวในประเทศไทย

โครงการติดตั้งใช้ได้ **ไม่มีปัญหา**



Keyspace Steel locker series

Standard color



4.3"



10"



24"

Monitor module
W40xD45xH195cm
W40xD60xH195cm



2 boxes



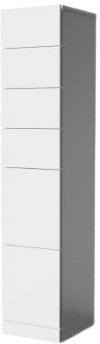
3 boxes



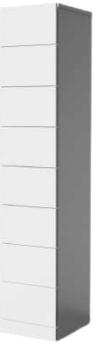
4 boxes



5 boxes



6 boxes



8 boxes

Opaque parcel module
W40xD45xH195cm
W40xD60xH195cm



15 boxes

Opaque parcel module
(special)
W87xD37xH187cm



4 boxes



6 boxes



8 boxes

Glass door parcel module
W40xD45xH195cm
W40xD60xH195cm



3 boxes

Warm locker module
W40xD60xH195cm



3 boxes

Opaque cold locker module
W40xD60xH195cm



6 boxes



3 boxes

Glass door cold locker module
W40xD60xH195cm



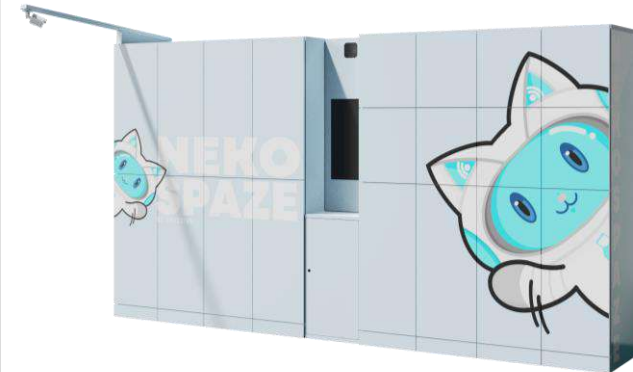
6 boxes



Monitor 4.3",10" 8 boxes
Mailbox module 8 boxes
W30xD40xH140cm



Monitor 4.3",10" 14 boxes
Mailbox module 14 boxes
W30xD30xH150cm



Nekospaze locker module
W40xD60xH195cm



EV charging station module
W60xD60x220cm



Smart farm shelf
W120xD55x200cm



UV locker module
W40xD45xH195cm



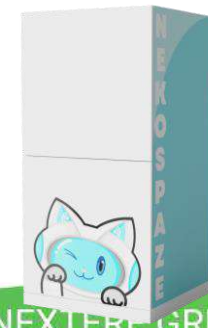
UV box module
W60xD60xH60cm



Single mailbox
W40xD40xH90cm



Key drop locker
W100xD16xH75cm



NEXTERE GREEN ENERGY MOBILITY
Neko self twin module
W200xD100x210cm



Nekodeli module
W125xD58x200cm

proprietary intellectual

Keyspace wood locker series



10" 24"
Monitor module D45 cm
W40xD45xH195cm



2 boxes 4 boxes 8 boxes
Parcel module D45 cm
W40xD45xH195cm



10" 24"
Monitor module D 60 cm
W40xD60xH195cm



2 boxes 4 boxes 8 boxes
Parcel module D 60 cm
W40xD60xH195cm



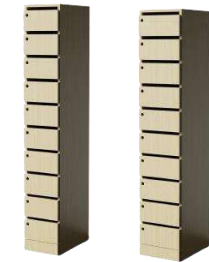
4.3" 10" 10"+4.3"
Mailbox monitor module



8 boxes
Mailbox 8 boxes
W30xD40xH140 CM



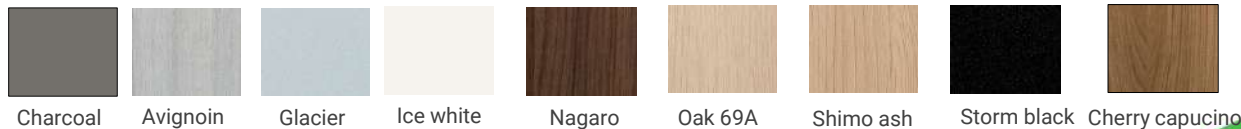
9 boxes
Mailbox 9 boxes
W30xD40xH155 CM



10 boxes
Mailbox 10 boxes
W25xD35xH160 CM
W30xD40xH160 CM



Standard color



Nekospaze

Automate your income with recurring business

Neko self hill

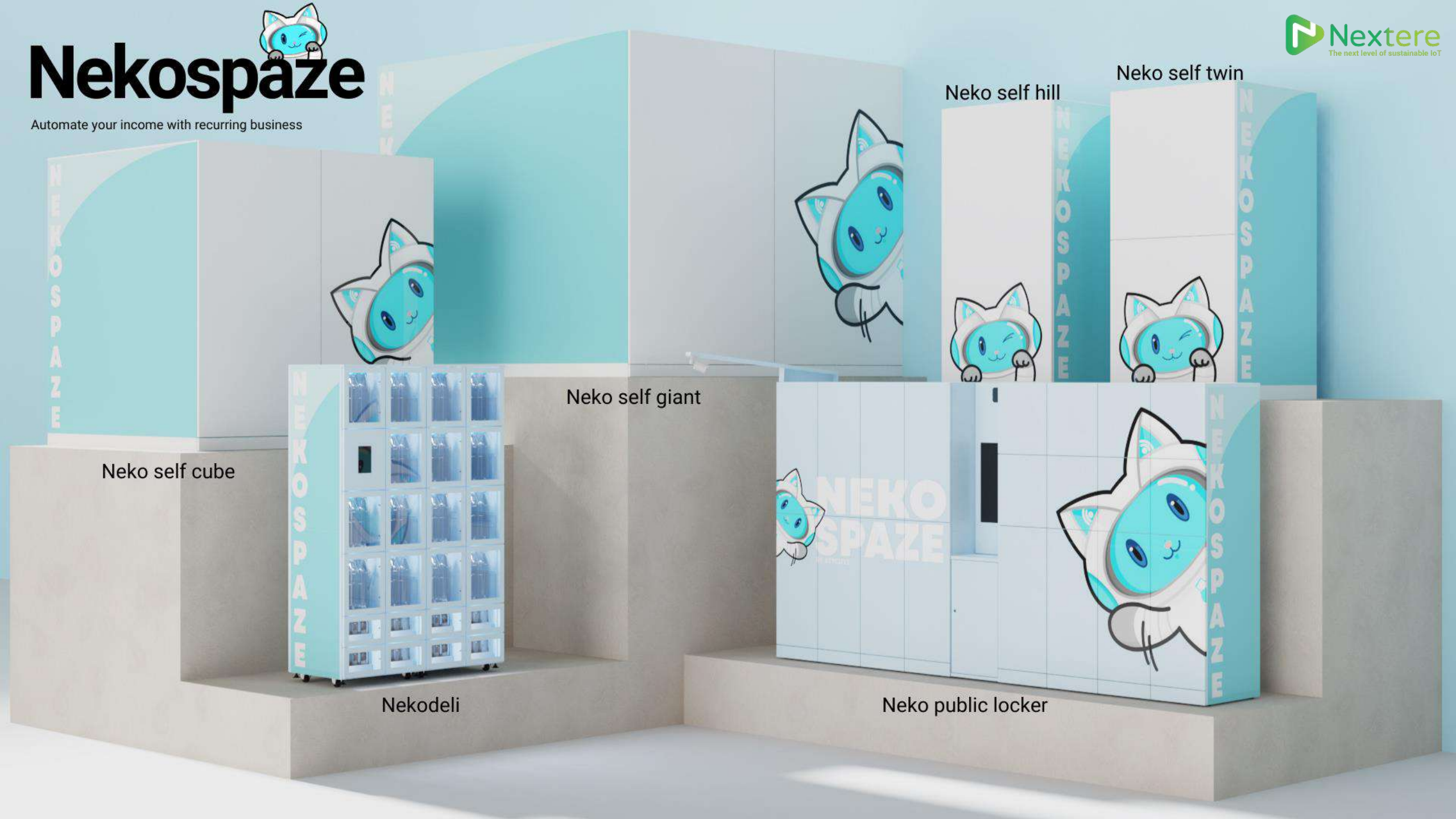
Neko self twin

Neko self cube

Neko self giant

Nekodeli

Neko public locker



New premium smart locker

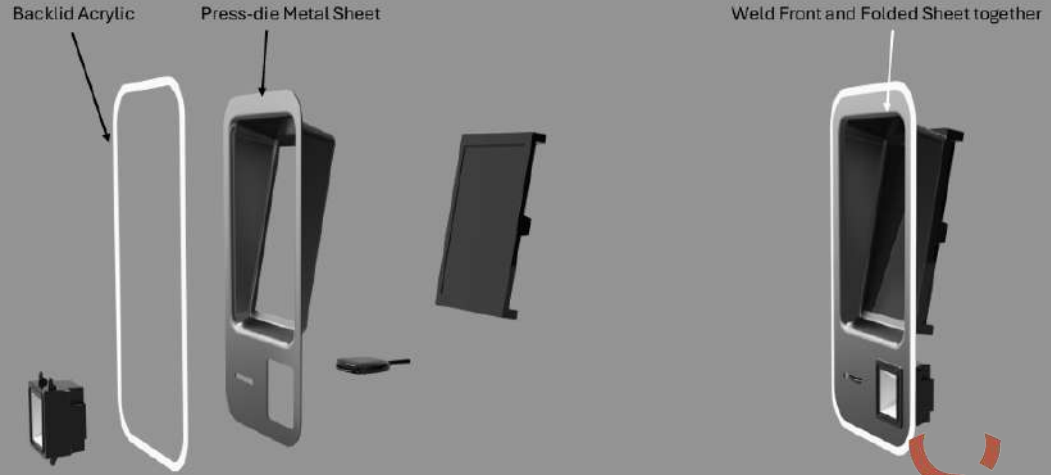
An innovative brand that nurture everyone's well-being by improve any space into the best version of itself.



Oregene

New Design (Option 2)

The New screen frame is made by sheet metal forming press die.
The Frame is accented by backlid acrylic panel for aesthetic purpose







Stations

100+

Users

2,000+

Batteries

6,000+

Deep-Tech IoT solutions for LEV

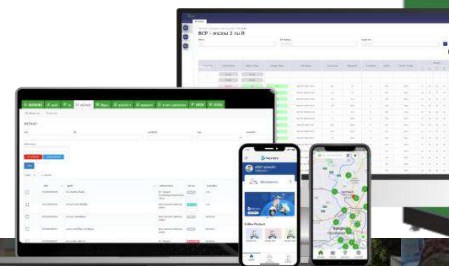
from R&D > production > installation > maintenance

- Battery swapping station
- Management platform/Application/LINE OA
- Battery management platform and app
- Battery repair and lifespan extension



NIA matching grant

- 2023 EV bike batt fast charge station
- 2024 BMS board for EV bike batt



Nextere capability



Ready-to-use platform
Scalable for business growth.



3+ years EV locker experience
Proven expertise.



Supports all protocols
Broad integration capability.



Unique advantage over all BMS
on the market (confidential).



Strong partners in
Thailand & China



In-house deep-circuit design team
Custom boards & continuous R&D.



Patent team in place
Intellectual property
secured.



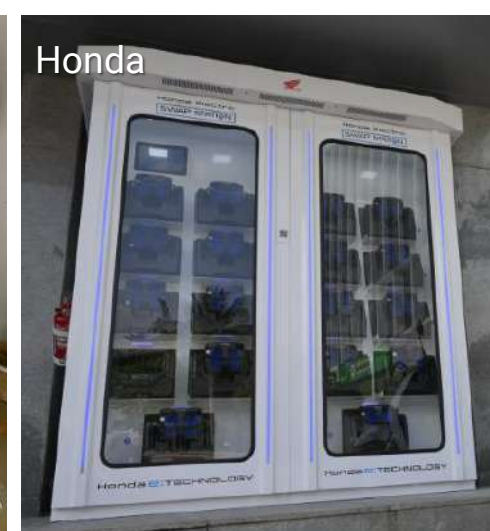
Expandable BMS for energy storage
Flexible product lines.



Core tech design
Independent, module-free
assembly.

