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Audit Report as per

ISO 50001:2018

For

**Manipal Academy of Higher Education
Madhav Nagar, Manipal – 576 104,
Karnataka, India**

Client	Standard(s)	Certification Number(s)	Audit Type
MANIPAL ACADEMY OF HIGHER EDUCATION (MAHE)	ISO 50001:2018	01 407 1737050	RECERTIFICATION AUDIT

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Audit Leader : DINESH KALE

Audit Team : Mr. GVS Rao, Mr. Alok Maiti (AM),

Client's representative : Mr. Shridhar K. Rao

Audit Date : March 27, 2023 – March 31, 2023

1 Audit result

Energy Management system effectiveness was verified through on site audit by means of random sampling by an appropriately selected audit team. This applies in particular to the compliance of workflows with standard requirements and the descriptions in management system documentation. The audit objectives as mentioned in the audit plan, the special features of the organization's business activities, the applicable statutory and regulatory requirements and the requirements set forth in other generally applicable documents were also taken into account. This was done by means of a sampling approach, by conducting interviews and reviewing the appropriate documentation. Audit findings and recommendations regarding opportunities for improvement have been set forth in Sections 4 of this report.

<input type="checkbox"/>	The last audit revealed nonconformities which have been demonstrably corrected. The corrections and corrective actions taken in this respect have been verified.						
<input type="checkbox"/>	A stage 1 audit was performed and the organization found ready for certification. Identified weaknesses, if any, have been eliminated and the respective corrective action verified.						
<input checked="" type="checkbox"/>	<p>The current audit revealed the following nonconformities:</p> <table border="1"> <thead> <tr> <th>Standard(s):</th> <th>No. of major nonconformity</th> <th>No. of minor nonconformity</th> </tr> </thead> <tbody> <tr> <td>ISO 50001</td> <td>0</td> <td>1</td> </tr> </tbody> </table>	Standard(s):	No. of major nonconformity	No. of minor nonconformity	ISO 50001	0	1
Standard(s):	No. of major nonconformity	No. of minor nonconformity					
ISO 50001	0	1					
<input type="checkbox"/>	The major nonconformities (No.Nil) with individual standard elements require a re-audit to verify the effectiveness of the corrections and corrective actions (probable date: dd.mm.yyyy)						
<input type="checkbox"/>	The organization has established and maintains an effective system to ensure compliance with its policy and objectives. The audit team confirms in line with the audit targets that the organization's management system complies with, adequately maintains and implements the requirements of the standard(s).						

The auditor/audit team therefore recommends (provided nonconformity response has been approved):

<input type="checkbox"/>	Award of the new certificates.
<input type="checkbox"/>	Maintenance of the existing certification.
<input type="checkbox"/>	Inclusion of the changes (see Section 3) in the scope of application of existing certifications
<input type="checkbox"/>	Maintenance or issue of the certificates only after successful completion of a re-audit.

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2 Scope

2.1 Description of the organization

3 "Manipal Academy of Higher Education" is recognized as one of the leading University in country. The Manipal, started with Medical College in 1953, added Engineering College in 1957 and many more institutions from Pharmacy to hotel management and in 1993 formally became University .The education streams consists of Medical, Engineering, Science, Commerce, Architecture, Nursing, Natural Science, medicine, Dentistry, Allied Health, Pharmacy Life Sciences, Management, Mass Communication, Information Technology, Computer science, Hotel Management etc. "Manipal Academy of Higher Education" registers over 26,000 students every year. It also has an active alumni base of over 100,000 students across the world. Organization has provided adequate infrastructure for classrooms, hostels, laboratory, libraries, entertainment, sports, natural resources, water etc. Efforts to conserve energy, water including academic resources are evident. The Educational systems work during 09.00 to 18.00 hrs, while the health care systems work round the clock. Organization has developed Energy Management system for the University operations and opted to go for ISO 50001 Certification.

3.1 Scope of certification

Scope of certification: (per standard):	Curriculum design and development, course delivery, research and health care delivery
ISO 9001 standard requirements which are not applicable:	NA
Reasons for non-applicability:	NA

In cases involving multi-site certification: During the Surveillance 2 audit, all locations including the Central Office were selected. The internal audit was conducted throughout the multi-sites and was verified with a positive result. Internal audit were conducted twice in a year i.e. in January 2023 and August 2022. The management representative has appropriate authority over the sites included in the multi-site organization.

Multi-shift operations: The University has both academics and healthcare services. The healthcare services are involved in 24 X 7 operations / activities. The audit team audited the organization from 09.am to 06.00 PM which covers two shifts of operation since; all the operations and activities are similar in all the shifts

The following sites and their scopes are included in the scope of certification:

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1	"Manipal Academy of Higher Education" (Formerly known as Manipal Academy of Higher Education) "manipal.edu", Madhav Nagar, Manipal – 576 104, Karnataka, India	7220 No of EnMS Eff. Personnel: 255 nos.	Providing Higher Education, Governing and Guiding Constituent Institutions in Academics leading to Under Graduate, Post Graduate, Super Specialty, Doctoral Degrees, Diplomas and Post Graduate Diplomas in Domains of Health Sciences, Engineering & Technology, Management & Communication, Humanities, Arts & Sciences, and Facilitating Academic Research Services	ISO 50001:2018	Yes
2	"Manipal Academy of Higher Education" Dr. TMA Pai Hospital Opp. Taluk Office, Main Road, Udupi – 576101, Karnataka, India.	244 No of EnMS Eff. Personnel: 6 nos.	Providing Multi Speciality Health Care Services Encompassing Clinical, Nursing, Diagnostics (Radiology, & Laboratory), Administrative and Allied Services. Specialities: Medicine, Surgery, Obstetrics & Gynaecology, Paediatrics, Orthopaedics and Anaesthesia	ISO 50001:2018	Yes
3	"Manipal Academy of Higher Education" Dr. TMA Pai Rotary Hospital Near Taluk Office Karkala - 574104 India.	103 No of EnMS Eff. Personnel: 1 nos.	Providing Specialty Health Care Services Encompassing Clinical, Nursing & Diagnostics (Radiology & Laboratory) services Specialities: Obstetrics & Gynaecology, Paediatrics and Ophthalmology	ISO 50001:2018	Yes
4	"Manipal Academy of Higher Education" Kasturba Medical College Hospital, Attavar Mangalore –	671 No of EnMS Eff. Personnel: 9 nos.	Providing Multi-speciality and Super-speciality (Paediatric Surgery & Medical Oncology), Healthcare services in Clinical Nursing, Diagnostics (Radiodiagnosis & Imaging, Clinical Biochemistry, Microbiology, Pathology),	ISO 50001:2018	Yes

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	575001, Karnataka, India		Blood Bank, Administrative and Allied Services		
5	"Manipal Academy of Higher Education" Kasturba Medical College Post Box No. 53, Light House Hill Road, Hampankatta, Mangalore – 575001, Karnataka, India	1191 No of EnMS Eff Personnel: 44 nos.	Providing Services leading to Bachelor's Degree, Post Graduate Diploma, Master's Degree in Specialization and Doctoral Degree in Medical Education, and Post Graduate and Doctoral Degrees in Medical Sciences	ISO 50001:2018	Yes

4 Changes in the management system / Contract review

No major changes have been made to the management system and the management system documentation since the last audit. The order details which form the basis of the audit (including number of employees, scope and sites) reflect the actual situation in the organization.

The following changes will be implemented in the management system and the management system documentation since the last audit. Minor changes are:

1. Conventional transformer is replaced with Energy Efficient Transformer as per management program
2. Investment of 40 Lacs with energy efficient 'Heat Pump of 2.2 KW from 9KW'.

The implementation of these changes in the existing management system and the management system documentation was verified within the framework of the audit.

The description of the scope in the certificate appropriately reflects the scope of the management system.

The audit plan was changed during the audit.

Changes to the original audit plan were made during the audit. They are documented in the audit plan and were agreed with the customer on site.

5 Audit findings

The audit findings related to the audited standards are listed in the annexes to this report (see. Annex ISO 50001:2018).

All information gained during the audit will be treated with strict confidentiality by the auditor(s) and the certification body. In view of the sampling approach applied to the audit, weaknesses and nonconformities may still exist which have not been identified during the audit.

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No.	Unit/Department Site	Positive findings
1	Top Management	15 Years Strategic planning – Pillars Excellence in Education, Exemplary Research and Innovation, Expanding Reach and internationalization, Effective Engagement and Alumina Relation and Enabling Foundation. - Addition energy efficient building structure – Manipal School of Architectural and planning in 2022.
2	Top Management	Five Years Rolling plan linkage with 15 Year strategic plans and status at University level and Institute level is well evident. - Energy Efficient Transformer in phase-wise - Phase 3 implementation Energy Efficient Heat Pump in Solar Hot Water System
3	Operational	Power Quality Improvement Program – APFC installation 100 KVAR 2 nos.
4		Initiated the Harmonic Distortion study towards compliance of KARNATAKA ELECTRICITY DISTRIBUTION CODE (KEDC), 2015 and installation of harmonic filter in sub-station level.
5	Operational	DG Synchronization: Installation AMF Auto Load Sharing, auto Synchronization panels: Energy Conservation Plan
6	Operational	Replacement of Conventional Transformer (high Loss) by Energy efficient transformer for HSC (Health Science), Hospitals and MIT Campus.
7	Operational	Focus on Latest Technology and upgradation of current equipment e.g. inverter technology AC units, screw chiller with VFD etc.
8	Operational	Diesel consumption monitoring at Stationery sources is made effective by Door to door delivery scheme from HPCL.

