Upgrading Buildings to Higher Energy Efficiency

SRM University-AP, located at Amaravati in Andhra Pradesh, is steadily making its existing buildings more energy efficient. Rather than relying on general intentions, the university commissioned an independent Energy, Environment and Green Audit to find out exactly where energy is used in its academic blocks, hostels, laboratories and utility rooms, and what can be improved.

The audit was carried out by RAM-KALAM Centre for Energy Consultancy and Training, an ISO 9001:2015 certified firm led by a BEE certified energy auditor. The audit team made field measurements on 30 June and 1 to 3 July 2025 and analysed the energy data for April 2024 to March 2025. The result is a clear picture of the campus today and a costed list of upgrades that can reduce electricity use further.

2. Where the Campus Stands Today

In 2024-25 the campus used about 1.83 crore units (18,286,800 kWh) of electricity at a cost of around Rs 1,886 lakh. Nearly all of this, about 95.4 percent, came from the state grid. Rooftop solar supplied 3.2 percent and diesel generators about 1.4 percent. The audit uses these figures as the baseline against which every proposed upgrade is measured, which means the university can track the effect of each improvement in real terms.

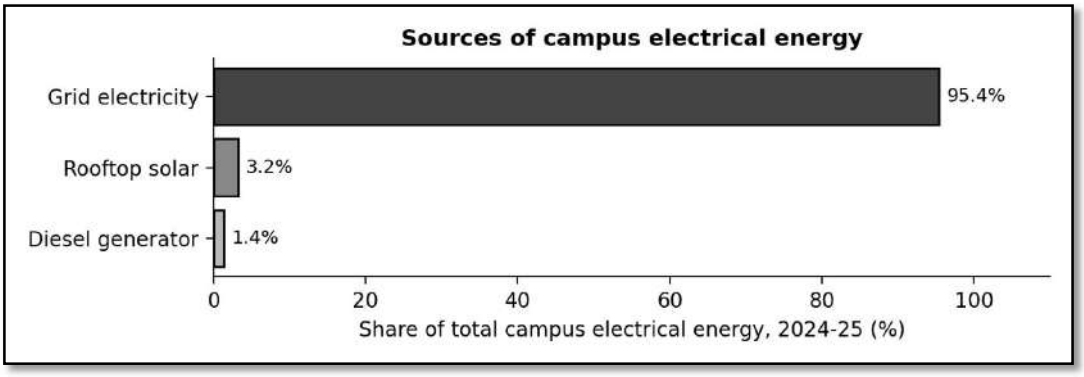


Figure 1. Sources of campus electrical energy, 2024-25

3. Energy-Efficient Features Already in the Buildings

3.1 Lighting

SRM University-AP has already moved a large part of its lighting to LED technology in 2025. The campus has 27,783 LED fittings, and all outdoor and street lighting uses LED lamps controlled by timers. Indoor spaces such as the auditorium use LED downlights, linear LED strips and LED panel lights, as shown in Annexure B. The

university has cut its lighting energy use by about 40 percent. The remaining conventional tube lights (FTL) in indoor areas are not forgotten.

3.2 Fans and Cooling

Fans on campus are a mix of BLDC (electronically commutated) and conventional fans. In 2025 the campus had 5,248 fans, of which 2,191 (42 percent) are BLDC fans and 3,057 are conventional. Table 1 gives the building-wise position. BLDC fans are already in use in most of SR Block (100 percent), CV Raman (98 percent) and Ganga (80 percent).

Table 1: Building-wise fans and BLDC fans on campus, 2025

No.	Building	Total fans	BLDC fans	BLDC share (%)
1	Krishna	285	28	9.8
2	Godavari	267	26	9.7
3	Kaveri	274	27	9.9
4	Narmada	286	28	9.8
5	Yamuna	320	32	10.0
6	HB, VS, JC Bose and VS Block	282	144	51.1
7	Vedavathi	1,529	30	2.0
8	Ganga	567	453	79.9
9	SR Block	649	649	100.0
10	CV Raman	789	774	98.1
	Total	**5,248**	**2,191**	**41.8**

A BLDC fan draws only about 35 watts at full speed, which is more than 50 percent lower than a conventional fan and saves energy in both lighting and cooling loads. Air conditioning is handled mainly by BEE star rated units, with outdoor units placed in shaded areas of the buildings, and all air-conditioned rooms are set to 24 degrees Celsius in line with BEE norms. Larger buildings with higher cooling needs are served by dedicated air handling units (AHUs).

