

DRAFT
ECONOMIC-TECHNICAL NORMS
ENERGY MANAGEMENT SYSTEM

Ho Chi Minh, April 2024

TABLE OF CONTENT

1. Objectives, Scope, and Applicable Subjects
2. Approach and Basis for Draft Development
3. Technical Basis of the Economic-Technical Norms
4. Structure of the Economic-Technical Norms
5. Summary of the Draft Norm Content
6. Key Issues for Consultation/Comments

01

OBJECTIVES, SCOPE, AND APPLICABLE SUBJECTS



Objectives

- Propose economic-technical norms as a basis for developing prices and unit rates for public services using the state budget in the field of industrial energy efficiency and conservation.
- Standardize the understanding of: scope of work; resource mobilization levels; output quality requirements.
- Provide a common basis for management authorities, contracting entities, and service providers in organizing, evaluating, and accepting services.
- Gradually contribute to enhancing transparency and the quality benchmark of consultancy services applying energy management systems.

SCOPE AND APPLICABLE SUBJECTS

Scope: Focus on consultancy services for the application of energy management systems in the field of industrial energy efficiency and conservation.

Applicable Subjects:

- Public service entities using the state budget: industrial promotion centers, energy efficiency centers;
- Tasks and projects applying energy management systems and utilizing the state budget;
- State management authorities;
- Private service providers (for reference).

02

APPROACH AND BASIS FOR DRAFT DEVELOPMENT



APPROACH FOR DRAFT DEVELOPMENT

Developed according to three components: labor, machinery and equipment, materials

Adhere to the process of establishing and implementing an energy management system

Combine different methods:

- Review of legal and technical documents
- Surveys of enterprises and consultancy entities
- Analysis, comparison, and synthesis of data
- Selective reference to existing documentation

Ensure accuracy, completeness, and applicability

PRACTICAL BASIS FOR CONSULTANCY ACTIVITIES ON THE APPLICATION OF ENERGY MANAGEMENT SYSTEMS

There are currently 34 Industrial Promotion Centers/Energy Efficiency Centers and nearly 50 private consultancy entities.

The capacity among service providers offering consultancy on the application of energy management systems remains uneven.

Measurement and testing equipment show significant disparities:

- Some entities have good capacity (mainly centers in large provinces/cities and long-established consultancy firms);
- Some entities have only partial capacity or rely on outsourcing.

Personnel:

- The majority of entities have a staff size in the range of 11 to 20 people;
- Fewer than 5 entities have a large workforce (21 to 100 people);
- A small number of centers have very small staff sizes (5 people or fewer).

03

TECHNICAL BASIS OF THE ECONOMIC-TECHNICAL NORMS



BASIS FOR DEVELOPING THE CONSULTANCY PROCESS FOR THE APPLICATION OF ENERGY MANAGEMENT SYSTEMS

- Law on Economical and Efficient Use of Energy No. 50/2010/QH12 (amended and supplemented by Law No. 77/2025/QH15), Point dd, Clause 1, Article 33;
- Article 8 of Decree No. 21/2011/NĐ-CP stipulates the main contents of the energy management model; however, this Decree has been superseded by Decree No. 30/2026/NĐ-CP. The new Decree does not include provisions on the energy management model; instead, this model will be guided or specifically regulated by the Ministry of Industry and Trade (expected to be addressed in the forthcoming amendment to Circular No. 25/2020/TT-BCT, anticipated for issuance in 2026);
- TCVN ISO 50001:2019, Energy management system based on the continuous improvement framework (Plan – Do – Check – Act).

