



*Experience with Indicators for
Energy Efficiency Policy Analysis*

Canada – Data, Indicators, Monitoring, Reporting

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April 27, 2006



Natural Resources
Canada

Ressources naturelles
Canada

Canada 



Developing a Data Strategy

- What is available?
- What more do you need?
- Cost and timing of options to collect
 - Sources of funds (and their purpose)
- Strategy





Our Data Collection Strategy

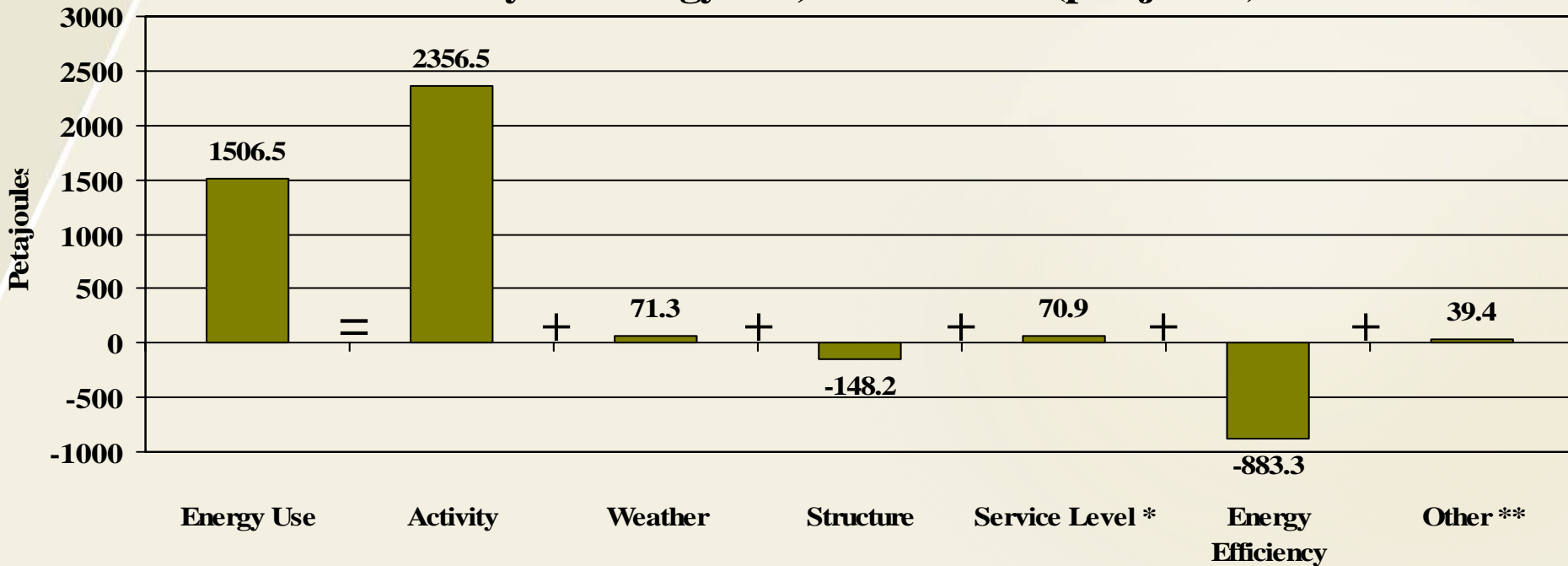
- Statistics Canada
- Sectoral surveys
 - In rotation, every 3-5 years
 - Add to existing periodic surveys, if possible
 - One-time surveys
- Contracted research
- Program data; e.g., from manufacturers
- Other data centres





Economy-Wide Trends

Impact of Activity, Weather, Structure, Service Level and Energy Efficiency on Energy Use, 1990 to 2003 (petajoules)



* “Service level” refers to auxiliary equipment service level in the commercial/institutional sector.

** “Other” refers to street lighting, non-commercial aviation, off-road and agriculture, which are not included in the factorization but are included in « Energy Use ».





