Mandatory Energy Benchmarking

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Where do Toronto’s greenhouse gas emissions come from?*

- **Transportation (road vehicles)**: 41%
- **Residential**: 21%
- **Waste Management (transportation, landfill)**: 11%
- **Commercial & Industry (small)**: 21%
- **Commercial & Industry (large)**: 6%

* Based on 2012 emissions of 21 million tonnes
It’s not one or the other...

New Buildings
• Easy
• Few in number

Existing Buildings
• Hard
• Many in number
“You can’t manage what you don’t measure.”
Dr. Edwards Deming

“When there’s a scoreboard, people play differently.”
Ben Myers, Boston Properties
History

- CaGBC’s GREEN UP program
- REALpac’s Energy Benchmarking Survey
- Civic Action’s Race to Reduce competition
- NRCan’s ENERGY STAR Portfolio Manager
Skill Testing Question

- What percentage of commercial real estate in Canada has entered data into ENERGY STAR Portfolio Manager?
  - 10%
  - 20%
  - 40%
How it Works

1. Benchmarking

Building owners are required to annually track whole-building utility data using Portfolio Manager tool.

BUILDING PROFILE DATA
• Address, Gross Floor Area, Primary Use

ANNUAL UTILIZATION DATA
• Natural gas, electricity, steam, chilled water, water

PERFORMANCE METRICS
• Energy Use Intensity, Energy Star Score
How it Works (con’t)

2  Reporting

Government compiles building reports to create a comprehensive buildings data registry

3  Disclosure

Data is made available to the public, in the form of:

- Disclosure of building-level data
- City publishes annual report on trends
Energy benchmarking and reporting allows building owners to track their usage over time and to compare their building to its past performance and others in its portfolio to support energy conservation decision-making.

Public disclosure promotes market transformation by making information available to real estate markets to value building energy efficiency.

Energy reporting and benchmarking can also better inform government policies and programs.
Early Findings from Energy Benchmarking in New York City

2012: In NYC the poorest performing buildings use 3-8x the energy of the highest performing buildings.

2013: Energy use varies by a factor of 3-6 (5th-95th percentile)
Progress in New York City...

13% reduction in energy use among office properties

23% reduction in heavy fuel oil in multifamily properties

NYC MEDIAN ENERGY STAR SCORE
70
Potential Benefit, by 2035 (Toronto)

Based on approximately 3,000 buildings, covering 540 million square feet (50 million square metres) of space

$1.9B cumulative utility cost savings
21M eMWh cumulative energy savings
3.3M t/eCO₂ avoided emissions

Source: Opportunity Screening Study: Building Energy Reporting Requirement, Halsall Associates
NATIONAL ENERGY BENCHMARKING FRAMEWORK
Summary Report

- A shared understanding on the importance of a national approach to energy benchmarking

- A set of principles to facilitate consistency, quality and participation on energy benchmarking, reporting and disclosure policies.

- A series of recommendations for government based on principles, stakeholder input, and industry research and efforts.
Principles

- **Consistency** to improve data collection and facilitate comparison
- **Effectiveness** in achieving energy savings
- **Transparency** and the movement towards open data
- **Capacity Building** through awareness raising, literacy efforts, and training
Preliminary Recommendations

Components

- Building size and type
- Timing
- Tools
- Data collection
- Data verification
- Public data
- Public visualization
- Labelling
- Training and support
PROGRAM DELIVERY

Steps

Preparing the ground
Engage local stakeholders

Setting building thresholds
Phase in implementation

Data management
Establish a system

Building lists and notification
Notify covered buildings

Encouraging compliance
Provide support and set fines
Forms of support

- Online resources
- Technical support centres
- Drop-in sessions
- Training workshops
Possible next steps

- Expand program administration steps into a Playbook for local governments
- Foster continued interest and engagement among Canadian stakeholders
- Support capacity building