

5TH ASEAN SMART GRID CONGRESS



**Introducing The Smart Energy
Management System at The Barat
Tioman Resort**

PEKAT SOLAR SDN BHD

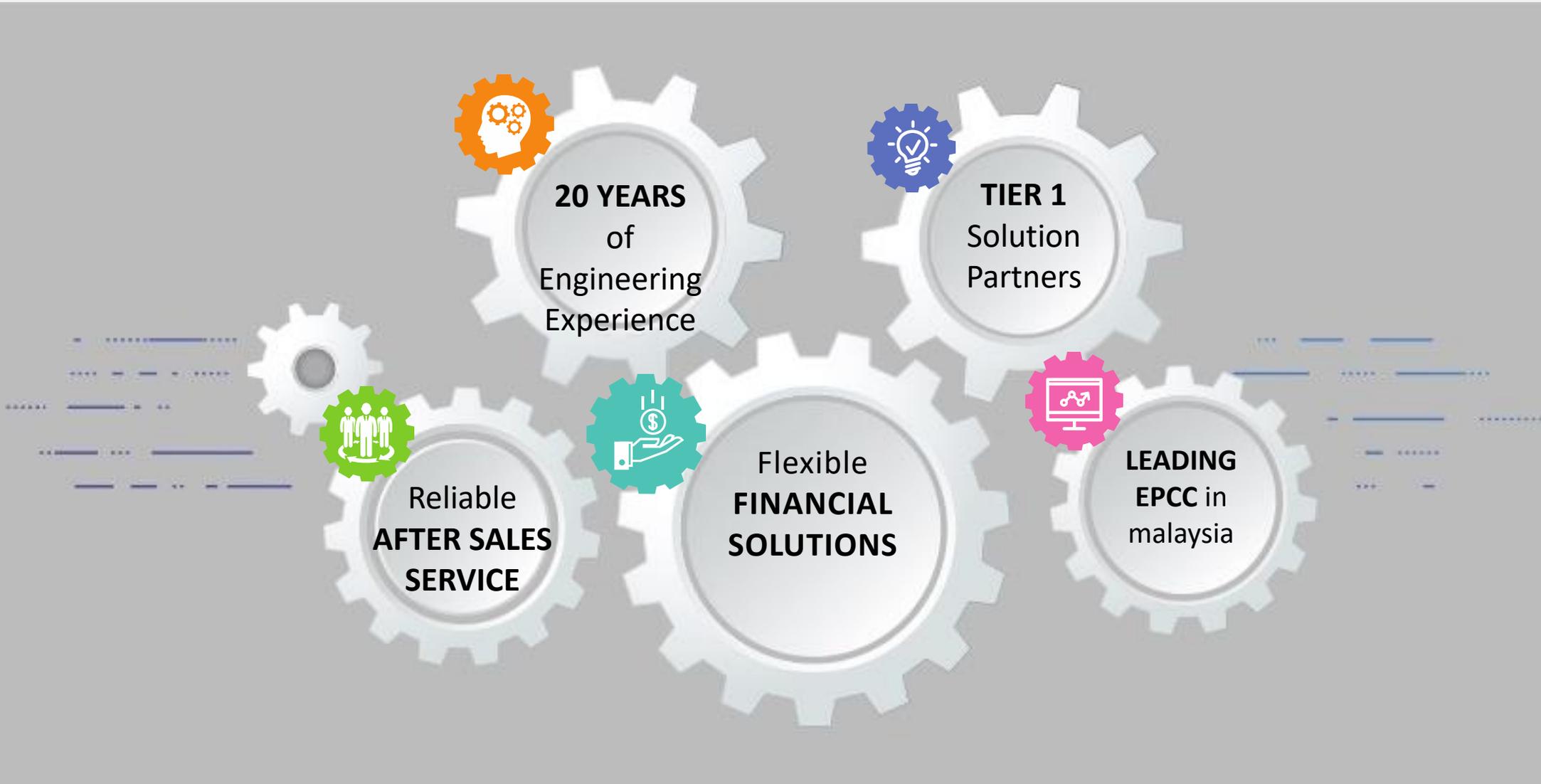


Realizing that renewal energy would play an important role in our lives, Pekat expanded its portfolio in **2006**, to **provide end-to-end solutions for commissioning Solar Photovoltaic (PV) systems** through its subsidiary **Pekat Solar Sdn Bhd**.



Founded in 1999 by a small team of engineers to **provide earthing and lightning protection solutions**, Pekat quickly grew to be a prominent brand name in the industry, renowned for its commitment, innovation and reliability.

OUR COMPETENCIES

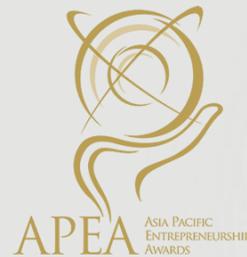


RECOGNITION

REGISTERED
WITH

CERTIFIED BY

AWARDS





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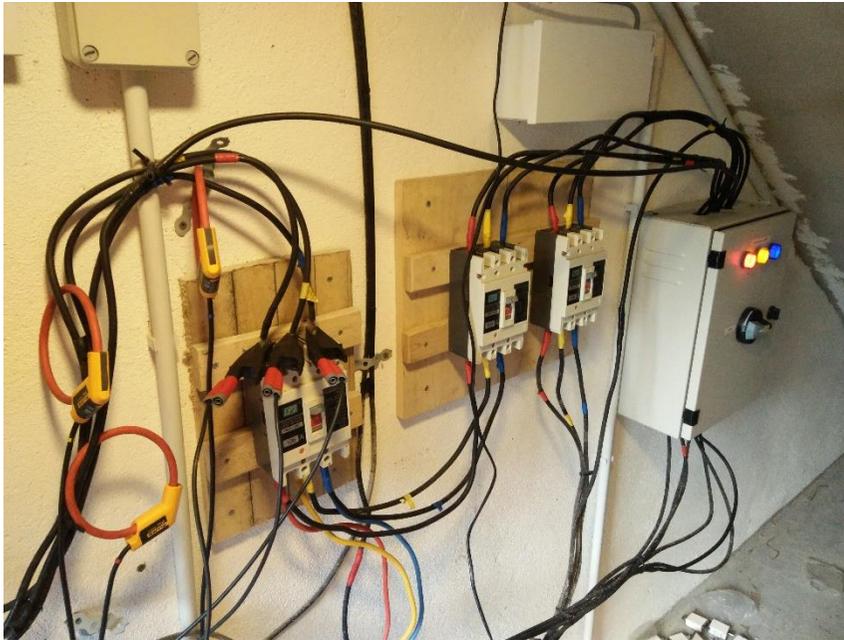


The Barat Tioman Beach Resort

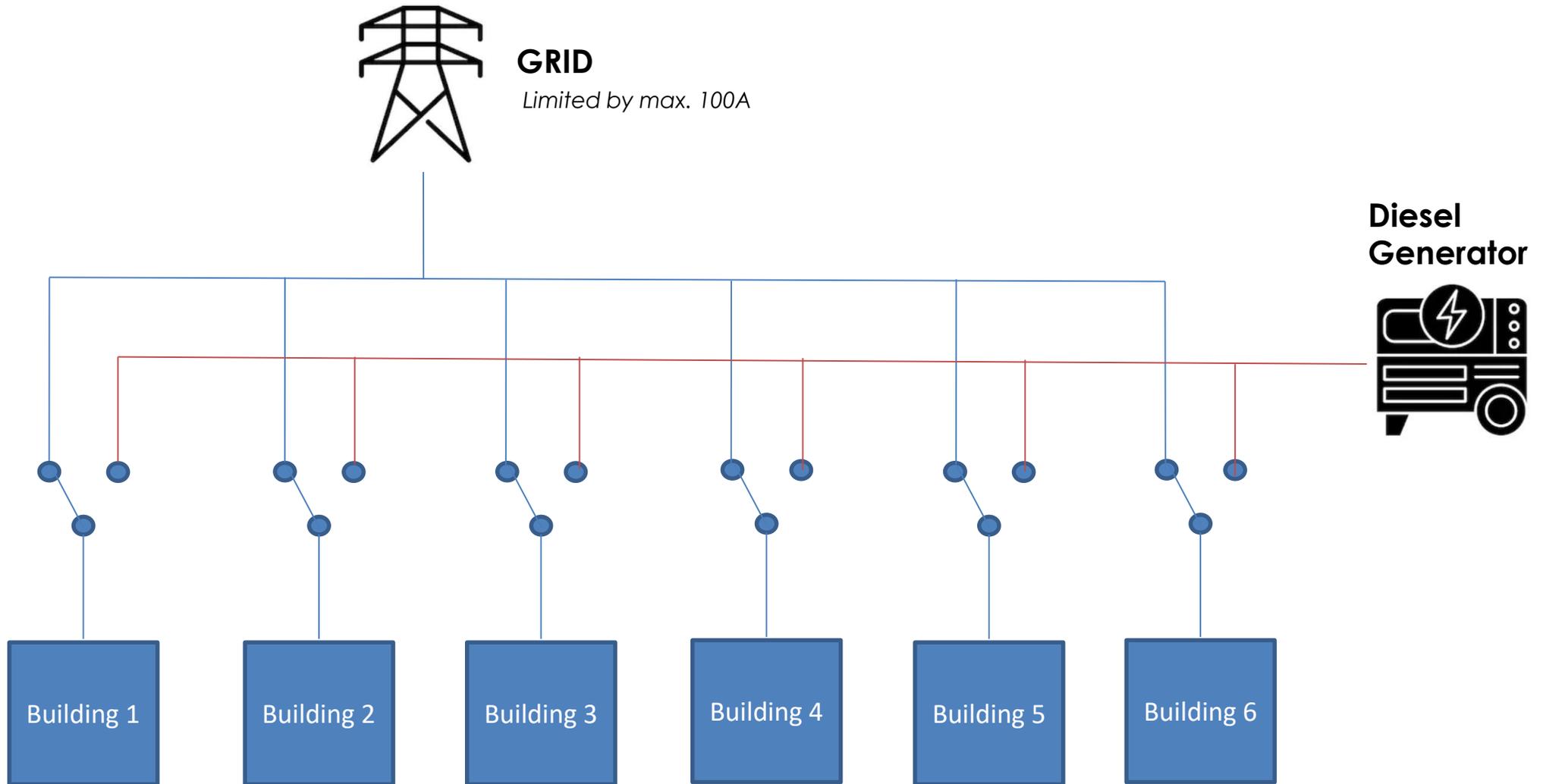


Background

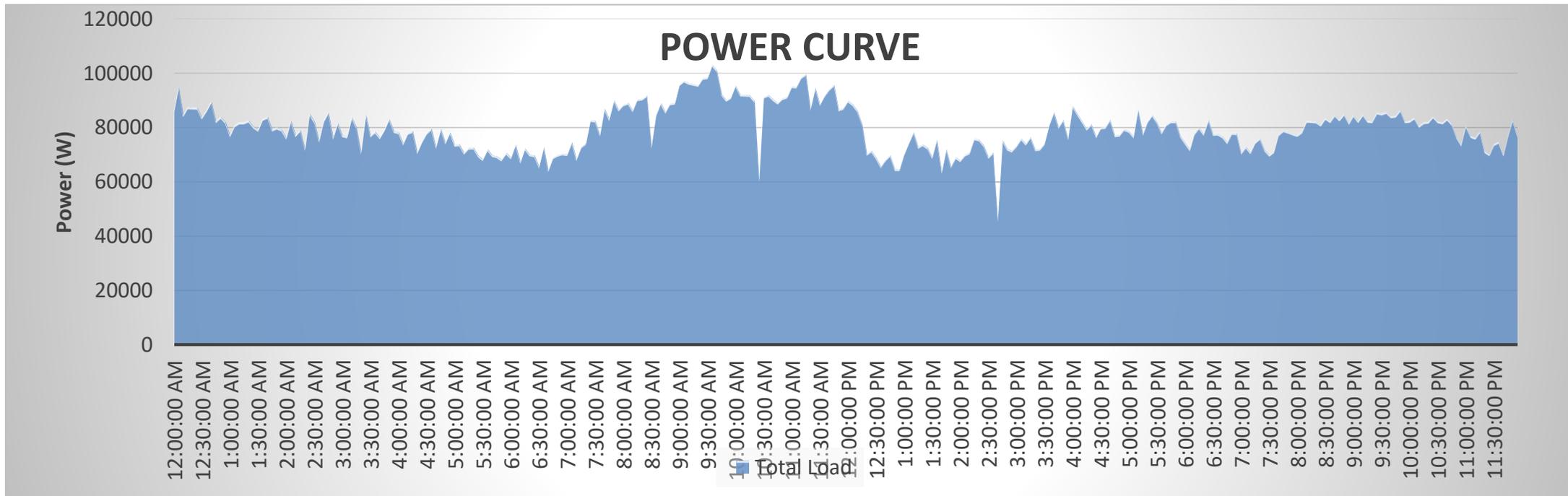
- Located in Tioman Island that lies off the east coast of peninsular Malaysia
- Wear out electrical system
- Insufficient power
- Unstable grid
- High opex for diesel generator



BEFORE:



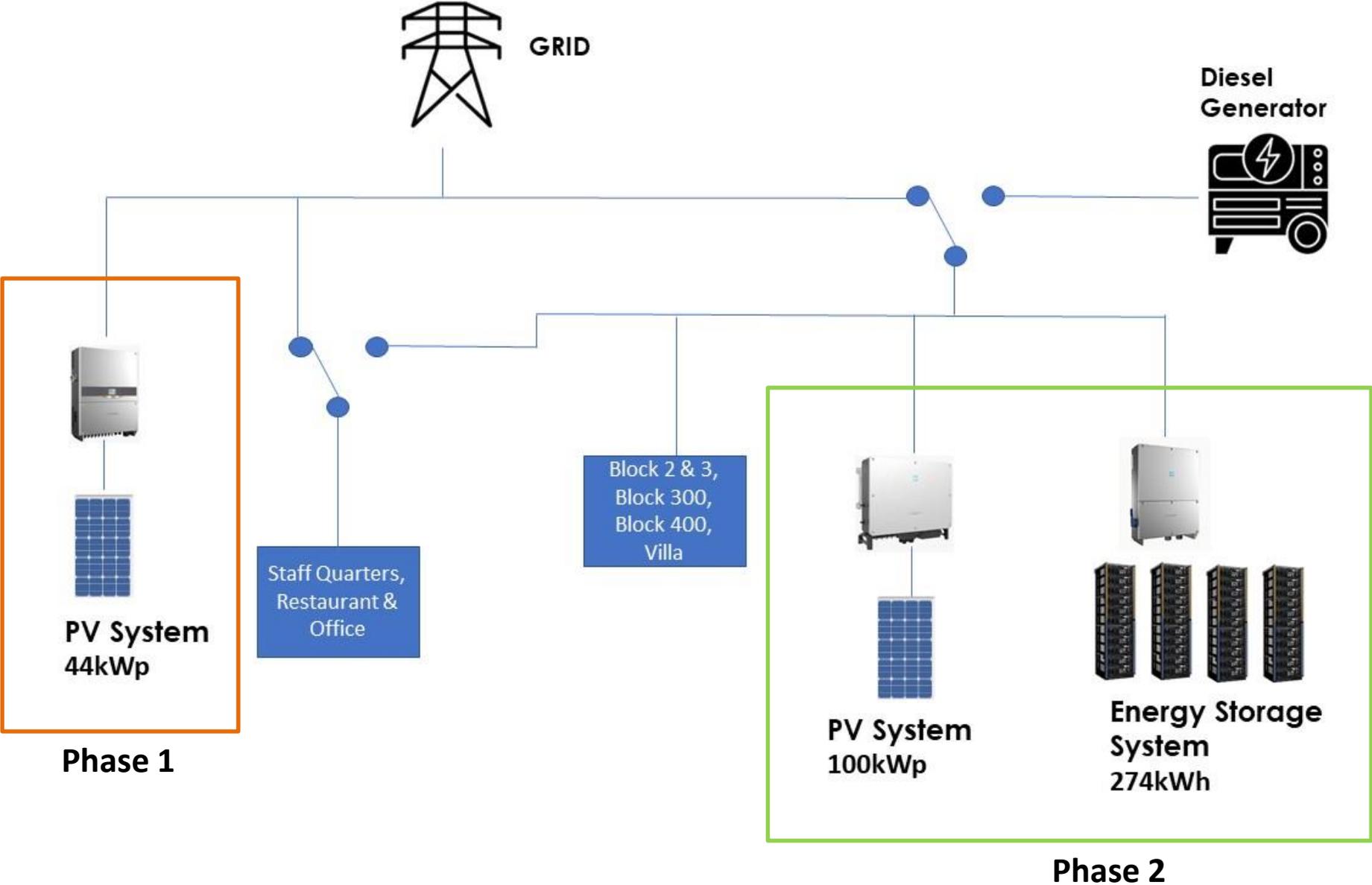
Load Profile



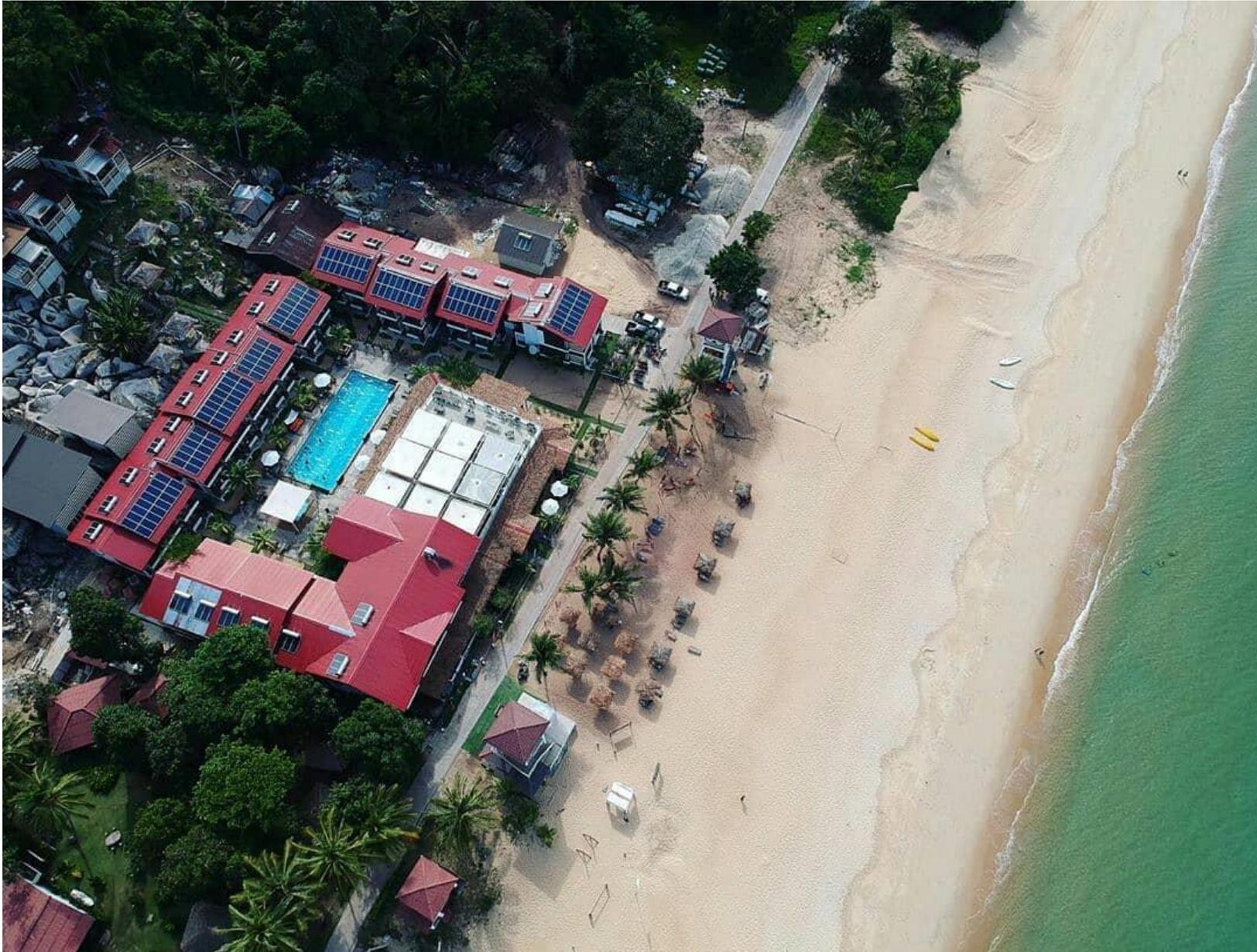
Project carried out in 2 phases:

- Phase 1: 44kWp Solar PV
- Phase 2: 100kWp Solar PV + 100kW PCS + 274kWh ESS

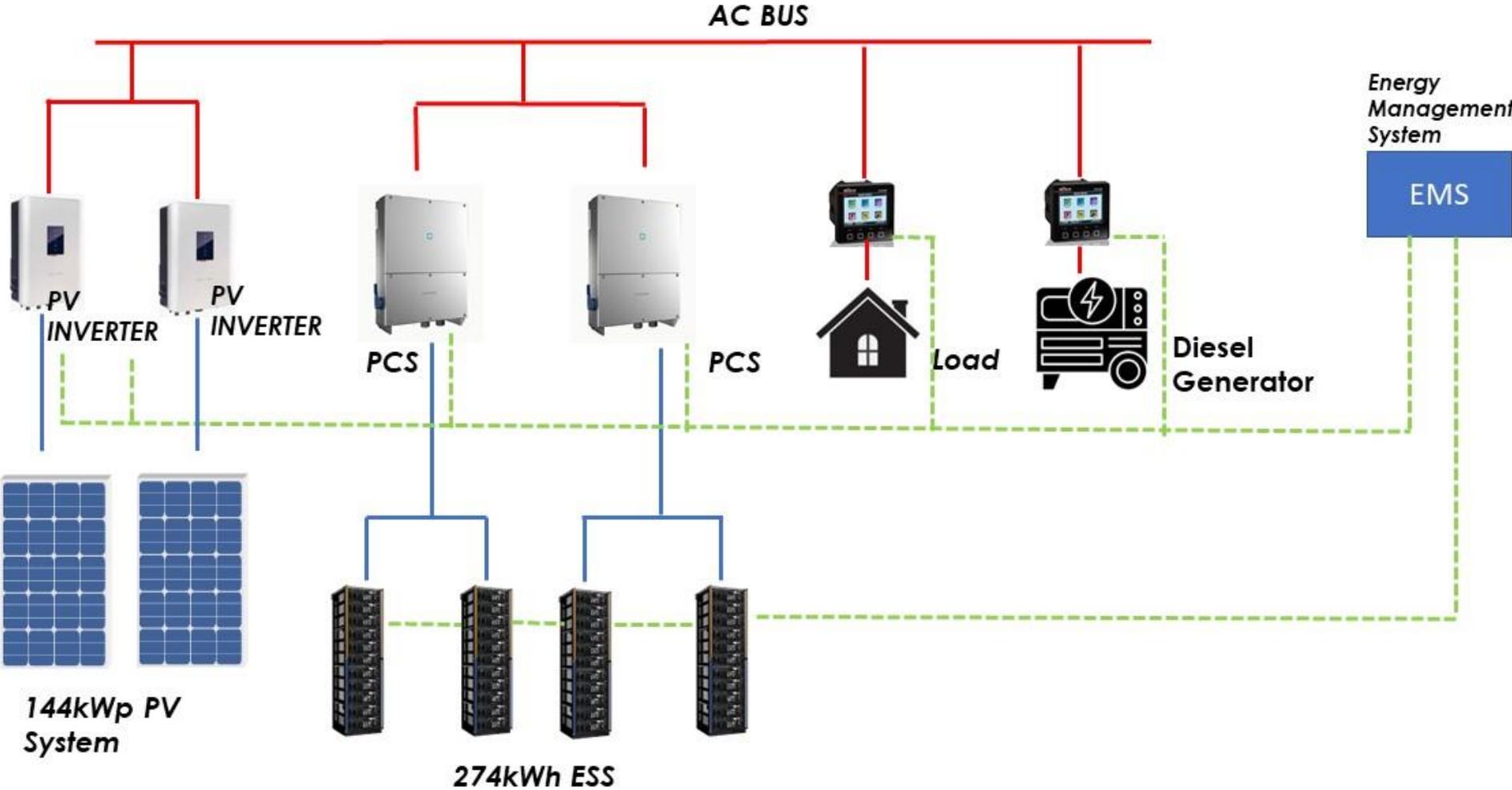
AFTER:



Phase 1: Completed

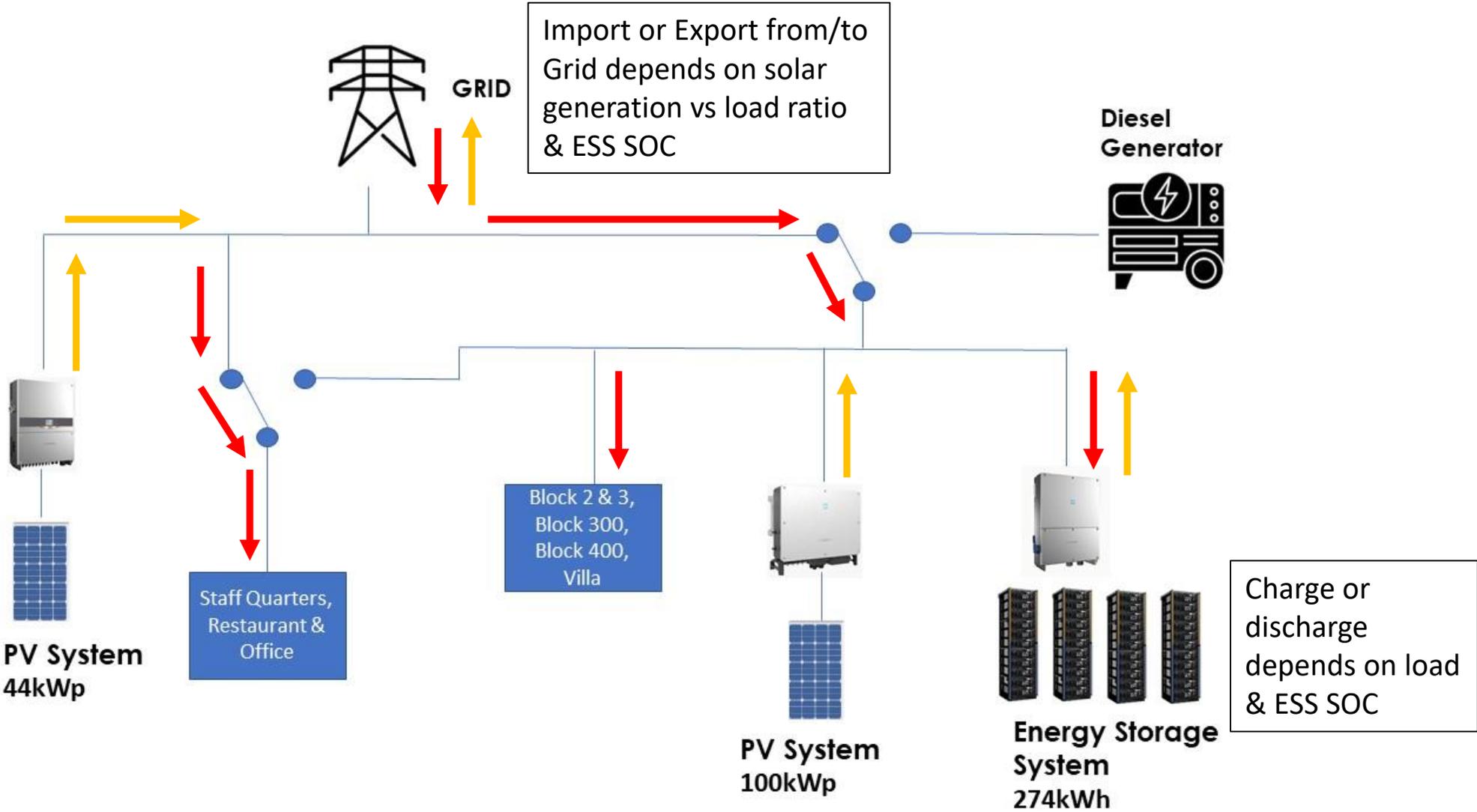


Energy Management System



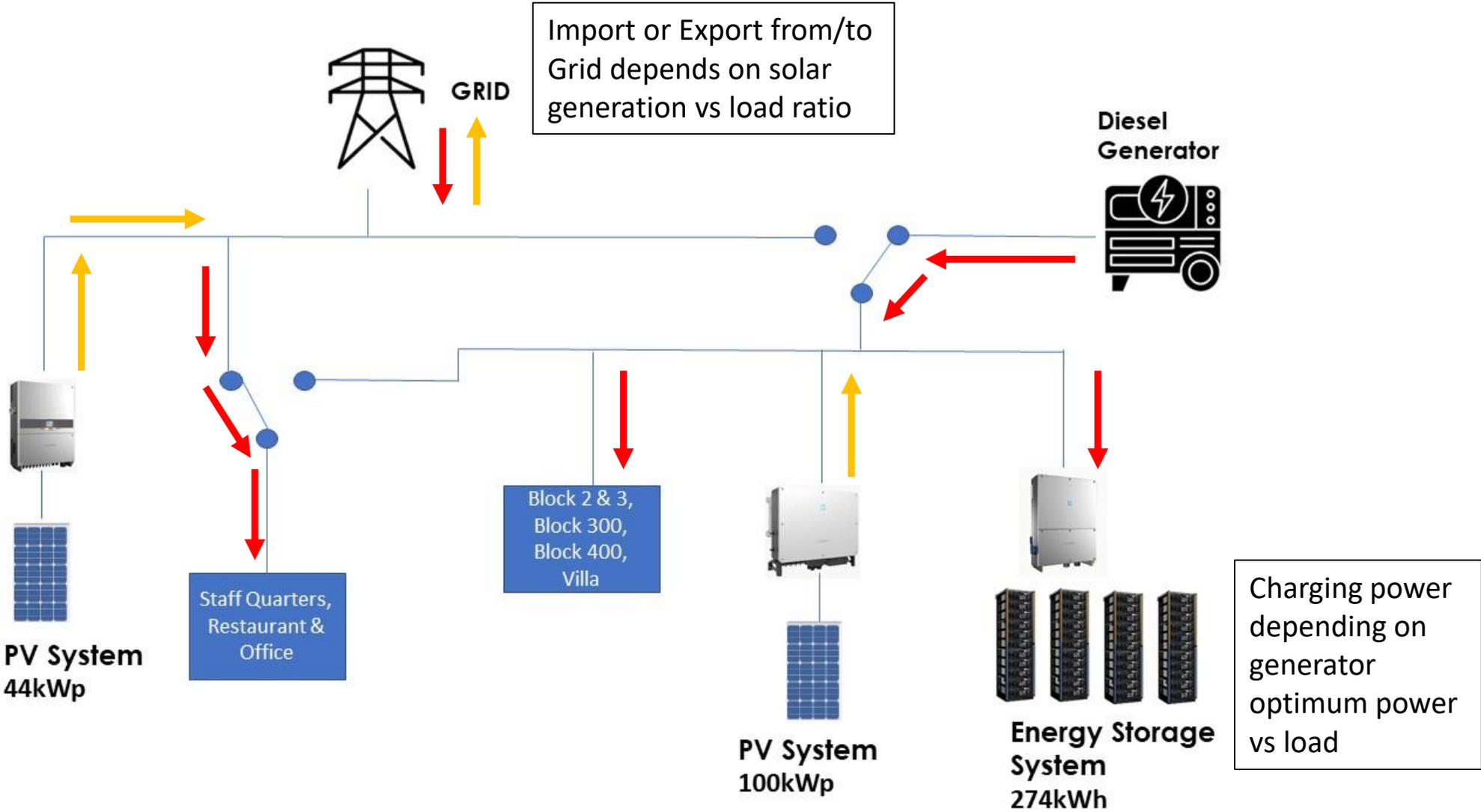
CONDITION 1

- GRID + Solar + ESS are sufficient to supply all loads



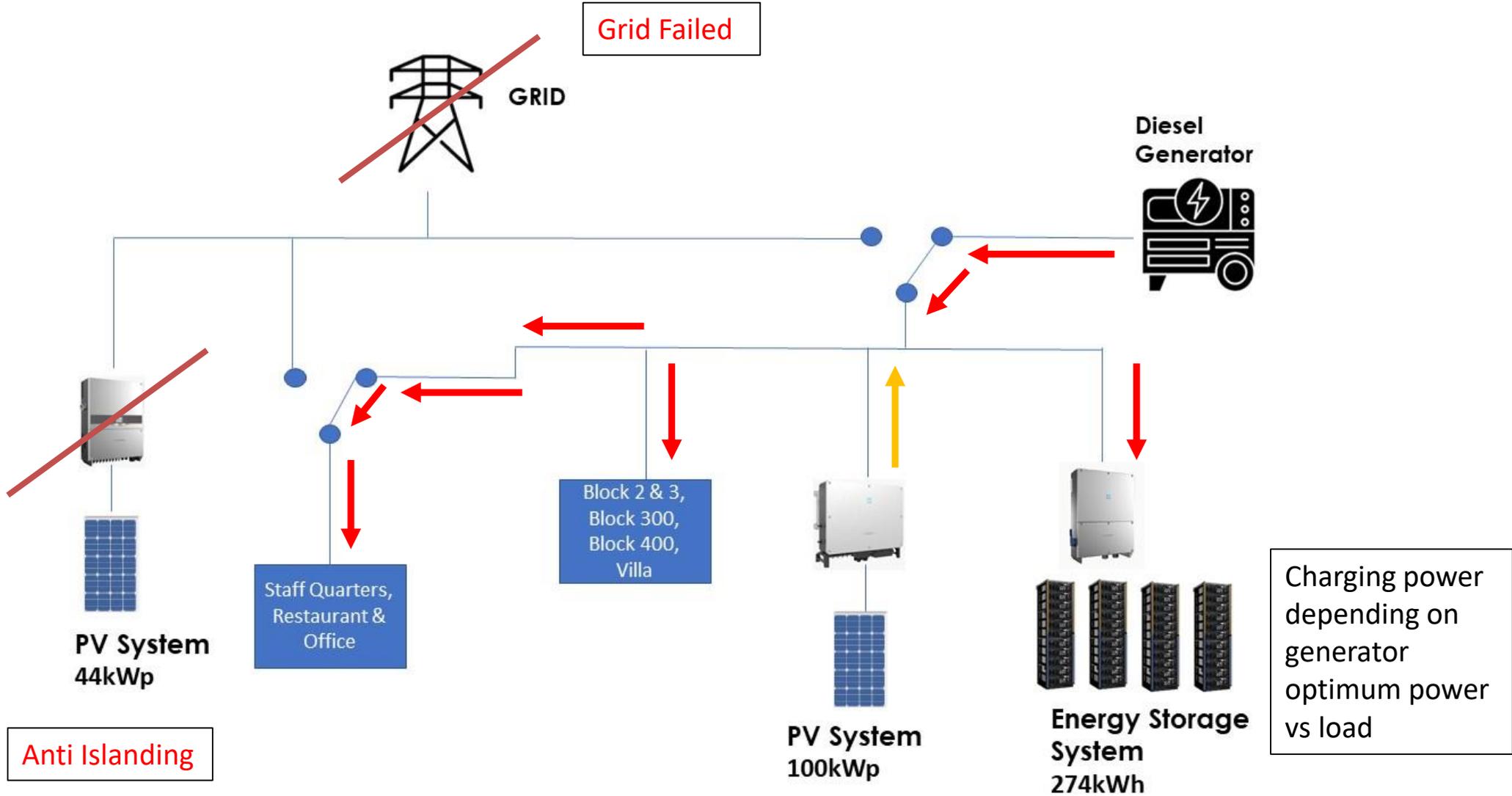
CONDITION 2