STEPS FOR ESTABLISHING AN ENERGY MANAGEMENT SYSTEM

No.	Task / Process	Details
1	Preparation for EnMS Implementation	Identify the scope of the energy management system; define consulting objectives; develop an implementation and consulting plan.
2	Initial Data Collection	Collect general information about the organization: production processes, energy-consuming systems and equipment, and current energy consumption status.
3	Assessment of Current Energy Management Practices	Evaluate current energy management activities of the organization; identify gaps against ISO 50001 standard requirements.
4	Energy Review	Analyze energy consumption data; identify Significant Energy Uses (SEUs).
5	Establishment of Energy Baseline (EnB)	Analyze energy consumption data to establish the energy baseline as a reference for performance evaluation and improvement.
6	Development of Energy Performance Indicators (EnPIs)	Establish appropriate energy performance indicators aligned with the organization's operational characteristics.
7	Development of Energy Policy	Provide guidance on developing an energy policy consistent with organizational context and ISO 50001 requirements.
8	Identification of Objectives, Targets, and Action Plans	Establish specific energy objectives and targets, along with action plans to improve energy performance.
9	EnMS Documentation Development	Develop required procedures, guidelines, and templates for the Energy Management System.
10	Training and Awareness Raising	Provide training to enhance awareness and competency of personnel regarding efficient and effective energy use.
11	Implementation and Operation of EnMS	Support the organization in applying energy management processes and implementing action plans.
12	Monitoring, Measurement, and Evaluation of Performance	Establish monitoring, measurement, and analysis systems for energy performance indicators.
13	Internal Audit of EnMS	Conduct internal audits to assess conformity of the energy management system with ISO 50001 requirements.
14	Management Review	Conduct management review meetings to evaluate the effectiveness and suitability of the EnMS.
15	Project Completion and Acceptance	Summarize consulting results and complete project acceptance documentation.

QUALITY CRITERIA FOR CONSULTANCY SERVICES ON THE APPLICATION OF ENERGY MANAGEMENT SYSTEMS

- Align with the requirements of TCVN ISO 50001:2019;
- Ensure the systematic and comprehensive nature of the energy management system;
- Ensure practical applicability within enterprises;
- Ensure continuous improvement of energy performance;
- Ensure the output results of the consultancy service.

REQUIREMENTS FOR OUTPUT PRODUCTS OF THE ENERGY MANAGEMENT SYSTEM

- Report on the current status of energy use of the enterprise;
- Energy management system documentation set in accordance with TCVN ISO 50001:2019;
- List of Energy Performance Indicators (EnPIs) and Energy Baseline (EnB);
- Action plan for improving energy performance;
- Consolidated report on consultancy results and guidance for the enterprise on operating the energy management system.

04

STRUCTURE OF THE ECONOMIC-TECHNICAL NORMS



GENERAL STRUCTURE OF THE ECONOMIC-TECHNICAL NORM FOR THE ENERGY MANAGEMENT SYSTEM (ENMS)

Unit of measurement: 01 facility/enterprise for which an energy management system is established

Norm components:

- Labor norm
- Machinery and equipment norm
- Material norm

Determination principles:

- Follow the service provision process
- Reflect the necessary consumption to complete the service meeting quality requirements

LOGIC FOR GROUPING BY NORM APPLICATION

Logic for grouping by energy consumption scale

- Group 1: Below 1,000 TOE
- Group 2: From 1,000 to below 3,000 TOE
- Group 3: 3,000 TOE and above

Basis for grouping

- Scale of the energy-using system
- Complexity level of the process line
- Scope of survey and measurement/inspection
- Requirements for data analysis and system development

05

DRAFT TE NORMS FOR EnMS



CLASSIFICATION OF PERSONNEL LEVELS FOR EnMS CONSULTING SERVICES

No.	Task	Participating labor group	Proposed average labor title and level per group in the economic-technical norm
1	Preparation for energy management system deployment	Engineer	Engineer, level 2
2	Initial information collection	Engineer	Engineer, level 2
3	Assessment of current energy management status	Engineer	Technician, level 3
4	Energy review	Engineer	Engineer, level 2
5	Establishment of energy baseline (EnB)	Engineer	Engineer, level 2
6	Development of energy performance indicators (EnPI)	Engineer	Engineer, level 2
7	Development of energy policy	Engineer	Engineer, level 2
8	Establishment of energy objectives and targets	Engineer	Engineer, level 2
9	Development of EnMS documentation system	Engineer	Engineer, level 2
10	Training and awareness raising	Engineer	Engineer, level 2
11	Implementation of energy management system documents	Engineer	Engineer, level 2
12	Monitoring, measurement, and evaluation of energy performance results	Engineer	Engineer, level 2
13	Internal audit of the energy management system	Engineer	Engineer, level 2
14	Management review	Engineer	Engineer, level 2
15	Finalization of report and service acceptance	Engineer	Engineer, level 2

