



MARIS STELLA COLLEGE (AUTONOMOUS), VIJAYAWADA

A College with Potential for Excellence

NAAC Accredited & ISO 9001: 2015 Certified



**REPORT ON
ENVIRONMENT AND ENERGY AUDIT**

2021-22



Institution : Maris Stella College (Autonomous)
Address : 59A-1-4, Maris Stella College, NH 16 Service Road, Benz
Circle, Vijayawada - 520008
Nature of Business : Educational Institute
Certification Body : HYM International Certifications Pvt. Ltd.
Accredited by : ASCB (E)
Name of Standards : ISO 14001: 2018 (Green Audit)
ISO 50001: 2018 (Energy Audit)
Audit Date : 18.02.2022
No. of man days : 2 man days
Name of Auditor
Team Lead Auditor : Sivaiah Alapati
Team Members : Suma Devi. T
Certificate Type : Initial Certification
Observations : 2
Recommendations : 2
Non-conformities : 0



A Green Campus is a place where environmentally responsible practices and behaviour, green initiatives are adopted, promoted and practiced for sustainable growth and development. Green Campus also supports the implementation of environment protection policies, optimal use of natural resources available in the campus, and advocates the use of eco-friendly products. Greening the campus is about using conventional sources of energies for its daily power needs, conserving natural resources, correct manner of handling, recycling and disposing waste, effective water conservation measures and practices, encouraging the purchase of environment friendly supplies, and a total ban on the usage of plastic products. This requires scrutiny of daily operations to track pollution prevention, managing waste streams and energy use, and promoting environmentally friendly practices. Hence, it is crucial to assess the use of resources like water, soil, air, and energy in the institution and the effectiveness of systems for water and waste management through environment audit. Environment audit plays a pivotal role in examining the judicious use of natural resources available in the campus, efficacy of the policies and systems for waste recycling, energy conservation, air quality maintenance, and water management. Conducting an environmental audit is no longer an option but a sound precaution and a proactive measure in today's heavily regulated environment. Environment audit is done on specific procedures and operational areas to assess their effectiveness and compliance with environmental rules and regulations. Environment audit is crucial for an institution to evaluate its environmental practices and ensure compliance with the different regulations that may apply to them.

Objectives

- To map geographical location of Maris Stella College
- To document the soil conservation strategies of Maris Stella College
- To document the water conservation strategies of Maris Stella College
- To document the biodiversity conservation with reference to fauna and flora
- To document the ambient environment in the campus with reference to energy conservation

About the College

Maris Stella College is a Catholic Christian Minority institution of higher education for women, under the direction of the Franciscan Sisters of Mary. Maris Stella College was founded on 16th July, 1962 to become the first college set up with the express mission of educating young women to be intellectually, morally, socially and spiritually sound, to be equipped to contribute positively to family, community and nation and to become torch-bearers of an equitable society. Maris Stella College strives to enable students to grow into

socially aware and responsible citizens. The college is blessed with a vast campus with abundant green cover and home to a variety of indigenous species of fauna and flora. Maris Stella College has a Green Policy which seeks to conserve resources and preserve the environment by harnessing the sun, catching the rain, providing green cover and managing and restoring from waste. The institution's guiding principles and practices to achieve resource conservation, waste reduction, and sustainability overall are summarized below:

- Conserve energy and other natural resources
- Encourage employees to use public transport/ environment-friendly modes of travel
- Reduce, reuse, and recycle to reduce waste
- Minimize the production of hazardous waste
- Adopt green procurement practices
- Ensure staff and students complete the environmental awareness training
- Continue to review and minimize the impacts of our activities

About the Auditing Agency

HYM International Certifications Private Limited, Hyderabad was established in the year 2012. HYM International Certification Hyderabad is accredited by Accredited Services Certifying Bodies (United Kingdom) London. The vision of HYM is "Right Path for Training and Certification on ISO Standards". The team consisting of Mr. Sivaiah Alapati as Team Lead auditor, and Ms.T. Suma Devi as Team Member visited Maris Stella College, Vijayawada on 18.02.2022 to conduct Environment and Energy Audit.

Biodiversity

Tree Diversity

The sixty-year old college campus has more than 50 varieties of trees that have been documented by the Department of Botany.

More than 50 Polyalthialongifolia (Ashoka), 20 (Mimusopselengi) Pogada, 10 Albizialebeck (dirisina), 20 Peltophorum pterocarpum (pachha), 15 (Delonixregia), 10 Azardirachtaindica (Neem), 5 Pongamiapinnata (Ganugu), 40 Ficus species, 20 Casuarina trees, and 2 Tectonagrandis (Teak) trees are there on the campus. Among them 80% trees are wood yielding and the rest are ornamental.

A total of 50 families and 100 varieties of species are recognized in the campus. These plants absorb maximum CO₂ and produce maximum O₂. Commercial crops like rice (black rice), fruit yielding plants like banana, mango, sapota, guava, papaya, emblica, orange, and vegetable crops such as brinjal, ladies finger, chillies, cassava etc. and leafy vegetables such as amaranthus, mint, curry leaves, coriander, red sorrel etc. are cultivated on the campus.

The campus has five endemic (rare) species: *Rauwolfia tetraphylla*, *Adathoda vasica*, *Andrographis paniculata*, *Cycas revolute*, and *Asparagus racemosus*.

The college is committed to following sustainable development, habitat creation and erosion control like natural forests to fulfil the needs of local biodiversity and for the benefit of future generations.

The trees in the college campus are listed in Table-1 and the medicinal plants in Table 2.