Technical pain point

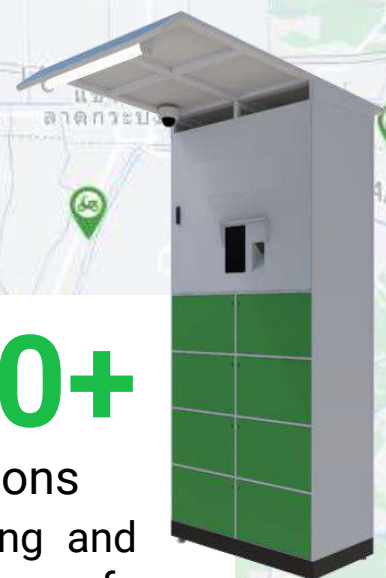
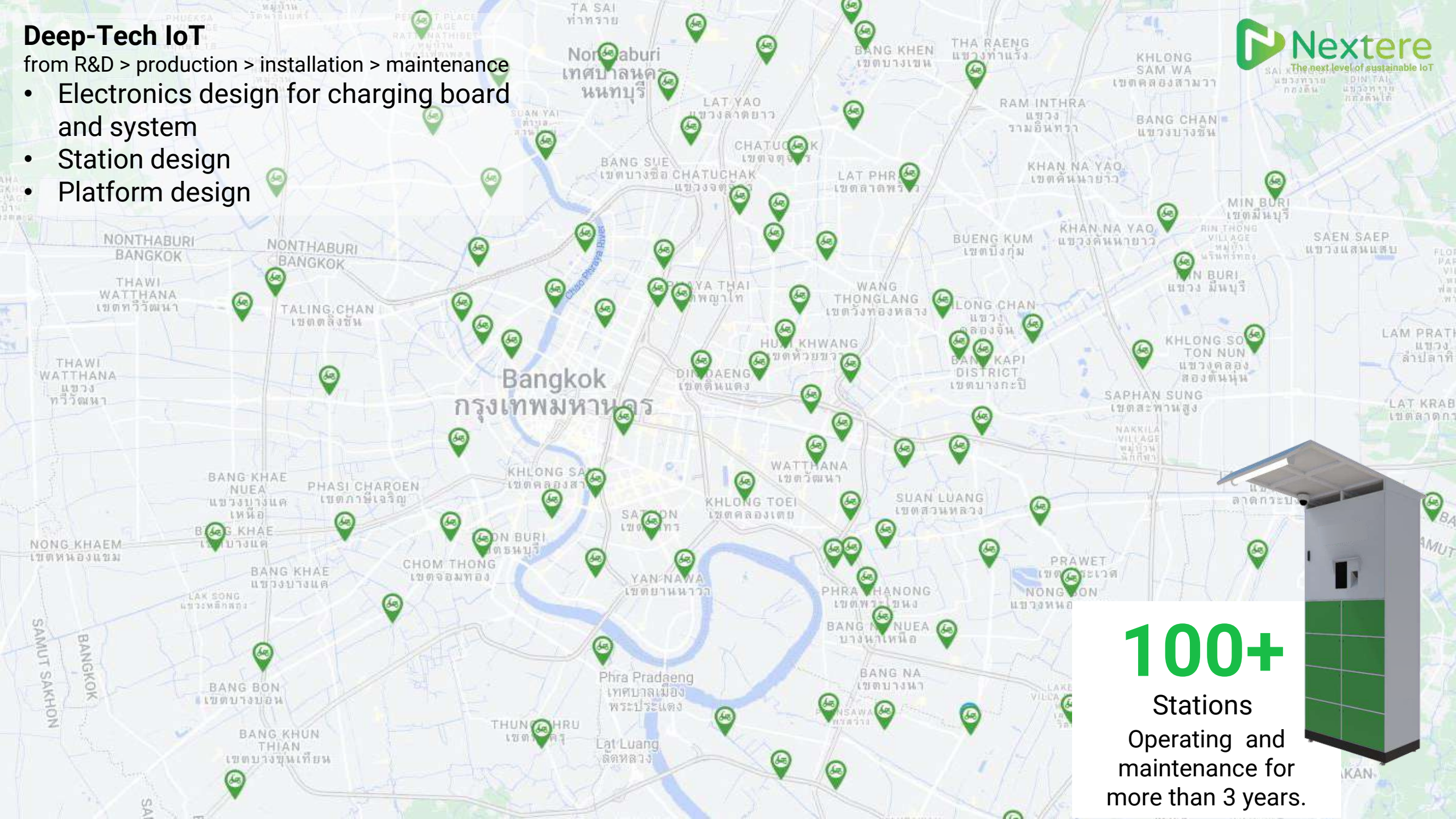
Most swapping stations are imported from abroad and cannot be further developed or upgraded locally



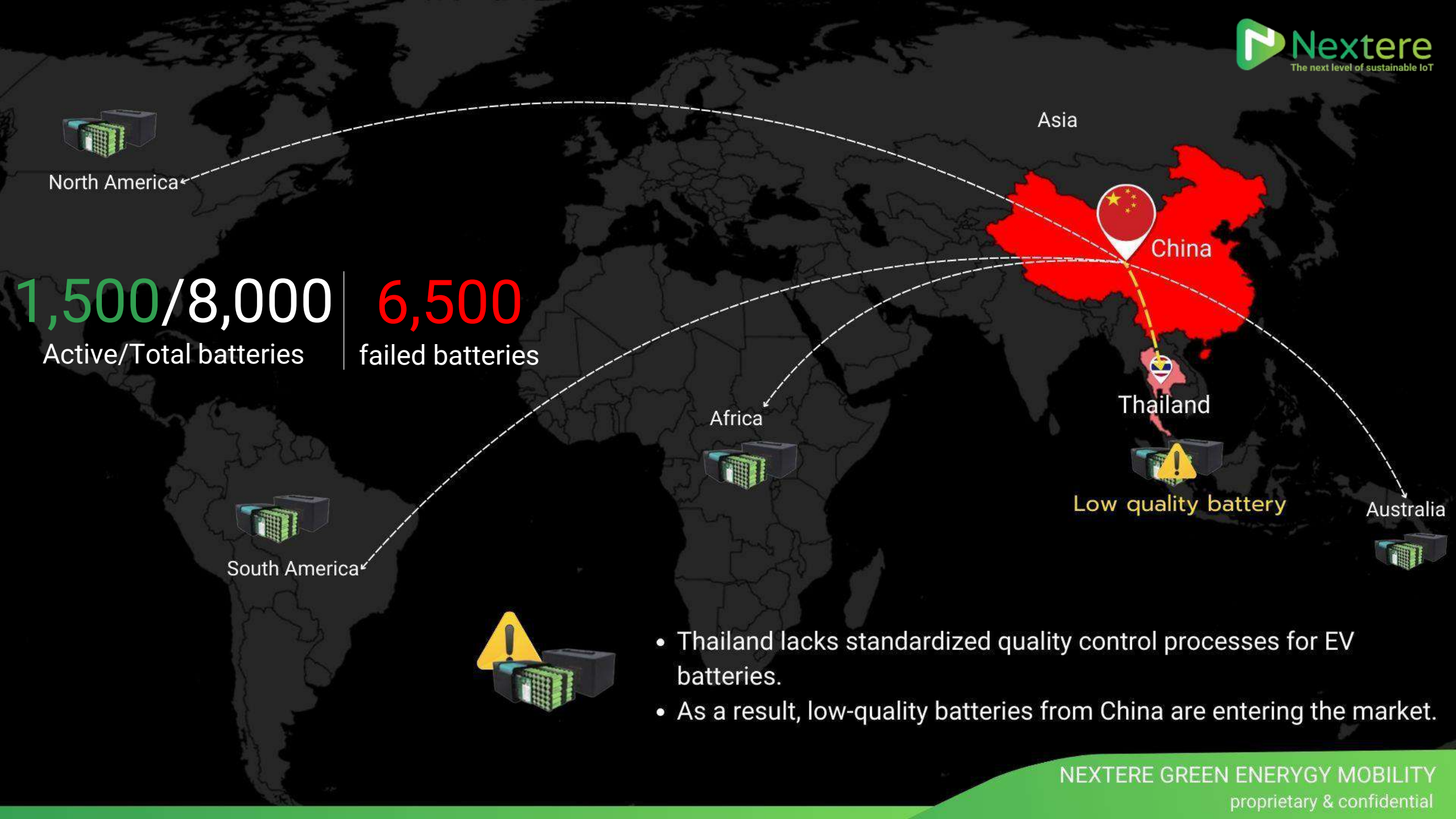
Deep-Tech IoT

from R&D > production > installation > maintenance

- Electronics design for charging board and system
- Station design
- Platform design



100+
Stations
Operating and
maintenance for
more than 3 years.



- Thailand lacks standardized quality control processes for EV batteries.
- As a result, low-quality batteries from China are entering the market.

Current Issues in Electric Vehicle Battery Waste

Key Challenges:

- ✘ Lack of a comprehensive, end-to-end battery waste management system.
- ✘ Ambiguous regulations and enforcement on battery disposal.
- ✘ Incomplete infrastructure for efficient battery recycling.
- ✘ High costs associated with advanced battery recycling technologies.
- ✘ Limited public awareness and understanding of proper battery waste management.



Transitioning Thailand's Automotive Industry to EVs

- Battery QC is Key: Rigorous quality control on imported batteries is essential for consumer confidence.
- Sustaining Automotive Leadership: Thailand must focus on producing EV batteries to remain competitive.
- Advancing Production: Moving from cell assembly to domestic cell manufacturing is critical.
- Battery Swap Networks: A strong battery swap system is vital for the motorcycle market.
- Expand Charging Infrastructure: More charging stations are needed for EV adoption.
- Raise Awareness: PR efforts should highlight the value of locally-made batteries to boost demand.

Growth trends in the LEV market

LEV ในไทยเติบโตมากกว่า 1,300 % ภายในระยะ 5 ปี และมีแนวโน้มเติบโตอย่างต่อเนื่อง

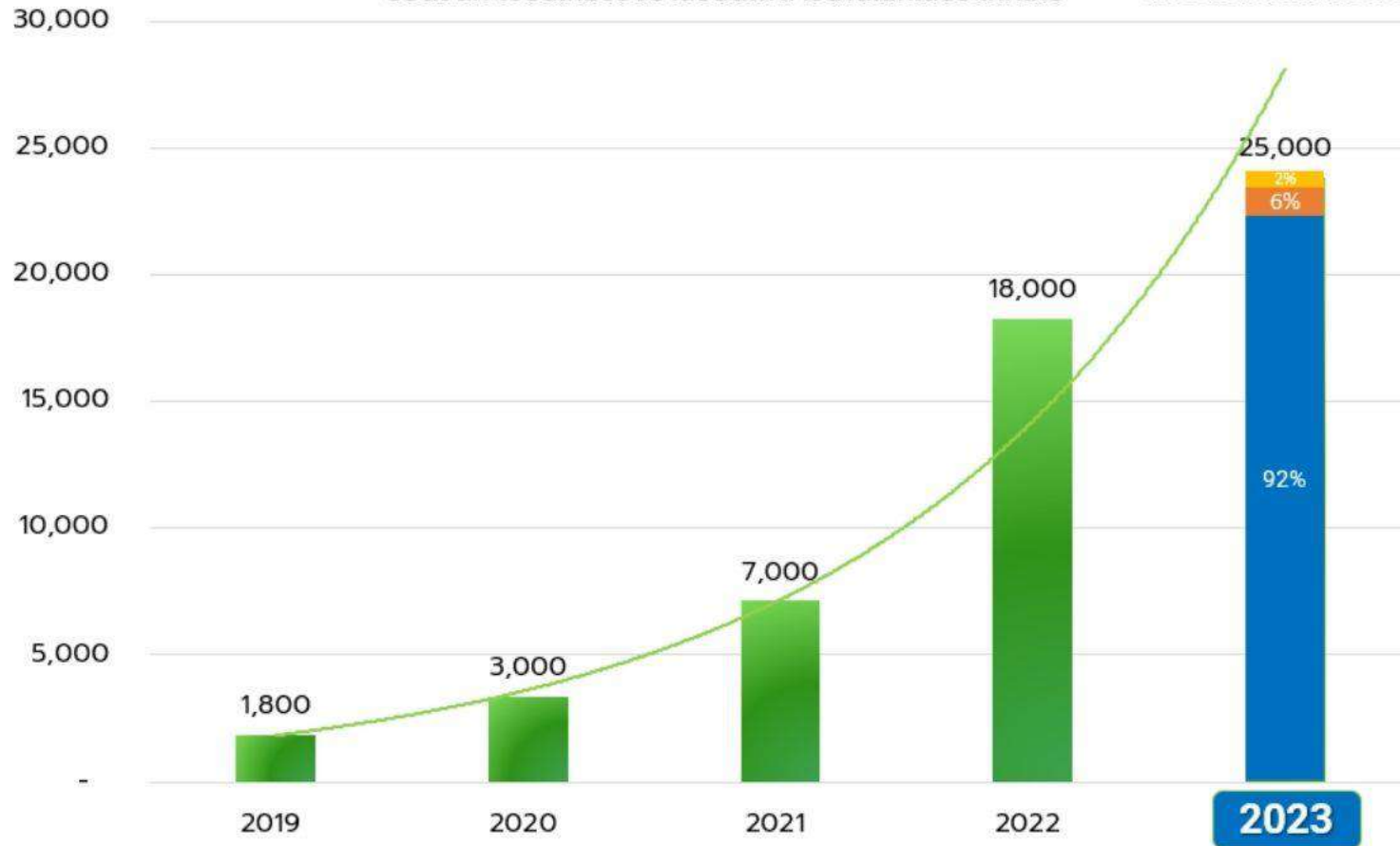
BMS ในตลาดโลก

2023 มีมูลค่า 7.8 พันล้านดอลลาร์สหรัฐ

2028 คาดว่าจะเติบโต 18.4 พันล้านดอลลาร์สหรัฐ

ด้วยอัตราการเติบโตประจำปี (CAGR) ที่ 18.7% ในช่วงเวลานี้ ข้อมูลจาก Markets and Markets™

ยอดจดทะเบียนใหม่ของยานยนต์ไฟฟ้าขนาดเล็กในประเทศไทย



EV battery data analyst progress



1. Data efficiency



2. Process efficiency

Developing Innovative Methods for Battery Repair and Lifespan Extension



3. Product efficiency

Repackaging Batteries to Enable a Second Life

Leveraging Data to Enhance Battery Efficiency and Extend Lifespan



- ✓ **Battery Restoration:** Refurbish damaged batteries to enable their reuse.
- ✓ **Extended Lifespan:** Increase battery life cycles from 1,000 to 1,500 cycles.
- ✓ **Enhanced Flexibility:** Improve battery resilience to humidity, air, temperature, and driving behavior to match local usage conditions.
- ✓ **Waste Reduction:** Address battery waste issues.
- ✓ **Comprehensive Solutions:** Meet the demands of the Thai market by advancing technology, economic benefits, and social impact.

Business pain point



High Costs

Heavy reliance on imported technology from China raises costs and doesn't fully meet local needs.



No Proprietary Tech

Local battery factories depend on foreign technology transfer, slowing growth.



Talent Gap

Lack of technical experts limits development progress.



Platform Deficiency

No integrated system connecting locker, battery, and motorcycle.



Limited Battery Knowledge

Insufficient understanding of battery technology.



Repair Issues

Many failed batteries can't be fixed.

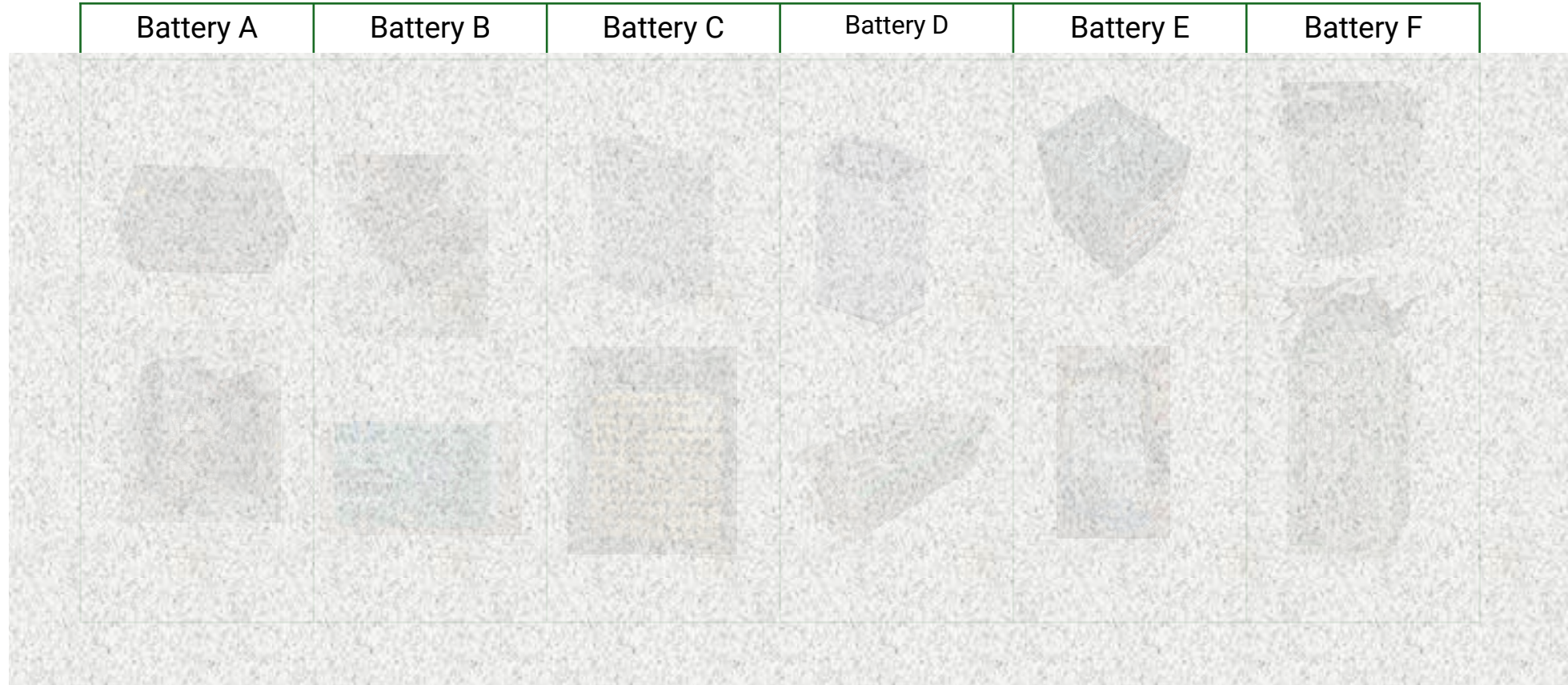
Technical pain point



Battery packers in Thailand import 100% of their BMS.

They cannot fully utilize the features as they are not designed to integrate seamlessly with the battery packs.

The battery that was studied and tested



Technical pain point

A significant number of batteries fail due to BMS shutdowns.

This occurs because the BMS does not communicate effectively with the charger, preventing proper charging and discharging.



Technical pain point

Battery burned

The battery caught fire due to cell issues and BMS malfunction, leading to thermal runaway and complete combustion.



Unused battery packs that have been left for 3-4 months become damaged.



| Pack 1 | | | | | | | | | | | | | | | | | | | |
|------------------|-----|---------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|------|------|-------|-------|-------|-------|-------|
| BNA9PY2B70420678 | 345 | 4.105 | 4.106 | 4.106 | 4.106 | 4.103 | 4.098 | 4.101 | 4.102 | 4.101 | 4.125 | 4.122 | 4.12 | 4.12 | 4.127 | 4.129 | 4.126 | 4.133 | 0.035 |
| BNA9PY2B70420678 | 345 | 3.8dt 3 | 3.91 | 3.74 | 3.75 | 3.74 | 3.77 | 3.58 | 3.74 | 3.74 | 3.8 | 3.87 | 3.81 | 3.78 | 3.81 | 3.8 | 3.8 | 3.79 | 0.33 |
| dt V | | 0.275 | 0.196 | 0.366 | 0.356 | 0.363 | 0.328 | 0.521 | 0.362 | 0.361 | 0.325 | 0.252 | 0.31 | 0.34 | 0.317 | 0.329 | 0.326 | 0.343 | |

| Pack 3 | | | | | | | | | | | | | | | | | | | |
|------------------|-----|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| BNA9PY2B71750281 | 308 | 4.106 | 4.11 | 4.103 | 4.111 | 4.097 | 4.105 | 4.101 | 4.106 | 4.103 | 4.097 | 4.098 | 4.103 | 4.095 | 4.116 | 4.112 | 4.109 | 4.118 | 0.023 |
| BNA9PY2B71750281 | 308 | 3.563 | 3.472 | 3.523 | 3.585 | 3.481 | 3.593 | 3.505 | 3.397 | 3.552 | 3.551 | 3.514 | 3.51 | 3.551 | 3.598 | 3.602 | 3.522 | 3.644 | 0.247 |
| dt V | | 0.543 | 0.638 | 0.58 | 0.526 | 0.616 | 0.512 | 0.596 | 0.709 | 0.551 | 0.546 | 0.584 | 0.593 | 0.544 | 0.518 | 0.51 | 0.587 | 0.474 | |

| Pack 4 | | | | | | | | | | | | | | | | | | | |
|------------------|-----|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| BNA9PY2B64700169 | 705 | 4.114 | 4.116 | 4.117 | 4.12 | 4.115 | 4.102 | 4.108 | 4.109 | 4.103 | 4.108 | 4.109 | 4.108 | 4.11 | 4.103 | 4.104 | 4.103 | 4.082 | 0.038 |
| BNA9PY2B64700169 | 706 | 3.646 | 3.649 | 3.635 | 3.654 | 3.65 | 3.607 | 3.529 | 3.635 | 3.637 | 3.61 | 3.611 | 3.622 | 3.633 | 3.63 | 3.635 | 3.637 | 3.607 | 0.125 |
| dt V | | 0.468 | 0.467 | 0.482 | 0.466 | 0.465 | 0.495 | 0.579 | 0.474 | 0.466 | 0.498 | 0.498 | 0.486 | 0.477 | 0.473 | 0.469 | 0.466 | 0.475 | |

| Pack 7 | | | | | | | | | | | | | | | | | | | |
|------------------|-----|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| BNA9PY2B64902442 | 359 | 4.105 | 4.108 | 4.106 | 4.109 | 4.11 | 4.09 | 4.103 | 4.1 | 4.104 | 4.114 | 4.113 | 4.119 | 4.115 | 4.106 | 4.091 | 4.106 | 4.099 | 0.029 |
| BNA9PY2B64902442 | 359 | 3.579 | 3.713 | 3.674 | 3.775 | 3.787 | 3.642 | 3.727 | 3.685 | 3.722 | 3.791 | 3.581 | 3.814 | 3.826 | 3.716 | 3.519 | 3.764 | 3.71 | 0.307 |
| dt V | | 0.526 | 0.395 | 0.432 | 0.334 | 0.323 | 0.448 | 0.376 | 0.415 | 0.382 | 0.323 | 0.532 | 0.305 | 0.289 | 0.39 | 0.572 | 0.342 | 0.389 | |

| Pack 8 | | | | | | | | | | | | | | | | | | | |
|------------------|-----|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| BNA9PY2B64901535 | 376 | 4.103 | 4.109 | 4.103 | 4.105 | 4.101 | 4.094 | 4.092 | 4.1 | 4.1 | 4.1 | 4.096 | 4.094 | 4.098 | 4.096 | 4.102 | 4.102 | 4.1 | 0.017 |
| BNA9PY2B64901535 | 376 | 3.6 | 3.683 | 3.646 | 3.726 | 3.506 | 3.638 | 3.495 | 3.675 | 3.714 | 3.727 | 3.585 | 3.604 | 3.606 | 3.582 | 3.6 | 3.592 | 3.615 | 0.232 |
| dt V | | 0.503 | 0.426 | 0.457 | 0.379 | 0.595 | 0.456 | 0.597 | 0.425 | 0.386 | 0.373 | 0.511 | 0.49 | 0.492 | 0.514 | 0.502 | 0.51 | 0.485 | |

Pack the battery that is damaged after leaving it for 3-4 months.

The cause is that the pack tested NEW FW, causing the voltage to be low and causing damage.

| Pack 2 | | | | | | | | | | | | | | | | | | |
|------------------|-----|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|------|-------|-------|-------|-------|-------|-------|
| BNA9PY2B70920060 | 447 | 4.098 | 4.101 | 4.101 | 4.106 | 4.084 | 4.094 | 4.087 | 4.099 | 4.104 | 4.107 | 4.11 | 4.117 | 4.113 | 4.114 | 4.113 | 4.106 | 4.108 |
| | | 0 | 2.04 | 2.6 | 2.47 | 0 | 0 | 0 | 0 | 0 | 0 | 1.52 | 0 | 2.36 | 2.35 | 0 | 2.23 | 0 |

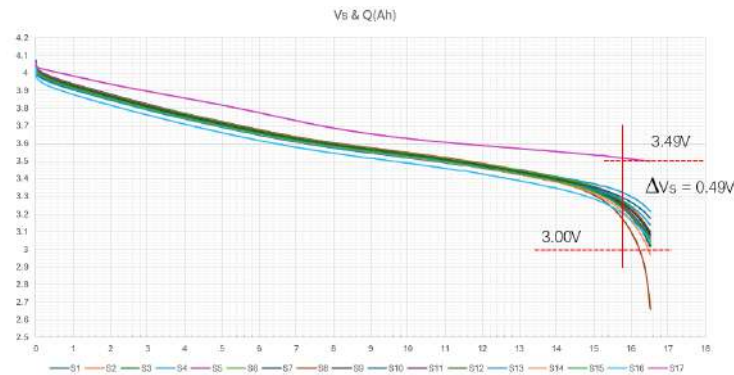
| pack 5 | | | | | | | | | | | | | | | | | | |
|------------------|-----|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| BNA9PY2B75050528 | 270 | 4.106 | 4.108 | 4.109 | 4.108 | 4.108 | 4.118 | 4.116 | 4.122 | 4.113 | 4.105 | 4.109 | 4.109 | 4.105 | 4.099 | 4.105 | 4.105 | 4.095 |
| | | 0.98 | 1.03 | 1 | 0.9 | 1.92 | 1.04 | 1.07 | 1.01 | 0 | 1.13 | 1.03 | 1.01 | 1.2 | 0.62 | 1.35 | 1.21 | 0.91 |
| | | 3.126 | 3.078 | 3.109 | 3.208 | 2.188 | 3.078 | 3.046 | 3.112 | 4.113 | 2.975 | 3.079 | 3.099 | 2.905 | 3.479 | 2.755 | 2.895 | 3.185 |

| Pack 6 | | | | | | | | | | | | | | | | | | |
|------------------|----|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| BNC9PY2B91700097 | 74 | 3.491 | 3.402 | 3.497 | 3.493 | 3.518 | 3.502 | 3.485 | 3.503 | 3.499 | 3.489 | 3.517 | 3.485 | 3.512 | 3.515 | 3.509 | 3.494 | 3.514 |
| BMS broke | | 0 | 0 | 0 | 2.62 | 2.59 | 0 | 2.62 | 0 | 0 | 1.47 | 1.98 | 0 | 1.36 | 0 | 0 | 2.51 | 2.49 |

| Pack 9 | | | | | | | | | | | | | | | | | | |
|------------------|-----|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| BNA9PY2B70420695 | 437 | 4.04 | 4.039 | 4.047 | 4.048 | 4.047 | 4.039 | 4.043 | 4.042 | 4.042 | 4.042 | 4.036 | 4.033 | 4.034 | 4.041 | 4.033 | 4.029 | 4.038 |
| BNA9PY2B70420695 | 437 | 2.62 | 2.385 | 2.386 | 2.659 | 2.575 | 2.639 | 2.66 | 2.568 | 2.612 | 2.656 | 2.621 | 1.874 | 0.693 | 2.659 | 2.508 | 2.083 | 2.617 |
| | | 1.42 | 1.654 | 1.661 | 1.389 | 1.472 | 1.4 | 1.383 | 1.474 | 1.43 | 1.386 | 1.415 | 2.159 | 3.341 | 1.382 | 1.525 | 1.946 | 1.421 |