TE NORMS FOR GROUP 1000 – 3000 TOE

Applicable to the group of facilities with the lowest energy consumption among the three groups.

Ensures full development of all required content of the energy management system.

Includes:

- Direct labor performing the tasks
- Basic measurement and testing equipment
- Necessary consumables and supporting tools

This serves as the baseline norm group for comparison with the remaining groups.

LABOR NORMS FOR GROUP 1000 – 3000 TOE

No.	Labor norms	Norm (hours)	Norm (Shifts)	Note
(1)	(2)	(3)	(4)	(5)
I	Direct Labor Norms			
1	Engineer Level 1	1.404	175,50	Engineer
2	Lead Engineer Level 3	1.288	161,00	Energy Efficiency Consulting Expert
3	Technician Level 3	480	60,00	Technician
II	Indirect Labor Norms (Management, Support)			
1	Specialist/Engineer Level 4	539,24	67,41	17% direct labor

EQUIPMENT NORMS FOR GROUP 1000 – 3000 TOE

No.	Equipment Name	Basic technical specifications	Norm (hours)	Norm (converted to man-days)
(1)	(2)	(3)	(4)	(5)
1	Desktop Computer		0	0
2	Laptop Computer		2.045	255,63
3	Black and White A4 Printer		0	0
4	Projector		10	1,25
5	4-Seater Car		144	18
6	Specialized Energy Audit Measurement Kit: Clamp ammeter; Multimeter; Power analyzer; Infrared thermometer; Lux meter (illuminance meter); CO_2 concentration meter; Flue gas analyzer; Temperature, humidity, and anemometer; Ultrasonic flow meter; Thermal imaging camera; SHGC (Solar Heat Gain Coefficient) meter		32	4
7	Mobile Phone		24	3

MATERIAL NORMS FOR GROUP 1000 – 3000 TOE

No.	Material name	Unit	Technical Specifications	Material norms		
				Usage	Recovery Rate %	Consumption
(1)	(2)	(3)	(4)	(5)	(6)	(7)
1	AA Battery	Unit	Alkaline battery or equivalent	10,00	0%	10,00
2	9V Battery	Unit	9V square Panasonic battery or equivalent	5,00	0%	5,00
3	Tool Kit (Specify tools: pliers, screwdriver, ladder, etc.)	Set		1,00	90%	0,10

TE NORMS FOR GROUP 3000 – 10000 TOE

Applicable to facilities with larger scales and more diverse equipment systems.

Compared to Group 1:

- Increased volume of on-site survey work
- Increased demand for measurement and data aggregation
- Increased requirements for technical analysis
- Greater need for more detailed solution assessment

More clearly reflects the need for energy balance establishment and system analysis.

LABOR NORMS FOR GROUP 3000 – 1000 TOE

No.	Labor Norms	Norm (hours)	Norm (converted to man-days)	Notes
(1)	(2)	(3)	(4)	(5)
I	Direct Labor Norms			
1	Engineer Level 1	2.104	263,00	Energy Auditor
2	Lead Engineer Level 3	1.960	245,00	Lead Energy Auditor
3	Technician Level 3	636	79,50	Technician
II	Indirect Labor Norms (Management, Support)			
1	Specialist/Engineer Level 4	99,00	99,88	17% of direct labor

