



VIBRANT ENEXCON

VIBRANT ENEXCON PVT LTD

Solar and Wind Project Developer

VIBRANT ENEXCON PVT LTD
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VIBRANT
ENEXCON



ABOUT COMPANY

VIBRANT ENEXCON PVT LTD has been a leading solar turnkey & wind project developer spare supply, wind repowering since 2012. We are devoted to offering our clients a superior range of services and increasing the efficiency of the renewable energy system. We assist our customer in providing the local body clearance, ROW, Land registering, licensing activities until commissioning and O&M for the complete life span of the project.

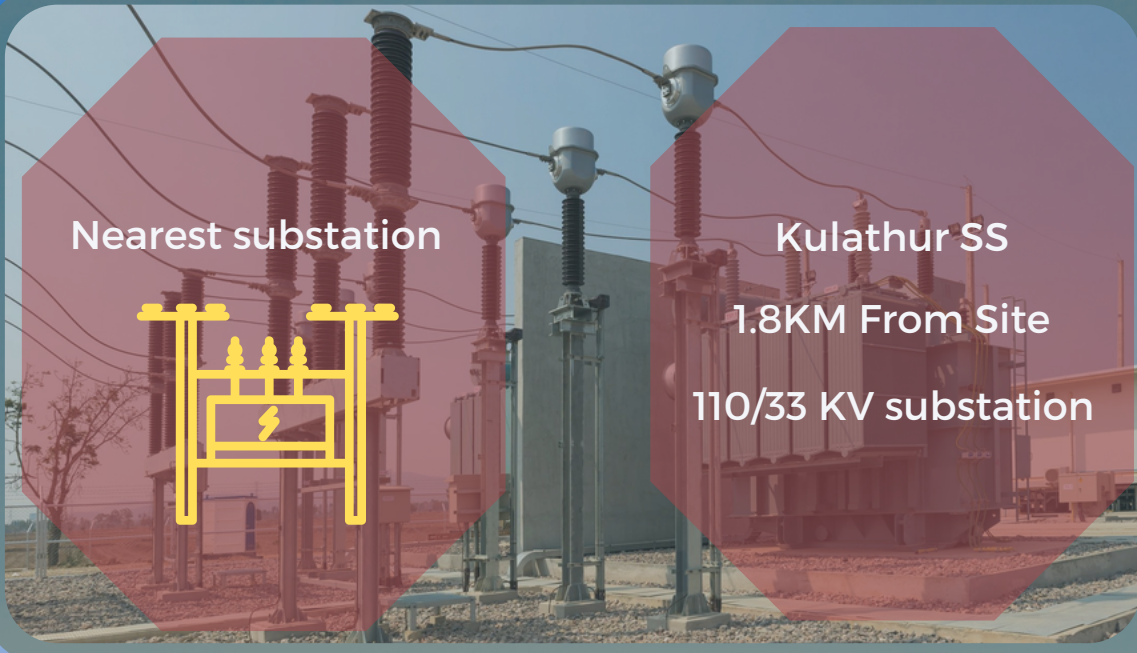


Mr. Nasheer (Chairman & Managing Director) has a handsome 28+ year experience in wind sector and he had executed major 25 MW + Solar Projects. In his own management he had executed more than 200 MW Wind Repowering projects



Mr. Alagu Shankar Narayanan (Managing Director) has excellent 24 + experience in renewable sector .He possess a high degree of knowledge in Project management , SCM functioning in Production and Project related material Purchase, planning, Costing, Vendor Development, Price negotiation

PROJECT HIGHLIGHTS



Nearest substation

Kulathur SS

1.8KM From Site

110/33 KV substation



Location

Kulathur
Tuticorin District



Line length

1.8 KM From
Substation



Nearest Highway

4KM From NH-32



Land area

52 Acres



Nearest Airport

Tuticorin Airport in 48 km



Soil type

Red Soil



Metrological data required for evaluation of solar PV power plant is as follows

Global Horizontal Irradiation

Global Horizontal Irradiation/Irradiance (GHI) is the sum of direct and diffuse radiation received on a horizontal plane. GHI is a reference radiation for the comparison of climatic zones; it is also essential parameter for calculation of radiation on a tilted plane

The following are the widely used and accepted solar radiation data source and PV System simulation report in the solar energy industry which is used in this project report

Metronome

Metronome is a unique combination of reliable data sources and sophisticated calculation tools. It provides access to typical years and historical time series. Metronome generates accurate and representative typical years for any place on Earth. You can choose from more than 30 different weather parameters. The database consists of more than 8 000 weather stations, five geostationary satellites and a globally calibrated aerosol climatology. On this basis, sophisticated interpolation models, based on more than 30 years of experience, provide results with high accuracy worldwide.

PVsyst7.0

PC software package for the study, sizing and data analysis of complete PV systems. It deals with grid-connected, stand-alone, pumping and DC-grid (public transportation) PV systems, and includes extensive Meteo and PV systems components databases, as well as general solar energy tools.

RADIATION DATA



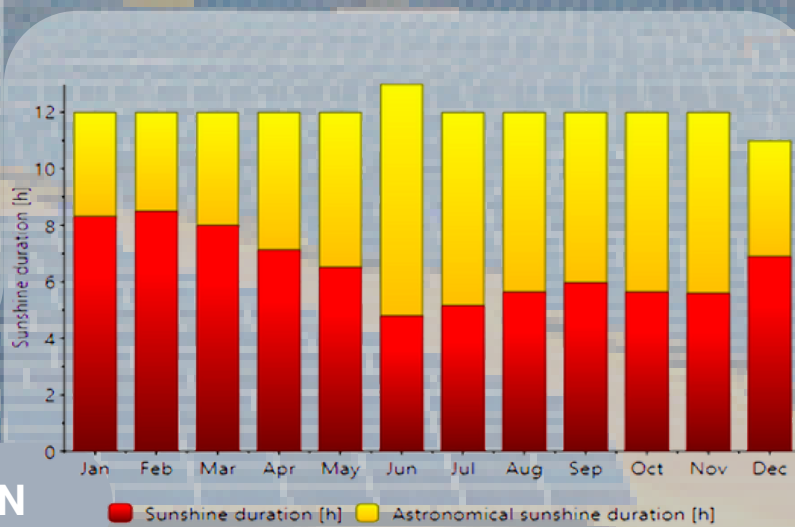
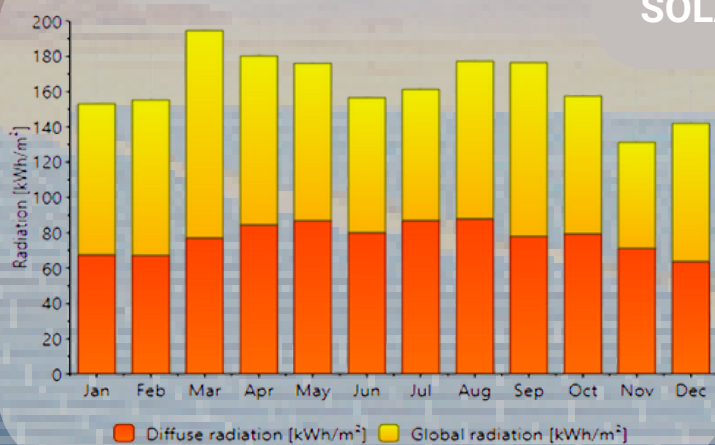
SITE & METEO DETAILS

Location coordinates	9.0245, 78.2085		
Ambient Temperature(0°C)	MAX	AVER	MIN
	34.6°C	28.7 °C	23.5°C
Relative humidity	66%		
Daily Solar irradiation Horizontal	5.53 kWh/M2/day		
Atmospheric Pressure	1012.2 mbar		
Highest Wind Speed	23.1 km/h		
Height from sea level	128 ft		
Design Wind Speed	200 km/hr		
Performance Ratio	80%		

Solar Irradiance

Solar irradiance is the power per unit area received from the Sun in the form of electromagnetic radiation as measured in the wavelength range of the measuring instrument. The solar irradiance is measured in watt per square metre (W/m²) in SI units. Solar irradiance is often integrated over a given time period in order to report the radiant energy emitted into the surrounding environment.

SOLAR IRRADIANCE



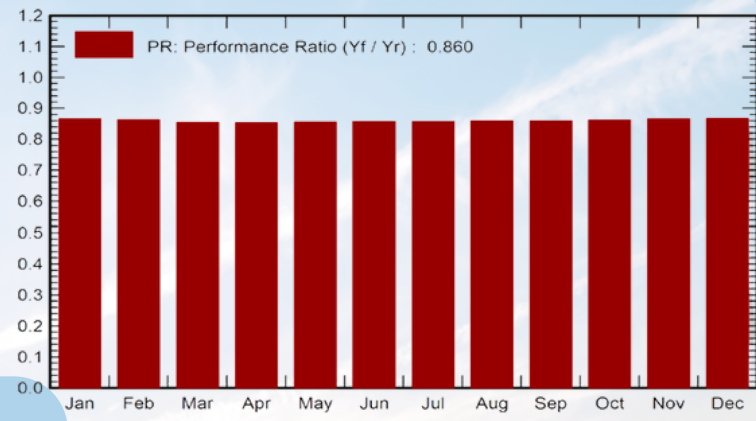
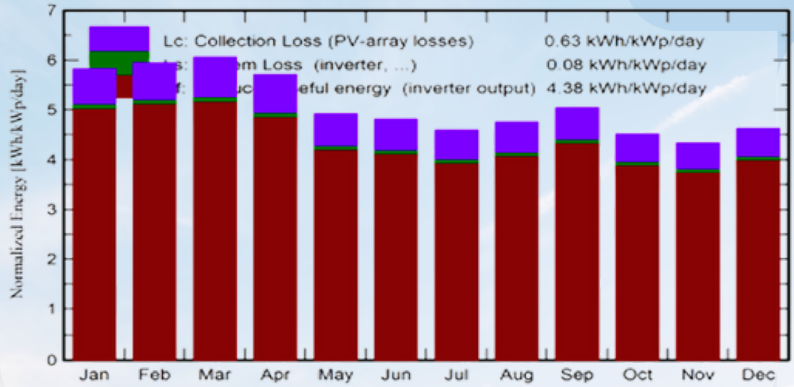
SUNSHINE DURATION

SITE SPECIFIC DATA



The Maximum Average 4.5 kw/hr will be generated during the month of MAR, which is highest nominal production.

