# SRI A S N M GOVERNMENT COLLEGE

**Palakol, West Godavari District, Andhra Pradesh- 534260**

**Affiliated to Adikavi Nannaya University, Rajamahendravaram**

**(NAAC Re-accredited by 'B' Grade with 2.61 CGPA)**

College e-mail: sriasnmgdc@gmail.com

Website: https://sriasnmgdcpalakol.ac.in

Phone: 08814229069


# Report on Energy Audit

**INTRODUCTION (College Profile)**

Educational Institutions are centres of learning. Sri A S N M Government College is one of the reputable institutions which was established as an affiliated college of Andhra University, Visakhapatnam from the academic year 1968-69 (videG.O.M.SNO:1441/EDN dated 11./07/1968) with B.Sc, BA and BCom Programs at Under Graduate Level. Ever since its inception, the college has been catering to the wide range of academic needs of Palakollu town and scores of its neighboring villages, bringing into reality the dream of value based education and skill development courses. The College is recognized by UGC under section 2(f) and 12 (B) of the UGC Act 1956 in the year 1968 and got eligibility to receive UGC grants. The College has received financial assistance from UGC up to 2019. The institution has appeared for assessment and accreditation by NAAC with B+ grade in 2007 (Cycle 1) and B grade in 2014 (Cycle 2). In 2007 College was identified as Nodal JKC centre to monitor the 15 Government Colleges JKC centres within the West Godavari District. Further in 2020 the college got recognized for its Quality Standards by ISO. In year 2021-22 (Present Year) a total of 999 students are pursuing their education and are mentored by 31 teaching staff.

The college started on 15th August, 1968 in its own premises with a sprawling land of 9.7 acres donated by the then great philanthropist and freedom fighter Sri Addepalli Satyanarayana Murthy Garu and other likeminded generous people as such the College was named after its founder Sri Addepalli Satyanarayana Murthy Government College. Sri Annapragada Lakshminarayana served as founder Principal. The streams offered initially were B.A. B.Com and B.Sc Subsequently new restructured programmes in B.Sc,(Aqua Culture, HortiCulture, DataScience,) B.Com(Computers) and B.A(Functional Telugu, Computer Science) Now the institution offers 14 UG and 2 PG programmes.

The college has been continuously upgrading its academic and infrastructural facilities. The dynamic and dedicated faculty of the college serves the student community with utmost commitment and equips itself with required ICT enabled and other relevant teaching methodologies. The ever increasing admissions into various programmes during the last 5 years vouch for the remarkable reputation andperformance of the college.

Thus the college as a premier educational centre of the region has won the reputation being an excellent centre of learning in Science, Arts and Commerce.

# ENERGY AUDIT

## 1. Introduction

An energy audit is a survey in which the study of energy flows for the purpose of conservation is examined at an Organization. It refers to a technique or system that seeks to reduce the amount of energy used in the Organization without impacting the output. The audit includes suggestions of alternative means and methods for achieving energy savings to a greater extend. Conventionally, electrical energy is generated by means of fossil fuels, hydraulic and wind. The availability of fossil fuels and their depletion rate, insist the need for alternate energy systems and conservation of electric energy. In general, the primary objective of an energy auditing and management of energy consumption is to offer goods or services at the lowest possible cost and with the least amount of environmental impact (Backlund and Thollander, 2015). The need for an energy audit is to identify the savings potential and cost reducing methods, understand the ways in which fuel is used, where, the waste occurs and find the scope forimprovement.

An energy audit is proposed and conducted to ensure that energy saving practices are implemented and followed in Educational Institutions and Industrial sectors in a sustainable way. Preparation and completion of a questionnaire, physical examination of the campus, observation and examination of documentation, key person interviews, data analysis, measurements and suggestions are all part of the audit process. Energy audit involves several facts including energy savings potential, energy management, finding alternatives, etc. (Cabrera et al., 2010) With these facts in mind, the audit's specific objectives are to assess the competence of the sustainability management and control system, as well as the departments' compliance with applicable rules, policies and standards.

It has the potential to have a significant influence on the organization's operational cost as well as the environmental impact (Singh et al., 2012). Energy Conservation Building Code (ECBC) is established in the year 2017 which provides minimum requirements for the energy-efficient design and construction of buildings across India It also provides two additional sets of incremental requirements for buildings to achieve enhanced levels of energy efficiency that go beyond the minimum requirements (Gnanamangai et al., 2021). Bureau of Energy Efficiency (BEE) came into force in 2002 towards implementation of energy saving practices in an Organization. Energy-efficiency labels are information affixed to manufactured products and usually communicate the product energy performance (Ingle, 2014).

BEE has developed a scheme for energy efficiency labelling of buildings coinciding with the star ratings of the building at accelerating energy efficiency activities. BEE Star Rating Scheme is based on actual performance of the building as well as equipment in terms of specific energy usage termed as 'Energy Performance Indicator' by means of star ratings labelled items used which will be useful for energy savings in a sustainable manner (Mishraand and Patel, 2016). Energy audit programme provide aid in maintaining a focus on energy price variations, energy supply availability and efficiency, determining an appropriate energy mix, identifying energy-saving technology, retrofitting for energy-saving equipment and so on.

