

Dr. B.C. Roy Engineering College

Ref.BCR/PR/ /2018

Date: 07/02/2018

Notice

Having solar panels installed in the college or home can significantly help on saving on energy. Installing solar panels to produce electricity is a wise investment that surely reduces electricity bills. With the above objective in mind, the authorities of Dr. B. C. Roy Engineering College, Durgapur, have installed **Solar Panels** on the roof of Vidyasagar Bhawan (exclusively used for 1st year students) and started utilization of the above facility in the college campus.

It has been observed by the authorities of the College that certain percentage of annual power requirement of the college can be met by renewable sources of energy.

The first phase of such installation will definitely increase consciousness about energy conservation and it is expected that successful implementation of the same in one building will help the college to widen the installation gradually in other areas of the college.



Prof. (Dr.) Pijush Pal Roy
Director
Dr. B.C.Roy Engineering College

Copy to : General Secretary...for kind information
All HODs / Incharges
Registrar/Head-Admn./Campus Administrator
Sr. Manager (Admn.)/Sr. Manager (Finance)
Manager (Corp.Affairs & Estate)

All Hostels



Dr. B. C. Roy Engineering College, Durgapur
 Campus : Jemua Road, Fuljhore,
 Durgapur - 713206. West Bengal, India.
 Phone : (0343) 250 1353/4106/4121; Fax : (0343) 250 4059/3424
 E-mail : info@bcrec.ac.in; Web : www.bcrec.ac.in

Order No. :
 BCR/E&S/A/19-20/70

Dated :
 17.12.2019

Quotation No. :
 APS/2019-20/590

Dated : 13/12/2019

Vendor's Details :
 APARAJITA SOLAR,
 2/175 Sree Colony, Opp: Regent Estate Post Office,
 Kolkata - 700092

Contact Person :

Mobile No.
 7980629467/9831514033

GST No.
 AIIPC6444L

PAN No.
 AIIPC6444L

Subjects :
 FOR ROOF TOP OF VIDYASAGAR
 BHAWAN

All disputes and arbitrations are subject to Durgapur Jurisdiction only.

Sl No.	Item Description	Unit	Qty.	Rate	Disc. %	GST %	Amount
1	30 KWP ON-GRID SOLAR POWER PLANT WITH 30KVA-SUPPORTING STRING INVERTER(ABB-MAKE)WITH 30 KW POLY-CRYSTALLINE PANELS(ADANI-MAKE) WITH SUPPORTING GI STRUCTURE COMPLETE ACCESSORIES AS PER SITE (AS PER YOUR QUOTATION NO.APS/2019-20/590 REVISED ON DT.13/12/2019) . CIVIL WORK WITH MATERIAL.	LS	1	11,84,814.29		5	12,44,055.00
2	INSTALLATION AND COMMISSIONING CHARGES.	LS	1	60,000.00		18	70,800.00

TERMS & CONDITIONS:
 DELIVERY: WITHIN 20 DAYS AFTER CONFIRMATION OF ORDER.
 PAYMENT: 50% ADVANCE AGAINST ORDER.
 40% DURING MATERIALS DESPATCHED.
 10% AGAINST SITE HANDOVER.

SPECIFICATION DETAILS ON BACK SIDE

Gross Amount 13,14,855.00
 Rounding off (-) 0.00
 Nett Amount 13,14,855.00

(Rupees Thirteen Lakh Forteen Thousand Eight Hundred Fifty Five Only)

SUMMERY	
Description	Amount
Gross Amount	12,44,814.29
Discount	0.00
Output CGST	35,020.36
Output SGST	35,020.36
Rounding off	(-) 0.00
Nett Amount	13,14,855.00

For Dr. B. C. Roy Engineering College, Durgapur

(Signature)
 Authorised Signatory
 Jemai Singh
 Treasurer
 Dr. B. C. Roy Engineering College
 Durgapur
 Signature of Receiver's

