



ASSOCIATION OF  
ENERGY ENGINEERS

Bay Area Chapter

# NEWSLETTER

March 2002

## Meeting Information Tuesday, March 26, 2002

*AEE Bay Area Chapter Presents*

### Reinventing HVAC Design for Green Buildings by Peter Rumsey, P.E., CEM

**6:00 – 6:30 p.m.**  
Social

**6:30-7:30 p.m.**  
Dinner

**7:30 – 9:00 p.m.**  
Chapter Business and Presentation

**Location:**  
Sinbad's Restaurant, San Francisco

**Cost:** \$35.00/Members  
\$40.00/Non-members  
\$15.00/Student

**Reservations:** Call Rory Moran at (925) 437-2718 or  
FAX (877) 638-4942. See inside for more info...

After a brief poll of the audience, we decided to take a brief intermission while the local authorities were summoned. It ended peacefully and we continued on with the presentation. Nervous moments, to say the least.

Being a typical engineer, I receive several emails each day from various sources. Walt Lehman at Energy Alliance forwarded some quips on the lighter side of engineering. I thought you might be amused.

To the optimist, the glass is half full. To the pessimist, the glass is half empty. To the engineer, the glass is simply twice as big as it needs to be.

~ ~ ~

What is the difference between Mechanical Engineers and Civil Engineers? Mechanical Engineers build weapons, Civil Engineers build targets.

~ ~ ~

Three engineering students were gathered together discussing the possible designers of the human body. One said, "It must have been a mechanical engineer. Just look at all the joints." Another said, "No, it must have been electrical engineer. The nervous system has many thousands of electrical connections." The last one said, "Actually I'm sure it must have been a civil engineer. After all, who else would have run a toxic waste pipeline through a beautiful recreational area?"

~ ~ ~

## President's Message

### Bits and Bytes

February's meeting at Café Rustica was full of surprises. After dining on great pizza, we were presented with an informative introduction to the economic and engineering aspects of Microturbine technology. The presenters included our own Rory Moran (chapter vice-president) and Don Pruss from Capstone. But the highlight of the evening came as a seemingly interested person appeared from nowhere (assumably from College Ave.) to join our meeting. As it turns out, his soul intention was to distract us from the presentation using verbal jabs that were incoherent at times.

An architect, an artist and an engineer were discussing whether it was better to spend time with the wife or a mistress. The architect said he enjoyed time with his wife, building a solid foundation for an enduring relationship. The artist said he enjoyed time with his mistress, because the passion and mystery he found there. The engineer said, "I like both." Both?" Engineer: "Yeah. When I have both a wife and a mistress, they each spend all their time trying to find out more about the other woman, and I can go to the lab and get some work done!"

~ ~ ~

Thanks for listening

John Clark  
President, AEE Bay Area Chapter

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Contact: John Clark  
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AEE Bay Area Chapter serves as a unique forum for the discussion of energy issues and concerns. AEE Bay Area Chapter provides common professional meeting ground for facility managers, design and specifying engineers, utility and vendor representatives and energy researchers to participate in vigorous peer-to-peer dialogue, learning and group discussion.

AEE Bay Area Chapter strives to provide quality professional development opportunities that build knowledge and skills through meetings, seminars and publications. Emphasis is placed on:

- ? Assessing the applicability of emerging technologies, and
- ? Improving the performance and reliability of current technologies.

Meetings are held on the fourth Tuesday of the month. All interested persons are welcome to attend, participate and join the Chapter. If you are interested in joining the AEE Bay Area Chapter, contact Ryan Wood (800) 770-8539.

# Secretary's Report

PRESENTATION FOR FEB 26 MEETING IN OAKLAND, CAFÉ RUSTICA

Topic: Has the Micro-turbine Finally Arrived?

Presenters: Rory Moran, Axiom Engineers and Don Pruss, Capstone Turbine Corporation

The discussion led by Rory and Don was intended to give an overview of one of the newer technologies in power generation and to provide a general understanding of its applications.

Microturbines have been promised as the next generation in power generation, and Capstone claims to be the first in delivering available commercial units. They believe that they have achieved loyalty from their customers and a proven track record. Even though Capstone California no longer exists, the void is currently being filled by new distributors.

The cost of installation for microturbines has turned out to be about double what the original literature showed; the approximate cost is now estimated at between \$2000 to \$2400 per kilowatt of generation capacity. Capstone is in the process of 'engineering' full systems at the factory to improve on the field installation process.

A few of the benefits of this technology:

- ?? 1 moving part
- ?? No jacket cooling
- ?? No lubricants
- ?? No noise pollution
- ?? No AQMD permit limitation
- ?? No run time limitation
- ?? No grid connection limitation (California P.U. connection agreement approved)
- ?? Small footprint
- ?? Minimal maintenance

Current issues can work together to make this form of power generation an attractive alternative, including:

- ?? Attractive incentives (currently \$1000 per kilowatt is available up to 30 percent of installed cost)
- ?? A reduced natural gas rate is possible for cogeneration
- ?? Attractive financial paybacks, and
- ?? Pre-designed code conformance.

At about this timeframe during the discussion, we had a minor interruption; the session was resumed soon after taking care of the disturbance.

After the break, the speakers went over the various applications of the product, including distributed generation, backup power and cogeneration, as well as types of facilities that have been successful candidates for installation of microturbines. The typical 60 kilowatt generator was cited to have an amortized yearly maintenance cost of about \$4000, which includes replacement air filters, igniters, and turbines which costs about ten thousand dollars in parts and have life-spans of about five years.

The challenges that lie ahead for Capstone are to improve efficiency, which currently lags a little behind reciprocating generators, improving heat exchangers for recovery of energy, and to expand on the available size selection of units.

Website link for further information: [www.microturbine.com](http://www.microturbine.com)

Raj Daswani, P.E.  
Co-Secretary, AEE Bay Area Chapter

# Announcement

## AEE SCHOLARSHIPS

The awarding of AEE Scholarships has been one of our most successful programs. Since 1983, the AEE Foundation has awarded \$350,000 to outstanding students who attended fully accredited schools on a full time basis and who take energy related courses.

Our chapter is again invited to participate by nominating qualified students. A chapter may nominate one to six candidates (no more than two-post baccalaureate). It is very important that the chapter and student complete the application forms with all the necessary information requested. Application forms can be found on our website, [www.aee-sf.org](http://www.aee-sf.org)

In addition to the \$500 scholarships awarded by the Foundation, there is the Victor Ottaviano Scholarship. One outstanding nominee will be awarded \$1000 when chosen by the AEE Scholarship Committee for this award. Chapters may indicate which one of their nominees would be best qualified for this award.

Applications must be post marked by **May 1, 2002**.

We hope to make our award selection early enough to help the student plan for his/her fall term. This program is also designed to assist students of AEE members who fulfill the qualifications.

Please send completed forms to:

**James P. Waltz**  
**AEE Scholarship Committee Chair**  
**Energy Resource Associates Inc**  
**1626 Holmes Street**  
**Livermore, CA 94550-6010**

Stop by the AEE Bay Area  
Chapter Booth at the 1<sup>st</sup> Annual  
Total Buildings Facilities Expo...

April 3 and 4, 2002  
10 am - 3 pm

**Do you know someone who  
might be interested in joining  
AEE Bay Area Chapter?**

The benefits of joining include:

- ?? Participating in exciting and informative programs
- ?? Receiving a monthly newsletter containing information on meetings, events, and job openings
- ?? Communicating with other energy professionals

For membership application:  
**Contact Ryan Wood**  
**(650)-596-1160**

Meetings are held on the fourth Tuesday of each month. All interested persons are welcome to attend, participate and join.



*Bay Area Chapter*

65 Battery Street, Suite  
200  
San Francisco, CA 94111

IT IS TIME TO RENEW YOUR MEMBERSHIP