3.3 Rooftop Solar Power

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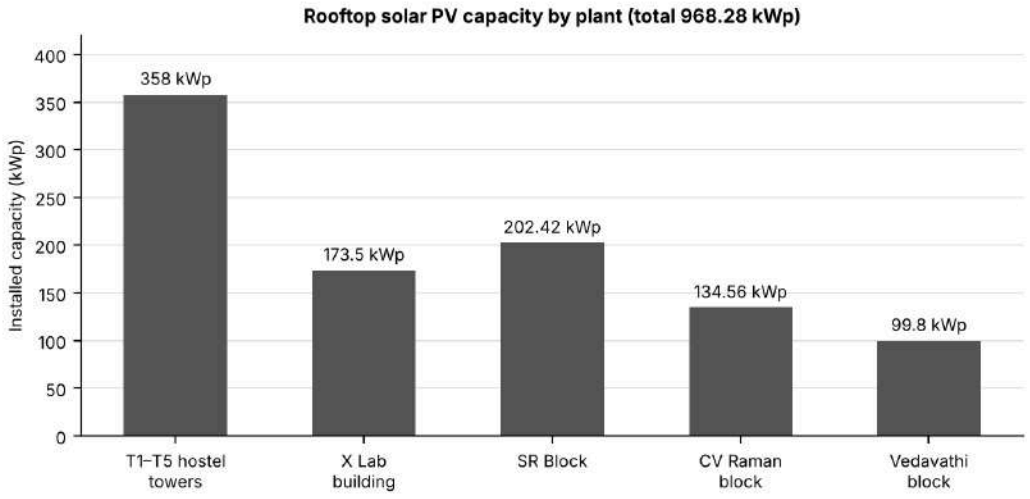


Figure 2. Rooftop solar PV capacity installed on campus buildings

3.4 Solar Water Heating

Solar water heaters are also installed on the hostel buildings. Insulated hot water storage tanks, with their circulation pumps, piping and control panels, are placed on the hostel roofs and supply hot water to the hostels using solar energy, which reduces the electricity that would otherwise be used for water heating. Photographs of the installations are given in Annexure C.

3.5 Sensor-Based Equipment

The campus also uses over 1,300 sensor-based equipment items, which switch devices on and off or adjust them automatically so that energy is not wasted when areas are unoccupied.

4. Plan to Upgrade Existing Buildings Further

4.1 A Costed Plan Based on an Independent Audit

The audit proposes 13 energy conservation measures for the existing buildings. Together they could save about 16.5 lakh units (1,650,964 kWh) every year, which is about 9 percent of the university's annual electricity use. This is worth roughly Rs 170 lakh a year. The estimated investment is Rs 230.9 lakh, and the audit calculates a combined payback period of only 1.36 years (about 16 months). Because the payback is so short, the plan is both practical and financially attractive for the university to carry out.

The measures fall into four groups. The first group needs no investment and is about better operation, such as cleaning solar panels regularly, cleaning AHU filters and monitoring their condition, setting transformer taps to bring supply voltage to the standard value, and using more of the solar energy generated. The second group

improves the electrical network by replacing worn-out capacitors and adding capacitor compensation at distribution boards to cut cable and system losses. The third group improves pumps and fans: variable frequency drives (VFDs) on primary and condenser pumps, conversion of the remaining conventional ceiling fans to BLDC fans, and replacement of conventional AHU blower fans with BLDC fans. The fourth group targets the chillers and AHUs, using refrigerant and chilled-water additives that improve heat transfer, and reducing belt slippage losses in AHU blowers.

The largest savings come from the cooling system. The two chiller measures alone are each expected to save about 4.26 lakh units a year, and converting AHU blower fans to BLDC technology could save a further 3.75 lakh units (Figure 3). Table 2 lists all 13 measures with their savings, investment and payback.

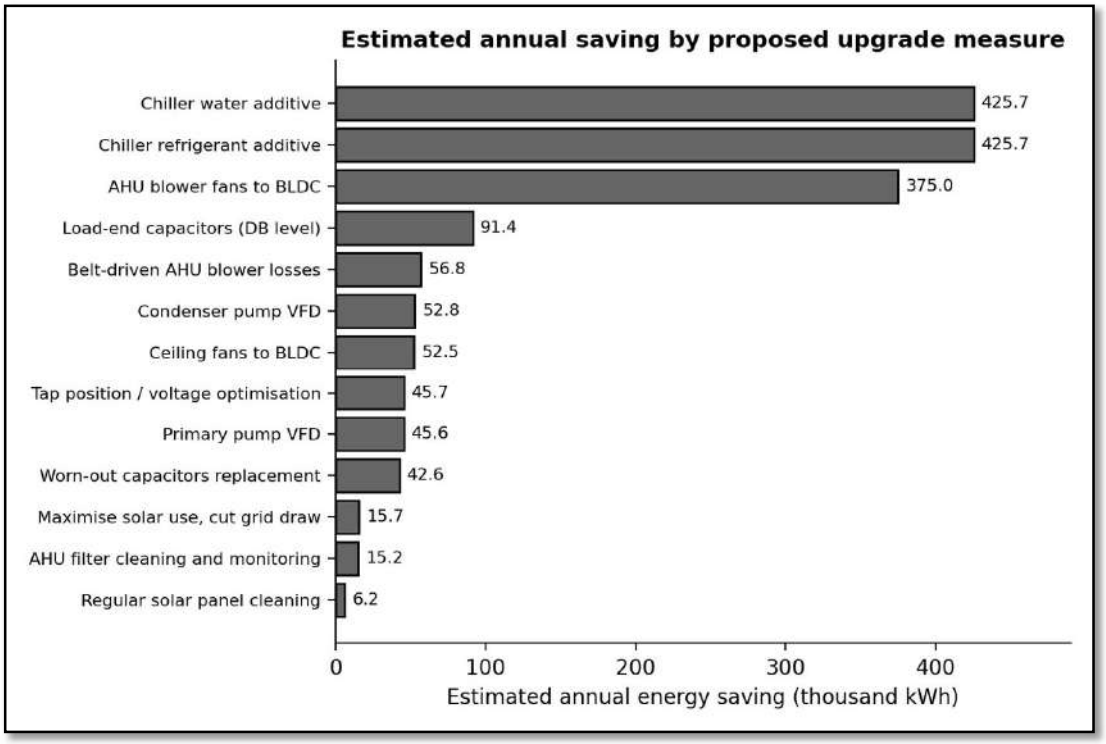


Figure 3. Estimated annual saving from each proposed upgrade measure

Table 2: Proposed energy conservation measures for existing buildings

No.	Proposed measure	Annual saving (kWh)	Investment (Rs lakh)	Payback (years)
1	Regular solar panel cleaning schedule	6,227	Nil	Immediate
2	AHU blower condition monitoring and filter cleaning	15,200	Nil	Immediate
3	Maximise solar use and reduce grid consumption	15,686	Nil	Immediate
4	Replace worn-out capacitors in the distribution network	42,600	2.8	0.6
5	Closed-loop VFD automation for primary pumps	45,600	6.0	1.3
6	Bring input line voltage to standard value (tap adjustment)	45,717	Nil	Immediate
7	Replace conventional ceiling fans with BLDC fans	52,500	9.0	1.7
8	Common VFD automation for condenser pumps (Utility I chillers)	52,800	4.0	0.74
9	Reduce transmission losses in belt-driven AHU blowers	56,800	6.8	1.2
10	Load-end capacitor compensation at DB level	91,434	6.0	0.64
11	Replace conventional AHU blower fans with BLDC fans	3,75,000	134.25	3.48
12	Active refrigerant additive in chiller units	4,25,700	32.0	0.73
13	Heat transfer water additive in chilled water system	4,25,700	32.0	0.73
	Total as stated in the audit	**16,50,964**	**230.9**	**1.36**

4.2 Phased Conversions

Two of the upgrades are being carried out in phases so that classes and daily operations are not disturbed. The first is the conversion of indoor tube lights to LED, which the management has committed to complete. The second is the replacement of the remaining conventional ceiling fans with BLDC fans.

4.3 Longer-Term Roadmap

Beyond the 13 measures, the audit sets out a longer-term roadmap for making buildings greener. It recommends designing all future buildings to a recognised green

building standard such as IGBC, GRIHA or GEM, which can reduce building energy use by 20 to 30 percent. It also recommends an online Energy Management System, which the audit estimates can cut energy use by 15 to 25 percent, supported by smart kWh meters on every distribution panel so that each block, including hostels, the auditorium and the library, can be monitored remotely. Other suggestions include BLDC air conditioners, energy-efficient star rated transformers, and a Green Energy Team of faculty and student volunteers who track energy targets block by block.

5. Expected Benefits

Carrying out the 13 measures is expected to reduce annual electricity use from about 1.83 crore units to about 1.66 crore units and the electricity bill from Rs 1,886.5 lakh to Rs 1,716.5 lakh. Using the emission factor given in the audit (0.82 kg of CO2 per unit of electricity), the saving of 16.5 lakh units corresponds to about 1,350 tonnes of CO2 avoided every year. Together with the existing LED, BLDC and solar measures, this moves the campus towards the audit's goal of lower carbon emissions and more efficient buildings.

6. Conclusion

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Annexure A: Rooftop Solar PV Installations



Photo 1. Rooftop solar PV panels on a campus building



Photo 2. Rooftop solar array in the Amaravati campus

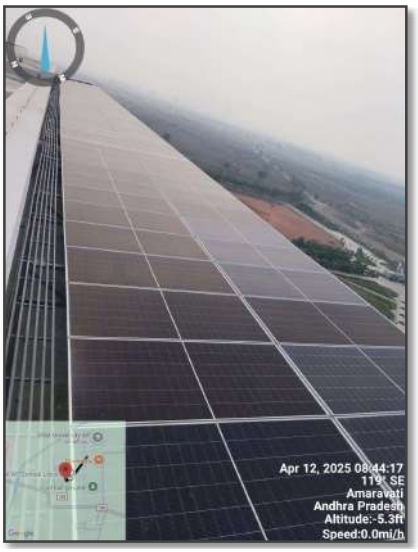


Photo 3. Long row of roof-mounted solar panels



Photo 4. Rooftop solar PV installed on the hostel blocks

Annexure B: Energy-Efficient LED Lighting



Photo 5. LED downlights in the auditorium ceiling



Photo 6. Linear LED lighting and ceiling lights in the auditorium



Photo 7. LED wall lighting in the auditorium



Photo 8. LED panel lights in an indoor ceiling

Annexure C: Solar Water Heaters on the Hostel Buildings



Photo 9. Solar water heater tanks with circulation pumps and piping on a hostel roof



Photo 10. Solar water heater tank with its control panel on a hostel roof



Photo 11. Solar water heater tanks, circulation pumps and piping on a hostel roof

