



Guideline on National Energy Award 2023 (NEA 2023)

for

Energy Management in Buildings and Industries

Organiser

Supported by



AKAUN AMANAH
INDUSTRI BEKALAN
ELEKTRIK (AAIBE)



THE OFFICIAL WEBSITE OF
Suruhanjaya Tenaga
Energy Commission

1.0 Objectives of Competition

1.1 To promote and disseminate energy management best practices applied and demonstrated in buildings and industries in Malaysia.

1.2 To encourage participation in adopting and implementing innovative and creative energy management approaches towards energy conservation to enhance business growth.

1.3 To promote energy management as another form of energy resource, as a tool to save energy and to improve environmental quality in Malaysia.

2.0 Competition Categories

2.1 Categories

1. Buildings – any type of buildings (define the nature and function of the building)

- Open category – any type of buildings, noting the nature and function of the building
- Must have been operational for at least 3 years

2. Industries

- Open category – any type of factories
- Must have been operational for at least 3 years

Note: If the building and industry are co-located and have a single receiving power system/metering, then the establishment is considered an industry. If industry and building are co-located in a single compound with a separate receiving power system and metering, then they could be treated separately.

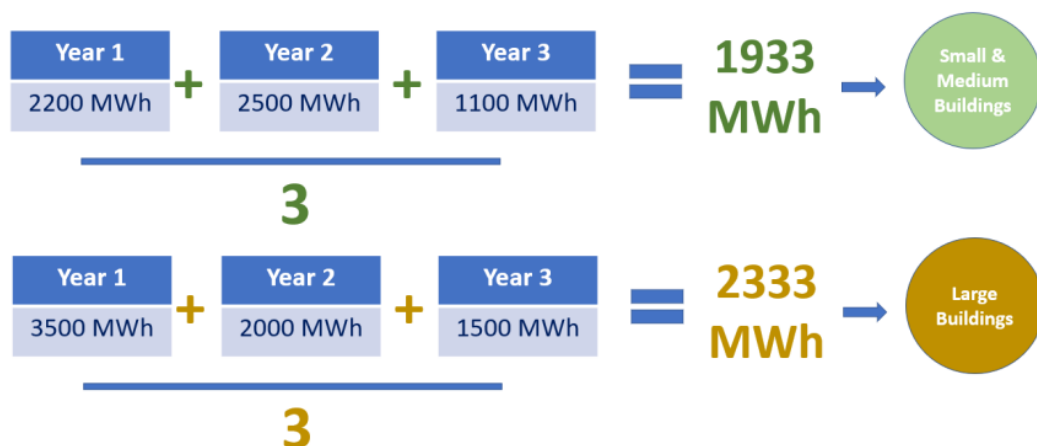
2.2 Definition of category by annual energy consumption

The following size for each category is specified in 2.1 above.

Size Category	Area	Criteria (Average Annual Energy Consumption for the last 3 years)*
Small and Medium	Buildings	Electricity \leq 2,000 MWh/year
	Industries	TEC \leq 30 million MJ/year
Large	Buildings	Electricity $>$ 2,000 MWh/year
	Industries	TEC $>$ 30 million MJ/year

*TEC – Total Energy Consumption (Insert a conversion table for uniform units of measure)

***Illustration:**



3.0 Pre-Qualification Requirement

3.1 Buildings and Industries should be least operational **in the last 3 year**.

4.0 Criteria and Distribution Scores

4.1 The Board of Judges will give evaluation scores in view of the substance of the contents and information presented in the submitted entry documents in reference to sets of established criteria.

4.2 The maximum total point score number is 100% based on the major criteria distribution. They are: 1) Impact; 2) Sustainability; 3) Replicability; 4) Originality and 5) Overall Presentation and Impression.

4.3 Table below shows the main criteria and its sub-criteria group with corresponding maximum percentage allocation:

Criteria and Mark Structures		
No.	Criteria Group	Marks Allocation
1	Impact	30%
	1.1 Energy Saving	12%
	1.2 Environmental Effect	6%
	1.3 Economic Effect	6%
	1.3.1 Investment	
	1.3.2 Payback Period	
	1.4 Energy Efficiency Index	6%
2	Sustainability	40%
	2.1 Level of Participation and Involvement	10%
	2.2 Top Level Management Commitment	10%
	2.3 Short and Long-term Plan	5%

	2.4 Established or Improved Organization for Energy Management	5%
	2.5 Capacity Building	
	2.5.1 Activities	5%
	2.5.2 Educational Training	5%
3	Replicability	20%
	3.1 Management Practices and Measures (Including staff with ASEAN Energy Management Scheme (AEMAS) and national certification systems)	10%
	3.2 Technology (showcasing new and advanced technologies)	10%
4	Originality (Creativity / Innovation)	5%
5	Overall Presentation and Impression (Readability, Adherence to format)	5%
	TOTAL	100%

5.0 Format of Submission

Please refer **Attachment 1**.

SUBMISSION FORMAT



NATIONAL ENERGY AWARDS 2023

ENERGY MANAGEMENT IN BUILDINGS AND INDUSTRIES

Submission Format

Procedural guidelines and applicable format in preparing the national entry documents as shown and discussed below.

1. Application Form
2. Certification and Endorsement
3. Project/Activity Overview
4. Impact
5. Sustainability
6. Replicability
7. Originality
8. Overall Presentation and Impression

(Note: Please insert checklist of documents in the covering letter of entries submitted to be checked and signed by Focal Points for easier tracking and flow of submission)

Submission Requirements	Unit	Please Check
Covering Endorsement Letter		
Total Number of Pages (max of 17)		
Submission	6 original hardcopies & 1 softcopies	
Size Category		
1. Building		
Small and Medium	Electricity \leq 2,000 MWh/year	_____MWh/year
Large	Electricity \geq 2,000 MWh/year	_____MWh/year
2. Industry		
Small and Medium	*TEC \leq 30 million MJ/year	_____MJ/year
Large	*TEC \geq 30 million MJ/year	_____MJ/year
Criteria (Discussion/presentation)		
1. Impact		
2. Sustainability		
3. Replicability		
4. Originality (Creativity/Innovation)		
5. Overall Presentation and Impression (Readability, Adherence to format; single paragraph, Times New Roman 12 pt font, 1 inch margin from all sides; A4 size paper)		
Pre-Qualification		
At least 3 full years of operation prior to nomination	Start date of operations:	

*TEC – Total Energy Consumption

Checked by and Certified by: _____ (Management of the company)

1.0 Format

Applicants to the NEA (Energy Management in Buildings and Industries) should follow documentation format in the organized item order as shown below:

Item No.	Submission Heading/Discussion Items	Maximum Number of Page Allocation*
1	Application Cover	1
2	Certification and Endorsement	1
3	Project/Activity Overview (Executive Summary)	1
	3.1 Description	
	3.2 Rationale	
	3.3 Target	
4	Impact	
	4.1 Energy Saving	
	4.2 Environmental Effect	
	4.3 Economic Effect	
	4.3.1 Investment	
	4.3.2 Payback period	
	4.4 Energy Efficiency Index (
5	Sustainability	
	5.1 Level of Participation and Involvement	
	5.2 Top Level Management Commitment	
	5.3 Short and Long-term Plan	
	5.3.1 Organization	
	5.3.2 Establishment of Organization of Energy Management	
	5.4 Capacity building	
	5.4.1 Activities: Projects/activities applied for internal and external of organization	
	5.4.2 Educational Training	
6	Replicability	
	6.1 Management Practices and Measures	
	6.2 Technology	
7	Originality	
	Creativity/Innovation	
8	Supporting Documents/Attachments	
	Total No. of Pages	17

Important Remarks:

- All entries must be typewritten in single paragraph, Times New Roman 12 pt font, 1 inch margin from all sides; A4 size paper.
- There is no definite number of pages allocated for each submission heading or discussion items. However, the total number of pages must not exceed 17 pages.
- Penalty will be applied to applications that exceeded the maximum number of pages. Score that will be deducted from the total garnered score will depend on the judgment of the BOJ.

For Special Submission:

- All entries must be typewritten in single paragraph, Times New Roman 12 pt font, 1 inch margin from all sides; A4 size paper.
- There is no definite number of pages allocated for each submission heading or discussion items. However, the total number of pages must not exceed 10 pages.
- Addition of Requirements for Application
 - Activities shall be focused on the PDCA (Plan / Do / Check / Act) cycle

2.0 Certification of Endorsement

As per **Attachment 2**.

3.0 Project/Activity Overview

Summarize the following in brief within **1 page**.

