

ISO 50001:2018 Audit report

Order no.: 4153809091 Customer no.: 515329-01
Customer: Krishna Vishwa Vidyapeeth, (Deemed to be University), Karad,
Maharashtra



Audit type: (Standard/revision status):	Certification-Audit (ISO 50001:2018) [ISO 50003:2021]		
Date of (on-site) audit:	2023-05-22 - 2023-05-24 [2023-04-26]		
Organization / client:	Krishna Vishwa Vidyapeeth, (Deemed to be University), Karad, Maharashtra		
Street / P.O. Box:	Near Dhebewadi Road, Malkapur, Tal. Karad, Dist. Satara		
Postal/zip code / city:	IN - 415539 Maharashtra		
Audit representative:	Mr. Dr. M.V. Ghorpade		
Lead auditor/auditor:	Nilesh Kshirsagar / Sameer Bhimchandra Girmé		
Technical expert / trainee:	/ Amit Kulkarni		
Scope of certification:	Higher Education and Healthcare, Higher Education Facilities, Multispecialty Healthcare and Diagnostic Services Under One Roof Through its Constituent Faculties and Teaching Hospitals.		
Technical area / industry scope (EA);	ISO 50003:2021 1		
Annexed documents:	☒ Audit report Annex 1: Action list including opportunities for improvement and positive aspects ☒ Audit report Annex 2: Site-specific information ☒ Audit report Annex 3: Audit program / audited elements ☐ Multi-site certification with/without site sampling: Multi-site plan / Sampling plan ☐ Print order		
Audit results ISO 50001:	☒ Certificate Release recommended ☐ Maintenance of Certificate recommended ☐ Non-Conformities were identified and closed by re-audit on site ☐ Non-Conformities were identified and closed by resubmitted Documentation ☐ Suspension of Certificate Recommended ☐ Withdrawal of Certificate Recommended ☐ Certificate Process terminated		
Next audit date scheduled:	March 2024		
Re-audit:	☐ On-site / date:	Duration in	
	☐ Submission of documents	hours:	

24/5/2023

Nilesh Kshirsagar

Date

ISO 50001 Lead Auditor

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1 General information

1.1 Certification scheme

The audit is carried out within the scope of:

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- ☒ **Single-site certification**
(Certification of one location including auditing of a sample of off-site points of energy accounts (PoEAs) is also considered single-site certification.)
- ☐ **Multi-site certification without site sampling (see multi-site certification plan)**
(Multi-site-certifications without site sampling are certifications in which all sites are audited on site each year or at least all sites audited on site during the initial certification and the repeat certification.)
- ☐ **Multi-site certification with site sampling (see multi-site certification plan)**
- ☐ **Certificate transfer**
- ☐ **Combined certification / certification of an integrated management system**
- ☐ **Special audit**
- ☐ **Other (please add)** _____

1.2 Customer-specific information

1.2.1 Annex 2: Site-specific information

The Annex includes the site-specific information of all audited sites.

1.2.2 Reason and use of certification

The following information must only be provided for organizations domiciled in Germany.

The organization – in case of multi-site-certification, the name of the single enterprise(s) concerned - needs the ISO 50001 certificate to fulfill the requirements for

- ☐ **Restriction of the EEG levy according to Sections 63 et seq. EEG 2017 (BAFA)**
(The organization must determine and document 100 % of its total energy consumption. 100 % of the organization's POEAs must be covered by the certification)
- 100% of the energy sources / energy carriers and the organization's energy consumption have been determined and documented **and**
 - All of the organization's points of energy account (PoEA) are covered by the scope and included in the audit.

