

# CAP

## Certified Carbon Auditor Professional (CAP) 3-Day Program for Professional Certification

**Date:** 18-20 July, 2011  
**Time:** 9:00 am to 5:30 pm  
**Exam:** 1:30 pm to 5:30 pm (Last Day)  
**Venue:** eTech Centre, 4/F Opulent Building,  
402-406 Hennessy Road, Wanchai, HK

**Course Code:** CAP / 09 / HK  
**Registration Deadline:** 18 June 2011



### THE MARK OF A CARBON AUDITOR PROFESSIONAL

Climate change has become a challenge to the international community. Since 1977, the Association of Energy Engineers (USA) has offered programs that address energy and carbon issues. The Certified Carbon Auditor Professional (CAP) is an international professional training course on carbon audits and carbon reduction strategies. Regarding carbon training and certification, the CAP certification was the first internationally accepted program to be offered in Hong Kong. This training course is widely accepted and used as a measure of professional accomplishment within the energy/carbon management fields. It is the standard for qualifying carbon audit professionals both in the United States and worldwide and is endorsed by the HK government. **The CAP program is a custom-tailored course for Hong Kong and includes instruction on HK's new reporting guidelines: "2010 Guideline to Account and Report Greenhouse Gas Emissions and Removals for Buildings of Commercial, Residential or Institutional Purposes in Hong Kong".**

**This is the most-respected and longest running carbon training course in Hong Kong. Participants from 6 continents have taken this course!**

### COMPREHENSIVE 3-DAY TRAINING PROGRAM FOR CARBON AUDITOR

The Chairman of the Carbon Certification Board shall travel from the headquarters to Hong Kong to conduct the training. CAP certificates will be issued directly from the Association of Energy Engineers (USA Headquarters) to candidates after passing the exam with eligibility conditions of experience and qualifications.

**Regular Price:** HK\$9,200.00  
**Discounted Price\*:** HK\$8,600.00

\* For members of AEE HK Chapter, HKAEE and all supporting organizations.

**Re-sit exam - Full Course taken previously:** HK \$ 2,000.00  
**Exam only:** HK \$ 2,800.00

Supporting  
Organizations:



ASHRAE  
HK Chapter



BUSINESS  
ENVIRONMENT  
COUNCIL  
商界環保協會



engineering success  
soe hong kong region  
營運工程師學會 香港分會



## ABOUT THE COURSE

This course will show you how to conduct a “carbon audit” and begin a carbon reduction program aligned with the Kyoto Protocol and the guidelines published by WRI, ISO and WBCSD. It is a custom-tailored course for Hong Kong for the “2010 Guideline to Account and Report Greenhouse Gas Emissions and Removals for Buildings of Commercial, Residential or Institutional Purposes in Hong Kong”. There is a practical session in the course, students have to take an exam and become a certified professional in this new area of expertise.

Professional knowledge on:

- How to conduct a carbon audit and enhance carbon monitoring.
- How to set up a carbon reduction program using cutting-edge resources and tools.
- How to calculate and communicate the "Green" benefits from your energy-efficiency projects.
- How you can improve the financial bottom line, the environment, your clients and colleagues in your business.

Additional Benefits:

- Prepare for new legislation that could affect your organization.
- Increased business efficiencies and profits,
- Energy, water, waste, taxes (and other resource) savings,
- Improved company image and marketing opportunities.

## INSTRUCTOR

**Dr ERIC WOODROOF, Ph.D., CEM Board Member, CRM Board Chairman**, is a trainer and writer, widely recognized both nationally and internationally for helping energy/environmental projects get approved and implemented. His focus is to help clients make more money and simultaneously help the environment. Dr. Woodroof has over 15 years of experience, 20 publications and has identified profit-improvement strategies at over 200 facilities. He has also been a Board Member of the Certified Energy Manager Program since 1999. Dr. Woodroof has worked with the U.S. Public Health Service, Ford, GM, Hertz, Visteon, Trane, Johnson Controls, IBM, the Tulsa International Airport and many others. He is friends with many of the top minds in energy, environment, finance and marketing.

### EDUCATION:

- 1998 Ph.D. Industrial Engineering (Energy & Environment Emphasis)
- 1995 M.S. Environmental Sciences (GPA = 4.0)
- 1992 B.S. Physics



Supporting  
Organizations:



ASHRAE  
HK Chapter



BUSINESS  
ENVIRONMENT  
COUNCIL  
商界環保協會



engineering success  
soe hong kong region  
營運工程師學會 香港分會



## COURSE OUTLINE

### DAY 1 - AM: INTRODUCTION, EXECUTIVE BRIEFING & HIGH-LEVEL STRATEGIES

- Day-by-Day Overview of Course and Exam Sections
- Class Member Introductions (Student's Goals)
- Review Selected Student Objectives and Profiles, Local Challenges, Problems, Barriers
- Carbon Management Process Overview:
  - Carbon Auditing and Reporting
  - Reduce, Reuse, Recycle and apply Energy Efficiency/Management
  - Implement Green Power / Renewable Energy Sources
  - Implement Offset / Trade Strategies
- Introduction and The Need for Carbon Reduction:
  - Trends and Data on the Global Challenges we Face, (Data Students Can Apply)
  - Why Monitor and Reduce Your Organization's Carbon Footprint?
  - History, Legislation and Terminology
  - Examples of Successful Programs: Profits, Results and Benefits,

### DAY 1 - PM: INTRODUCTION TO CARBON MANAGEMENT

- Insights from Class / Instructor
- Protocols, Strategies and Reference Documents
- Protocol Overview & Terminology
  - Kyoto's 6 Listed Greenhouse Gases, GWP Factor, Control vs. Equity Share Approaches, De-Minimis, Base Year and Adjustments, Transitional Periods, Tier Quantification System. ISO 14064 & 14065 as well as Trading Terms like: CCX, CDM, JI, VER, etc.
  - Emissions Types: Direct, Indirect, Fugitive and Mobile; Scope I, II and III and Biogenic
- European Union Policies, Strategies and Practices
- Overview: Carbon Audit and Reporting Process (Getting Credit for What you Do):
  - Identify Boundaries (Tenant vs. Communal Areas), Sources
  - Quantify, Report and Verify Emissions

#### Supporting Organizations:



ASHRAE  
HK Chapter



BUSINESS  
ENVIRONMENT  
COUNCIL  
商界環保協會



engineering success  
soe hong kong region  
營運工程師學會 香港分會



## DAY 1 – PM (CONTINUED): CARBON FOOTPRINT MEASUREMENT & MONITORING

- Components of a Carbon Audit
  - Identify Carbon Intensity
  - Electricity, Gas and Fuel Usage (Scope I and II Emissions)
  - Scope III Emissions: Extended Audit Components (Travel, Personal Travel, “Cradle to Cradle” Products and Processes)
  - Class Exercise on a Carbon Audit / Carbon Map of their Operations
- Exact Steps to setting up a Carbon Reduction Program & Reporting Software
  - Protocols and timelines to calculate, certify and report your emissions
  - Establishing reduction goals as well as monitoring and reporting tools
  - Verification process tools
  - Direct, indirect, mobile and fugitive source management
- Reporting Software / Reporting Formats
  - Report Content must include:
    - Info on organization, emissions, offsets (and locations)
    - New Goals to further reduce GHG emissions
- Verification Process
- Emissions Conversion Factors and Where to Find Them
- Q&A

## DAY 1 – PM (CONTINUED): BEST PRACTICES FOR A CARBON AUDIT PROFESSIONAL

- Quick review, Insights from Case Studies
- Practical Tips for Setting up a Program in Your Facility
- Inventory Management Plan and Processes
- Day to Day Functions
- Implementation and Data Management Best Practices
- Homework Exercise on Carbon Audit
- Q&A

### Supporting Organizations:



## DAY 2 - AM: PRACTICAL STRATEGIES & TACTICS TO REDUCE YOUR CARBON FOOTPRINT AND ENVIRONMENTAL IMPACT

- Quick review, Insights from Case Studies
- Proven tactical measures to reduce your carbon footprint:
  - Re-Engineer Processes to Reduce Carbon
    - Design, Materials, Manufacturing/Process Changes
  - Resources for Building it “Right”, (LEED plus more)
  - Energy Efficiency and Management
  - Energy Procurement and Green Power
  - Emissions Conversion Exercises- *to help students convert energy savings into avoided carbon emissions*
  - Renewable and other Sustainable Technologies
  - Tax Benefits
  - Green Janitorial, Water & Waste Management / Reuse / Recycling
  - Green Transportation and Administrative Functions
  - Greening your Suppliers and Distributors
- Local Strategies and Techniques
- Q&A

## DAY 2 - PM: CARBON CREDITS, OFFSETS, TRADING AND NEW REVENUE TACTICS

- Carbon Trading and Credit terminologies
  - Renewable Energy Certificates
  - Green & White Certificates, Offsets Explained
    1. Wind, Solar, Methane Recovery... Certified Credits
    2. Fleet management
    3. Bulk Purchasing Credits
  - Additional profit-generating as well as bartering strategies
  - NAP and other trading terms
- Creating an On-Going Green Program:
  - Justification for a “Green” Manager
- Process for Finding Profitable Green Strategies
- Homework Exercise Review
- Financial (Time Value of Money) Review for Exam
- Q&A

## DAY 3 - AM: FINANCING/SELLING/APPROVING YOUR PROGRAM

- 3 Big Reasons why Green Projects Fail... and How to Overcome Them
- Financing For Positive Cash Flow
- How to quantify all the benefits and help your organization improve its “environmental image”.
- Marketing Tactics to help your “Green” project get approved.
- Course Review and Test Prep

Supporting Organizations:



ASHRAE  
HK Chapter



(Hong Kong Branch)  
能源學會(香港分會)



