

**Annexure 16: Supporting related to
Solar Rooftop System**

Brighten Your Life With Solar.



HINDUSTAN SOLAR



HBCTC is an entrepreneurial renewable energy startup that is set to revolutionize the solar ecosystem, predominantly in the Kokan region of Maharashtra, India.

The professional expertise of the founder at HBCTC in power and energy sector for the past 13 years has helped them understand the energy crisis the world is going to face and ignite a spark to nurture the very simplest form of energy - **SUN**.

HBCTC aims to provide customizable appropriate solar powered systems to residential, commercial and industrial users

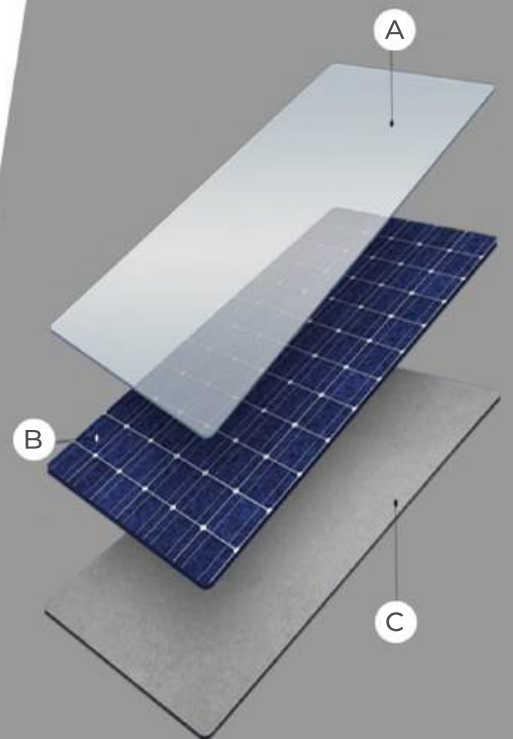
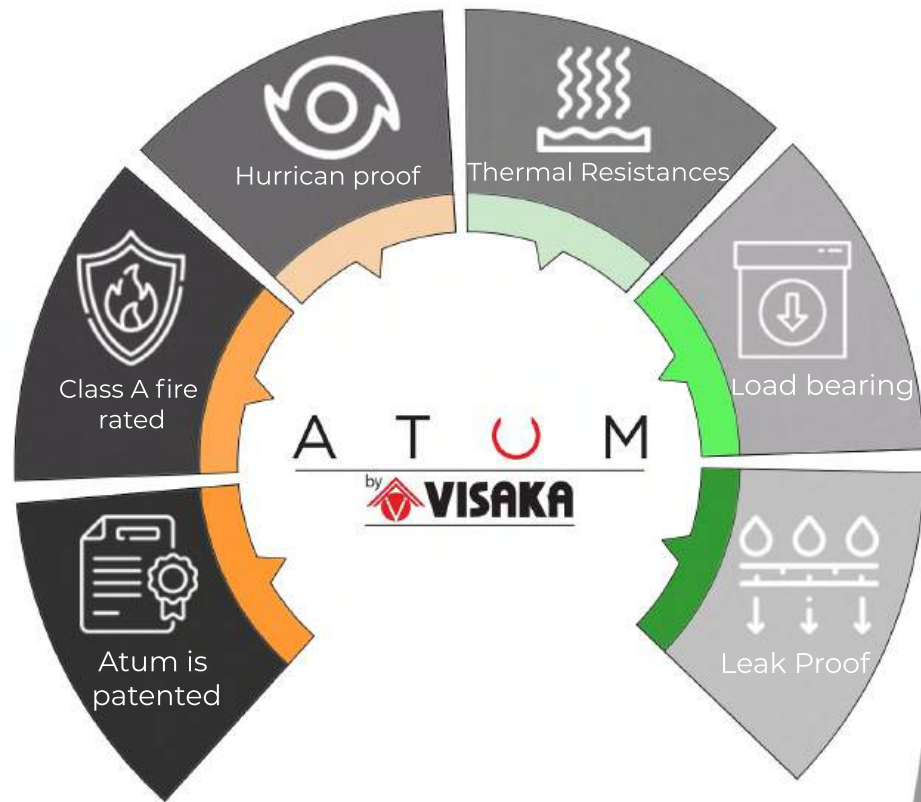
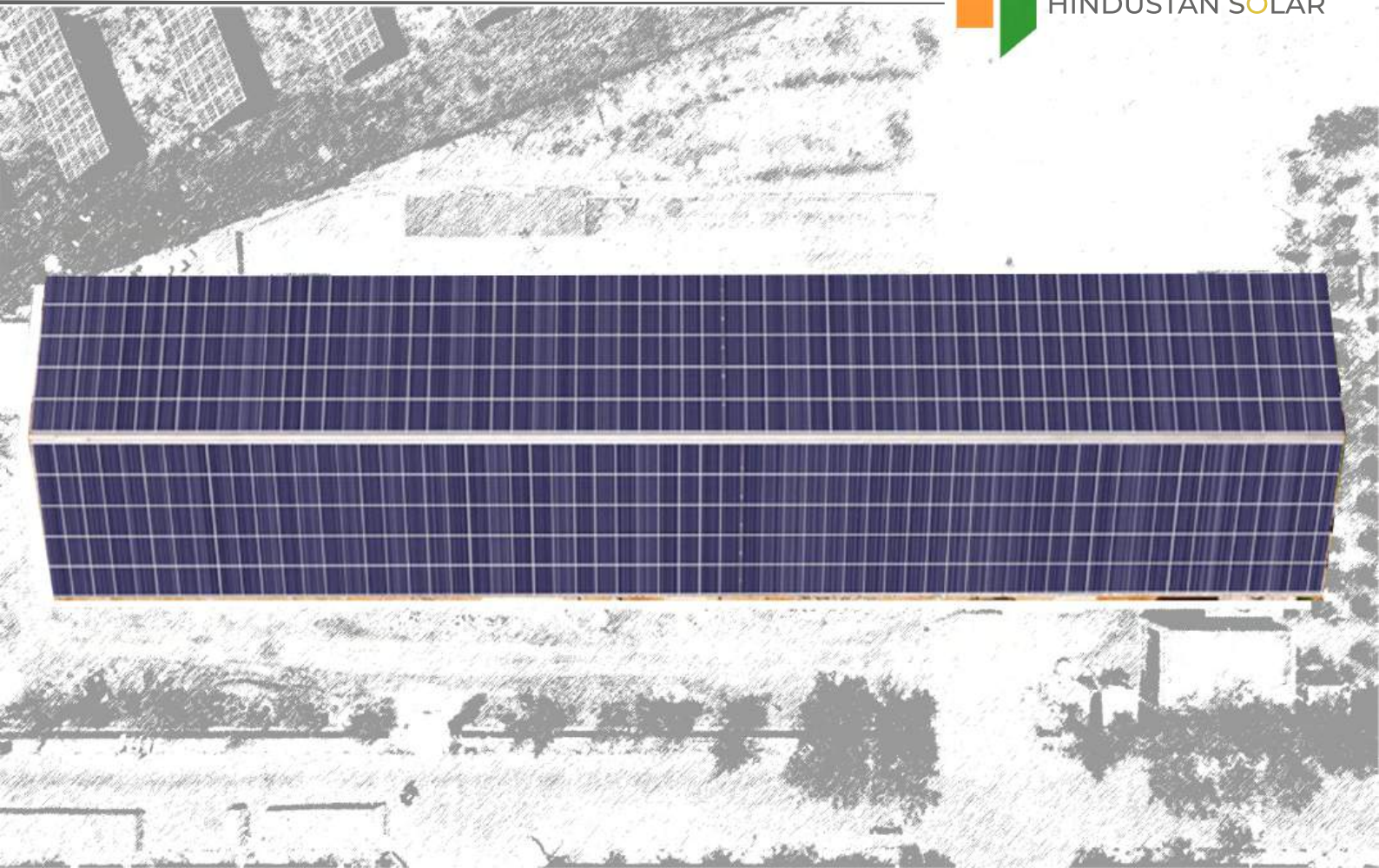
A strong promoter of the **MAKE in INDIA** initiative, HBCTC in collaboration with **Atum Solar** provides state of art Solar Roofing solutions equipped with powerful Inverter systems from brands such as **Evvo Solar**.

