

17.3.7 c – Progress against SDG7 – Policy Document and Certificate of Appreciation

POLICY DOCUMENT ON AFFORDABLE AND CLEAN ENERGY

In modern times, the generation of energy is disproportionate to the demand. Therefore, conservation of energy is a pivotal requirement to meet the demand. The minimal use of energy and finding alternative sources ensures its continuous supply for a long time. With this aspect in mind, energy conservation is done by using the most modern techniques.

Renewable Energy

The demand that is contracted from TANGEDCO is 1200 KVA and the backup power capacity is 2350 KVA(100%).

SOLAR POWER

Three roof top solar power plants are present inside the campus and the capacity of the first solar power plant is of 150 kWp commissioned in June 2014 at a cost of 1.32 Cr. The second solar power plant is of 100 kWp commissioned in October 2014 at a cost of 62 Lacs. New roof top Solar Power Plant III is of 300 kWp capacity and it was commissioned in October 2018 at a cost of 1.20 Cr. So the total power generated through the solar plant is 27,04,654 units till 31st July 2020 and our average monthly energy savings is 43%. Installation of additional 100 kWp Solar PV project on the RCC Roofs of School of Architecture Building and Innovation & Incubation Centre at a cost of Rs. 40 lakhs (work in progress). The campus also has an Online monitoring solar power system.

Solar Water Heaters

Three solar water heaters having a capacity of 36,500 litres which is equivalent to 365 numbers are installed. By this the saving of power is approximately Rs. 24 lacs per annum. Sub meters are provided in canteens, hostels and quarters

Solar Street Lights

Solar street lights have been installed in the campus by a 3rd year EEE students along with our estate electrical department team. It is installed towards staff quarters to Men's hostel road and Architecture block area.

Bio gas Plant

A bio gas plant of 50m³ capacity was commissioned in the Ladies Hostel in the month of June 2017 to recycle the food waste generated from the Hostel mess and Canteen in the campus. The bio gas generated is used in the Ladies Hostel mess kitchen.

The Institute has a bio gas plant in order to handle the food waste generated from hostel kitchens and canteens. It will generate 15-20m³/day from the plant and the same shall be used for the cooking purposes at hostel kitchen and canteens. The total project amount is 35 lakh and the Institute have contributed Rs.10 lakh.

Energy efficient Appliances in Campus

LED fixtures are being extensively used for all new interior renovation works in the campus. So far, 50.87 kW capacity of LED lights are fixed which provide around 70% of energy saving compared to conventional lighting.

With an emphasis to energy conservation, all split AC units purchased since the year 2012 are of BEE 5- star energy rating. The AC units are free from ozone depleting CFC.

Motion sensor lights are provided in computer science lab, staff cabins and toilets for energy savings.

The Institute is a proud owner of "Tissue Cultured bamboo plant" of variety "Beema." This is one of the super bamboo, developed by the Biotechnology lab, grown in greenhouse for six months and now it is ready for planting in the soil. The full growth of the bema bamboo is achieved only by providing the best care by us; both at the time of planting and growing it for at

least 4 to 5 years. Every plant when it is fully grown to its best growth generates over 300kg of oxygen every year, it is just sufficient for one person for a whole year.

The Institute has an Air Quality Sensor Station which helps to know the air quality.

Recognitions

ASSOCHAM award " University of the year for Eco-Friendly Sustainable Campus" for its eco-friendly self-sustaining efforts in conserving the environment. The award was presented by Dr. Mahendra Nath Pandey, Hon'ble Minister of Skill Development and Entrepreneurship, Govt. of India in 2020.

Weblink: <https://crescent.education/wp-content/uploads/2020/11/Crescent-Policy-Document-on-Affordable-and-Clean-Energy.pdf>

Walk-thru Energy Audit Report
Of
Crescent Institute of Science & Technology

Vandalur, Chennai

24th Mar 2021

CONDUCTED BY



PETROLEUM CONSERVATION RESEARCH ASSOCIATION

(Under the Ministry of Petroleum and Natural Gas)

**BSNL TN Circle Building, Tower-2, Ground floor, No.16,
Greams Road,**

Chennai – 600 006 Tel: 044-28290416/8

web site: www.pcra.org

Follow us on:



ACKNOWLEDGEMENT

Petroleum Conservation Research Association is thankful to the management of **Crescent Institute of Science & Technology** for allowing us to carry out a Walk-thru energy audit at their premises. The report is based on the field observations and the data provided/observed during the study. This is the walk-thru audit only, if **Crescent** agrees then we can do the detailed energy audit also. PCRA appreciates the keen interest and involvement shown by **Dr.A.K. Kaliluthin, Deputy Director**.

PCRA is thankful to all the staff who were helpful to complete the field study successfully. Last, but not the least, we express our thanks for the hospitality and courtesy shown by the management and all the staff of the office.

