FOURTH PARTNER ENERGY

HYUNDAI's COMMITMENT TO GREENING ITS INDIA FOOTPRINT

Case Study on Fourth Partner Energy's Rooftop Solar unit for Hyundai's Tamil Nadu Facility

HYUNDAI's 9.5 MWp ROOFTOP SOLAR UNIT

FOR ITS TAMILNADU MANUFACTURING FACILITY

This rooftop solar installation by Fourth Partner Energy spans across 5 sheds of Hyundai's Tamil Nadu manufacturing unit. The unique design was executed keeping in mind Hyundai's energy consumption and the company branding that already occupied roof space. The sheer scale and generation potential of a 9.5 MWp rooftop facility has helped Hyundai accelerate its Decarbonisation goals.

This project was implemented during the global COVID-19 pandemic - testament to 4PEL's ability to overcome challenges related to coordination, logistics, construction during the monsoon season and seamless integration with the plant's operations. Another feat was executing this project despite regulatory ambiguity on rooftop solar capacities above 1 MWp in Tamil Nadu.

Non-penetrative technology was used for mounting of modules and structures across all the sheds, which ensured that the Hyundai's roof was not punctured, preventing water leakage that could potentially damage the Client's production line and operations.

KEY HIGHLIGHTS
OF THE PROJECT

Project Capacity: **9,552 kWp**	CoD **17-June-2022**	Project Location **Chennai**
% of RE in Energy Mix **8%**	Type of Roof **Tin Shed**	Cost Savings **37% per unit**
~ 13,120 tons of reduced CO2 emissions	Annual Generation **~ 10 mn to 13 mn kWh**	

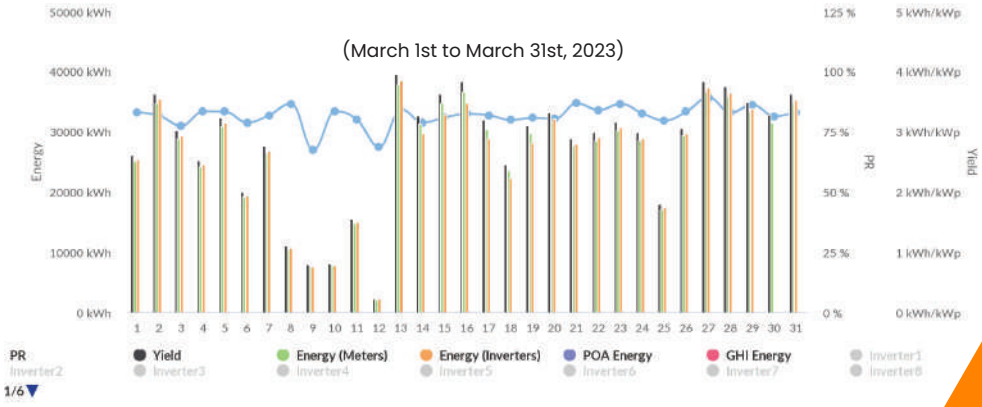
HYUNDAI's COMMITMENT
TO SUSTAINABILITY

Hyundai Motor India is the second-largest automaker in the country and is a wholly owned subsidiary of the Hyundai Motor Company headquartered in South Korea. Across geographies, Hyundai aims to achieve carbon neutrality by 2045 - by developing fuel cell vehicles, increasing EV production, investing in renewable energy, promoting sustainable mobility solutions, and reducing emissions in its supply chain.

This rooftop solar unit is one way in which the company has effectively cut down on its Carbon footprint, while saving on electricity costs.

Hyundai's Tamil Nadu facility saves ₹ **6.4 Crores** on its annual electricity bills via this Rooftop Solar unit

SOLAR GENERATION
DATA



Cost Savings
₹ 53,25,013

Avg Units/ Day
41,465

Avg PR/ Day:
77.76%

Capacity Utilization Factor
(CUF): 16.67%

ANNUAL ENVIRONMENTAL IMPACT

~ 13,120 tons of reduced CO2 emissions

~ 6,500 tons of other GHG emissions reduced

~ 30 million litres of Water conserved

equivalent to planting **~ 6 Lakh Trees**

4PEL's CUSTOMISED SOLUTIONS FOR HYUNDAI

01 Strategic Procurement: Solar modules contribute 50-60% to the project cost and purchasing them in earlier stages of execution would have tied up a significant amount of capital in inventory, leading to increased costs. By procuring them towards the end of the project, 4PEL was able to optimize cash flow and reduce inventory carrying costs.

02 Plant Efficiency and Value Engineering: The right materials were chosen to increase plant efficiency while being cost-effective, and its impact on plant generation from any design parameter variation was carefully evaluated. This approach helped to maximize the efficiency and generation capacity of the plant while minimizing costs.

03 **Timing:** The installation took place during the COVID-19 pandemic, which presented several challenges such as travel restrictions, workforce availability, and safety protocols. 4PEL adopted multiple protocols and measures to ensure the safety of its workforce and comply with the guidelines set by the local authorities. We also worked with our supply chain partners to ensure timely delivery of equipment and materials, despite the nationwide lockdown.

04 **Liasoning:** 4PEL faced liasoning issues during the installation, as Tamil Nadu did not have proper regulations for renewable energy (RE) capacities on rooftops of more than 1 MW. 4PEL worked closely with the local authorities to understand the regulatory requirements and obtain necessary approvals and permits. We also engaged with industry bodies to advocate for clearer regulations for renewable energy capacities on rooftops in Tamil Nadu.

05 **Integration with plant operations:** The integration of the solar installation with the operations of Hyundai's car manufacturing plant meant that the installation had to be carried out with minimal disruption to the plant's operations. As a result, the workforce was only able to work on the rooftop installations for 2-3 hours each day. 4PEL also adopted innovative solutions such as pre-fabrication of modules, which helped to speed up the installation process and minimize disruption to the plant's operations.

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