

**EMC'S e- DIPLOMA AND  
e- CERTIFICATE COURSES ON  
ENERGY EFFICIENT OPERATION OF  
UTILITIES**

**Starting from 8<sup>th</sup> September 2020**

***Organised by,***

**Energy Management Centre –Kerala**

Department of Power, Government of Kerala

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## About EMC

Energy Management Centre (EMC) - Kerala, Department of Power, Govt. of Kerala, the first National level organization exclusively for promoting energy conservation came into existence on 07-02-1996. In exercise of power conferred by clause (d) of section 15 of Energy Conservation Act 2001(Central Act 52 of 2002) Energy Management Centre - Kerala (EMC), is designated as the State Designated Agency (SDA) of Bureau of Energy efficiency, Ministry of Power, Government of India to coordinate, enforce and implement Energy Conservation Act 2001(Central Act 52 of 2002) in 2003.

The Centre is devoted to the improvement of energy efficiency in all sectors of economy in the State through promotion of energy conservation and encouraging development of technologies related to energy through demonstration programmes, research, training, and awareness creation.

## Background

EMC was organising capacity building exclusively for the Commercial Industries on various energy efficiency methods and energy management process. Experts from various energy field were handling the capacity building programme. EMC has also collaborated with Public Sector Restructuring and Internal Audit Board (RIAB), for improving the energy efficiency and processes optimisation in PSUs.

But due to the unforeseen conditions in the State due to COVID 19 and subsequent lock down, the capacity building programme cannot be continued in the same fashion as it was followed during the pre COVID 19 period. In this regard, for continuing the energy efficiency improvement programme and quality upgradation of operators and technicians, EMC is organising an "EMC's e-Diploma and e-Certificate courses on Energy Efficient Operation of Utilities".

## Overview

The major industrial energy systems commonly found in manufacturing facilities are compressed air, ammonia refrigeration, chilled water, steam, process heating, combined heat and power, pumps, and fans. The efficiency of these systems contributes significantly to the whole-facility energy performance. This

well-structured training and highly recognized certification program will help to develop a highly skilled and qualified workforce able to maintain and improve facilities' energy performance, with technologies for these systems becoming more and more advanced.

This training program will enhance the attendees' understanding of working principles, knowledge of best practices, and capability to analyze the energy performance data of industrial energy systems. Training employees on these systems also helps create a safer working environment, increases employee's engagement and productivity, and improves system reliability and energy efficiency. Certification programs also motivate professionals to strategically improve their expertise and obtain new skill sets.

The "EMC's e-Diploma and e-Certificate courses on Energy Efficient Operation of Utilities" is such type of programme which enriches the knowledge of operators in their particular field and the programme will also focus on the energy efficiency aspects in these systems.

### **Structure of the Certificate programme**

As the operators and technicians of an industry will be of various stream, for eg., electrical operator, electrician, boiler operator, boiler attendant, process operators, water pump operators, etc, there will be separate certificate programme for each utilities. So the online certificate programme is designed in such a way that it includes webinars on selected topics. Each webinar will be of 2 hours duration which will be followed by a quiz type evaluation which the particular operator should qualify for obtaining the certificate. The topics for webinar are as follows

#### **1. Electrical systems (2 hrs) – 8<sup>th</sup> September, 2020**

- a. Electrical wiring
- b. Electrical safety
- c. Electrical motors and drives
- d. Transformers
- e. Harmonics

#### **2. Diesel Generators(2 hrs)- 15<sup>th</sup> Septmeber, 2020**

- a. Selection and Installation factors
- b. Energy saving opportunities

- c. Case studies

### **3. Compressed Air System, Fans and Blowers(2 hrs) – 22<sup>nd</sup> September 2020**

- a. Efficient operation
- b. Checklist for energy efficiency

### **4. Pumping system (2 hrs) – 29<sup>th</sup> September 2020**

- a. Factors affecting efficiency
- b. Boiler feed water pumps
- c. Sewage water pumps
- d. Energy conservation opportunities

### **5. Boilers &Furnace(2 hrs) – 06<sup>th</sup> October 2020**

- a. Introduction to Boilers and Furnaces
- b. Heat loss reduction opportunities
- c. Energy conservation opportunities

### **6. Refrigeration system(2 hrs) – 13<sup>th</sup> October 2020**

- a. Types of refrigeration systems
- b. Selection of suitable refrigeration system
- c. Performance assessment
- d. Energy conservation opportunities

Prominent experts and Energy Auditor in each sector will be taking the sessions. **The webinar sessions will be offered in Malayalam.**

#### **Procedure to be followed**

All the industries in the State will be informed regarding the online certification course for operators and technicians. The interested industries should nominate the details of the participants to EMC. The operator or technician who wishes to attend the programme may also directly apply for the certification programme.

The particular operator or technician will be provided Certification in each area. For that, the operator or technician needs to attend the webinar on the particular topic, he wish to attend and he should get a minimum pass marks in the evaluation. If the registered participants failed to attend the live webinar, the recording of the webinar will be shared to the registered participants. At that time he/she may not get the opportunity for clarifying the doubts and he/she can clarify

the doubts through EMC. An operator/technician need not attend all the topics for getting the certification, but if he wishes to attend more than one topic he can attend.

The questions for the quiz will be forwarded to the registered participants within that day after the conduct of the webinar and the link will be active for two days. Within that time, the questions need to be answered and submitted. An applicant needs to submit only one response, the submission of multiple responses will be considered as disqualification.

### Who can attend?

- The course is mainly intended for operators and technicians of Industries in the State

### Course Faculty

Technical experts from particular fields

### Registration Process

The registration has to done online. The applicant need to fill the application form in the link provided.

<https://forms.gle/rmYx5GxZfzUVFMfr9>

### Fees Structure

**For private Industries** Rs. 595 /- (Rupees Five Hundred and Ninety Five only) will be charged per head for attending a session.

**For State Government-owned PSUs** Rs. 298/- (Rupees Two Hundred and Ninety Eight only) will be charged per head for attending the session.

The fees include a GST of 18% and flood cess of 1%. If you are having GST registration number, please provide that.

If you want to attend two or more session, you will be required to pay additional charges.

The fees may be paid online to the EMC bank account.

Account Name: Energy Management Centre  
Account No: 67084840014

Bank & Branch: State Bank of India, Engineering College Branch  
IFSC Code: SBIN0070268

### Award of Certificate

If an operator attends a particular webinar and successfully completes the quiz programme, then the operator will be awarded a certificate titled "**EMC's e-Certificate on Energy Efficient Operation of Utilities- *Respective Topic***".

If he/she completes the 1<sup>st</sup>, 2<sup>nd</sup> and 3<sup>rd</sup> topics mentioned in this document successfully, then he/she will be awarded an "**EMC's e-Diploma on Energy Efficient Operation of Electrical Utilities**".

If he/she completes the 4<sup>th</sup>, 5<sup>th</sup> and 6<sup>th</sup> topics mentioned in this document successfully, then he/she will be awarded an "**EMC's e-Diploma on Energy Efficient Operation of Thermal Utilities**".

### Address

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