- TNB + Solar + ESS are insufficient to supply all loads



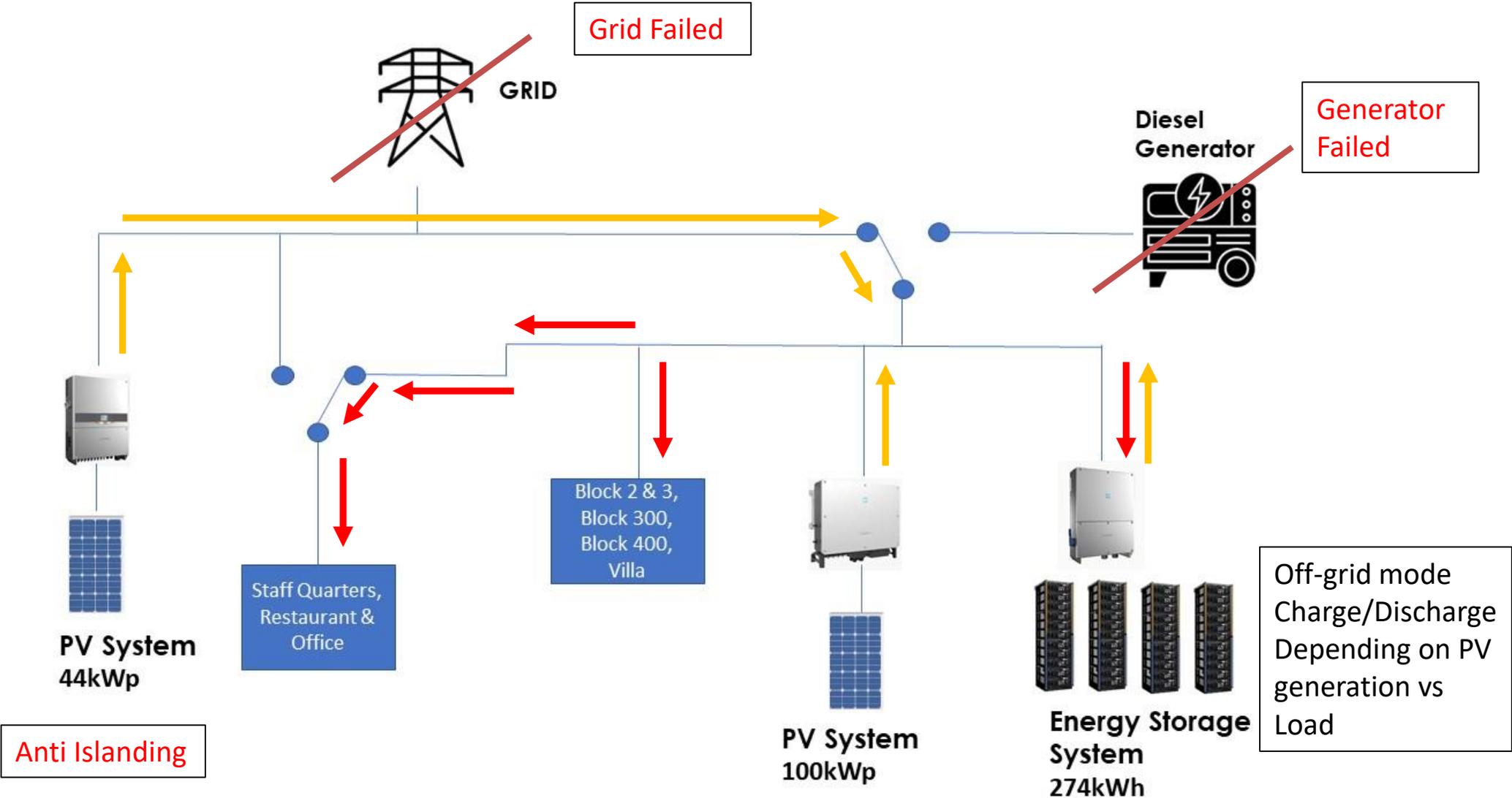
CONDITION 3

- Grid Failed (Blackout)

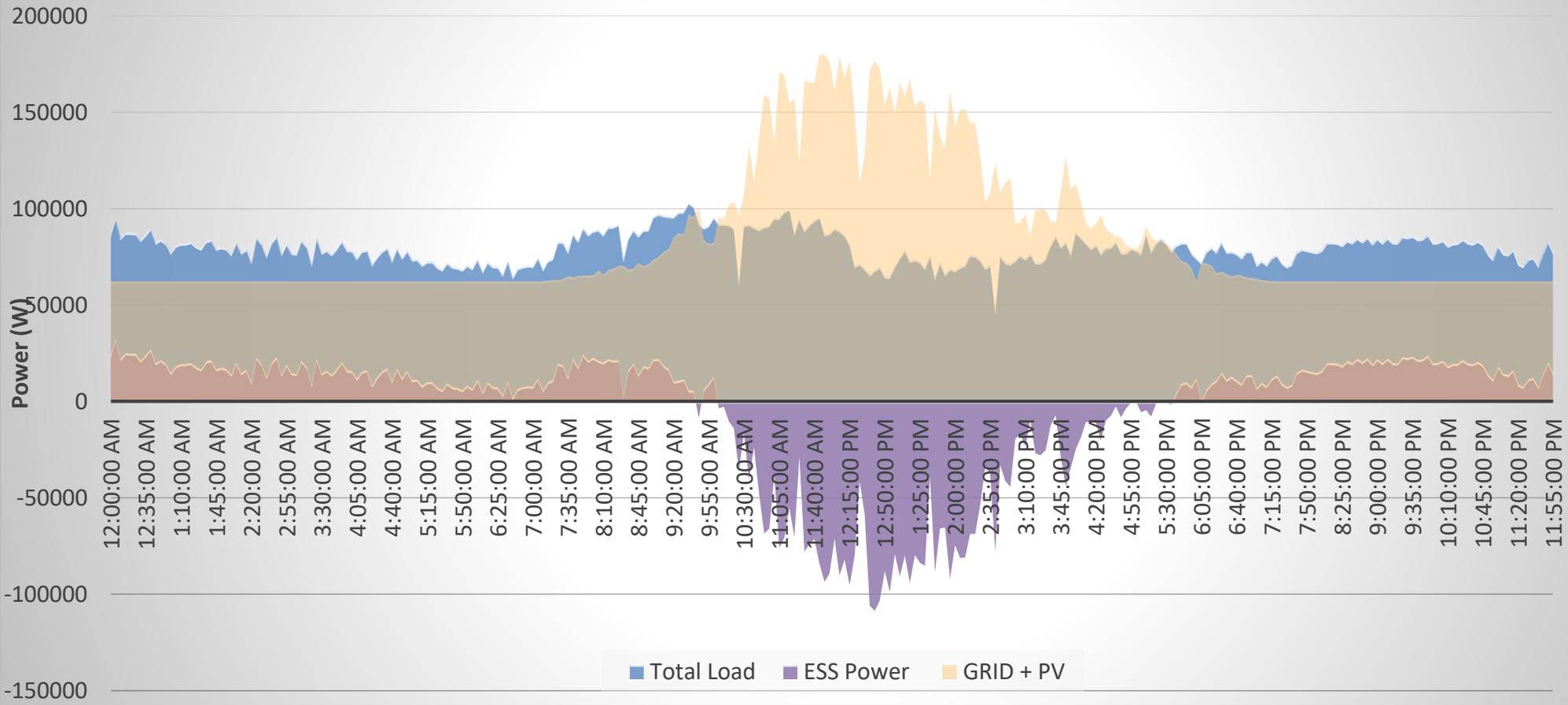


CONDITION 4

- Grid & Diesel Generator Failed



Power Curve



Expected Energy Penetration

- Up to 30% during peak season
- Up to 60% during low season

Way Forward / Challenge

- Hundreds of island resorts in South East Asia are without or with unstable utility grid
- Space constrain of resort
- Lack of encouragement on green initiative

THANK YOU

