Integrated Management System

ISO 14001: 2015

Environmental Management System (EMS)

&

ISO 50001: 2018

Energy Management System (EnMS)

Integrated Management System Manual

(Version 01)

Madanapalle Institute of Technology & Science (MITS)

Deemed to be University

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Version control

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1	IMS Manual	01	01.04.2025	Registrar

APPROVAL

This manual describes the Integrated Management System of Madanapalle Institute of Technology & Science (MITS) Deemed to be University simultaneously complying with the requirements of the international standards - ISO 14001:2015, and ISO 50001:2018.

This manual is Version 01 of Integrated Management System manual of MITS issued on 01/04/2025.

The scope, approach and the contents of this manual are hereby approved, authorized, and released for use of all concerned in MITS.

Any future change(s) in this manual shall be issued only after the specific approval, ensuring the system integrity and compliance with the above standards.

All users shall also exercise necessary care to prevent unauthorized use, loss, damage, and/or illegibility of this
manual.

Sd/-
Registrar

Place: Madanapalle.
Date:

Integrated Management (Environment & Energy) policy of MITS

The IMS (environmental & energy) policy of Madanapalle Institute of Technology & Science Deemed to be University, defines the strategic direction to perform all activities/processes concerning environmental & energy considerations. This integrated policy contributes to the institute's broader commitment to social responsibility.

The IMS policy of Madanapalle Institute of Technology & Science is to:

- Protect the environment & energy by utilizing natural resources efficiently through reduce, reuse and recycle processes.
- Minimize the significant environmental & energy impacts through integrated environmental & energy management processes and planning.
- Adopt the pollution hierarchy approach to prevent pollution through source reduction, reuse (or) recycling, recovery, treatment, and controlled disposal.
- Mitigate climate change with reduced emission of greenhouse gases.
- Maintain the necessary compliance obligations related to the state and central legislations.
- Purchase of eco-friendly and energy efficient materials, services and designs from authorized dealers with life cycle considerations.
- Attain continual improvement to improve the efficiency of IMS to enhance environmental & energy performance.
- Protect the bio-diversity, habitats, and ecosystem through direct on-site conservation in the neighboring locations.
- Incorporate energy efficiency as a key component for new equipment, major renovation, and new design.
- Promote energy saving awareness to our staff.

All activities/processes associated with the environment & energy will be performed as per the standards of ISO 14001:2015 & ISO 5001:2018. Based on the Integrated Management policy, IMS objectives will be framed. The performance against the IMS Objectives will be reported annually to the top management. All the students, research scholars, teaching and non-teaching staff, and other external stakeholders share this responsibility in maintaining the Integrated Management System (IMS). They are therefore required to adopt the standards, objectives, and procedures of IMS wherever applicable.

1. DISTRIBUTION LIST

Controlled hard copy distribution by IMS Coordinator, MITS

Copy No.	Copy Holder	Purpose / Responsibility
Master Copy	IMS Coordinator	Master controlled copy for document control, management review, certification audits, and external audits
CC-01	Registrar	Overall IMS implementation and management oversight
CC-02	IMS Team Leader	Coordination of IMS activities and monitoring
CC-03	Estate Officer	Implementation of EMS and EnMS requirements in infrastructure and utilities
CC-04	Electrical Maintenance In-charge	Energy management, HT systems, DG sets, solar systems, and electrical facilities
CC-05	Civil Maintenance In-charge	Civil works, water systems, drainage, rainwater harvesting, and infrastructure maintenance
CC-06	Housekeeping In-charge	Housekeeping and waste management activities
CC-07	Horticulture In-charge	Green campus and horticulture activities
CC-08	Transport In-charge	Transportation services and fuel management
CC-09	Internal Audit Team	Internal audit implementation and verification
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Note: Electronic copies maintained in the IMS Document Management System shall be treated as controlled copies. Printed copies are uncontrolled unless specifically identified and recorded in the Controlled Copy Distribution Register.

2. CONTENTS

3. Definitions, Abbreviations and Conventions

Environmental surroundings – in which an organization operates, including air, water, land, natural resources, flora, fauna, humans and their interrelationships.

Environmental aspect – element of an organization's activities or products or services that interacts or can interact with the environment.

Environmental impact – change to the environment, whether adverse or beneficial, wholly or partially resulting from an organization's environmental aspects.

Interested parties – are the internal and external stakeholders whose actions can directly or indirectly influence the EMS performance

Top management – person or group of people who directs and controls an organization at the highest level

Cross functional team (CFT) – members of organization who are responsible for representing their area or department in several facets of the EMS.

Operational heads – reporting authority to whom the CFT reports

Operation controls – shall be a procedure, work instructions, physical controls, use of competent personnel, or any combination of these.

Compliance obligations – legal requirements that an organization has to comply with and other requirements that an organization has to or chooses to comply with

Intended outcomes – is what the organization intends to achieve by implementing its environmental management system.

Nonconformity – non-fulfilment of a requirement which can be stated in relation to the environmental management system or in terms of environmental performance.

Corrective action – action to eliminate the cause of a nonconformity and to prevent recurrence

Continual improvement – recurring activity to enhance performance

Risks and opportunities – potential adverse effects (threats) and potential beneficial effects (opportunities)

Competence – ability to apply knowledge and skills to achieve intended results

Effectiveness – extent to which planned activities are realized and planned results achieved

Indicator – measurable representation of the condition or status of operations, management or conditions

Monitoring – determining the status of a system, a process or an activity without using an equipment

Measurement – process to determine a value using equipment

Performance – measurable result

Environmental & energy performance – performance related to the management of environmental & energy aspects

Standards – requirements as mentioned in ISO 14001:2015 & ISO 50001: 2018

In this IMS policy, the following verbal forms are used:

"**shall**" indicates a requirement (mandatory);

"**should**" indicates a recommendation;

"**may**" indicates a permission;

"**can**" indicates a possibility or a capability.

"**retain** documented information as evidence of" to mean records

"**maintain** documented information" to mean documentation other than records.

MITS – ORGANIZATION PROFILE

Globally, there is an increasing emphasis on environmental protection and the achievement of a sustainable future. The adverse impacts of current climatic conditions have necessitated the adoption of systematic frameworks to safeguard the environment and ensure sustainability, failing which may lead to severe ecological consequences.

In this context, various organizations are striving to implement and maintain Environmental Management Systems integrated with their core business processes to minimize environmental impact and promote sustainability.

Madanapalle Institute of Technology & Science (MITS) is committed to conducting its activities and processes in a proactive, environmentally responsible, and socially acceptable manner, while continuously enhancing energy performance.

The Integrated Management System (IMS) of MITS aims to minimize environmental impact by protecting environmental conditions and reducing adverse environmental effects. The implementation of ISO 14001:2015 and ISO 50001:2018 provides a structured framework for establishing and maintaining an effective Environmental Management System (EMS) and Energy Management System (EnMS).

The IMS Manual serves as a guiding document for developing the EMS and EnMS framework in accordance with the requirements of these standards.

INTEGRATED MANAGEMENT SYSTEM MANUAL

The Integrated Management System Manual defines a structured framework aligned with ISO 14001:2015 and ISO 50001:2018 standards to plan, implement, monitor, control, and improve the Environmental Management System (EMS) and Energy Management System (EnMS) at MITS.

The IMS Manual provides guidelines for protecting and improving environmental and energy performance within the campus environment of MITS.

The IMS Manual may be reviewed annually by top management and updated as necessary based on organizational requirements.

The structure of the IMS Manual is organized into the following sections:

1. Context of the Organization
2. Leadership

3. Planning
4. Support
5. Operation
6. Performance Evaluation
7. Improvement

4. CONTEXT OF THE ORGANIZATION

4.1 MITS and its Management System

Madanapalle Institute of Technology & Science (MITS) is established in 1998 in the picturesque and pleasant environs of Madanapalle and is ideally located on a sprawling 26.17 acre campus on Madanapalle - Anantapur Highway (NH-205) near Angallu, about 10km away from Madanapalle.

MITS, originated under the auspices of Ratakonda Ranga Reddy Educational Academy under the proactive leadership of Late Sri. N. Krishna Kumar M.S. (U.S.A), the then President and Dr. N. Vijaya Bhaskar Choudary, Ph.D., Secretary & Correspondent of the Academy.

MITS is governed by a progressive management that never rests on laurels and has been striving conscientiously to develop it as one of the best centers of Academic Excellence in India. The Institution's profile is firmly based on strategies and action plans that match changing demands of the nation and the students fraternity. MITS enjoys constant support with distinguished academic traditions and vast experience in Engineering & Technology.

MITS is one of the pioneering private institutions in the country and has the highest grade of "A+" by the National Assessment and Accreditation Council (NAAC).

VISION

To serve our region, nation and world through academic excellence, research relevance, and community engagement while emphasizing the importance of the individuals.

MISSION

The MITS Deemed to be University is committed to providing a dynamic and inclusive learning environment that nurtures intellectual curiosity, promotes critical thinking, and cultivates ethical leadership. Our mission is to empower students with the knowledge, skills, and values necessary to thrive in a rapidly changing global society.

A well-conceptualized strategic plan provides a roadmap for achieving the organization's vision through its mission. The strategic plan is built on six key pillars:

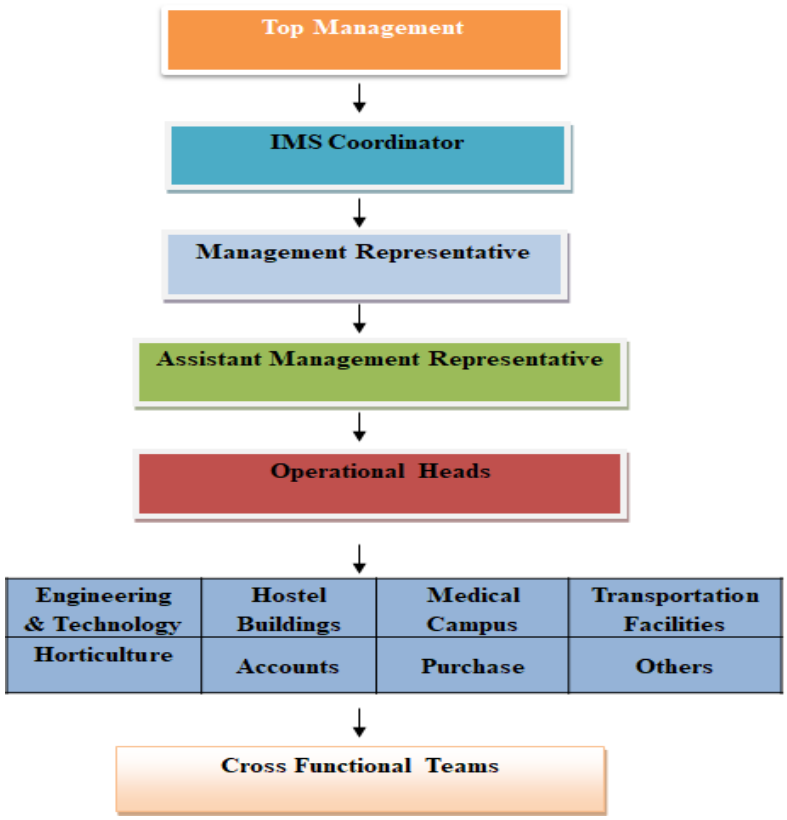
1. Academic Excellence
2. Research Excellence
3. Capacity Building – Faculty and Students
4. Global Visibility and Collaboration
5. Innovation, Incubation, and Entrepreneurship
6. Sustainability and Development

To establish, implement, maintain, and continually improve the Integrated Management System (IMS), the organization shall determine the context in which it operates. This includes both internal and external issues, as well as environmental and energy conditions relevant to its purpose, which may influence its ability to achieve the intended outcomes of the IMS.

The term "intended outcome" refers to what the organization aims to achieve through the implementation of its Integrated Management System.

Top management of MITS has identified relevant external and internal issues that may positively or negatively impact the organization. These identified issues are documented in Annexure 1.

The organizational structure of the IMS is presented in Figure 1.



4.2 Needs and expectations of all interested parties of MITS

The needs and expectations of the interested parties represent the requirement of environmental & energy consideration that the organization shall include while developing the IMS. The top management of MITS identified the interested parties. The primary interested parties are students, faculties, and staff involved in the administrative activities. The other interested parties are the regulatory or statutory agencies, industry membership organizations, neighboring communities, contractors, non-governmental organizations (NGOs), and others. The interested parties were surveyed to determine their needs and expectations

The operational heads shall review the received needs and expectations in the organization. After the review, the relevant needs and expectations are considered while formulating the environmental & environmental objectives. Wherever the interested parties expressed their unsatisfactory opinion about the specific environmental & energy impacts shall be considered as compliance obligations by the organization. The needs and expectations shall be annually reviewed and updated as per the requirement of the standard.