In general, an energy audit process dealt with the driving conservation concepts into reality by giving technically possible solutions within a specified time limit while also considering the economic and other organizational issues (Asnani and Bhawana, 2015). It also dealt with the uncover ways to cut operating expenses or reduce energy use per unit of production in terms of savings. It serves as a "benchmark" (reference point) for managing energy in the organization for planning more energy-efficient use across the board (Cabrera et al., 2010).

**2. Need for an Energy Audit**

In any Organization, the three top operating expenses are often found to be energy (both electrical and thermal), labour and materials. If one were to relate to the manageability of the cost or potential cost savings in each of the above components, energy would invariably emerge as a top ranker, and thus energy management function constitutes a strategic area for cost reduction. Energy Audit will help to understand more about the ways energy and fuel are used in any industry, and help in identifying the areas where waste can occur and where scope for improvement exists. The Energy Audit would give a positive orientation to the energy cost reduction, preventive maintenance and quality control programmes which are vital for production and utility activities. Such an audit programme will help to keep focus on variations which occur in the energy costs, availability and reliability of supply of energy, decide on appropriate energy mix, identify energy conservation technologies, retrofit for energy conservation equipment etc. In general, Energy Audit is the translation of conservation ideas into realities, by lending technically feasible solutions with economic and other organizational considerations within a specified time frame. The primary objective of Energy Audit is to determine ways to reduce energy consumption per unit of product output or to lower operating costs Energy Audit provides a "bench-mark" (Reference point) for managing energy in the organization and also provides the basis for planning a more effective use of energy throughout the organization Eco-campus concept mainly focuses on the efficient use of energy and its conservation including savings opportunities in a sustainable manner. It also focuses on the reduction of contribution to carbon emissions, carbon footprint calculation, procurement of star rated equipment for a cost effective and secure supply of energy, encourage and enhance energy use conservation in all buildings, reduce the organization's energy consumption, reduce wastes to landfill, and integrate environmental considerations into all contracts and services considered to have significant environmental impacts.

Auditing for Energy Management may be studied in terms of energy savings and opportunities. In general, energy cannot be seen, but we know it is there in wire, pipes and other non-living materials because we can see its effects in the forms of heat, light and power. This indicator addresses energy consumption, energy sources, energy monitoring, lighting, vehicle movement, electrical and electronics appliances, and transportation. Energy use is clearly an important aspect of campus sustainability and thus requires no explanation for its inclusion in the assessment. However, energy saving and opportunities may be taken into consideration while energy is extensively used. An old incandescent (tungsten) bulb uses approximately 60W to 100W while an energy efficient light emitting diode (LED) uses only less than 10W which indicated the positive indication on energy savings. Energy auditing deals with the conservation and methods to reduce its consumption related to environmental degradation. In addition, suggestions and recommendations might be given after auditing which in turn useful for energy savings. It is therefore essential that any environmentally responsible institution examine its energy use practices at least once in two years using internal and external auditors.

The conduct of energy audit using internal and external energy auditors is playing important role in any organization in terms of energy management. It is able to measure the impact of energy potential in an organization so that we can determine better ways to manage the impact on environment. In addition to the water, liquid and solid wastes, biomedical and electronic wastes energy potential and biodiversity audits, attempts may be made to measure the carbon footprint in the organization based on the amount of carbon emissions created by the electrical appliances, vehicles and human population. It undertakes the measure of bulk of carbon dioxide equivalents exhaled by the organization through which the carbon accounting is done. It is necessary to know how much the organization is contributing towards sustainable development in terms of energy management is being done. It is therefore to recommend to measure the carbon footprint in each organization which may be useful for maintaining the ecofriendly campus to the stakeholders.

**3. Aims and Objectives of an Energy Audit**

An energy audit is a useful tool for developing and implementing comprehensive energy management plans of an Organization. The aim of an energy audit is to identify the energy efficiency, conservation and savings opportunities at the premises of the audit sites in a systematic manner. The audit process is carried out as per the following.

- Review of energy saving opportunities and measures implemented in the audit sites.
- Identification of additional various energy conservation measures and saving opportunities.
- Implementation of alternative energy resources for energy saving opportunities and decision making in the field of energy management.
- Providing a technical information on how to build an energy balance as well as guidance to be sought for particular applications.
- Detailed analysis on the calculation of energy consumption, analysis of latest electricity bill of the campus, understanding the tariff plan provided by the central and State Electricity Board.
- List ways that the use of energy in terms of electricity, electric stove, kettle, microwave, LPG, firewood, Petrol, diesel and others.
- Analysis of electricity bill amount for the last two to three years, amount paid for

LPG cylinders for last one year and amount paid for water consumption for human beings and watering to the plants.

- Use of incandescent (tungsten) bulb and CFL bulbs, fans, air conditioners, cooling apparatus, heaters, computers, photo copiers, inverter, generators and laboratory equipment and instruments installed in the organization (for example- 60 watt bulb x 4hours x number of bulbs = 4kwh).

- Alternative energy sources / nonconventional energy sources are employed / installed in the organization (photovoltaic cells for solar energy, windmill, energy efficient stoves, Biogas, etc.).
- Creating awareness among the stakeholders on energy conservation and utilization.

