



## **REAL ESTATE INFRASTRUCTURE | ENERGY BUILDING | GREEN TECHNOLOGY**

Produce your own electricity day and night

24 Hours Electricity from the Sun

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First and foremost, build an energy building which has two functions: to store energy and distribute power. Generate 24 hours electricity from the Sun, produce your own electricity. It should have the largest array of solar panels and is divided in three rooms: the control room, hydrogen room and battery room.

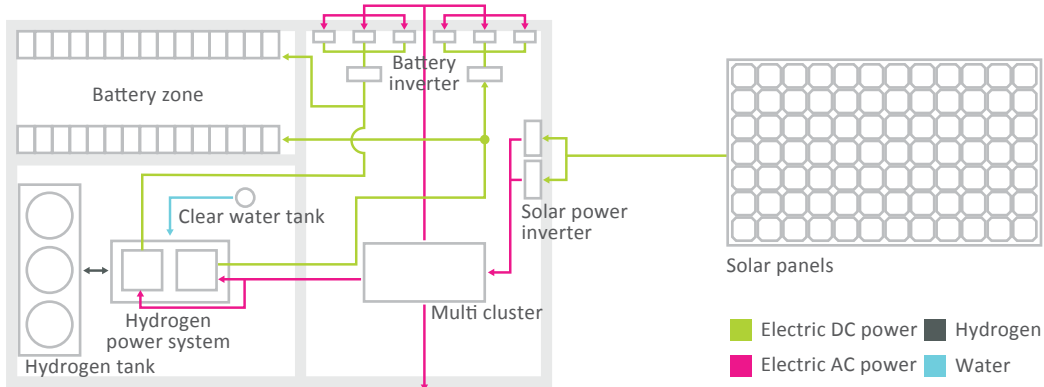
Excess power from the photovoltaic (semiconductor which converts light into electricity) is used to power electrolyzers that split water into its composite gases ( hydrogen and carbon ). The hydrogen gas is then stored in tanks. The energy storage is a hybrid battery-hydrogen system. The bulk of the nightly demand is covered by the fuel cells using hydrogen, while the batteries help cover short peaks in demand.

During the day, solar power is used to run a hydrogen electrolyzer to produce hydrogen and store it in tanks. The hydrogen is then used in a fuel cell to generate electricity once the sun goes down. The only by-products of this premier green technology are oxygen and water. The oxygen emitted from this system will help in become carbon negative much sooner. This scalable technology combines batteries with a self-recharging hydrogen energy storage system to maximise the advantages.

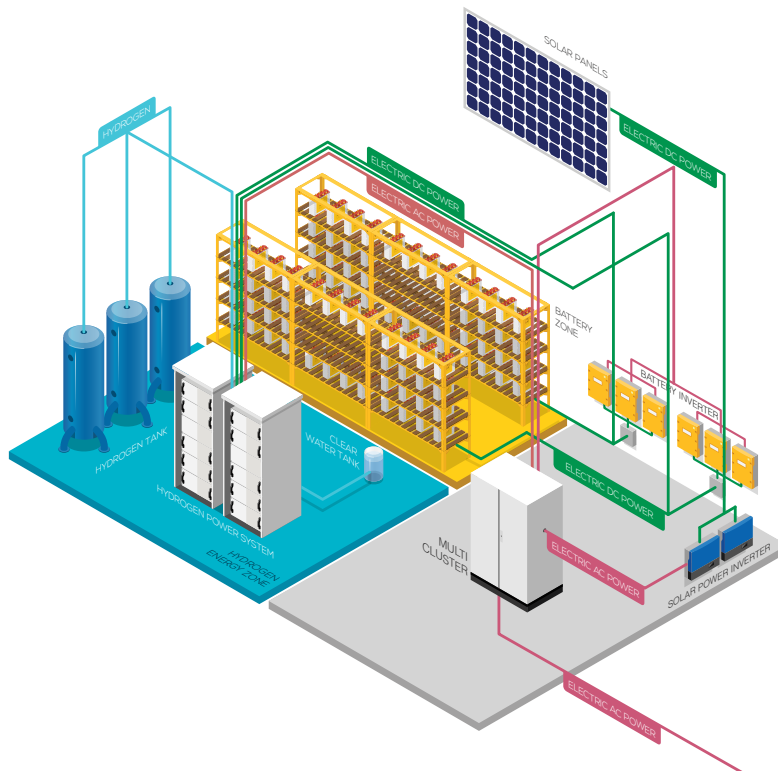
# ENERGY SYSTEM

## Solar Powered Hydrogen Storage System

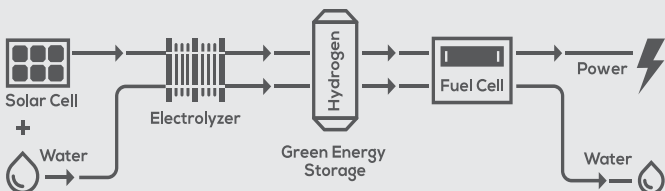
### PV POWER / HYDROGEN ENERGY STORAGE / BATTERY



PV installed:	86kW
Average daily power production:	326.8kWh
Phi Suesa House energy demand:	6000kWh monthly
Battery:	2x 2000Ah, 48V lead-acid battery banks
Hydrogen gas production rate:	max. 2000 litres/hour
Hydrogen storage capacity:	90,000 litres of H2 at 30 bar, equivalent to 130 kWh in the fuel cell



☀ DAY



🌙 NIGHT

#### Day Time

- The electricity that solar panels generate is direct current (DC power).
- Electrolyzer generates Hydrogen and Oxygen from water.
- We store Hydrogen in a tank but Oxygen gas goes in the air.

#### Night Time

- A solar inverter converts the electricity (DC power) from Hydrogen into alternating current (AC power) that can be used for your TV, computer, etc in your house.