



Shaping Future Energy with Integrated Solar

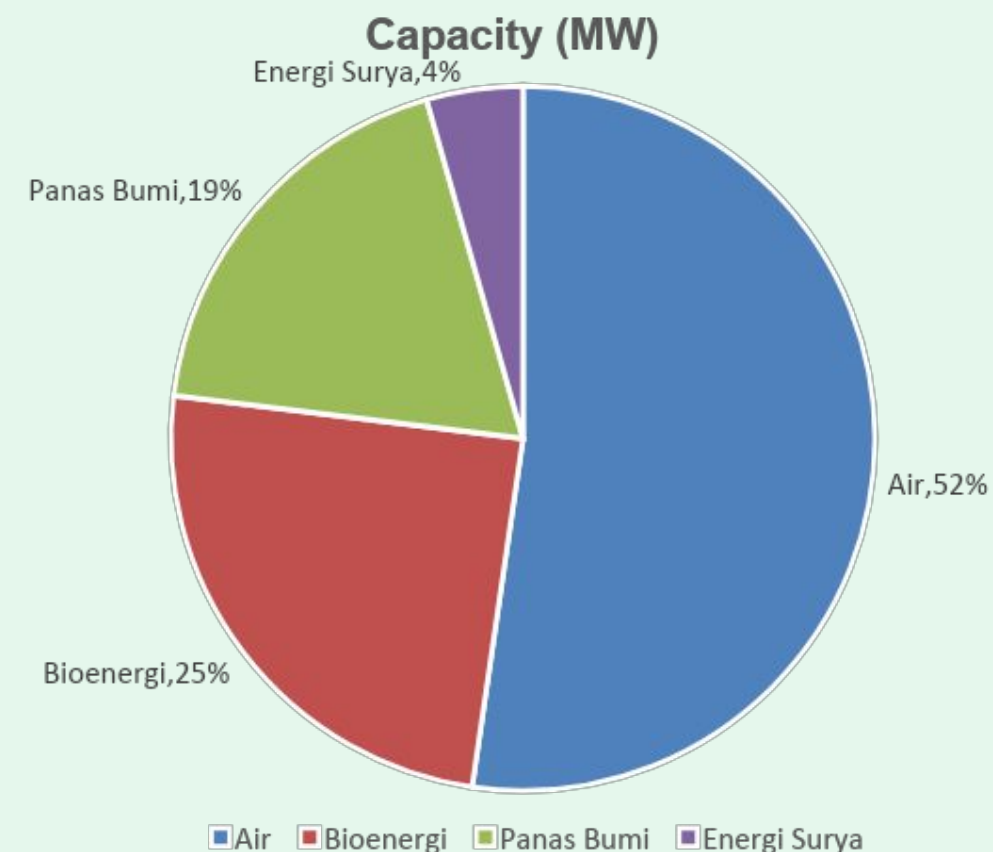
www.sunenergy.id



Accelerating the Utilization of Solar Energy in Indonesia

Our Current Condition

The utilization of renewable energy has been increasing in recent years.



With total of installed capacity of 13,155 MW in year 2023.

Source: MEMR, 2023

Unlocking Potentials

Renewable energy, specifically solar energy, carries great potential that able to be utilized in Indonesia.

Largest Source of Renewable Energy
Reaching over 3,000 GW of potential installed capacity.

High Solar Irradiation Intensity
With an average solar radiation intensity of about 4.8 kWh/m² per day.

Future Energy Sources
Sustainable alternative to replace the use of non-renewable energy.



Supporting the Efforts

Providing Smart Solar System

Solar systems use AI technology to monitor and directly optimize energy use, boosting efficiency and saving more energy.

Easy Operation & Maintenance Services

Solar systems offer hassle-free solutions for buildings with minimal maintenance required.



Introducing Your Future Sustainability Partner



SUN TERRA
Powering Residential & Retail Sector with solar energy

SUN ENERGY
Tailor-made solar solutions for commercial & industrial sectors

nira
Serving sustainable water solutions for commercial and industrial needs

SUN MOBILITY
Creating eco-friendly ecosystem for electric vehicle through solar charging stations
Otopods



SUN Group

From Indonesia to Asia Pacific: Providing Clean and Affordable Energy for All

5 Countries

Expansion across Asia Pacific



Indonesia Singapore Thailand Vietnam Australia



Thailand
North Thailand Solar Farm:
22 MWp Ground Mounted Solar System

Vietnam
26 MWp Rooftop Solar System



Australia
Merredin Solar Farm:
132 MWp Ground Mounted Solar System

Indonesia
133 MWp Rooftop Solar System

Empowering Commercial & Industrial Sectors with Solar Energy Solutions

SUN Energy provides comprehensive solar energy services and customized solutions for the commercial and industrial sectors.



Fully Integrated & Tailor Made Solar Solutions

Utilizing reliable technology and experts, we provide integrated solutions that empower the commercial and industrial sectors with tailored specifications for a seamless transition to solar energy.



Facilitating Zero Upfront Cost

Our best offer to the commercial and industrial sectors allows for the installation of a solar energy system at no upfront cost. Pay a monthly fee or rental based on your energy usage.



Trustworthy Solar Energy Solutions for Leading Brands & Industries

SUN Energy is dedicated to meet the needs of leading brands. With more than 150 customers and experience in over 35 industries.

