

Energy Conservation and Demand Management Plan (Phase II – due July 1, 2014)

Education Sector Background

Funding and Energy Management Planning

All Boards receive 100% of their funding from the Ministry of Education.

The Ministry announces each Board's funding allocation in March for the next Fiscal Year which runs from September 1st to August 31st. The Ministry does not provide Boards with multi-year funding allocations.

As a result, while a Board may have a five-year energy management strategy, the Board's ability to implement their strategy is dependent on the funding that they receive in each of the five years covered by their energy management plan.

Asset Portfolios and Energy Management Planning

Energy consumption at a site can be impacted by a number of variables. The following lists provide education sector examples that may impact changes in consumption at a site from one year to the next. These examples will play a significant role in the Board's assessment of energy management priorities.

Facility Variables

- Year of Construction
- Building Area
 - Major additions
 - Sites sold
 - Portables
 - installed
 - removed
- Site Use
 - Elementary school
 - Secondary school
 - Administrative building
 - Maintenance/warehouse facility
- Shared Use Sites (e.g. one building, two boards share common areas and/or partnered with a municipality)
- Equipment/Systems
 - Age
 - Type of technology
 - Lifecycle

- % air conditioned building area

Other Variables

- Programs
 - Day care
 - Before/After School Programs
 - Summer School
 - Community Use
- Occupancy
 - Significant Increase or decrease in number of students
 - New programs being added to a site

About the Board

The following statistics apply to the Board’s Fiscal Year 2013-14

Total Number of Sites: 32

Total Number of Students: 9000

Background

1. The Board has a qualitative energy conservation goal

Yes The Board proposes to reduce energy consumption by 13% over the course of this plan

No

2. To date the Board’s energy management strategy has included the following:

The Board regularly incorporates energy efficient products into maintenance and construction work:

- Increased roof insulation during replacement
- Purchasing energy efficient boilers and ventilation equipment
- Upgrading windows and doors
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3. The Board has an energy management position.

In-house

Shared job function

Energy Consumption Data for the Board

The values below are “metered” data for the Board.

Utility	Fiscal Year 2012-13 (Baseline)	
Total Electricity (kWh)	11,329,221	
Total Natural Gas (m3)	1,907,615	
Total Heating Fuel (Type 1 and 2) (litres - L)	135,004	
Total Heating Fuel (Type 3 and 4) (litres - L)	0	
Total Propane (litres - L)	536337	
Total Wood (metric tonnes - MT)	0	
Total District Heat (GJ)	0	
Total District Cool (GJ)	0	

The values below are raw data.

	Fiscal Year 2011-12 (Baseline)	Fiscal Year 2012-13 (Current)
Total Energy Consumed (ekWh)	37,146,263	35,512,680
Energy Intensity (ekWh/m2)	225.2	215.3

Energy Conservation Goal

The Board has set out the following energy conservation goals for the next five fiscal years

Fiscal Year	2013-14 (ekWh/m2)	2014-15 (ekWh/m2)	2015-16 (ekWh/m2)	2016-17 (ekWh/m2)	2017-18 (ekWh/m2)
Conservation Goal	1,284,651	885,585	1,108,686	532,245	1,041,807

	FY 2013-14 to 2017-18 (ekWh/m2)
Cumulative Conservation Goal	93.35

Renewable Energy

For a list of the Board's renewable energy projects, please see Appendix A.

Energy Management Strategies

Energy management strategies fall into three key categories:

1. Design/construction/retrofit
2. Operations and maintenance
3. Occupant Behaviour

1. Design/Construction/Retrofit

Definition

Design/construction/retrofit encompasses the original and ongoing intent of how a building and its systems are to perform as a whole through the integration of disciplines such as, architecture and engineering.

For the Board's relevant projects over the next five years, please refer to Appendix B.

2. Operations and Maintenance

Definition

Operations and maintenance includes the strategies the Board uses to ensure that the existing buildings and equipment perform at peak efficiency. For the Board's relevant projects over the next five years, please refer to Appendix C.

3. Occupant Behaviour

Definition

Strategies that the Board uses to educate occupants, including staff, students and community users, with an emphasis in changing specific behaviours to reduce energy consumption. For the Board's relevant projects over the next five years, please refer to Appendix D.

Environmental Programs

1. In 2013-14 schools within the Board that participated in environmental programs.

EcoSchools

Energy Efficient Incentives

1. The Board applies to incentive programs to support the implementation of energy efficient projects on a regular basis.

Yes No

2. The Board uses the services of the sector’s Incentive Program Advisor.

Yes No

Energy Procurement

1. The Board participates in a consortia arrangement to purchase electricity.

Yes No

If yes,

CSBSA Electricity Consortia

Other

Provide Name of Consortia: _____

2. The Board participates in a consortia arrangement to purchase natural gas.

Yes No

If yes,

CSBSA Natural Gas Consortia

Other

Provide Name of Consortia: _____

Demand Management

1. The Board monitors electrical Demand.

Yes No

If yes,

Daily

Monthly

Quarterly

2. The Board uses the following method to monitor electrical Demand:

- Invoices
 - Real-time data
 - Online data from the Local Distribution Company (LDC)
 - Other
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3. The Board uses the following methodologies to reduce electrical Demand:

- Equipment scheduling
 - Phased/staged use of equipment
 - Demand-limit equipment
 - Deferred start-up of large equipment (e.g.: chiller start-up in spring)
 - Other
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4. The Local Distribution Companies (LDCs) for the Board explicitly state the Power Factor on each bill.

Yes

The Board monitors Power Factor.

Yes No

If yes,

- Monthly
- Quarterly
- Annually

Senior Management Approval of this Energy Conservation and Demand Management Plan

I confirm that the Renfrew County District School Board's senior management has reviewed and approved this Energy Conservation and Demand Management Plan.

Manager of Health Safety and Facilities

June 10, 2014