

Energy Efficiency Working Group 2007 ANNUAL REPORT TO THE DIRECTORS

Introduction

Purpose

The Energy Efficiency Working Group is a working committee whose intent is to facilitate the objectives of the Energy Facility Contractors Group (EFCOG) as related to the particular areas of energy costs, usage, and conservation awareness.

The purpose of the Energy Efficiency Working Group is for members to promote excellence in Department of Energy programs by sharing information and lessons learned, energy efficiency, and by facilitating the application of information and techniques to the degree appropriate for their contract/facility.

Objectives

The objectives of the Energy Efficiency Working Group are to:

- Promote energy efficiency by sharing management, technical, and financial information among contractors through vehicles such as workshops, subgroups, and seminars.
- Promote, coordinate, and facilitate the active exchange of successful energy efficiency programs, practices, procedures, lessons learned, and other pertinent information of common interest to energy usage which have been effectively utilized by Management and Operations/Environmental Restoration Management Contractors (M&O/ERMC) for DOE facilities.
- Strive to meet DOE energy efficiency goals.
- Promote and demonstrate renewable energy technologies.
- Provide planning and actions necessary to ensure that the overall objectives of EFCOG are met.
- Operate within the EFCOG Charter and the Guidelines for Working Groups in EFCOG.

Scope

- The areas of contractor interest covered by energy efficiency include, but are not limited to: energy generation, energy usage, utility systems, conservation techniques, and communication of energy efficiency information.
- The Energy Efficiency Working Group will operate within the scope of EFCOG.
- The Energy Efficiency Working Group will not lobby, advocate independent positions, or try to change DOE policy.
- The working group will foster and promote the interchange of information among the M&O/ERMC staff and the DOE (field and headquarters) offices to serve as a forum for DOE complex-wide energy efficiency issues, to strive for consistency in the implementation of customer requirements and initiatives, and to improve the quality and responsiveness to requests for information and data.

Membership

The EEWG membership is comprised of 17 steering committee members representing HQ and eight sites. Our membership includes over 150 members and regular participants representing national laboratories, M&O contractors, energy management firms, DOE/HQ, field, operations and support.

- DOE Sponsor: Ab Ream, FEMP
- Sponsoring Director, Mike Schlender, PNNL
- Chair: Lynnwood Dukes, SNL
- Vice Chair: Ernie Fossum, INL

- EEWG Steering Committee
 - Ab Ream, EE
 - Beverly Dyer, EE
 - Blair Horst, LLNL
 - Chris Parker, ORNL
 - Carter Ward, EIS
 - Cyrus Nasser, EE
 - Dale Sartor, LBNL
 - David Rodgers, EE
 - Ernie Fossum, INL
 - Chris Evans, SNL
 - James Hedin, WIPP
 - Kim Fowler, PNNL
 - Marc Berman, PNNL
 - Otto VanGeet, NREL
 - Rick Khan, EE
 - Skye Schell, EE
 - Will Lintner, EE

Achievements

A conference call was held in June to initiate the turnover of Chairperson for the group from Mike Moran to Lynnwood Dukes. Most discussion involved the August 9th meeting in New Orleans and the agenda topics. Numerous sites were represented on the call and provided input to the agenda format and breakout session topics.

The working group membership list was updated as was the steering committee. Sponsorship was a topic of discussion in the call since significant changes have occurred in the FEMP office in the last year.

The annual meeting of the EEWG was held on August 9th following the EGov Conference in New Orleans. Numerous sites and HQ departments were represented by the 41 attendees. The meeting was formatted around open discussion of various agreed to issues.

FEMP HQ Update

Cyrus Nasser discussed several issues with FEMP and received feedback from many of the EEWG attendees. The following topics were discussed:

- 1) ASHRAE 90.1: Cost effectiveness should be established by using the latest version of FEMP's BLCC program.
- 2) Guidance for both building sustainability and for water efficiency should be available for draft review in the next few months.
- 3) DOE Order 430.2B is being written and should be available for review in November with final roll-out in January 2008.
- 4) FEMP is currently discussing how to incorporate the TEAM Initiatives into DOE Order 430.2B.
- 5) DOE has a fairly high building exclusion rate of 30% and should look at ways to reduce the rate if the buildings really do not need to be excluded.
- 6) No Retrofit Projects have been committed this year. As ESPCs are the emphasis for project implementation, FEMP funding is being considered for implementation assistance so other projects not directly tied to ESPCs may be dropped.
- 7) Some sites may have a hard time with the 2007 water usage baseline as they have higher process usage and may want to be exempted. Draft guidance is being prepared.

Kasey Curtis discussed the TEAM Initiative:

- 1) Executable Plans that commit to achieving the TEAM Initiative goals need to be in place by the end of FY-08.
- 2) No less than 30% energy reductions.
- 3) 3rd party funding (ESPC and UESC) will be the key to achieving the energy and water reduction goals.
- 4) Fleet Goals – By the end of FY-08, fueling infrastructure needs to be either in the ground or under construction. Strategies to obtain this infrastructure may include tax credits and a move to being able to leverage ESPC funding mechanisms. Conventional fueled vehicles need to be gone by 2010.
- 5) The TEAM Initiative is intended to be a disruptive process, especially for the ESPC funding process and the ESCOs.
- 6) ESPCs should provide the 30% energy and 16% water reductions. They must also include renewable power production and advanced metering.
- 7) There will be a website for the TEAM initiative.
- 8) There is a sense of urgency with the TEAM Initiative and it is expected that DOE will lead the Federal government with energy efficiency.
- 9) There was significant discussion concerning ESPC internal support construction oversight and support costs. Dale Sartor stated that these costs could easily reach 10% to 20% of the ESPC construction costs. It appears that all sites are confronting this issue and are struggling with how to pay for these costs. ESPC project support costs can be very volatile and typically depend upon the overall project scope, the resources available for both the site and the ESCo, scheduling, individual site funding processes, the site review and reporting process, and how the internal work is funded (ie: rolled into the project, direct, indirect, etc.).

ESPC Discussion

Mike Holda continued with the discussion on ESPCs:

- 1) Each site energy manager briefly discussed his or her current and planned ESPC projects.
- 2) Fred Johnson discussed significant problems encountered at Pantex to install the second phase of the project.
- 3) Mike Holda and Dale Sartor discussed several M&V issues with their developing project at LBNL.
- 4) Blair Horst discussed his current project at LLNL and stated that they are working it as a design/build project that includes significant HVAC controls and advanced metering with very little or no problems.
- 5) The ability to use the ESPC process for leased space was discussed. In particular, how this issue might affect sites with predominately leased space.

Issues and Concerns Brainstorming Session

ASHRAE 90.1

- a. ASHRAE 90.1 is predominately for office buildings with very little information and requirements for labs. (Note: As part of the Labs21 program "Laboratory Modeling Guidelines using ASHRAE 90.1-2004 Appendix G" have been developed) http://www.labs21century.gov/pdf/ashrae_appg_draft_508.pdf
- b. Cyrus discussed the guidelines that are published that provide prescriptive guidance to achieve the 30% goal. ASHRAE has published these guidelines.
- c. Available software includes:
 - E-Quest
 - Energy Plus
 - Comcheck / Rescheck

Metering

- a. Will Lintner asked if sites would like DOE/FEMP to provide meter benchmarking, bill analysis, energy benchmarking, etc. He discussed a possible central system at HQ similar to the EMS4 data collection system. He also asked about GSA providing this service for DOE. There was mixed response. The primary concern was entering information into another system, but is really only useful and manageable at the site level.
- b. ORNL has a Metering Plan and Program that might be a good resource for other sites to review for help getting started with their metering plans.

Water Reduction Goals

- a. Will Lintner stated that there is a draft water reduction guidance document being released soon. This document should be reviewed by at least selected members of the EEWG.

- b. There is an effort underway at the HQ level to create a process to allow / approve exemptions to the water reduction goals such as reactors and heavy process users.

Renewable Energy Goals

A concern was expressed that some sites may have an issue in meeting the renewable energy goals if the power used by reactors, accelerators, etc., has to also be included. It was proposed that there should be guidance and a method to allow / approve exemptions to the renewable energy goals, such as the power used by reactors, accelerators, and heavy process users.

EPAct 2005 and Other Directives Discussion

This discussion session time was given to Ab Ream to discuss several important issues and explain his role in the future of the EEWG.

- 1) Ab stated he will be the primary FEMP contact for the EEWG. He commented on the Portfolio Process and that it needs a champion at the HQ level. Ab stated that Andy Karsner is working to build the resources that might be able to address the various issues with the portfolio approach to meeting the Order goals.
- 2) He also volunteered to contact the Alexander Dhivou (US Army) to see if he has documentation on the range of energy use that typical buildings should experience based on type and location.
- 3) Ab will regularly participate with the monthly EEWG teleconferences and stated that he would be willing to provide a status at the beginning of each teleconference.

The EEWG Website has been updated with an Information Tab where all new publications, lessons learned, innovative ideas and latest information is posted to allow easy access and limit email traffic.

A best practice was also submitted to the EFCOG website this CY.

CY08 Action Plan

- 1) Need to distribute the Water Guidance and the draft DOE Order 430.2B to the EEWG for review and familiarization.
- 2) Ab Ream will research having a dedicated resource to assist, organize, and provide administration for the EEWG.
- 3) Teleconference Topics to be scheduled:
 - Water – baseline and exclusions
 - ESPC – especially internal support cost issues
 - Emerging Policy – portfolio approach
 - ASHRAE 90.1

- Metering
 - New and Emerging Technologies
- 4) Lynnwood Dukes and Ernest Fossum will research an org chart and list of Energy Managers for the EEWG.
 - 5) Lynnwood Dukes and Ernest Fossum will set up and facilitate monthly EEWG teleconferences.
 - 6) EEWG will continue to have involvement in the TEAM Initiative Working Group to ensure coordinated approaches to energy conservation.

- We will continue to interact with representatives from other EFCOG Working Groups to exchange information, share common goals, and to take advantage of synergies between the working groups and their members

- EEWG will also continue to take a comprehensive customer focused approach responsive to FEMP's vision to assist DOE and federal agency sites increase energy efficiency, conserve water, promote renewable energy technology use and manage energy costs.

- EEWG will continue to assist DOE's Federal Energy Management Program with timely and effective communication between sites, field and operations offices and HQ.

- We will also continue to increase communication and participation of energy management professionals from DOE, other federal agencies and other appropriate EFCOG working groups at workshops to extend the pool of knowledge available to support DOE's energy management initiatives.

Effectiveness Evaluation

In the current environment and focus on energy reduction it is imperative that these efforts are coordinated across all sites and that the TEAM Initiative efforts are integrated with the EEWG efforts. If a reasonable approach is not taken, valuable funds will be ineffectively utilized to achieve questionable results. The EEWG is the appropriate forum in which to provide a sounding board and advisory council on these issues.

Recommendations

Recommend that the Energy Efficiency Working Group (EEWG) be continued.

Administrative assistance and minimal funding to acquire dedicated resources would be of significant value to the group in order to make progress on key issues.

Advice to DOE headquarters (Andy Karsner) that the TEAM initiative should be integrated with the EEWG is also suggested so that all are working to the same end goals.