

## GENERAL INSTRUCTIONS

### FOR THE PREPARATION OF SEMI-ANNUAL ENERGY CONSUMPTION REPORT (SAECR) AND ANNUAL ENERGY CONSERVATION REPORT (AECR) FOR INDUSTRIAL SECTOR

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Section 2 of Republic Act No. 7638, otherwise known as "Department of Energy Act of 1992" declares as policy of the State, among others, to ensure a continuous, adequate, and economic supply of energy through the judicious conservation, renewal and efficient utilization of energy.

Adhering to the foregoing mandate, the Department of Energy through the Energy Efficiency and Conservation Division of the Energy Utilization Management Bureau collects data needed for benchmarking as a basis from which to estimate improvement potentials, to provide valuable information on sectoral energy use, to determine Specific Energy Consumption (SEC) and to establish Minimum Energy Performance (MEP) regulations.

#### ***Administration of the Energy Consumption Report***

Technology Promotion and Assessment Section (TPAS) collects data through online reporting, operates and maintains a computerized database system to facilitate retrieval and analysis of the energy consumption data. Energy evaluation and analysis are conducted for the establishment of a national energy utilization regulations for industrial sector; for the monitoring of the energy utilization performance;

source of recipients for the "Don Emilio Abello Energy Efficiency Awards"; and for other monitoring activities such as total industrial sector's energy consumption profile, potential energy savings, energy conservation projects etc.

#### ***1. Mandatory Submission of SAECR and/or AECR***

Industrial establishments with an annual energy consumption of **500,000 kWh of electricity or 130,500 liters oil equivalent (LOE) or more** are required to submit Semi-Annual Energy Consumption Report (SAECR). Those with an annual energy consumption of **1,000,000 LOE or more** shall, in addition to SAECR, submit Annual Energy Consumption Report (AECR).

#### ***2. Schedule of Submission***

The following are the schedules of submission:

##### **SAECR**

<i>First Semester</i>	<i>July 31</i>
<i>Second Semester</i>	<i>January 31 of the following year</i>

##### **AECR**

*January 31 of the following year*

All reports shall be submitted online to:

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### **3. Confidentiality of Report**

All reports shall be treated with strictest confidentiality. Specific reports of each company shall not be divulged without the consent of the involved establishment subject to the exceptions provided by law.

### **4. Definition of Terms**

#### **MANUFACTURING OR BUSINESS ACTIVITIES**

This refers to activities involving manufacturing and production of goods, such as cement, ceramic, chemicals, food, glass, mining, petroleum, pulp & paper, semi-conductor, electronics and other electronics, steel/metal, sugar, textile, tobacco, wood, and the like.

#### **SEMI-ANNUAL ENERGY CONSUMPTION REPORT (SAECR)**

##### **Part A. TOTAL ENERGY CONSUMPTION**

This part gives an overview of the energy consumption of the whole facility. The quantities reported in this section should be the total energy consumption for all activities and services in the industrial sector including generation of electricity and others.

#### **ENERGY SOURCE -**

Items listed under this column are electricity, steam and other energy

sources consumed as fuel.

#### **UNIT -**

The column specifies the units of measurement which should be used when reporting the consumption of the various energy sources.

#### **QUANTITY -**

This is the company's overall consumption of a particular energy source.

#### **CONVERSION FACTOR -**

This refers to column 4 Part A for the conversion factor to Liters of Oil Equivalent (LOE). Values under this column are specified by DOE - Energy Efficiency and Conservation Division for the various groups/sectors (see Annex)

#### **LITERS OIL EQUIVALENT (LOE) -**

The number of LOE (standard gross heating value: 41,800 KJ/l) that will liberate an amount of heat equal to the amount generated from the actual energy source used. The source may be liquid, solid or gaseous fuels and/or electricity.

#### **PURCHASED ELECTRICITY -**

The total quantity of electricity purchased by the establishment from the distribution utility.

##### **Part B. ENERGY CONSUMPTION FOR TRANSPORTATION**

This part refers to the amount of energy consumption in hauling or other similar activities.

#### **HAULING/DELIVERY -**

This refers to energy usage for moving

raw materials and products into and out of the plant battery limits, using plant transport facilities.

***OTHERS (SPECIFY) -***

This column is for energy used for transport activities other than hauling and delivery, that may include the following, among others:

**a) utility** - energy usage for transport equipment used within company premises like forklifts and

**b) personnel service** - energy usage for service cars of executives, sales representatives, employees service bus/cars, and the like.

**Part C. ELECTRICITY GENERATION**

This part consists of generating units, their capacity and fuel type, as well as the consumption, and hours of operation and maintenance runs of generators.

***GENERATING UNITS -***

This column identifies the electricity generators in the facility. The brand of the generator may be specified.

***CAPACITY -***

This is the capacity of a generating unit in kW.

***FUEL TYPE -***

This pertains to the classification of fuel used by different generating unit.

***CONSUMPTION QUANTITY -***

This is the amount of fuel used by different generating units.

***HOURS OF OPERATION -***

These are the numbers of hours in which the generators were operated.

This should include the time spent in operating the unit even for maintenance/test run purposes only.

***ELECTRICITY GENERATED -***

The amount of electricity in kWh produced by each generating unit during operation and maintenance/test checks.

**Part D. STEAM GENERATION**

The information in this portion is the facility's total production of steam, whether for industrial operation or any other purpose.

***BOILER UNITS -***

This column identifies the different boilers in the facility. Brand and model name may be given.

***CAPACITY -***

This is the capacity rating of the different boiler units, in kg/hr.

***FUEL TYPE -***

This pertains to the classification of fuel used by each boiler units of the facility.

***CONSUMPTION QUANTITY -***

This is the amount of fuel used by the different boiler units. Any convenient unit of measurement may be used provided the said unit is specified.

***HOURS OF OPERATION -***

These are the number of hours in which the boilers are operated.

***STEAM GENERATED -***

This is the generated steam in metric tons corresponding to the reported energy consumption. This should be expressed in terms of equivalent evaporation from and to 100°C @ 1 atm.

***RECOVERED STEAM -***

The quantity of steam extracted or exhausted from the steam turbine in cogeneration systems which is utilized for production and other purposes. This should be express in terms of equivalent evaporation from and to 100°C @ 1 atm.

**Part E. ELECTRICITY AND STEAM UTILIZATION**

***PRODUCTION -***

Refers to the amount of electricity or steam directly used for production operations.

***AUXILIARY SERVICES –***

The portion of the electricity and steam consumption that went into offsite services such as maintenance shops, laboratories, perimeter lighting, administrative offices, canteens and staff houses. The consumption for production should not be included.

***LOSES –***

This is the amount of energy source losses in the Energy Consumption

**Part F. WASTE OIL UTILIZATION**

***UNIT -***

This is the unit of measurement to be used when reporting the various data on waste oil utilization.

***QUANTITY -***

This is the amount of waste oil collected, sold, or recycled and the amount of lube oil consumed.

**Part G. ENERGY CONSUMPTION PER ACTIVITY**

This part indicates the amount of energy consumption for every activity of an establishment.

**G.1.0 ENERGY CONSUMPTION PER PRODUCT LINE/ACTIVITY**

The quantities entered under these columns cover the consumption for every activity of an establishment, which do not include fuel consumption for steam and electricity generation, as well as energy consumption of plants offices, and energy consumption to move materials and products outside of plant battery limits.

***STEAM -***

This is the total amount of steam, whether generated or purchased, which was consumed during operation. This should be expressed in terms of equivalent evaporation from and to 100 equivalent evaporation from 100°C @ 1 atm.

***ELECTRICITY -***

This refers to the total amount of electricity, whetehr generated or purchased., consumed in the production of a particular product.

**G.2.0 PRODUCTION VOLUME -**

This pertains to the details of production for each product line/activity

**UNIT –**

This refers to the indicative unit of measure used in the production, such as kilogram, metric ton, liters, pieces, and the like.

**QUANTITY -**

This is the plant's actual output during the reported period.

**HOURS OF OPERATION -**

This are the number of hours of operation of the plant during the reported period.

**HOURS SHUTDOWN -**

This are the number of hours during the reporting period in which the facility stopped its operations for maintenance and other purposes.

**ANNUAL ENERGY CONSERVATION REPORT (AECR)****Part I. A. ENERGY EFFICIENCY PROJECTS**

1.0 This part requires the specification of projects that commenced during the reported year but which have not yet been completed as of year-end.

**DATE STARTED -**

This refers to the first day of implementation of the project.

**ESTIMATED COMPLETION DATE -**

This refers to the estimated end of project life.

**ENERGY SAVINGS THIS YEAR -**

These are the savings realized from the project as of the end of the reported year, specifying the unit of measurement being used.

**TOTAL INVESTMENT AS OF YEAR END –**

The total Investment that have been placed in the project as of the end of the reported year.

2.0 This refers to projects that have reached the end of their project life.

3.0 Refers to projects that are on-going of the reported year. Same as in 1.0.

**Part I. B.**

This section requires to specify energy conservation measures that may be carried out projects that may be carried out in the establishment but which have not been implemented nor are lined up for implementation and also to indicate difficulties and constraints that may hinder the said implementation.

**PART II. A.**

These columns under the “Reported Year” cover the targeted energy consumption as well as the actual energy consumption which is set at the start of the reported year.

The consumption values should be given under the column "QTY" using the standard of measurement specified in the column "Unit".

The “QTY” values should be converted

to LOE values and entered in the LOE column. The appropriate conversion factor is found at Part A of SAECR Form.

Target consumption for the current year are entered in the columns under "Current Year Target".

## **Part II. B.**

Items in this section are similarly defined as those in Part E of SAECR Form, but instead of actual consumption, Consumption Targets are given. These are the targets set by the establishment for the current year.

**SPECIFIC ENERGY CONSUMPTION (SEC)** – This is the specific energy consumption which to be filled out by DOE

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**The report should be prepared by a competent and duly authorized personnel preferably the establishment's designated energy manager or energy conservation officer.**

## **ANNEX PRODUCTION UNITS for VARIOUS SECTORS**

### **1. CEMENT**

Each product (ex. pozzolan, portland) should be reported in MT.

### **2. CERAMICS**

Report each product (ex. sanitary wares, chinaware, pottery, earthenware) in MT.

### **3. CHEMICALS**

a) *Industrial and Consumer Non-durable Chemicals* - report each product (ex.  $\text{MgSO}_4$ ,  $\text{NaOH}$ ,  $\text{O}_2$ , alcohol, fertilizer, pesticide, fungicide, paint, thinner, soap/detergent, carbon black etc.) in MT.

b) *Pharmaceutical* - report production of:  
a. solid preparation  
b. liquid preparations in MT.

### **4. FOOD**

Report each solid product (ex. canned fruits, biscuits, powdered milk, candies, coffee, flour, butter, etc.) in Kg or MT.

Report each liquid product (ex. softdrinks, liquors, fruit juices, vegetable oil, condensed milk, etc.) in Liter.

### **5. GLASS**

Report each product (ex. sheet glass, bottles/containers, etc.) in MT.

### **6. MINING**

Report each product (ex. ore, concentrate) in MT.

### **7. PETROLEUM**

Report each liquid product (ex. diesel, kerosene, gasoline, etc.) in Liter.

Report each gaseous product (ex. LPG) in Kg.

OR

Report on the basis of each operation or stage (ex. topping, cracking, desulfurization, hydro-treating, etc.) of the petroleum refining activity. Unit of measure should be MT feedstock processed in each stage.

## **8. PULP & PAPER**

Report in MT of pulp and/or MT of paper; report production of specialty paper (ex. tissue paper, cigarette paper, etc.) in MT.

## **9. SEMI-CONDUCTOR, ELECTRONICS and other ELECTRONICS**

Report each product (ex. Integrated Circuit (IC), interface, amplifier, power module, processor, sensor, transistor, rectifier, etc.) in Pieces.

## **10. STEEL/METAL**

Report each product (ex. sheet, bars, wires, pipes & tubing, extruded parts, etc.) in MT.

Note: Give production data for each type of metal.

For precious metals (ex. gold, silver, etc.) report production in Grams or Kilograms.

## **11. SUGAR**

Report MT of raw sugar and/or MT of refined sugar produced.

## **12. TEXTILE**

Report each product (ex. yarn, fabric, wearing apparel, etc.) in MT.

## **13. TOBACCO**

Report each product (ex. cigars/cigarette, processed tobacco, etc.) in MT.

## **14. WOOD**

Report production of each wood or wood product (ex. lumber & lumber products, veneers & plywood, logs, etc.) in Cubic Meters.

## **15. OTHERS**

a. *Fabricated Metal Products, Machinery & Equipment*

Report production (ex. cars, TV sets, motorbikes, radio, ship, etc.) in PIECES or UNITS.

b. *Nondurable Consumer Products*

Also report each product Z(ex. toys, matchboxes, razors, batteries, writing materials, etc.) in PIECES or UNITS.

For more information please call:

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