Energy Efficiency Trends

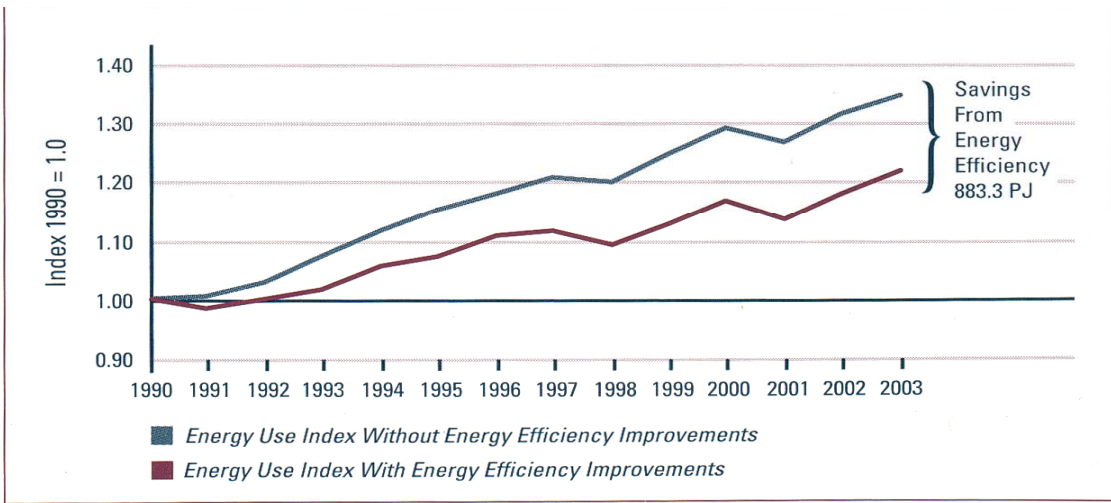


Buildings



Industry

Final Energy Use, With and Without Energy Efficiency Improvements, 1990 – 2003 (index 1990 = 1.0)



From 1990 to 2003, Canada's energy efficiency improved by 13%



Housing



Transportation



Equipment





Market Monitoring

- Trends analysis (factorization)
- Collection of data and information
- Research / contracted studies
- Consultation with stakeholders
- Other published material





Program Performance / Reporting

- Performance indicators (outputs, outcomes)
 - Market monitoring and consumer studies assist the design and tracking of indicators
- Formal evaluations of efficiency / effectiveness
- Special studies

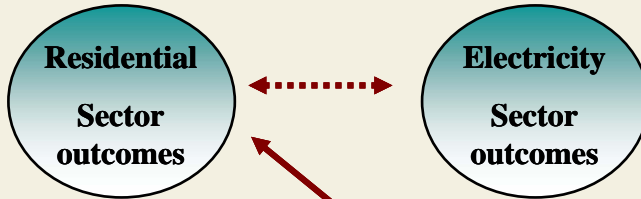
... from simple to complex





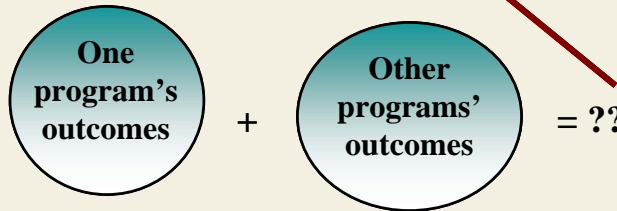
Some Measurement Issues

SECTORS



Intersectoral feedback – outcomes in one sector may affect outcomes in other sectors; e.g., sector 1 achieves a program target that was set using a specific factor; but if that factor changes due to outcomes in sector 2, it will affect sector 1's program performance

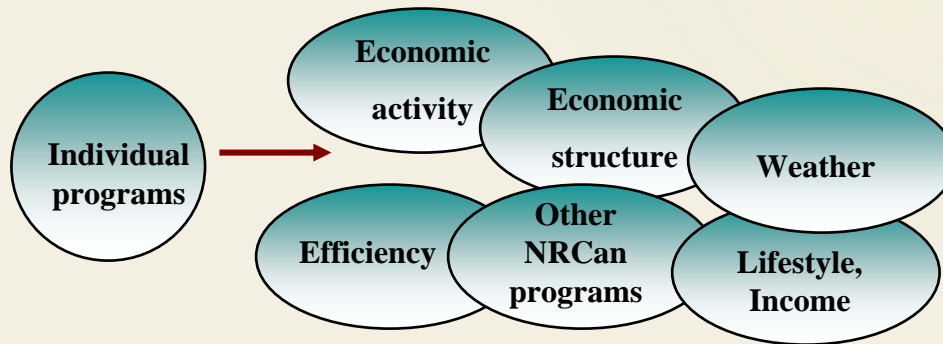
SUB-SECTORS



Overlapping results – programs targeting the same public may measure outcomes using the same data, same indicators, etc. ; thus a potential for double-counting

PROGRAMS & MEASURES

Attribution – aims to remove the effects of factors over which program has little control, to estimate its outcomes



Imperfect, but usually get a reasonable measurement of program outcomes





Policy Development Processes

- 1998 – 2000: Issue Tables, comprising over 450 experts, developed Foundation and Options Papers; followed by work of AMG Roll-up Analysis and interdepartmental working group on complementary measures
- New sets of energy efficiency measures: 2000, 2003, 2005
- 2005-2006: climate change program review
- Market Barriers: Inadequate information and knowledge; Institutional deterrents; Financial and economic constraints in energy end-use markets
- Policy Instruments: Financial incentives; Regulations; Voluntary programs; Information; Leadership by example

... *partnerships*





Market Transformation Measures

- *Selected Progress Indicators*

- ❑ Evaluated, existing houses that made improvements reduced emissions by, on average, 3.7t CO₂ per house per year (2005)
- ❑ CBIP (new) buildings are over 34% more energy efficient than similar buildings constructed to the Model National Energy Code for Buildings (2005)
- ❑ EnerGuide for Equipment labelling program reduced energy consumption by 91 GWh in 2000 (2002)
- ❑ Dollars to \$ense workshops on energy management resulted in total energy savings of 3 PJ per year (2003)

