

International Hands-On Training On Energy Audit for Energy Professionals In Developing Countries

**Mumbai, India
04-14 May 2011**

ORGANISED BY



**Centre for Science & Technology of the Non-Aligned
and Other Developing Countries (NAM S&T Centre),
New Delhi, India**



**Centre for Energy Studies and Policy Analysis (CESPA)
Thiruvananthapuram, India
(Centre of Excellence promoted by SEEM)**



**Society of Energy Engineers and Managers (SEEM)
Thiruvananthapuram, India**

Introduction

There is a need to curtail energy wastage in all spheres of our lives for a better tomorrow for us and the generations to come. Versatile, energy efficient and non-polluting sources of energy have the potential to revolutionise the way we power our nations. Renewable sources of energy production are the most abundant element on earth and can be adapted to applications from powering laptop computers to vehicles to running municipal power plants with no harmful by-products and practically no emission. Individuals and organisations that are direct consumers of energy choose to conserve energy to reduce energy costs and promote economic security.

In spite of many beneficial offers, the technology must overcome several barriers to succeed commercial use of renewable energy. Cost is the greatest challenge for the development and adaptation of these technologies. The price of production remains high for sources of energy like fuel cells and hydro-power. Technical issues must also be resolved and new material and improved designs are also needed to make these durable and dependent. Utility can play an important role in increasing public acceptance of renewable sources by becoming more familiar with the technology.

Energy audits initially became popular in response to the energy crisis of 1973 and later years. Interest in energy audits has recently increased as a result of growing understanding of human impact upon global warming and climate change. An energy audit is an inspection, survey and analysis of energy flows for energy conservation in a building, process or system to reduce the amount of energy input into the system without negatively affecting the output. The term energy audit is commonly used to describe a broad spectrum of energy studies ranging from a quick walk-through of a facility to identify major problem areas to a comprehensive analysis of the implications of alternative energy efficiency measures sufficient to satisfy the financial criteria of sophisticated investors. Energy audit helps in energy cost optimisation, pollution control, safety aspects and suggests the methods to improve the operating & maintenance practices of the system. It is instrumental in coping with the situation of variation in energy cost availability, reliability of energy supply, decision on appropriate energy mix, decision on using improved energy conservation equipment's instrumentation's and technology. When the object of study is an occupied building then reducing energy consumption while maintaining or improving human comfort, health and safety are of primary concern. Beyond simply identifying the sources of energy use, an energy audit seeks to prioritise the energy uses according to the greatest to least cost effective opportunities for energy savings.

Increasingly in the last several decades, industrial, agricultural and home energy audits have exploded as the demand to lower increasingly expensive energy costs and move towards a sustainable future have made energy audit greatly important. The role of an energy audit is to institute the correct energy efficiency programs. One needs to know first the areas in the establishment which unnecessarily consume too much energy, e.g. which is the most cost-effective to improve. An energy audit identifies where energy is being consumed and assesses energy saving opportunities – so that potential regions to save energy are known. In a factory, doing an energy audit increases awareness of energy issues among plant personnel, making them more knowledgeable about proper practices that will make them more productive. An energy audit in effect gauges the energy

efficiency of the plant against 'best practices'. When used as a 'baseline' for tracking yearly progress against targets, an energy audit becomes the best first step towards saving money in the production plant. The identified energy conservation opportunities should be analysed in terms of the costs of implementing the project versus the benefits that can be gained. It is profitable to go on with the project if there is a net positive benefit in terms of installation and output.

In order to deliberate on the above issues, the Centre for Science & Technology of the Non-Aligned and Other Developing Countries (NAM S&T Centre) jointly with the Centre for Energy Studies and Policy Analysis (CESPA), Trivandrum, India announces the organisation of a 10-days **International Hands-on Training on Energy Audit for Energy Professionals in Developing Countries** during **4-14th May 2011 at Mumbai, Maharashtra, India.**

Objectives of the Training Programme

- To provide an impetus to capacity building in energy conservation in NAM and other developing countries.
- To identify the unmet needs in the sector in these countries and work toward solutions.
- To equip professionals in the developing countries with necessary hands-on training to have an understanding on the methodology of conducting an energy audit, including drawing out recommendations and reporting with special reference to
 - a) Engineering industry
 - b) Hospital
 - c) Residential complex
 - d) Process industry

Participants will be given opportunity of exposure to:

- (1) Energy star rating assessment of buildings as per Bureau of Energy Efficiency, Government of India's norms and regulations
- (2) Harmonic analysis - Harmonics are distortions in wave form leading to energy losses, often created as an undesirable side effect of inappropriate selection of energy efficiency systems like Variable Frequency Drives etc.

Programme of the Training

- Two days class room introduction
- Five days practical hands on audits under expert guidance
- One day outing/sight seeing
- Two days summing up/report making /discussion/valedictory

The exact venue and time schedule will be announced in due course.