Mr.R. Nesamani

Jt. Director-PCRA SR

Mr.M. Srinivasan

Sector Expert-PCRA SR

1. UNIT DETAILS

Name of the unit	Crescent Institute of Science & Technology
Address of the Unit	Seethakathi Estate, GST Road, Vandalur, Chennai, Tamilnadu-600 048.
Coordination In-charge	Mr. Rajkumar
Major product manufactured	Science College
Name of the PCRA staff involved in study	R. Nesamani & M. Srinivasan
Value of Energy Saving identified	36.2 KLOE/Annum

EXECUTIVE SUMMARY - Crescent					
ECM. No	Energy Conservation Measures	Annual Savings		Investment	Payback
		kWh	Rs.	Rs.	Months
1	Replace FTL lamps with LED lamps in Office/Class room /Hostel / Quarters	1,36,000	13,60,000	17,00,000	15
2	Replace conventional type fans with BLDC fans in Office/Class room/Hostel/Quarters	2,41,500	24,15,000	86,25,000	43
3	Replace Night lamps with LED lamps in Hostel/Quarters	43,800	4,38,000	1,25,000	3
Summary of Savings					
Total Annual kWh Savings by EB		4,21,300	42,13,000	1,04,50,000	30
Annual Savings in KLOE by EB consumption		36.2			

Savings calculation with payback period will be given after conducting detailed Energy Audit

2. Equipment's list: -

Equipment list		
Description	Capacity	Quantity in No's
Transformer	750 kVA	2
Transformer	500 kVA	1
DG	750 kVA	1
DG	500 kVA	1
Lifts	NA	23
Chiller	75TR	2
VRF AC	12 TR	12
Window/Split AC	1 ~ 2 TR	350
FTL/CFL lights	40 W	3400
Ceiling Fan	70 W	3450

3. Energy Savings: -

Total oil Savings Identified is 36.2 KLOE/Annum. It is suggested that the unit shall conduct the detailed energy audit to find out more ECM and also to get details on each ECM.

Other observations: -

- 1) Window/Split AC has to be replaced with 5 star rated AC
- 2) Chiller performance study to be conducted & replace if SEC is more
- 3) Halogen lamps to be replaced with LED lamps
- 4) Pumps performance to be study during detailed energy audit
- 5) Solar rooftop performance to be studied

===== The End of the report =====

ENERGY REVIEW

In auditorium, HVAC system (75 TR X 2 Numbers = 150 TR Air-cooled Chiller Plant) is not giving performance not working properly and hence, both chiller plants performance is very low and it is resulting in unnecessary power consumption.



AIR-COOLED CHILLER PLANT

Efficient chiller plant consumes 150 kW of power approximately. Based on performance study, our institution chiller plant consumes 223 kW of power maximum.

Action to be taken: Chiller plants may be replaced with new one and the air ducts and Air Handling Units may be revamped.

CHILLER PLANT PERFORMANCE REVIEW REPORTS

10/11/2021, 23:32

B.S. ABDUR RAHMAN UNIVERSITY Mail - AC Design validation report for CRESCENT Auditorium



Ramkumar M <ramkumar@crescent.education>

AC Design validation report for CRESCENT Auditorium

5 messages

Syed <syed@cresconprojects.com>

Mon, Jul 8, 2019 at 11:53 AM

To: Ramkumar M <ramkumar@crescent.education>

Cc: cresconpurchase@gmail.com, v.prasath@cresconprojects.com, a.sameeullah@cresconprojects.com, crescondesign@gmail.com, Srivijayavelrajan <srivelrajan@cresconprojects.com>, pradheep.v@cresconprojects.com, srscreators2020@gmail.com

Dear Sir,

We thank you so much for considering us for the participation of the AC works at Auditorium in your esteemed institutions.

We herewith attaching the detailed report based on our site visit and discussion had with you at the time of site visit.

Kindly let us know the reply from you for the report at the earliest. We shall submit the detailed BOQ for the work execution upon your confirmation on the report as attached.

We are attaching the Invoice copy also for the report submission for your further proceedings.

We are eagerly awaiting to work with you for this project works.

Regards,

S.SYED ABDUL RAHUMAAN

Planning & Procurement Head

CRESCON PROJECTS & SERVICES PVT. LTD.,

No 70, Second floor, 8th Street,

Sector No.2, K.K.Nagar,

Chennai- 600 078.

Email: syed@cresconprojects.com

Mob: 98403 70071

Tel: +91 44 23664945

Fax: +91 44 23664950

National Building Code of India 2016 (NBC 2016)

The National Building Code of India (NBC) provides guidelines for regulating the building construction activities across the country. It serves as a Model Code for adoption by all agencies involved in building construction works. The Code mainly contains administrative regulations, development control rules and general building requirements; fire safety requirements; stipulations regarding materials, structural design and construction (including safety); building and plumbing services; approach to sustainability; and asset and facility management.

GREEN BUILDING CERTIFICATE and LEED

GBCI-EDGE GREEN BUILDING CERTIFICATION FOR LADIES HOSTEL



GBCI- EDGE CERTIFICATE FOR STAFF QUARTERS



CRESCENT SCHOOL OF ARCHITECTURE BLOCK, IS DESIGNED AS A NET ZERO ENERGY BUILDING AND REGISTERED UNDER USGBC-LEED GOLD CERTIFICATION

New Crescent School of Architecture block, is designed as a Net Zero Energy building and registered under USGBC-LEED Gold certification.



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



सत्यमेव जयते

Certificate



*This is to certify that **B.S. Abdur Rahman Crescent Institute of Science & Technology**, Chengalpattu, Tamil Nadu is now a **Recognized Social Entrepreneurship, Swachhta & Rural Engagement Cell (SES REC) Institution**. The Institution has successfully framed the SES REC Action Plan and constituted ten working groups for improving facilities in the Campus and the Community/Adopted Villages in the areas of **Sanitation & Hygiene, Waste Management, Water Management, Energy Conservation and Greenery** post COVID-19, along with the observation of three environment, entrepreneurship and community engagement related days to inculcate in faculty, students and community, the practices of **Mentoring, Social Responsibility, Swachhta and Care for Environment and Resources**.*

Date of Issue:
29/08/2020


Dr. W G Prasanna Kumar
Chairman

Mahatma Gandhi National Council of Rural Education
Department of Higher Education, Ministry of Education
Government of India

Certificate No.: MoE/SES REC/TN/CHE/63