**4. Benefits of an Energy Audit**

¬ Reduced Energy Expenses: The most obvious benefit is that the less energy the Organization uses, the less money that the Organization will have to spend on energy costs.

¬ Identify Problems: An energy audit can also help to identify any issues that the equipment might have. For example, the auditor could find small leaks in the compressed air system. These leaks would cost a significant amount of money if it is not noticed. Auditors can also detect dangerous health risks like the carbon monoxide that's emitted from equipment that hasn't been vented properly. With a regular energy audit, the organization will be able to address these kinds of issues promptly to help ensure the health and safety of the staff members.

¬ Increased Employee Comfort: During the audit, the Organization might learn about changes that have been made regarding insulation and air sealing. Completing these enhancements will help create a more reliable and more efficiently cooled or heated space for the employees. In turn, more comfortable employees tend to be more productive, so not only will the Organization save on energy costs, but may also improve overall well-being.

¬ Personalized Recommendations: Working with an energy expert can help learn about new energy-efficient technologies. The professional will customize a plan, recommending which upgrades will give the most return on investment. These might include updated lighting systems, a new HVAC system, weatherization measures like insulation and air sealing, and more. While some of the recommendations might have a substantial up-front cost that many of them will pay for themselves in a short period of time with significantly reduced energy expenses.

¬ Show Environmental Concern: By taking steps to be more energy efficient, the Organization will be showing the employees and clients that the organization cares about the impact on the environment.

¬ Increased Property Value: Using the recommendations of an energy auditor to make facility more energy efficient could also help to increase its overall worth. Things like solar panels, high-efficiency LED lighting, and weatherization procedures are all things that contribute to a higher property value.

¬ Longer Equipment Lifespan: An energy auditor might recommend to update some of the equipment for maximum energy savings. If the Organization decide to upgrade, it will not only save on energy costs, but also expect the equipment to last a long time. This is because newer, more energy-efficient equipment doesn't have to work as hard as older, outdated units to provide the same level of

performance.

¬ Energy audit evaluation: Energy audits will evaluate the Organization “as a whole”, the goal is not to evaluate single measures but to consider a wide range of available alternatives (Electrical, Mechanical, Envelope and Water).

Energy audit Opportunities: The audit will not only inform about the opportunities but also provide information with financial analysis. This will enable prioritization based on financial benefit and return on investment. It provides technical information regarding the proposed energy conservation measures.

¬ Energy audit quality analysis: A good quality audit will analyse the historical energy use and find potential issues using statistical methods. Provide information with emissions analysis to help understand the benefits of the decisions from an environmental standpoint. Understand where energy is used and which areas are worth focusing on the most. Provide benchmark information to help understand the energy use performance compared to others.

**5. Procedures followed in an Energy Audit**

In order to conduct an energy audit, several methods are adopted in the audit sites in which walk-through audit is conducted. The balance of total energy inputs with total energy outputs and identification of all energy streams in a facility are taken into account. The amount of energy used by each of its energy streams are calculated as per the methodology mentioned in the Manual of Gnanamangai et al. (2021). The top three operating expenses of the Organization are typically observed to be energy (both electrical and thermal), labour and materials. During the audit, physical verification of Lighting, Ceiling, Table and Exhaust Fans, A/C machines, Solar panels, Heaters, Generators, Uninterrupted power supply machines and ventilators load fixtures and verification of installed energy efficient system’s capacities are carried out. Inspection of when the cost or prospective cost savings in each of the above components are considered, energy always wins, and the energy management task becomes a key cost reduction area. The energy audit assisted in better understanding how energy and fuel are used in the Organization as well as identifying waste factors and development potential towards energy savings opportunities. Finally after the audit process, the energy audit included suggestions for energy cost reduction, preventive maintenance and quality control activities, all of which are critical for the utility operations in the auditee (Organization). The audit involved visiting the campus and physical verification of the loads and sources installed. The entire campus is divided into different sections and those sections are audited in which electrical fittings and energy supply are monitored. The production process flow is studied and electricity consumption are measured. Location of the electrical machines, conditions of them and their accessories are inspected through physical verification is observed as per the regulation of Indian Green Building Council (IGBC, 2021) and World Green Building Council (WGBC, 2021). The energy bill from the supply utility company (Example: Tamil Nadu Electric Generation and Distribution Corporation Limited, Chennai) is audited and assessed for the load demand requirement and efficient consumption of energy. Stakeholders are interacted with the scope for improvement and energy management during the audit. Potential areas in which the

scope of energy conservation and saving opportunities available in the current context have been identified and suggested for implementation to the Organization. The level of carbon dioxide might be measured in different places across the Organization campus using a portable CO2 Analyzer to calculate the carbon footprint. It may be useful to check where carbon emission is prominent which could be taken into account to reduce.

The audit involves visiting physical position of load & carry out inventory of load. Due measurement of electrical load of equipment & circuit is carried out. Energy bill received from TNEB is audited & studied for KWH requirement & how efficiently energy is used. Various positions are interacted, familiarized with energy audit & involved for successful & result oriented energy audit. Energy conservation & saving opportunities are identified during round & measurement for implementation.