S.No.	Name of the Tree Species	Number	Common Name	Family
1	<i>Polyalthia longifolia</i>	50	Ashoka	Annonaceae
2	<i>Azadiracta indica</i>	10	Neem	Meliaceae
3	<i>Cassia fistula</i>	2	Golden shower	Fabaceae
4	<i>Pongamia pinnata</i>	8	Kanuga	Fabaceae
5	<i>Senna auriculata</i>	12	Tangedu	Fabaceae
6	<i>Albezzia lebek</i>	20	Albezzia	Fabaceae
7	<i>Eukalyptus</i>	2	Jamail	Myrtaceae
8	<i>Palms</i>	10	Areca Palm	Arecaceae
9	<i>Syzygium cumini</i>	20	Malabar Palm	Myrtaceae
10	<i>Musa paradisiac</i>	100	Arati	Musaceae
11	<i>Moringa oleraceae</i>	20	Drumstick tree	Moringaceae
12	<i>Murraya koenigii</i>	20	Curry leaves	Rutaceae
13	<i>Ficus religiosa</i>	10	Raavi	Moraceae
14	<i>Annona reticulate</i> (ramaphalam)	50	Ashoka	Annonaceae
15	<i>Psidium guajava</i>	6	Jaama	Myrtaceae
16	<i>Punica granatum</i>	2	Pomegranate	Lythraceaea
17	<i>Terminalia arjuna</i>	2	Tella maddi	Combretaceae
18	<i>Emblica phyllanthus</i>	8	Amla	Phyllanthaceae
19	<i>Mangifera indica</i>	30	Mango	Anacardiaceae
20	<i>Nerium oleander</i>	20	Nerium	Apocynaceae

21	<i>Courouptia guinensis</i>	1	Cannon ball tree	Lecythidaceae
22	<i>Butea monosperma</i>	2	Fire of the forest	Fabaceae
23	<i>Manilkara zapota</i>	20	Sapota	Sapotaceae
24	<i>Annona squamosa</i>	4	Seethaphalam	Annonaceae
25	<i>Annona reticulata</i>	1	Ramaphalam	Annonaceae

Table 1: List of Tree Species in Maris Stella College Campus

Table 2: List of Medicinal Plant Species in Maris Stella Campus

S. No	Name of the Tree Species	Family Name	Common Name
1	<i>Azadirachta indica</i>	Meliaceae	Vepa
2	<i>Abutilon indicum</i>	Malvaceae	Tutturubenda
3	<i>Acalypha indica</i>	Euphorbiaceae	Muripinda
4	<i>Achyranthus aspera</i>	Amaranthaceae	Uthareni
5	<i>Aloe vera</i>	Liliaceae	Kalabandha
6	<i>Alternanthera sessilis</i>	Amaranthaceae	Ponnagantikura
7	<i>Araca catechu</i>	Arecaceae	Poka
8	<i>Artocarpus integrifolia</i>	Moraceae	Panasa
9	<i>Boerhaavia diffusa</i>	Nyctaginaceae	Atakamamidi
10	<i>Calotropis gigantea</i>	Asclapiadaceae	Gelladu
11	<i>Carica papaya</i>	Caricaceae	Boppai
12	<i>Cassia auriculata</i>	Cesalpiniaceae	Boppai
13	<i>Cassia fistula</i>	Caesalpinaceae	Tangedu
14	<i>Catheranthus roseus</i>	Apocynaceae	Billaganneru
15	<i>Cathranthus alba</i>	Apocynaceae	Billaganneru
16	<i>Ceiba pentandra</i>	Bombacaceae	Buruga
17	<i>Ciccaacida</i>	Euphorbiaceae	Vusirikia
18	<i>Citrus aurantium</i>	Rutaceae	Naringa
19	<i>Citrus lemon</i>	Rutaceae	lemon
20	<i>Cleome viscosa</i>	Capparadaceae	Vomitlu

21	<i>Cymbopogon</i> spp	Poaceae	Bodagaddi
22	<i>Datura metel</i>	Solanaceae	Vumetha
23	<i>Eclipta alba</i>	Asteraceae	Guntagalalagara
24	<i>Eucalyptus globosa</i>	Myrtaceae	Zamoil
25	<i>Euphorbia hirta</i>	Euphorbiaceae	Pachabotlu
26	<i>Euphorbia tirucalli</i>	Euphorbiaceae	kadajemudu
27	<i>Ficus racemosa</i>	Moraceae	Medi
28	<i>Ficus religiosa</i>	Moraceae	Raavi
29	<i>Ficus benghalensis</i>	Moraceae	Marri
30	<i>Gossypium arboreum</i>	Malvaceae	Pathi
31	<i>Hibiscus rosasinensis</i>	Malvaceae	Mandara
32	<i>Jatropha gossypifolia</i>	Euphorbiaceae	Nephalun
33	<i>Lawsonia inermis</i>	Lythraceae	Gorinta
34	<i>Mangifera indica</i>	Anacardiaceae	Mamidi
35	<i>Moringa tinctoria</i>	Moringaceae	Munaga
36	<i>Murraya tinctoria</i>	Moringaceae	Mumaga
37	<i>Ocimum sanctum</i>	Lamiaceae	Tilasi
38	<i>Ocimum basilicum</i>	Lamiaceae	Sabja
39	<i>Phyllanthus neruri</i>	Euphorbiaceae	Nelavusire
40	<i>Phyllanthus emblica</i>	Euphorbiaceae	Nelavusire
41	<i>Physalis minima</i>	Euphorbiaceae	Vusirika
42	<i>Pongamia pinnata</i>	Fabaceae	Kanuga
43	<i>Pongamia longifolia</i>	Fabaceae	Kanuga
44	<i>Psidium guajava</i>	Myrtaceae	jama
45	<i>Punica granatum</i>	Punicaceae	Denemma
46	<i>Ricinus communis</i>	Euphorbiaceae	Aamundam
47	<i>Sida cordifolia</i>	Malvaceae	Aribala
48	<i>Syzygium cumini</i>	Myrtaceae	Neredu
49	<i>Tamarindus indica</i>	Cesalpiniaceae	Chinta

50	<i>Tephrosiapurpuria</i>	Fabaceae	Vempalli
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Polyalthia longifolia



Syzygium cumini



Delonix regia



Mimusops elengi

Faunal Diversity

India, an acclaimed mega-biodiversity nation, represents about 6.4% of the total global fauna in its share of only 2.4% of the total land surface of the world. Biogeographically, the country is divided into ten different biogeographic zones: Trans Himalaya, Himalaya, Desert, Semi-Arid, Western Ghats, Deccan Peninsula, Gangetic Plains, Northeast, Islands, and Coasts. The Indian Himalaya (IH) with a total area of 3, 95,485 sq. km. comprised of 2 biogeographic zones including 7 biotic provinces:

1. Trans Himalaya (Ladakh Mountains: 1A, Tibetan Plateau: 1B, Sikkim: 1C)
2. Himalaya (North-West: 2A, West: 2B, Central: 2C and East: 2D)

Despite being one of the global biodiversity hotspots of the world, so far no attempt has been made to catalogue the faunal diversity of the extant species reported from Maris Stella College, Vijayawada.

India is one of the hotspot for biodiversity owing to its versatile and endemic distribution of flora and fauna. Keeping in view of the immense biodiversity potential, a large network of Indian Biosphere reserves, National parks, Wild life sanctuaries and sacred grooves vested for the conservation and sustainability of valuable biodiversity.

The geographical and ecological ambits under which Maris Stella College categorically falls are Deccan plateau, Coastal Andhra (central). Central Coastal Andhra is blessed with wide variety of fauna. Maris Stella College which is located in the proximity of Krishna River has a prevailing variety of fauna ranging from annelids to insects (under Invertebrates) and amphibians, reptiles, birds to mammals (under Vertebrates). Owing to the climatic, terrestrial and local atmospheric favourability the common fauna in habituating in the Maris Stella College campus was tabulated.

The following table contains the fauna which is commonly in habituating in the region in general, and Maris Stella College in particular. Insects are widely prevailing fauna in the campus in terms of number of species in habituating in the campus.

1	Vertebrates	Fishes
2	Amphibians	<i>Hoplobatrachus tigerinus, Duttaphrynus melanostictus</i>
3	Reptiles	<i>Hemidactylus</i>
4	Mammals	<i>Canis lupus familiaris, Bonnet macaque</i>
5	Birds	<i>Columba livia, Corvus splendens, Psittaciformes</i>

Soil Management

Soil conservation is a combination of practices used to protect the soil from degradation. First and foremost, soil conservation involves treating the soil as a living ecosystem, and recognizing that all the organisms that make the soil their home, play important roles in producing a fertile healthy environment. Soil conservation is the need of the day as it protects the loss of this natural resource and improves agricultural production.

Maris Stella College has adopted organic vermicomposting practice for soil conservation.

Organic Vermicomposting

The main objective of vermicomposting is to produce organic manure of exceptional quality for the organically starved soil by using college campus plant refuse agricultural wastes, garden wastes, office paper waste, hostel kitchen waste, canteen waste, and animal farm waste which are usually dumped at places resulting in a foul mess. The biological waste obtained in the college campus through plant refuse, garden weed, hostel kitchen waste, office paper waste, and canteen waste is recycled to obtain vermicompost. Vermicomposting is a simple way to add rich nutrients to the agriculture crop fields and restores vitality to the depleted soil. It's also free, easy to make, and good for the environment. The Department of Agriculture and Rural Development trains the students in Vermicomposting Techniques which is their Best Practice.

Objectives

- To maintain Vermicomposting Unit in Maris Stella College for the welfare of students, staff, and society
- To utilize campus plant and garden waste by using earthworms and get vermicompost as a Black Gold
- To create awareness among the students and society about the use chemical free vermicompost as an organic fertilizer for agriculture.
- To provide vermicompost produced in the campus free of cost for agricultural and horticultural purposes
- To provide Vermicomposting Technology as a Skill Development Course for Maris Stella College students

Benefits

The students of B.Sc. Agriculture & Rural Development are involved in the preparation of organic vermicompost. So, this practice acts as an awareness tool for students about the eco-friendly method of waste management and as a provider of fertilizers to the college garden. The organic composting addresses many environmental problems by conditioning the soil with compost, creating rich humus for lawn and garden. This process adds nutrients to the plants and helps retain moisture in the soil.

Solid waste management takes place due to vermicomposting as office paper waste, campus green refuse, kitchen and canteen waste are recycled through decomposition mechanism.

The organic composting results in introducing beneficial organisms to the soil. Microscopic organisms like saprophytic microorganisms in compost help aerate the soil, simplify into organic material for plant use.

The segregation of campus waste into plastic waste, wet waste and dry waste and conversion of dry waste and wet waste into compost serves the dual purpose of recycling the waste in the campus and also reducing the pollution in the campus through an eco-friendly approach.

1. The college has constructed two permanent chambers for solid waste management and vermicomposting in the college campus. First unit is of 9 ft. length, 9 ft. width, and 5 ft. deep, which is about 2 ft. above ground level to avoid entry of rainwater into the chambers for solid waste decomposition. The college campus waste like agricultural waste, botanical garden waste, office paper waste, hostel kitchen waste, canteen waste, and animal farms waste are dumped in this pit for recycling.

2. The second unit is of 12 ft. in length, 4 ft. in width, and 2 ft. in depth, which is about 2 ft. above ground level to avoid entry of rainwater into the chambers. In this pit solid waste decomposed material is dumped. *Eisenia foetida* (Red Worms), *Eudrilus eugeniae* (Night crawler) and the native species *Perionyx excavates* of the earthworms are added to the decomposed material in the second pit for vermicomposting as this species has high conversion ratio.

Vermicomposting is an advantageous technology for solid waste management. Vermicomposting results in earthworms and vermicompost products. The vermicompost can be used as bio-fertilizers whilst the earthworms can be used for further vermicomposting.



Releasing the earthworms

The institution has shade net structures to provide favourable environment for the crop growth there by achieving greater yield and high-quality produce. The construction of shade net structures was undertaken by the Department of Agriculture and Rural Development. This department trains students in soil conservation techniques, water management, and crop cultivation. The main agricultural applications of shade net covered structures are: protection against meteorological hazards, insects, and little animals; reduction of solar radiation; and soil covering. Nets are also used for harvesting fruits, vegetables and flowers.



Construction of shade net

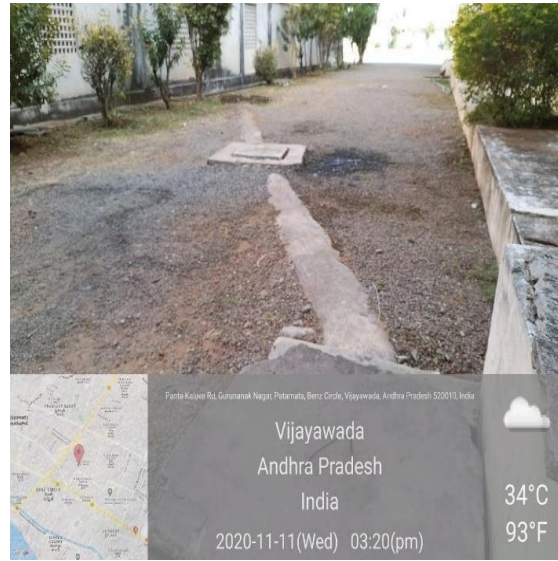
Water Conservation

Water is the most important natural resource essential for living. Hence it is necessary to use water economically and preserve it. One of the ways to minimize misuse and wastage of water is to reuse water and this is the core idea of water conservation. Water Conservation is the practice of efficiently preserving, controlling, and managing water resources.

Rain water harvesting system was incorporated in the architecture plan and has been installed in the college building right from its inception. The college practices rainwater harvesting which recharges the bore wells in the campus and also helps in water conservation. The institution collects and stores rain water running down the roof top, logged on the road, and in the college playground. Rain water harvesting assists in recharging ground water and improves the water table. It improves quality and quantity of ground water. Rainwater harvesting measures are essential when the ground water is brackish or has a high Iron or



Rain water collection sump



Water pipes carrying rain water

There are five rain harvesting pits in the campus and each pit is 5 ft. in length, 5 ft. in width, and 10 ft. in depth. With the construction of an RO plant to provide clean drinking water for students, one more rain harvesting pit has been constructed nearby the RO plant to make use of the water discharged after the reverse osmosis process. Thus, the institution has six rain harvesting pits. Water collected in the rain harvesting pit adjacent to the Indoor Stadium is used for agricultural purposes and the water stored in the second pit is used for aquaculture.



Paddy seedling transplantation with harvested rain water



After transplantation, paddy seedling growing well harvested rain water

Water Meters

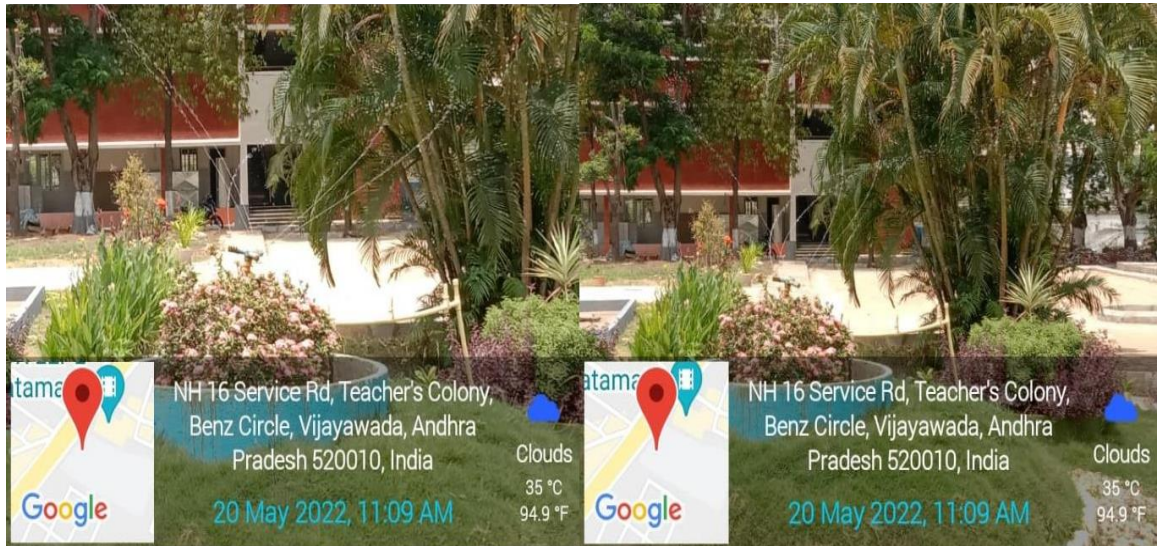
The institution has installed water meters for effective water management. Water meters measure the characteristics of liquid water, its speed of flow, the quantity used, its pH balance, and its quality, how well it conducts electricity. Many meters are used to calculate monthly water bills, others to measure just the right amount of liquid to add to a product or process.



Water meters installed in the institution

Water Efficient Irrigation System

Drip irrigation is the most water-efficient way to irrigate many different plantings. It is an ideal way to water in clay soils because the water is applied slowly, allowing the soil to absorb the water and avoid runoff. Drip devices use a fraction of the water that overhead spray devices use.