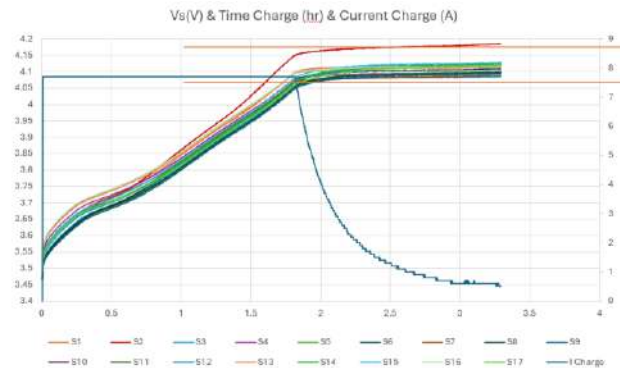
Battery test results

Voltage Unbalance



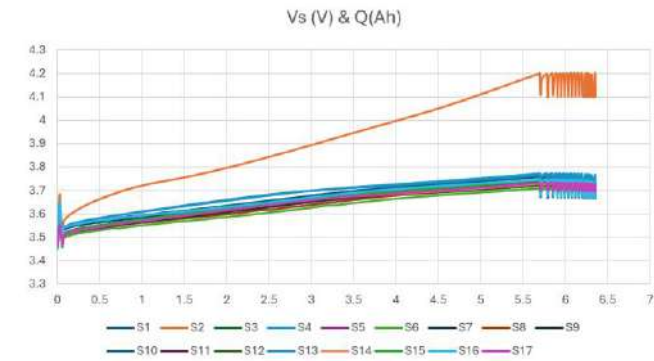
Here's the discharge graph of the battery with unbalance. The maximum different between cell voltage is almost 0.5V

Capacity Mismatch



This is the charging graph of another battery pack. This one show that one cell has lower capacity than others, causing it to charge faster

Cell Problem



This one charge very fast and trigger overvoltage so BMS cut-off, but since the battery was still not full, the charger was trying charge when the voltage drop



1. Cell Replacement

- Full Replacement:
 - Replace all cells with new ones when significant capacity differences are observed. For packs with substantial capacity variance, replace fewer than 10 cells.
- Mixed Replacement:
 - Integrate new cells with existing ones to balance the pack.



2. Balance Existing Cells:

- Rebalance cells that are not yet degraded. This method has a high likelihood of returning to balance, effective in approximately 1 out of 11 cases.



3. Firmware Update

- Updating the firmware can improve balance, but it must be reverted to the original version to prevent excessive power consumption by the BMS (Battery Management System), which could damage cells if left unchecked.

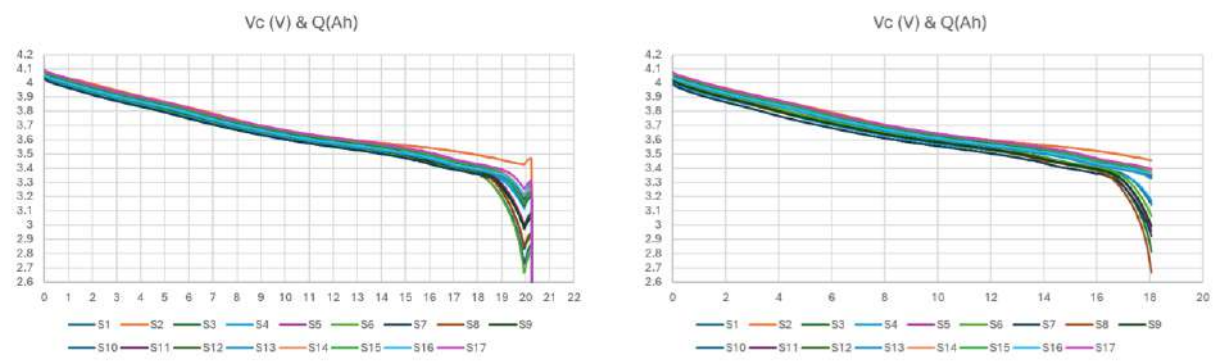


4. BMS Replacement

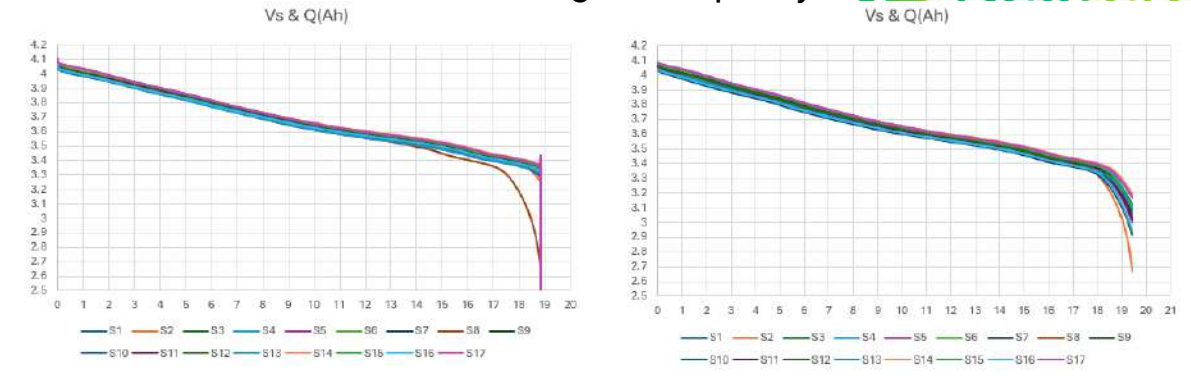
- No communication
- Inability to charge/discharge
- Unresponsive (e.g., buttons not lighting up or functioning)

| ID | SN | Symptoms of Battery Failure | Reasons | Battery Repair Methods | Number of Cells Replaced |
|----|------------------|-----------------------------|--|--|--------------------------|
| 1 | BNA9PY2B70420678 | Unbalance | high capacity mismatch cause by BMS low undervolt threshold | Change cell 1 stack Match cell capacity and leakage Mix 2 cell manual balance | 10 |
| 2 | BNA9PY2B70920060 | Low voltage multiple stack | BMS not cutoff | - | |
| 3 | BNA9PY2B71750281 | Unbalance | capacity mismatch from dead cell (open) | Change 2 cell Match cell capacity and leakage Mix 1 cell manual balance | 2 |
| 4 | BNA9PY2B64700169 | Cell dead 1 stack | Random Cell Short | Change 8 cell Match cell capacity and leakage Mix 1 cell manual balance | 8 |
| 5 | BNA9PY2B75050528 | Low voltage multiple stack | BMS not cutoff | - | |
| 6 | BNC9PY2B91700097 | Low voltage multiple stack | BMS not cutoff | - | |
| 7 | BNA9PY2B64902442 | Unbalance | high leakage of the lowest capacity stack cause by BMS low undervolt threshold | Change 5 cell Match cell capacity and leakage manual balance | 5 |
| 8 | BNA9PY2B64901535 | Unbalance | BMS cannot balance | Change 2 cell Match cell capacity and leakage manual balance | 2 |
| 9 | BNA9PY2B70420695 | Low voltage multiple stack | BMS not cutoff | - | |
| 10 | BNS9PY2B54600079 | Cell dead 1 stack | Random Cell Short | Change 9 cell Match cell capacity and leakage Mix 4 cell manual balance | 9 |