**6. Types of Energy Audit**

The type of Energy Audit to be performed depends on:

- Function and type of industry
- Depth to which final audit is needed, and
- Potential and magnitude of cost reduction desired

Thus Energy Audit can be classified into the following two types.

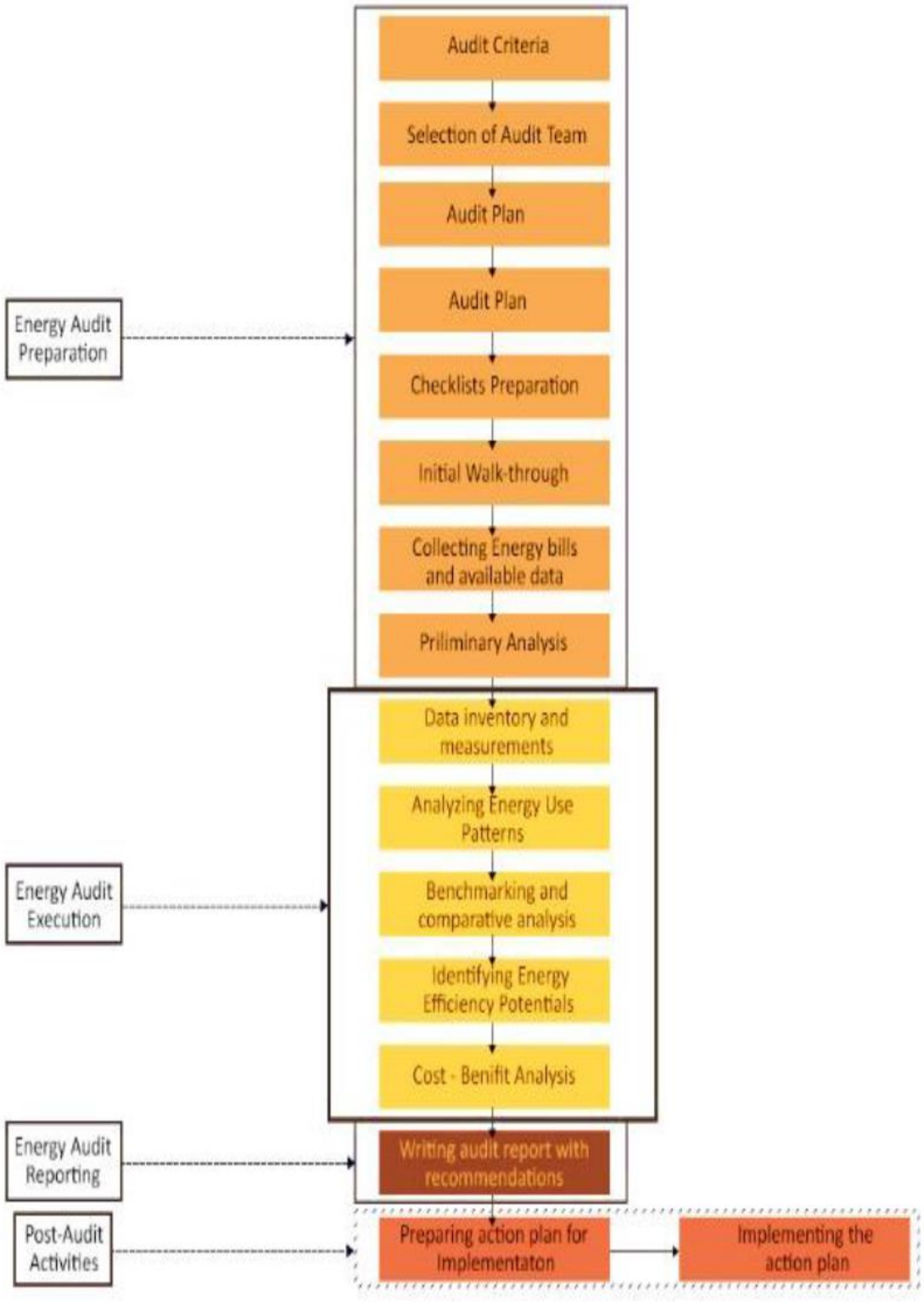
I. Preliminary Energy Audit
II. Detailed Energy Audit
III. Potential and magnitude of Energy Audit
IV. Comprehensive Energy Audit

**6.1. Preliminary Energy Audit Methodology**

Preliminary energy audit is a relatively quick exercise to:

- Establish energy consumption in the organization
- Estimate the scope for saving
- Identify the most likely (and the easiest areas for attention
- Identify immediate (especially no-/low-cost) improvements/ savings
- Set a ‘reference point’
- Identify areas for more detailed study/measurement
- Preliminary energy audit uses existing, or easily obtained data.

The Methodology of the Audit is presented in the following chart:




**Flow chart of Energy Audit Methodology**


**Calculating Carbon footprint**

# Certificate

## HYM International Certifications Pvt. Ltd.

Certified that the Energy Management System of

## SRI A.S.N.M. GOVT COLLEGE

Palakol, West Godavari Dist, Andhra Pradesh, India

has been assessed and found to be in accordance with the requirements of the Energy standards

# ISO 50001 : 2011

for the following scope of certification

## PROVIDING EDUCATIONAL SERVICES

Further information about the scope of this certificate and applicability of ISO 50001 : 2011 requirements may be obtained by consulting the organization.

