



MODULAR
ENERGY

Subsidiary of
RENOZ
ENERGY

Battery Energy Storage & Power Conversion System Integration & Solution

www.modularenergy.id

ABOUT US



www.onenewenergy.com.au | www.renoz.energy | www.modularenergy.id



OIG group corporation was established and consolidated as group holding in in Western Australia, 2023.



One New Energy Pty, Ltd. is providing Development and Investment for Solar Power Purchase Agreement, and decarbonization scheme.



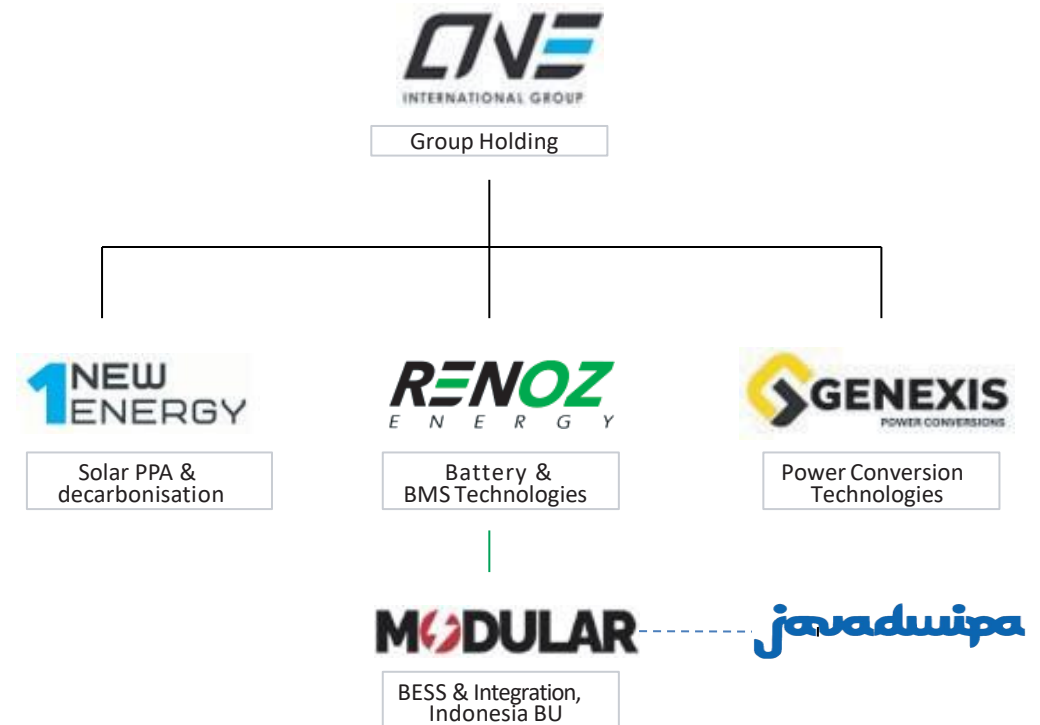
Renz Energy Pty, Ltd. has its bussiness and R&D focus on Battery Technology and Battery Management System.



Genexis PCT. focus on power electronics for Power Conversion System, Rectifier, Bi-directional Inverter, and EV charger.



Modular Energy is integrator and fully owned Subsidiary Unit for establishment in Indonesia.





MODULAR UPS / PCS



Ultra flexible design

Allow multiple module functions in 1 cabinet

ADVANCED UPS / PCS MODULE SELECTION



Hybrid UPS module

5 – 10 kWh / block
24 – 48V batteries /DC bus
220(1ph) / 380(3ph) AC input-
output 40 – 500 V DC MPPT PV
input
CAN/RS485 communication



DC Rectifier/Inverter

2000-6000W / block
12 - 72 V DC input-output (DC
mode) 220(1ph) - 380(3ph) V AC
input
40 - 500 V DC MPPT*2 PV mode
SNMP/CAN/RS485 communication



