1999 Demand Side Management Report

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I. Background

In Order No. P. U. 1 (1990), the Board of Commissioners of Public Utilities ("the Board") ordered Newfoundland Power Inc. ("the Company") to file annually a progress report of its Demand Side Management (DSM) activities. In Order No. P.U. 7 (1996-97) the Board expanded on the reporting requirement, stating: "*The Applicant shall continue to file DSM progress reports annually, indicating the validity of individual programs and documenting their impact on conservation, valley filling, peak shifting, peak clipping and strategic load growth; their impact on minimizing customer rates; and their impact on next generation planning."*

This report provides an overview of the Company's DSM activities during 1999. It includes a description of the various activities, together with the results and associated costs. Where applicable, the costs and benefits of the programs are analyzed from the perspectives of participants, non-participants and total resources.

II. 1999 DSM Activities

The intent of DSM programs is to manage the demand side use of electrical energy in order to minimize electricity rates. However, because of the size and isolated nature of the Newfoundland electrical system, and its current dynamics, as reflected in load forecasts, competitive pressures and generation cost projections, larger scale DSM activities are unlikely to have a significant impact, either on load or on generation requirements. In this context, Newfoundland Power has refocused its activities during the last two years on programs that improve customer service and enhance the value customers receive from electricity. The current focus will be maintained unless circumstances warrant a change in direction.

The activities for 1999 are described below under the general categories of Customer Energy Services and Programs, Load Shape Programs, and DSM Research Projects.

Customer Energy Services and Programs

The Customer Service Department provides assistance and information to customers on a variety of customer and energy related matters. These services and programs affect load shape either directly by influencing customers' use of electricity, or indirectly by influencing the use of products that have the potential to affect load shape.

***Power Smart Programs*:**
Activities under this heading include customer inquiries, financing, electric heating designs, and the Thermostat Rebate Program.

Customer Inquiries: The Company answered customer inquiries on energy efficiency and Power Smart programs through its toll-free service. Where necessary, these services were provided in conjunction with Customer Service Specialist field visits and the involvement of participating trade allies. In addition to the inquiries handled by Call Centre agents, approximately 4,677 calls were referred to Power Smart Representatives during 1999.

Financing: The Company offers financing to eligible customers for electric heating systems, heat recovery ventilation systems, insulation upgrades, electrical upgrades, high performance thermostats, and hot water tanks. A total of 1,473 loans were issued in 1999. Of this total, 948 loans were for hot water tanks, 490 for electric heat financing, and 35 for insulation upgrades.

Electric Heat Design: The Company provided electric heat designs to customers building new homes. These designs indicate appropriate sizing for heating systems along with an estimate of annual heating costs. The heating design reports also provide customers with recommendations on insulation levels. The Company completed 129 electric heat designs in 1999.

Thermostat Rebate Program: The Company offered a $4 rebate on each purchase of a selected high performance thermostat under its Thermostat Rebate Program. The purpose is to increase the comfort and satisfaction of electric heat customers by encouraging customers to install quality thermostats that perform more accurately. There were 1,721 rebates issued in 1999.

***Customer Service Specialists*:**
Customer Service Specialists are responsible for providing advice on energy issues, delivery of safety and general consumer information, and the assessment and settlement of customer damage claims.

Energy conservation continues to be an important issue for the Company's customers, and the Company considers the provision of information on this topic to be an essential component of good customer service. Information related to the wise use of electricity is available from all employees performing customer service functions. In 1999 there were a total of 4,510 contacts by Customer Service Specialists. Of this total, 3,542 contacts were with residential customers, while 968 were with commercial customers.

***Energy Advertising*:**
The Company regularly advertises its many programs and services including the Equal Payment Plan (EPP), Pre-authorized Payment Plan (PAP), TVD (automated power outage information system), Power Smart Energy Efficiency programs, Call Centre hours, and services and information available on the Company's Internet website. The total 1999 expense for advertising programs and services was $13,265. It is estimated that 15% of this amount was attributable to Power Smart programs and energy advertising. Brochures explaining programs and services continue to be displayed at Company locations. These brochures are also distributed along with other information provided to customers building new homes.

Load Shape Programs

Load Shape Programs improve the Company's load factor by reducing demand for energy during system peak periods. These programs have the potential of deferring capital expenditures and associated customer costs by making more effective use of the electrical system. Wrap Up For Savings and the Curtailable Service Option were the two DSM programs quantitatively measured as having an affect on load shape in 1999.