Issue Date : 10/04/2021

Renewal Date : 09/04/2024

1st Surveillance 09/04/2022

2nd Surveillance 09/04/2023

Authorised Signature

Certificate No : En9186414010

HYM International Certifications Pvt. Ltd

NOTE: Subject to Recertification at the end of every one year from the date of issue of this certificate

This is an accredited certificate authorized for issue by Accreditation Service for Certifying Bodies [Europe] Limited who have assessed M/s.HYM International Certifications Pvt. Ltd. against defined criteria and in cognisance of ISO 17021:2015 "Conformity Assessment - Requirements for bodies providing audit and Certification of management Systems".

www.hymcertifications.com on for checking the validation of the Certification

Regd. Office : Plot No. 265/C, Addagutta Society, Opp. JNTU, Kukatpally, Hyderabad - 500 072, Telangana State, India.
E-mail: siva@hymcertifications.com, Website: www.hymcertifications.com

**NEW & RENEWABLE ENERGY DEVELOPMENT CORPORATION OF A.P. Ltd**
(Formerly Non-Conventional Energy Development Corporation of A.P. Ltd)
5-8-207/2, PISGAH COMPLEX, NAMPALLY, HYDERABAD – 500 001
Phone Nos: 040 – 23202391: 23203376: Fax 040 – 23201666
E-mail, info@nedcap.gov.in Website: www.nedcap.gov.in

Ref: NREDCAP/SE/ NM /35A/2015-16/1663 Date: 22.01.2016

To,

ASNM Govt. College, Doddipatla Road, Palakol, West Godavari-534260

Sir,

Sub: Installation of Grid connected Rooftop SPV plant under the "National Clean Energy Fund" scheme of MNRE – Reg.

Ref: 1. Your Proposal
2. MNRE Sanction Letter No.03/38/2015-16/GCRT dated 31.12.2015

***

Please refer to your proposal for sanction of Grid connected Solar Rooftop System. MNRE has accorded sanction to the proposal for installation of Grid connected Solar Rooftop System. The list of projects sanctioned by MNRE is enclosed. The MNRE sanction is subject to the following conditions,

1. The Grid connected Rooftop Solar Power Plant shall be installed as per minimum technical requirements as per MNRE scheme guidelines issued vide letter no.30/11/2012-13/nsm dated 26.06.2014 and 26.05.2014. in vogue and amended time to time.
2. Only indigenously manufactured PV modules will be used in the project.
3. The Grid connected Rooftop Solar Power Plant will be installed duly following the guidelines stipulated by the DISCOM from time to time.
4. Proper Metering arrangement may be incorporated so that the generation data from the proposed SPV Power Plant will be available.
5. The cost of the project should be firmed up through open competitive bidding. After firmed up cost by competitive bidding, the 15% cost arrived through competitive bidding or Rs 12/- per watt, whichever is lower, shall be considered as CFA and necessary release will be made as per scheme norms.
6. The last date for completion of project is 4 months from the date of issue of the sanction letter (i.e., to be completed before 30th April 2016).
7. The monthly progress reports of the project shall be submitted to NREDCAP during implementation phase.

Contd…2

**No. 03/38/2015-16/GCRT**
**Ministry of New & Renewable Energy**
**Government of India**

13 JAN 2016

Block No.14, CGO Complex
Lodi Road, New Delhi 110003
Dated 31.12.2015

*****

To
The Pay and Accounts Officer
Ministry of New & Renewable Energy
New Delhi

**Subject: Sanction and release of CFA to New and Renewable Energy Development Corporation of Andhra Pradesh Limited for implementation of grid connected SPV power plants of aggregate capacity of 2774kWp in different locations in Andhra Pradesh under Grid Connected Rooftop and Small Solar Power Plants Programme**

Agency Type: State Nodal Agency

Sir,

Sanction of the president of India is hereby conveyed for central financial assistance amounting to **Rs. 3,33,00,000/- ( Rupees Three Crore Thirty Three Lakh only)** to Agency for New and Renewable Energy Development Corporation of Andhra Pradesh for support for implementation of 2774kWp rooftop solar PV plants on different buildings in the State of Andhra Pradesh under the above mentioned programme as per list given in annexure. No beneficiaries in commercial/industrial sector are included in the eligible list.

2. The cost of the project should be firmed up through a transparent process and the actual amount of subsidy will be 15 % of the actual cost or Rs. 12 per watt , whichever is lower .

3. Sanction of the president of India is also conveyed to the release of Rs. 99,00,000/- ( Rupees Ninety Nine Lakh only) to New and Renewable Energy Development Corporation of Andhra Pradesh Limited (NREDCAP) as 1st installment in advance. Details of the release are given below:

| | |
|---|---|
| **i) Amount proposed to be released:** | **Rs. 99,00,000/-** |
| ii) Interest accrued from the previous releases: | N/A |
| iii) Unspent balance of the previous year: | N/A |
| Amount to be released: | Rs. 99,00,000/- |

4. The release of further installments will be considered after submission of requisite claims, submission of project completion reports, utilization certificate and Audited Statement of Expenditure. NREDCAP will also make the sites/premises available for inspection by MNRE or its designated team/agency.