4.3 Scope and coverage of integrated management system of MITS

- The primary function of MITS is to provide academic services. The scope of the Environmental and Energy Management System is defined to specify the physical and organizational boundaries within which the integrated management system is applicable. While determining the scope, the organization considers the level of control and influence it can exercise over its activities, products, and services, taking into account a life cycle perspective.
- The physical boundaries of the scope include the main campus. The key activities and services carried out within these boundaries include:
- Consumption of electricity supplied by the State Electricity Board, Generation of electricity using diesel generators and solar power systems. Operation of water treatment units through Reverse Osmosis (RO) systems, Operation of wastewater treatment facilities, including Sewage Treatment Plants (STP).

- Transportation facilities

- Horticulture activities
- Waste management

4.4 Integrated management system and processes of MITS

The top management of MITS established the integrated management system to achieve the intended outcomes and enhance its environmental & energy performance. The EMS & EnMS shall be implemented, maintained, and continually improved following the requirements of the international standard ISO14001:2015 & ISO 50001: 2018. The interaction of the Plan Do-Check-Act cycle with the elements of the standard is presented in figure 2. The planning activities/processes are as follows:

1. Understand the organization and its context, including the needs and expectations of interested parties
2. Determine the scope and implement the integrated management system
3. Ensure leadership and commitment from top management
4. Establish an environmental & energy policy
5. Assign responsibilities and authorities for relevant roles
6. Determine environmental aspects and associated environmental impacts
7. Identify and have access to compliance obligations
8. Determine the risks and opportunities that need to be addressed related to bullets 1), 6) and 7) above
9. Plan to take actions to address risks and opportunities determined in 8) above, and evaluate effectiveness of these actions
10. Establish environmental & energy objectives and define indicators and a process to achieve them

The “Do” phase activities and processes include the following:

1. Determining the resources required for the implementation, maintenance, and continual improvement of the Integrated Management System
2. Identifying the necessary competence of personnel and ensuring that individuals performing work under the organization’s control are competent based on appropriate education, training, skills, and experience the competency and awareness as determined
3. Establish, implement and maintain the processes needed for internal and external communications

4. Ensure an appropriate method for creating and updating and controlling documented information
5. Establish, implement and control operational control processes needed to meet the integrated management system requirements

   The check activities/processes activities are as follows

   1. Monitor, measure, analyze and evaluate environmental & energy performance
   2. Evaluate fulfillment of compliance obligations
   3. Conduct periodic internal audits
   4. Review the organization's integrated management system to ensure continuing suitability, adequacy and effectiveness

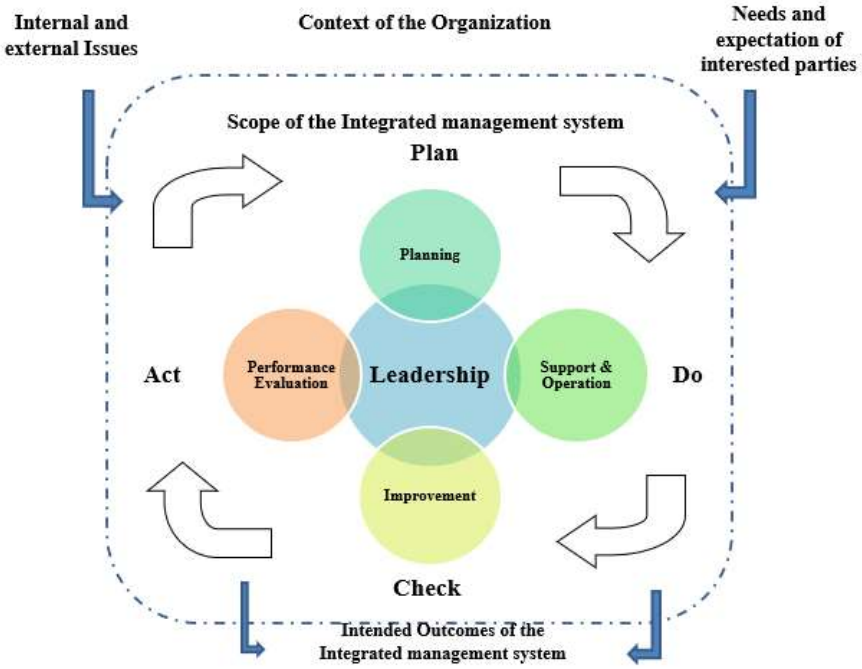


Figure 2: Relationship between PDCA and the framework

The act – activities/processes are as follows:

1. Take appropriate action to identify, control, and eliminate nonconformities, and prevent their recurrence.
2. Continually improve the suitability, adequacy, and effectiveness of the Environmental Management System (EMS) to enhance overall environmental performance.

5. LEADERSHIP

5.1 Leadership and commitment

The MITS Chancellor constitutes Governing Body for the ultimate reporting and governing authority of the institution. They are the highest authority responsible for directing and overseeing the Integrated Management System (IMS) of MITS. The commitment, accountability, and leadership of top management are essential for the successful implementation, maintenance, and continual improvement of an effective Integrated Management System capable of achieving its intended outcomes.

The top management of MITS demonstrates leadership and commitment towards the IMS by:

- Taking accountability for the effectiveness of the Integrated Management System.
- Ensuring that the Environmental and Energy Policy, along with the related objectives, are established and aligned with the strategic direction and organizational context.
- Ensuring the integration of IMS requirements into the institution's business processes.
- Ensuring the availability of resources necessary for the effective implementation and maintenance of the IMS.
- Communicating the importance of effective environmental and energy management and ensuring conformity with IMS requirements.
- Ensuring that the Integrated Management System achieves its intended outcomes.
- Directing and supporting all personnel to contribute to the effectiveness of the IMS.
- Promoting continual improvement in environmental and energy performance.
- Supporting relevant management roles in demonstrating leadership within their respective areas of responsibility.

The top management also formulates and establishes an Integrated Policy covering Environmental and Energy Management to effectively implement, maintain, and continually improve the Integrated Management System.

5.2 Integrated Management (Environment & Energy) policy

The Integrated Management System (IMS) Policy of Madanapalle Institute of Technology & Science is committed to:

- Protecting the environment and conserving energy through the efficient utilization of natural resources by adopting the principles of reduce, reuse, and recycle.
- Minimizing significant environmental and energy impacts through integrated environmental

and energy management processes and systematic planning.

- Adopting the pollution prevention hierarchy approach through source reduction, reuse and recycling, recovery, treatment, and controlled disposal practices.
- Mitigating climate change by reducing greenhouse gas emissions.
- Ensuring compliance with all applicable state and central environmental and energy-related legal and regulatory requirements.
- Procuring eco-friendly and energy-efficient materials, services, and designs from authorized suppliers with due consideration to life-cycle aspects.
- Achieving continual improvement in the effectiveness of the IMS to enhance environmental and energy performance.
- Protecting biodiversity, habitats, and ecosystems through direct on-site conservation activities and initiatives in neighbouring areas.
- Incorporating energy efficiency as a key consideration in new equipment procurement, major renovations, and infrastructure design, while also promoting energy conservation awareness among staff members.

