

Summary of Reporting Items

**Energy Conservation Workshop (ECAP 37) under ASEAN-
Japan Energy Efficiency Partnership (AJEEP) Scheme 5**

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Reporting under Energy Conservation Act 2012 & Energy Conservation (Energy Management Practices) Regulations 2013

Background

The Energy Conservation Act (ECA) was enacted in June 2012, and the Energy Conservation (Energy Management Practices) Regulations came into force on 22 April 2013. Through the ECA, mandatory energy management practices were introduced, aiming to focus management attention on proper energy management, as well as to level up laggards that manage energy use inadequately.

In June 2017, the ECA was enhanced to stipulate more energy management practices as part of Singapore's efforts to achieve its pledge under the Paris Agreement on climate change to reduce emission intensity by 36% from 2005 levels by 2030, and to stabilise emissions with the aim of peaking around 2030.

The enhancements include requiring companies to implement energy management system, undertake regular energy efficiency opportunity assessments or implement energy performance monitoring, and introducing minimum energy efficiency standards for common industrial equipment and systems.

Singapore enhanced energy conservation in 2024 which included the plan lodgement and the energy manager needing to sign on energy efficiency opportunities assessment (EEOA) and energy management system (EnMS) reports.

1 Mandatory Energy Management Practices for Existing Industrial Facilities

With effect from 22 April 2013, energy intensive companies in the industry sector are required under the ECA to register with the National Environment Agency (NEA) within 6 months of qualifying as a registrable corporation (RC) and to implement mandatory energy management practices.

A corporation is a registrable corporation if it meets the following qualifications:

1. It has operational control over a business activity which has attained the energy use threshold (54TJ of energy used per calendar year) in at least 2 out of the 3 preceding calendar years; and
2. The business activity is carried out at a single site and is attributable to one of the following sectors:
 - manufacturing and manufacturing-related services;

- supply of electricity, gas, steam, compressed air and chilled water for air-conditioning; and
- water supply and sewage and waste management.

Once registered, corporations will be required to implement the following energy management practices:

1. appoint an energy manager;
2. monitor and report energy use and greenhouse gas emissions annually; and
3. submit energy efficiency improvement plans (EEIP) annually.

Note: Transport sector has same reporting system for the energy user report and the energy efficiency improvement plan (EEIP) under the ECA and the Energy Conservation (Energy Management Practices for Transport Facility Operators) Regulations 2013.

1.1 Periodic Reporting of Energy Use

1. A registered corporation shall submit an energy use report by 30 June of each year, which shall cover each business activity under the operational control of the registered corporation.

2. The report shall be prepared and reviewed by the energy manager and endorsed by the chief executive of the registered corporation, and shall be submitted by the energy manager using the electronic service provided at <https://www.edma.gov.sg>.

3. The energy use report shall be made:

- a) using the relevant form provided in the electronic service provided at <https://www.edma.gov.sg>; and
- b) in the manner specified by the Director-General.

4. The energy use report shall contain, in respect of each relevant business activity, the following information relating to its operation during the preceding calendar year, or part thereof (if applicable) in the case of the first report submitted after registration:

- a) quantity of each type of fuel or energy commodity in the inventory of the corporation as at 1 January and 31 December of the calendar year, and their net calorific value or energy content value, and unit of measure;
- b) quantity of each type of fuel or energy commodity purchased or sold, or used for the purposes of producing or providing energy, during the year, and their net calorific value or energy content value, and unit of measure, but excluding any fuel or energy commodity purchased, used or stored for the purposes of an emergency standby generator;

- c) quantity of each type of fuel or energy commodity produced for purposes of producing or providing energy, and their net calorific value or energy content value, and unit of measure;
- d) in respect of energy-consuming systems forming part of the business activity, the aggregate energy consumption of which shall not be less than 80% of the total energy consumption of the business activity, the following information for each energy-consuming system:
 - i. type and description of energy-consuming system;
 - ii. type of fuel or energy commodity used;
 - iii. quantity and unit of measure of annual energy consumption;
 - iv. quantity and unit of measure of each intended output of the energy-consuming system;
 - v. specific energy consumption;
 - vi. predicted specific energy consumption calculated on the basis that the energy-consuming system is new and clean, if available; and
 - vii. the ratio of the specific energy consumption to the predicted specific energy consumption referred to in sub-paragraph (vi), if available;
- e) specific energy consumption;
- f) reasons for increase or decrease in specific energy consumption compared to that reported in the previous year to the extent necessary for a reasonable understanding of the significant factors that affected the energy efficiency of the business activity.
- g) information relating to items listed in the second and third columns of the Second Schedule of [Energy Conservation \(Energy Management Practices\) Regulations 2013](#) in respect of the processes or activities resulting in greenhouse gas emissions as listed in the first column thereof;
- h) information on type, quantity and unit of measure of each fuel or energy commodity used as feedstock to produce products containing carbon;
- i) basic process diagram(s) showing the energy-consuming systems and the general process and energy flow; and
- j) such other information or document as may be required by the Director-General