Drip irrigation in the campus

Energy Conservation

In today's world, energy is not only the future, it drives everything in the present. As a global society, we generate and use more energy than ever before, and the demand for energy is continually increasing. While we have been able to expand energy production to keep up with demand, there are physical, geographical, and economic limits to how much can be produced. The energy on Earth is not in unlimited supply. Furthermore, energy can take plenty of time to regenerate. This certainly makes it essential to conserve energy. Energy conservation is the prevention of the wasteful use of energy, especially in order to ensure its continuing availability. Educational institutions play a major role in it as they can sensitize the students in this regard. In this regard Maris Stella College has adopted the following responsibilities towards energy conservation. They are

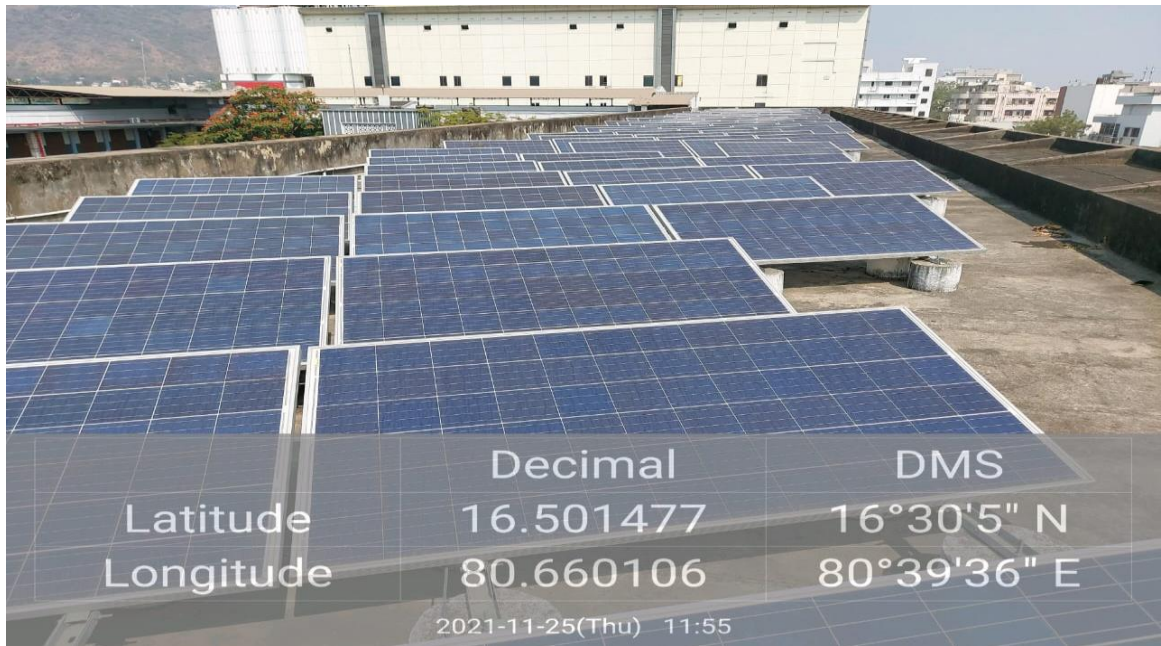
- Turn off lights when not in use and use natural light when possible.
- Turn off all computers, terminals, speakers and other office equipment at the end of every work day.
- Activate the power down features on the computer and monitor to enter into a low-power or sleep mode when not in use.
- Unplug equipment that drains energy even when not in use (e.g., cell phone chargers, fans, desktop printers).
- Use LED lighting wherever possible.
- Utilize video conferencing and conference calls as an alternative to travel when possible.
- Limit the use of air conditioners.

All the appliances that we use like computers, refrigerators, air conditioners use electrical energy. Electrical Energy that we use to run our appliances is generated majorly through thermal power plants where large amounts of fossil fuel, mainly coal, are burnt every day to produce electricity in India. This burning of fossil fuels adds a lot of carbon into the atmosphere, making the earth warmer. So there is a dire need for renewable sources of energy. Renewable energy or green sources of energy like solar and wind provide electricity without impacting environment and do not get exhausted. This makes it imperative for us to use energy efficiently and switch to alternative, green sources of energy. Hence it is imperative to conduct energy audit as it recommends ways to implement renewable energy systems and energy efficiency enhancement technologies thereby reducing the overall carbon footprint. Energy audit consists of: scout energy consumption in the organization, find scope for saving, identify the most likely areas for attention as well areas of improvement/ savings, and set a reference point.

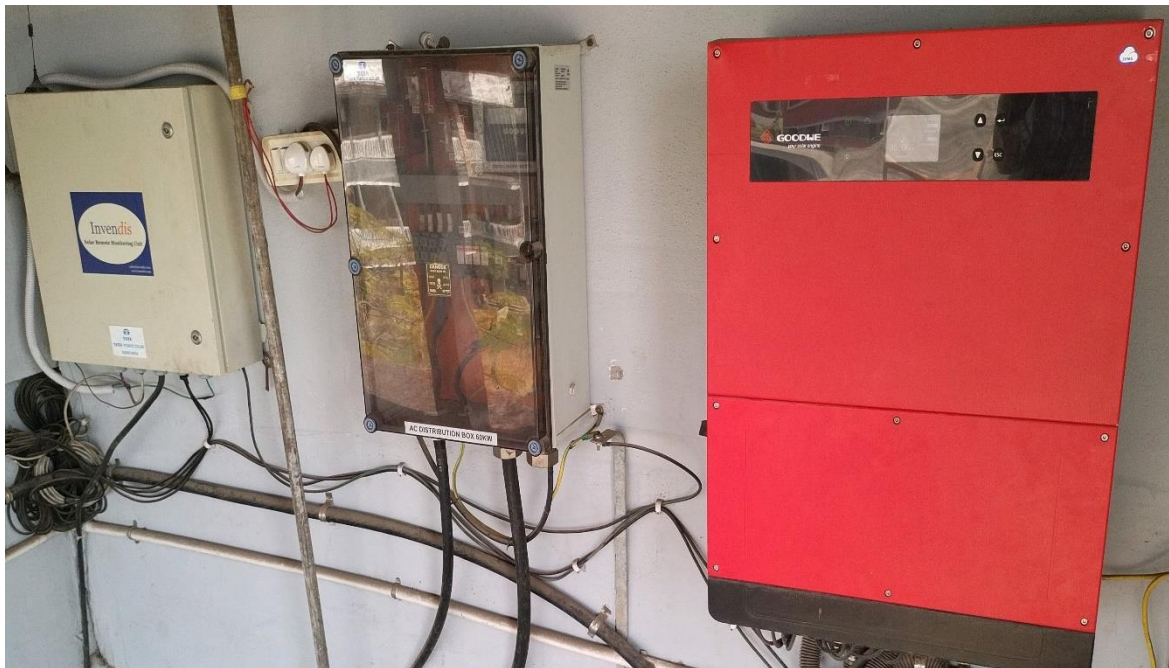
The institution has installed solar panels to make use of renewable energy source. The institution generates solar energy as a part of its idea to switch to renewable form of energy. There are 169 solar panels fixed over the roof top the main block to generate solar energy. The details of the solar panels is given below:

Company Name	:	TATA Power Solar
Inverter Purchased from	:	TATA Power Solar
Inverter Capacity	:	50K
Inverter Model	:	GW50K-MT
Inverter Serial Number	:	9050KMTS187R0015
Inverter Installation date	:	FEBRUARY - 2019
End customer Name	:	Dr. Sr. Jasintha Quadras, Principal
Site Address	:	Maris Stella College, NH-16 Service Road, Benz Circle, Vijayawada – 520 008
Support Required	:	Technical Person to get the data
Contact Name	:	Mr. Prasad, IT Admin

The solar panels are cleaned periodically and maintained in good condition. Due to the second wave of as classes were conducted in online mode the institution was able to contribute power to the grid as less electricity was consumed and also had surplus power through solar energy.



Solar panels on the top of the main block



Solar Power Grid

As the demand for college tuition continues to rise, so does the cost of running an educational institution. With big campuses, there are dozens of student facilities and miles of pathways that should be lit throughout the day. Due to the constant use of electricity, the lighting bills of college exceed the allocated budget. That requires more money in lighting up the facilities instead of other crucial investments in education. So it becomes

essential for college administration to save electricity costs by installing energy-efficient LED lighting fixtures. It decreases energy consumption and saves the cost of maintenance. A well-designed hi-tech LED lighting system can provide safety and financial benefits for campuses. Apart from saving energy and going green, there are numerous other benefits of installing LED lights on college campuses. LED lighting fixtures are more beneficial for saving energy and conserving the environment. These lighting solutions help a lot in maintaining campus security, providing better quality light, improving student safety, and giving facility managers a sense of peace that comes with purchasing long-lasting products.

Maris Stella College is putting continuous effort in reducing the electricity consumption on campus by switching to energy efficient lighting fixtures. In comparison to incandescent bulbs and CFLs, LED bulbs are most efficient, longer lasting and durable and consumes much lesser energy. Improving energy efficiency in College campus can help reduce GHG emissions and air pollutants by decreasing consumption of fossil fuels.

Given below are the energy consumption details at Maris Stella College:

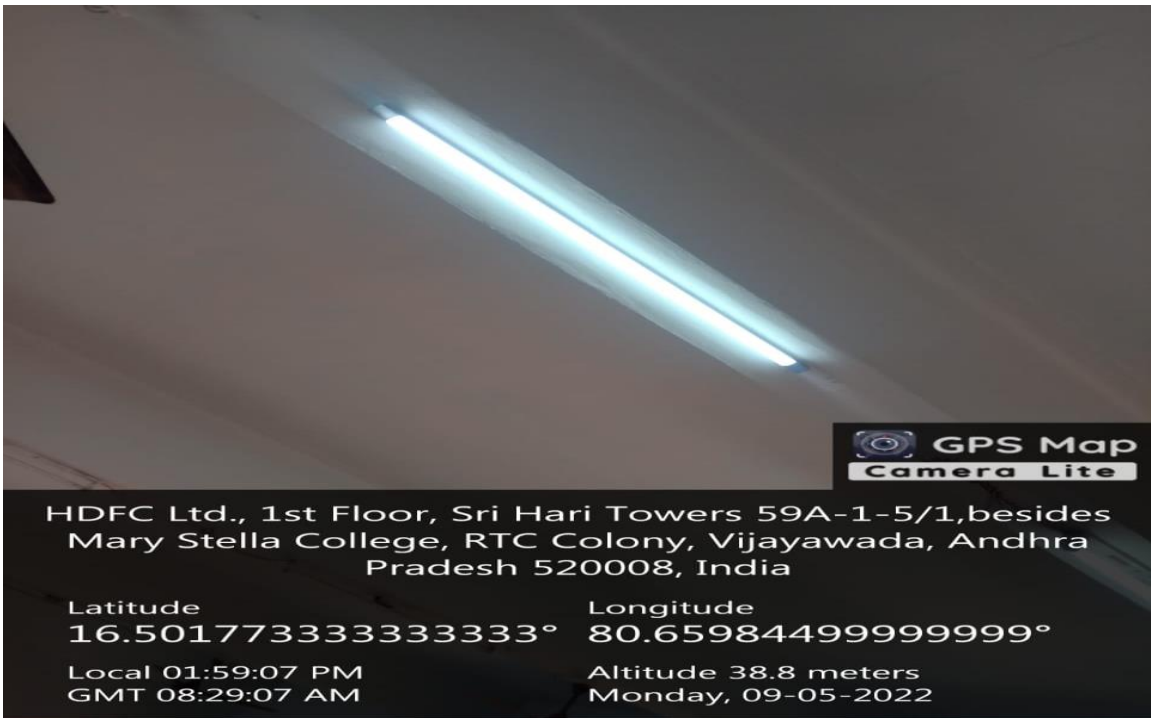
Heavy consumption areas are auditorium, office, examination section, computer labs, and audio-visual room. Medium consumption areas are the classrooms, physics lab, biotechnology lab, food science and technology lab, English language lab, RUSA lab, conference room, canteen, and indoor stadium. Low consumption areas are chemistry lab, electronics lab, zoology lab, botany lab, Bonaventure block, Helen block, Francis block.

Calculation

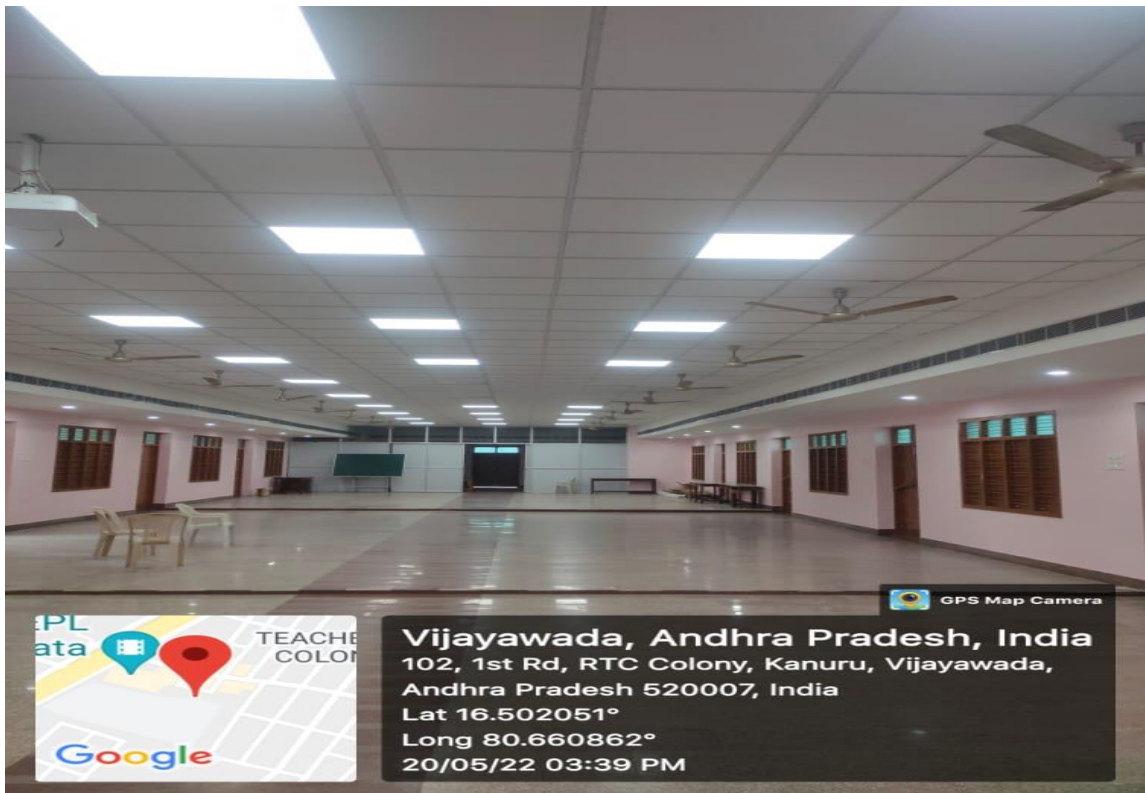
Details of lighting system used in the college:

Total No. of Light bulbs	Incandescent / CFL bulbs	LED bulbs	Percentage of LED bulbs using in the campus
1382	337	1045	75.61 %

$$\begin{aligned} \text{Percentage of LED lights used in the college} &= \frac{\text{No. of LED lights}}{\text{Total No. of lights}} \times 100 \\ &= \frac{1045}{1382} \times 100 = 75.61 \% \end{aligned}$$



Room No. M2-3



Auditorium


Power Consumption

MARIS STELLA COLLEGE (AUTONOMOUS), VIJAYAAWADA							
COMPARATIVE STATEMENT FOR METER NO 6512305000312							
Electricity and Solar Reading from April 2021 to March 2022							
Months	KVAH			Solar			Net difference
	Present	Previous	Difference	Present	Previous	Difference	
Apr-21	118088	110572	7516	64833	63415	1418	6098
May-21	124046	118088	5958	67467	64833	2634	3324
Jun-21							
Jul-21	177908	124046	53862	74711	67467	7244	46618
Aug-21	181672	177908	3764	76263	74711	1552	2212
Sep-21	181672	181672	0	76263	76263	0	0
Oct-21	9702	3820	5882	1323	363	960	4922
Nov-21	14776	9702	5074	1817	1323	494	4580
Dec-21	18547	14776	3771	2688	1817	871	2900
Jan-22	21248	18547	2701	3466	2688	778	1923
Feb-22	24649	21248	3401	4178	3466	712	2689
Mar-22	29393	24649	4744	4758	4178	580	4164
Apr-22	32763	29393	3370	5637	4758	879	2491
May-22	37101	32763	4338	6246	5637	609	3729
Jun-22	39086	37101	1985	7028	6246	782	1203

**MARIS STELLA COLLEGE (AUTONOMOUS), VIJAYAAWADA
COMPARATIVE STATEMENT FOR METER NO 6512305000312**

Electricity and Solar reading April 2021 to March 2022

Months	KVAH			Solar			Net difference
	Present	Previous	Difference	Present	Previous	Difference	
Apr-21	118088	110572	7516	64833	63415	1418	6098
May-21	124046	118088	5958	67467	64833	2634	3324
Jun-21							
Jul-21	177908	124046	53862	74711	67467	7244	46618
Aug-21	181672	177908	3764	76263	74711	1552	2212
Sep-21	181672	181672	0	76263	76263	0	0
Oct-21	9702	3820	5882	363	62	301	5581
Nov-21	14776	9702	5074	1323	363	960	4114
Dec-21	18547	14776	3771	1817	1323	494	3277
Jan-22	21248	18547	2701	2688	1817	871	1830
Feb-22	24649	21248	3401	3466	2688	778	2623
Mar-22	29393	24649	4744	4178	3466	712	4032


