Energy Benchmarking Data Snapshots for Offices

ENERGY STAR® Portfolio Manager® is a tool used to track the energy use of 19,000 buildings in Canada. Energy benchmarking can save on energy costs and reduce environmental impact. This document provides a snapshot of the Canadian data for offices entered into Portfolio Manager as of December 2017.

QUICK FACTS

- **6,600** office buildings
- **137.5 million** m^2 floor area
- **1.0** GJ/m^2 median **site** energy use intensity (EUI)
- **1.7** GJ/m^2 median **source** EUI

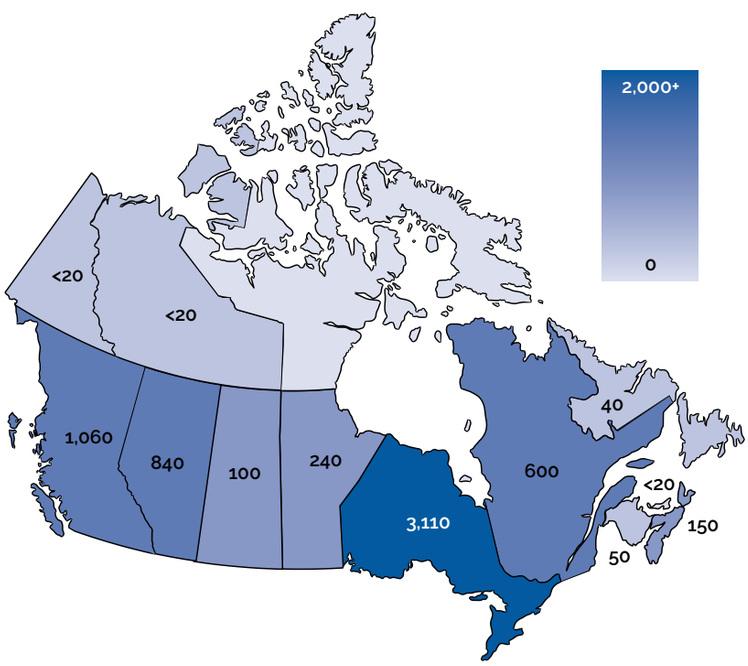
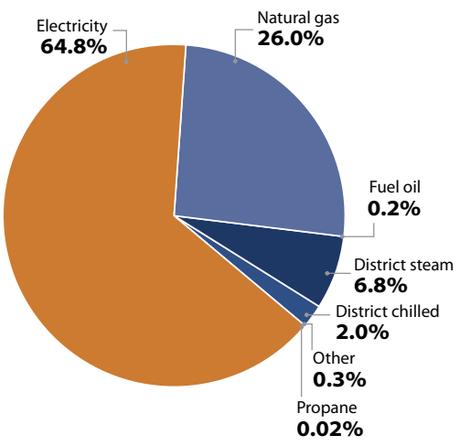


Figure 1. Total energy use breakdown



Fuel mix breakdown for offices in Portfolio Manager

Table 1. Benchmarking by province and territory

Province or territory	Buildings	Floor area (m^2)
Alberta	840	21,222,000
British Columbia	1,060	16,287,000
Manitoba	240	2,458,000
New Brunswick	50	263,000
Newfoundland and Labrador	40	208,000
Northwest Territories	<20	–
Nova Scotia	150	1,409,000
Ontario	3,110	72,380,000
Prince Edward Island	<20	–
Quebec	600	15,627,000
Saskatchewan	100	836,000
Yukon	<20	–
Other/not identified	<20	–
Total	**6,600**	**137,500,000**

For privacy reasons, data are not provided for provinces and territories with fewer than 20 registered buildings.
Numbers may not sum to the total indicated because of rounding.

Figure 2. Source EUI distribution

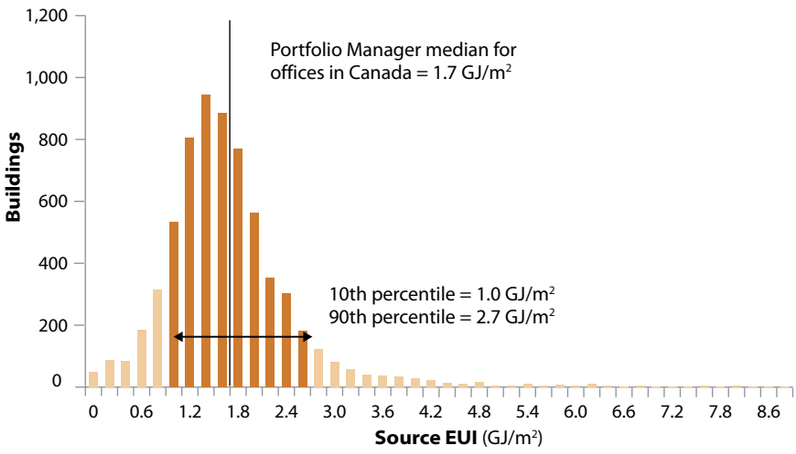


Table 2. Characteristics of offices – range of values

Building characteristics	10th percentile	Median	90th percentile
Gross floor area (m²)	631.0	9,268.0	54,237.0
Heating degree days	2,501.0	3,766.0	5,345.0
Cooling degree days	1.0	149.0	380.0
Computer density	2.0	2.2	4.8
Worker density	1.9	2.5	4.8