EQUIPMENT NORMS FOR GROUP 3000 – 10000 TOE

No.	Equipment Name	Basic Technical Specifications	Norm (hours)	Norm (converted to man-days)
(1)	(2)	(3)	(4)	(5)
1	Desktop Computer		0	0
2	Laptop Computer		3.013	376,625
3	Black and White A4 Printer		0	0
4	Projector		10	1,25
5	4-Seater Car		160	20
6	Specialized Energy Audit Measurement Kit: • Clamp ammeter; • Multimeter; • Power analyzer; • Infrared thermometer; • Lux meter (illuminance meter); • CO_2 concentration meter; • Flue gas analyzer; • Temperature, humidity, and anemometer; Ultrasonic flow meter; • Thermal imaging camera; • SHGC (Solar Heat Gain Coefficient) meter		40	5
7	Mobile Phone		24	3

MATERIAL NORMS FOR GROUP 3000 – 10000 TOE

No.	Material norms	Unit	Technical Specifications	Material norms		
				Usage	Recovery Rate %	Consumption
(1)	(2)	(3)	(4)	(5)	(6)	(7)
1	AA Battery	Unit	Alkaline battery or equivalent	10,00	0%	10,00
2	9V Battery	Unit	9V square Panasonic battery or equivalent	5,00	0%	5,00
3	Tool Kit (pliers, screwdriver, ladder, etc.)	Set		1,00	86%	0,14

TE NORMS FOR GROUP >10000 TOE

Applicable to large-scale energy users with multiple critical systems.

Requires higher resources in terms of:

- Specialized human resources
- Quantity and duration of measurement equipment usage
- Time for survey, data processing, and normalization
- Volume of analysis and solution development

Technical depth must be ensured.

LABOR NORMS FOR GROUP MORE THAN 10000 TOE

No.	Labor Norms	Norm (hours)	Norm (converted to man-days)	Notes
(1)	(2)	(3)	(4)	(5)
I	Direct Labor Norms			
1	Engineer Level 1	2.808	351,00	Energy Auditor
2	Lead Engineer Level 3	2.608	326,00	Lead Energy Auditor
3	Technician Level 3	864	108,00	Technician
II	Indirect Labor Norms (Management, Support)			
1	Specialist/Engineer Level 4	1.067,60	133,45	17% of direct labor

MATERIAL NORMS FOR GROUP > 10000 TOE

No.	Equipment Name	Basic Technical Specifications	Norm (hours)	Norm (converted to man-days)
(1)	(2)	(3)	(4)	(5)
1	Desktop Computer		0	0
2	Laptop Computer		4.045	505,63
3	Black and White A4 Printer		0	0
4	Projector		10	1,25
5	4-Seater Car		176	22
6	Specialized Energy Audit Measurement Kit: • Clamp ammeter; • Multimeter; • Power analyzer; • Infrared thermometer; • Lux meter (illuminance meter); • CO_2 concentration meter; • Flue gas analyzer; • Temperature, humidity, and anemometer; Ultrasonic flow meter; • Thermal imaging camera; • SHGC (Solar Heat Gain Coefficient) meter		48	6
7	Mobile Phone		24	3

MATERIAL NORMS FOR GROUP > 10000 TOE

No.	Material name	Unit	Technical Specifications	Material Norms		
				Usage	Recovery Rate %	Consumption
(1)	(2)	(3)	(4)	(5)	(6)	(7)
1	AA Battery	Unit	Alkaline battery or equivalent	10,00	0%	10,00
2	9V Battery	Unit	9V square Panasonic battery or equivalent	5,00	0%	5,00
3	Tool Kit (pliers, screwdriver, ladder, etc.)	Set		1,00	80%	0,20

06

DISCUSSION



QUESTIONS

- Is the grouping based on the three TOE thresholds appropriate?
- Is the list of tasks within each norm group complete?
- Are the mobilization levels of labor, equipment, and materials realistic?
- Is the scope of excluded costs clear and reasonable?
- What additional content is needed to enhance practical applicability?

THANK YOU