PV charger module

**45kW (summable 250-
830V PV side
700-830V DC Bus MPPT
*3**



Bi-directional Inverter

30kW/45kVA 150-
750V Charging 700-
830V DC bus
400±15V AC
RS485 communication



Static Transfer Switch

Up to 100kVAh
150-750V Charging
700-830V DC bus
400±15V AC



Bi-directional storage inverter Off grid & Interactive mode 30kW- 1.7MW Scalable blocks

150-1500VDC
380/400VAC 3Ph+N
SCADA/DER controlled & EMS



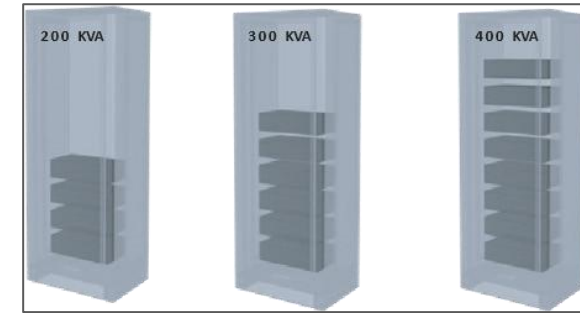
Hybrid inverter 45kW - 1.7MW Scalable blocks

250-830VDC MPPT Input
380/400VAC 3Ph+N Output
SCADA/DER controlled & EMS

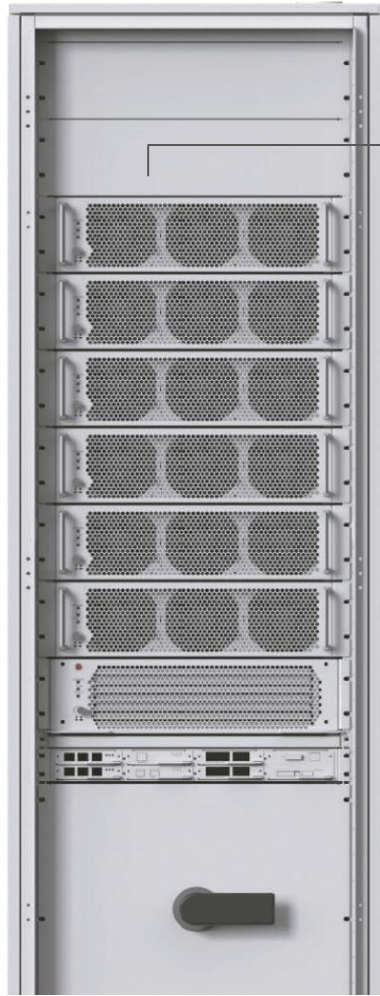


Advanced UPS

40kW - 1.2MW Modular System
220 / 380 / 400VAC 1Ph / 3Ph+N
Input/Output
Static Transfer Switch
SCADA/DER controlled & EMS
Load Shifting Function