Figure 3. Distribution of floor area and buildings

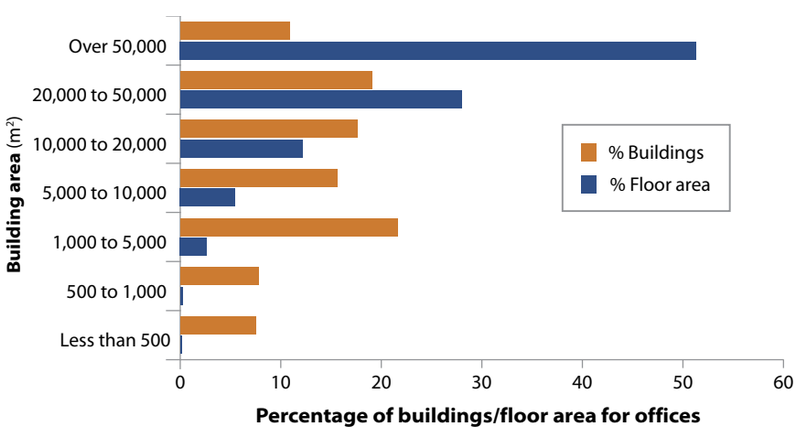
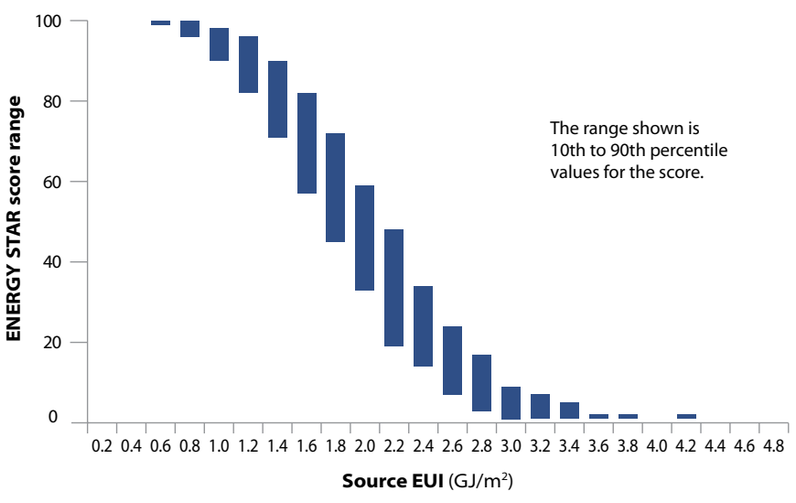


Figure 4. ENERGY STAR score range – offices



Source EUI distribution

The median source EUI for offices in ENERGY STAR Portfolio Manager is 1.7 GJ/m².

Characteristics

The buildings in Table 2 represent 60% of the floor area and 33% of the buildings registered in Portfolio Manager in Canada.

Distribution of floor area and buildings

Figure 3 shows that larger buildings represent a relatively small portion of the number of buildings but account for almost half of the floor area benchmarked for offices in Portfolio Manager. The median gross floor area is 9,268 m².

ENERGY STAR score ranges

Figure 4 shows the range (10th to 90th percentile) of ENERGY STAR scores given source EUI. At the median source EUI of 1.7 GJ/m², the range of ENERGY STAR scores was 57 to 82.

METRICS AND ACRONYMS

ENERGY USE INTENSITY (EUI)

EUI is the energy use per square foot at a property (energy divided by square foot). EUI enables you to compare different size buildings.

SITE ENERGY VERSUS SOURCE ENERGY

There are two ways of measuring energy: at the site and at the source.

SITE ENERGY is the simplest way to measure energy because it accounts for only the energy your property uses, as measured by your energy meters. The usage that appears on your utility bills is a site energy measurement.

SOURCE ENERGY measures not only the energy used by your property, but also accounts for energy losses incurred during the production, transmission and delivery of energy to your property. Source energy is a more accurate measurement of the energy actually required to run your building.

ENERGY STAR Portfolio Manager uses **source energy**. This is the most equitable unit of evaluation, which enables a complete assessment of building-level energy efficiency.

For more information, see the **ENERGY STAR Portfolio Manager *Technical Reference: Source Energy.***

The data is self-reported and has been filtered to exclude outliers, buildings with less than a full year of consumption data and test cases. Buildings registered in Portfolio Manager do not represent a randomly selected sample and are not the basis for the ENERGY STAR score.

For more information on ENERGY STAR Portfolio Manager, contact Natural Resources Canada at **nrcan.buildings-batiments.rncan@canada.ca**.

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