- 3.1 Status of the project in EE&C policy/ commitment by top managers of the building or factory.
- 3.2 Purposes and targets of the project. This may include the current energy status such as annual energy consumption.
- 3.3 Outline of the project specifics with the following points:
 1. Organization of energy management implementation and dissemination of measure
 2. Duration of project
 3. Process flow and specific area(s) for improvement
 4. Key measures for improvement including changes in process flow (Operating/ maintenance conditions and modification/ installation of equipment and process)
 5. Impact by comparing the following between the baseline and after implementing the project:
 - Energy consumption (Annual total and unit energy consumptions)
 - Economical merits
 - Other tangible / intangible merits to be emphasized
 6. Measures to sustain improvement such as standardization and training
- 3.4 Future plan

4.0 Impact (30%)

General guide: Insert/put a Summary Table indicating all energy conservation measures with corresponding CO² emission reduction.

1. The standardized baseline for determining the improvements is set three (3) years prior to the submission (2018). In each year, the conditions affecting the energy usage shall be explained: Define each index for evaluation
2. Show breakdown to identify level of each measure for improvement
3. It is recommended to separate the measures into two main groups: (a) the non-investment measures, and (b) the investment measures

4.1 Energy Savings (12%)

1. Identify kinds of energy and the units for evaluation (kWh/year for Buildings and kJ/year for industry).
2. Evaluate total savings and percentage compared to the baseline.
3. Show details of energy conservation measures that has been completed and implemented up to the last 3 years and the real or actual energy savings as a result. Evidence of energy saving calculated from building/industry energy management system, should be included.
4. Show supporting documents such as details of energy conservation measures, brief description of the concept, steps of actions undertaken and applicable pictures
5. Consider the regularity of energy conservation up to the last 3 years
6. Consider the results of energy conservation (Percentage of the energy conservation)

4.2 Environmental Effect (6%)

Identify factors for evaluation such as reduction in CO₂ and pollutants etc.

1. Reduction in CO₂
 - Specify CO₂ reduction. Unless there are any nationally defined coefficients for conversion, it is possible to apply the international norms such as the IEA's and the evaluation based on the environmental requirements of the Intergovernmental Panel on Climate Change (IPCC).
2. Reduction in waste and/or pollution (air / water / noise / odour etc.)
 - If there are any changes, specify the items and quantitative / qualitative changes.
 - Describe an overview of waste & pollution management in organization or process associated with energy conservation.

4.3 Economic Effect (6%)

1. Investment
2. Payback period

It is recommended to provide numbers for both investment and payback period (in Ringgit Malaysia, RM and in US dollar, USD)

It is also recommended to clarify the numbers for each major improvement.

Otherwise, it would be possible to categorize Zero / Small & Medium / Large Investments as follows with specific ranges of investment and/or payback period including the reasons.

4.4 Energy Efficiency Index (6%)

It is important to define the index (indices) with clarification of conditions for evaluation by:

1. Explaining the concept and how to evaluate energy efficiency index of each measure, benefits received, and applications.
2. Explaining the improvement of energy efficiency index. (Show the energy efficiency index before and after implementation.)
3. Providing related data and supporting documentation.

- **Standard Calculations for the Energy Efficiency Index in building**

Based on **Gross Floor Area**, $EEI (GFA) = (TBEC \div GFA) \times (NH \div OH)$

Based on **Air-conditioned area**, $EEI (AC) = (TBEC \div AC) \times (NH \div OH)$

EEI	Normalized Energy Efficiency Index	kWh/m ² /yr
TBEC	Total Building Energy Consumption	kWh/yr
GFA	Total Gross Floor Area	m ²
NH	Normalized Operating Hours = 2000 hr/yr	hr/yr
OH	Operating Hours	hr/yr
AC	Air-conditioned area	m ²

- **Standard Calculations for the Energy Efficiency Index in industry**

Based on **Annual Production**, $EEI (AP) = (TIEC \div AP)$

EI	Energy Efficiency Index	kJ/unit/yr
TIEC	Total Industry Energy Consumption	kJ/yr
AP	Annual Production Output	Units/yr

5.0 Sustainability (40%)

5.1 Level of Participation and Involvement (10%)

1. Show the organization of energy management for the project implementation
2. Explain roles of groups(s) / section(s) / department(s) including numbers(s) of members
3. Explain how to create participation, the role of personnel joined in the action at all levels of organization, and results received.
4. Show additional documentation if available.