Single enterprise(s)	NA
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- ☐ **Issue of proof according to SpaEfV – tax cap (main customs office)**
(The organization must determine and document 100 % of its total energy consumption. Generally, at least 95% of total energy consumption must be covered by certification)

Single enterprise(s)	NA
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100% of the organization's energy sources / energy carriers and its energy consumption have been determined and documented **and**

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- ☒ Certification covers 100% of the energy consumption of the organization **or**
☐ Certification covers less than 100%, but more than 95 % of the energy consumption of the organization.
In this case the sites and/or PoEAs excluded from the scope of certification must be listed.
- A
 - B
 - C

- ☐ Fulfillment of obligations imposed by EED and/or EDL-G
(The organization must determine and document 100 % of its total energy consumption.
At least 90 % of the organization's total energy consumption must be covered by the scope of the certification)

1.2.3 Issue of proof 1449 according to SpaEfV – tax cap (main customs office) (Only relevant for Clients in Germany)

Please specify below the name of the liaison, including the complete contact details of the organization, to whom proof 1449 for submission to the main customs office shall be sent. If there are several legal entity of the client require a proof 1449, please copy the table as a template.

Name of contact	NA
Organization / company	NA
Street	NA
Postal/zip code / City:	NA
Phone	NA
Fax number, if necessary	NA
Email address	NA

1.2.4 Off-site, unstaffed Point of energy consumption and point of energy account (Point of Energy Account – PoEA)

– in as far as available -

Name of the sites/ clients with allocated PoEAs (Client No. of the site and Client No. of	Number of PoEAs per Site/ Client	Number of examples of PoEAs audited on site (≥ 200 MWh/a)	Description of the audited PoEA (type of energy user, energy source, energy consumption)
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the PoEA in iCert):		<table><tr><th>Number of PoEAs per Other Client</th><th>Number of exemptions of PoEA's audited on site (5,000,000 kWh)</th></tr><tr><td>1 - 49</td><td>1</td></tr><tr><td>50 - 99</td><td>2</td></tr><tr><td>100 - 499</td><td>3</td></tr><tr><td>≥ 500</td><td>4</td></tr></table>	Number of PoEAs per Other Client	Number of exemptions of PoEA's audited on site (5,000,000 kWh)	1 - 49	1	50 - 99	2	100 - 499	3	≥ 500	4	
Number of PoEAs per Other Client	Number of exemptions of PoEA's audited on site (5,000,000 kWh)												
1 - 49	1												
50 - 99	2												
100 - 499	3												
≥ 500	4												
Client No. 12345-01 Client-No. 12345-02 (Point of energy account) Company name, street, site	27	1	Water works; Street, site; Electricity: xy kWh										
Client No. 12346-01 Client No. 12346-03 (Point of energy account) Company name, street, site	80	2	Heating station 1; Street, site; Natural gas: 20 GWh; Electricity: xy kWh Heating station 2; Street, site; Natural gas: 20 GWh; Electricity: xy kWh										

1.3 Audit objectives

- Determination of conformity of the management system with the audit criteria
- Assessment of the ability of the management system to ensure the customer meets the applicable statutory, regulatory and contractual requirements
- Evaluation of the effectiveness of the management system to ensure the customer is continually meeting its specified objectives

1.4 Changes since the previous audit (or compared with Audit Planning)

Topic	Changes
Management system / documented information	☒ No ☐ Yes:
Scope of certification	☒ No ☐ Yes:
Number of Effective Employees	☒ No ☐ Yes, see Annex 2
Energy Complexity	☒ No change ☐ Yes, see Annex 2
Scheduled audit time	☒ No change ☐ Change:
Temporary sites – work sites – if any:	☒ No change ☐ Change:
No. of Shifts	☒ No change ☐ Change:
Miscellaneous	NIL

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Note: If significant deviations or suggestions from the input information are identified, the responsible auditor must inform the function in charge of audit commissioning without delay. The same applies if the auditor has any suggestions regarding modification of the certification procedure.

1.5 Particular aspects of the audit

Deviations from the audit plan	☒ No ☐ Yes:
Significant issues impacting the audit program (<i>activities planned in the course of the certification cycle</i>)	☒ No ☐ Yes:
Changes in audit objectives or audit criteria	☒ No ☐ Yes:
Other special features:	NIL

2 Effectiveness of corrections and corrective actions from previous audit

The audit team evaluated the corrective action taken to address the nonconformities / areas of concern from the previous audit. In the case of RA / re-certification audits, the audit team considered the audit reports for the last two audits in the audit planning / performance of the audits and checked the nonconformities / areas of concerns in particular. Corrective actions were found to be:	☒ Effective ☐ Not effective (MiN or NC) ☐ Not applicable (no existing MiNs or NCs)
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3 Summarized evaluation of management-system

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Refers to strengths and weaknesses, degree of maturity of the management system, commitment by top management, ensuring continuous conformity with legal and other requirements, application of performance indicators, continual improvement, achievement of objectives, employee expertise, effectiveness of internal audits and management reviews, energy performance.

Management Commitment for EnMS with allocating budget for energy related innovation ,
Energy policy displayed at various location.
Energy team is formed by top management
Periodic effective Internal audit conducted on 13 May 2022
M.R.M conducted on 17/5/2023 .
Energy review found conducted as per plan.
EnMs objective implementation with management program evident
Continual improvement projects like heat pump , energy saving ac procurement , LED light fixing.

3.1 In Case of **Certification Audit** – necessary Audit Evidence has been collected and verified to ensure that Continual Energy Performance Improvement has been demonstrated prior to making an Initial Certification Decision. ☒ Yes ☐ No

3.2 In Case of **Re-Certification Audit** – necessary Audit Evidence has been collected and verified to ensure that Continual Energy Performance Improvement has been demonstrated prior to making an Re-Certification Decision. ☐ Yes ☐ No

3.3 In Case of **Surveillance Audit** – necessary Audit Evidence has been collected and verified to ensure that implementation of actions for Energy Performance Improvement has been demonstrated. ☐ Yes ☐ No

NOTE: In case of NO for the above Questions (3.1 or 3.2 or 3.3) – a Major NC has to be raised

Total number of identified audit findings:

Standard	Nonconformities	Minor nonconformities	Opportunities for improvement	Positive aspects meriting special mention
ISO 50001:2018	0	5	0	1

The individual audit findings are recorded in the audit list (Annex 1).
The audit findings are based on evidence collected during the audit which has been submitted to the certification body.

Only applicable to multi-site certification (with / without site sampling):

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Additional aspects for multi-site procedures:	ISO 50001
The criteria of the certification body for multi-site certification are	☐ fulfilled ☐ not fulfilled ^{1) 2)}
Under consideration of all audit reports from all sites, the management system of the organization is	☐ effective ☐ not effective ^{1) 2)}
When planning corrective actions for nonconformities, all sites of the organization were considered in order to detect changes in the management system:	☐ fulfilled ☐ not fulfilled ¹⁾
The organization effectively uses information from corrective actions from all individual sites in order to increase the overall effectiveness of the management system:	☐ fulfilled ☐ not fulfilled ¹⁾
Overall Evaluation of the Multi Site: NA	

1) Listed as a nonconformity in the action list (Annex 1)

2) Certification cannot yet be recommended

Improvements realized / Ensuring of Continual Improvement Process:

- New Air screw compressor (10 HP) installation for CVTS dep. On Dec. 2022 against old reciprocating compressor.
- 130 Kwp Solar PV plant installed
- LED 18 watt 4500 nos installed and working from 01 march 2019 against old 40 watt Tube light 4500 no

4 Control of the use of certificates and certification marks

The evidence collected during the audit demonstrates that the organization uses certificates and certification marks in conformity with the applicable requirements:

- ☐ fulfilled
☐ not fulfilled (NC)
☒ not applicable (in the case of initial certification)

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5 Additional remarks

5.1 Disclaimer statement

Auditing is based on a sampling process of the available information. Any audit recommendations are subject to an independent review prior to a decision concerning the awarding or renewal of certification.

Management system certification audits (initial certification, surveillance or re-certification audits) are not legal compliance audits (ISO 17021 9.2.1.2).

5.2 Duty of information

The Certification Body shall be notified by the client without delay of all changes that may impact on the management system's capability to continue to fulfill the requirements of the relevant standard now and in the future.

These matters include major changes regarding:

- legal, commercial, organizational status or ownership
- organization and management (e.g. key managerial, decision-making, or technical staff)
- addresses and sites
- scope of operations under the certified management system

5.3 Due dates

The due date (last day of the certification audit) must be considered for the planning of any additional audit. The respective due dates should be coordinated with the lead auditor.

5.4 Confidentiality

The Certification Body will treat all received documented information related to the certification process as strictly confidential.

Copies to:

- Members of the audit team
- Certification Body
- Customer


REGISTRAR
Krishna Vishwa Vidyapeeth
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Characteristics of sites within the designated scope of certification

For multi-site-organizations to be filled in for each site audited and to be updated for each audit!

Site:	Krishna Vishwa Vidhyapeeth, (Deemed to be University), Karad, Maharashtra, Near Dhebewadi Road, Malkapur, Tal. Karad, Dist. Satara, IN 415539 Maharashtra	
Date of data collection:	22 – 24 May 2023	
Integration of the management system (MS) / documented information:	☒ Independent MS without interaction with other management systems ☐ Independent MS with interaction with other management systems ☐ Integrated Management System	
Site specific scope:	Higher Education and Healthcare, Higher Education Facilities, Multispeciality Healthcare and Diagnostic Services Under One Roof Through its Constituent Faculties and Teaching Hospitals.	
Products /Services: <i>Which products/services are manufactured in detail (information more detailed as in the scope of certification), and if applicable for which client?</i>	• Education, Healthcare, Diagnostic	
Employees at the site (total number /and, where appropriate, number of effective personnel - calculated as for ISO 9001, ISO 14001, OHSAS) <i>Please note: Reasons must be provided if the number of effective EnMS personnel differs from the total number of employees Total = number of employees including contracted personnel and trainees Effective personnel = full-time equivalents of personnel calculated as outlined in the applicable calculation guideline roXtra ID 19635 as amended.</i>	• 260 / 78	
Number of EnMS-effective personnel (calculated according to ISO 50003:2021) <i>According to Annex A 2.2 to ISO 50003, determination of the EnMS-effective personnel shall give consideration to the personnel who</i>	Top management [Annex A.2.2 a) e)] (e.g. Managing Director, Member of the Executive Board (in case of more than one person, only those responsible for the EnMS)	11

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Site:	Krishna Vishwa Vidhyapeeth, (Deemed to be University), Karad, Maharashtra, Near Dhebewadi Road, Malkapur, Tal. Karad, Dist. Satara, IN 415539 Maharashtra	
materially impact on the EnMS, including the following: a) Top management; b) Energy Management Team c) Person (s) responsible for procurement related to Energy Performance d) Person(s) responsible for major changes affecting energy performance e) Person(s) responsible for developing, implementing, or maintaining energy performance improvements including Energy objectives, targets, and action plans; f) Person(s) responsible for developing and maintaining energy data and analysis g) Person(s) responsible for planning, operating & maintain the processes related to the SEUs (Significant Energy Usages) h) Person(s) responsible for design which affects energy performance Note: According to experiences gathered so far, the total number of EnMS effective personnel is generally 10 – 40 % of the total number of employees.	E EnM team / Management representative(s) [Annex A.2.2 b) d) e)] EnMR (several, if applicable, members of the EnM team)	27
	Persons responsible for Procurement Annex A.2.2 c)	5
	Persons responsible for recording, maintaining and analysing Energy Data Annex A.2.2 f)	4
	Responsible for the planning, implementation and maintenance of processes associated with significant energy uses (SEUs) Annex A.2.2 g) d) e) [Ex: Energy Planning, Production, Personnel involved in Preparation of work, Process Engineers, Equipment Planning / Design, Utilities, Plant Maintenance, Outsourced SEUs] (Includes Regular + Contractors)	4
	Persons responsible for Design which affect Energy Performance Annex A.2.2 h) d) (Ex: Product developments which impact on the energy efficiency of manufacturing processes (e.g. choice of materials, selection / optimisation of process engineering, operating parameters, Process engineers)	2
	Other persons responsible for energy performance improvement Annex A.2.2 d) e) [Ex: unit or department managers, machine operators with impact on significant energy use (i.e. without administrative staff, assembly staff, etc.)	25
	Total EnMS effective personnel:	78
Similarity of shift working scheme:	☐ Not applicable ☒ The character of each shift is mainly the same with regard to processes and/or energy uses ☐ The shifts differ partly with regard to processes energy uses; at least the change-over of shifts was audited in order to track the character of each shift ☐ The shifts differ significantly with regard to processes and/or energy uses; all shifts were audited	

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Site:	Krishna Vishwa Vidhyapeeth, (Deemed to be University), Karad, Maharashtra, Near Dhebewadi Road, Malkapur, Tal. Karad, Dist. Satara, IN 415539 Maharashtra
Temporary sites – work sites (if any): Exclusively applies to temporary sites with significant energy uses (= main consumers / groups of main consumers); <i>significant energy users = main consumers accounting for $\geq 5\%$ of the total annual energy consumption of the site including all temporary sites assigned to this site</i> <i>Information about the type and number of work sites existing at the time of the audit; reasons for selection of the sample (is the sample selected representative?)</i> <i>The work site audited must be provided, including the name of the site and the activities carried out there.</i>	NOT APPLICABLE


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South Asia

ISO 50001																																													
Energy Management Representative:		Mr Yogesh Kulkarni																																											
Assessment of energy efficiency (Date of first analysis and current updating)		1/1/2023																																											
Below Energy Consumption Data are from		Calendar Year: 12 Month Period: Jan 22 – Dec 22																																											
Total energy consumption per energy carrier / energy source* and calendar year or per 12-month period (in kWh, MWh, GWh) <i>*All energy / energy carriers / energy sources consumed at the site and purchased externally outside the system boundaries of the site's EnMS shall be included</i> <i>(1GJ ≈ 278 kWh ≈ 0.3 MWh ≈ 0.0003 GWh;</i> <i>1 kWh = 3.6 MJ = 0.0036 GJ</i> <i>1 Million British thermal unit (MMBtu) ≈ 293 kWh</i> <i>1.000 kWh = 1 MWh.</i> <i>1.000 MWh = 1 GWh.</i> <i>1 Mio. kWh = 1 GWh;</i> <i>1 l heating oil/diesel = 10 kWh.</i> <i>1 m³ natural gas = 11 kWh ≈ 0.038 MMBtu)</i>		<table border="1"> <thead> <tr> <th>SI No</th> <th>Energy Sources</th> <th>Input in Kw/hr</th> <th>Conversion to Gw/hr</th> <th>%</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>Electricity</td> <td>4120470</td> <td>4.1</td> <td>66.46</td> </tr> <tr> <td>2</td> <td>LPG</td> <td>349460</td> <td>0.349</td> <td>5.7</td> </tr> <tr> <td>3</td> <td>Diesel</td> <td>648140</td> <td>0.64</td> <td>10.55</td> </tr> <tr> <td>4</td> <td>Solar</td> <td>1062067</td> <td>1.06</td> <td>17.30</td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td></td> <td>Total Energy Consumption of all Energy Sources</td> <td>6180137</td> <td>6.1</td> <td>100</td> </tr> </tbody> </table>				SI No	Energy Sources	Input in Kw/hr	Conversion to Gw/hr	%	1	Electricity	4120470	4.1	66.46	2	LPG	349460	0.349	5.7	3	Diesel	648140	0.64	10.55	4	Solar	1062067	1.06	17.30												Total Energy Consumption of all Energy Sources	6180137	6.1	100
SI No	Energy Sources	Input in Kw/hr	Conversion to Gw/hr	%																																									
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	Total Energy Consumption of all Energy Sources	6180137	6.1	100																																									
Number of Significant Energy Sources (number of Energy Types (sources) that account for atleast 80% of the client Organizations Total Energy Consumption)		2 _____																																											

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Energy-relevant processes, facilities, equipment and building infrastructure – significant energy uses (SEU) (= main consumers / groups of main consumers)

(For calculation of audit time, the following applies:
significant energy uses = main consumers = consumers/groups of consumers accounting for $\geq 5\%$ of the total annual energy consumption at the site).

Examples of main consumers:

- ❖ Individual production facilities / facilities / machineries, e.g. injection moulding machine
- ❖ Production lines
- ❖ Energy production*, e.g. CHP, cogeneration plant
- ❖ Heat generation (process heat*), e.g. steam boiler, natural-gas-fired paint dryer
- ❖ Refrigeration*, e.g. cooling tower, cooling systems
- ❖ Infrastructure, e.g. heating/ventilation/air condition system (HVAC), IT/EDP, building services equipment, elevators and escalators
- ❖ Transport, e.g. vehicle fleets, wheel loaders, trucks, heavy trucks, material handling trucks

*Hints:

- ❖ Several similar production systems can be combined into one "production line" and counted as one significant energy use (SEU).
- ❖ Integrated systems such as HVAC (heating, ventilation, air conditioning) systems can be combined into one significant energy use (SEU).
- ❖ Individual consumers can be combined into technologically and functionally reasonable units. The same applies to plants and processes which are similar in type and size and can be combined into reasonable units. (Example: Systems of the same type, such as injection moulding machines of a similar type and year of manufacture)
- ❖ Multiple machines linked in an automated system can be summarized as groups of energy consumers.

Significant energy uses:

(relevant for determining energy complexity / Audit duration)

(Main consumers $\geq 5\%$ of the total annual energy consumption at the site; Total energy consumption = Total energy consumption of all energy sources together; Please, list the main consumers and the energy consumption (kWh and %-part of total annual energy consumption):

SI No	Energy Uses (consumers or groups of consumers) - SEUs	Kwhr	%
1	Loundry	676244	10.94%
2	Drinage pump and medical college B ZONE	479063	7.75%
3	Hostel 4,5,6,7 & Guest house	475211	7.69%
4	X RAY & CT Scan	347620	5.62%
5	Ward 15 & 16 :	317000	5.13%
	Grand Total	2644598	37.13

Total No of SEUs: _05_

Other energy uses:

SI No	Energy Uses (consumers or groups of consumers) – Other Energy Uses	Kwhr	%
1	Deemed university	249981	4
2	Medial college	237199	4
3	Ladies hostel	224433	4
4	Ward 1 to 9	219142	4
5	MRI	214000	4
6	CSSR	193265	3
7	Library	173000	3
8	Gym	149795	2
9	Ward 21 - 28	146411	2
10	AHU	140732	2
11	Annex building	135000	2
12	Hoset and bore Pump	119000	2
13	Other (Admin Buildings , dental building , guest house, pump house	1502927	22 %
14			
	Grand Total	2202058	97 %

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Category of Energy Complexity (Auditors to check and confirm Energy Complexity for each Site Audited – using Formula given below in Hints Section)	Low											
Improvements realized / Ensuring of a continual Energy Performance improvement process:	The Organization has implemented the following significant improvements <i>(Please provide specific examples plus measured values)</i>: 1) New Air screw compressor (10 HP) installation for CVTS dep. On Dec. 2022 against old reciprocating compressor saving of 200 kwh/ day completed dec 21 2) 130 Kwp Solar PV plant installed 3) Old 40 watt Tube light 4500 nos Replaced by, LED 18 watt 4500 nos Saving of 507304 kwh /Year – Partially completed The submitted documentation furnishes proof that the company has established and maintains a continual improvement process. <i>(The above statements may have to be adjusted to fit the individual case)</i>											
Energy targets:	The organization pursues the following key energy targets <i>(please provide specific examples plus measured values)</i>: 1. To reduce electricity consumption in SEU By 1 % As compare to last year 2022 2. To reduce diesel consumption in SEU 1 % As compare to last year 3. Heat pump provision in hostel area – Saving 10kwh /day											
Energy performance indicators: <i>(Indicators in reference to the energy baseline (EnB) and as a minimum requirements indicator of the previous year and current year; specific examples including numerical values)</i> <i>Indicators from all SEUs and indicators (s) of the entire site or entire organization are required.</i>	<table border="1"> <thead> <tr> <th>Energy performance indicator</th> <th>Value Energy baseline – Baseline Period</th> <th>Value Previous year</th> <th>Value Current year - Reporting period</th> </tr> </thead> <tbody> <tr> <td>Laundry</td> <td>Year 2022</td> <td>Year 2022</td> <td>Year 2023</td> </tr> </tbody> </table>	Energy performance indicator	Value Energy baseline – Baseline Period	Value Previous year	Value Current year - Reporting period	Laundry	Year 2022	Year 2022	Year 2023			
Energy performance indicator	Value Energy baseline – Baseline Period	Value Previous year	Value Current year - Reporting period									
Laundry	Year 2022	Year 2022	Year 2023									

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	Kwh / kg	1.4	1.4	1.4
	Medical college	Year 2022	Year 2022	Year 2023
	Kwh /Sqm	4.96	4.96	4
	Hostel 4,5,6,7 & Guest house	Year 2022	Year 2022	Year 2023
	Kwh / Person	56.93	56.93	60
	X RAY & CT Scan	Year 2022	Year 2022	Year 2023
	Kwh / Scan Person	3.8	3.8	3.5
	Ward 15 & 16	Year 2022	Year 2022	Year 2023
	Kwh / Person	82.25	82.25	73
Comment: (Include necessary justification from the client if the evidence of Energy Performance improvement cannot be provided due to an increase of EnPIs in the reporting period compared to the Baseline period) Hostel 4,5,6,7 & Guest house base line is 60 kwh /person against target of 56.94 is high due to high AC consumption Due to Summer Season.				

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Energy Data Collection Plan (Energy Data Collection Plan in bullet Points as follows – give Examples):	Data collection plan - KVV/EnMSR/6.6-00/33		
	Electricity consumption	Monthly	Laundry incharge
	Diesel Consumption	Monthly	Laundry incharge
	Calibration of Energy meter	Yearly	Electrical Head
	No of Occupancy	Monthly	Admin
Significant regulations of energy law and other requirements:	Indian electricity rule MSDEL Requirement NACC reequipment		

Hints for the Auditor:

Energy complexity category

The complexity is a calculated value based on a weighted factor that addresses all three of these considerations.

The following formula is used to calculate the complexity value:

$$C = (F_{EC} \times W_{EC}) + (F_{ES} \times W_{ES}) + (F_{SEU} \times W_{SEU})$$

C = Energy complexity value

F_{EC} = annual energy consumption complexity factor from Table A.1

F_{ES} = number of energy sources complexity factor from Table A.1

F_{SEU} = number of significant energy uses complexity factor from Table A.1

W_{EC} = weighting of the factor from Table A.1 for annual energy consumption

W_{ES} = weighting of the factor from Table A.1 for number of energy sources

W_{SEU} = weighting of the factor from Table A.1 for number of significant energy uses

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Table A.1 – Energy complexity criteria for determination of audit time

Criteria	Weight (W_{EC} , W_{ES} , W_{SEU})	Range	Range	Complexity factor (F_{EC} , F_{ES} , F_{SEU})	Weighted complexity factor ($W \times F$)
Annual energy consumption	25 %	≤ 20 TJ	≤ 5.6 GWh	1.0	0.25
		$20 \text{ TJ} \leq 200 \text{ TJ}$	$5.6 \text{ GWh} \leq 55.6 \text{ GWh}$	1.2	0.30
		$200 \text{ TJ} \leq 2,000 \text{ TJ}$	$55.6 \text{ GWh} \leq 555.6 \text{ GWh}$	1.4	0.35
		$> 2,000 \text{ TJ}$	$> 555.6 \text{ GWh}$	1.6	0.40
Number of energy sources	25 %	1 – 2 energy carriers		1.0	0.25
		3 energy carriers		1.2	0.30
		≥ 4 energy carriers		1.4	0.35
Number of significant energy uses (SEU)	50 %	1 to 3 SEUs		1.0	0.50
		4 - 6 SEU		1.2	0.60
		7 - 10 SEU		1.3	0.65
		11 - 15 SEU		1.4	0.70
		≥ 16 SEU		1.6	0.80

1,000 kWh = 1 MWh, 1,000 MWh = 1 GWh, 1 Mio. kWh = 1 GWh; 1 l Heating oil/Diesel = 10 kWh, 1 m³

Natural gas = 11 kWh

Biomass -- if customers use biomass as energy source, the following information must be available: the amount of annual energy consumption expressed as kWh or MWh or GWh; if the customer gives the energy consumption in t or m³, the customer must specify the conversion factor (calorific value in kWh/t or kWh/m³) and the energy quantity must be converted into kWh.

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Table A.2 – Level of EnMS complexity

Complexity Level	Level of the EnMS complexity
> 1.35	High
1.15 – 1.35	Medium
< 1.15	Low


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