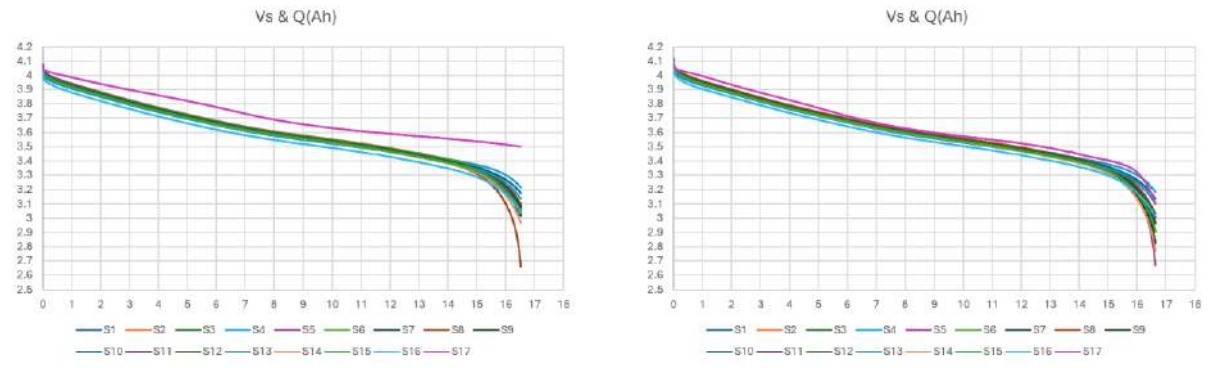
Pack 1 Unbalance



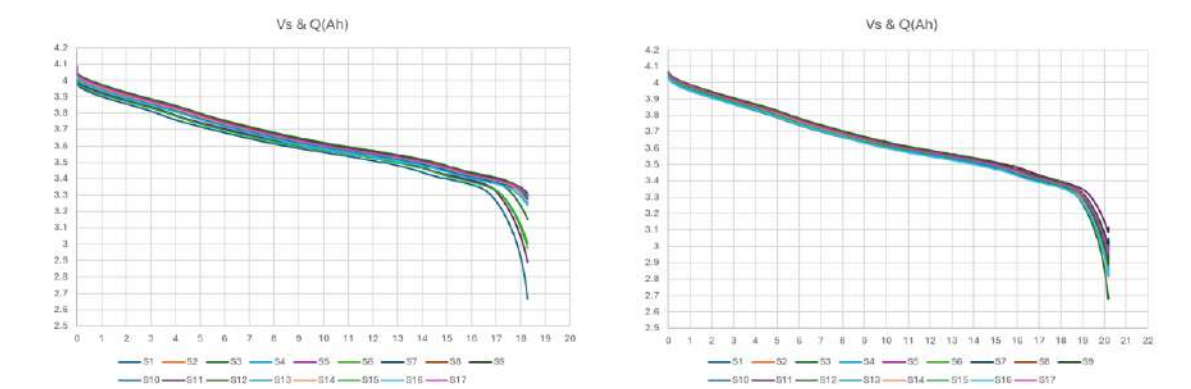
Pack 3 Dead Cell and degrade capacity



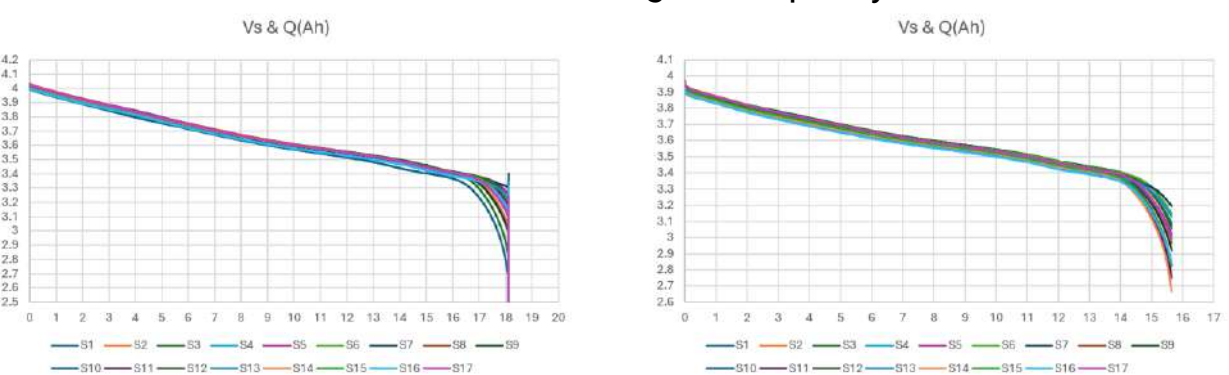
Pack 4 Dead 10 Cell



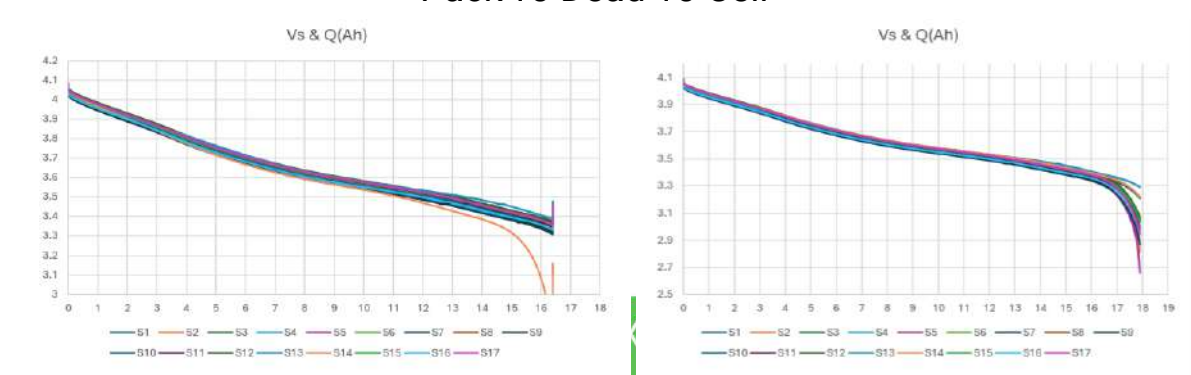
Pack 7 Unbalance and cell leak



Pack 8 Unbalance and degrade capacity

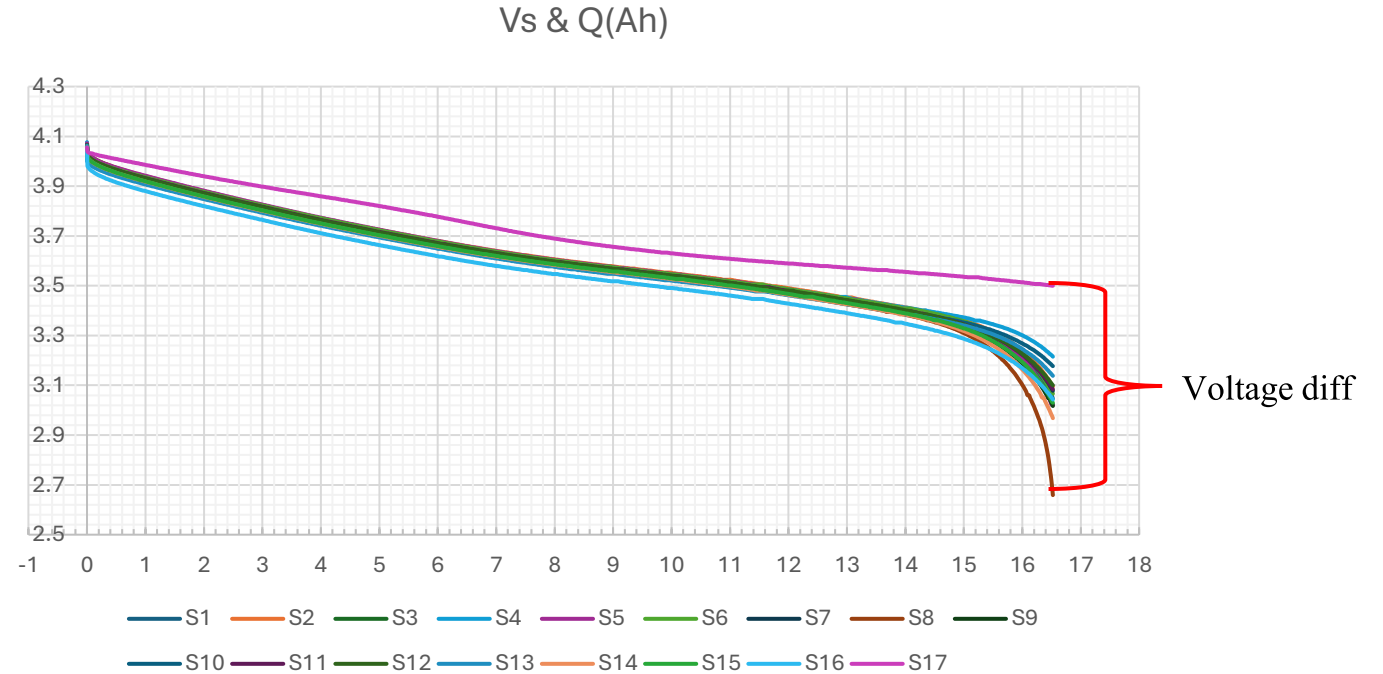
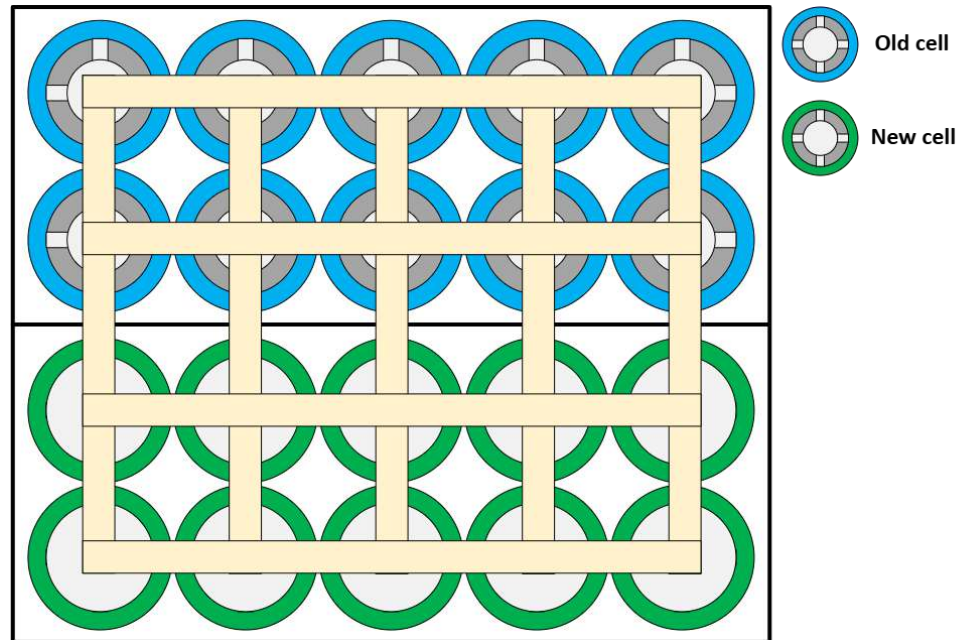


Pack 10 Dead 10 Cell

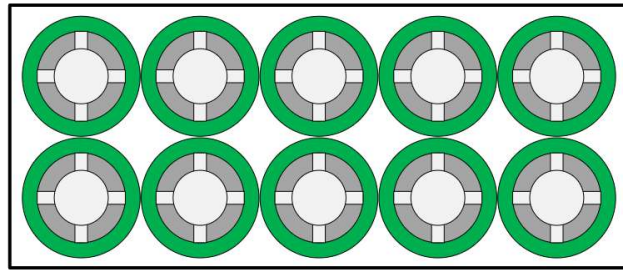


Old Cells + New Cells in Different Modules

- When old and new cells are mixed within a battery pack, issues can arise due to the internal resistance (R) differences between the cells. In high-cycle packs, this leads to a significant voltage difference during use, causing instability.
- In low-cycle packs, the combination can still function, but a different problem arises: new cells tend to leak less energy compared to older cells within the pack. This leads to an imbalance much faster, as the new cells remain healthier longer while the old ones degrade.

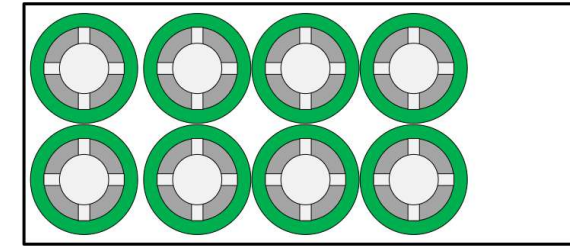
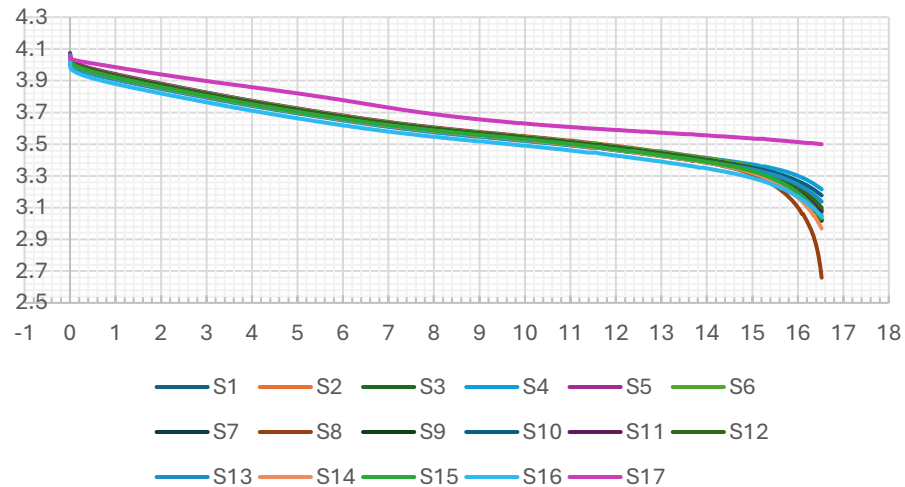


Capacity Mismatch Issues Between Cells



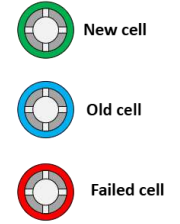
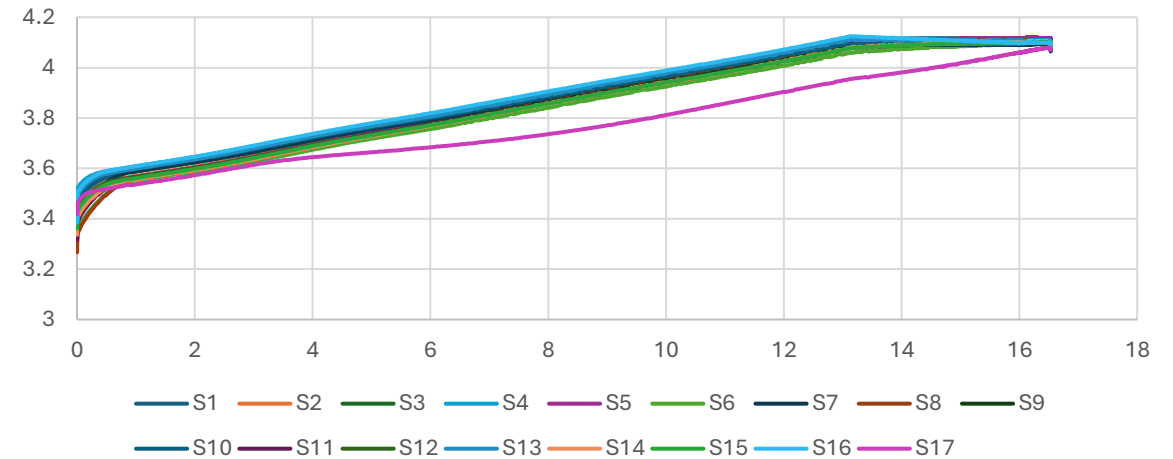
Excessive Capacity

Vs & Q(Ah)

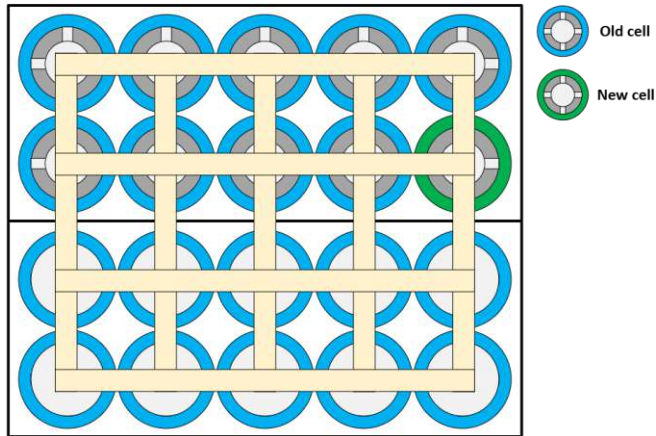


Optimally Matched Capacity

Vs & Q(Ah)



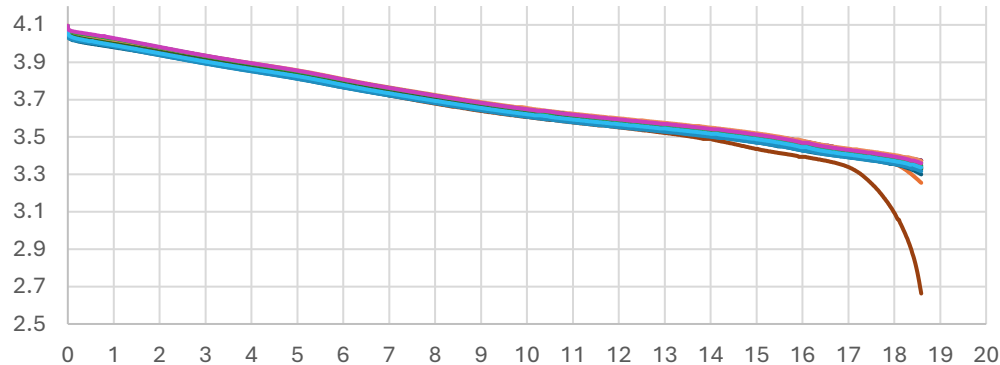
Old Cells + New Cells in the Same Module



When new cells are mixed with old cells within the same module, compatibility improves among cells. However, this setup can lead to issues where the current flows preferentially through the new cells, which have lower internal resistance, rather than the older cells. This imbalance can result in inefficient power distribution and reduced overall performance of the module.

