

Energy Efficiency Literacy

OnLine Learning covering the basics of air conditioning and refrigeration and how to mitigate their climate impact

DEVELOPED BY



IN COOPERATION WITH



WITH FUNDING SUPPORT FROM



With climate change of increasing concern, it is critical to understand international regulations impacting air conditioning and refrigeration not only for compliance but to reduce operating costs and reduce CO₂ emissions.

Online training from United Nations Environment Program (UNEP) assists government policy makers, community stakeholders and business leaders in making the transition the regulations require, explaining

- why air conditioning and refrigeration are essential
 - how demand for them will increase
 - how systems create and maintain productive environments and preserve food and vaccines
- And what steps governments and businesses can take to minimize environmental impacts and cost.

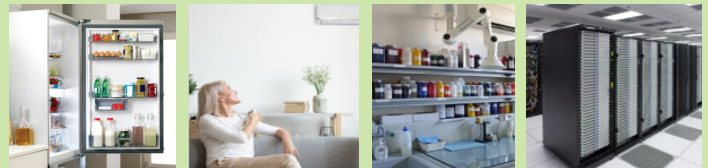
Energy Efficiency Literacy for Air-Conditioning and Refrigeration Systems

is a 4-hour self-paced virtual course. Passing a final exam at the course's conclusion earns a Certificate of Successful Completion.

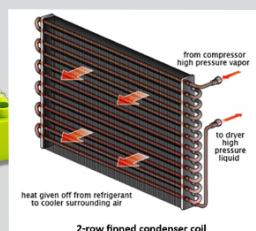
Learn when it is convenient anywhere with Internet access.

Learning Objectives Module 1 Demand for Air Conditioning and Refrigeration

Why there is a need for active air conditioning and refrigeration; main criteria that need to be controlled to keep occupants comfortable and productive; how psychrometric chart enables engineers to optimize system performance; key building features that can be altered to reduce the need for cooling.



Learning Objectives Module 2 Refrigeration and Air Conditioning Technology



How power and energy apply to operating buildings; processes that maintain spaces at lower temperatures; key components of air-conditioning and refrigerating systems; why refrigerants are the life-blood of systems.

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Learning Objectives Module 3 Drivers and Indicators for Efficient Systems

Stakeholders in energy efficiency and environmental performance; international regulations for refrigerant use and management; operations promoting responsible use of resources, reduced operating costs, healthier environments.



Energy Efficiency Literacy was developed by UNEP to jointly build the capacity of National Ozone Officers (NOOs) and national energy policymakers (NEPs) for linking energy efficiency with Montreal Protocol objectives in support of the Kigali Amendment. The Kigali Amendment calls for the climate co-benefits of phasing down high global warming potential (GWP) refrigerants while promoting energy efficiency of air-conditioning and refrigeration.

Energy Efficiency Literacy was developed with support from the Kigali Cooling Efficiency Programme (K-CEP) and with technical assistance from ASHRAE.

Left unchecked, energy use from refrigeration and cooling is expected to rise by 90% from 2017 levels by 2050, resulting in greenhouse gas emissions equivalent to a third of all current emissions. Research indicates that by moving to best available technologies could reduce cumulative emissions dramatically.

Over one billion people presently face immediate risks from a lack of cooling, and this number will only increase. It is expected there will be demand for 10 new air conditioning systems every second for the next 30 years. Expanded application of refrigeration in the cold chain could feed 950 million additional people annually and increase by 40% the world's usable vaccines.

How to Enroll

There is no fee for National Ozone Officers, National Energy Policymakers, and UNEP clients to enroll in Energy Efficiency Literacy.

- 1) Visit ASHRAE-UNEP portal: ashrae.org/ashrae-uneep-portal
- 2) Select the Energy Efficiency Literacy course, ensuring that it is in the category of "UNEP Clients".
- 3) The next page will prompt you to login in or create an account. If you don't already have an account, please create one.
- 4) Once you have created an account, you will be prompted to enter an enrolment key. The enrolment key is **"Ashrae&unepeel1."**
- 5) Once you enter the enrolment key, you will have access to your chosen course in the ASHRAE eLearning Center.
- 6) Once enrolled, the subscription lasts for 12 months.

Course Technical Support

If you have any difficulties with login or course access, please contact eLearning@ashrae.org.