Extended Eco-efficiency Indicator Testing

Executive Summary

1. Introduction

Canada's National Round Table on the Environment and the Economy (NRTEE), with the active cooperation of twelve volunteer companies, has developed and tested decision rules for energy, waste and water intensity indicators. The twelve companies include: Alcan Inc., Atomic Energy of Canada Limited, BASF Canada Inc., Dofasco Inc., Dupont Canada Inc., General Motors of Canada, Husky Injection Molding Systems Ltd., Nexfor Inc. (Norbord subsidiary), Nestlé Canada Inc. St. Lawrence Cement, Tetra Pak Canada Inc. and TransAlta Corporation. Funding for the program was provided by Environment Canada.

The work builds on the development of principles and a framework on eco-efficiency indicators undertaken by the World Business Council on Sustainable Development (WBCSD) and on a previous Feasibility Study by the NRTEE. The program focussed on translating the WBCSD principles and framework into specific definitions and rules for the resource and material productivity elements of eco-efficiency and testing them for standard applicability across business sectors.

The indicators address two elements of eco-efficiency that are within the direct responsibility of a company. They do not address the issue of consumption.

2. The Rationale

Measuring and reporting eco-efficiency can help businesses reduce costs and environmental impacts. Many leading companies have already developed key performance indicators for their businesses. They are routinely tracking and reporting energy, waste and water intensity indicators. Because these indicators have been developed internally within businesses or business sectors, the results are not readily comparable.

Many companies, including SME's, have not begun to monitor eco-efficiency. The standardization of definitions and decision rules for calculating and reporting eco-efficiency indicators could help companies to set measurable eco-efficiency targets, facilitate comparisons between companies and business sectors – essentially to provide widely accepted, quantifiable, verifiable and transparent indicators that could be widely used. Ultimately, reporting of eco-efficiency could become as standard and routine as reporting currently accepted indicators of financial performance.

3. The Results

The results of the program have been detailed in a Final Report, "Extended Eco-efficiency Indicator Testing", prepared for the National Round Table on the Environment and the Economy, March, 2001. The key results are summarized as follows:

Value of Indicators

- Energy, water, and waste indicators are measuring, tracking, and reporting tools that can be used by businesses to maintain and enhance competitiveness while reducing environmental burdens.

- The energy, waste, and water intensity indicators can be valuable for:
  - internal monitoring and reporting
  - benchmarking
  - communication with external audiences.

- A *material intensity indicator* is **not** useful to companies in tracking material productivity.

Standardization of Indicators

- Measuring and reporting of *energy and water intensity* are amenable to a standard approach across most business sectors.

- Measuring and reporting of *waste intensity* in a consistent fashion can work in limited sectors, e.g. manufacturing, especially tertiary manufacturing.

Cautions in Communication/Reporting of Indicators

- Comparisons of indicators between businesses and business sectors should be made with caution. Businesses in the same sectors may be operating under different economic, political, environmental and natural resource constraints. The manufacturing processes in different business sectors are inherently different resulting in different achievable eco-efficiencies.

- To properly understand indicator results and for the credibility of indicator reports, it is essential to provide the assumptions, limitations and exceptions to decision rules in notes accompanying the indicator values.

Indicator Reporting Frequency

- The appropriate reporting frequency depends on the intended use of the indicator. Most of the companies report indicators to the corporate level on an annual basis and use quarterly, monthly and even weekly reporting intervals for the purposes of tracking performance within facility boundaries. For companies that report indicators externally, an annual reporting frequency is generally used.

Indicator Denominators

- Indicator denominators are not readily amenable to standardization. While many businesses find weight in tonnes to be a useful indicator denominator, the nature of some businesses necessitates other denominators, e.g. megawatt hours for the energy sector, etc.

- Price shifts in commodities, recessions, etc. make it difficult to track eco-efficiency performance over time using financial denominators. Decision rules for financial denominators were not developed in this program.

Data Availability/Accuracy

- It is important that the accuracy and completeness of data to calculate the indicators be sufficient for monitoring and tracking purposes. Data needed to calculate indicators were found to be generally readily available by companies and were judged to be sufficiently accurate and complete. For complementary indicators that address life cycle steps outside the

responsibility of the company, data are frequently less accurate and available and often require estimation.

Project Boundaries

- The project boundaries most useful to companies for measuring and reporting indicators are at the facility (plant site) and corporate levels. Allocating between product lines within a given facility is difficult and does not generally justify the effort needed to obtain and estimate the necessary data.

- Aggregation of information up to the corporate level can be confounding particularly if a company makes many different products.

4. Next Steps

The group agreed that businesses should be encouraged to measure and report the indicators that are relevant to their operations. They agreed that findings from this program should be shared with a broader business group to encourage a consistent approach to measuring and reporting eco-efficiency indicators.

As a result, a 'workbook' that provides a simple guide to calculating the indicators has been drafted and a communication program for reaching a broader business group is being developed.

A 'Workbook'

- The 'How-To' Manual or 'Workbook' explains the value of the indicators and provides simple instructions for their calculation.

- In addition to providing guidance to companies, the 'Workbook' will also be useful for environmental auditors to audit how companies are measuring eco-efficiency and to suggest how this could be done.

A Communication Program

- A communication program to reach targetted business sectors will accompany the 'Workbook'. Small and medium-sized enterprises are among the sectors to be targetted.

- The communication program will consist of 2 parts:

    - Cross-country workshops to teach company technical representatives how to use the tools of eco-efficiency, including:
        - eco-efficiency indicators
        - design for environment
        - environmental management systems
        - environmental supply chain management
        - life cycle analysis
        - product stewardship

- Panel discussions, presentations, papers at events organized and attended by targetted sectors to convince company executives to send technical specialists to the workshops.