SPECIFICATIONS

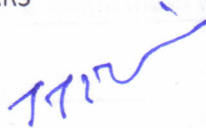
Order No. : BCR/E&S/A/19-20/70

Dated : 17th December, 2019

1. CAPACITY ;
2. Material
3. Structure
4. / LIFE (WARRANTY)

5. AREA REQUIRED:
6. INVERTER:
7. CABLES:
8. JUNCTION BOX:
9. ANN

325-335 Wp Total 30KWp
Polycrystalline (Adani)
GI Structure
25 YR (SOLAR PANEL) WITH 80%
EFFUCUEBCTM 5 YR (INVERTER)
3000 SQ.FT
ABB MAKE
POLYCAB -DC(CU)
IP-65 ENCLOSURE GASPE BOX
5 YEARS



For and on the behalf of
Dr. B. C. Roy Engineering College, Durgapur

Jernall Singh
Treasurer
Dr. B. C. Roy Engineering College
Durgapur

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Aparajita Solar

A House of Complete Solar Solution



Client Name	Dr.B.C. Roy Engineering College
Address	Fuljhore, Durgapur, W.B
Subject	30 KWp On-Grid Solar Power Plant
Date	09-Nov'19 (Revised on 13-Dec19)
SL No.	APS/2019-20/590



Introduction:-

APARAJITA SOLAR is a Kolkata based Rooftop Solar Installation organization in West Bengal (India). We design, supply and install 1KW to 500KW Rooftop Off-Grid, On-Grid, and Hybrid Solar Power Plants for Home, Business, School, Colleges, Institutes and Industries. We provide free of cost solar consultancy and design solar structure as per site requirements in all major cities of West Bengal and India.

Nowadays, enterprises are facing rising costs of electricity. But, today there is a solution – and that is nothing but rooftop solar. Our rooftop solar power systems have enabled SMEs across West Bengal to dramatically reduce their electricity bill. Commercial and industrial customers can expect a payback in just 3 to 4 years. Once paid off, electricity from solar is effectively free going forward.

We look forward for your long lasting Business relationship and we are committed to deliver high quality service & standards to our clients.

Vision:-

- ❖ Strive to build the world's best solar power plants in terms of quality, price, and performance.
- ❖ Aggressively capitalize on the emerging Grid and Off-Grid opportunities.
- ❖ Create job opportunities through engaging unemployed resources by spreading knowledge about Solar Energy.

Mission:-

- ✚ We will translate our advanced technologies into value for our customers.
- ✚ We will ensure that our comprehensive business solutions will spearhead the renewable energy movement for a cleaner and greener environment globally.



Our Products:-

Our prime range of Products include Solar lanterns, solar home lighting systems, solar street lighting systems, solar water heater systems, to name a few. We are equipped with sophisticated technologies with an upcoming, encouraging and enthusiastic youth team, super infrastructural facilities, modernized machines followed by superior quality testing procedures by Government approved test laboratories.

Authorized Dealers :-



Authorized Channel Partner :-





Why Solar?

While a majority of the world's current electricity supply is generated from fossil fuels such as coal, oil and natural gas, these traditional energy sources face a number of challenges including rising prices, security concerns over dependence on imports from a limited number of countries which have significant fossil fuel supplies, and growing environmental concerns over the climate change risks associated with power generation using fossil fuels. As a result of these and other challenges facing traditional energy sources, governments, businesses and consumers are increasingly supporting the development of alternative energy sources and new technologies for electricity generation. Renewable energy sources such as solar, biomass, geothermal, hydroelectric and wind power generation have emerged as potential alternatives which address some of these concerns. As opposed to fossil fuels, which draw on finite resources that may eventually become too expensive to retrieve, renewable energy sources are generally unlimited in availability. Solar power generation has emerged as one of the most rapidly growing renewable sources of electricity. Solar power generation has several advantages over other forms of electricity generation: Reduced Dependence on Fossil Fuels. Solar energy production does not require fossil fuels and is therefore less dependent on this limited and expensive natural resource Environmental Advantages. Solar power production generates electricity with a limited impact on the environment as compared to other forms of electricity production. Matching Peak Time Output with Peak Time Demand. Solar energy can effectively supplement electricity supply from an electricity transmission grid, such as when electricity demand peaks in the summer Modularity and Scalability. As the size and generating capacity of a solar system are a function of the number of solar modules installed, applications of solar technology are readily scalable and versatile.



System Configuration:-

Basic components for grid connected system

- ❖ Solar PV module
- ❖ DC Cable & AC Cable
- ❖ GI Structures
- ❖ Grid- Tie Inverter
- ❖ Lightning Arrestor
- ❖ Earthing
- ❖ GI Earthing Strip

Technical Description:-

Solar energy is important for many reasons and has great positive impact on environment.

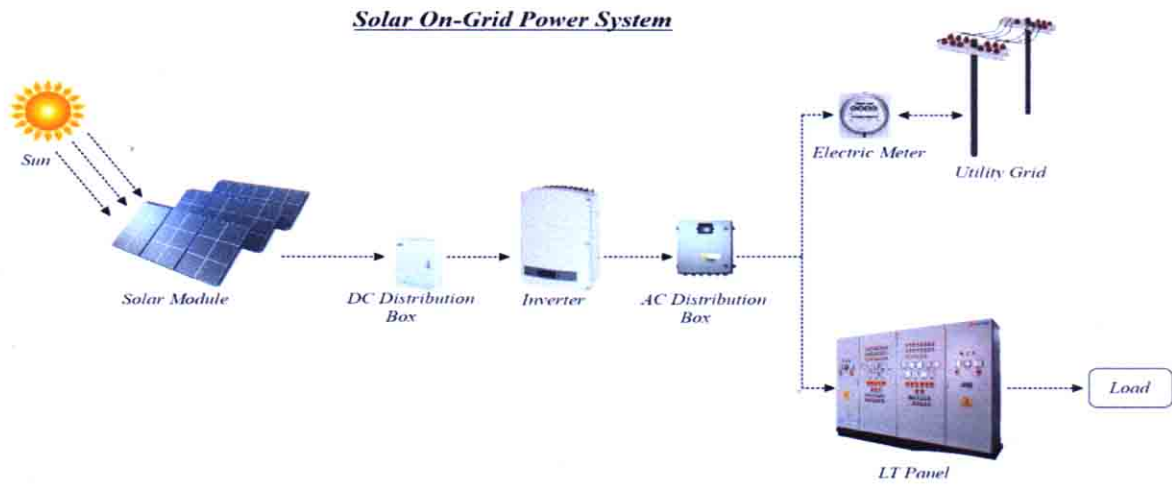
Solar / Photovoltaic devices convert light from sun into usable form of electrical energy.

These mainly consist of PV modules, module mounting structures, inverters, batteries, monitoring devices etc. The system is further classified as Grid Connect (where the energy from PV system is fed into the Utility Grid) and Off-grid (where the energy generated by the PV system is stored and used when required) and Hybrid (where multiple sources are used for generation of power including conventional sources and utility). The proposed system is a Grid Connected system.

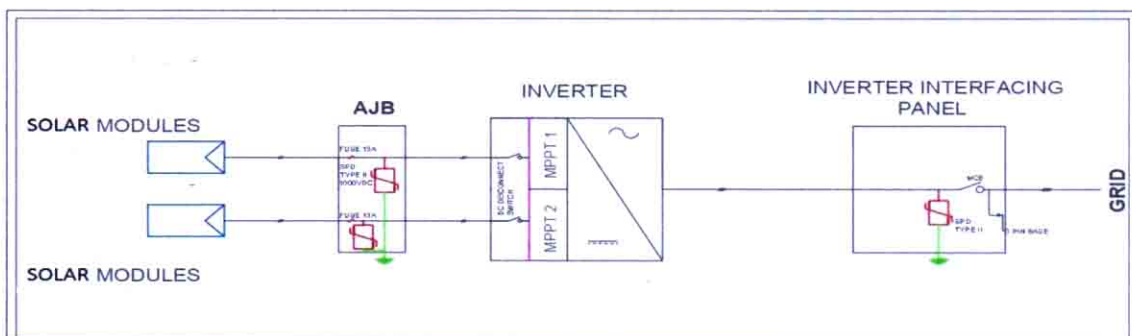
As the name suggest, Solar Grid Interactive solutions work in tandem with grid electricity, or in some cases in reference with another constant electrical energy source like diesel generators. The systems are designed to reduce energy consumption from the DISCOM, and hence directly help in reducing the energy bills.



Conventional solar power system:-



On Grid SLD :-





Execution Methodology And Scope Of Supply:-

- Approximate area required 100Sq feet. Per KWP.
- Have to provide shadow free area; Solar Modules will be oriented towards South at a suitable angle.

Operation And Maintenance:-

Operation of the power plant is totally automatic in nature and does not require any attention as long as the systems are in operation.

For maintenance, our technicians will visit the site within a period of 5 Years for emergency break down maintenance free of cost (Only Technician Charges). For Maintenance support please contact us.

Scope Exclusion:-

- Daily Operation of the PV Power plant.
- Construction of Control Room. Any civil work except civil pedestal for module mounting structure.
- Load Distribution network beyond inverter
- Supply of water & electricity for installation & maintenance.
- Daily operation & maintenance of the system
- Main grid line has to be given to a nearest point of installation.

Non Employment:-

- CLIENT will neither offer employment nor employ, directly or otherwise, any APARAJITA SOLAR employee, associated with the assignment, during the period between the date of the proposal and one year from the completion of the assignment. This clause would be applicable to APARAJITA SOLAR as well for any offer to CLIENT employees.



Proposal:-

Sl.No	Particulars	Units	Amount
1	30 KWP On-Grid Solar Power Plant With 30 KVA – Supporting String Inverter With 30 KW Poly-Crystalline Panels With Supporting GI Structure Complete accessories as per site. (Detail list of component is attached) Civil Work with Material	30000	1184814.29
Total			1184814.29
GST 5%			59240.71
Total Value (A)			1244055.00
2	Installation and Commissioning Charges	30000	60000.00
GST 18%			10800.00
Total Value (B)			70800.00
Grand Total [Total (A)+ Total (B)]			1314855.00



Technical Proposal:-

SL#	Equipment	Features	Make	Qty
A				
MODULE AND CONNECTOR				
1	PV Solar Module	<ul style="list-style-type: none"> • 25 years performance warranty. • 80% Efficiency warranty for 25 years. • Best in class conversion efficiency. • Compliance to IEC Standards & MNRE Approved. • Anti-Reflecting coating and black surface field. • Optically, mechanically and electrically tested. • Advance EVA Encapsulation. • Strong Light Weight Aluminium Frame Design. 	Vikram/Adani	30 KWP
2	MC4 Connector		Elmex	Requirement
B				
MODULE MOUNTING STRUCTURE				
3	Solar module mounting structure	<ul style="list-style-type: none"> • Angle Channel • Corrosion resistance. • Foundation Designed to counter wind speed. • No damage to water proofing. • Fixed Tilt Angle based on design Calculation for obtaining max generation. 	MNRE Approved	1
4	Nut Bolt for MMS	As per approved drawing		Requirement
5	Civil Foundation for MMS	As per approved drawing		Requirement
C				
INVERTER & DATA LOGGER				
6	30 KVA – Supporting String Inverter	<ul style="list-style-type: none"> • 5 years warranty. • High Efficient >98.2%. • Automatic restart time after high current. • Graphic LCD Display, IP65 Protection • Showing various input and output parameters such as, Output voltage, Unit generation, PV Voltage, Current with cumulative solar energy. • With Web-monitoring. 	ABB	1
7	Data Logger			1
8	Modem			1