MAKE
IN
INDIA



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HINDUSTAN SOLAR



A-3.2 MM Toughen Glass
B-Energy Generating PV Module
C-10 mm SC Board

COLLABORATION WITH ATUM



Customer Project Details

Customer Enquiry No	C00202
Customer Enquiry Date	6-May-2023
Name	M/s JAYGAD POWER TRANSCO LIMITED
Address	112/c/10 mirjoli CHIPLUN RATNAGIRI
Mobile No	9011072816
Email Id	
Distance From Ratnagiri City in Km	100
Project Type	Commercial
Consumer No	220412003411
Existing Sanction Load kW	2.78
Required Sanction Load kW	15

Consumption Details

Particulars	Value
Average units/Months (As per last 12 Months bills)	500
Required Solar capacity	4.17
Less - Average consumption between 18.00 To 22.00 Hrs as per latest bill	0
Daytime Units/ Month	500
Average units per day for Solar Generation	17
Estimated Solar Plant Capacity to offset Daytime Consumption	5.0
Proposed Solar plant capacity	15



Tariff & ROI Details

Tariff Details	Per Unit Rate
Monthly Billing Units	1,148
Fixed Charges/ Demand Charges	427
Energy Charges	8,116
Wheeling Charges	1,550
TOD Tariff Charges	0
F.A.C Fuel Adjustment Charges	1,607
Electricity Duty (16%)	2,457
Tax On Sale	207
Current Interest	0
Other Charges	0
Bill Amount	13,937
Per Unit Charges (Excluding Fixed Charges)	12.14

Estimated ROI Details	Months
Estimated Cost per Rs/ Kw (Subsidy Included for Residential only)	57,000
Estimated Project Cost	855,000
Estimated project Cost after NRTP Subsidy	855,000
Average Solar Generation Per Month	1,800
Solar Generation Amount (Avg Generation X Last Bill Per unit Amount)	21,853
Direct Payback in Months	39.00
Depreciation @40% of Project cost (Applicable For ITR Client)	342,000
Indirect benefit of depreciation in Income Tax	102,600
Payback in Months (Direct & Indirect)	34.00



Quotation

Quotation No. :	HBCTC/22-23/QUO/C00202		
Phase	TP	TP	TP
Required System Load kW	15.0	15.0	15.0
Type of Solar System	Waree/Vikram	Pahal/ Polycab	ATUM
Solar PV Modules	Grade 1	Grade 2	ATUM
Solar PV Modules Wattage	Poly 325-350 Wp	Poly 325-350 Wp	Poly 375 Wp
Inverter Type	Ongrid Inverter	Ongrid Inverter	Ongrid Inverter
Inverter Make	Growatt / Evvo	Growatt / Evvo	Growatt / Evvo
Rate ₹ Per KW	₹61,000	₹57,000	₹75,000
Total System Cost Rs.	₹915,000	₹855,000	₹1,125,000
Net Cost Rs.	₹915,000	₹855,000	₹1,125,000



HBCTC ORGANIZATION DETAILS

- NAME : HINDUSTAN BLUE COAST TRADING CO. (HINDUSTAN SOLAR)
- ADDRESS: 1024, GREEN HOUSE, KARWANCHI WADI
RATNAGIRI - 415612
- CONTACT DETAILS : 7720073000
- EMAIL: vasimnaik@hbctcsolar.in
- COMPANY GST : 27AHNPN2699C1ZY
- COMPANY UDYAM REGISTRATION : UDYAM-MH-28-0003819
- HBCTC BANK DETAILS
- Bank Name: State Bank of India,
- Salvi Stop Branch Ratnagiri,
- Account Name : Hindustan Blue Coast Trading Co.
- **Account No: 39902181960.**
- Account Type: Current Account,
- **IFSC Code: SBIN0010182**

PAYMENT TERMS

- a) 60% immediately site confirmation
- b) 30% After material mobilization at site
- c) 10% After System Installation.

OTHER TERMS

- Accessories quantities are calculated based on experience, may vary based on site conditions
- Warranty As per Manufacturer terms & Conditions.
- Offer Validity : 7 Days from the date of Quotation.
- Delivery : Within 7 working days after receipt of payment and MSEDCL Permission



CLIENT SCOPE

- Construction Power & Water
- Storage for Material
- Shadow Free Roof Area
- Any change in scope & quantity, additional cost will be in client scope
- Fabrication Material & fabrication Charges
- Civil work other than earthing pits.

HBCTC SCOPE

- Solar PV Modules as per Gov. approved (ALMM & DCR List).
- Inverter BIS Approved 7/10 years warranty (extended warranty available at extra cost).
- DC System & AC Distribution Box as per standard
- Cable Trays (If required)
- Earthing Pits with Earth Kit & Earthing Conductors
- DC Cables (Copper) & AC Wires Aluminum/Copper
- Standard MC4 Connector
- Lightning Arrester With Conductor & Chemical Earthing
- Conduit PVC Pipes with U clip Fitting
- Accessories, Lugs, Cable Ties, Other Consumable, Etc.
- Transport, Lifting, Installation, Labor And Material Handling
- Net & Generation Meter Testing including testing charges (Secure/ L&T Make)
- Module, Inverter, Meter & System Installation
- 20 Years Agreement With Msedcl on Legal Bond
- Work Completion, Testing, Release And Commissioning of System
- 5 Years free service as per Gov. Norms (Applicable for Residential Client Only)

Point to be Noted

- Government Subsidy If Applicable will Be Directly Deposited In Client Account.
- Aluminum Rail Structure for Tinted Shed Roofing @ 2 Rs per watt Approx.
- Pre GI Structure for terrace Mount Cost @ 5 Rs Per Watt Approx.
- HDGI Structure for Terrace Mount cost @ 7/- Rs per watt Approx.
- Structure Costing not considered in above quote, Same will be charged extra at actual, depending upon the site conditions & choice of the customer.
- Earthing Pit covers if required will be charged extra.
- Final quotation will be provided after site visit.
- Load Extension if any will be charged extra on actual basis.



Bill of quantities:

Description	Make	Quantity
Solar PV Module	Waaree/ Pahal/ Polycab 25 Years warranty	28/40 Nos
Solar String Inverter	Growatt (7 years) OR EVVO (10 years) Warranty	01 Nos
DC Cables	Polycab/ Microtek 4/6 Sq.mm Copper	20 Mtr
AC Cable	Polycab/ Microtek 4/6 Sq.mm Aluminum (Copper Cable at Extra cost)	20 Mtr
Net Energy Meter	Secure/ L&T Make Single/Three Phase	01 Nos
Generation Energy Meter	Secure/ L&T Make Single/Three Phase	01 Nos
Net & Generation Meter Testing Fees	All Inclusive	02 Nos
Application Fees	All Inclusive	01 Nos
Earthing Rods	Copper Bonded Earthing Rods 2 Nos(01 meter)	02 Nos
Lightning Arrester	Conventional copper LA with 16 sq mm Aluminum down Conductor, Chemical earthing 01 Meter for LA (Polycab Conduit PVC Pipe Included)	01 Nos
Chemical Compound	Chemical Compound Bags 15KG	03 nos
Earthing Cables	Structure, DC & AC Earthing Copper Cables, 4/6 Sqmm (polycab Conduit PVC Pipe Included)	20 Mtr
ACDB Panel	Polycab / SPD Finder	01 Nos
DCDB Panel	Polycab / SPD Finder	01 Nos
MCB	Polycab OR Equivalent	01 Nos
RCCB	Polycab OR Equivalent	01 Nos
Transportation	All Inclusive	-
Taxes	All Inclusive	-
MSEDCL Liasioning	All Inclusive	-
Fabrication & Structure	In client Scope (MS/ GI/ HDGI)	-

- **Extra charges applicable if material consumed other than mentioned BOQ.**



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HINDUSTAN SOLAR

Our U.S.P



We Assist You With
Rooftop **Solar Subsidy**
by
Central Government

5 Years
Hassle
Free Service

Easy
EMI Available
With



State Bank of India

5 Years of EMI
&
20 Years
Free Electricity

HBCTC Empaneled with MAHADISCOM



Industrial



Residential



Portable shed



Commercial

Contact us

7820882265 / 9423297595

hindustanbluecoast@gmail.com

Ratnagiri, Maharashtra

M/s JAYGAD POWER TRANSCO LIMITED

15.12 kWp

GFMM+84J, Kaluste, Maharashtra

415605, India

(17.54000 , 73.49000)

[Click here for 3D Model](#)



Company Overview

HBCTC is an entrepreneurial renewable energy startup that is set to revolutionize the solar ecosystem, predominantly in the Kokan region of Maharashtra, India.

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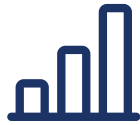
System Metrics



Annual Production

22.41

x 1000 kWh (Units)



Performance Ratio

76.52%



Specific Generation

1,481.8

kWh/kWp/year

Module DC Nameplate

15.12 kWp

AC Nameplate

15 kW

Load Ratio

1.01

Weather Dataset

Meteonorm

Components

Your installation uses latest technology in solar



Modules

Waaree Arka Series WSMD-515 to 545 WSMD-540 - **28 No.**



Inverters

MAC15KTL3-XL Growatt - **1 No.**



Structure

Premium Structure

Expected Annual Production

During the first year of operations, your system is expected to produce 22.41 x 1000 kWh over the year

Expected average generation of the system
1,867.12 kWh/month

Yearly degradation rate
1.5%/year

kWh (Units)



Monthly Table

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Months	Direct Irradiance (kWh/m2)	Diffused Irradiance (kWh/m2)	Effective Irradiance (kWh/m2)	DC Energy (kWh)	AC Energy (kWh)	Specific Generation	Performance Ratio
January	156.39	46.77	174.29	2,150.35	2,043.69	135.16	77.55
February	158.89	52.81	174.17	2,132.82	2,027.03	134.06	76.97
March	195.3	72.49	205.96	2,494.65	2,370.91	156.81	76.14
April	199.16	82.86	204.56	2,457.73	2,335.82	154.49	75.52
May	203.73	88.86	208.96	2,505.2	2,380.94	157.47	75.36
June	124.31	84.18	125.99	1,529.1	1,453.26	96.12	76.29
July	101.74	75.29	101.32	1,237.31	1,175.94	77.77	76.76
August	117.68	83.06	120.34	1,465.71	1,393.01	92.13	76.56
September	131.12	83.24	134.11	1,629.53	1,548.7	102.43	76.38
October	148.54	76.59	156.65	1,901.26	1,806.95	119.51	76.29
November	145.79	58.26	162.05	1,983.05	1,884.69	124.65	76.92
December	142.9	50.62	169.3	2,088.07	1,984.5	131.25	77.53
Annual	1,825.55	855.03	1,937.7	23,574.76	22,405.44	1,481.85	76.52

Client: Mr. Vaibhav Sansare

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Field Segments

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Name	Orientation	Tilt	Azimuth	Row Spacing	Frame Size	Modules	Power
Subarray #1	Portrait	7 °	192 °	5 ft 2.13 in	4x7	28	15.12 kWp



Shading Analysis

June 21 | 9:00:00 AM



June 21 | 4:00:00 PM



Shading Analysis

December 21 | 9:00:00 AM



December 21 | 4:00:00 PM



Conclusion: Panels are shadow free for 100% of solar time throughout the year.

Irradiance Map



Solar Access



System Production Losses

Loss in generation predicted due to environmental and electrical factors



Environmental Impact

You are contributing to solve Earth's biggest problem - Climate Change.



Carbon Dioxide Offset

332.3

metric tons

Equivalent Acres of Forest

390.11

acres/year

Coal Burn Avoided

164.8

metric tons

Equivalent Number of Trees Planted

5,499 trees

Petrol Consumption Avoided

141,728.77 litres

Equivalent Kilometers Driven

1,306,619.83 kms

Thank You



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