

ALEX FLEMING, P. ENG.

PRESIDENT

PROFILE

In 1990, Mr. Fleming founded DEMAND SIDE ENERGY (DSE), an energy management firm specializing in industrial and commercial energy management. DSE projects have been successfully completed under his direction and the firm's unique and successful approach to technology transfer and DSM program management work is widely recognized.

As an **Energy Manager and Planner** for government and major industry, Mr. Fleming has an ongoing role for design, implementation and operation of electric and gas energy management programs for boilers, motors, adjustable speed drives, pumps and new construction.

Mr. Fleming brings has over 18 years experience in large industrial and commercial energy audits, energy management planning, development and program implementation. His experience provides a broad view into energy management from a technical economic and market perspective.

EXPERTISE

Mr. Fleming's work on drivepower is particularly well regarded throughout Canada and the United States. Some of his recent publications and presentations are regarded as being among the most thoroughly discussed. Mr. Fleming is intimately familiar with the North American drivepower technologies and their application in industry. He has contributed widely to the development of Canadian utility efficiency programs; in fact, he developed and delivered (1990- 1996) the B.C.Hydro Power Smart High Efficiency Motors Program, which is recognized as the most impactful industrial motor-based demand side management initiatives in North America.

Under Mr. Fleming's direction, DSE has provided North American sale and market forecasts for the electric motors, variable frequency drives and the motor service industry. The "Past Trends and Probable Future Directions" document is in its second edition

(2001) in the United States and is widely used by industry sales specialists.

Industrial Energy Auditing: With over 200 energy audits completed and extensive industrial audit and training experiences in Canada, Jamaica, Malaysia, Brazil, India and the Slovak Republic, Mr. Fleming and his team of professionals are an asset to any project that emphasizes end-use rationalization. This energy audit experience has afforded DSE a first-hand insight into the range of practical energy management alternatives applicable within the industry; moreover, it has enabled them to tailor a wide range of technology and energy management training services to industry needs

Energy Performance Reviews: DSE's primary role is to provide objective technical evaluations and monitoring to validate energy savings for both the commercial and industrial sectors. As a Bridging Consultant, Owners representative or an Engineering Project reviewer, Mr. Fleming brings a wealth of knowledge from the industrial plant efficiency and cost reduction opportunities to decision makers.

Energy Management Planning: In 2003, DSE put together an "Energy Action Plan" for Winnipeg Health Sciences Centre with which they achieved "Gold level status reporting" with the Voluntary Challenge Registry (VCR) and was the first organization to 100 points.

PROFESSIONAL HISTORY

- 1990 –Present: President, Demand Side Energy Consultants Inc.
- 1988-1990: Consulting Mechanical Engineer/Design Engineer, E.J Faraci and Associates ltd.
- 1986-1988: Engineering officer, Manitoba Department of Energy & Mines

EDUCATION

- 1986: Bachelor of Science, (Engineering)

RELEVANT PROJECT EXPERIENCE

B.C. Hydro Industrial Power Smart Partners 2001-03:

Through BC Hydro's "Power Smart Incentive Fund" and "Energy Savings Opportunity Identification", Demand Side Energy performed Industrial end-use energy Audits for large industrial customers including

- ▶▶ S&R Sawmills
- ▶▶ General Paints
- ▶▶ Cascadia
- ▶▶ Neptune Bulk Terminals

Jamaica Industrial DSM Strategy 1994-1996, Lead Trainer, Energy Auditor:

Performed all technical and financial detail for 19 industrial energy audits focused on electricity use. Provided 3 engineering audits for several individual technologies. Provided DSM unit with program design information based on field experience and contact with non-government organizations.

Customer Assisted Energy Audits 1992-1999, Program Developer, Lead Auditor

Design, technical analysis, training and report requirements for industrial energy auditing. Conducted 23 industrial energy audits and over 100 detailed technical analyses of equipment and process-specific energy improvements. Developed and delivered 3-5 year energy plans for the various facilities. Provided utility and customer training in the energy audit process, electrical metering and energy management planning.

Jamaica Large Commercial Energy Audits 1997-2000, Prime Contractor, Project Manager

Performed all technical and financial detail for 17 large commercial energy audits focused on electricity use. Provided \$15M USD in bankable projects for a low interest loan project. Financial and economic analyses were conducted on individual and sector participants respectively. Large scale projects include feasibility assessment for co-generation and district cooling.

INDUSTRIAL ENERGY AUDITS

The following is a list of energy audits that were conducted by Demand Side Energy in the Province of B.C. from 1993- 2003:

Alcan Aluminum (Kitimat)
Methanex Chemical Corp.(Kitimat)
Quintette Coal Corp.(Tumbler Ridge)
Downie Timber Ltd.(Revelstoke)
Saskatchewan Wheat Pool (Vancouver)
Bullmoose Corp. (Tumbler Ridge)
Stork Craft Manufacturing (Vancouver)
FMC of Canada (Prince George)
Doman Forest Products
Silvertree Division (Vancouver)
Elkview Coal Corp. (Sparwood)
J. S. Jones Timber (Boston Bar)
Mill & Timber Sawmill, (Vancouver)
S & R Sawmills (Surrey)
MacMillan Bloedel, K3 Division (Vancouver)
CN Rail Thornton Yard (Surrey)
Merfin Hygienics (Delta)
MacMillan Bloedel, Powell River
University of British Columbia
Storkcraft, Richmond
S&R Sawmills, Delta, B.C.
General Paints, Vancouver, B.C.
Cascadia, Vancouver, B.C.
Neptune Bulk Terminals, N. Van., B.C.

Manitoba Hydro & Natural Resources Canada funded industrial audits: 2000-2002

Maple Leaf Consumer Foods
(Packaging Plant, Winnipeg, M.B.)
McDonalds Consolidated/Canada Safeway,
(Warehousing/pkg facility Winnipeg, Manitoba)

PROFESSIONAL ASSOCIATIONS

Association of Professional Engineers, British Columbia
Association of Professional Engineers, Manitoba
American Society of Heating Refrigerating and Air Conditioning Engineers

LANGUAGES

English (Excellent); French (Fair).