5. NREDCAP will follow all the terms and conditions stipulated in the Administrative approval of the above mentioned programme no. No. 30/11/2012-13/NSM dated 26.06.2014 and as amended time to time.

6. This Ministry may also be kept apprised about the status of the development of the project related activities from time to time. The funds being released may be kept in the interest bearing account and the interest accrued may be credited towards the Govt. account. NREDCAP will also submit the audited Statement of Expenditure (SoE) and Utilization Certificate (UC) in the prescribed format of GFR 19 (A).

7. The grants-in-aid will be regulated in accordance with the provision contained in the Terms and Conditions of Ministry of New and Renewable Energy. The grand-in-aid is also subject to the Chapter 9 of the General Financial Rules, 2005, as amended from time to time, read with the Government of India's decisions incorporated there-under, and any other guidelines which may be issued in this regard, and in particular to the following conditions:

i) The pattern of assistance of rules governing such grants-in-aid has received the approval of the Ministry of Finance, as required under Govt. of India Decision No. (1) under DFPR- Rules 20.

ii) Assets acquired wholly or substantially out of Government Grants shall not be disposed of without obtaining the prior approval of the sanctioning authority of grants-in-aid.

iii) The accounts of NREDCAP shall be audited by C&AG or by any person authorized by him on his behalf in accordance with the provisions laid down in Section 14 of the C&AG (DPC, 1971) as amended from time to time.

iv) The accounts of NREDCAP shall be open for inspection by the sanctioning authority and audit, both by the Comptroller & Auditor General of India under the provision of C&AG (DPC) Act, 1971 and internal audit party by the Principal Accounts Office of the Ministry or Department whenever it is called upon to do so.

v) Other provisions may be inserted keeping in view the special requirement of each institution

vi) The Grantee Institute has no Utilization Certificate as 'due for rendition' under the rules under the Ministry in question.

8. The amount of Rs. 99,00,000/- ( Rupees Ninety Nine Lakh only) will be drawn by the Drawing and Disbursing Officer, Ministry of New and Renewable Energy and disbursed to the New and Renewable Energy Development Corporation of Andhra Pradesh (NREDCAP) as per bank details given as follows:

Name of the account holder: New & Renewable Energy Development Corporation of Andhra Pradesh Limited (NREDCAP)
Bank Name & Address: State bank of Hyderabad,Shanthinagar Branch, #10-2-289/95 Opposite Mahavir Hospital Hyderabad 500028
**Account No: 52188924294**
Account type: Current
IFSC Code: SBHY0020070
MICR Code: 500004057

9. The expenditure involved will be met from within the Sanctioned Budget Grant of Ministry of New and Renewable Energy: Demand No.69-Ministry of New & Renewable Energy, Major Head 2810-New & Renewable Energy, Minor Head: 101-Grid Interactive & Distributed Renewable Power, 01- Grid Interactive Renewable Power; 04-Solar Power, 01.04.31 – Grants-in-aid General during the year 2015-16 (Plan). The amount may be met from the NCEF grant for the programme namely "Grid Connected Rooftop and Small Solar Power Plants Programme".

10. The expenditure has been entered at S. No. 34 & Page No. 09 in the Expenditure Register of this Division.

11. This sanction issues in exercise of the powers conferred on this Ministry in consultation with the IFD's vide Dy. No. 1734 dated 23.12.2015 and approved on 29.12.2015

12. Sanction I. D. No. has been generated.

Yours faithfully,

(Dr. Arun K Tripathi)
Scientist F

Telfax: 011-24363035 ,Email: aktripathi@nic.in

Copy to:

1. Principal Director of Audit, Scientific Dept., DG, ACR Building, IP Estate, N. Delhi
2. AG, CW& M.II (Science Audit), AGCR building, New Delhi.
3. The Accountant General, Govt. of Andhra Pradesh, Hyderabad, Andhra Pradesh
4. Shri M. Kamalakar Babu,Vice Chairman & Managing Director ,New & Renewable Energy Development Corporation of Andhra Pradesh (NREDCAP) Ltd.,5-8-207/2, Pisgah Complex, Nampally, Hyderabad – 500 001
5. JS&FA/DS(F)/US (F)
6. JS(TK)/Sci C (HCB)
7. Cash Section, MNRE (2 copies)
8. Guard File/Spare Copies