About the Organisers

NAM S&T Centre

The Centre for Science and Technology of the Non-Aligned and Other Developing Countries (NAM S&T Centre; www.namstct.org) is an inter-governmental organisation with a membership of 44 countries spread over Asia, Africa, Middle East and Latin America. The Centre was set up in 1989 in New Delhi, India in pursuance of recommendations of various NAM Summit meetings for the promotion of South-South and North-South cooperation in science and technology. The Centre undertakes a variety of programmes, including organisation of workshops, symposiums, meetings and training courses and implementation of collaborative projects and offers short-term research fellowships to the scientists from the developing countries in association with various Centres of Excellence. The Centre also brings out technical books and other scientific publications in different subjects. These activities provide opportunity for scientist-to-scientist contact and interaction; familiarising participants on the latest developments and techniques in the subject areas; identification of the requirements of training and expert assistance; locating technologies for transfer between the members and other developing countries, dissemination of S&T information etc. The Centre also encourages academic-research-industry interaction in the developing countries through its NAM S&T-Industry Network.

Centre for Energy Studies and Policy Analysis (CESPA)

Centre for Energy Studies and Policy Analysis (CESPA) is an initiative under the Society of Energy Engineers and Managers (SEEM; www.energyprofessional.in) to institutionalise the training programmes hitherto conducted by SEEM, which is an Indian national professional body of Certified Energy Managers (CEMs) and Certified Energy Auditors (CEAs) [Certified by the Bureau of Energy Efficiency –BEE - under the Ministry of Power, Government of India]. SEEM came into existence to provide all-encompassing support to BEE in its efforts to operationalise the comprehensive ‘energy conservation’ provisions of the Energy Conservation Act 2001. It was launched as a non-governmental and not-for-profit organisation (registered under the Charitable Societies Act) with the aim of serving as a platform to stimulate and promote energy efficiency, conservation, renewable energy usage and productivity consciousness among the people through a team of professionals associated with energy related fields and professional training in these areas

Participants

The training programme has been primarily designed for the specialists and professionals from the government departments, academic institutions, energy sector, private sectors and voluntary agencies in the developing countries with relevant background and active involvement in energy conservation.

The selection of the participants will be strictly based on merit and the relevance of their current responsibilities to the subject of the training programme, and the quality of the extended abstract of the presentation material to be submitted along with the completed Nomination Form. A pre-condition for participation in the training course is that the participants must submit the final manuscript of their presentation material, in MS-Word format, at least a fortnight before the commencement of the programme.

Venue

The Training Programme will be organised at Mumbai, Maharashtra, India.

Special requirements

The participants are advised to carry their laptops, which are to be used for data analysis, report generation and presentation.

Resource Persons

Resource persons for the Training will comprise eminent experts from India and other countries.

Submission of Application

Applicants from India should however contact Director - CESPA, India before April 10th.

Publication of Proceedings of the Training Programme

A publication edited by one or more international expert(s) and based on the course material, papers presented by the resource persons and participants during the training programme and also containing papers contributed by eminent experts in the field will be brought out in the form of a book as the follow up to the deliberations of the programme.

Participation fee

The participant will have to pay fee of Rs. 15000/- to cover the course expenses excluding accommodation. However a limited non-AC accommodation (twin sharing basis) facility available is offered at an extra fee of Rs.10000/-. Regular discount of 20% is applicable to SEEM Members on registration fee only. A limited number of scholarships are also available to SEEM Member applicants to be decided on the basis of details in the application form.

Contact Details

FOR INDIAN PARTICIPANTS

CENTRE FOR ENERGY STUDIES AND POLICY ANALYSIS (CESPA), INDIA

SEEM Bhavan,

KRA-A79, Kannammoola, Thiruvananthapuram

KERALA-695011, INDIA

Tel:+91-4712557607, 3242323; Fax:+91-471-2557607

E-mail: info@cespa.in Website: www.cespa.in

In order to avoid confusion, the interested professionals from countries other than India may in the first instance please correspond only with the by the NAM S&T Centre and not with CESPA. All these applications will be initially processed by the NAM S&T Centre.

However, the Indian applicants should send their forms to CESPA, India only.

**CENTRE FOR SCIENCE AND TECHNOLOGY OF THE
NON-ALIGNED AND OTHER DEVELOPING COUNTRIES**

**International Hands-on Training
On
Energy Audit for Energy Professionals
in Developing Countries
Mumbai, India
4-14 May 2011**

NOMINATION FORM

*PLEASE TYPE OR USE BLOCK CAPITALS;
NO COLUMN SHOULD BE LEFT BLANK)*

Please affix your scanned photograph

SECTION -A

(To be filled in by the nominee)

1. Name (Dr/Mr/Mrs/Ms):.....
(As in Passport)
(Please attach copies of the relevant pages of your Passport)

2. Father's/Spouse Name:

3. Designation (Position held):.....

4. Nationality:.....

5. Date of Birth:..... Place of Birth (City)(Country).....

6. Name of the Parent Institution (Employer):
Full Address (Office):.....
.....
Phone: Mobile:
Fax: E-mail:

7. Full Address (Home):
.....
.....
Phone: Mobile:
Fax: E-mail:

8. Educational Qualifications: Highest Degree:
Year of Award: University:.....
Field of Study:
9. Brief Bio data:
(To be attached on separate sheet)
10. What in your opinion qualifies you for the participation in this Workshop?
(To be attached on separate sheet)
11. Self sponsored / Organisation sponsored.
Date: Signature:
12. SEEM Member / Not: