

7.2.3 b - Carbon Management and reducing carbon dioxide emission (Solar Power Plants)

B.S.Abdur Rahman Crescent Institute of Science and Technology is searching for ways to lessen the cost and effect on the environment related with their green initiatives. A 550 kWp grid tied roof top solar photovoltaic plant commissioned at institution is one of the largest solar power plants with the site receiving a good average solar radiation of 4.97 kWh/m²/day.

As a part of its 'Green Campus' initiative, our Institution has set up a 550 kWp grid tied Rooftop Solar PV Power Plant on its academic buildings. The plant is located in the vacant roof space of various buildings.

The outputs from all the plants are connected to the institute grid through local AC distribution boards. This output can be used anywhere in the campus. Available diesel generator set is being used to create the local grid during load shedding.

INSTALLED ROOFTOP SOLAR PV POWER PLANT

Installed 550 kWp Rooftop solar plant shares all the power generated with DG set to reduce its dependence on diesel as fuel.

Most recently, a 100 kWp rooftop plant is being installed on New Architecture Block and CIIC Block. This installation shall run in parallel to the existing 550 kWp solar plants.



100 KWP ROOFTOP SOLAR PLANT UNDER CONSTRUCTION

RENEWABLE ENERGY – SOLAR POWER PLANTS

B.S.Abdur Rahman Crescent Institute of Science and Technology undertakes initiatives to obtain energy from various natural resources. The Institute is pioneer in establishing renewable energy sources to meet the energy requirement of the campus.

Three Roof top solar power plants of total capacity of 550 KWp (against the sanctioned demand of 1200 KW) are installed in our campus.



SOLAR PANEL INSTALLED AT ROOF TOP IN VARIOUS BUILDINGS





Google Satellite Map View

150kWp Solar PV Power Plant - Generation from 2014 -2020			
S.No	Year	Units Generated	Amount saved
1	2014	1,03,248	8,77,615
2	2015	2,14,937	18,26,969
3	2016	2,05,374	18,42,140
4	2017	1,93,912	16,57,963
5	2018	1,98,162	17,12,369
6	2019	1,96,269	16,83,398
7	2020	1,81,064	19,52,642
	Total	12,92,966	1,15,53,096

100kWp Solar PV Power Plant - Generation from 2014 -2020			
S.No	Year	Units Generated	Amount saved
1	2014	17,458	1,48,398
2	2015	1,46,940	12,48,990
3	2016	1,50,730	13,56,665
4	2017	1,41,458	12,08,720
5	2018	1,50,464	13,00,737
6	2019	1,42,965	12,26,905
7	2020	1,29,606	13,95,243
	Total	8,79,621	78,85,656

300kWp Solar PV Power Plant - Generation from 2018 -2020

S.No	Year	Units Generated	Amount saved
1	2018	41,037	3,74,495
2	2019	4,19,309	35,95,084
3	2020	2,98,201	31,55,265
	Total	7,58,547	71,24,844

Total Solar Power Generation - 550kWp up to 31st December 2020		
Plant	Units	Amount
150kWp	12,28,567	1,08,00,699
100kWp	8,33,832	73,51,332
300kWp	6,42,255	57,82,158
Total	27,04,654	2,39,34,189

As per the CO₂ Baseline Database for the Indian Power Sector (CEA), the emissions from grid electricity were about 820 g CO₂ equivalent per kWh. Our solar plant can prevent 2000 tonnes of CO₂.

SOLAR WATER HEATERS

168 number of solar water heaters have been installed on the roof top of the Hostels and staff quarters. The total capacity is 36,500 liters.

Normally, solar water heating system can save up to 1500 units of electricity per year, for every 100 litres per day of solar water heating capacity. Our 36,500 liters of heating capacity of solar water heating system can save up to 500000 units of electrical energy per year.

A solar water heating system of 100 litres capacity can prevent emission of 1.5 tonnes of carbon-dioxide per year. Our solar water heating system can prevent emission of 500 tonnes of carbon-dioxide per year.



Men's Hostel



Ladies Hostel



New Staff Quarters

Men's Hostel		
Block	No. of tanks	Capacity in liters
A Block	20	5000
B Block	6	3000
C Block	6	3000
D Block	8	4000
Main block	20	5000
PG block	12	3000
Ladies Hostel		
Main block	10	5000
Annexure Block		
New Block Phase 1	11	2750
Staff Quarters		
New Staff Quarters	23	5750
Total Capacity	116	36,500Litres

RENEWABLE ENERGY – SOLAR STREET LIGHT

Installed towards staff quarters to Men's hostel road and Architecture block area. This project was done by our III yr. EEE students along with our Estate electrical dept. team.



Near Sports Village Road



Near Architecture Block



CENTRALIZED SOLAR POWERED STREET LIGHTS - Near Sewage Treatment Plant (STP)

Weblink: <https://crescent.education/wp-content/uploads/2020/10/Crescent-Green-Initiatives-July-2020.pdf>

Dr. A. Azad
REGISTRAR



Date: 17.03.2020

Lr.No: BSACIST/PROJ/SPP/EL/PO/2020/107

To

M/s Fourth Partner Energy Pvt Ltd,
4-7-19/45, 1st floor,
Raghavendra Nagar,
Nacharam,
Hyderabad 500076.

Dear Sir,

Kind Attention: Mr.Vivek Subramanian, Exucutive Director.

Sub: Purchase order for supply, erection and commissioning of 102.49kWp grid connected Solar power plant in B.S.Abdur Rahman Crescent Institute of Science & Technology - Reg

Ref: Your revised offer dated 26.02.2020

With reference to your referred offer and subsequent discussions had with you we are pleased to issue the purchase order for Supply, erection and Commissioning of 102.49kWp solar power plant in BSACIST campus as per details mentioned below;

S.No	Description	Amount
1	Supply, erection & Commissioning of 102.49kWp solar power plant in our Institution campus as per approved design along with Data logging and remote monitoring system with 1 year AMC	37,40,885
	GST 8.9%	3,32,938
	Total Amount (Rupees Forty lakhs seventy three thousandeight hundred and twenty three only)	40,73,823

Contd,2

1. The Roof-tops of New Architecture Block and Crescent Innovation & Incubation council block to be used for installation.
2. Due to buildings site constraints if there is any change in final capacity of the solar plant, either up or down from 102.49kWp, price shall be accordingly adjusted because of inverter capacity range.
3. Formal contract agreement shall be signed as per SECI requirements.
4. Fourth Partner Energy Pvt Ltd shall work in co-ordination with M/s Arbutus Consultants, Pune, who are our Solar Energy Consultants
5. Cleaning of solar panels is coming under client scope once in a week
6. Birds drop V-Shape clip to be fixed
7. The specifications of all the materials used in the project are subject to approval by our consultants, M/s.Arbutus Consultants, Pune.
8. Tap will be provided by us.
9. **Payment Terms:**
 - a. 25% advance along with order
 - b. 60% on receipt of all materials at site
 - c. 15% on successful completion of installation and commissioning
 - d. Statutory approval fee paid by us
10. **Warranty:**
 - i) 10years product warranty for SPV modules against manufacturing defects
 - ii) Linear power output guarantee of 80% for25 years.
 - iii) 5 years for manufactures warranty for inverter
 - iv) 1 year for balance system
11. **Taxes:**Included
12. **Project Completion:**90-120 days

Thanks and regards,


17.03.2020
REGISTRAR

SOLAR WATER HEATER PURCHASE ORDER



B.S. Abdur Rahman
Crescent
Institute of Science & Technology
Deemed to be University u/s 3 of the UGC Act, 1956
GST Road, Vandalur, Chennai 600 048

PO No: BSACIST/SWH/MH/PO-2019/82

Date:06.12.2019

To

**M/s.Mithil Associates
No.14/7, Kanchi Natarajan Street,
Vasudevan Nagar,
Jaffarkhanpet
Chennai-83**

Dear Sir,

Sub: Supply and installation of V Guard 500LPD Solar Water Heaters for Men's Hostel at B S Abdur Rahman Crescent Institute of science & technology campus.

Ref: Your Quotation dated: 13.11.2019

With reference to the above, we are pleased to place with you the purchase order for Supply and installation of V Guard 500LPD Solar Water Heaters for Men's Hostel at B S Abdur Rahman Crescent Institute of science & technology.

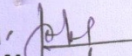
Sl.No	Description	Qty	Rate	Amount Rs.
1	Supply and installation of V Guard 500LPD ETC Non PR Model- Solar Water Heaters for Men's Hostel. Model Win hot 500plus H	20	65,000	13,00,000
	Grand Total			13,00,000

Terms & Conditions:

- 1. Payment: 50% advance 50% after installation & commissioning**
- 2. Taxes: Included**
- 3. Completion of work : 10 days**
- 4. Warranty : 5 Years**
- 5. GI tank with epoxy coating**

Thanks and Regards

For **B.S.Abdur Rahman Crescent Institute of science & technology.**

VNA. 
V.N.A.JALAL 6/12/19
General Manager

Seethakathi Estate, G.S.T. Road, Vandalur, Chennai – 600 048. India.
Tel : +91 (44) 2275 1347, 1348, 1350, Fax : +91 (44) 2275 0520

Email : registrar@crescent.education
www.crescent.education



FOURTH PARTNER ENERGY PRIVATE LIMITED

Fourth Partner House, Plot No.N46, House No.4-9-10, HMT Nagar, Hyderabad - 500076

T : +91-40-27158865 | info@fourthpartner.co | website : www.fourthpartner.co

PROFORMA INVOICE

Bill To,
B S Abdur Rahman Crescent Institute of Science & Technology
Seethakathi Estate
GST Road, Vandalur, Chennai - 600048

Tamilnadu

Proforma Invoice No: PI/4PEL/20-21/023
Dated: 10-08-2020

Buyers Order No.: BSACIST/PROJ/SPP/E
Dated: L/PO/2020/107
17-Mar-20

Ship To,
B S Abdur Rahman Crescent Institute of Science & Technology
Seethakathi Estate
GST Road, Vandalur, Chennai - 600048

Tamilnadu

All figures in INR

Sl. No.	Description of item	Unit	Qty.	Unit Rate	Total Amount
1	Supply Erection & Commisioning of 102.49kWp Solar Power plant as per approved Drawing along with Data logging and remote monitoring system at BSA Crescent Instiute of Science & Technology, Seethakathi estate, Chennai	No	1	37,40,885	37,40,885
					-
					-
	GST@5%			0%	1,30,931
	GST@18%			18%	2,02,008
	Total Order Value				40,73,824

25% Amount Payable Against This PI	10,18,456
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(Rupees Ten Lakhs Eighteen Thousand Four Hundred and Fifty Six Only)

Terms & Conditions

Price Basis : F.O.R Site
Tranportation: Included in the above price
Payment Terms: 25% along with Order, 60% against dly of Material at site, 15% against completion of Installation and commissioning

GST No.36AABCF6092M1Z8

Our Bank Details

RBL Bank, Opp: Green Park Hotel, Ameerpet , A/C No. 609000467653, IFSC Code:RATN0000112

For FOURTH PARTNER ENERGY PVT. LTD.
Computer Generated. Hence Not Signed
Authorised Signatory