(Dr. Arun K Tripathi)
Scientist F

Annexure: list of project

| Sr. No. | Name of the Institution | Category of the Beneficiaries | Total Capacity(kWp) | estimatedproject cost (Rs. in Crore) | Estimated Subsidy @15 % of benchmark cost (Rs. in Crore) |
|---|---|---|---|---|---|
| 1 | Santhiram Medical College and Hospital,Nanyal, Kurnool , Andhra Pradesh | Educational Institute | 500 | 3.95 | 0.60 |
| 2 | Rajiv Gandhi Memorial College of Engineering & Technology, Nandyal , Kurnool Dist AP | Educational Institute | 500 | 3.95 | 0.60 |
| 3 | GSL Educational Society, Rajamundry, East Godavery District | Educational Institute | 500 | 3.95 | 0.60 |
| 4 | Annamacharya Institute of Technology and Sciences | Educational Institute | 100 | 0.86 | 0.12 |
| 5 | Golden Jubilee Hospital , Vishakhapatnum | Govt. Organisation | 100 | 0.82 | 0.12 |
| 6 | Amalapuram Institute of Management Sciences and College of Engineering, East Godavary District | Educational Institute | 100 | 0.96 | 0.12 |
| 7 | The Chief Executive Officer , The District Cooperative Central bank Ltd., West Godavary District | Co- Bank | 25 | 0.20 | 0.03 |
| 8 | Jaya Educational Society, Tripati | Educational Institute | 500 | 4.00 | 0.60 |
| 9 | JK Aqua Farms, East Godavari Dist. | Aqua Farm | 100 | 0.82 | 0.12 |
| 10 | CR Reddy Hospital, Nellore Dist. | Hospital | 25 | 0.20 | 0.03 |
| 11 | C Jayachandra Reddy, Nellore Dist. | Domestic | 6 | 0.05 | 0.01 |
| 12 | The Registrar, Sri PdamavatiMahilaVishvidayalayamTirupati | Educational Institute | 30 | 0.24 | 0.04 |
| 13 | Sri NandyalaSatyanarayana, West Godavari Distt. | Domestic | 10 | 0.12 | 0.01 |
| 14 | KarnoolMuncipal Corporation, Kurnool Dist. | Govt. Organisation | 25 | 0.20 | 0.03 |
| 15 | DR Subramanyam Reddy, TitupathiDistt. | Domestic | 10 | 0.08 | 0.01 |
| 16 | Govt. Degree College Krishna Distt. | Educational Institute | 10 | 0.10 | 0.01 |
| 17 | The Divisional For3est Oficer,Vijaywada, Krishna Dist. | Govt. | 6 | 0.06 | 0.01 |
| 18 | SRR & CVR Govt. Degree College Vijayawada | Educational Institute | 10 | 0.01 | 0.01 |
| 19 | The Commissioner, Srikakulam Muncipality, SrikulamDistt. | Govt. | 40 | 0.46 | 0.05 |
| 20 | Domestic ( Domestic 24nos) | Domestic | 73.2 | 0.73 | 0.09 |
| 21 | Domestic ( 20 nos) | Domestic | 54 | 0.72 | 0.06 |
| 22 | P Chandra Mohan Chetty, Chittoor District, Andhra Pradesh | Hospital | 50 | 0.41 | 0.06 |
| **Total** | | | **2774** | **22.89** | **3.33** |

**MNRE sanction order no.03/38/2015-16/GCRT Dated.31.12.2015**

| Domestic 24nos | | | | | |
|---|---|---|---|---|---|
| S.No | Name of the beneficiary | Category | Capacity (KWp) | Project Cost in Rs | CFA Sanctioned in Rs |
| 1 | ASNM Govt. College, Doddipatla Road, Palakol, West Godavari-534260 | Domestic | 5 KWp | 3,75,275 | 56,291 |
| 2 | D. Balakrishna, 79/4A, Krishna Nagar, Kurnool-518002 | Domestic | 3 KWp | 3,33,000 | 49,950 |
| 3 | Devineni Avinash, #48-4-16, 1st Floor, Ashok Garden, Gunadala, Vijayawada-520004 | Domestic | 3 KWp | 3,33,000 | 49,950 |
| 4 | Devineni Avinash, #48-4-16, 1st Floor, Ashok Garden, Gunadala, Vijayawada-520004 | Domestic | 3 KWp | 3,33,000 | 49,950 |
| 5 | NP Savithramma Degree College, Greamspet, Chittoor-517002 | Domestic | 5 KWp | 5,13,000 | 76,950 |
| 6 | Project Director, AP Housing Corpn, Jyothi Rao Pule Bhavan, New Collectorate, Chittoor-517001 | Domestic | 3 KWp | 3,33,000 | 49,950 |
| 7 | Sreekantam Venkata Ramachandra Rao, D.No.1-99, Sri Nilayam, Sai Nagar, KotiTheertham-524341, Nellore District | Domestic | 3 KWp | 3,33,000 | 49,950 |
| 8 | M Srinivasa Reddy, H.No.1-397/1, Gannavaram road, Agiripally, Krishna district | Domestic | 3 KWp | 2,64,074 | 39,611 |
| 9 | Dr. D.Rajeswara Rao, D.No.18-8-20, 5th Lane, Kedareswarapet, Opp. Municipal School, Vijayawada-520003 | Domestic | 3 KWp | 3,20,000 | 64,000 |
| 10 | Dr. P. Lalitha Kumari, 60-7-4/A, Pink Palace, 4th Lane, Sidhartha Nagar, Vijayawada-520010 | Domestic | 3 KWp | 3,20,000 | 48,000 |
| 11 | Kotha Reddiah, D.No.16-12-76, Hospital Street, Peddapuram, East Godavari Dist. | Domestic | 1.12 KWp | | 34,665 |
| 12 | Sri AC Nagaraju, #27-8-658, Main Road, Mudireddypalle, Hindupur, Ananthapuramu District | Domestic | 3 KWp | 2,64,074 | 39,611 |
| 13 | C. Nagaraju, #27-8-658, Main Road, Mudireddypalle, Hindupur, Ananthapuramu District | Domestic | 3 KWp | 2,65,074 | 39,611 |
| 14 | Lankadasu Appala Swamy, Flat No.FIF-1, Maruthi Residency, NH-5, Tadepalli, Paturu Junction, Guntur Dist-522 501 | Domestic | 3 KWp | 3,33,000 | 49,950 |