All activities and processes related to environmental and energy management shall be carried out in accordance with the requirements of ISO 14001:2015 and ISO 50001:2018 standards. Based on this Integrated Management Policy, IMS objectives shall be established, monitored, and periodically reviewed. Performance against the IMS objectives may be reported annually to the top management.

All students, research scholars, teaching staff, non-teaching staff, and relevant external stakeholders share the responsibility for maintaining and improving the Integrated Management System. Therefore, they are required to adhere to the IMS policies, objectives, standards, and procedures wherever applicable.

5.3 Organizational roles, responsibilities and authorities

The top management of Madanapalle Institute of Technology & Science ensures that the responsibilities and authorities for all relevant roles related to the Integrated Management System (IMS) are clearly defined, assigned, and communicated throughout the organization. The roles and responsibilities of individuals associated with the IMS are communicated to ensure effective implementation, operation, maintenance, and continual improvement of the system.

The defined roles and responsibilities are established to ensure that the Integrated Management

System conforms to the requirements of the applicable standards and achieves its intended outcomes. Details of the roles, responsibilities, and authorities related to the IMS are provided in Annexure–2.

6. PLANNING

6.1 Actions to address risks and opportunities

The risks and opportunities associated with the Integrated Management System (IMS) shall be identified and addressed to ensure that the organization achieves the intended outcomes of the IMS, prevents or reduces undesired effects, and promotes continual improvement. The identification of risks and opportunities is carried out by considering the organizational issues, relevant requirements, and the defined scope of the IMS.

Madanapalle Institute of Technology & Science has adopted a qualitative assessment approach to determine the risks and opportunities related to environmental and energy aspects, compliance obligations, and other relevant organizational issues. Potential emergency situations and their possible impacts are also considered during the identification and evaluation of risks and opportunities. The Risk Assessment Register is provided in Annexure–3.

Emergencies are unplanned or unexpected events that require the immediate application of specific competencies, resources, or processes to prevent, control, or mitigate their actual or potential consequences. Such emergencies may lead to adverse environmental impacts, energy-related issues, or other negative effects on the organization and its stakeholders.

6.2 Environmental Aspects and Impacts

Within the scope of the Integrated Management System (IMS), Madanapalle Institute of Technology & Science determines the environmental aspects of its activities, products, and services that it can control and those that it can influence, along with their associated environmental impacts, by considering a life-cycle perspective. All possible environmental aspects and their related impacts are identified and evaluated systematically.

The identified aspects are further analyzed under normal, abnormal, and emergency operating conditions to perform risk assessment. Risks (negative impacts) and opportunities (positive impacts) are identified based on the significance of their impacts. The likelihood and severity values for both negative and positive impacts are assigned with inputs from cross-functional team members to ensure comprehensive evaluation and effective decision-making.

The life-cycle considerations of activities, products, and services are provided in Annexure–4, and the Environmental Impact Assessment is presented in Annexure–5.

6.3 Compliance Obligations

Compliance obligations are the legal and other requirements that the organization is required to comply with, as well as other requirements that the organization chooses to comply with. These obligations include applicable acts, rules, regulations, and guidelines relevant to the scope of the IMS issued by Central and State Pollution Control Boards and the respective governmental ministries. Compliance obligations also include the expectations and requirements of interested parties. Such obligations may result in risks and opportunities that need to be addressed appropriately.

The top management of Madanapalle Institute of Technology & Science assesses campus activities and processes at a sufficiently detailed level to determine the compliance obligations applicable to its environmental and energy aspects. The Compliance Register applicable to the scope of the IMS is presented in Annexure–6.

Mandatory compliance obligations include:

- Requirements from governmental entities or other relevant authorities
- International, national, and local laws and regulations
- Requirements specified in permits, licenses, or other forms of authorization
- Orders, rules, or guidance issued by regulatory agencies
- Judgments of courts or administrative tribunals

6.4 Planning Actions

The top management of Madanapalle Institute of Technology & Science determines and plans actions to address significant environmental and energy aspects, compliance obligations, risks, and opportunities. The management also ensures the integration and implementation of these actions by providing the necessary support for operational control, monitoring, and continual improvement of IMS processes.

While planning actions, the top management considers available technological options to improve Environmental Management System (EMS) and Energy Management System (EnMS) performance. These include air and noise monitoring devices, occupancy sensors for automated control of electrical

services, electromagnetic flow meters, online effluent monitoring systems, and other relevant technologies, along with financial considerations necessary for their implementation and operation.

6.5 Integrated Management Objectives and Planning to Achieve Them

The top management of Madanapalle Institute of Technology & Science establishes Integrated Management System objectives at relevant functions and organizational levels in alignment with the commitments stated in the Integrated Environmental and Energy Policy. These objectives are determined by considering significant environmental and energy aspects, applicable compliance obligations, and identified risks and opportunities.

The Integrated Environmental and Energy objectives are categorized into three levels:

- Strategic Objectives
- Tactical Objectives
- Operational Objectives

The IMS objectives are reviewed and updated annually or whenever necessary to ensure continual improvement and alignment with organizational goals and regulatory requirements. The detailed IMS objectives are presented in Table–1.

Table 1 IMS Objectives

Obj.No.	IMS Objectives	Target	Due Date
1	Minimize the overall electricity consumption	10%	01.07.2026
2	Minimize the consumption of diesel for gensets	10%	
3	Increase the production of electricity using photovoltaic cells	10%	
4	Minimize the diesel consumption for transport facilities	3%	
5	Minimize the ground water extraction	10%	
6	Increase the rain water harvesting facilities	10%	
7	Increase the utilization of waste water	10%	
8	Minimize the consumption of fresh paper for printing	5%	

Obj.No.	IMS Objectives	Target	Due Date
9	Minimize the consumption of LPG	10%	
10	Increase the plantation cover	10%	