BUSINESS  
ENVIRONMENT  
COUNCIL  
商界環保協會



engineering success  
soe hong kong region  
營運工程師學會 香港分會



- Final Q&A
- WRAP UP / Conclusion

## Examination

### DAY 3 - PM: EXAM

100 Questions: (The Table Below Indicates # Questions per Topic)

TOPIC	NUMBER OF QUESTIONS
Understanding The Problem:	
History, Terminology, Policy and Legislation	15
Carbon Audit	20
Emissions Reporting / Verification	15
Emissions Conversions	10
Solutions:	
Energy Efficiency Solutions	5
Renewable Energy Sources and Green Power	5
Fleet Management	5
Emissions Trading, Terminology and Offsets	10
Recycling, Water-Management, Time Value of Money (NPV, IRR, etc.), Alternative Financing and Marketing	15
<b>TOTAL</b>	<b>100</b>

- Note:
1. All questions are of multiple choice and no essay writing is required.
  2. Regarding the test categories, "Emissions Auditing/Reporting/Verifications and Conversions" are key components to conducting a compliant carbon audit, so the "carbon audit" related categories actually comprise about 45% of the exam.
  3. All students should know how to perform basic "Time Value of Money" calculations (for example: students should know how to calculate the Net Present Value given a series of cash flows).

Supporting Organizations:



ASHRAE  
HK Chapter



(Hong Kong Branch)  
能源學會(香港分會)



BUSINESS ENVIRONMENT COUNCIL  
商界環保協會



engineering success  
soe hong kong region  
營運工程師學會 香港分會



## Eligibility

The prerequisites to qualify for the certification process have been designed to take into account the possible diversity of education and practical experience an individual may have. However each CAP candidate must meet one of the following criteria with the pass of exam:

- A **Certified Energy Manager (CEM)**,  
with CPD in energy engineering or energy management.
- An **engineering degree and/or R.P.E and/or P.E.**,  
with at least **three** years experience in energy engineering or energy/carbon emissions management.
- A **science or business degree**,  
with at least **five** years experience in energy engineering or energy/carbon emissions management.
- A **technical diploma or certificate**,  
with **eight** years experience in energy engineering or energy/emissions management.
- **Ten** years or more **verified experience** in energy engineering or energy/emissions management.  
(Note: Letters of reference and verification of employment must be submitted.)

Application forms will be distributed the students after the course/exam for the certification.

## Conditions

1. All candidates should firstly fax/email the form for registration and issue cheque for seat confirmation.
2. Every effort will keep the course date unchanged. However, all candidates will be informed well in advance should there be any change of course date due to venue booking and other reasons.
3. The course contents may subject to change according to the decision of the instructors.
4. The organizer reserves the right to cancel the course should there be insufficient candidates or other reasons. Course fee will then be refunded 100%.
5. The organizer reserves the right to close the application before the deadline should the application exceeds the maximum intake.
6. All CAP successful candidates will enjoy a 1-year free AEE membership and a CAP certificate if he/she fulfils the eligibility requirement.

## Class Details

All students should know how to perform basic “Time Value of Money” calculations (for example: students should know how to calculate the Net Present Value given a series of cash flows).

A limited maximum of 40 students will be accepted for the class.

Registration Deadline: 18 June 2011

Supporting  
Organizations:



ASHRAE  
HK Chapter



(Hong Kong Branch)  
能源學會(香港分會)



BUSINESS  
ENVIRONMENT  
COUNCIL  
商界環保協會



engineering success  
soe hong kong region  
營運工程師學會 香港分會



< REPLY SLIP >

## The Certified Carbon Audit Professional (CAP) Program for Professional Certification

Course Code: CAP / 09 / HK

### Registration

Deadline: 18 June 2011

(First come first serve, application may close if class size reaches 40)

To register, please complete the reply slip and fax to (852) 2372 0490 or email to adela@creativegp.com and then mail to below to secure seat with your crossed cheque payable to:

“AEE Hong Kong Chapter”

c/o Creative Consulting Group Inc.

Room 1106-8, 11/F, CC Wu Building, 302-8 Hennessy Road, Wanchai, Hong Kong.

Attention: **Ms Adela Au-Yeung** (Tel: +852 2372 0090)

### Course Enquiry

Dr Leonard Chow, AEE Authorized Course Certification Administrator in Hong Kong.

Tel: (852) 2566 3397, leonardchow@ispl.com.hk

**Course & Exam Fee: HK\$9,200 / HK\$8,600 / HK\$1,800 / HK\$2,800 (Delete as appropriate)**

Date of Registration: \_\_\_\_\_

Name (Same as HKID Card): \_\_\_\_\_ (Ir/Mr/Ms/Miss)

Company Name: \_\_\_\_\_

Position Title: \_\_\_\_\_

Company Address: \_\_\_\_\_

Contact Phone: (Office) \_\_\_\_\_ (Mobile) \_\_\_\_\_

Fax #: \_\_\_\_\_ Email Address: \_\_\_\_\_

Institution: \_\_\_\_\_ Membership No: \_\_\_\_\_

Cheque no.: \_\_\_\_\_ Amount (HK\$): \_\_\_\_\_

Supporting Organizations:



ASHRAE  
HK Chapter



(Hong Kong Branch)  
能源學會(香港分會)



BUSINESS  
ENVIRONMENT  
COUNCIL  
商界環保協會



engineering success  
soe hong kong region  
營運工程師學會 香港分會