Industrial



Commercial and Property



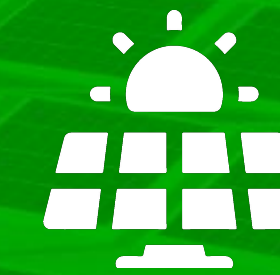
Financial Institution



Educational Institution



Mining and Others



350 MWp

Installed & Contracted Projects in Asia Pacific



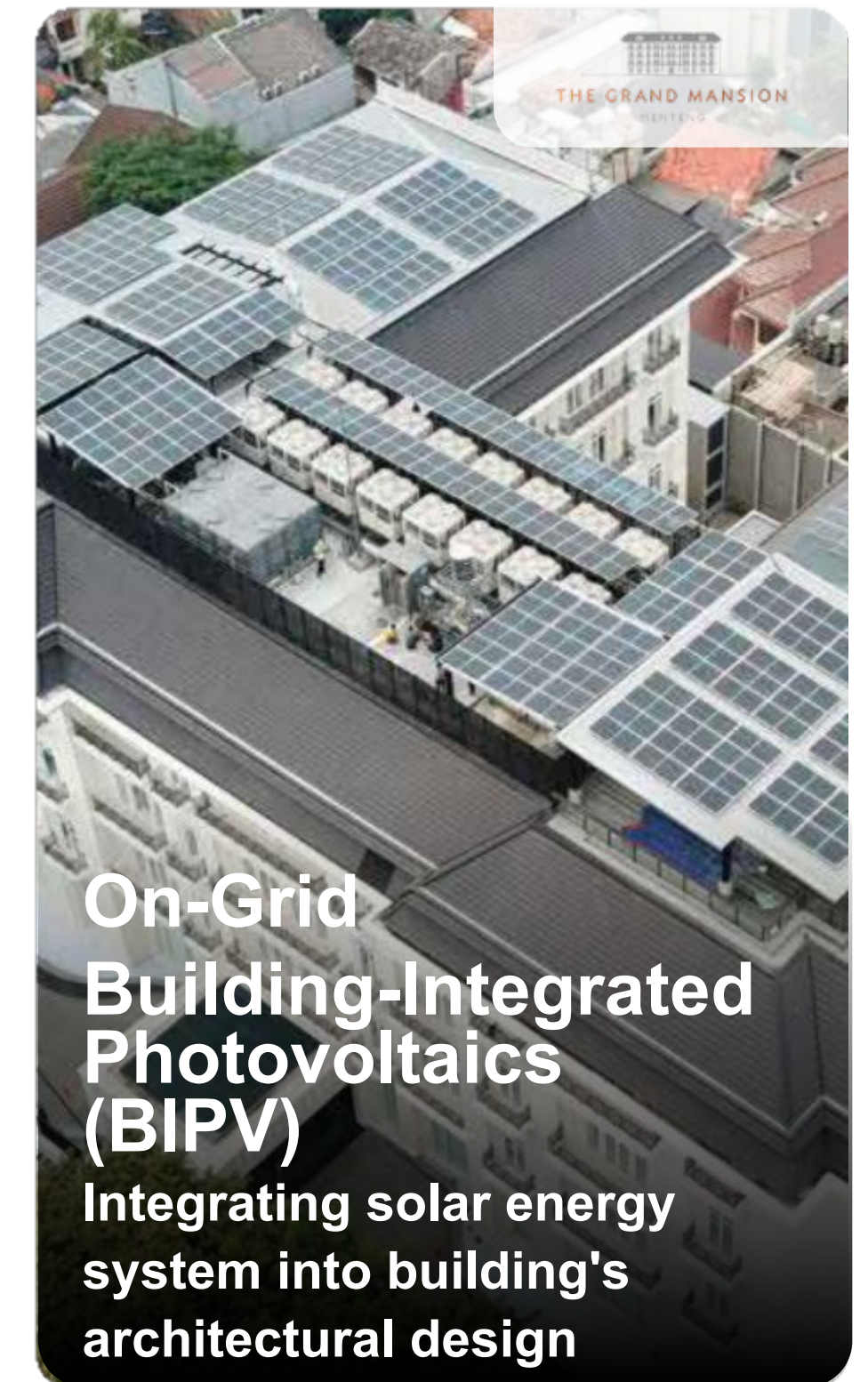
>30 Cities

of solar projects installation in Indonesia

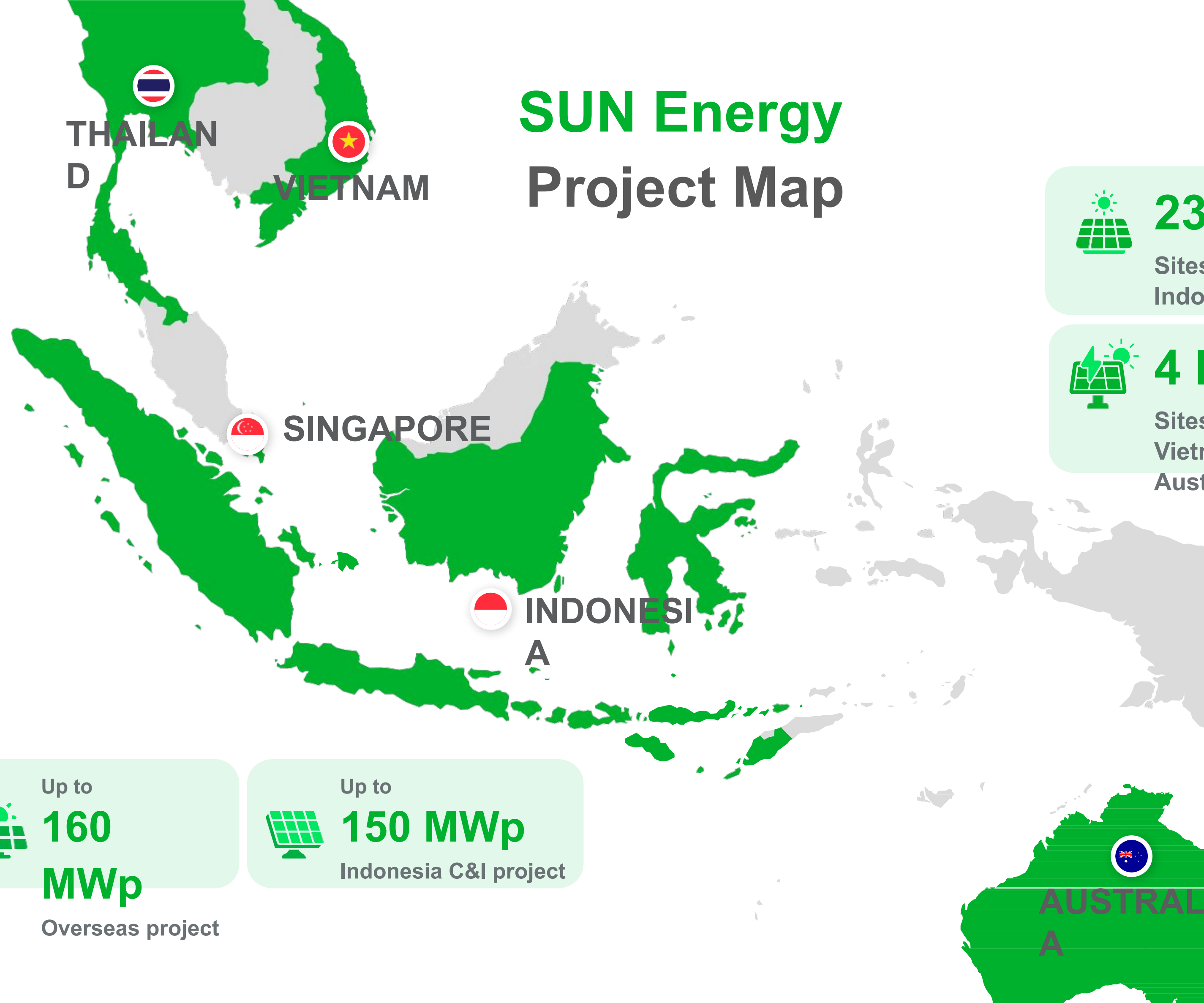


8 Years


of solar projects installation in Indonesia





SUN Energy Project Map



 **230 Project**
Sites installed in
Indonesia

 **4 Project**
Sites installed in Thailand,
Vietnam, Indonesia,
Australia

 Up to
**160
MWp**
Overseas project

 Up to
150 MWp
Indonesia C&I project

SUN Energy Notable Projects

Across Asia Pacific



Australia

Merredin Solar Farm, 132 MWp

SUN is proud being a part of the largest Western Australia's solar energy provider, Merredin Solar Farm project acquired in 2021. Currently Merredin Solar Farm powering approximately 42,000 homes with solar energy.



Thailand

Chiang Rai & Nakhon Ratchasima Solar Farm, with total 17 MWp

A couple projects in Thailand through acquisition symbolize how SUN oversee the advantage of Solar Energy utilization in Thailand.



Vietnam

Commercial & Industrial Solar Project, 26 MWp

Aiming to take a key role in solar energy development in Vietnam, SUN began managing a solar facility in the C&I sector to support further expansion around Southeast Asia.

SUN Energy Notable Projects in Sumatra



OPI Mall
618 kWp
On-Grid



Namasindo Plas
1,5 MWp
On-Grid



Universitas HKBP Nommensen
823 kWp On-Grid



PT Domus Jaya
390 kWp On-Grid



CV Gunung Mas
260 kWp
On-Grid



ITERA
1 MWp
On-Grid

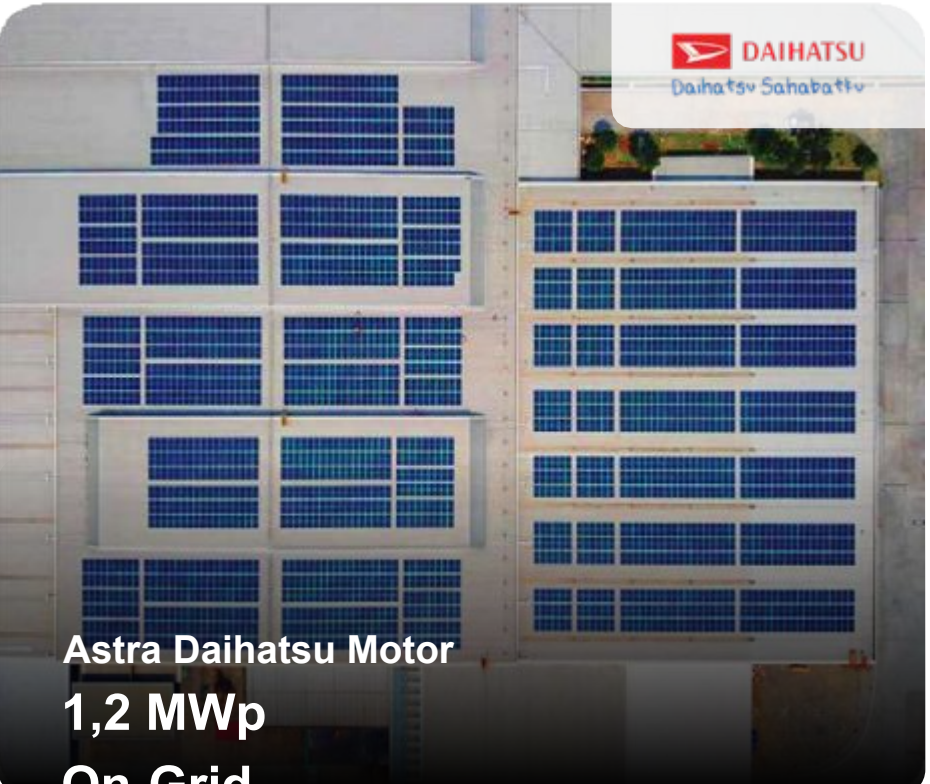
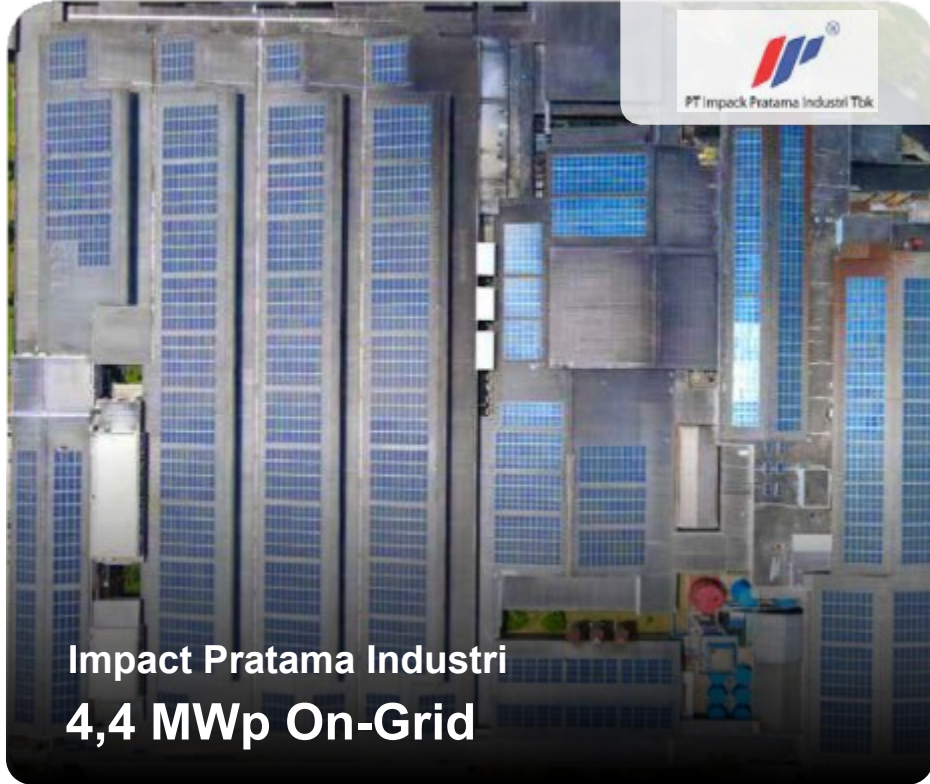


Visi Prima Artha
545 kWp
On-Grid

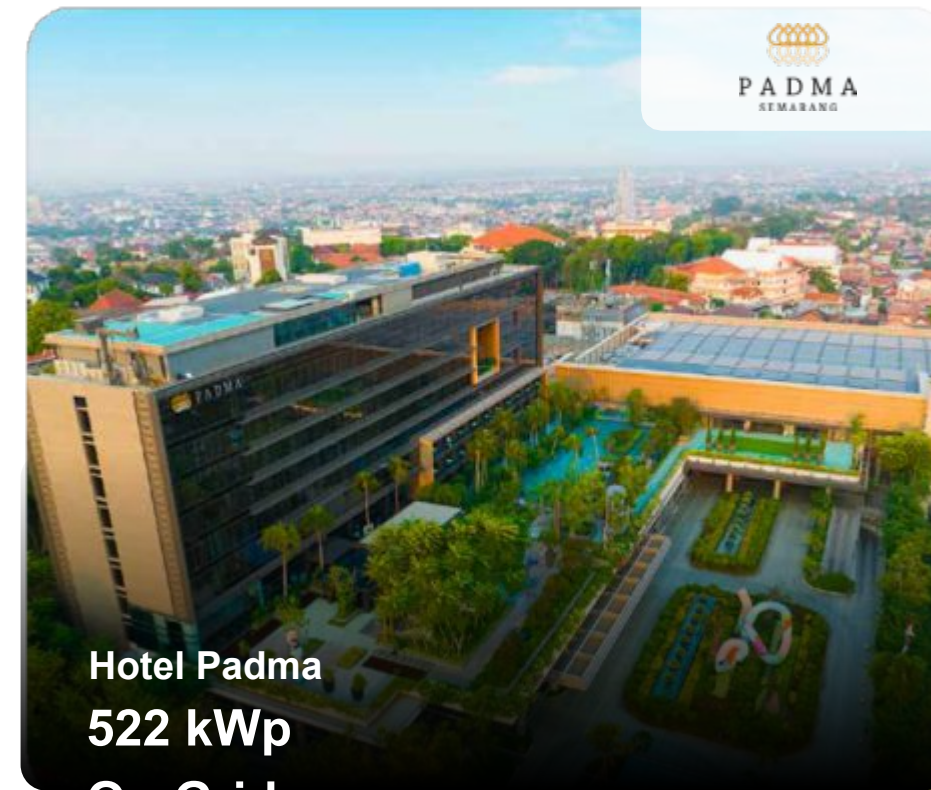


APL Medan
100 kWp
On-Grid

SUN Energy Notable Projects in West Java



SUN Energy Notable Projects in Central Java



SUN Energy Notable Projects in East Java



SUN Energy Notable Projects in Kalimantan



BC Suaran
720 kWp Hybrid



Universitas Tanjungpura
1,5 MWp On-Grid

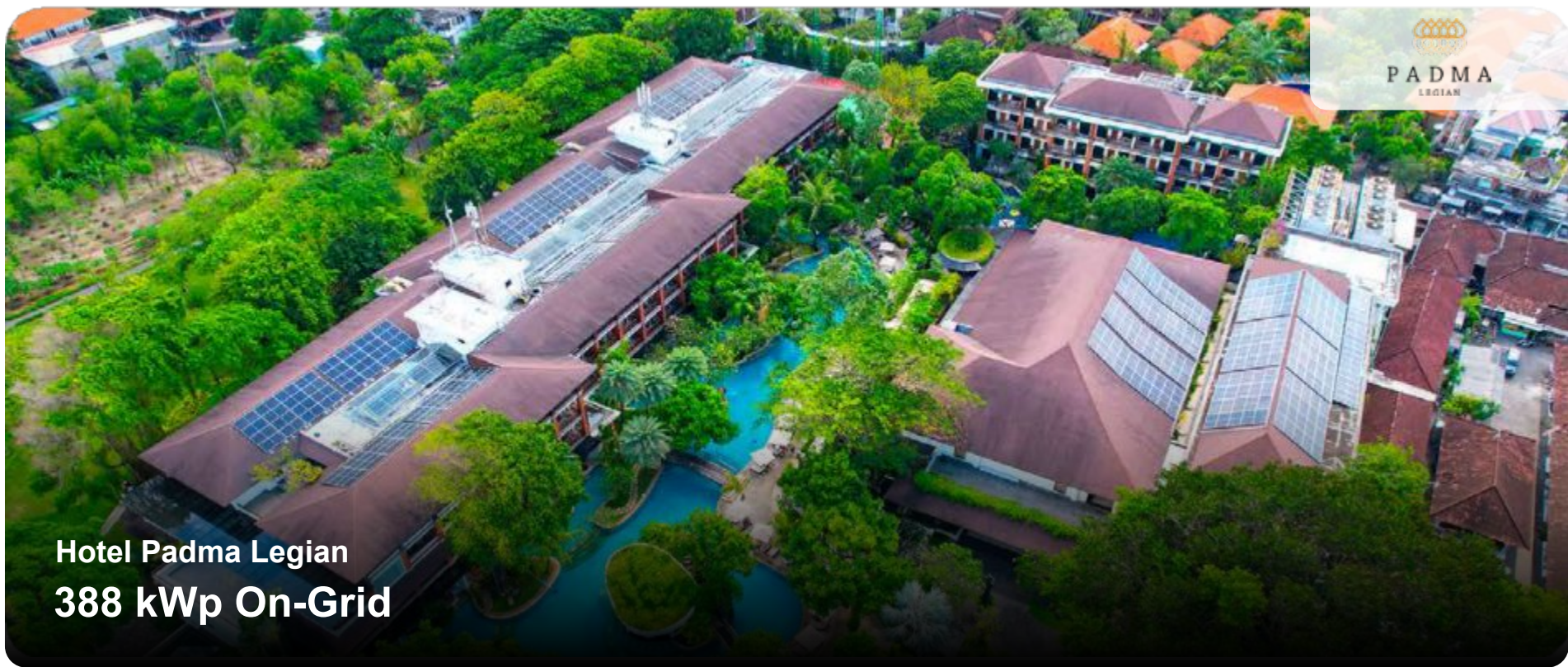


PT Borneo Indobara
164,2 kWp On-Grid

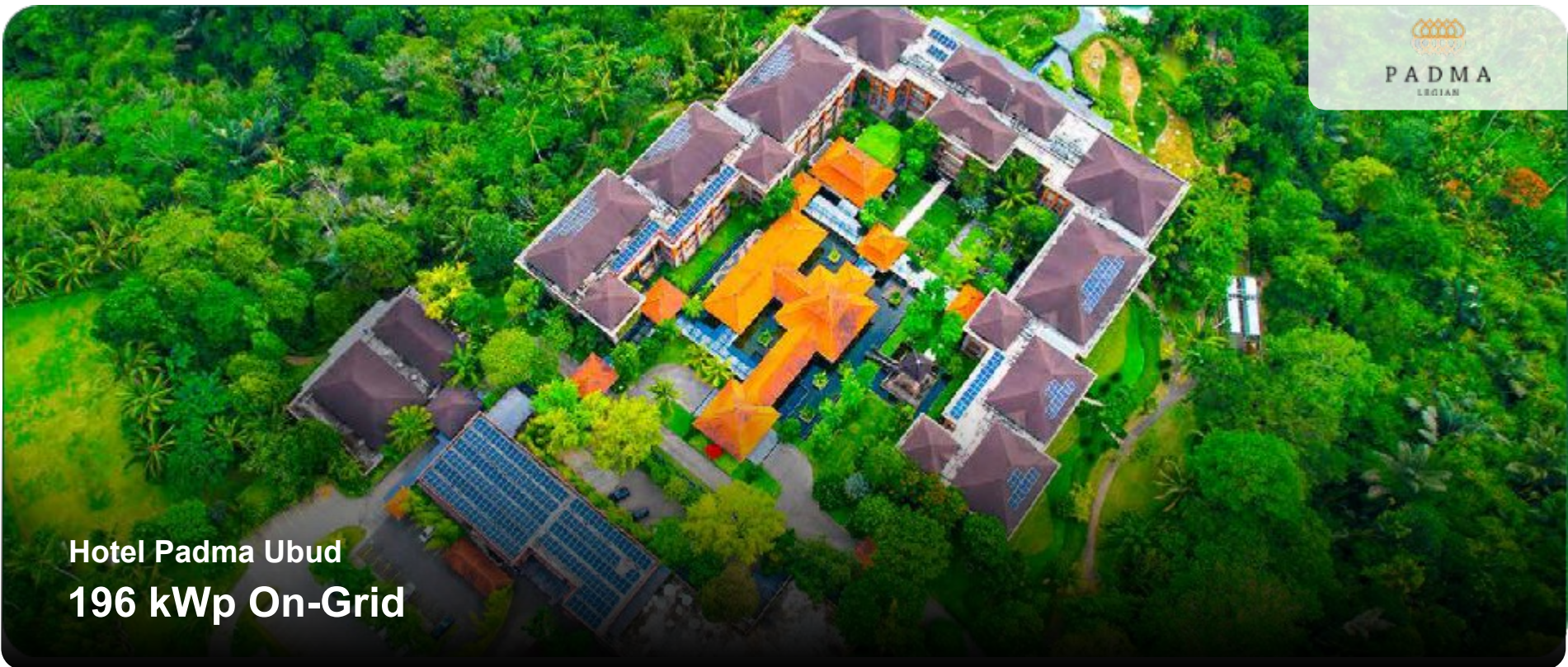


Indocement Tarjun Plant
19,7 MWp

SUN Energy Notable Projects in Bali & Nusa Tenggara



Hotel Padma Legian
388 kWp On-Grid



Hotel Padma Ubud
196 kWp On-Grid



ITDC Nusa Dua
97 kWp On-Grid



Desa Cancar
3 kWp

Supporting Latest Technology

for Solar Energy Adoption

We always ensure to use the latest technology to optimize the utilization of solar energy. SUN Energy only uses the best quality products from the world's leading manufacturers to maintain high performance of your solar energy system.



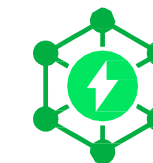
Advanced IoT Integration

Real-time monitoring and control of solar energy systems through seamless IoT connectivity.



Proactive Safety Features

Huawei-backed security measures and early issue detection for prompt resolution.



Advanced Technology

Cutting-edge developments using AI-powered insights and analytics.



Accessible Expertise & Support

By visiting SUN Energy Tech Space, you will get open access to our experts guidance on solar energy solutions.

'SUN Energy Tech Space,' a 24/7 real-time solar energy system, to provide continuous support and guidance to ensure smooth green energy production at every site.

Achieving Net Zero Emission

through Stakeholder Collaboration

SUN Energy encourages the adoption of solar energy technology in Indonesia by collaborating with multiple stakeholders. We aim to ensure we can achieve our shared long-term goal of Net Zero Emission in Indonesia.



Collaboration with the national electricity provider, ensuring regulatory adherence and promoting the integration of renewable energy solutions.

Striving for a Sustainable Future in Every Way: ESG Excellence



Environmental

Continuously reducing carbon emissions through solar energy system installations as our business core, and applying carbon offsetting to make our operations Net Zero.



Produce Green Energy up to **815 GWh***

*data up to 2023



Carbon Offsetting for Operational Activities **69 Ton CO₂***

*data up to 2023



SUN Energy is aligning its business practices with the United Nations Global Compact (UNGC) for responsible and ethical operations. This alignment supports SUN Group's commitment to achieving the Sustainable Development Goals (SDGs) pillars.



Social

Empowering Indonesians with renewable energy through various initiatives and consistently leading awareness about clean energy sources across generations.

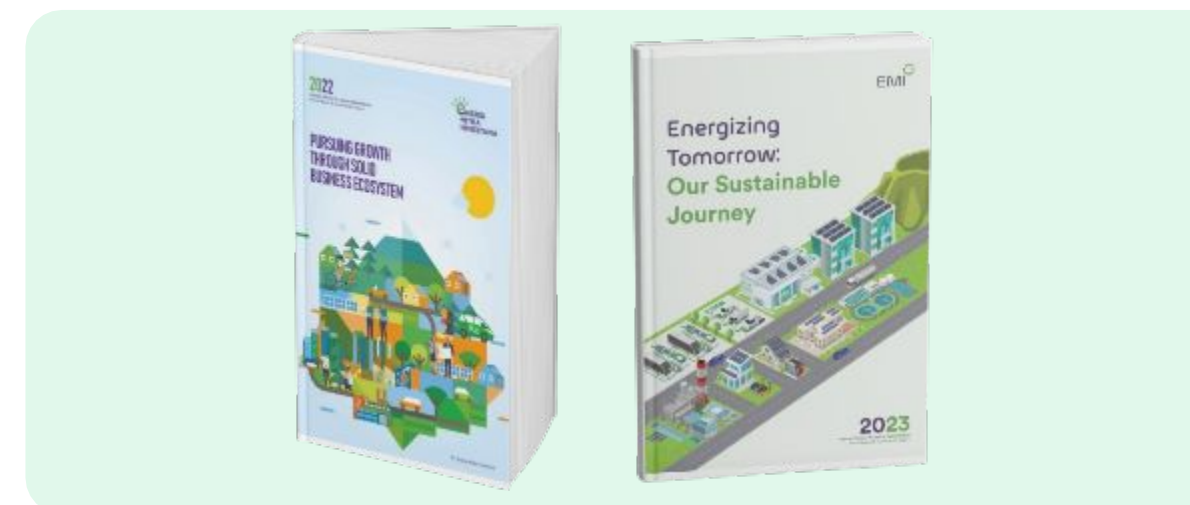


Providing Solar Energy Benefits to Up to **241,000 People**



Governance

Aligning our business implementation with responsible and ethical operations, adhering to ISO standards, and publishing an annual report.



SDGs Pillars



Standing as the Largest Indonesian Solar Developer



with Proven Best Practices



ISO 9001
Quality Management System



ISO 14001
Environmental Management System



ISO 45001
Occupational Health & Safety Management System



Top 100 Indo Pacific Climate Tech
HolonIQ | 2024



Pengembang Proyek Tenaga Surya Terkemuka
Anugerah Dewan Energi Nasional | 2023



Corporate Excellence Award for Energy Industry
Asia Pacific Excellence Award | 2023



Solar Company Of The Year (Developer C&I)
SolarQuarter | 2023



Largest Solar Developer Company in Indonesia
CNBC Award | 2023



Best Partner of the Year
TrinaSolar | 2022



Best Digital Transformation
Huawei | 2022

BESS Case Study

Operation Scheme Comparison

Option 1 Fully Manual

Pros

1. Cheaper price option for equipment.

Cons

1. Blackout will present when switching everyday which will alter the client existing electricity operation.
2. Need to have manpower standby to manually change switch everyday (increase O&M cost).

Option 2 Partially Automatic

Pros

1. No blackout will occur while switching.
2. Offers automatic switching everyday.
3. No-need manpower standby.

Cons

1. Need manual operation for change over from genset 1 to genset 2 every 200hours as per client operation scheme.

Option 3 Fully Automatic

Pros

1. No blackout will occur while switching.
2. Offers automatic switching everyday.
3. No-need manpower standby.
4. Client is more satisfied because no manual operation is needed anymore.

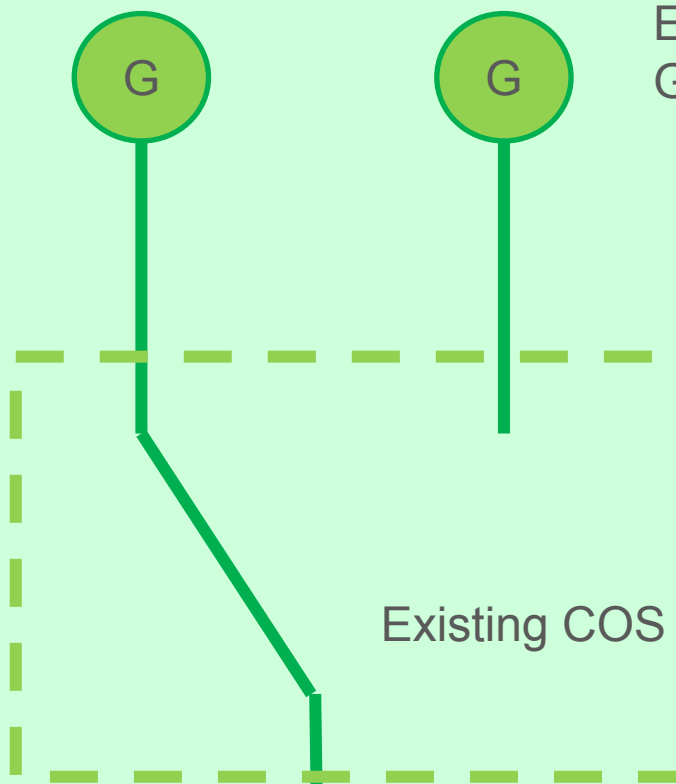
Cons

1. More expensive price for equipment.

Fully Manual Operation

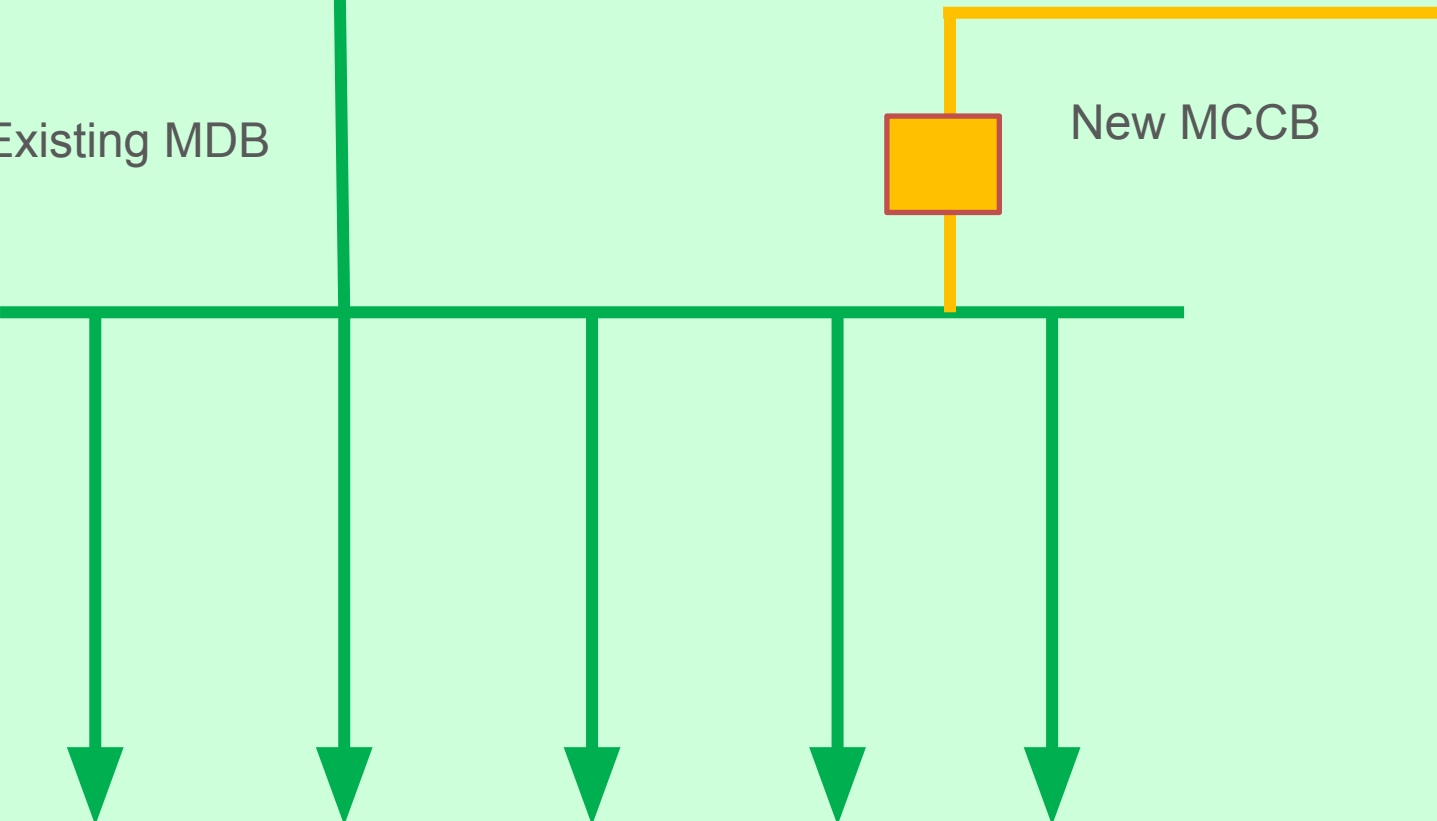
Scheme

Existing Genset 1 Existing Genset 2



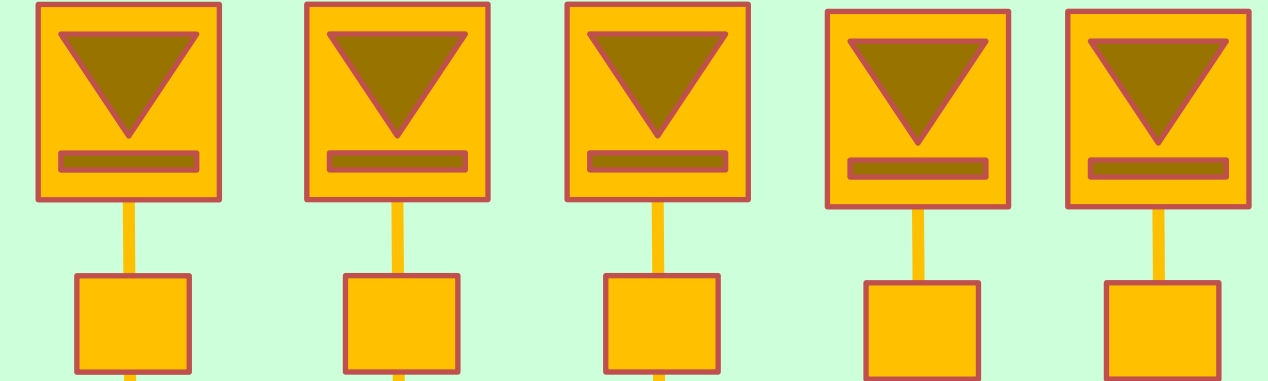
Existing MDB

New MCCB

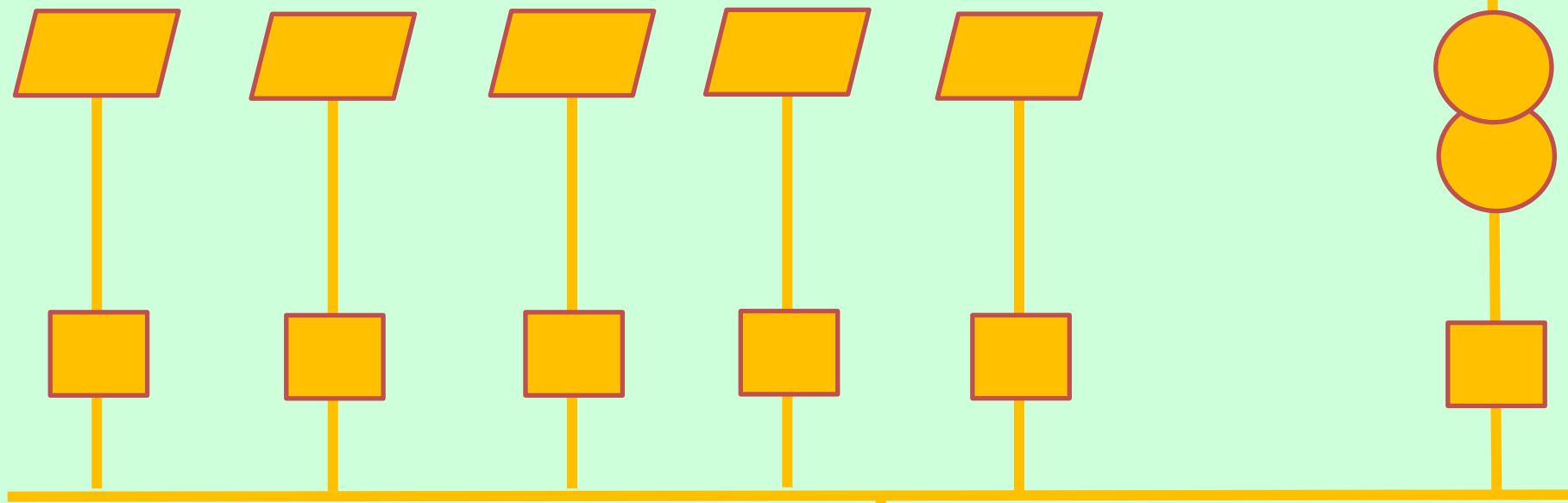


Underground cable
2 x 4C x 240mm² – 130m

PCS 1 200kW PCS 2 200kW PCS 3 200kW PCS 4 200kW PCS 5 200kW



INV 1 115 KTL INV 2 115 KTL INV 3 115 KTL INV 4 115 KTL INV 5 50 KTL

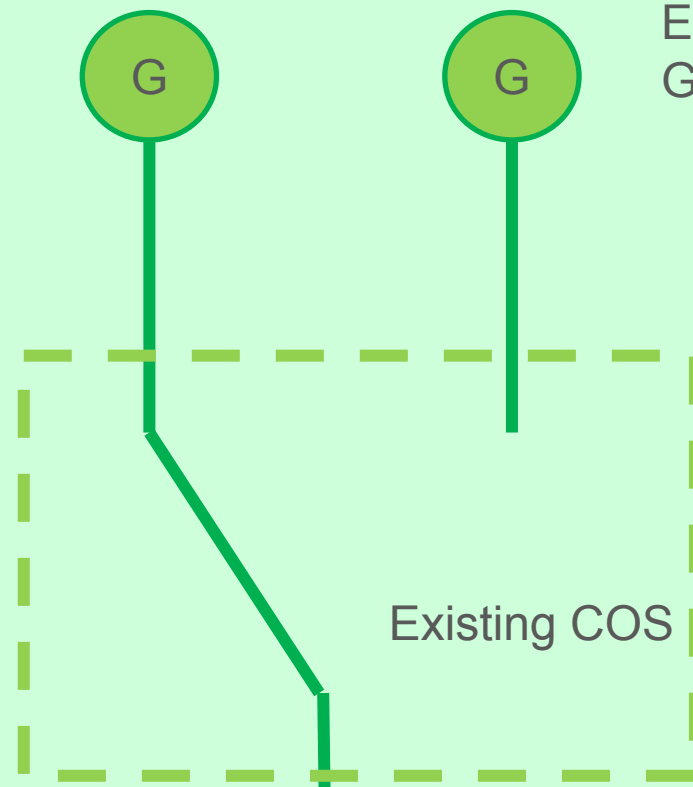


— New
— Existing

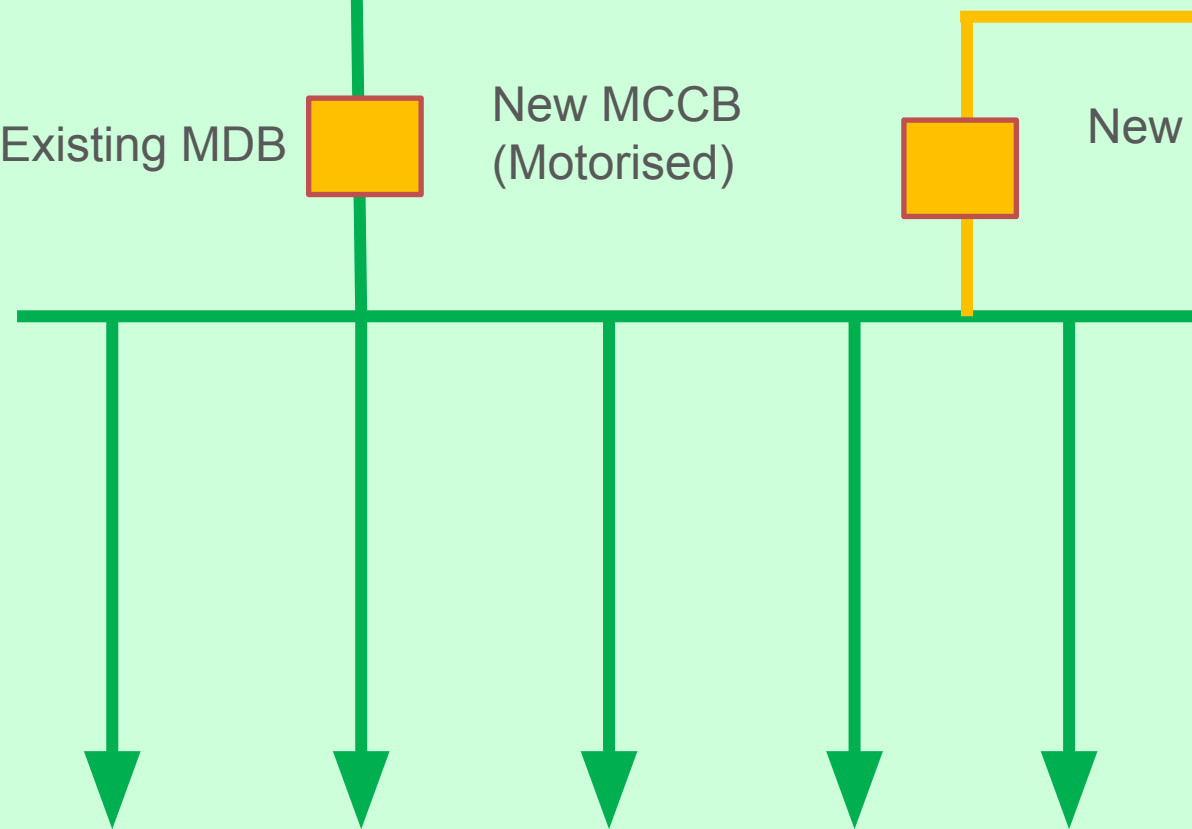
Partially Automatic Operation

Scheme

Existing Genset 1 (G) Existing Genset 2 (G)