5.2 Top Level Management Commitment (10%)

Present policy on energy management of the organization and the commitment of the top-level management to the organization's energy conservation to achieve its goals and objectives. (Specify any technical / financial supports including incentives provided by top management to implement the project)

Approach: Consider to include policy on energy management that is duly signed by the top level official of the management. The policy should demonstrate the commitment and intents of the executive to conserve energy. Practices under policy on energy management should be clearly stated. For example, organization must have set of energy management activities as well as targets to reduce energy consumption; set action plans for continuous monitoring and for making energy consumption evaluation relating to the set targets.

5.3 Short and Long-term Plan (5%)

Describe how the actual improvements / achievements are reflected to the EE&C plan including related business plan(s) in the building / factory such as:

1. Show details of each measure/project/activity that organization plans to implement in the future separately by year (Short and long-term plan). Specify period of implementation, target of energy conservation, investment and payback period.
2. Show the additional documentation if available.

Approach: Consider that the organization has prepared action plans for conservation of energy in the future.

5.4 Organization (5%)

Established or Improved Organization for Energy Management

1. Show an organization chart for energy management and explain the specific points changed, the concept of structure and responsibilities of the energy conservation team.
2. Show supporting document as energy management structure, defining duties and responsibilities.

Approach: Consider the energy management structure and its coverage within the corporate organization, clearly define duties and responsibilities, and show persons in authority who have can take decisions or actions for the company.

5.5 Capacity Building (10%)

1. Activities (5%)

- Explain projects/activities related to energy conservation which the organization has operated by itself or cooperate with other organizations or participate in other organizations.
- Describe the details of projects/activities other than the energy conservation trainings, including the benefits derived from related projects/activities. For example, energy conservation slogans contest for raising awareness, energy conservation exhibition contest, etc.
- Explain On-Job-Training (OJT) and program / procedure to conduct OJT including preparation of textbook / materials for OJT.
- Show other related information such as activity pictures to support the claims.

Approach: Consider projects/ activities within the organization/ co-operation with outside organizations. Consider the number of projects/ activities to promote knowledge, experience, and benefits received by the personnel.

2. Educational Training (5%)

Explain system and programs to educate/ train employees in a factory (company) to improve capability to promote EE&C including utilization of outside courses.

6.0 **Replicability (20%)**

This topic will consider projects or applicable technologies and/or energy conservation measures that have been successfully implemented in one plant such that it can be replicated to other plants or facilities of the same category.

6.1 Management Practices and Measures (10%)

- Explain specific features and points of easiness to possible dissemination and replication of management best practices and measures realized into another project in AMS. To include AEMAS or national certified energy Managers or staffs.
- For example, introducing new or improvement Building Automation System (BAS) to Building Energy Management System (BEMS), Centralized Energy

Monitoring System (CEMS) or any related building or factory monitoring system.

- For example, introducing recovery cooled air from heat pump to be used or utilized to other suitable area.
- For example, introducing recovery hot water from condenser water to be used or utilized to suitable process.
- For example, introducing recovery hot air from compressed air to be used or utilized to suitable process.
- For example, improvement system process using technologies or control for energy and cost saving to industries.

6.2 Technology (10%)

- Explain specific features and points of easiness possible to disseminate and replicate the new and advanced technologies realized in the project including reasons.

7.0 **Originality (5%)**

7.1 Creativity/Innovation

This topic will consider creativity / innovations or new ideas that led to implementation of projects or energy conservation measures wherein that said factory has conducted it successfully. One sample project or energy conservation measures should be presented and specify the ideas adopted, technology used, and techniques or methods applied.

Approach: Consider for a successful implementation of creative ideas, innovations or technology and award receiving.

8.0 **Overall Presentation and Impression (5%)**

8.1 Adherence to format.

8.2 The document must be correctly completed according to the specified format and readability.

8.3 Provide attractive documents, for example, the pictures, diagram, graph etc. in colour to make the documents more interesting.

Approach: Consider information integrity, adherence to format, and understandable use of English language, clear and concise presentation, among others.

CERTIFICATION OF ENDORSEMENT

“Company Name” hereby agree to allow the NEA Board of Judges (BOJ) and other experts that are designated by the NEA committee to visit the company and to verify the authenticity of the data. However, two weeks advance notice is required to allow the necessary arrangements.

We also hereby agree that NEA organizing party can publish the whole submission in the NEA, Ministry of Energy and Natural Resources publication and website, without any prior consent of the owner of the company.

We, the undersigned, certified that the information given is true and accurate and prepared with the consent of the party/ies involved.

Name:
Position:
Company Name:
Phone number:
Fax number:
Email: