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CLEANSOLAR PROJECT

• TANDUR • TELANGANA

Size
7.5 MWp

EPC
Mahindra Susten

Developer
Cleansolar Renewable Energy Pvt Ltd (CREPL)

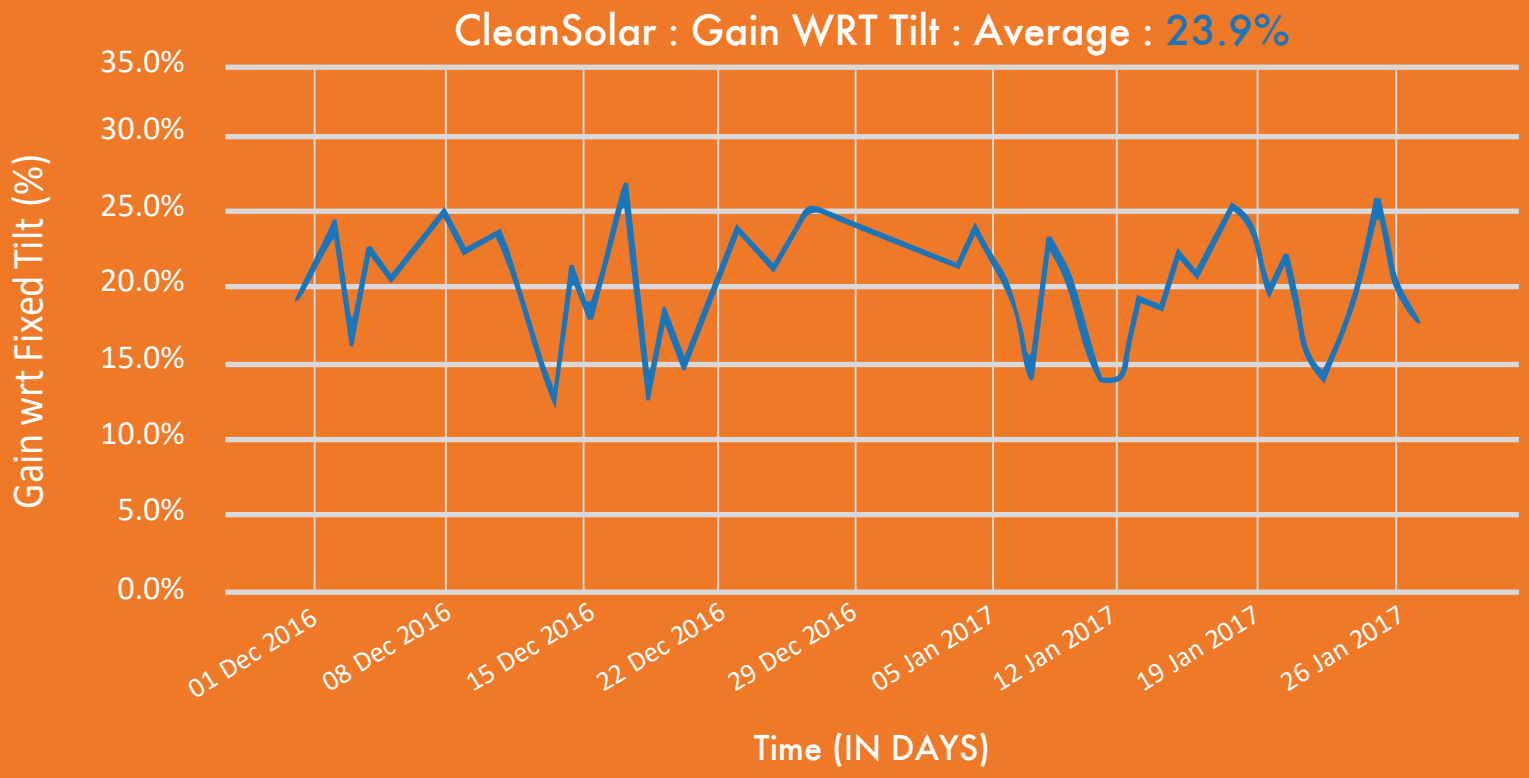
Tracker Rows
384

Project Highlights

Project Overview -

CleanSolar, 7.5MW, is one of the largest in-house Mahindra Susten Azimuth tracker (MSAT100™) Project, commissioned in 2016. Installed in Tandur, CleanSolar Project harvests the full potential of MSAT100™,by utilising Telangana's high irradiance. With use of MSAT100™, the project leveraged the slope tolerances and maximized cost savings.