Planning Actions to Achieve Integrated (Environmental & Energy) Objectives

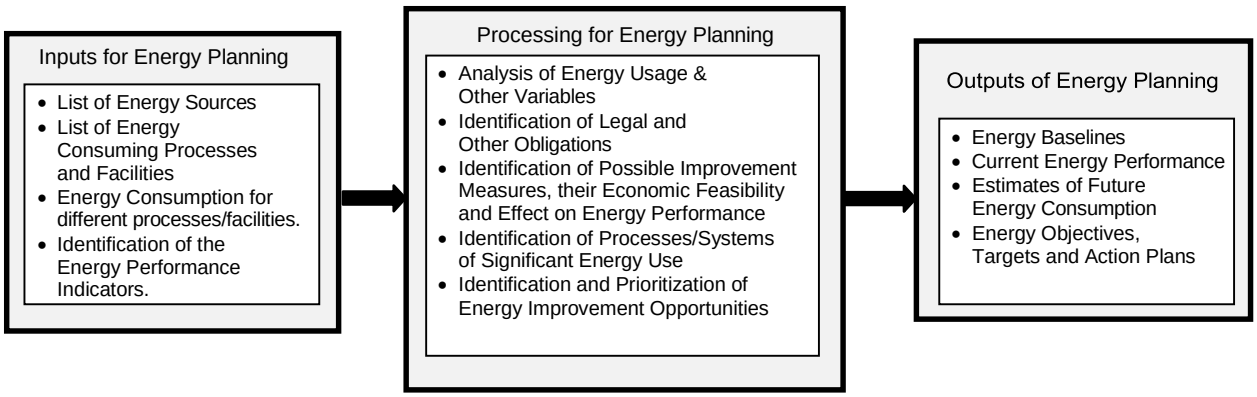
The top management of Madanapalle Institute of Technology & Science establishes tactical environmental and energy objectives, targets, performance indicators, and key actions required for achieving the intended outcomes of the Integrated Management System (IMS).

The respective operational heads should prepare and implement action plans to achieve the defined objectives within one year from the implementation of the IMS. Operational heads are responsible for assigning competent personnel, determining the resources and support required from the top management, implementing the planned actions, and periodically submitting progress reports on a monthly, quarterly, or half-yearly basis for the relevant environmental and energy aspects.

Operational heads may revise, modify, or include additional key actions whenever necessary to ensure the effective achievement of the intended environmental and energy objectives. The tactical objectives, targets, key actions, performance indicators, monitoring methods, and measurement plans are provided in Annexure–7.

Energy Planning

In line with the commitments stated in the Integrated Management Policy and with a focus on continual improvement, Madanapalle Institute of Technology & Science has established a systematic Energy Planning process to ensure effective energy management, improved energy performance, efficient utilization of energy resources, and continual enhancement of the Energy Management System (EnMS). The energy planning process is illustrated in the following diagram.



For planning and improving energy performance, Madanapalle Institute of Technology & Science undertakes the following processes:

1. Based on appropriate data periods and other relevant factors affecting energy use and consumption within the institution, suitable Energy Baselines are established annually and maintained under the Energy Baseline Record. These baselines serve as reference points for evaluating and improving energy performance.

2. To ensure objective monitoring and measurement of energy performance, appropriate Energy Performance Indicators (EnPIs) are identified for various processes and documented. The IMS Team Leader periodically reviews and compares these indicators against the established Energy Baselines to assess performance and identify opportunities for continual improvement.

6.6 Energy review

Energy reviews at Madanapalle Institute of Technology & Science are conducted and periodically updated through the "Energy Review Record" with the following objectives:

a. To objectively analyze the energy consumption of various energy-consuming processes, equipment, machines, and facilities within the institution, and to identify the relevant variables influencing energy use under different energy sources.

b. To identify areas of Significant Energy Use (SEU) based on systematic and objective analysis, thereby enabling the prioritization and documentation of objectives, targets, and action plans for improving energy performance.

c. To determine the current energy performance of various processes, equipment, and facilities, and to estimate future energy use and consumption for effective energy planning and continual improvement.

6.7 Energy Performance Indicators (EnPIs)

Energy Performance Indicators (EnPIs) are an integral part of the energy management system of Madanapalle Institute of Technology & Science and are appropriately designed for monitoring and measuring energy performance in a systematic and objective manner.

The methodology used for determining and updating EnPIs is documented as controlled

information and is reviewed periodically to ensure its relevance, accuracy, and effectiveness in reflecting energy performance trends across various processes and facilities.

6.8 Energy Baseline

Based on historical energy performance data collected through the initial Energy Review Record and considering data from previous years, an Energy Baseline has been established. This baseline is derived by taking the lower value of either the mean or median of monthly Energy Performance Indicators. The established baselines are documented in the Energy Baseline Record.

The Energy Baseline is reviewed annually and is also reassessed whenever significant changes occur in facilities, equipment, processes, or energy systems.

Performance achievements against *these baselines are recorded by the IMS Team Leader and reviewed at the apex level for evaluation and identification of improvement opportunities such as new objectives, targets, action plans, and performance enhancements.*

6.9 Planning for Collection of Energy Data

The organization ensures systematic planning for the collection of energy-related data to support effective monitoring, measurement, and analysis of energy performance. This includes identifying relevant energy sources, defining data collection methods, and ensuring the availability of accurate and reliable measurement systems.

At Madanapalle Institute of Technology & Science, energy data collection is planned in a structured manner to support Energy Performance Indicators (EnPIs), Energy Baselines, and Energy Reviews. Appropriate measuring instruments, monitoring systems, and data recording procedures are established to ensure consistency and traceability of energy data.

The collected data is regularly analyzed to support decision-making, identify improvement opportunities, and ensure continual enhancement of energy performance within the Integrated Management System (IMS).

We will identify the key characteristics of our management and operational activities that affect energy performance. These characteristics will be measured, monitored, and analysed at planned intervals.

The requirements for collecting energy data will be defined based on the organisation’s size, complexity, available resources, and the type of measuring and monitoring equipment used. A process flow diagram will be developed to define the required data and key parameters for energy data collection.

The data to be collected may include, as applicable:

- Relevant variables related to Significant Energy Uses (SEUs)
- Energy consumption associated with SEUs and the organisation as a whole
- Operational criteria linked to SEUs
- Static factors, where applicable
- Data specified in energy action plans

The documented process for planning and collecting energy data should be reviewed periodically to ensure its continued suitability and effectiveness.

7. SUPPORT

7.1 Resources

Resources are essential for the effective functioning, continual improvement of the Environmental and Energy Management System, and enhancement of environmental and energy performance. The top management of MITS may ensure that adequate resources are made available to those responsible for the Integrated Management System.

Resource allocation can be reviewed periodically during management review meetings, and appropriate actions may be taken by top management to ensure adequacy and effectiveness.

Resources may include:

- Human resources with appropriate skills, competence, and knowledge
- Natural resources such as water and air
- Infrastructure including buildings, equipment, drainage systems, storage tanks, and other supporting facilities
- Technology-based tools and applications for measuring environmental parameters (air, noise, water quality), monitoring performance outcomes, and enabling digital data collection for informed decision-making
- Financial resources required to procure and sustain the above resources

7.2 Competence

Competence refers to the demonstrated ability to apply knowledge and skills by persons working under the organization's control, which influences its environmental and energy performance.
Top management should ensure that personnel involved in the Integrated Management System (IMS) are adequately competent. This is achieved by providing appropriate training through certified bodies, as well as periodically evaluating their competence to ensure effectiveness.