5. The energy use report shall, in respect of every other business activity under the operational control of the corporation that is not a relevant business activity, state the following in relation to the operation of all such business activities during the preceding calendar year, or part thereof (if applicable) in the case of the first report submitted after registration:

- a) the estimated aggregate energy consumption as a percentage of the corporation's total energy consumption during the same period;
- b) the estimated aggregate energy production as a percentage of the corporation's total energy production during the same period; and

c) the estimated aggregate greenhouse gas emissions as a percentage of the corporation's total greenhouse gas emissions during the same period.

6. Any quantity or figure required in paragraph (4)(d)(iii) to (vi), (g) or (h) may be expressed either as a measured value or an estimated value.



Energy User Report -
Template.xlsx

1.2 Energy Efficiency Improvement Plan

1. A registered corporation shall submit an energy efficiency improvement plan (EEIP) by 30 June of each year, covering each business activity under the operational control of the registered corporation.
2. The plan shall be prepared and reviewed by the energy manager and endorsed by the chief executive of the registered corporation, and shall be submitted by the energy manager using the electronic service provided at <https://www.edma.gov.sg>.
3. The energy efficiency improvement plan shall be made:
 - a) using the relevant form provided in the electronic service provided at <https://www.edma.gov.sg> and
 - b) in the manner specified by the Director-General.
4. The plan shall cover a period of not less than 1 year and not more than 5 years, which shall start from 1st January of the year of submission.
5. The plan shall include the following information in respect of each relevant business activity:
 - a) description of energy efficiency measures to be implemented or completed, and the following information in respect of each measure:
 - i) estimated start and end dates;
 - ii) projected reduction in energy consumption together with underlying assumptions;
 - iii) projected improvement in specific energy consumption together with underlying assumptions;
 - iv) projected improvement in the ratios referred to in [section 8\(4\)\(d\)\(vii\) of the Energy Conservation \(Energy Management Practices\) Regulations 2013](#), if available that would be affected by the measures;
 - v) estimated cost; and
 - vi) name of person responsible for implementation;
 - b) update on the progress of energy efficiency measures described in the previous energy efficiency improvement plan submitted; and
 - c) for each measure implemented before the end of the preceding year, the following information:
 - i) estimated or measured difference in energy consumption attributable to each measure;

- ii) estimated or measured difference in specific energy consumption attributable to each measure;
 - iii) difference in ratios referred to in [section 8\(4\)\(d\)\(vii\) of the Energy Conservation \(Energy Management Practices\) Regulations 2013](#), if available, attributable to each measure; and
 - iv) description of how each difference referred to in sub-paragraph (a), (b) and (c) above was measured and verified.
6. The plan shall include a description of energy efficiency measures to be implemented or completed in respect of each business activity that is not a relevant business activity.



EEIP - Template.xlsx

1.3 Energy Management System for Registered Corporations

1. A registered corporation under the ECA must, for each relevant business activity under its operational control, implement an energy management system (EnMS) and submit either an (a) energy management system report no earlier than 12 months and at least 6 months before the last day of the assessment cycle or (b) accredited ISO 50001 certification expiring on or after the last day of the assessment cycle.

2. First EnMS Submission

The submission of the EnMS report/ISO 50001 certification for each relevant business activity shall be done by either:

- a) 31 Dec 2021 for Tier 1 facilities (annual energy consumption* \geq 500 TJ); or
- b) 31 Dec 2022 for Tier 2 facilities ($54\text{TJ} \leq$ annual energy consumption* $<$ 500TJ).

3. Subsequent EnMS Submission

Relevant business activities will follow either a three-year assessment cycle beginning from the approval of the first EnMS report or the certification cycle of the accredited ISO 50001 certification, and need to submit either:

- a) an EnMS report, no earlier than 12 months, and at least 6 months before the end of each assessment cycle; or
- b) a valid, accredited ISO 50001 certification with effective date no later than the day immediately following the end of the assessment cycle/certification cycle.

4. Submission Requirements

ISO 50001 certification must be issued by either:

- a) a certification body accredited by the Singapore Accreditation Council (SAC) under the Council's accreditation scheme for Energy Management System Certification Bodies to provide ISO 50001 certification; or

- b) a certification body accredited to provide ISO 50001 certification, by a signatory of the International Accreditation Forum Multilateral Recognition Arrangement (IAF MLA).