SL#	Equipment	Features	Make	Qty
D	DISTRIBUTION BOX			
9	AJB	<ul style="list-style-type: none"> • Best Quality Fuse Protection • With Surge Protection Device (SPD) • IP-65 Enclosure Gaspe Box. 	Reputed	1
10	Inverter LT Panel	As per approved drawing	Reputed	1
11	Mounting Hardware			Requirement
E	CABLE & HARDWARES			
12	DC Cable	• 4 SQ.MM X 1 CORE Cu	Polycab/ Havells/ RR	300 M
13	AC Cable (Inverter to Inverter LT Panel)	• 4C, 6 sq mm Cu, Flexible PVC Cable	Polycab/Mescab	100 M
14	AC Cable (Inverter LT Panel to Grid Interfacing LT Panel & Grid Interfacing LT Panel to Client LT Panel)	• 4C, 6 sq mm Cu, PVC Armoured Cable	RR/ Mescab	20 M
15	Civil Foundation for DC Cabling			Requirement
F	SAFETY & PROTECTION			
16	Earth Pit	• 600 mm X 600 mm X 500 mm (depth) complete with cemented brick work (1:6) of minimum 150 mm width duly plastered with cement mortar (inside) (As per approved drawing)		A/P Drawing
17	Earth Pit cover	• 300 X 300 mm Hinged Cover with locking arrangement		A/P Drawing
18	GI Earthing Strip	<ul style="list-style-type: none"> • G.I- Galvanized iron for RCC Structure. • With Insulators/Corrosion resistance. 		Requirement
19	GI Earthing Strip holding clamp		Reputed	Requirement
20	Salt & charcoal	• Each set contains Salt & Charcoal		Requirement
21	Earthing wire			Requirement
22	Insulators			Requirement
23	Earth Bus Bar		Reputed	Requirement

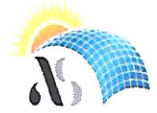


SL#	Equipment	Features	Make	Qty
G	BOS			
24	PVC Numbering ferrule			Requirement
25	PVC Tape - (R,Y,B)			Requirement
26	PVC Conduct Pipe & Tee bend or DC cable & earthing cable		Standard	A/P Drawing
27	GI saddle for PVC Pipe			
28	Cable Gland	• Double compressive Brass Gland to be provided.		Requirement
29	Cable Tie - 200mm	SS Cable tie, thickness 0.6 - 0.9 mm (min), width 5 mm (min)		Requirement
30	Cable Tie - 100mm			Requirement
31	Wiper with suitable long Handle	• Handle Size : L 2 mtr		2
32	Cable Tray	• G.I. Perforated		Requirement



Terms & Conditions:-

Price	FOR KOLKATA BASIS.
G.S.T	Included
Delivery	Within 20 days after receiving of confirm order along with 50% advance
Transportation	Included
Installation Charges	Included
Payment	<ul style="list-style-type: none">• 50% Advance against along with your confirmed order• 40% During Materials Despatched.• 10% Against Site Handover.
Warranty	<ul style="list-style-type: none">• 10 Years for SPV Module (for 90% output) and 10 years onward to 25 years (for 80% output)• 5 Year for Inverter (GTI)
Validity	21 Days from the date of this offer.
Order Placement	Order shall be placed on our office at Aparajita Solar 2/175 Sree Colony, Opp: Regent Estate Post Office, Kolkata-700092 (A) Supply Order. (B) Installation Order.



Warranty Terms:-

- a) The system used specifically for the solar application only. We assure replacement or repair or adjustment of any manufacturing defect in the above product, as may be deemed necessary free of cost.
- b) Only the authorized agent, distributor, sales person of Aparajita Solar can do installation, servicing.
- c) Change of place of the unit or change of name of the owner of the unit if take place. Please inform our authorized agent at least before one week.
- d) Any damage for mishandling from clients end is not covered under the warranty.
- e) Any short circuits by the external agents (Not from APARAJITA) will not come under the purview of the warranty.
- f) If any problem arises within the warranty period, company would change or rectify the defect as quick as possible. But the company is committing service support within 48 Hrs.
- g) The system broken in transit/ rough handling does not come under the purview of the warranty.
- h) Our warranty stands only against any manufacturing defects; any violation of operation instruction will not be covered by this warranty. Cleaning of dust from solar module is not in our scope. Local help will be trained in this regard.

Hope, you will find our offer most competitive, terms & conditions are economically viable to you and shall oblige us with your valued order.

Assure best of services at all times.

Yours faithfully,

APARAJITA SOLAR

Contact Us: +91-9831514033/7980629467



**Thank
You**