NORMALIZED PRODUCTION



PERFORMANCE RATIO

The Average performance ratio is 80% for the whole year

MONTH	GlobHor kWh/m2	DiffHor kWh/m2	T_Amb	GlobInc kWh/m2	GlobEff kWh/m2	EArray MWh	E_Grid MWh	PR Ratio
JANUARY	161.1	72.11	26.72	180.5	177.0	189.0	185.7	0.866
FEBRUARY	155.3	74.18	27.59	166.5	163.3	173.6	170.7	0.863
MARCH	184.1	80.57	29.24	188.0	184.2	194.1	190.8	0.854
APRIL	176.6	86.02	30.11	171.2	167.5	176.7	173.6	0.853
MAY	163.7	92.67	30.50	152.6	148.6	158.0	155.2	0.856
JUNE	158.2	81.25	29.50	144.4	140.3	149.8	147.1	0.858
JULY	154.1	87.45	29.72	142.5	138.5	147.9	145.1	0.857
AUGUST	154.7	87.97	29.21	147.4	143.7	153.3	150.5	0.859
SEPTEMBER	151.9	83.07	28.69	151.4	147.8	157.5	154.7	0.860
OCTOBER	135.4	82.69	28.60	140.1	137.2	146.2	143.4	0.862
NOVEMBER	121.0	71.22	27.28	130.0	127.3	136.4	133.9	0.866
DECEMBER	128.9	67.25	26.99	143.3	140.4	150.3	147.5	0.867
YEAR	1845.0	966.45	28.69	1858.0	1815.6	1932.9	1898.1	0.860

GlobHor : Global horizontal irradiation
 DiffHor :Horizontal diffuse irradiation
 T_Amb :Ambient Temperature
 GlobInc :Global incident in coll. Plane

GlobEff :Effective Global, corr. for IAM and shadings
 EArray :Effective energy at the output of the array
 E_Grid :Energy injected into grid
 PR : Performance Ratio

GENERATION



SL.NO	DESCRIPTION	POWER GENERATION FOR A YEAR
1	Annual power generation -DC	15.98 Lakh /year
2	Annual power generation -AC	18.50 Lakh /year

NOTE :

- Solar radiation data is sourced from Meeonorm 7.3 and PVsyt 7.2
- This is the estimation only and generation depends upon actual radiation and temperature at site
- The details provided by considering evacuation at 110/33 kv Substation , 100 % site and grid availability to the plant side
- The generation is calculated considering no shadings objects near to the solar array causing any decrease in energy generation
- The generation is calculated considering no shadings objects near to the solar array causing any decrease in energy generation
- Generation and PR need to be corrected and factored as per the actual irradiation and temperature measured at site at actual for calculating the PR

SUPPLY EQUIPMENT LIST :

SNO	MATERIAL
1	Solar Mono-Perc Module 540 Wp
2	Inverter(central)
3	module mounting structure
4	DC Cables
5	AC Cables
6	SMB 13 in 1 Out - 1500 V Rated
7	Connectors
8	VCB/ICOG
9	Transformer
10	CT PT
11	Energy Meter
12	LT panel
13	Water softener, bore well
14	Lightening Arrestor
15	Civil Foundation work

SCOPE OF WORK




INSTALLATION :

- Module mounting structure installation
- Module installation
- DC electrical Installation
- AC electrical Installation
- Boundary fencing
- RCC Building – office/MCR room
- Internet connection during operation
- security during construction
- security during operation
- Insurance during construction
- Insurance during operation
- Access road to inverter room
- Operation & Maintenance
- Installation for metering point double pole structure
- Transmission line for park capacity
- ROW /land survey for transmission line erection (for park capacity)
- Erection of module cleaning system with pipe line and RO plant (For park capacity)
- Erection of street light
- Design & Build
- Natural calamities Insurance
- Commissioning of project


OTHER INFRA & CONSENTS :


- Land ,Land related approvals
- TANGEDCO approval for plant charging
- Land levelling & other land related development activities
- Any existing line crossing & DCW works inside the land
- CEIG approval for plant charging
- SLDC real time data communication charges (from 2 nd year onwards)
- Refundable security deposit @ 10 Lacs Per MW
- Non-Refundable JLDC Charges to TANGGEDCO
- C-License holder for CEIG In spection
- Load flow security deposit
- Local Body clearance approval for establishment of PV solar plant


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