30 – 1700 kVA
per group



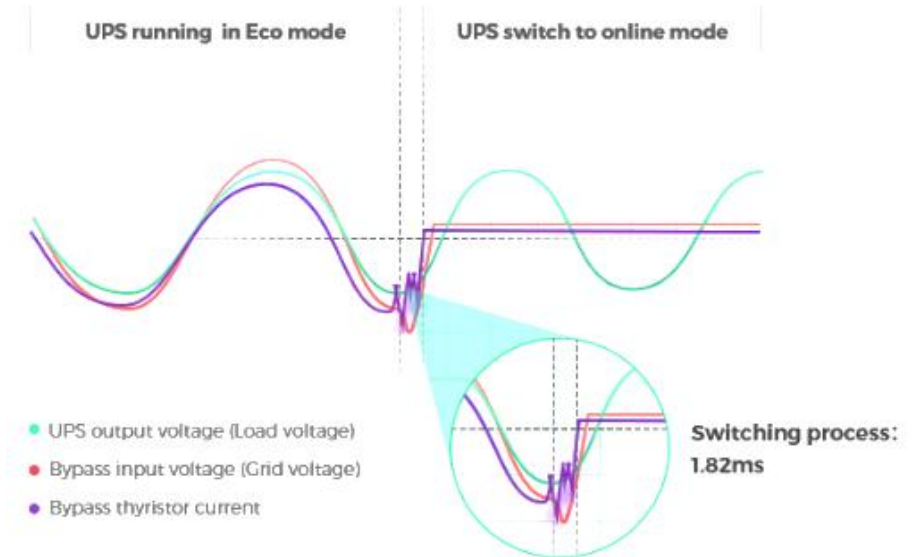
Sinexcel

High frequency UPS



Faster Response

High Frequency IGBT technology allows instantaneous switching time



Long backup hours

1 hour to 18 hours backup time available thanks to Lithium LFP & Sodium Ion high energy density batteries



Higher Safety

Multi layer battery management system ensure safety of lithium LFP battery operation

BATTERY SELECTION

RENOZ
ENERGY

- ✓ Highest **Energy density**
- ✓ Moderate Power density
- ✓ Highest Voltage range



Lithium BESS

5kWh pack - 4.6MWh / container
12-1331 VDC
LiFePO4 Cells
0.5-1C discharge Amp
20~40 degC operation



 **ZincFive**

- ✓ **Fire Safe**
- ✓ No thermal runaway
- ✓ Highest **Power density**
- ✓ Moderate Energy density
- ✓ Moderate Voltage range



Ni-Zn BESS

38kWh – 46kWh / cabinet
12 – 577 VDC
Nickel-Zinc Cells
0.5-10C discharge Amp
-20~50 degC operation
UL9540A certified



UL 9540A



IBC2018



Sodium BESS

15 - 200kWh / pack
48 – 600VDC
Sodium Nickel Chloride Cells
0.5-1C discharge Amp
-18~60 degC operation
UL9540A certified



UL 9540A



GE's Durathon®

VEKEN

- ✓ **Fire safe**
- ✓ No thermal runaway
- ✓ **Water immersion** safe
- ✓ Moderate Energy density
- ✓ Highest Voltage range

Lead Acid



1kWh – 300kWh / rack
48 – 240VDC
Lead Acid Cells
0.5-5C discharge Amp
15~45 degC operation

FIAMM

EXIDE
TECHNOLOGIES

Panasonic

- ✓ Commonly available
- ✓ Lower Energy Density
- ✓ Lower Power density

SPACE OPTIMIZATION

Space optimization benefit can have trickle down effect to other support system such as HVAC, lighting, fire system, etc

VRLA
Battery Rack



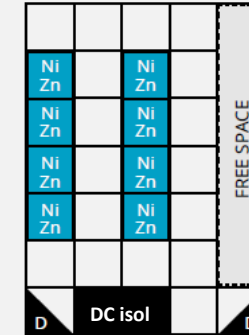
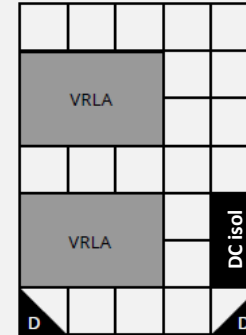
Ni-Zn
BESS Cabinet



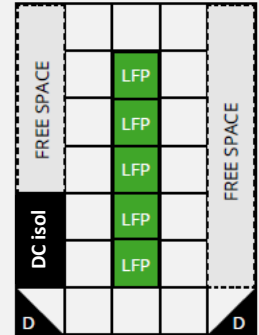
Lithium LFP
BESS Cabinet



90-600kVA UPS
Edge data center
8 min backup*

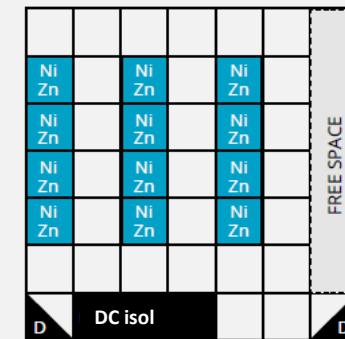
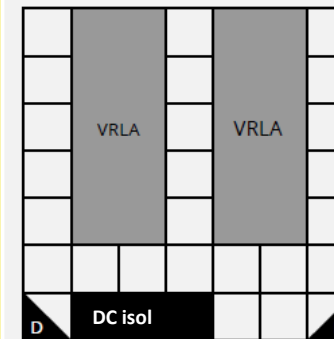


*BESS cabinet only need front access

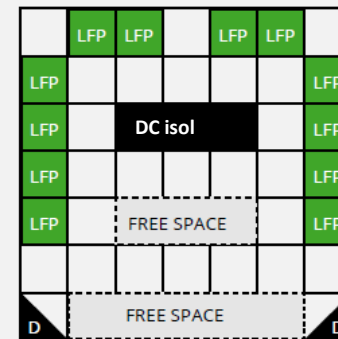


*BESS cabinet only need front access

0.8-1.2MVA UPS
Tier-1 data center
6 min backup*



*BESS cabinet only need front access



*BESS cabinet only need front access

*footprint multiplication will increase significantly with higher Tier system

*dimension in multiplication of 0.8 x 0.8 m square

MODULAR BATTERY SYSTEM



Residential-Commercial Stackable Energy Storage

220VAC 1Ph 50Hz hybrid inverter
5 – 50 kWh energy storage
51.2V Battery w/ BMS
Prismatic 0.5C LFP Cell



Industrial Energy Storage Rack System

220VAC 1Ph 50Hz hybrid inverter
30 – 233 kWh energy storage
51.2-V Battery w/ BMS
Prismatic 0.5/1C LFP Cell
Liquid / Air Cooling
Indoor / Outdoor



CB



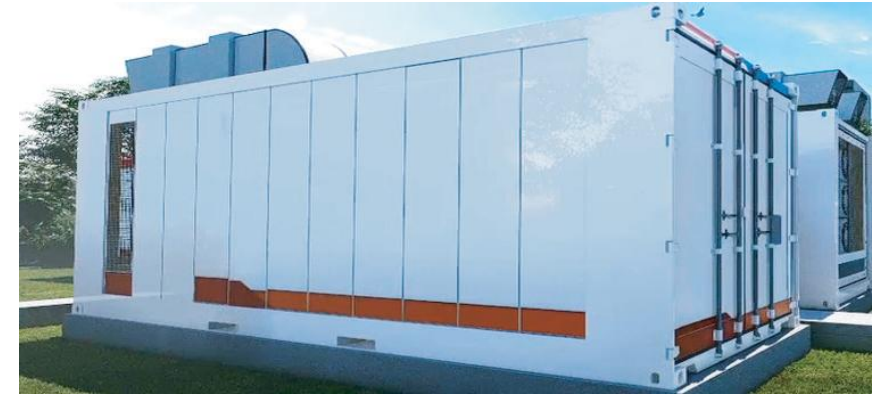
UN38.3

CONTAINERIZED BESS

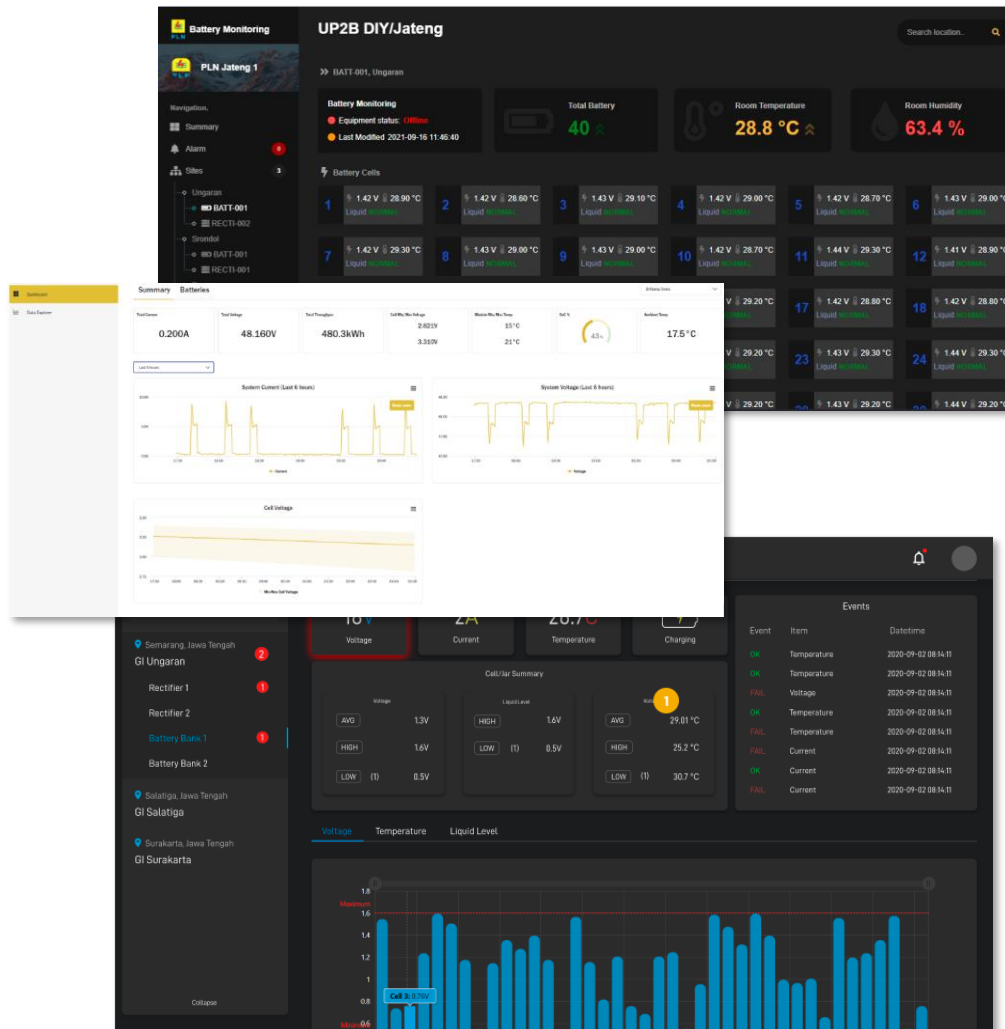
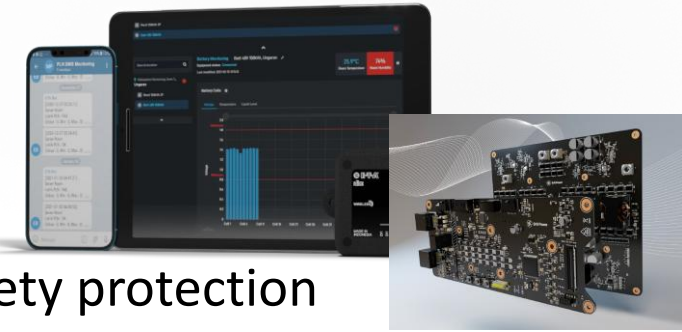
0.5MW | 0.8MWh
Built-in PCS



1MW | 1 ~ 2.3MWh
External PCS



BATTERY MANAGEMENT SYSTEM

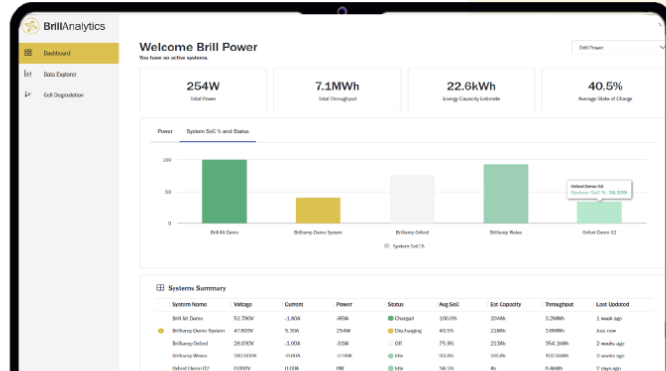


- ☒ **Higher Safety**
Multi layered battery safety protection
- ☒ **Remote monitoring**
Alarm and trending of battery multi-parameters
- ☒ **Data analytics**
Higher system availability & battery lifetime prediction
- ☒ **Chemistry Agnostic**
Compatible with various battery types Lead Acid, NiCad, LFP, NMC, Ni-Zn, Sodium
- ☒ **Augmentation**
Increase capacity to existing system, even with different battery types (device required)
- ☒ **Automatic balancing**

BATTERY MANAGEMENT SYSTEM

System performance summary
and error flags

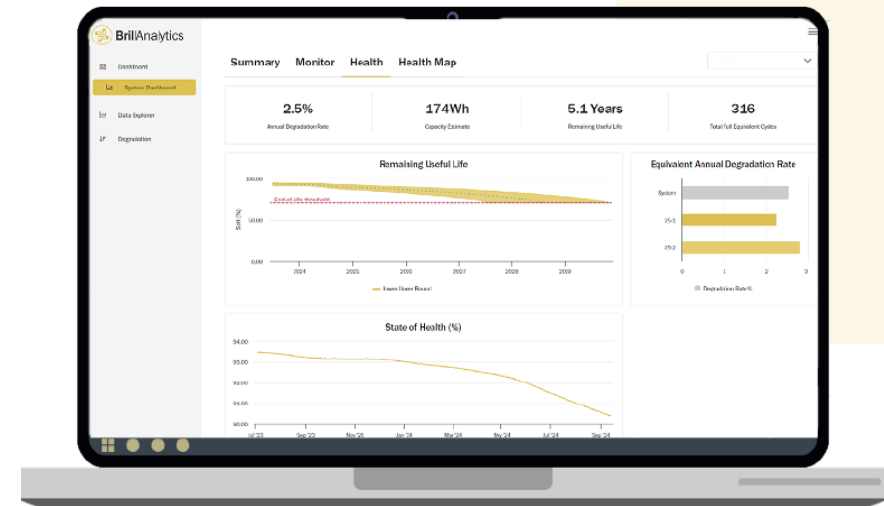
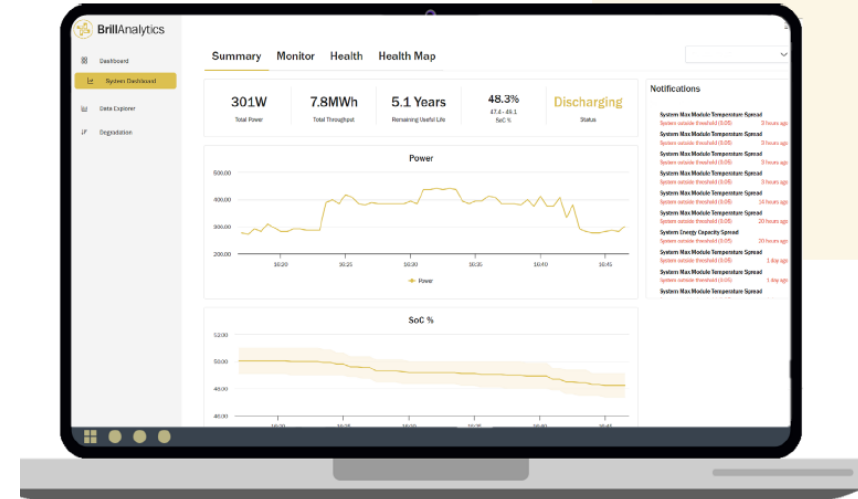
Asset portfolio overview and
insights at a glance



Deep dive into cell, module and
string level data to identify
underperforming components

BrillAnalytics

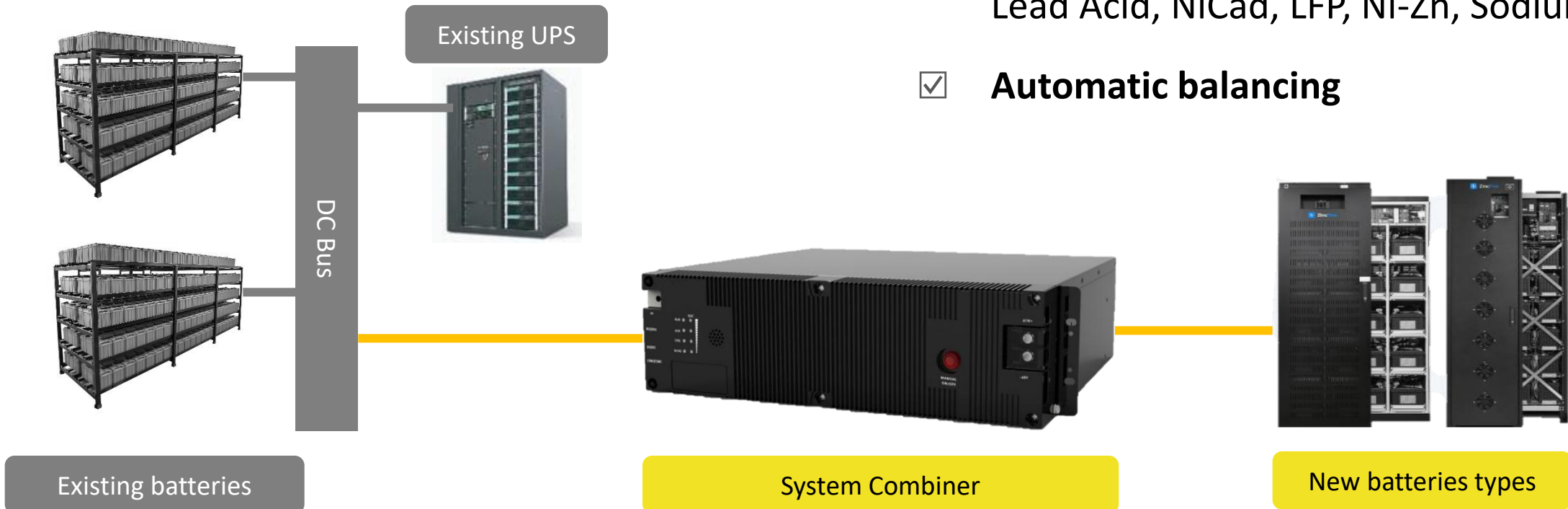
System Health insights



BATTERY AUGMENTATION / COMBINER

Adds capacity to existing battery system, combining power from **different battery** types & chemistry

- ✓ **Bi-directional DC-DC combiner**
Increase capacity to existing system, even with different battery types
- ✓ **Chemistry agnostic**
Compatible with various battery types
Lead Acid, NiCad, LFP, Ni-Zn, Sodium
- ✓ **Automatic balancing**



TYPICAL PROJECTS



20kW / 60kWh BESS
for Myanmar



50kW / 100kWh BESS for
Polish C&I Project



Stackable BESS for
Sol-Ark USA Ohio



Australian mining
Containerized BESS



UPS system for Offshore
WHP, Indonesia



Loop Comm testing
with Sol-Ark



120kWh BESS for UK
based Company



Stackable battery
inspection



Liquid cooling
system test



Delivery of 5kWh &
10kWh units



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