

# Case study

## Residential Solar Hybrid Project

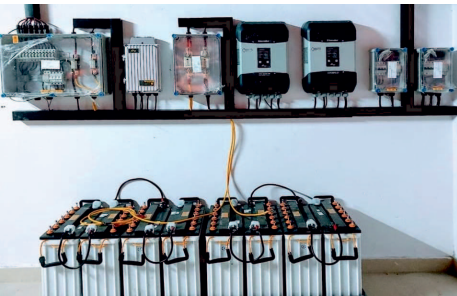
### Kochi - Kerala

### India



#### The challenge

Kerala is having wet and maritime tropical climate, influenced by the seasonal heavy rains brought up by the monsoon. Well known for its Lush greenery, during monsoon power outage due to tree falling is common in rural areas. In 2018, monsoon caused flood in



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most of the rural parts for more than 3 days.

It was during COVID lockdown in 2020, Mr. Aji Kumar an NRI contacted us to install a solar for home. His home is located in a beautiful village called Kalady Angamaly. Since he was back home and working – he wanted a project which guarantees continues power even in case of power failures for 3-4 days. Also when he is going back to UAE power generated must not go un-utilized. Another challenge was the roof itself, we have to install solar panels on Traditional Antique Kerala Clay tiles without disturbing or breaking it.

#### Why STUDER

High reliability, surge capacity and 10 years long warranty made us to choose STUDER for the project. Multi programmable functions, detailed plant performance monitoring was also utilized in the project.

#### System components

Solar Modules : 5kW REC Mono PERC - 395Wp  
INVERTER : STUDER XTM 4000-48V - 2 Nos  
Charge Controller : VT-80 - 1 Nos  
Remote Communication: XCom – LAN - 1 Nos  
DBL : ABB-80L - 3 Nos  
Batteries : EXIDE C10 – 200Ah - 8 Nos  
Racking – Engineered GI Structure

#### The Solution

Starting from the designing, our team of engineers did energy auditing at site. We figured the power usage at different time & surge. This residence was using 4 Air conditioners, powerful water pumping motors for irrigation, washing machine, refrigerators & Work Server. Since customer requirement of solution for power failure & solar power not getting wasted when no one at home cannot be met by OFF Grid and ON Grid, we recommended Hybrid Solar Solution.

We did project using high efficiency REC solar module 5kWp & Studer Inverter – 2nos to support load up to 6kW and surge load up to 12kVA. 200Ah battery 8 nos was used considering 50% Depth of discharge & autonomy for 1 day. Special structural designing was made for panel mounting on roof without disturbing the tiles.

#### Project outcome

Hybrid project is providing uninterrupted supply & excess power is exported to GRID. Customer is now working without any fear of power failures due to monsoon & happy that he can monitoring solar generation, usage and export . Even when there is fluctuation in grid voltage, Xtender is handling.

#### The Company

ILLUMINE ENERGY SOLUTIONS is a major EPC company in renewable energy category south India. With 10 years of industrial experience handling – On Grid, OFF Grid & Hybrid installations for Residential & Commercial sector in Kerala, Tamil Nadu and Karnataka.

#### For more information please contact:

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