SRM University AP Solar capacity (968.28Kwp)			
1	Location of Plant	T1,T2,T3,T4,&T5	
	Capacity (kWp)	358	
	Total No. of modules	1070	
	Inverter Power Rating	50KW-4 & 70KW-1	
	Year of Installation	2022	
2	Location of Plant	Xlab Building	
	Capacity (kWp)	173.5	
	Total No. of modules	525	
	Inverter Power Rating	110KW-1 & 50KW-1	
	Year of Installation	2024	
3	Location of Plant	SR Block	
	Capacity (kWp)	202.42	
	Total No. of modules	349	
	Inverter Power Rating	175 KW	
	Year of Installation	2025	
4	Location of Plant	CV Raman	
	Capacity (kWp)	134.56	
	Total No. of modules	232	
	Inverter Power Rating	125 KW	
	Year of Installation	2025	
5	Location of Plant	Vedavathi	
	Capacity (kWp)	99.8	
	Total No. of modules	172	
	Inverter Power Rating	80 KW	
	Year of Installation	2025	



Andhra Pradesh State Energy Conservation Building Code Compliance Certificate

Application/File Number:

TPA License Number:
TPA-ECBC/APSECM/2019/01

SRM UNIVERSITY AP, AMARAVATI – PHASE 1

Guntur District, AP

has successfully achieved following level of certification established by Government of Andhra Pradesh for Energy Conservation Building Code compliance (Phase -1 consists Administrative block, Dining block and two hostels)

★ ★ ★ ★ ★ ★

JUNE -2019

6 STAR RATING AT OCCUPANCY STAGE

METHOD OF COMPLIANCE

○ PRESCRIPTIVE ● WHOLE BUILDING PERFORMANCE ○ BUILDING ENVELOPE TRADEOFF

GENERAL INFORMATION

Applicant Name: Dr. D. Gunasekaran
Address: SRM University, AP, Neerukonda, Mangalagiri Mandal, Guntur District, Andhra Pradesh 522502
Project Description: Institutional Development
Project Category : Daytime Building
Site Area : 60,014 Sq.m
Built Up Area : 66,424 Sq.m.
Conditioned Area : 44,481 Sq.m
Unconditioned Area : 21,943 Sq.m.

TECHNICAL INFORMATION

Project Base case EPI* : 61.60
Project Existing EPI* : 41.20
Star Category Awarded: SIX Star
(EPI is in kWh/m²/yr)*

Percentage of Savings
33.12%

This certificate is issued on basis of analysis, compliance report & declaration duly signed by representative of Owner – Dr. D. Gunasekaran, SRM University; Architect – Mr Raja Shyam Sundar; MEP Consultant – Mr. Sandeep Nair, Radiant Consulting Engineers and ECBC Consultant - Mr. Sumesh Nair , Godrej & Boyce MfG Co Ltd of the proposed building.

Name of Licensee : Ar.Er.S.P.Anchuri

Name of Firm: Anchuri & Anchuri

24.6.2019

Signature of the Licensee

Andhra Pradesh State Energy Conservation Building Code Compliance Certificate

Application/File Number:

TPA License Number: TPA-ECBC/APSECM/2019/01

SRM UNIVERSITY AP, AMARAVATI – PHASE 2

Guntur District, AP

has successfully achieved following level of certification established by Government of Telangana for Energy Conservation Building Code compliance. (Phase -2 consists Academic Block ,Dining Block ,Boys Hostel &Girls Hostel)

★★★★★

JUNE -2019

5 STAR RATING AT DESIGN STAGE

METHOD OF COMPLIANCE

○ PRESCRIPTIVE ● WHOLE BUILDING PERFORMANCE ○ BUILDING ENVELOPE TRADEOFF

GENERAL INFORMATION

Applicant Name: Dr. D. Gunasekaran
Address: SRM University, AP, Neerukonda, Mangalagiri Mandal, Guntur District, Andhra Pradesh 522502
Project Description: Institutional Development
Project Category : Daytime Building
Site Area : 101942 Sq.m
Built Up Area : 59520 Sq.m.
Conditioned Area : 16,058 Sq.m
Unconditioned Area : 31,596 Sq.m.

TECHNICAL INFORMATION

Project Base case EPI* : 87.01
Project Existing EPI* : 61.42
Star Category Awarded: FIVE Star
(EPI is in kWh/m²/yr)*

Percentage of Savings
29.4%

This certificate is issued on basis of analysis, compliance report & declaration duly signed by representative of Owner – Dr. D. Gunasekaran, SRM University; Architect – Mr Raja Shyam Sundar, MEP Consultant – Mr. Sandeep Nair, Radiant Consulting Engineers and ECBC Consultant - Mr. Sumesh Nair , Godrej & Boyce MfG Co Ltd of the proposed building.

Name of Licensee : Ar.Er.S.P.Anchuri

Name of Firm: Anchuri & Anchuri

27/6/2019

Signature of the Licensee

Andhra Pradesh State Energy Conservation Building Code Compliance Certificate

Application/File Number: CRDA -12029/3/2017 Part 1 dt 13/05/2023

TPA License Number: TPA-ECBC/APSECM/2019/01

SRM UNIVERSITY, AP – PHASE 2

has successfully achieved following level of certification established by Government of Andhra Pradesh for Energy Conservation Building Code compliance

★ ★ ★ ★ ★

JUNE, 2024

5 STAR RATING AT OCCUPANCY STAGE

METHOD OF COMPLIANCE

- ○ PRESCRIPTIVE
- ● WHOLE BUILDING PERFORMANCE
- ○ BUILDING ENVELOPE TRADEOFF

GENERAL INFORMATION

Address: SRM University, AP, Neerukonda, Mangalagiri Mandal, Guntur District, Mangalagiri, Andhra Pradesh 522502
Project Description: Institutional Development
Project Category : Daytime Building

Site Area	: 101942 Sq.m
Built Up Area	: 59520 Sq.m.
Conditioned Area	: 16,058 Sq.m
Unconditioned Area	: 31,596 Sq.m.

TECHNICAL INFORMATION

Project Base case EPI* : 87.01
Project Existing EPI* : 61.42
Star Category Awarded: FIVE Star

(EPI is in kWh/m²/yr)*

Percentage of Savings
29.4%

This certificate is issued on basis of analysis, compliance report & declaration duly signed by representative of SRM University,AP; Architect – Mr Raja Shyam Sundar; MEP Consultant – Mr. Sandeep Nair, Radiant Consulting Engineers and ECBC Consultant –Mr. Arun Ganesh Green Soul of the Existing building.

Name of Licensee: Dr.S.P.Anchuri
Name of Firm: Anchuri & Anchuri

TPA-ECBC/APSECM/2019/01 • S.P. ANCHURI ANCHURI & ANCHURI GUNTUR A.P.

Signature of the Licensee

Andhra Pradesh State Energy Conservation Building Code Compliance Certificate

Application/File Number: CRDA -12029/3/2017 Part 1 dt 16/12/2023 & Fire Pre NOC 1927 & 1928

TPA License Number: TPA-ECBC/APSECM/2019/01

SRM UNIVERSITY, AP – PHASE 3

has successfully achieved following level of certification established by Government of Andhra Pradesh for Energy Conservation Building Code compliance

★★★★★

JUNE, 2024

5 STAR RATING AT OCCUPANCY STAGE

METHOD OF COMPLIANCE

- ○ PRESCRIPTIVE
- ● WHOLE BUILDING PERFORMANCE
- ○ BUILDING ENVELOPE TRADEOFF

GENERAL INFORMATION

Address: SRM University, AP, Neerukonda, Mangalagiri Mandal, Guntur District, Mangalagiri, Andhra Pradesh 522502
Project Description: Institutional Development
Project Category : Daytime Building

Site Area	: 376464 Sq.m
Built Up Area	: 40724 Sq.m.
Conditioned Area	: 27692 Sq.m
Unconditioned Area	: 13032 Sq.m.

TECHNICAL INFORMATION

Project Base case EPI* : 143
Project Existing EPI* : 107
Star Category Awarded: FIVE Star

(* EPI is in kWh/m²/yr)

Percentage of Savings
24.3%

This certificate is issued on basis of analysis, compliance report & declaration duly signed by representative of SRM University,AP; Architect – Mr Raja Shyam Sundar; MEP Consultant – Mr. Sandeep Nair, Radiant Consulting Engineers and ECBC Consultant –Mr. Arun Ganesh Green Soul of the Existing building.

Name of Licensee: Dr.S.P.Anchuri
Name of Firm: Anchuri & Anchuri

TPA-ECBC/APSECM/2019/01

Signature of the Licensee

Andhra Pradesh State Energy Conservation Building Code Compliance Certificate

Application/File Number:
CRDA -12029

TPA License Number:
TPA-ECBC/APSECM/2019/01

SRM UNIVERSITY, AP – PHASE 4

has successfully achieved following level of certification established by Government of Andhra Pradesh for Energy Conservation Building Code compliance

★ ★ ★ ★ ★

JUNE, 2024

5 STAR RATING AT DESIGN STAGE

METHOD OF COMPLIANCE

○ PRESCRIPTIVE ● WHOLE BUILDING PERFORMANCE ○ BUILDING ENVELOPE TRADEOFF

GENERAL INFORMATION

Address: SRM University, AP, Neerukonda, Mangalagiri Mandal, Guntur District, Mangalagiri, Andhra Pradesh 522502
Project Description: Institutional Development
Project Category : Daytime Building

Site Area	: 376464 Sq.m
Built Up Area	: 50509 Sq.m.
Conditioned Area	: 40407 Sq.m
Unconditioned Area	: 10102 Sq.m.

TECHNICAL INFORMATION

Project Base case EPI* : 157
Project Existing EPI* : 113
Star Category Awarded: FIVE Star
(EPI is in kWh/m²/yr)*

Percentage of Savings
23.5%

This certificate is issued on basis of analysis, compliance report & declaration duly signed by representative of SRM University, AP; Architect – Mr Raja Shyam Sundar; MEP Consultant – Mr. Sandeep Nair, Radiant Consulting Engineers and ECBC Consultant –Mr. Arun Ganesh Green Soul of the Existing building.

Name of Licensee: Dr.S.P.Anchuri

Name of Firm: Anchuri & Anchuri

Signature of the Licensee

Andhra Pradesh State Energy Conservation Building Code Compliance Certificate

Application/File Number: CRDA -12029/3/2017
Part 1 dt 16/12/2023 & Fire Pre NOC 1927 & 1928

TPA License Number:
TPA-ECBC/APSECM/2019/01

SRM UNIVERSITY, AP – PHASE 3
GANGA HOSTEL EXTENSION A & RESEARCH BLOCK 2

has successfully achieved following level of certification established by Government of Andhra Pradesh for Energy Conservation Building Code compliance

★ ★ ★ ★ ★

FEBRUARY, 2025

5 STAR RATING AT OCCUPANCY STAGE

METHOD OF COMPLIANCE

○ PRESCRIPTIVE

● WHOLE BUILDING PERFORMANCE

○ BUILDING ENVELOPE TRADEOFF

GENERAL INFORMATION

Address: SRM University, AP, Neerukonda, Mangalagiri Mandal, Guntur District, Mangalagiri, Andhra Pradesh 522502
Project Description: Institutional Development
Project Category : Daytime Building

Site Area	: 376464 Sq.m
Built Up Area	: 47199 Sq.m.
Conditioned Area	: 31544.2 Sq.m
Unconditioned Area	: 15655 Sq.m.

TECHNICAL INFORMATION

Project Base case EPI* : 127.74
Project Existing EPI* : 96.07
Star Category Awarded: FIVE Star

(EPI is in kWh/m²/yr)*

Percentage of Savings
24.79%

This certificate is issued on basis of analysis, compliance report & declaration duly signed by representative of SRM University,AP; Architect – Mr Raja Shyam Sundar; MEP Consultant – Mr. Sandeep Nair, Radiant Consulting Engineers and ECBC Consultant –Mr. Arun Ganesh Green Soul of the Existing building.

Name of Licensee: Dr.S.P.Anchuri
Name of Firm: Anchuri & Anchuri

TPA-ECBC/APSECM/2019/01 SP ANCHURI ANCHURI & ANCHURI GUNTUR AP

Feb 21

Signature of the Licensee

NIN ENERGY INDIA PRIVATE LIMITED
47, JUSA COMPLEX,
PONNIAMMAN KOIL STREET
KOTTUR, CHENNAI-600085

CERTIFICATE OF GREEN AUDIT

This is to certify that

SRM UNIVERSITY ANDHRA PRADESH

VILLAGE - NEERUKONDA, MANGLAGIRI MANDAL, GUNTUR, ANDRA PRADESH- 522502

has successfully undergone an ENERGY, ENVIRONMENT AND GREEN AUDIT for the year **2023** on and assessed the Electrical Energy conservation, Energy saving, measures and sustainability in compliance with the applicable regulations, policies and standards in the campus were found to be 'Satisfactory'



B. SENTHIL KUMAR, DIRECTOR,

NIN ENERGY INDIA PRIVATE LIMITED

ACCREDITED ENERGY AUDITOR BY BUREAU OF ENERGY EFFICIENCY

V. DIVYA, DIRECTOR

NIN ENERGY INDIA PRIVATE LIMITED

Date : 30/05/2023

RAM KALAM CENTRE FOR ENERGY CONSULTANCY & TRAINING
No.8, VPK Garden, Mylampatti, Coimbatore – 641 062
GSTIN: 33AAZFR8890A1ZN

GREEN AUDIT CERTIFICATE

RAM KALAM/SRM AP/EA/April/2024/01

(Audited and Accounted from January 2023 to December 2023)

This is to certify that, we have conducted a detailed ***GREEN AUDIT*** in **M.P. NACHIMUTHU M. JAGANATHAN ENGINEERING COLLEGE**, Sudhanandhen Kalvi Nagar, Chennimalai, Erode-638 112, Tamil Nadu, India on 02 June 2023. The college has exemplary greenery, transportation system with Pollution Control Certificates, effective waste management and rich collection of Flora & Fauna.

Audit conducted and verified by

S.R. Sivarasu

Dr. S.R. SIVARASU
BEE Certified Energy Auditor (EA-27299)
Lead Auditor – ISO 14001: EMS; IGBC AP, GRIHA CP
CII Certified Professional in SWM
ISO-14064: Implementor & Auditor - Carbon Footprint Management

RAM KALAM CENTRE FOR ENERGY CONSULTANCY & TRAINING
No.8, VPK Garden, Mylampatti, Coimbatore – 641 062
GSTIN: 33AAZFR8890A1ZN

GREEN AUDIT CERTIFICATE

RAM KALAM/SRM AP/EA/April/2024/01

(Audited and Accounted from January 2023 to December 2023)

AUDIT SUMMARY

- Assessment of Mature trees, bushes & shrubs (nearly 5,019 Nos No's)
- Roof top Solar PV System (532 kW of Green Energy Generation)
- Waste to Energy: Bio gas Generation (6 m^3 capacity)
- Waste to Energy: Vermicompost Plant
- Assessment of Rain Water Harvesting (RWH)
- Pollution certificates for all transport vehicles
- Study on effective Solid Waste Management (SWM) system
- Bio Sewage Treatment Plant
- Sprinkler bases watering to Plants (Effective water management)
- Maintaining excellent Bio-diversity & Ecology

The Green Campus, Energy and Environment Policy

Context

The relationship between SRM - AP and nature is a long and enduring one,something that students and staff of the university are aware of. The Campus is situated in the Guntur district of Andhrapradesh with lush green surroundings and the beautiful clean water reservoir.

Since 2017, the university has always had sustainable initiatives at the core of all activities. 100-acre lush green campus having a built–up area of -18 lakhs Sq. ft and green area – 2 lakhs Sq.ft. The rest of the campus can be categorized as playgrounds,lawns, pathways, and gardens. A huge area is left in its natural form and acts as a naturalhabitat for biodiversity and a large variety of species of grasses, herbs, shrubs,and trees.

Policy Statement

SRM University AP is dedicated to protecting and enrich the ecology of the campus through water conservation, proper waste management systems, eco-friendly practices, thoughtful landscaping, sensitization and awareness regarding social responsibility and perception towards the environment and understanding audit procedures.

Scope of the Policy

The Green Campus, Energy and Environment Policies will develop exciting new co-curricular and extracurricular practices that encourage students to take thelead in creating positive change. These initiatives call for a thorough review of all infrastructural and administrative functions from the standpoints of energy efficiency, sustainability, and the environment.

Address: Neerukonda Post, Mangalagiri Mandal, Guntur District, Mangalagiri, Andhra Pradesh 522240
Phone: 0863 234 3000

SRM UNIVERSITY AP ★ ANDHRA PRADESH ★

The focus areas of this policy are:

- ➔ Clean Campus Initiatives
- ➔ Landscaping Initiatives
- ➔ Clean Air Initiatives
  - ◆ Smoking Free Campus
- ➔ Infrastructure
  - Solar Power Plant
  - Installation of Energy Efficiency Equipment
  - Water Conservation through Rainwater Harvesting System
- ➔ Waste Management processes
  - Solid Waste Management
  - Liquid Waste Management
  - E-Waste Management
  - Hazardous / Bio Waste Management
- ➔ Awareness Initiatives
- ➔ Environment-centric Student Societies and Department Activities
- ➔ Green Audit
- ➔ Energy Audit
- ➔ Plastic-Free Campus

Objectives of the Policy

- To protect and conserve ecological systems and resources within the campus.
- To ensure judicious use of environmental resources to meet the needs. and aspirations of the present and future generations.
- To integrate environmental concerns into policies, plans and programmes for social development and outreach activities.

Address: Neerukonda Post, Mangalagiri Mandal, Guntur District, Mangalagiri, Andhra Pradesh 522240
Phone: 0863 234 3000

- To work with all stakeholders and the local community to raise awareness and seek the adoption of environmental good practice and the reduction of any adverse effects on the environment.
- To continuously improve our contribution to climate protection and adaptation to climate change and to the conservation of global resources.
- To continuously improve the efficient use of all resources, including energy and water, and to reduce consumption and the amount of wasteproduced, recovering and recycling waste where possible.
- To make the campus plastic free.
- To conduct environmental and energy audits from time to time.
- To minimize the use of paper in administration through having policy forE-governance.

Policy:

Clean Campus Initiatives

SRM - AP had pledged to actively coordinate cleanliness activities in the university andbeyond the campus in accordance with the vision of Swachh Bharat Abhiyan.It commits to continue with this Programme. The broad vision is as follows:

1. Generating mass awareness on cleanliness and hygiene amongst students and staff members by holding regular cleanliness drives. The idea is to motivate them to contribute in a proactive manner.
2. Activities under 'Swachh Bharat Abhiyan' will be a key component of all the community work being done by NSS and Green Society volunteers of the university.
3. Staff Members will be encouraged to participate in the cleanliness drive in the university campus.
4. Events such as poster and slogan competitions, essay writing, spoken word poetry, speeches, skits on 'Swachh Bharat' will be Organised.
5. Rallies on themes connected with 'Swachh Bharat Abhiyan' in and aroundthe university campus will be conducted to create mass awareness.

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6. Remove all kinds of waste material like broken furniture, unusable equipment etc.
7. Administer of the pledge by students and staff members to maintain cleanliness of the University campus and its surrounding areas on an annualbasis.
8. Conduct workshops on the 3Rs: Reduce, Reusing and Recycling of waste.
9. Commit to manage waste and maintain clean campus especially during university events.

Landscaping Initiatives

The campus landscape, like its buildings, can be seen as the physical embodiment of a university's values. It is a vital part of the life of a campus, providing space for study, play, outdoor events, relaxation, and aesthetic appreciation. Green campus landscapes also manage runoff, help recharge groundwater, and clean and cool the air on campus. The landscape serves asa visual representation of the campus community's commitment to sustainability. As campus landscapes are so visible and accessible, landscaping initiatives are a great way to build awareness around the environment.

There are more than 350 trees and more than 1000 shrubs on campus alongwith 1.5 acre of grass cover. The landscape of trees and plants provide the 8500 students and staff with clean and cool air and is a soothing environment.

The diverse green cover of SRM - AP is also home to a number of animals and rarebirds across at least 24 species, creating a campus rich in biodiversity. The University commits to enriching this healthy habitat and maintaining the symbiotic relation of the institution with nature by

- Organizing annual tree plantation drives
- Encouraging student societies to hold tree planting events.

Clean Air Initiatives

We encourage our students and staff to use public transportation. We encourage carpooling to university, an activity that will control air pollution and strengthen social interaction. The entry of automobiles inside the campus is restricted to discourage the use of private vehicles.

Our campus is also located at the foothills of Neerukonda, Mangalagiri Mandal of Eastern Ghats, an area identified as an educational zone of Amaravathi. For these reasons, we feel responsible to maintain our green cover. The abundant natural landscape not only cleans the air on campus.

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- **Smoking Free Campus**

  In compliance with the framework provided by the National Tobacco Control Programme, the University prohibits smoking and the use of other tobacco products. Use of tobacco in and around the campus is strictly prohibited. The anti- smoking committee of the University ensures enforcement of the anti- smoking policy.

Infrastructural Initiatives

- **Renewable Sources of Energy**

  SRM - AP is dedicated to minimizing and sustainably manage its use of electricity. The University believes in reducing the consumption of electricity produced by non-renewable resources by switching to cleanenergy sources like solar energy for purposes like lighting the campus.

- **Energy Saving and Energy Efficient Equipment**

  We commit to install environment-friendly electrical appliances that save energy and reduce wasteful inefficiencies. The University believes inusing cleaner energy such as LED lighting.

- **Water Conservation through Rainwater Harvesting System**

  As an institution located in the Guntur district of Andhrapradesh, the area that has seen maximum fall of ground water levels, SRM - AP has committeditself to this effort to replenish the groundwater table by practicing rainwater harvesting. This practice helps in the replenishment and recharge of the groundwater.

Waste Management Processes

SRM - AP strives to have a minimal impact on the environment and is dedicated to reducing and manage the waste generated by the University campus. The followingspecific procedures will be undertaken to ensure SRM - AP contribution in protecting the environment.

- **Solid Waste Management**

  With its aim to provide holistic education that also has a positive impact on the environment, the University will adopt practices that will mitigate.
  The generation, and manage solid waste through the followingmethods:

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- Systematically engage with the 3Rs of environment friendliness (Reduce, Reuse and Recycle).
- Collect paper waste produced on campus and collaborate withscrap dealers for recycling.
- Reduce solid waste by developing a technology-centric teaching and administrative model.
- Reduce use of paper by supporting digitization of attendanceand internal assessment records.
- Reduce the requirement of printed books by updating the e-booksand e-journals collection of the University library.
- Encourage the students and teachers to use emails forassignment submissions.
- Take initiatives to spread awareness amongst students about
  - ✓ Food wastage and ways of minimizing it
  - ✓ Minimizing the use of packaged food
  - ✓ The habit of reusing and recycling non-biodegradableproducts
  - ✓ Organizing workshops for students on solid waste management.

♦ **Liquid Waste Management**

- Maintain leak proof water fixtures.
- Using treated water for watering all green belt and sports ground
- Continued employment of a caretaker to take immediate steps tostop any water leakage through taps, pipes, tanks, toilet flush etc.
- Prevention of release and mixing of oil from the University canteen liquid waste in the municipal drainage system by use of Grease trap mechanism. Reuse of wastewater generated by the Reverse Osmosis (RO) system in washrooms.

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- **E-Waste Management**

SRM - AP ensures that its usage of technology and generation of e-waste does notimpact the environment. For this purpose, the University plans to strive towards:

- Assigned agreement government approved E-Waste collecting agency name M/s. RE Sustainability
- Collaboration with e-waste recycling companies to get electronicwaste recycled.
- Awareness amongst students about reduction of e-waste and environment friendly disposal practices for e-waste.
- Encouraging department and society level activities pertaining to e-waste management.

Awareness Initiatives

Outreach and education are of utmost importance so that all members of the campus community may value the objectives of the policy and aid in its implementation. This is why SRM - AP supports and encourages awareness campaigns, seminars, workshops, conferences and other interactive sessionsto facilitate effective implementation of the Green Campus, Energy and Environment policies.

Environment-centric Student Societies and Department Activities

SRM - AP encourages all the departments and specific student societies like Greensociety / Clubs, NSS, and others to organize events, competitions and training sessions that will bring about positive environmental changes at the grassrootlevel. The University supports departments and student societies in molding the students into active agents of environment protection and conservation.

- **Green Society**

Institutional changes towards sustainability and eco-friendly practices have percolated down to the students which have led more and more students to join Green Society. Making the society a compulsory one will

provide it a bigger platform to broadcast the institution's environmentalvalues to raise awareness. Because compulsory societies expect the fulfilment of a specified number of hours of work and commitment, thiswill aid the green initiatives and practices that are a part of this policy to grow exponentially.

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Conduct Green Audit

The University aims to regularly conduct a Green Audit of our University campus toassess our strengths and weaknesses to further our goals of long-term sustainability. A Green Audit conducted by **M/s. NIN Energy India Private Limited on May 2023** green audit is a useful tool to determine how and where mostenergy or water or resources are being used. The University can then consider how to implement changes and make savings. It can determine the type and volume of waste. Recycling projects or waste minimization plans can be adopted. It will create health consciousness and promote environmental values and ethics. It provides a better understanding of the impact of eco- friendly practices on campus. Green auditing will promote financial savings through reduction of resource use. It is imperative that the University evaluate its own contributions toward a sustainable future.

Conduct Energy Audit

An Energy Audit conducted by **M/s. NIN Energy India Private Limited on May 2023** further reduce its carbon footprint. The importance of reducing energy consumption cannot be overstated. The energy audit, with its specialized tools, will identify wastage of energy. Such an inspection often reveals several different flaws which cause a loss of significant amounts of energy which the University will not be able to detect. These flaws often have easy and affordable solutions and provide significant savings.

Plastic-Free Campus

SRM - AP has been observing most of its duties in terms of solid waste managementsince its inception. In view of the Government of India's resolution to ban all single use plastics due to the hazardous impact of plastic use and pollution, the University administration strictly bans the use of single use plastics in its premise to make it a 'Plastic Free Campus'.

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