 Sub-Electricity Revenue Office
 A.P.C.P.D.C.L., Patamata, Vijayawada

Sensitization Programmes for Students

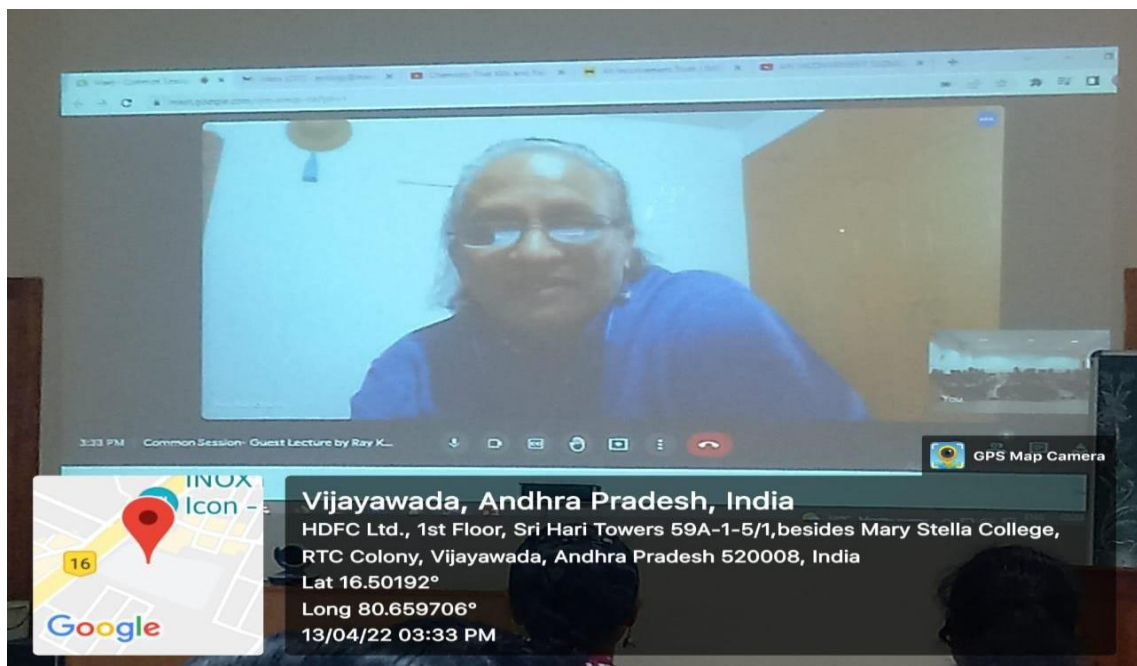
The institution organized various programmes to create and raise awareness in protecting the ecosystem.

- In a bid to raise awareness about environmental issues affecting the planet, such as pollution, deforestation and global warming, Eco Ambassadors of Green Club, Maris Stella College observed Earth Day on 22-04-2022. The Eco Ambassadors of Green Club announced a “REEL, SNAP & TUNE” contest with a theme “A video of Mother Earth back to life”, “A Earth snap clicking the beauty of Mother Earth and “A Song or Poem on Mother Earth”. Sparklit Club of English Department conducted Hyku poem contest on “Mother Earth”.



World Earth Day celebrations in blended mode on 22.04.2022 in the AV room

- The Eco Ambassadors of Green Club organized a guest lecture on Ecological Crises on 13-04-2022. The resource person Mr. Ray Kancharla, Climate Change and Youth Leadership Activist asked the students to protect the environment by doing simple things like switching off fans and lights when not in use, non-purchase (usage) of single plastic items, planting at least one tree, commuting by public transport and thereby reducing the use of private vehicles.



Mr. Ray Kancharla, the resource person during the session

- Maris Stella College, proudly commemorated the World Water Day celebrations on 22.03.2022, along with many other nations. Many activities like holding placards in front of the college, carrying captions about the wise use of groundwater, short play, folk song on saving water, a quiz, mime, discussion etc. were arranged to stimulate the students and the people in the neighbourhood and make them address the critical water issues so that everyone would use water wisely.



Mime on “Consequences of wasting water” as a part of World Water Day celebrations on the highway in front of Maris Stella College on 22.03.2022

- The Departments of Physics and Chemistry, Maris Stella College, Vijayawada jointly arranged an invited talk followed by an awareness programme on the subject, ‘Pollution Control’ on 3rd December, 2021 from 2.00 PM to 4.00 PM as a part of National Pollution Control Day celebrations. A team of students enacted role plays, dialogue, mime, dance and performed simple experiments on pH, TDS and hardness with different water samples (ground water, municipal water and RO water samples instantly gathered from students) and demonstrated the quality of drinking water. As an outreach activity, fifty five students accompanied by six faculty members visited three schools: Bishop Grassi High School- Gunadala, Saint Antony’s RCM Girls High School- Tarapet, Christ The King(E.M) School-Christurajapuram and enacted role plays, dialogue, mime, dance, performed simple experiments on pH, TDS and hardness with different water samples (ground water, municipal water and RO water samples instantly gathered from students) and demonstrated the quality of drinking water in those campuses on 2nd December, 2021.



Dr. Sanjiv Kumar delivering a talk on 'Importance of Pollution Control from a Material Science Perspective', 03.12.2021



Experimental Demonstration on 02.12.2021

Observations

The audit team made two observations during their visit to Maris Stella College. The team appreciated the rain harvesting methods, drip irrigation system adopted by the institution, water meters installed and commended the judicious use of water collected through rain harvesting for agricultural purposes. The team welcomed the efforts of the Eco Ambassadors of Green Club with regard to the programmes and awareness campaigns organized for the students which in turn raised the pitch for eco-system protection in the campus. The Maris Stella College campus flora was given QR codes during 2020-21. The department of Botany initiated this programme and around 100 plants on the campus were given QR codes to bring awareness on scientific and vernacular names of the plants and their significance.

Recommendations

The audit team suggested two improvements towards improvement of natural resources in the campus. The team advised the institution to adopt testing of water, soil, and air quality in the campus in order to create awareness on these and incorporate necessary reforms in improving the water, soil, and air quality, if need be. The audit team also recommended effective measures towards treatment of grey water.

Conclusion

The audit team acknowledged the initiatives implemented by the institution towards greening the campus. The audit team advised the institution to spread the green campaign in the nearby areas and villages through community service measures thereby widening the campaign for a clean and green environment.