The report or certification shall be submitted using the electronic service at <https://www.edma.gov.sg>

5. Refer to the following links for reporting templates and guidelines:

- a) [EnMS reporting template \(excel, 60kb\)](#)
- b) [Guidelines on EnMS requirements \(pdf, 380kb\)](#)

1.4 Energy Efficiency Opportunities Assessment (exclude power generation facilities)

With effect from 1 January 2020, a registered corporation under the ECA must, for each relevant business activity under its operational control, conduct an Energy Efficiency Opportunities Assessment (EEOA) for the relevant business activity, and submit an assessment report to NEA before the expiry of the respective assessment period.

You may refer to the circular [Requirements under Energy Conservation Act \(ECA\) to Promote Continual Energy Efficiency \(EE\) Improvement](#) on requirements on EEOA for registered corporations.

1. For the first EEOA,

- A registered corporation that established operational control of a relevant business activity on or before 2 June 2017 must
 - a) conduct an Energy Efficiency Opportunities Assessment for the relevant business activity; and
 - b) submit to the Director-General an assessment report by 31 December 2021.
- A registered corporation that established operational control of a relevant business activity after 2 June 2017 must
 - a) conduct an Energy Efficiency Opportunities Assessment for the relevant business activity; and
 - b) submit to the Director-General an assessment report within 6 years from the day the registered corporation established operational control of the relevant business activity.

2. For Subsequent EEOAs,

- At the end of every assessment period, each relevant business activity that has attained the energy use threshold of at least 500 terajoules in at least 2 out of the 3 preceding calendar years will have to conduct a subsequent EEOA and submit the assessment report within 6 years from the end of its current EEOA.

- Relevant business activities that attain an energy use threshold of at least 54 terajoules but less than 500 terajoules in at least 2 out of the 3 preceding calendar years will only have to conduct a subsequent EEOA upon receiving a notice of assessment from NEA. The relevant business activity will be given 6 years from the date of the notice of assessment to submit its EEOA report.
3. The EEOA Report must be
 - signed off by the energy efficiency opportunities assessor who is principally responsible for conducting the assessment;
 - endorsed by the chief executive of the registered corporation.
 4. Find out more about the EEOA requirements under the [Energy Conservation \(Energy Management Practices\) Regulations 2013](#)
 5. Find the list of certified EEO assessors [here](#).
 6. Submission Requirements

The EEOA report shall have the information as required in [Regulation 22 of the Energy Conservation \(Energy Management Practices\) Regulations 2013](#). The report shall be made using the relevant form provided in the electronic service at <https://www.edma.gov.sg>

7. Refer to the following reporting templates and guidelines:

RC Report Template	Report Template RC REV 10
RC Excel Template	RC Report Calculation Tb1_2_5 Template EEOA RC Report Calculation Tb3_4 Template
Guidelines for RC	Guidelines for RC

1.5 Energy Performance Monitoring (for power generation facilities)

1. The Energy Performance Monitoring (EPM) requirements shall apply to each relevant business activity (RBA) under the operational control of a registered corporation
 - (i) whose principal business activity is in the generation, transmission, or distribution of electricity, and
 - (ii) where there is at least 1 generating unit that has a name-plate rating of more than 10 MW.
2. A registered corporation under the ECA must, for each RBA under its operational control, implement EPM for each generating unit, whereby the aggregate annual energy consumption (AEC) of these units is at least 80% of the site's AEC.

You may refer to the [Energy Conservation \(Energy Management Practices\) Regulations 2013](#) to find out more about the EPM requirements.

3. Thermodynamic Model Development and First Report Submissions Timeline

- The implementation of EPM and submission of reports (such as the model validation report and first EPM report) shall be done by the following timeline:

Scenarios	Thermodynamic Model Development	Model Validation Report	First EPM Report
Existing RBA	31 Dec 2023	30 Jun 2024	30 Jun 2025
Newly registered RBA (From 2024 onwards)	31 Dec of year (X)*	30 Jun of year X+1	30 Jun of year X+2
Existing RBA with new or repowered generating units (From 2024 onwards)	31 Dec of year (Y)^	30 Jun of year Y+1	30 Jun of year Y+2

Note:

* Year (X) refers to the year on which either a change in operation control of a relevant business activity occurs or a corporation is registered under ECA

^ Year (Y) refers to the year on which an existing genco begins commercial operation of a new or repowered generating unit, which is expected to fall under the EPM requirements for the genco to cover generating units which consume on aggregate, at least 80% of the site's AEC.

- The thermodynamic model developed for each generating unit covered under EPM shall have the capabilities as required in [Regulation 29 of the Energy Conservation \(Energy Management Practices\) Regulations 2013](#).

4. Subsequent EPM Report Submission Timeline

After the first EPM report submission, the RBA shall submit an EPM report annually by 30 June of each year.

5. Submission Requirements

- The assessment period for an EPM report shall be based on a 1-year period, starting on 1 January of the preceding calendar year.
- The model validation report and annual EPM reports shall have the information as required in [Regulation 30 and 33 respectively, of the Energy Conservation \(Energy](#)

[Management Practices\) Regulations 2013](#). The reports shall be submitted using the relevant form provided in the electronic service at <https://www.edma.gov.sg>.

1.6 Minimum Energy Efficiency Standards

Scope of Minimum Energy Efficiency Standards (MEES)

1. The Minimum Energy Efficiency Standards (MEES) will cover electrically-driven, water-cooled chilled water systems in industrial facilities that:
 - a) has a total installed capacity of 1055 kW (300 RT) or more; and
 - b) produces chilled water at a temperature of 3°C or higherChillers solely utilising brine or glycol and air-cooled chillers that form part of the water-cooled chilled water system will be exempted.
2. The MEES will be applied to a water-cooled chilled water system, comprising, among others, chillers, chilled water pumps, condenser water pumps and cooling towers that uses chilled water as the medium to transfer heat.
3. An industrial facility refers to:
 - a) any single-user facility that has a business activity attributable to any of the following industry sectors:
 - i) manufacturing and manufacturing-related services;
 - ii) supply of electricity, gas, steam, compressed air and chilled water for air-conditioning; and
 - iii) water supply and sewage and waste management
 - b) any multi-user facility that is sited on URA Masterplan B1 or B2 zone.

Compliance Timeline

1. New Industrial Facilities: Water-cooled chilled water systems in a new industrial facility that requires Planning Permission (PP) clearance or equivalent on or after 1 December 2020 must conform to MEES within 3 months of:
 - a) for new single-user industrial facility: one year after the TOP is issued; and
 - b) for new multi-user industrial facility: three years after TOP or when 80 per cent of occupancy is reached, whichever is earlier

From 1 April 2026, new industrial facilities that apply for PP or equivalent with water-cooled chilled water system that is that is used solely for space cooling¹ must conform to a separate MEES level (see table 1 below) that is aligned with BCA's implemented standards for new commercial buildings. These facilities (single user or multi-user whichever is applicable) are still subject to the same timeline to conform to MEES.

[¹ Space cooling includes but is not limited to the cooling of spaces such as office areas, clean room, storage room etc]

2. Existing Industrial Facilities: Water-cooled chilled water systems installed in existing industrial facilities must conform to MEES by the following deadlines:

Type of industrial facility	Compliance Deadline
Industrial facilities regulated under the ECA	By 1 December 2025
All other industrial facilities	By 1 December 2029

Detailed Requirement

Operating system performance

1. Chilled water systems in industrial facilities may be used for space or process cooling. In process cooling and space cooling for production spaces, a wide range of chilled water supply temperatures may be used. As temperature has a direct effect on the performance of a chiller, and thus the performance of a chilled water system, the performance standards vary for chilled water systems that operate at different chilled water supply temperatures.

2. The table below displays the MEES for different chilled water supply temperatures.

Chilled water supply temperature (°C)	3	4	5	6	7	8	9	≥10
New and Existing Industrial facilities								
MEES in kWe/kWc (kW/RT)	0.203 (0.71)	0.200 (0.70)	0.197 (0.69)	0.194 (0.68)	0.191 (0.67)	0.188 (0.66)	0.185 (0.65)	Energy performance for chilled water supply temperature ≥10°C to be improved from 0.185 kWe/kWc at 9°C by 0.003 kWe/kWc for every 1°C increase in chilled water

								supply temperature
[NEW] (With effect from 1 Apr 2026)								
New Industrial Facilities with water-cooled chilled water systems used solely for space cooling								
MEES in kWe/kWc (kW/RT)	0.191 (0.67)	0.188 (0.66)	0.185 (0.65)	0.182 (0.64)	0.179 (0.63)			

Table 1: MEES levels corresponding to different chilled water supply temperatures

Measurement & Verification System

To show that operating chilled water system performances meet MEES, permanent measurement and verification (M&V) systems must be installed. A M&V system should be linked to a monitoring system such as a building automation system (BAS) or a standalone energy management system (EMS). The monitoring system should be capable of:

1. displaying and trend logging performance parameters; and
2. generating a report, consisting of aggregated data in a standard reporting format.

Refer to the attached file on [M&V requirements and guidelines for MEES](#).

First Report for New and Existing Industrial Facilities

1. A [report](#) must be submitted to NEA to show that:
 - a) operating chilled water system performance meets the MEES threshold; and
 - b) M&V system is accurate, which is demonstrated through a heat balance substantiating test⁵ where the heat balance is within 5% for 80% of the operating points during the assessment period.
2. The report must be:
 - a) prepared and signed off by an [Energy Efficiency Opportunities \(EEO\) Assessor](#) with systems-specific experience in chilled water systems or a Professional Engineer in the branch of mechanical engineering, electrical engineering or chemical engineering; and
 - b) endorsed by the Chief Executive (or equivalent) of the company

Subsequent Reporting for Existing Industrial Facilities

After the approval of the First Report, key performance data of the chilled water system will have to be reported to NEA on a periodic basis to demonstrate that the operating system performance is maintained. Data should be aggregated in the monitoring system,

downloaded in a standard reporting format and uploaded onto a NEA-designated online reporting portal.

NEA has revised the data reporting format ([see attached](#)). Companies are to use the updated version for their MEES reports with immediate effect.

Review by NEA

Annually, NEA will review the annual average operating system performance and other key performance data of the chilled water system. NEA may also conduct on-site verification on the accuracy of the M&V system.

In the event that a company fails to comply with any of the requirements, the company may be required to take corrective actions to ensure compliance. Fines will be imposed for non-compliance.

The following information should be kept for a minimum of 5 years:

1. First Report, annual reports and all information used in producing the reports e.g. raw data and calculations
2. Technical specifications of chilled water system components
3. All input parameters and settings for the permanent instrumentations
4. Instruments' calibration certificates from accredited laboratories and/or their factory calibration certificates from manufacturers
5. As-built schematic drawings of the chilled water system



MEES

annual-report-templa

2 Mandatory Energy Management Practices for New Industrial Facilities

2.1 Energy Efficiency Opportunities Assessment (EEOA) for New Ventures

Before Development Control Stage, an owner of a New Venture (a new business activity or major expansion of any existing business activity) will be required to carry out energy efficiency opportunities assessment (EEOA) during the design of the facility and submit an EEOA report to NEA.

Find out more about the EEOA requirements under the [Energy Conservation \(Energy Management Practices\) Regulations 2013](#).

You may refer to the circular [Requirements under Energy Conservation Act \(ECA\) to Promote Continual Energy Efficiency \(EE\) Improvement](#) on requirements on EEOA for New Ventures.

From 1 October 2025, new projects with a Gross Floor Area (GFA) of 30,000m² and above must submit their applications through CORENET X, with those eligible to conduct EEOA having their EEOA submissions processed through EDMA (Emissions Data Monitoring and Analysis System).

Project owners should check the CORENET X website for the latest implementation updates: <https://info.corenet.gov.sg/overview/about-corenet-x/implementation-timeline>

For detailed information about the EEOA submission process and approval procedures through CORENET X, please refer to section 2.7.2 of the [Energy Efficiency Opportunities Assessment and Energy Performance Measurement Guidelines for New Ventures 2025](#).

Eligibility to submit EEOA Report

An owner of a New Venture that applies for URA Planning Permission on or after 1 October 2018 or URA Lodgement on or after 1 December 2025 will have to comply with the EEOA requirements if the business activity

1. is carried out at a single site and is attributable to one of the following industry sectors:
 - manufacturing and manufacturing-related services;
 - supply of electricity, gas, steam, compressed air and chilled water for air-conditioning; and
 - water supply and sewage and waste management.

And

2. will have an estimated Annual Energy Consumption (AEC) \geq 54 TJ, that is calculated on the basis that the business activity is carried out at full capacity for 24 hours every day throughout the calendar year.

- **Details on Estimated Annual Energy Consumption (AEC)**

The AEC shall be aggregated from all energy consuming systems of the entire new business activity/premises or expansion of any existing business activity/premises as per New Venture definition in Section 26A(4) of the Energy Conservation Act.

The AEC of the New Venture is the total energy consumption derived from all fuel and energy commodities (e.g. Natural gas, Liquid Fuel oil, Electricity, Steam, etc) used to provide or produce energy within the New Venture's boundary. To avoid double-counting, the energy produced from any fuel or energy commodity that is already accounted for in the estimated total figure should not be included.

If an estimated quantity of a fuel or an energy commodity to be used is to be converted to an amount of energy in joules, the conversion is to be done using —

1. Default net calorific values set out in the [Second Schedule](#) (for a fuel) or [Third Schedule](#) (for an energy commodity) to the Energy Conservation (Registrable Corporations) Order 2013; or
2. Net calorific values specified by the corporation and approved by the Director-General (refer to [Regulation 7B-\(7\) of the Energy Conservation \(Energy Management Practices\) Regulations 2013](#)).

- **Quick Rule of Thumb**

If the energy bill of your New Venture facility is expected to be \geq \$500,000 annually, your facility is likely to have an estimated AEC of \geq 54TJ. You can use the [Energy Consumption Calculator](#) to verify the AEC of your New Venture facility.

EEOA Process

Owners of New Ventures should start the EEOA process early and engage NEA's Verification Office (VO) at **concept design phase** to discuss the details, especially for complex projects. This will help to minimise clarifications during the review and ensure timely approval of the EEOA reports.

The key elements of the EEOA process are:

1. Develop EEOA plan
2. Identify EE Opportunities
3. Evaluate Feasibility

4. Shortlist Feasible EE Opportunities
5. Develop Design for Facility and each Energy Consuming System

Refer to the following for more information:

- a) [Industry briefing on EEOA for New Ventures \[PDF, 597KB\]](#)
- b) [Energy Efficiency Opportunities Assessment and Energy Performance Measurement Guidelines for New Ventures 2025](#)
- c) [Detailed requirements of the EEOA](#)

Submission Requirements

1. Declaration at Development Control Stage

Owners of New Ventures are required to declare whether they meet the eligibility of submitting EEOA report at Development Control (DC) stage in the [EEOA for New Venture Declaration form_R2](#) [docx,20KB].

2. EEOA report

The EEOA report shall have the information as required in [Regulation 7D of the Energy Conservation \(Energy Management Practices\) Regulations 2013](#).

Refer to the following reporting templates:

- [EEOA NV Report Template R2](#) [doc. 73kB]
- [EEOA NV Report Calculation Template R6](#)[csv. 220kB]

3. Submission of EEOA report

The EEOA report shall be submitted by a Qualified or Authorised Person (QP/AP):

- Submit the EEOA report to NEA for approval via EDMA module. Click [here](#)
- Refer to the instructions in the attachment below

[EDMA_EEOA_NV_Industry Demo_v0.4](#)

- Report must be signed off by the person responsible for conducting the EEOA.
- Report must be endorsed by the Chief Executive of New Venture.

Records to be Kept

Data used for the EEOA must be kept for **at least 5 years** from the date of Certificate of Statutory Completion (CSC) issued in respect of the New Venture facility.

2.2 Energy Performance Measurement for New Ventures

An owner of a New Venture (a new business activity or major expansion of any existing business activity) facility is advised to plan for and install meters and instruments at design and construction phases to measure:

1. Total energy consumption of the New Venture facility; and
 2. Energy consumption and intended output of key energy-consuming systems that account for at least 80% of the New Venture facility's annual energy consumption.
- **When the New Venture becomes a [relevant business activity](#) under the Energy Conservation Act:**

The registered corporation with operational control over the relevant business activity is required to report the following in the annual submission of the [Energy Use Report](#):

1. the quantity of each type of fuel or energy commodity used for the purposes of producing or providing energy in respect of the business activity, during the calendar year covered by the report, expressed as **a measured value**; and
2. the quantity of the annual energy consumption, intended output and specific energy consumption figures of the energy-consuming systems as **measured values**, the aggregate energy consumption of which is at least 80% of the total energy consumption of the business activity

Find out more about the Energy Performance Measurement requirements under the [Energy Conservation \(Energy Management Practices\) Regulations 2013](#).

Eligibility to Report Measured Values in Energy Use Report

An owner of a New Venture that applies for Planning Permission **on or after 1 October 2018** will have to comply with the above requirements if the business activity-

1. is carried out at a single site and is attributable to one of the following industry sectors:
 - manufacturing and manufacturing-related services;
 - supply of electricity, gas, steam, compressed air and chilled water for air-conditioning; and
 - water supply and sewage and waste management.

And

2. will have an estimated Annual Energy Consumption (AEC) ≥ 54 TJ, that is calculated on the basis that the business activity is carried out at full capacity for 24 hours every day throughout the calendar year.

Annex – Minimum Energy Performance Standards (MEPS) to Motors

A) Scope of MEPS for Motors

1 With effect from 1 October 2018, MEPS for motors will cover single speed, three-phase 50 Hz induction motors that have:

- a. 2, 4 and 6 poles;
- b. rated output power from 0.75 kW to 375 kW;
- c. rated voltage up to 1,000 V; and
- d. rated on the basis of continuous duty operation.

2 The following classes of motors, which are intended for special purposes or are uncommon, will not be covered under MEPS:

Classes of Motors Not Covered Under MEPS

- a) Motors specifically designed to operate:
 - i. where ambient air temperatures exceed 60°C;
 - ii. in maximum operating temperature above 400°C;
 - iii. where ambient air temperatures are less than -30°C for any motor or less than 0°C for a motor with water cooling;
 - iv. where the water coolant temperature at the inlet to a product is less than 0°C or exceeding 32°C; or
 - v. in potentially explosive atmospheres.
- b) Motors specified to operate wholly immersed in a liquid
- c) Multi-speed motors
- d) Brake motors
- e) Torque motors
- f) Motors that are completely integrated into a product where the motors' energy performance cannot be tested independently from the product
- g) Motors that are supplied exclusively to third parties who will incorporate the motors into equipment that will be exported to another country, and
- h) Motors exempted by the Director-General of Environmental Protection of the National Environment Agency

B) Registration and Testing

- 3 Suppliers of motors and motor-driven equipment/systems must register themselves and their motor models with NEA. Each registration is valid for a 3-year period and has to be renewed if the supplier intends to continue supplying the product in Singapore. The registration and renewal fee per motor model are \$57 and \$32 respectively.
- 4 During the registration, suppliers must produce test reports to demonstrate compliance with the requirements specified under MEPS. Test reports from any of the following testing laboratories will be accepted:
 - a. Manufacturers' in-house testing laboratories;
 - b. Testing laboratories that are accredited by the Singapore Accreditation Council (SAC) to carry out the test in accordance with the applicable test standards; or
 - c. Testing laboratories in other countries that are accredited by their local accreditation bodies that have signed a Mutual Recognition Arrangement with SAC to carry out the test in accordance with the applicable test standards.
- 5 The test standards - IEC 60034-2-1:2014 (method 2-1-1B) or IEEE[4] 112:2004 (method B) will be adopted as they are internationally recognised and adopted by countries like USA, those in the EU, China and South Korea.
- 6 A registered supplier will be required to display on the motor nameplate the year of manufacture, IE efficiency class and nominal efficiency at 100%, 75% and 50% rated load[5] before the motor can be sold. Such information will allow the end-user of a motor to ascertain whether the motor is MEPS-compliant.

C) Verification Testing

- 7 NEA will from time to time carry out verification testing on registered motor models to ensure compliance with the MEPS requirements. All verification testing will be carried out in accordance with the applicable test standards.

Reporting under Carbon Pricing Act 2018 & Carbon Pricing (Measurement, Reporting and Verification) Regulations 2018

Background

The Carbon Pricing Act (CPA) applies to business facilities¹ in the industry sectors of:

1. manufacturing and manufacturing related services;
2. supply of electricity, gas, steam, compressed air and chilled water for air-conditioning; and
3. water supply and sewage and waste management.

Please click [here](#) for more information on the Carbon Pricing (Registration and General Matters) Regulations 2018 for the full elaboration of the prescribed industry sectors.

¹ A *business facility* is a single site at which any business activity is carried out, including series of activities carried out at more than one parcel of land, where: i) parcels of land that are contiguous, adjacent, adjoining or separately by any road or pathway or drain or waterway; or ii) there is dependency between the activities carried on the parcels of land.

1 Measurement and Reporting Requirements for Greenhouse Gas Emissions

1.1 M&R Requirements for Reportable Facility (2000 tCO₂e)

Reportable facilities are required to comply with the following requirements: -

1. Submit an Emissions Report for every reportable facility and each reporting period by 30 June of the year following the end of each reporting period, for NEA's approval.
2. Appoint at least one GHG Manager for each reportable facility to be responsible for preparing and submitting the Emissions Report.
3. Appoint at least one Designated Representative. The Designated Representative cannot be the same person as the GHG Manager.

Please refer to the guidelines relevant to reportable facilities (≥2000 tCO₂e) below:

1. Part 1A: Introduction to the GHG Measurement and Reporting Requirements for Reportable Facility

For RY2019 - RY2023,	For RY2024 onwards,
download [PDF, 406 KB]	download [PDF, 578 KB]

2. Part III: Emissions Report

For RY2019 - RY2023,	For RY2024 onwards,
download [PDF, 1.53 MB]	download [PDF, 2.36 MB]

1.2 MRV Requirements for Taxable Facility ($\geq 25,000$ tCO_{2e})

Taxable facilities are required to comply with the following requirements: -

1. Prepare, submit and maintain a Monitoring Plan for each taxable facility. The Monitoring Plan is a document that identifies and describes the facility's GHG emission sources and streams, emissions quantification methods and quality management procedures. It shall be submitted by **31 December** of the year immediately following the trigger year.
2. Submit an Emissions Report for every taxable facility and each reporting period by **30 June** of the year following the end of each reporting period. The Emissions Report must be prepared based on the approved Monitoring Plan and be verified by an accredited third-party verification company prior to submission.
3. Appoint at least one GHG Manager for each taxable facility to be responsible for preparing and submitting the Emissions Report.
4. Appoint at least one Designated Representative. The Designated Representative cannot be the same person as the GHG Manager.

Please refer to the guidelines relevant to taxable facilities ($\geq 25,000$ tCO_{2e}) below:

1. Part 1B: Introduction to the GHG Measurement and Reporting Requirements for Taxable Facility

For RY2019 - RY2023,	For RY2024 onwards,
download [PDF, 228 KB]	download [PDF, 660 KB]

2. Part II: Monitoring Plan

For RY2019 - RY2023,	For RY2024 onwards,
download [PDF, 933 KB]	download [PDF, 1 MB]

3. Appendix to Part II: Monitoring Plan

For RY2019 - RY2023,	For RY2024 onwards,
download [PDF, 1 MB]	download [PDF, 2.14 MB]

4. Part III: Emissions Report

For RY2019 - RY2023,	For RY2024 onwards,
download [PDF, 1.53 MB]	download [PDF, 2.36 MB]

1.3 Emissions Report

The Emissions Report for each reporting period shall contain information on facility's activity data, computation for each direct GHG Emissions, and the total direct GHG emissions.

The Emissions Report shall be submitted via the Emissions Report User-Interface (UI) provided by NEA in the Emissions Data Monitoring and Analysis (EDMA) system. The Emissions Report UI builds on the forms and templates used for reporting of energy use and Industrial Processes and Product Use (IPPU) emissions under the Energy Conservation Act. The Emissions Report shall be substantiated with supporting documents.

1.4 Monitoring Plan (Only Applicable to Taxable Facilities)

The Monitoring Plan is a document that identifies and describes the facilities' GHG emission sources and streams, emissions quantification method and quality management framework.

The Monitoring Plan submission includes the Monitoring Plan Template (MP Template) and the relevant supporting documents. The Monitoring Plan will need to be submitted and approved by NEA before the start of the first reporting period. The reporting period is a calendar year during which the direct GHG Emissions are measured and reported.

The approved Monitoring Plan will apply for all future reporting periods unless there is a change to the Monitoring Plan. The registered corporation shall ensure that the Monitoring Plan remains current and up-to-date.

Monitoring Plan Submission and Template

The registered corporation must use the MP Template provided by NEA to prepare its Monitoring plan submission for each taxable facility. The MP template has been designed in

Microsoft Excel to allow the Monitoring Plan submission to be prepared offline and electronically. Each taxable facility must use this MP Template for consistency and to facilitate the approval of the facilities' Monitoring Plan submission.

The completed MP Template and supporting documents will need to be uploaded onto the EDMA system.

2 Verification and Accreditation Requirements

2.1 Third-party verification of Emissions Report (only applicable to taxable facilities)

Verification involves an independent and objective assessment of the accuracy of the Emissions Report based on the implementation of the Monitoring Plan. The registered corporation is required to engage an NEA-accredited third-party verifier to verify each taxable facility's Emissions Report annually, before submitting the Emissions Report to NEA by 30 June of the year following the end of each reporting period. Only information relating to reckonable greenhouse gas (GHG) emissions is subjected to third-party verification.

Verification Report submission and templates

Accredited verifiers shall use the following templates provided by NEA to prepare for the conduct of verification and the final verification report:

1. Notice of verification template
2. Verification plan summary template
3. Verification report template

2.2 Application for accreditation to conduct verification

Any Singapore registered company that wishes to provide third-party verification services in relation to the Carbon Pricing Act (CPA) shall be accredited by NEA. Accreditation involves an independent assessment by NEA on whether a verification company has the competence to carry out the verification of GHG emissions reporting in line with the CPA and its accompanying regulations.

NEA will inform the verification company of the outcome of the application within 30 days of receiving the complete application. Verification companies engaged by facilities to conduct verification on their Emissions Report shall complete the verification and submit the verification report to the facility and NEA before 30 June of the year following the end of each reporting period.

The verification company is required to read the Verification and Accreditation guidelines in detail and assess the company's capabilities to meet the accreditation requirements before making an application to NEA. The application form can be found [here](#).

2.3 Verification and Accreditation Guidelines

To help registered corporations and verifiers comply with the Verification and Accreditation requirements, NEA has developed a series of guidelines as follows:

1. Part I: Verification Requirements for the Emissions Report ([download](#)) [PDF, 1.30 MB]

2. Part II: Accreditation Requirements for Verifiers ([download](#)) [PDF, 913 KB]

These guidelines provide guidance on:

1. Requirements relating to the planning and conducting of independent third-party verification of GHG emissions reports;
2. The preparation of the verification report; and
3. Requirements and process for accreditation of verification companies for verification of GHG emissions reports.

2.4 Accredited External Auditor under the Carbon Pricing Act

These [companies](#) have been accredited to conduct third-party greenhouse gas verification under the Carbon Pricing Act for the indicated sectors.

Complex sectors:

Sector 1. Refining of oil and gas, and large-scale manufacture of chemical products.

Sector 2. Manufacture (other than large scale manufacture) of chemical products.

Sector 3. Manufacture of semiconductor devices and wafers.

Non-complex sectors:

Any industry sector that is not a complex sector as described above