In accordance with standard requirements, competence may be ensured for personnel:
a) Whose work has the potential to cause significant environmental and energy impacts
b) Who are assigned responsibilities within the Integrated Management System, including those who:

- Determine and evaluate environmental and energy aspects and compliance obligations
- Contribute to the achievement of environmental and energy objectives
- Respond to emergency situations
- Perform internal audits
- Conduct compliance evaluations

7.3 Awareness

Top management is responsible for creating and promoting awareness within the organization regarding the Integrated Management System (IMS) and environmental and energy performance. This helps enhance knowledge and encourages behaviors that support the organization's environmental and energy policy commitments.

This includes ensuring that employees and other persons working under the organization's control are aware of the organization's environmental and energy values and understand how these values contribute to the overall business strategy.

MITS can ensure that personnel under its control are aware of:

- The Integrated Environmental and Energy Policy
- Significant environmental aspects and the related actual or potential environmental and energy impacts associated with their work
- Their contribution to the effectiveness of the Integrated Management System, including the benefits of improved environmental and energy performance
- Significant actual or potential environmental and energy aspects and impacts related to their activities
- Identified risks and opportunities relevant to their work activities, where applicable.

The consequences of not conforming to Integrated Management System requirements, including failure to meet compliance obligations The awareness may be created through internal communication using e-mails, displaying visual signs and banners at appropriate places, publishing the IMS newsletter, conducting campaigns, training or education, and mentoring.

7.4 Communication

7.4.1 General

Communication allows the organization to provide and obtain information relevant to its environmental management system. Communication is a two-way process, in and out of the organization. The top management of MITS should communicate within and outside the organization about the importance of effective integrated management and conformance with the environmental & energy management system requirements. The interested parties and stakeholders can mention their suggestions and feedback to the official IMS e-mail id: iso.ims@mits.ac.in or submit the proactive risk and opportunity form (Annexure 8) to the office of the IMS Coordinator. The management representative should maintain the documented information about the internal communications.

7.4.2 Internal communication

The top management communicates the following information relevant to the IMS to the interested parties and stakeholders internally among the various levels and functions of the organization.

Main elements to communicate within the organization:

- The environmental & energy policy
- The responsibilities and authorities for relevant roles
- The significant environmental aspects among the various levels and functions of the organization, as appropriate
- The environmental & energy objectives
- The relevant environmental & energy requirement(s) to external providers and legislative bodies
- Communications required by its compliance obligations
- The results of internal audits are reported to relevant management
- The performance reports of IMS
- The operational process
- Top management's review of the organization's integrated management system should include consideration of communication(s) from interested parties

The internal communications can be made through e-mails, notifications, the IMS newsletters and other appropriate mediums.

7.4.3 External communications

The standard requires the creation and maintenance of documented information to ensure that the Integrated Management System is suitable, adequate, and effective. The primary focus should remain on effective implementation of the IMS and improvement of environmental and energy performance, rather than on overly complex documentation systems.

Documented information may be maintained in any suitable format, including paper, electronic records, photographs, and posters, provided it is legible, easily understood, and accessible to relevant users.

Information that changes frequently should be maintained as controlled documented information, while information that changes periodically should be retained as records. All documented information and records should be controlled by the respective authorities.

7.5 Documented information

7.5.1 General

The standard recommends creating and maintaining documented information in a manner sufficient to ensure a suitable, adequate, and effective integrated management system. The primary focus should be on implementing the integrated management system and environmental & energy performance, not on a complex documented information control system. Documented information can be controlled in any medium (paper, electronic, photos, and posters) that is useful, legible, easily understood, and accessible to those needing the information. The standard suggests that certain information which changes regularly is to be maintained as documented information and certain information which changes periodically are to be retained as records. The documented information and records are available with the control of the respective authorities.

The organization shall maintain the following as documented information:

- Scope of the Integrated Management System
- Environmental and energy policy
- Identified risks and opportunities that need to be addressed
- Processes defined in clauses 6.1.1 to 6.1.4, to ensure they are implemented as planned
- Environmental aspects, associated environmental impacts, criteria used to determine significant aspects, and identified significant environmental aspects
- Compliance obligations
- Environmental and energy objectives
- Operational control processes necessary to meet IMS requirements, ensuring planned execution
- Processes for preparedness and response to potential emergency situations identified in 6.1.1, ensuring planned implementation

The organization can retain documented information as evidence (records) of the following:

- Competence of personnel, as applicable
- Communication activities, as appropriate
- Monitoring, measurement, analysis, and evaluation results

- Compliance evaluation results
- Implementation of the audit programme and audit results
- Results of management reviews
- Nature of nonconformities identified, subsequent actions taken, and results of corrective actions.

7.5.2 Creating and updating

The essential documents related to the Integrated Management System (IMS) are included in the IMS Manual. Additional documents, if required, may be prepared by the IMS Coordinator and issued only after obtaining approval from top management for suitability.

All documented information shall be maintained in the English language and stored in both digital and printed formats to ensure accessibility and control.

Each document shall clearly display the title, date of issue, author, version number, and effective date (if applicable).

Whenever a document is revised or updated in accordance with the requirements specified in Table 2, the latest version shall be communicated to all relevant stakeholders. Previous versions may be withdrawn from use and considered void to prevent unintended use of outdated information.

Table 2 Update frequency of documents

S.No	Description	Update frequency
1	IMS Manual	Annually
2	IMS Policy	
3	Needs and expectations of the interested parties	
4	Risk and opportunities	
5	Aspect impact study	
6	Environmental & Energy Management objectives	

S.No	Description	Update frequency
7	Emergency preparedness and response procedure	
8	Audit reports and management review reports	Based on its occurrences
9	Abnormal and emergency incidents report	
10	Progress reports	Monthly/quarterly/half yearly/annually
11	Compliance obligations	Regularly or whenever as decided by the top management
12	Documented information	
13	Test reports	
14	Operational control processes	
15	Roles and responsibilities	Periodically or whenever as decided by the top management
16	Non-conformity report	
17	Corrective action report	
18	Proactive risk and opportunity form	Regularly

7.5.3 Control of Documented Information

The documented information required by the standard should be controlled to ensure that:
a) It is available and suitable for use, where and when it is needed
b) It is adequately protected, including protection from loss of confidentiality, improper use, and loss of integrity

All documented information may be stored for a minimum period of three years and can be disposed of in an appropriate manner after the retention period, as per applicable procedures.

8. OPERATION

8.1 Operational Planning and Control

Top management should establish, implement, control, and maintain processes (a set of interrelated or interacting activities that transform inputs into outputs) required to meet IMS requirements and achieve defined objectives.

Operational planning and control should be ensured by:

- Establishing operational criteria for processes
- Implementing controls in accordance with defined criteria

Operational Process for EMS Scope Activities/Services

Operational heads shall ensure that all operational processes within their scope are implemented effectively and communicated to the Management Representative.

The following operational controls may be ensured:

- Establish operational controls such as procedures, work instructions, physical controls, use of competent personnel, or a combination of these
- Define operational criteria in the form of Standard Operating Procedures (SOPs) for each activity/service within the IMS scope
- Implement operational controls following the hierarchy below:
    - Elimination (e.g., banning single-use plastics and similar materials)
    - Substitution (e.g., replacing solvent-based paints with water-based alternatives)
    - Engineering controls (e.g., emission control systems, abatement technologies)
    - Administrative controls (e.g., procedures, visual controls, work instructions, safety data sheets)

- Monitor, measure, evaluate, and report implementation of operational controls during progress review meetings
- Identify and allocate required resources, budget, and support for managing significant environmental aspects
- Determine necessary competencies for personnel and ensure training/provision of competence
- Conduct regular progress review meetings (at least once in the fourth week of every month) to monitor achievement of objectives and report progress to the Management Representative

8.2 Emergency Preparedness and Response

An Emergency Preparedness and Response Procedure shall be established for all abnormal and emergency situations identified through the Environmental Aspect-Impact Assessment. The identified abnormal and emergency conditions are documented in Annexure 9.

The procedure can be made available to all relevant personnel at their respective workplaces.

All incidents of actual emergency situations and corresponding response actions should be promptly communicated to the IMS Coordinator upon occurrence.

Operational heads should maintain documented information to the extent necessary to ensure confidence that processes are being carried out as planned.

The Emergency Preparedness and Response Plan is provided in Annexure 10.

8.3 Design

MITS shall consider opportunities for improving energy performance during the design of new facilities, systems, equipment, processes, and major modifications that can significantly affect energy performance.

Energy performance, energy-efficient technologies, life-cycle energy use, renewable energy opportunities, operational requirements, and applicable statutory requirements shall be considered during the design process. Relevant documented information shall be maintained as evidence of implementation.

8.4 Procurement

MITS shall ensure that energy performance is considered during the procurement of energy-consuming products, equipment, systems, and services that can affect energy performance.

Procurement activities shall consider energy efficiency, life-cycle cost, operational performance, reliability, sustainability requirements, and compliance obligations. Preference shall be given to energy-efficient products and services wherever technically and economically feasible. Relevant procurement records shall be maintained as documented information.

9. PERFORMANCE EVALUATION

9.1 Monitoring, measurement, analysis and evaluation of environmental & energy performance and IMS

9.1.1 General

The organization shall regularly monitor, measure, analyze, and evaluate its environmental and energy performance in order to report and accurately communicate its environmental and energy outcomes.

Performance indicators related to significant environmental and energy aspects may be systematically monitored and measured. In accordance with compliance obligations, relevant performance information can be communicated to both internal and external interested parties, as appropriate.

Operational heads should retain appropriate documented information as evidence of the results of monitoring, measurement, analysis, and evaluation activities to ensure traceability and verification of performance.

The organization may, where appropriate, use laboratories whose testing methods are accredited by a national accreditation body or approved by regulatory authorities. In cases where accreditation or approval is not available or feasible, the organization may adopt

alternative methods to ensure the reliability of results. These methods may include split sample analysis, testing of certified reference materials, and participation in proficiency testing programs.

The results of monitoring and measurement should be analyzed and utilized to identify nonconformities, assess compliance with applicable limits, evaluate performance trends, and determine opportunities for continual improvement. All instruments used for measuring environmental and energy parameters should be properly calibrated and maintained to ensure accuracy and reliability.

Based on documented monitoring and measurement data, the performance of activities can be analyzed and evaluated during progress review meetings conducted by the Management Representative. In the event of any deviations from IMS requirements, operational heads may propose appropriate corrective actions to achieve IMS objectives. All deviations, corrective actions taken, and their outcomes may be documented by the respective operational heads.

9.1.2 Evaluation of Compliance

Compliance obligations should be monitored, measured, analyzed, and reviewed to ensure conformity with applicable requirements under the IMS scope. This process enables the organization to demonstrate its commitment to compliance, understand its compliance status, reduce the risk of regulatory violations, and avoid adverse actions from interested parties.

Compliance evaluation may be conducted at least once every three months or more frequently, as deemed necessary by the organization. Internal or external parties may be engaged to perform compliance evaluations of the IMS.

Where a failure or potential failure to meet a compliance obligation is identified, the organization should take appropriate corrective action. The nonconformity and corrective action process may be applied to address required corrections.

Reports of compliance evaluations should be submitted to top management for review to ensure awareness of the organization’s compliance status. The Management Representative can retain documented information as evidence of compliance evaluation activities.

9.2 Internal Audit

9.2.1 General

Internal audits are conducted to evaluate, measure, report, and recommend corrective actions to ensure conformity with IMS requirements. The scope of each internal audit shall be planned and communicated to relevant stakeholders in advance.

Internal audit findings should be summarized and presented to top management during the Management Review. Based on audit results, top management shall direct relevant authorities to implement corrective actions to address identified nonconformities.

9.2.2 Internal Audit Programme

In accordance with standard requirements, MITS has trained 14 internal auditors to conduct audits for ISO 14001:2015 and ISO 50001:2018 certifications.

Internal audits shall be conducted once every three months or earlier, based on organizational requirements, to achieve the following objectives:

- Assess conformity with applicable requirements
- Evaluate effectiveness in relation to objectives
- Identify opportunities for improvement
- Verify compliance with regulatory requirements

Internal auditors, specialized in different disciplines, shall conduct audits in batches under the leadership of a Lead Internal Auditor. The Management Representative shall communicate the audit scope and schedule to auditors in advance.

In the initial phase, internal auditors shall conduct a gap analysis to assess the current status of the IMS and submit their report to the Management Representative.

9.3 Management Review

Top management of MITS shall review the Integrated Management System at planned intervals to ensure its continuing suitability, adequacy, and effectiveness. Management reviews are preferably conducted following internal or external audits.

The IMS Coordinator shall present the status of the IMS based on summaries of internal and external audit results to top management.

The management review shall be conducted by top management in the presence of operational heads, Lead Internal Auditor, IMS Coordinators, and other members as determined by top management. The inputs and outputs of the management review process are presented in Figure 3.

The Management Representative shall retain documented information as evidence of management review activities.

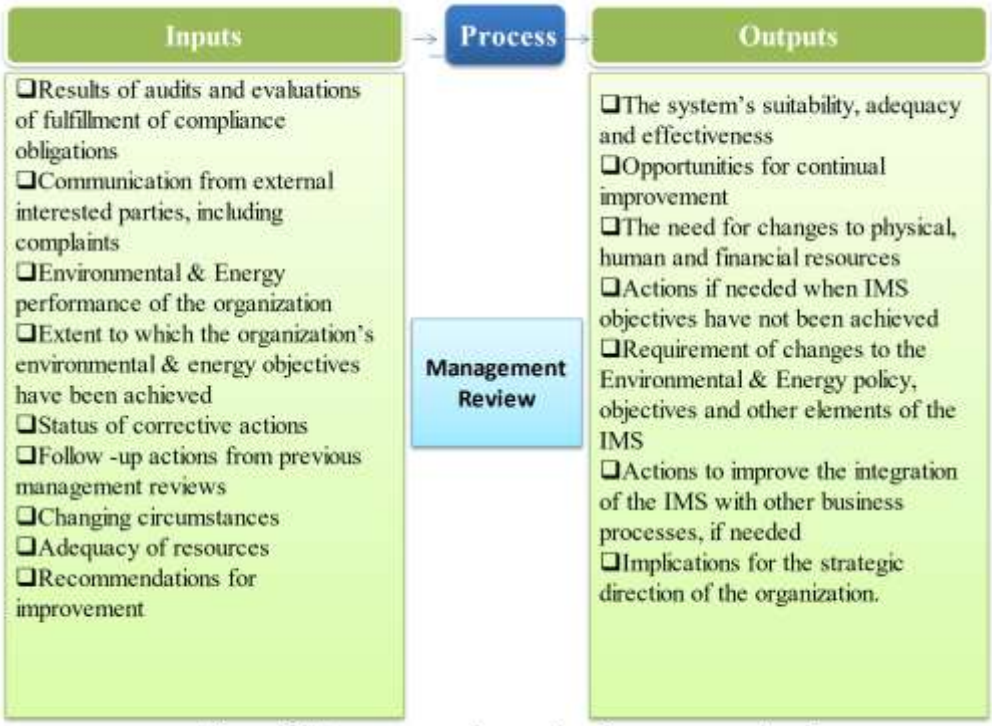


Figure 3: Process requirements of management review

10. IMPROVEMENT

10.1 General

Improvement is an integral element of an effective Environmental and Energy Management System. Top management shall ensure that opportunities for improvement are identified, evaluated, and addressed through appropriate actions.

Figure 4: Sources of opportunities

This shall be achieved by controlling and correcting nonconformities, as well as enhancing environmental and energy performance through continual improvement of the Integrated Management System (IMS) in terms of its suitability, adequacy, and effectiveness.
Opportunities for improvement shall be identified through processes as illustrated in Figure 4.

10.2 Nonconformity and corrective action

Nonconformity is the non-fulfillment of a requirement that can be stated concerning the IMS or environmental & energy performance. A systematic approach for identifying nonconformity, acting to mitigate any adverse environmental & energy impact, analyzing the cause of the nonconformity, and taking corrective action is required to maintain an effective IMS. The nonconformity shall be recorded in the nonconformity report as presented in annexure 11. The major nonconformities should be resolved and followed by minor nonconformities. If a potential problem is identified, but no actual nonconformity exists, action can be taken to prevent nonconformity from occurring. The track record of nonconformities is to be maintained and monitored in order to avoid its re-occurrence.

10.3 Continual improvement

Top management of MITS shall actively participate in the continual improvement process through the Management Review mechanism.

Continual improvement is a key requirement of an effective Integrated Management System aimed at enhancing environmental and energy performance.

The continual improvement process consists of two stages:

- Identification of opportunities for improvement
- Implementation of improvement actions

Opportunities for improvement shall be identified through:

- Continuous monitoring and measurement of the IMS

- Internal and external audits
- Suggestions received proactively from stakeholders through improvement feedback mechanisms

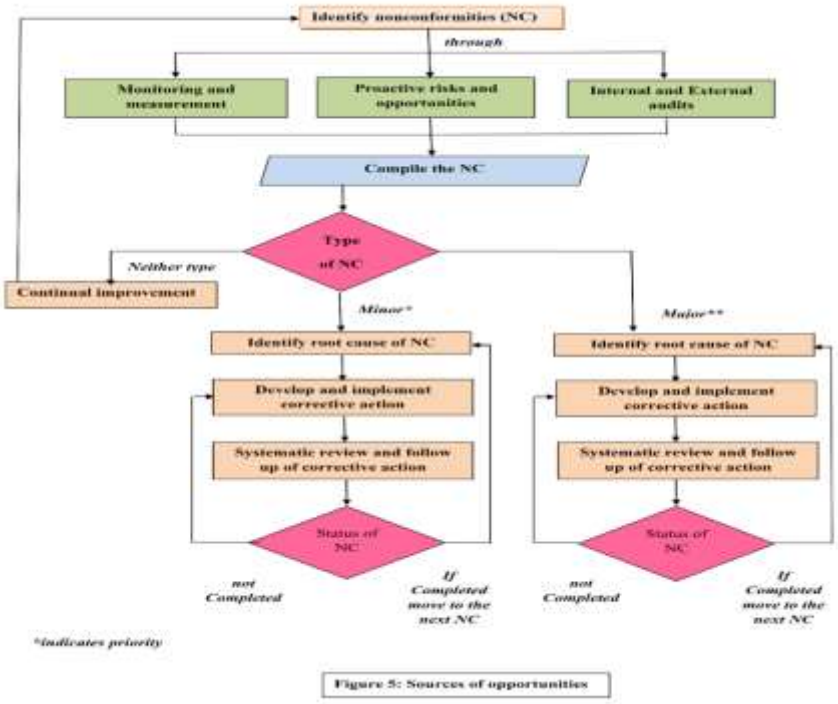


Figure 5: Sources of opportunities

Identified opportunities shall be evaluated to determine appropriate actions. These actions shall be planned, and necessary changes to the IMS shall be implemented accordingly.

The overall process, from identification of nonconformities to implementation of corrective actions, is illustrated in Figure 5. Corrective action status shall be recorded in the Corrective Action Report, as provided in Annexure 12.

The IMS Manual shall serve as the primary reference document for all IMS-related activities. It shall be reviewed and updated annually and maintained by the Management Representative.