- **100 % Plant Uptime**
- **Tracker POA ~6255Wh per sq. meter vs Fixed Tilt POA ~5818Wh per sq. meter**
- **Undulation Management with RCC & Piling**
- **Average tracker gain of 23.9%**



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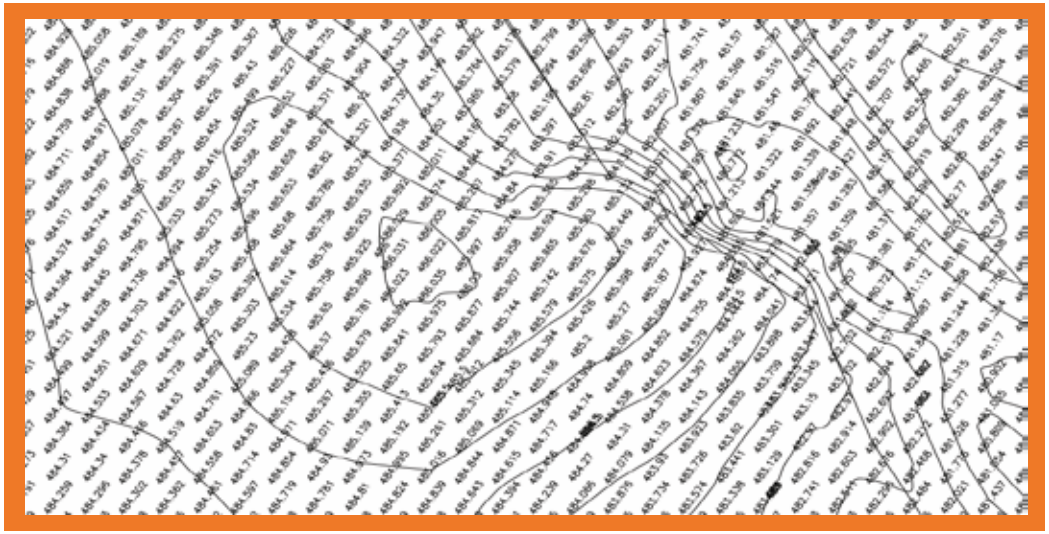
Challenges:

Tandur is the largest town in Vikarabad district of Telangana and the land is famous for its limestone. During the site survey, our design & engineering team observed that around 50% of the land had undulations of range 500-600mm and for 20% of the land, the undulations went upto even 1-1.5m. Susten had a staggered land with stringent project timelines And Amidst all these execution challenges, Mahindra Susten had to devise a solution with tracker which is not only feasible but also well-fortified.



Solution:

Stern timelines, rippling land and with highly swelling & shrinking type of soil, Cleansolar site indeed was an engineering epitome for Mahindra Susten. The engineering team analysed on various solutions but most of them were either disturbing the natural terrain or were extremely unattainable. The maximum foundation depth that Susten considers for a typical MSAT system is 1.5m (below ground) and stub length is 2.7m. As can be seen in the contour drawing, the land was extremely undulated, To overcome this, Susten did a combination of Posts embedded in RCC foundation and in Plain concrete foundation. A combination of varying platform through RCC & PCC foundations ensured that the top level of RCC and the platform height was a challenge too. The team developed a program to highlight exact details by superimposing contour on array layout itself, which was easy for the site execution team to understand. For instance, say, wherever, the undulations were around 500mm, the Muff of RCC foundation was raised to maintain the top of foundation same. This way the team managed ground level tolerances up to 1m, while moving away from the conventional way of tracker installations. The focus was to construct a workable solution to ensure timely completion of the project.

CleanSolar Project is a testament to engineering improvisation, skilful execution leading to effective deployment of tracking technology in a difficult terrain. The project sets a perfect example of Mahindra's **"Alternative thinking" and "Innovation".**

Benefits:

Amidst rigorous engineering and installation challenges, Cleansolar project has recorded an exceptional tracker gain of 23.9% and the plant is exhibiting 100% uptime.

Further impressing upon alternative thinking, Mahindra Susten has already come up with two more solutions on varying stub lengths and coupler design to address undulations. As it is said: **"Small Changes translate into Large Savings"**

For details, write to us at susten.products@mahindra.com