Before

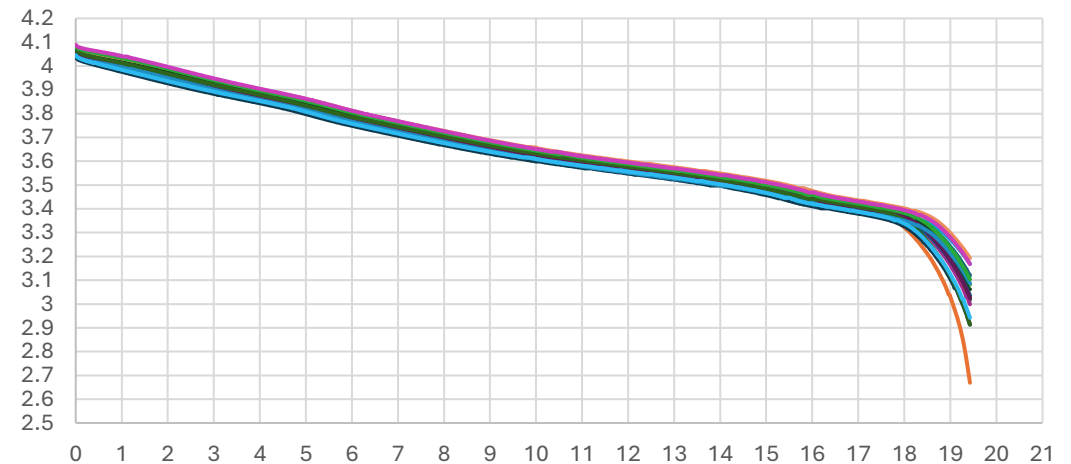
Vs & Q(Ah)



- S1
- S2
- S3
- S4
- S5
- S6
- S7
- S8
- S9
- S10
- S11
- S12
- S13
- S14
- S15
- S16
- S17

After

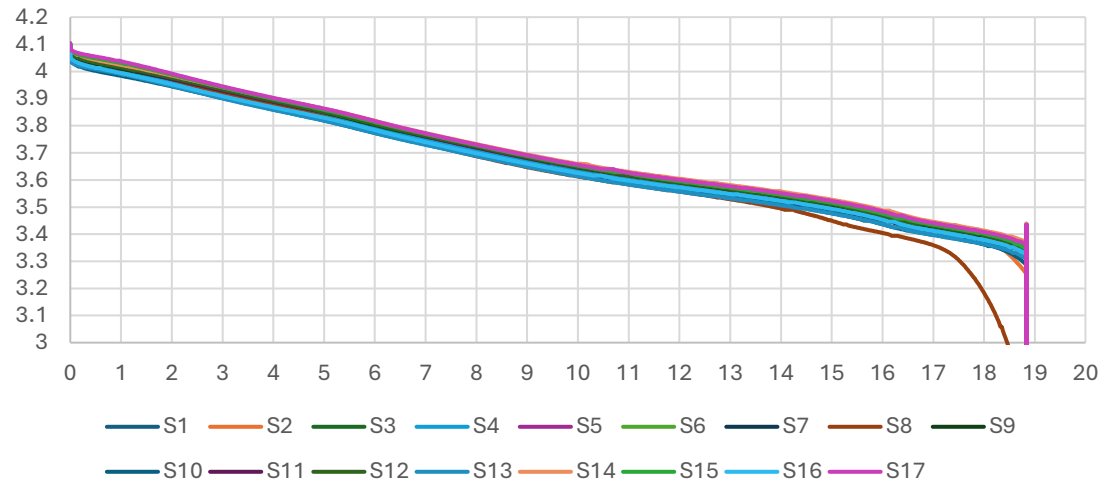
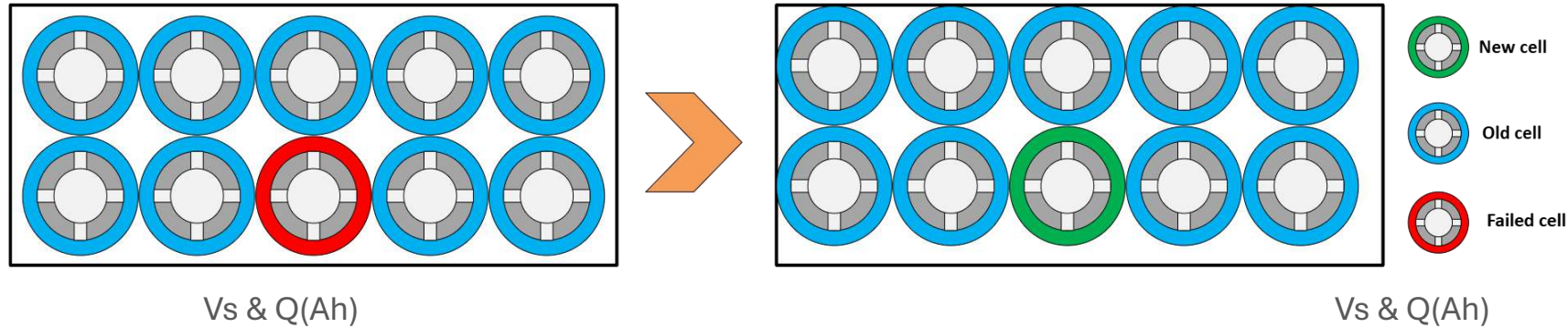
Vs & Q(Ah)



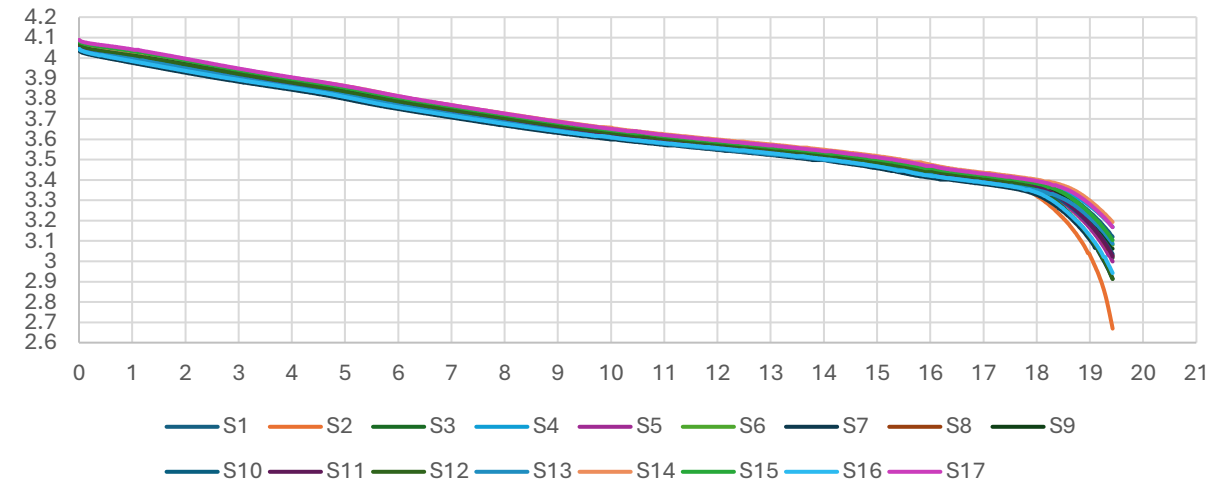
- S1
- S2
- S3
- S4
- S5
- S6
- S7
- S8
- S9
- S10
- S11
- S12
- S13
- S14
- S15
- S16
- S17

Replace Only Faulty Cells

This repair method ensures that the internal curves of the battery pack are very similar after replacement. However, it requires additional steps to check each cell individually to identify faulty ones. In some cases, the deterioration might affect the entire module, necessitating a thorough assessment to ensure all issues are addressed.



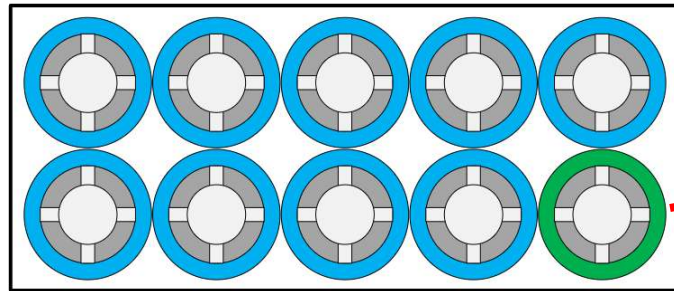
Cell 8 Curve Capacity Decline



Other Cells Should Have Capacity Comparable to Reference Pack

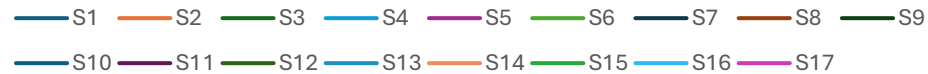
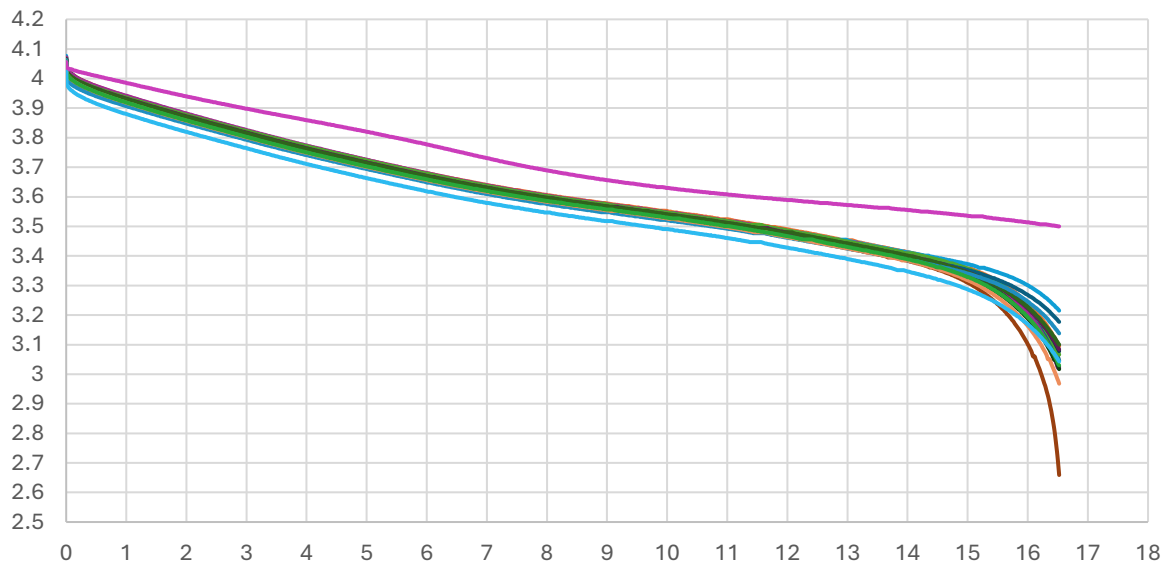
Pack 4 Capacity Matching

Old, Poor-Performing Modules Within the Pack

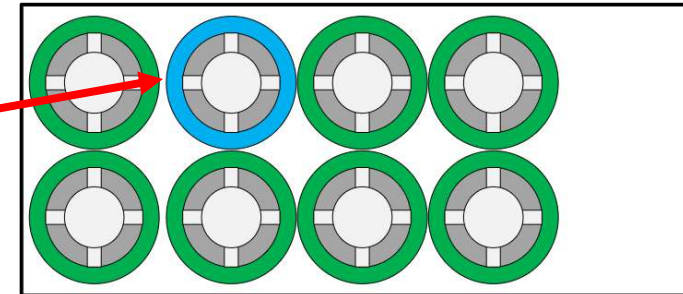


Before

Vs & Q(Ah)

