

IMPROVING OPERATIONAL EFFICIENCY WORKSHOP



CETAC-WEST

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“To do nothing is not an option.”

I. INTRODUCTION

CETAC-WEST has undertaken to develop and deliver a program to bring the practice of eco-efficiency to the oil and gas-processing sector, and has been working on this initiative for almost two years. The program consists of comprehensive, integrated audits on gas-processing facilities utilizing a team with multi-disciplinary expertise.

The challenge now is to generate industry support to implement the program. CETAC-WEST developed and delivered the Workshop to determine if the necessary support would be forthcoming, and to seek input on how best to proceed on an industry-wide basis.

II. INDUSTRY RESPONSE

The feedback from industry was strong support to a proactive and responsible approach, and would work with CETAC-WEST to achieve desired results.

Industry Recommendations

Industry participants made specific recommendations for moving forward on operational efficiency. Some of the key suggestions include:

1. To assess the cost-effectiveness of full, integrated audits, the Pilot Audit Program, which is targeting six plants, should consider **Targeted Audits** on all six, and **Detailed Full Audits** on two of them (one sour and one sweet). The Targeted Audits would rely on visual inspections, existing facility data and limited additional process or emission measurements. The Detailed Full Audits would include this work plus detailed process and emission measurements and an integrated facility review of energy supply and demand.
2. The development of a **centralized database for benchmark information** that reflects best practice in the industry.

“Benchmarks indicating Best Practice would be very important tools for gaining project approval.”

3. An audit cost sharing arrangement between industry and government, recognizing the interests in the data of both parties.
4. The involvement of CAPP as the initiative would benefit all members of industry.

Next Steps

- Industry participants offered to participate on an **advisory committee** for the pilot audit project to guide CETAC-WEST in moving ahead with the project.
- Industry participants offered their **facilities** to be considered as candidates **for the audit** for the pilot program, subject to approvals as needed from senior management.

III. OBJECTIVES OF THE WORKSHOP

To address both the general issue of the need to strive for improved performance in gas-processing plants and the specific challenge of determining the viability of the program, CETAC-WEST developed a Workshop on ***Improving Operational Efficiency*** for plant managers and engineers.

The objectives of the workshop were three-fold:

1. To raise issues of energy and environmental efficiency with industry representatives, and in particular with plant managers and engineers, in order to assess their willingness to adapt to a proactive approach and, specifically, to participate in a capacity, energy and environmental efficiency project.
2. For the CETAC team to gather additional information from its ‘target market’, including intelligence on what actions are now being taken and what could be incorporated into the program to increase its value to the industry.
3. To identify possible barriers to industry acceptance of action, as well as strategies to move ahead.

IV. WORKSHOP PROGRAM AND FEATURES

Program

The Workshop used presentations and case studies focused on energy and environmental efficiency to stimulate discussion. Within the context of reducing GHG emissions, participants discussed the potential economic and environmental benefits of **integrated facility audits** and **benchmarking**. Barriers to implementing GHG reduction programs and suggestions for continuing and improving the energy and environmental efficiency initiative were discussed.

Faculty and Program Developers

The program was developed by a team of outstanding experts with extensive experience in conducting plant performance testing, emission testing and audits of specific process units, recognized as experts in their fields worldwide:

- Brian Tyers, Optimum Energy Management Inc. (OEMI),
- John Sames, Amine Experts Inc., Sulphur Experts Inc.
- Dave Picard, Clearstone Engineering Ltd.,
- Rod Leland, RCL Environment Group Ltd.,
- Neville Hircock, N.C. Hircock Process Consulting,
- John Jackson, Entech Environmental Services Ltd.,
- Don Colley, DGC Consulting Ltd., and
- Joe Lukacs, CETAC-WEST

Participants

Workshop participants included representatives from eight major gas-processing corporations, three government or quasi-government agencies and two institutions:

- 13 plant engineering/management and operations representatives (BP, PetroCanada, Husky, Keyspan, Murphy Oil, Nexen, Shell and Talisman)
- 3 government participants (AEUB, AERI, and Alberta Environment)

- 2 institutional participants (Chemical Engineering, U of C, and Power Engineering, SAIT)
- 8 resource participants (OEMI, Sulphur Experts, Clearstone Engineering, RCL Environment Group and N.C. Hircock Process Consulting and Entech Environmental)

V. KEY RESULTS

The key conclusion reached by the industry participants was that they must be proactive in addressing this issue. Not participating in an initiative to improve environmental and economic efficiency was not acceptable, a sentiment expressed by all participants. In addition, all participants recognized the value of site-specific process information and emission data, and agreed that audits and benchmarking are tools that would assist in their efforts to improve operational efficiency and reduce greenhouse gas emissions.

Barriers

Several barriers to achieving energy and operational efficiency were identified by industry. These included:

1. Capital rationing, capital allocations and competition for capital.
2. Available human resources with current staffing.
3. Focus on minimizing capital cost and not giving full credit to operational and maintenance cost savings. Adoption of life cycle cost accounting would result in more efficient facilities.
4. Inadequate benchmarks to define best practices and lack of cost details.
5. Corporate culture and training needs for operating personnel.

Recommendations to Overcome Barriers

A number of suggestions to overcome the barriers were also put forth. These recommendations (summarized earlier in this report) include:

1. The Pilot Audit Program, which is targeting six plants, should consider **Targeted Audits** on all six with **Detailed Full Audits** (one sour and one sweet) on two of those. The Targeted Audits would rely on visual inspections, existing facility data and limited additional process or emission measurements. The Detailed Full Audits would include all of the work required for the Targeted Audit, plus detailed process and emission measurements and an integrated facility review of energy supply and demand. This approach would provide information on the cost-benefit of the Detailed Full Audit approach and an indication of the GHG emission reduction potential that is missed by adopting the less intensive, Targeted Audit approach.
2. The development of a **centralized database for benchmark information** that reflects best practice in the industry. For some this information is a valuable component in gaining approval for GHG reduction projects as it establishes the "best practice" performance level for production energy consumption, for GHG emissions and potentially for other important performance measures.
3. An audit cost sharing arrangement between industry and government, recognizing the interests in the data of both parties and the fact that industry would incur additional internal costs related to their staff participation in the audit.
4. The involvement of CAPP as the initiative would benefit all members of industry.
5. Additional team members with engineering expertise to assist industry with the implementation of energy and environmental efficiency projects.
6. A program that made fuel saved through energy and environmental efficiency programs royalty free would provide an additional incentive to reduce GHG emissions, similar to the idea that fuel consumption is now royalty free.

"A program to offset costs of new technology and capital improvements would be an incentive to do audits."

VI. CONCLUSION

- The CETAC-WEST team was encouraged to proceed with its program based on the feedback provided at the workshop, and communicate the program back to the advisory committee and to CAPP.
- Industry participants are prepared to participate in the pilot audit program assuming acceptable funding arrangements and data management procedures are developed.