The following recommendations and opportunities for improvement provided by the auditor(s) are intended to contribute to the continuous improvement of the management system.

No.	Unit/Department Site	Recommendations and opportunities for improvement
1	KH Block	Solar Energy generation and monitoring by outsourced agency M/s. CleanMax and further monitoring is being done by MAHE but the monitoring criteria in terms of energy efficiency w.r.t. solar irradiation level may be documented and review for periodic management review.
2	Design	External isolation transformer as far as modular UPS System WGSMA to be reviewed.

6 Dates

Due Date for the next audit

2024-03-09 (indicate for each standard if applicable)

Agreed date for the next audit

2024 March 1st Week

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March 31, 2023

Date

Dinesh Kale

Audit Leader / Auditor(s)

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Annex ISO 50001:2018

Item	Audit result
Context of the organization	<p>The organization has determined internal and external issues related to the following topics:</p> <p>ISP-04-01 / 02 dt 09.03.2020 & Risk – Mitigation Plan MAHE ISP 9-03 R 2 dt 20.01.2020</p> <ul style="list-style-type: none"> • Norms from State Electricity Board • Disruption of Electricity (failure in supply)industry acadmic collaboration • Comfortable Environment for classroom / hostel energy efficient – Awareness among recruited students. • Campus and conductive environment. • Delay in issue of clearance leading to project delay – 5/6 months <p>The organization has identified interested parties and the requirements of these parties. Examples for such parties are:</p> <ul style="list-style-type: none"> • Karnataka Electricity Regulatory Commission • Mangalore Electricity Supply Company (MESCOM) • KARNATAKA ELECTRICITY DISTRIBUTION CODE (KEDC), 2015 • Green Energy - KWH (Wheeling & Banking) • Green Building – Architectural (MIT Campus)
Policy/objectives	<p>The energy policy established by top management was communicated, implemented and is available to interested parties, as appropriate, in the organization at last on 19.10.2021. It is suitable and includes the commitment to continual improvement and compliance with the applicable energy laws, regulations and requirements. It provides the framework for establishing and reviewing energy objectives. The organization has implemented and maintains a program for realizing the energy objectives and targets.</p> <p>Quantifiable key energy targets, which based on the organization targets, are:</p> <p>Reduction of Electricity consumption by 2.5% with EnPI of Building EnPI -Kwh/Sq.M</p> <p>Site 1: Reduction from 56 to 55 Kwh/Sq.M Achieved - 61 Kwh/Sq.M (This is due to health science campus is started to utilize with full occupancy which was first time since last 3 years. Considering this full occupancy revised target is 65 Kwh/Sq M).</p> <p>Site 2: Achieve 74 Kwh/Sq.M from 89 Kwh/Sq M Achieved – 70.97 Kwh/Sq.M</p> <p>Site 3: Achieve 38 Kwh/Sq.M from 45 Kwh/Sq M Achieved – 31.42 Kwh/Sq.M</p> <p>Site 4: Achieve 48 Kwh/Sq.M from 51 Kwh/Sq M Achieved – 46.15 Kwh/Sq.M (Renovation of complete building with additional facility of laboratory and dental chair is added with HVAC and hence revised target – 48 Kwh/SqM)</p> <p>Site 5: Achieve 148 Kwh/Sq.M from 138 Achieved - 145 Kwh/Sq.M (Central Laboratory Building is added with HVAC system with 6394 Sq M i.e. 23% added of total and hence revised target – 146 Kwh/SqM)</p>