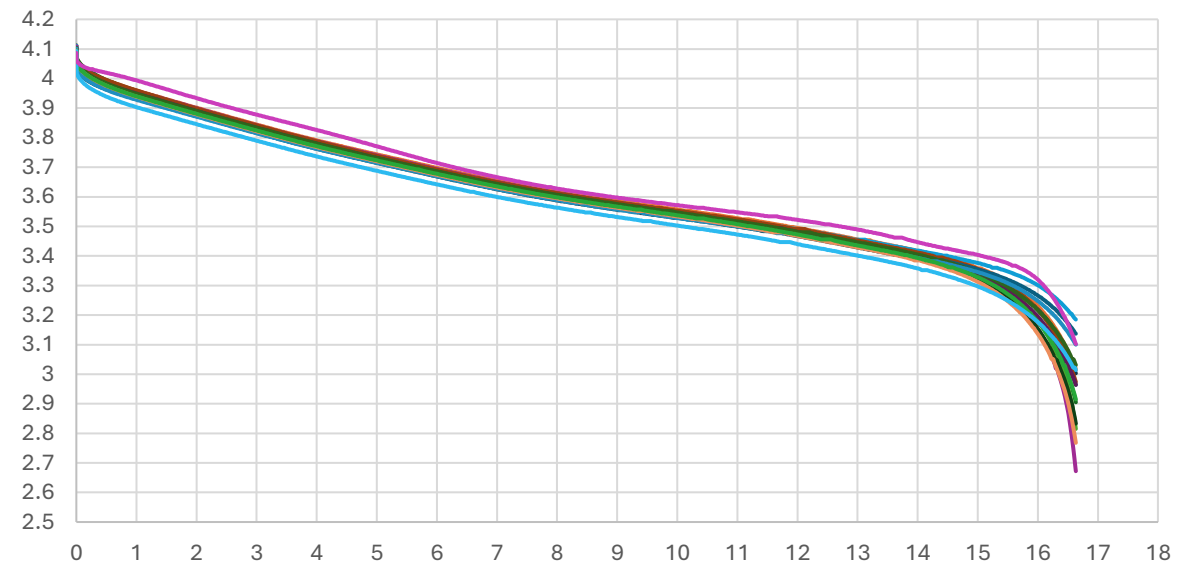


Entire Faulty Module



After

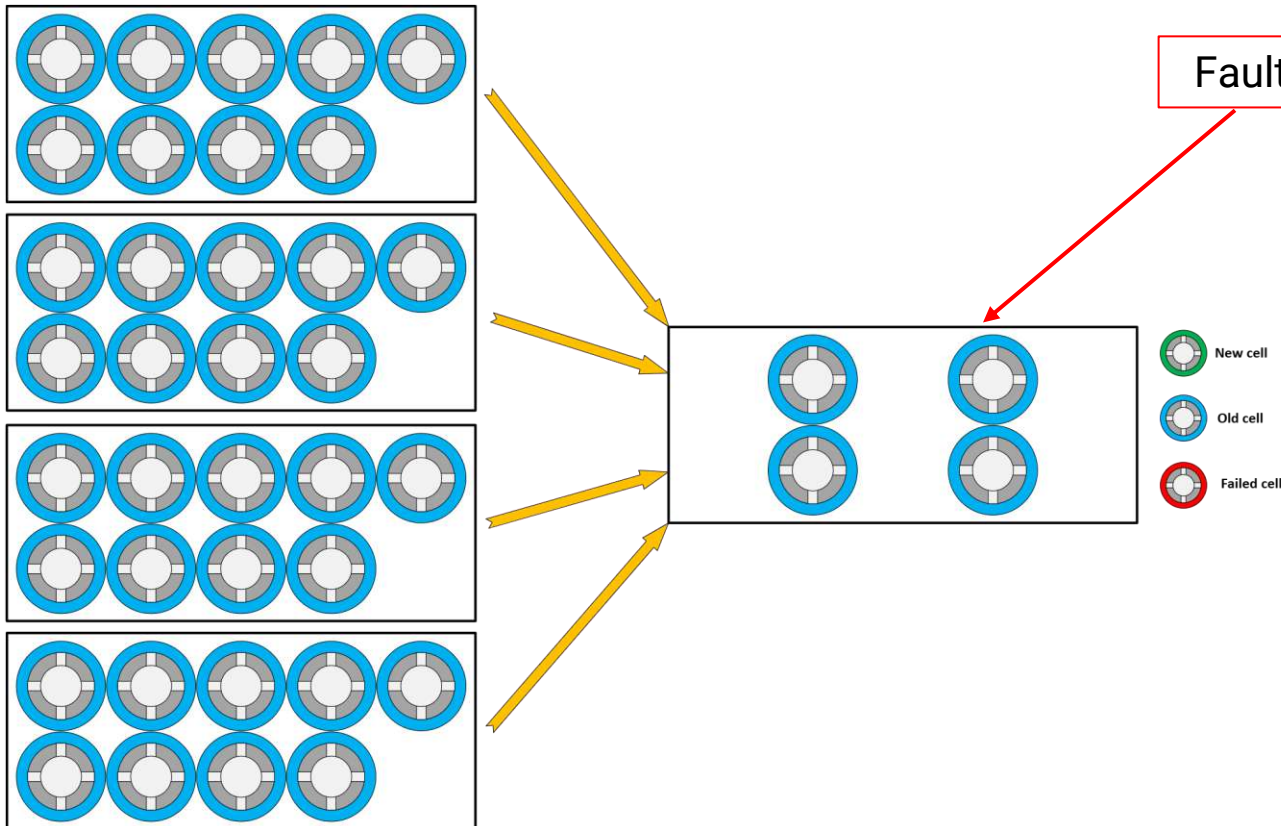
Vs & Q(Ah)



Pack 10 Repair Method

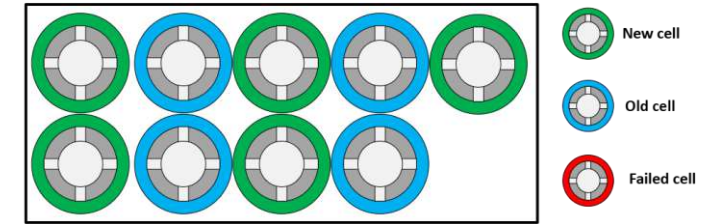
The repair method involves selecting the top 4 modules within the pack with the lowest capacity. From each of these modules, one cell is removed. This approach targets the modules with the poorest performance to improve overall pack efficiency.

Transfer Cells to Faulty Modules

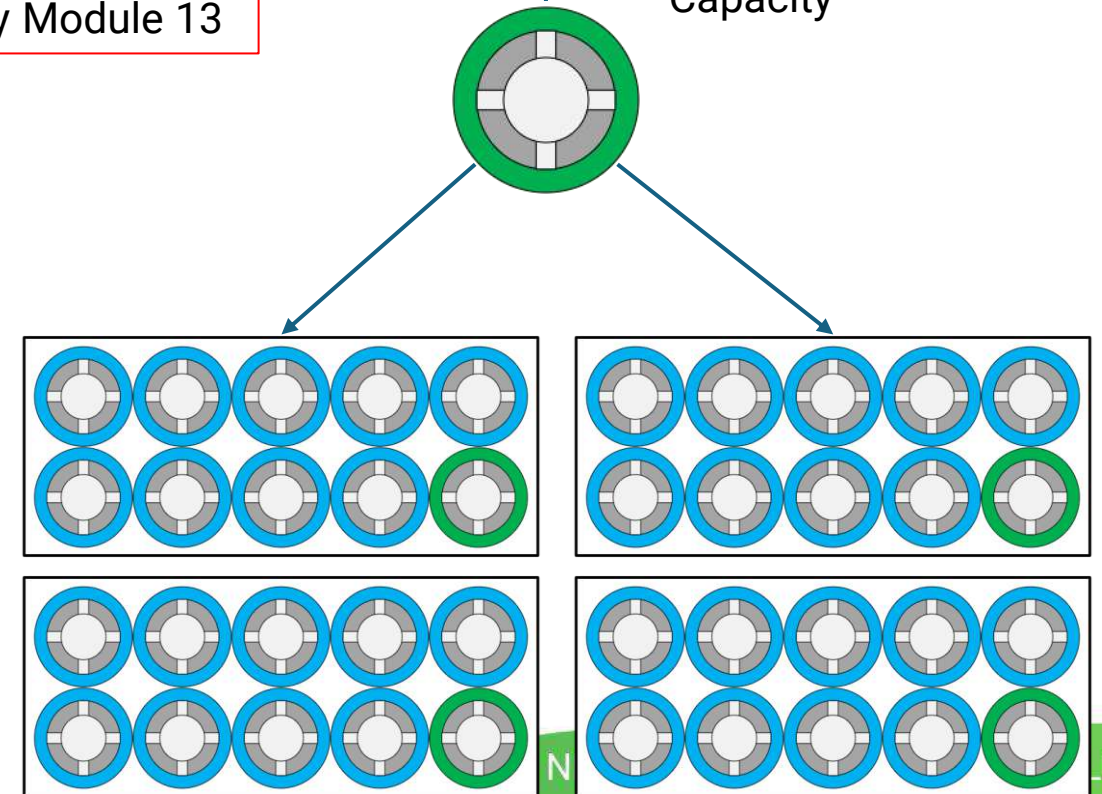


Faulty Module 13

- New cell
- Old cell
- Failed cell



Add New Cells to Adjust Capacity



Pain points and limitations of BMS

1. Deep Discharge Recovery

- Conventional BMS cannot revive batteries from a deep discharge state.
- Batteries may become unresponsive and fail to charge when in deep discharge.

2. Cell Balancing Issues

- Inconsistent cell balancing over time.
- Most BMS units are typically passive balancers that generate heat during cell balancing.

3. Overcharge Management

- Inability to charge batteries that have entered an overcharge state.

4. Energy Leakage Detection

- No capability to detect energy leakage within battery cells.

5. Data Logging and Feedback

- Absence of memory for logging usage data and providing feedback to battery manufacturers.

6. Energy Efficiency Features

- Lack of energy-saving features such as GPS and 4G system optimization.

7. Theft Prevention

- No built-in theft protection features.





Key functions of the Nextere BMS:

Voltage and current monitoring:

Actively controls the voltage and current within the battery cells to ensure safe operation.

Temperature control:

Prevents overheating by regulating temperatures within safe limits, protecting battery life and reducing safety risks.

Cell Balancing:

Ensures uniform voltage levels across cells, optimizing battery performance and extending longevity.

Charge/discharge protection:

Protects against overcharging and over-discharging, preventing damage to the battery and ensuring safety.

Charge status and battery health management:













Monitors charging status and overall battery health, providing users with crucial performance data.



Nextere BMS specification

- Operating info
 - A. Cell Chemistry : Li-ion NMC , LiFePo4
 - B. Number of cell : 8S-24S
 - C. Voltage Range type : 40V-90V
 - D. Cell Balancing : Active balancing/Passive balancing
 - E. Balancing current : 0.5-2A
 - F. Voltage/Temperature measurement frequency : 2s-120s
 - G. Pre-discharge feature
- Accuracy
 - A. Current measurement accuracy : +/- 0.1A
 - B. Temperature monitoring : -40C to +85C at +/- 2C
 - C. State of Health (SoH) estimation : SoH accuracy of +/- 5%
 - D. State of Charge (SoC) estimation : SoC accuracy of +/- 1%
- Protection
 - A. Over/Under voltage protection
 - B. Overcurrent protection
 - C. Short circuit discharge (SDC) protection
 - D. Over / Under temperature protection
 - E. Adjustable protection threshold
 - F. Isolation between battery and electronics
 - G. PCB coating
- Other info
 - A. Communication interface : RS485/CAN
 - B. Firmware update : Support Over-The-Air (OTA) firmware updates
 - C. GPS,4G,Bluetooth

Green energy management platform

Ready-to-use platform scale your business instantly.

 DASHBOARD  ลูกค้า  รถ  สนใจเช่า  สัญญา  ศูนย์บริการ  ดูแลลูกค้า  ข่าวสาร และกิจกรรม  สถานี  FLEET  REPORT  SYSTEM




 34  HI. ADMIN

ลูกค้า Master




























ลูกค้า

HOME * ลูกค้า

รหัส รหัส Peak ชื่อ มือถือ/เบอร์โทร อีเมล ประเภทลูกค้า Grade

 ADD NEW  RESET  SEARCH

View 10 records

| รหัส | รหัส Peak | ชื่อ | ทะเบียนรถ | มือถือ | เบอร์โทร | อีเมล | |
|------|-----------|------|-----------|--------|----------|-------|---|
| | | | | | | |    |
| | | | | | | |    |
| | | | | | | |    |
| | | | | | | |    |
| | | | | | | |    |
| | | | | | | |    |
| | | | | | | |    |
| | | | | | | |    |
| | | | | | | |    |

Showing 1 to 10 of 1,167 entries

Page 1 of 117

Direct Integration of motorbike data

Battery Information

- Charge Cycles
- Level
- Temperature
- Voltage
- Serial Number

Motorbike Information

- Device ID:
- Model Name:
- Model Logo:
- Plate Number:
- Serial Number:
- Firmware Versions: BCS software, ECU software

Operational Status

- Online State

Location and Navigation

- Current Location
- Position Accuracy
- GPS Signal
- GPS Reboot
- Estimated Mileage
- Total Mileage

Communication and Connectivity

- Bluetooth (BLE) State
- GSM Signal
- ICCID
- Sync Status
- Server Update Time
- GPS Update Time
- FOTA Download Percent

Miscellaneous

- Operation Status
- Rent Status
- Dashboard Battery Level
- ECU Battery Level
- Device Model Name
- Device Model Logo
- Bind User Information



