

# ALEX FLEMING, P. ENG.

---

## PRESIDENT



## PROFILE

*In 1990, Mr. Fleming founded DEMAND SIDE ENERGY (DSE), an energy management firm specializing in commercial and industrial energy management. More than 200 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 to the project over 16 years experience in commercial and industrial facility energy audits, energy use verification and engineering reviews for energy performance contracts. In addition to the site-based work, his DSM Program design development and delivery is fairly broad, including six Power Smart programs and several major utility DSM marketing and assessment projects.

## EXPERTISE

Mr. Fleming's work on DSM Program design, development and delivery is well regarded throughout both Canada and the United States. Some of his recent publications and presentations are regarded as being among the most thoroughly discussed. He has contributed widely to the development of Canadian and international utility efficiency programs.

In fact, he developed and delivered (1990- 1996) the Power Smart High Efficiency Motors (HEM) Program, which continues to be recognized as the most impact-full industrial demand side management initiatives in North America and sited case study in Market transformation in the DSM industry world-wide.

## EXPERTISE (CONT.)

- Designed and delivered the BC Hydro "Power Smart High Efficiency Motors Program", which is recognized as the foremost DSM market transformation program in North America.
- Provided extensive technical review for the E-Source "Drivepower Technology Atlas"
- Co-established the Motor Service Initiative in a coordinated effort with the Canadian Utilities Group.
- Became an invited member of the U.S. Department of Energy "Experts Round Table" on Electric Motor Systems.
- Provided extensive input into the motor repair standards and technical papers developed for and used by Canadian Motor Service Shops.
- Author and presenter of several presentations and papers involving the motor service industry.
- Panel leader for "Motor Service Initiatives", a presentation to motor manufacturers regarding coordination of manufacturers' data and quality assurance for rewind facilities.

**HE Motor Technical hotline:** Demand Side Energy maintained a motors hotline for North American Utility HEM programs including: Nova Scotia Power, Alberta Power, Ontario Hydro and BC Hydro. Motor suppliers, end users and utility DSM program personal utilized this 1- 800 MOTORS1 hotline from 1992- 1997.

## PROFESSIONAL HISTORY

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

## RELEVANT PROJECT EXPERIENCE

### Ontario Hydro High Efficiency Motors Program Evaluation and Summary 1995:

Conducted customer and trade ally interviews, assessed technology baseline and estimated program impact for this \$22,000,000 DSM initiative during its wind down phase. Compiled all rebate database information and assessed the program impact through in-situ efficiency testing and laboratory testing of high efficiency motors.

### CEA Motive Systems Interest Group Technology Watch

The specific topics and issues covered in this Technology Watch were classified into three categories, technical, economic and market related. The document provided a framework for linking the issues and formulating an integrated work plan for the Motive Systems Group at the Canadian Electric Association.

### CEA Advanced Motors Project

This project focused on the application of advance motor technologies within industry. Specifically the written pole motor switched reluctance motor, permanent magnet and electronically commutated ECM motors were lab tested for efficiency and compared with general purpose motor and variable frequency drive alternatives. The motor testing then was moved in-situ, where the motors were installed on an existing application and reviewed for performance and cost effectiveness.

### Motor Management:

Identify and implement all aspects of a motor management system at the plant level for large facilities such as Pulp and Paper and automotive parts manufacturing. Analyses included:

1. Review Motor Inventory System
2. Review Motor Purchase Specifications
3. Review Motor Repair Specifications
4. Motor Maintenance Assessment
5. Review Motor Applications
6. Motor Monitoring and Efficiency Assessment

### Canadian Motor Market Survey

The objectives of this study were to document the changes that have occurred within the Canadian motor market over the period, to establish the relative importance of the influencing factors in bringing about the changes and to assess the durability of the market changes. In addition, the findings were to be used to address future directions that utilities could pursue related to this market.

### EASA-Q: Quality System for Motor Repair

Led a team to identify and implement a quality system program for the motor repair industry to evaluate procedures that reduce the impacts of motor repair on efficiency. Developed the first EASA Q seminar and became the first firm qualified to conduct repair shop quality system audits.

## PROFESSIONAL ASSOCIATIONS

Association of Professional Engineers, British Columbia

Association of Professional Engineers, Manitoba

American Society of Heating Refrigerating and Air Conditioning Engineers

Manitoba Energy Management Task Force, Chair