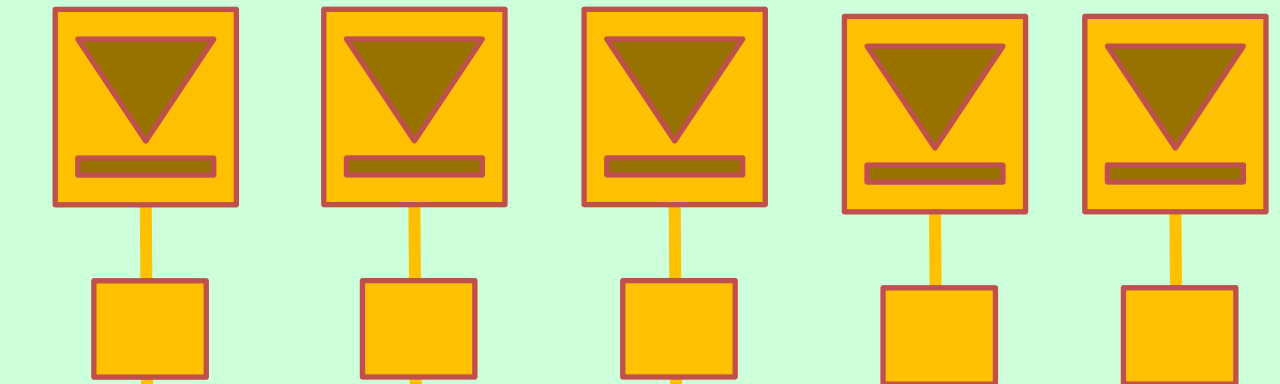


Existing MDB (Main Distribution Board) New MCCB (Motorised) New MCCB

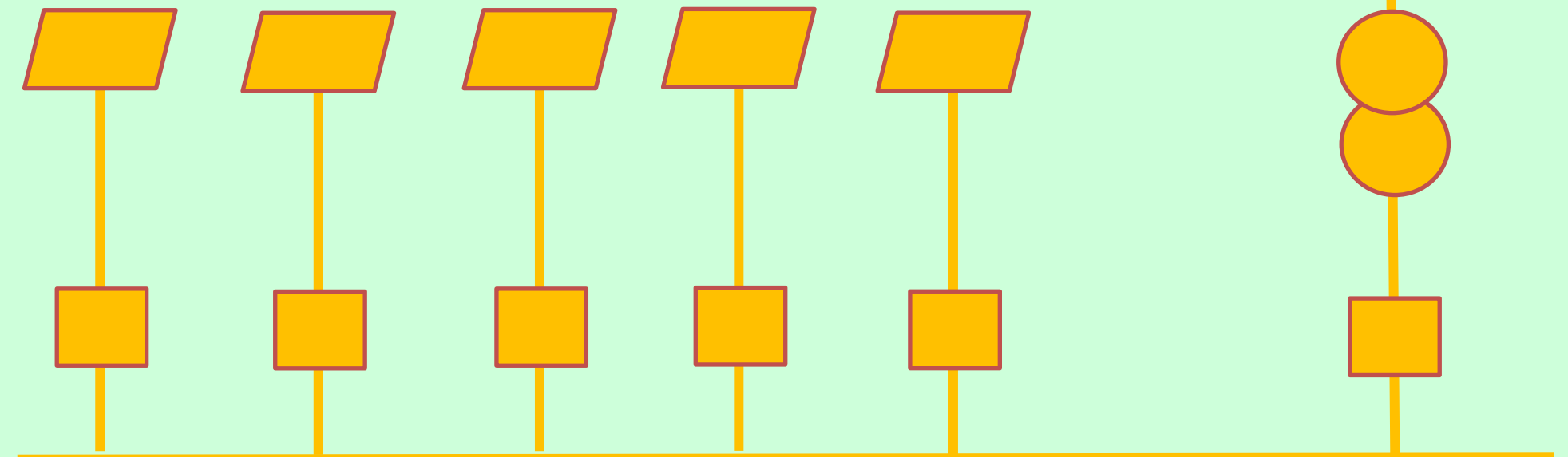


Underground cable
2 x 4C x 240mm² – 130m

PCS 1 200kW PCS 2 200kW PCS 3 200kW PCS 4 200kW PCS 5 200kW

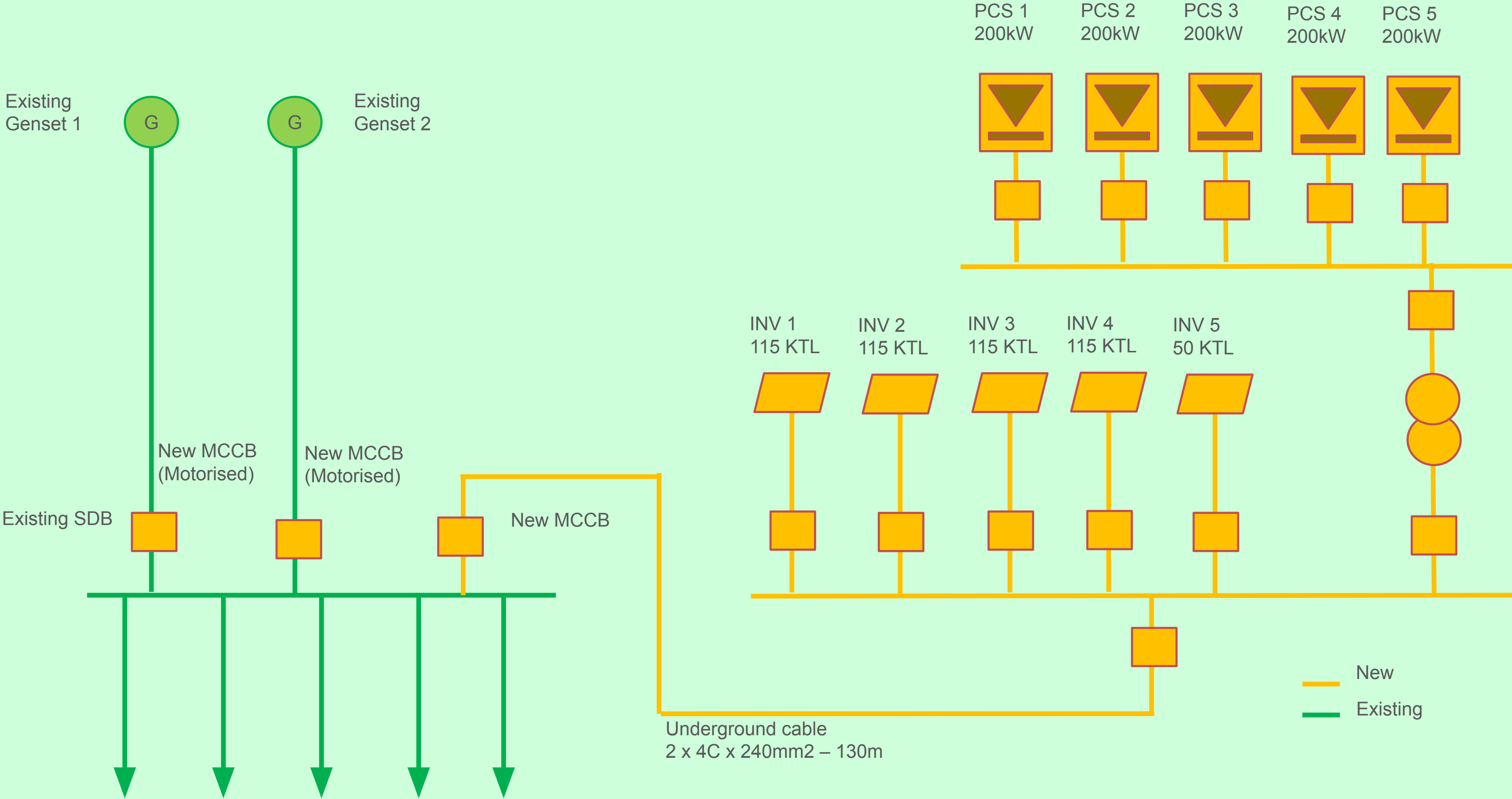


INV 1 115 KTL INV 2 115 KTL INV 3 115 KTL INV 4 115 KTL INV 5 50 KTL

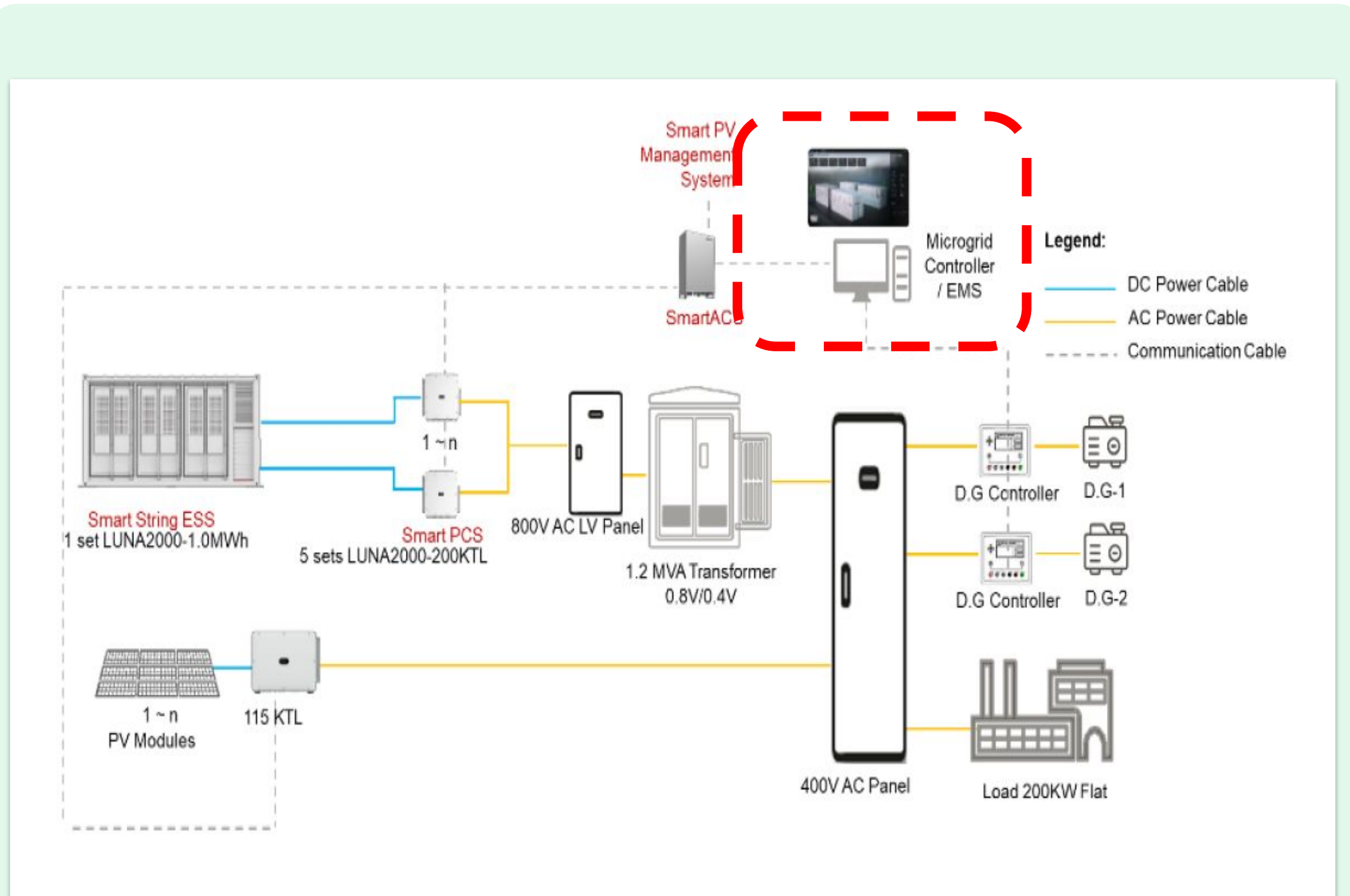


— New
— Existing

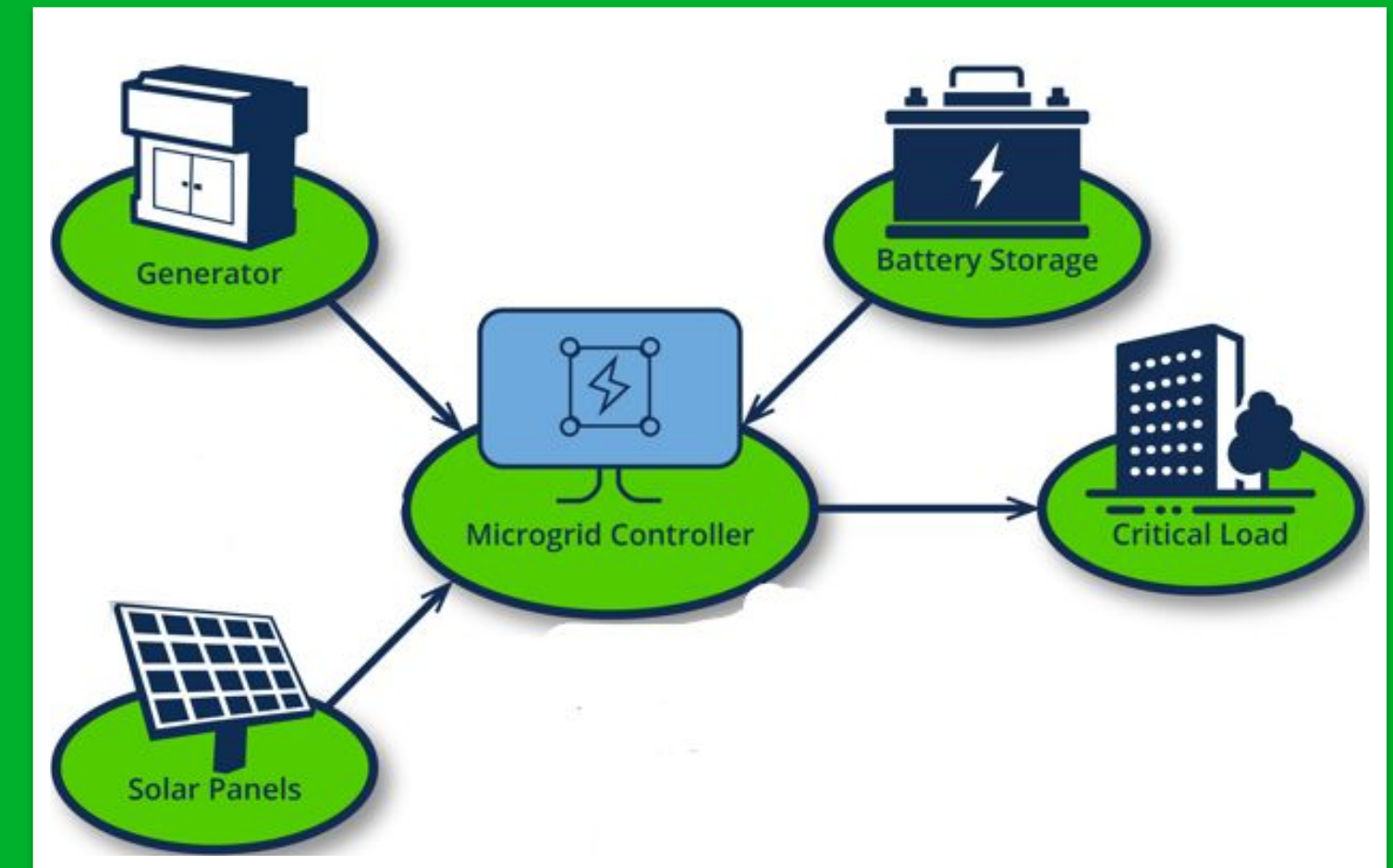
Fully Automatic Operation Scheme



BESS Architecture & EMS (Brain of Micro-Grid System)



EMS/Microgrid Controller Functions



- Ensuring system stability by balancing load and generation.
- Automatic grid operation; When to charge/discharge BESS, and when to turn on/off Gensets.
- Doing seamless transition of Power Source (BESS to Genset, & vice versa). So, customer won't experience unwanted blackouts.
- System monitoring and control function. Etc.

Shaping Future Energy

Leading Commercial & Industrial Solar Energy Developer

 SUN ENERGY

 SUN TERRA

 SUN MOBILITY

 nira

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OTOPODS.ID |

NIRA-WATER.COM

For more information, please contact:

marketing@lifewithsun.com

WA. +62 881-0122-51888

Catch us on social media:

 SUN Energy

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