- Service points
- EV locker
- Users
- Battery

Winnonie > Winnonie > Service points

Service points

Statuses
Provinces
Station No.
Stations
Type
Application status

| checkbox | Station No. | Station | Type | Address | Total | Locker | | | | | | Meter (kWh) | Status | Activation | Breaker | Setting |
|--------------------------|-------------|---|------|---------------|-------|-------------|--------------|--------------|--------------|-------------|----------------|-------------|---------|-------------------------------------|-------------------------------------|---------|
| | | | | | | Empty (145) | Charging (6) | Charged (11) | Reserved (0) | Failed (40) | Inactive (282) | | | | | |
| <input type="checkbox"/> | WN-27 | ● toneer-1 | NIU | 88/188 The... | 8 | 1 | 0 | 0 | 0 | 0 | 5 | 506.8G | Active | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | |
| <input type="checkbox"/> | | | | | | | | | | | | | Warning | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | |
| <input type="checkbox"/> | | | | | | | | | | | | | Warning | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | |
| <input type="checkbox"/> | | | | | | | | | | | | | Warning | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | |
| <input type="checkbox"/> | | | | | | | | | | | | | Warning | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | |
| <input type="checkbox"/> | | | | | | | | | | | | | Warning | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | |
| <input type="checkbox"/> | | | | | | | | | | | | | Warning | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | |
| <input type="checkbox"/> | | | | | | | | | | | | | Warning | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | |
| <input type="checkbox"/> | | | | | | | | | | | | | Warning | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | |
| <input type="checkbox"/> | | | | | | | | | | | | | Warning | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | |

- Service points
- EV locker
- Users
- Battery

Winnonie > Winnonie > Battery

Battery

Service time All Period

MM/DD/YYYY - MM/DD/YYYY

Station: All

Battery statuses: All

S/N Battery: S/N Battery

SEARCH CLEAR ALL FILTERS

+ Add battery

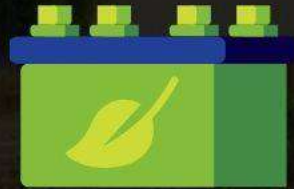
| No | S/N Battery | Type | Cycle Count | Current(A) | Voltage(V) | Soc(%) | Remain Time(h) | Temp(C) | | | | | Battery status | Full name | Process | Station | Locker | Action date | Others |
|----|------------------|------|-------------|------------|------------|--------|----------------|---------|----|----|----|----|----------------|---------------------|---------|------------------------------|--------|------------------|-------------------------------|
| | | | | | | | | 1 | 2 | 3 | 4 | 5 | | | | | | | |
| 1 | BNA9PY2B81870126 | NIU | 492 | 7.6 | 62.5 | 55 | 2h24m | 43 | 44 | 45 | 44 | 47 | Charge | จิรวัดน์ บุญยะดีพท์ | Insert | BCP - ประชาชื่น | | 2024-08-25 06:45 | Battery usage |
| 2 | BNA9PY2B81770262 | NIU | 526 | 7.7 | 62.7 | 48 | 2h30m | 42 | 43 | 45 | 43 | 46 | Charge | จิรวัดน์ บุญยะดีพท์ | Insert | BCP - ประชาชื่น | | 2024-08-25 06:45 | Battery usage |
| 3 | BNA9PY2B81771404 | NIU | 416 | 3.9 | 67.4 | 82 | 2h00m | 48 | 48 | 49 | 48 | 62 | Charge | พิรวิญญ์ ยามิน | Insert | BCP - เพชรเกษม 92 | | 2024-08-25 06:43 | Battery usage |
| 4 | BNA9PY2B81770329 | NIU | 447 | 3.9 | 67.1 | 81 | 1h37m | 50 | 47 | 47 | 47 | 59 | Charge | พิรวิญญ์ ยามิน | Insert | BCP - เพชรเกษม 92 | | 2024-08-25 06:43 | Battery usage |
| 5 | BNA9PY2B81870597 | NIU | 464 | 0 | 69.9 | 100 | 00m | 35 | 34 | 34 | 34 | 44 | No load | วงศกร อินทเนตร | Insert | BCP - อ่อนนุช 55 | | 2024-08-25 06:40 | Battery usage |
| 6 | BNA9PY2B81771976 | NIU | 425 | 0 | 69.9 | 100 | 00m | 36 | 33 | 33 | 33 | 39 | No load | วงศกร อินทเนตร | Insert | BCP - อ่อนนุช 55 | | 2024-08-25 06:40 | Battery usage |
| 7 | BNA9PY2B81770648 | NIU | 380 | 3.7 | 65.6 | 69 | 2h18m | 46 | 43 | 45 | 44 | 50 | Charge | ธนพนธ์ แสนสุภา | Insert | Lotus Hyper - บางกะปิ | | 2024-08-25 06:39 | Battery usage |
| 8 | BNC9PY2B91701160 | NIU | 252 | 7.6 | 67.1 | 76 | 1h37m | 47 | 45 | 46 | 45 | 55 | Charge | ธนพนธ์ แสนสุภา | Insert | Lotus Hyper - บางกะปิ | | 2024-08-25 06:39 | Battery usage |
| 9 | BNA9PY2B64500768 | NIU | 671 | 7.7 | 69.6 | 92 | 30m | 39 | 42 | 40 | 41 | 48 | Charge | เอกชัย สืบสาย | Insert | Lotus Hyper - ลำลูกกา คลอง 2 | | 2024-08-25 06:38 | Battery usage |
| 10 | BNA9PY2B81771866 | NIU | 580 | 7.7 | 68.6 | 96 | 12m | 42 | 41 | 42 | 41 | 60 | Charge | เอกชัย สืบสาย | Insert | Lotus Hyper - ลำลูกกา คลอง 2 | | 2024-08-25 06:38 | Battery usage |

Rows per page: 100 1 2 3 4 5 ... 66 1 - 100 of 6516

Total solutions



Importing/Manufacturing Batteries



Extending Battery Lifespan



Battery Repair and Recycling



Comprehensive Battery Management Platform



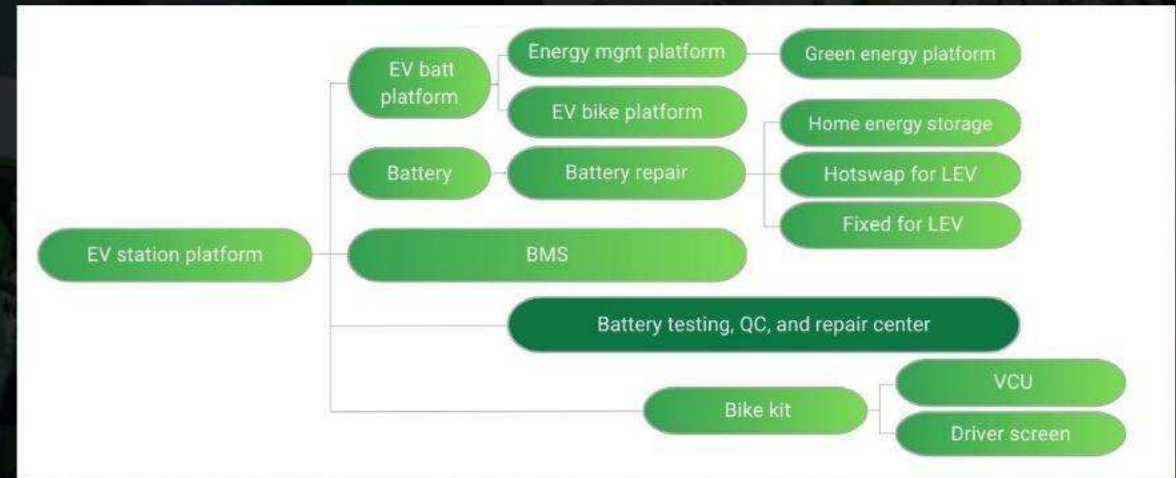
One-Stop Service for Solar, Drones, Charging Stations, and Battery Swaps



Comprehensive EV Battery Kit Sales

- EV Bike kit
- EV car kit
- EV car conversion kit
- Ice to EV conversion

EV battery ecosystem



EV station platform

EV batt platform

Energy management platform

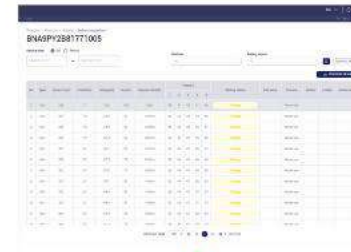
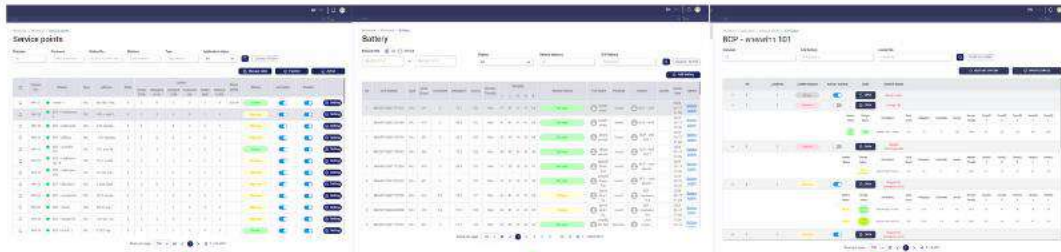
EV batt passport platform

Green energy platform

IoT platform

IoT device

Business



2022

2023

2024

2025

2026

2027

2028



EV bike swapping station



Battery repair



BMS



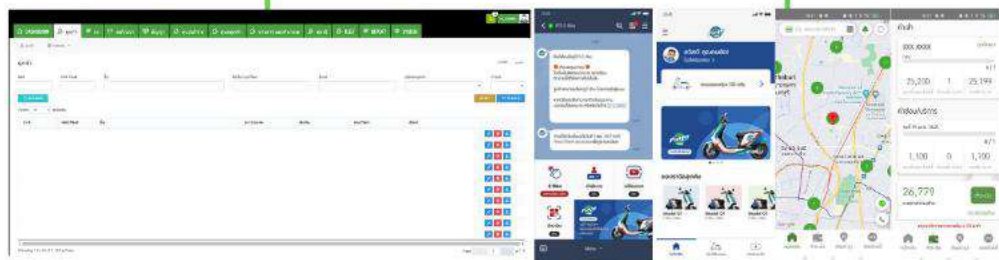
Battery testing, QC, and repair center



- Home energy storage
- Hotswap for LEV
- Fixed for LEV



- Bike kit
- VCU
 - Driver screen



- User management
- Enquiry & contract
- Call center
- Payment
- Bike rental management

- Part & inventory
- Booking service
- Service center
- Asset management
- Rider app

- Payment & promotion
- Fleet management
- Loyalty rewards
- Franchise management



Total solutions platform one stop service

- One-Stop Service for Solar, Drones, Charging Stations, and Battery Swaps
- Applicable to various types of batteries, ensuring broad usability.



ESG

Environment

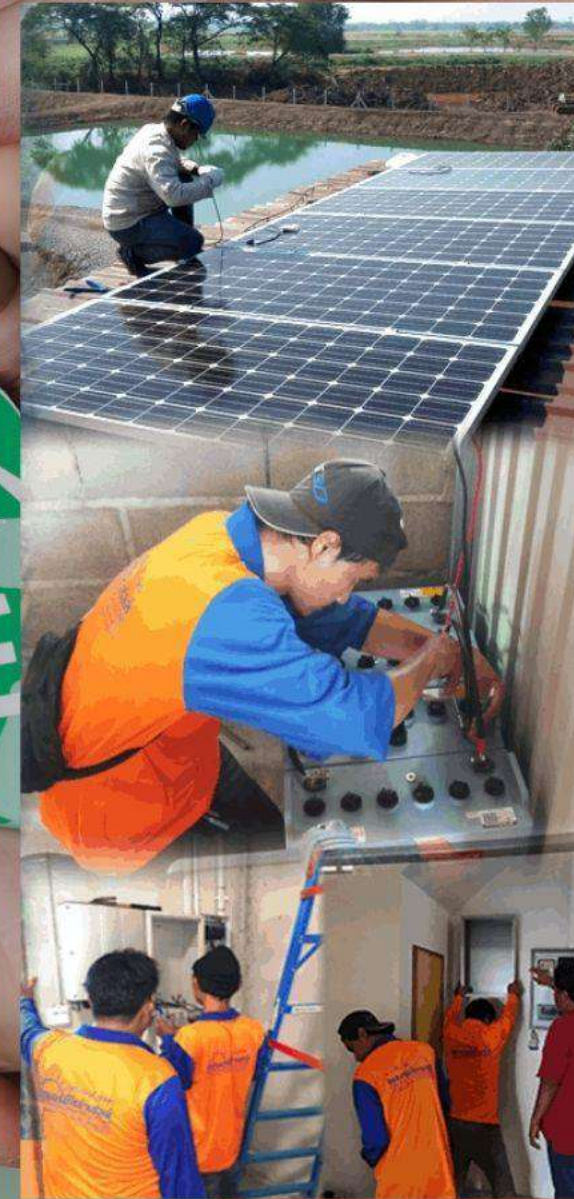
- Reduce Waste: Cut down on electronic and battery waste.
- Conserve Resources: Lower new battery production and resource usage.

Social

- Tech Transfer: Educate and support local communities on clean energy.
- Local Services: Install and repair solar cells, EV drones, charging stations, and swapping stations.
 - การซ่อมและติดตั้ง
 - solar cell
 - agricultural ev drone
 - Battery charging station
 - EV swapping station

Governance

- Efficient Management: Use data for effective and transparent EV management.
- Sustainable Practices: Strengthen governance and decision-making.
-



TASSANAI SAWAENGSUP

ทัศนัย แสงทรัพย์

CEO

NEXTERE CO.,LTD.

 +66 81 363 4029

 info@nextere.co.th

 www.living.keyspace.life