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Energy performance and their changes since the last audit	<p>Essential energy uses are identified and their significance and impact on services are reviewed and updated at regular intervals (energy review last defined 01.03.2023, energy baseline from 01.04.2021 to 31.03.2022.</p> <p>The total energy consumption for the period from 01.04.2021 to 31.03.2022 and 01.04.2022 to till date amounts to the total sum (kWh) of 56.04 Million Kwh and 59.78 Million Kwh was divided into the following energy sources applied for all locations. Refer below table.</p> <ul style="list-style-type: none"> Electricity from Mangalore Electricity Supply Company (MESCOM) and Green Energy - KWH (Wheeling & Banking) @ 94% & 95% in 2021-22 and 2022-23 Solar Roof Top PV System – 3.5 % and 2.5% in 2021-22 and 2022-23 Diesel for DG Set and Vehicles - 3.13 % and 2.71% in 2021-22 and 2022-23 Petrol for Vehicles @ 0.01% <p>The significant energy uses (SEUs) are (share of total energy consumption in %) applied for all locations:</p> <ul style="list-style-type: none"> HVAC Electricity - @ 70% Illumination Level @ 20% Solar Energy of Site 1 >2% <p>Adequate energy performance indicators were determined (according to locations, if applicable):</p> <ul style="list-style-type: none"> EnPI of Building EnPI -Kwh/Sq.M <p>The main planned measures in the action plans with the expected savings are</p> <ul style="list-style-type: none"> Human Sensor Central Switch off system Procurement of energy efficient Equipment. <p>The continual improvement of the energy performance has been determined identified by the following indicators and amounts to (e.g. development of energy performance indicators):</p> <ul style="list-style-type: none"> Continual improvement in energy consumption per building area <p>The verification was provided by the document / the documents [EnMS -Audit Back up sheet] of 01.03.2022 (updated monthly).</p>
Identification and monitoring of legal and other requirements	<p>The organization identifies the relevant energy related legal and other requirements at regular intervals and makes them accessible to all relevant functions.</p> <p>The following requirements are mainly relevant for the organization:</p> <ul style="list-style-type: none"> As of now, there is no applicable compliance obligation other sanctioned demand fulfilment and power factor compliance which is complied at all sites.
Leadership, responsibility and authority and communication	<p>The top management demonstrates commitment with respect to the energy management system and integrates its requirements into the organization's business processes.</p>

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	<p>The management system-related requirements regarding competence, of the people working for or on behalf of the organization as well as the roles, responsibilities and authorities are defined, documented and communicated.</p> <p>The organization has set up an effective communication process for both internal and external communication.</p>
Operational planning and control, design and procurement	<p>To comply with the energy policy and the energy objectives and targets, the organization identifies all energy-relevant operations and activities. Operations are planned and monitored.</p> <p>The organization maintains documented information for analyzing and including the impact of design (processes, products, equipment, etc.) and of procurement activities on organizations energy performance.</p>
Control of documented information	The ongoing control and maintenance of documents and records regarding the energy management system is appropriate.
Internal audit and management review	<p>The organization measures the implementation, maintenance and effectiveness of the management system by means of scheduled system audits once in six months. The organization reliably carries out these audits.</p> <p>Energy planning is reviewed where 2023-24 projection is 61.9 Million Kwh is total demand for Site 1, Site 2 – 1 Million Units, Site 3 – 0.5 Million Units, Site 4 – 5.14 Million KWh and Site 5 – 4.9 million Kwh.</p> <p>Internal audit plan is reviewed for Year 2021-22.</p>
	<p>Six monthly audit plan is reviewed.</p> <p>University level internal audit and management review is done.</p> <p>Planned Aug-22 and Jan-23. Completed August and Feb-23 audit.</p> <p>Planned Aug-22 and Jan-23. Completed September -22 audit and Feb 2023.</p> <p>Top management reviews the organization's management system at regular intervals and in line with the requirements to ensure its continuous suitability, adequacy and effectiveness. The management review was carried out in accordance with the requirements and was effective.</p> <p>Management review is planned six monthly which is being done every internal audit and completion of each institute level management review. Date of last management review: 04th & 05th September 2022 and 27th and 28th February 2023</p>
Use of certificate and logo	The organization uses the logo and the certificate (e.g. on business cards, company brochures, websites etc.) in compliance with the requirements.

Chapter of standard	4.1	4.2	4.3	4.4	5.1	5.2	5.3	6.1	6.2
Rating*	1	1	1	1	1	1	1	1	1
No. of nonconformity	0	0	0	0	0	0	0	0	0
Chapter of standard	6.3	6.4	6.5	6.6	7.1	7.2	7.3	7.4	7.5
Rating*	1	1	1	2	1	1	1	1	1
No. of nonconformity	0	0	0	2 (NC2 & NC3)	0	0	0	0	0
Chapter of standard	8.1	8.2	8.3	9.1	9.2	9.3	10.1	10.2	
Rating*	1	1	1	1	1	1	1	1	

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No. of nonconformity	1 (NC1)	0	0	0	0	0	0	0	
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***Rating:** 1 = conforming
2 = nonconformity (see nonconformity report)