**LED LIGHTING SOURCES IN THE COLLEGE CAMPUS**

| LIGHTING THROUGH LED | NUMBERS | WATTS | TOTAL WATTS |
|---|---|---|---|
| OFFICE ROOM | 02 | 20 | 40 |
| EXAMINATION SECTION | 02 | 20 | 40 |
| DEPARTMENT OF ZOOLOGY | 02 | 20 | 40 |
| DEPARTMENT OF MATHEMATICS | 02 | 20 | 40 |
| Street lights LED | 07 | 50 | 350 |
| DEPARTMENT OF COMMERCE | 01 | 20 | 20 |
| DEPARTMENTS OF POLITICS,ECONOMICS,HISTORY | 01 | 20 | 20 |
| Library | 01 | 50 | 50 |
| COMPUTER LABS | 06 | 20 | 120 |
| DIGITAL CLASS ROOMS | 21 | 10 | 210 |
| B.Sc. CLASS ROOMS | 01 | 20 | 20 |
| B.A. CLASS ROOMS | 01 | 20 | 20 |
| B.Com CLASS ROOMS | 15 | 20 | 300 |
| SEMINAR HALL | 24 | 10 | 240 |
| Ladies waiting room | 01 | 20 | 20 |
| TOTAL WATTS = | | 1432 WATTS | |

## SRI A.S.N.M. GOVT. COLLEGE (A), PALAKOL

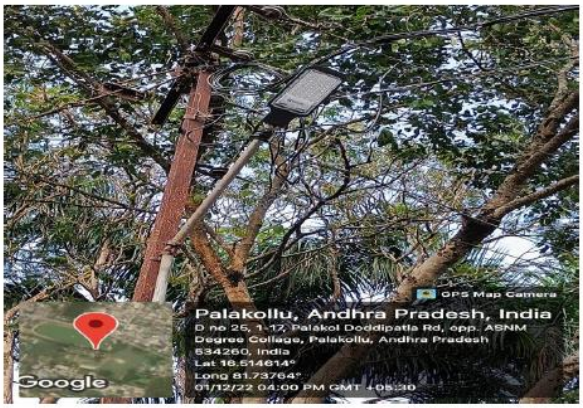
# Solar panels and LED bulbs in the College campus

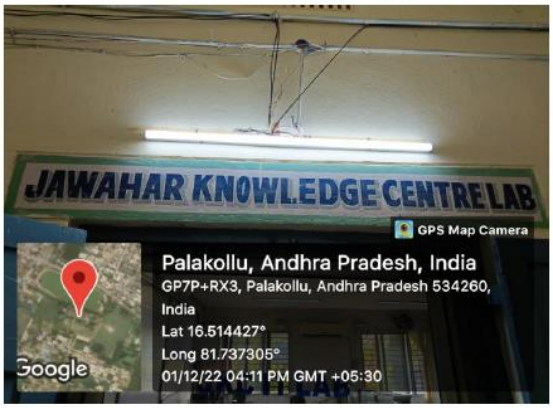

## SOLAR PANELS IN B.Sc. BLOCK

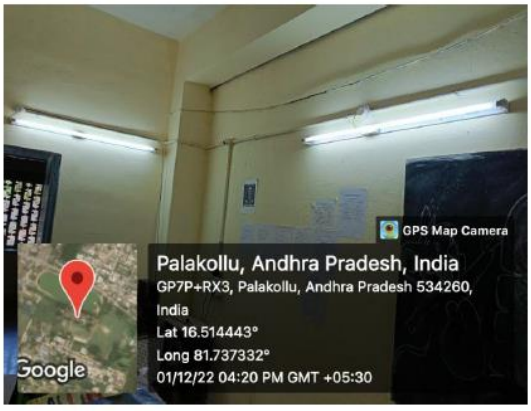

## SOLAR PANELS IN B.A. BLOCK

## LED BULBS IN THE COLLEGE CAMPUS







## LED BULBS IN CLASS ROOMS, DEPARTMENTS AND LABS


**GRID CONNECTED GEOTAGGED PHOTOGRAPH**

## Conclusion:

By use of solar power on an average the college was able to reduce the electricity bill and save money. Further by closely monitoring and strengthening the solar power system the college is planning to reduce the electricity bill as well as to provide excess produced electricity to the power grid in the next six months. For this an estimated amount of rupees 2lakhs is required and the college is planning to tap the funds from NGO's/ Philanthropists/Government agencies like New Renewable Energy Department