***Wrap Up For Savings*:**
This program is designed to improve energy efficiency, enhance the comfort level of customers living in electrically heated homes, and increase customer satisfaction with the value they are receiving from electricity. The program offers rebates to customers to upgrade insulation in basements, crawl spaces, and attics. Customer Service Specialists meet with customers to provide advice on insulation and how to properly upgrade existing insulation levels.

The load shape impacts of this program are conservation and peak clipping. Improved insulation and air sealing tend to reduce both demand and energy at the time of system peak and throughout the remainder of the heating season. The program also functions as a load retention mechanism, as increased customer satisfaction with electric heating will likely ensure continued customer usage of electric space heating.

In 1999, 150 projects were completed under the program, resulting in an energy reduction of 527,000 kWh and a peak reduction of 162 kW.

The costs and benefits of this program were analyzed from the perspective of participants, non-participants, and total resources. In 1999, the DSM program tests indicated benefit to cost ratios as follows:

Participants Test[1] :	3.76
Rate Impact Test[2] :	1.12
Total Resource Cost Test[3] :	3.54

***Curtailable Service Option*:**
The Curtailable Service Option provides an incentive to large customers to reduce electrical demand during system peak. The option is available to general service customers who can curtail load by at least 330 kVA. Participants who curtail their load at the request of the Company receive an annual credit on their electric bills at the end of the winter season.

This project has a peak clipping impact on the load shape. Results for the 1998/1999 winter heating season were submitted to the Board in the *1999 Curtailable Service Option Report*, dated April 30, 1999. Fourteen commercial customers participated in the Curtailable Service Option in the 1998/1999 winter heating season. As a result of unseasonably warm weather customers were only asked to curtail on one occasion. This option provided between 6 MW and 7 MW of curtailable load to the Company. The actual results depend on both the number of successful curtailments for each request and the coincidence of the curtailable customer's peak energy usage with the Company's peak energy use.

DSM Research Projects

DSM research projects are conducted to test the costs and benefits of potential programs through the analysis of small-scale pilots or demonstration projects and to research customer acceptance of innovative products. In 1998, the Company collected data from a small number of load monitoring devices that had been deployed to assess the impact of various heating systems on load. While the data sample was not large enough to provide statistically-valid results, the analysis yielded conclusions that will enable the Company to provide better advice to customers on appropriate heating solutions.

There were no new projects initiated in 1999.

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1 A *Participants Test* is used to determine if a DSM program minimizes the overall energy costs for users.

2 A *Rate Impact Test* is used to determine whether the program minimizes rates for non-participants.

3 A *Total Resource Cost Test* is used to determine if a DSM program minimizes the overall cost of supplying energy. As such, the Total Resource Cost Test is a test of the program's impact on generation planning.

III. 1999 DSM Costs

The following table summarizes the costs associated with the various activities classified as DSM activities in 1999.

1999 Costs

	Total
Customer Energy Services and Programs	
Power Smart Programs	$195,068
Energy Advertising	1,990
Load Shape Improvements	
Wrap Up for Savings	23,458
Curtailable Service Option	216,392
DSM Research Projects	0
Total DSM Costs	**$436,908**

IV. Summary And Outlook

In 1999, the Company's DSM activities continued to focus on improving customer service and enhancing the value customers receive from electrical energy. The Company continues to see load shape improvements from customer participation in the Wrap Up for Savings Program and the Curtailable Service Option. Other DSM activities undertaken by the Company during 1999 did not have a measurable impact on generation planning. However, a combination of energy packages and customer service offerings that adds value to customers will contribute indirectly to minimizing the cost of generation over the long term.

In 2000, the Company will continue to facilitate the optimal use of electricity by customers through its Customer Energy Services and Programs. These programs are designed to maximize the value of electrical energy by ensuring customers use electricity efficiently and wisely. The Company will also continue with its Wrap Up For Savings and Curtailable Service Option.

It is the intent of the Company that all customers benefit from the Company's DSM activities either directly as participants, indirectly as non-participants or through improved customer service. The focus of DSM activities will continue to be influenced by load forecasts, competitive pressures and generation cost projections. The Company will continuously reassess DSM initiatives to ensure they meet customer requirements.