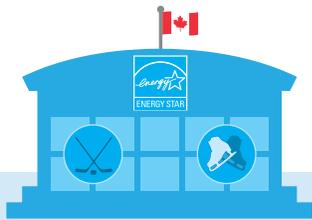




# Energy Benchmarking Data Snapshots for Ice Rinks

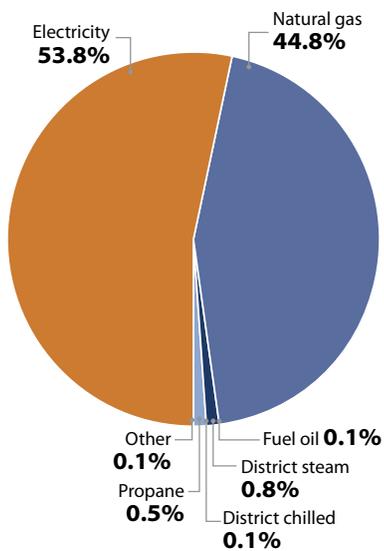


## QUICK FACTS

- **150** ice rink buildings
- **1.0 million** m<sup>2</sup> floor area
- **1.5 GJ/m<sup>2</sup>** median **site** energy use intensity (EUI)
- **2.4 GJ/m<sup>2</sup>** median **source** EUI

**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 ice rinks entered into Portfolio Manager as of December 2017.

Figure 1. Total energy use breakdown



Fuel mix breakdown for ice rinks in Portfolio Manager

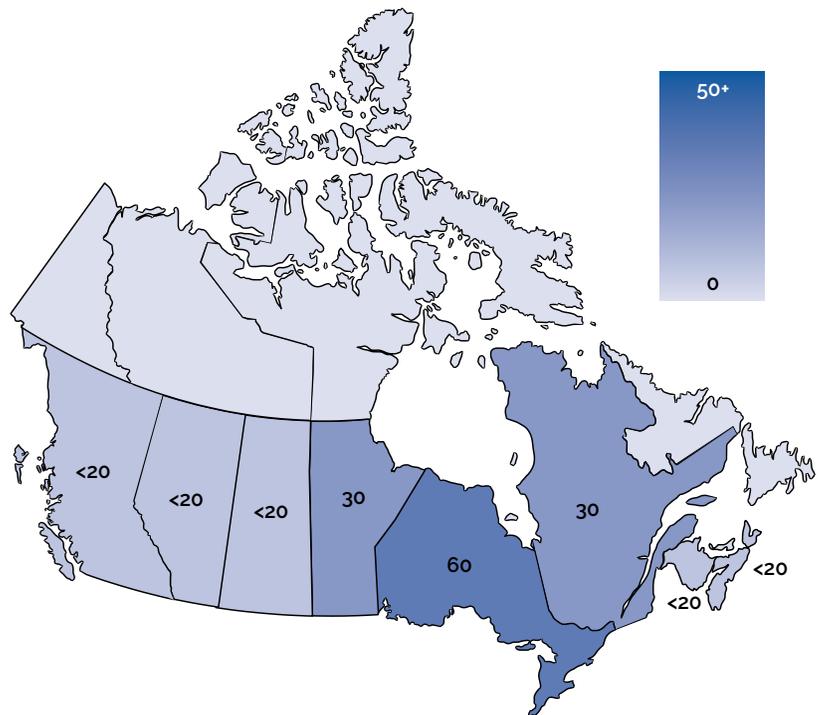


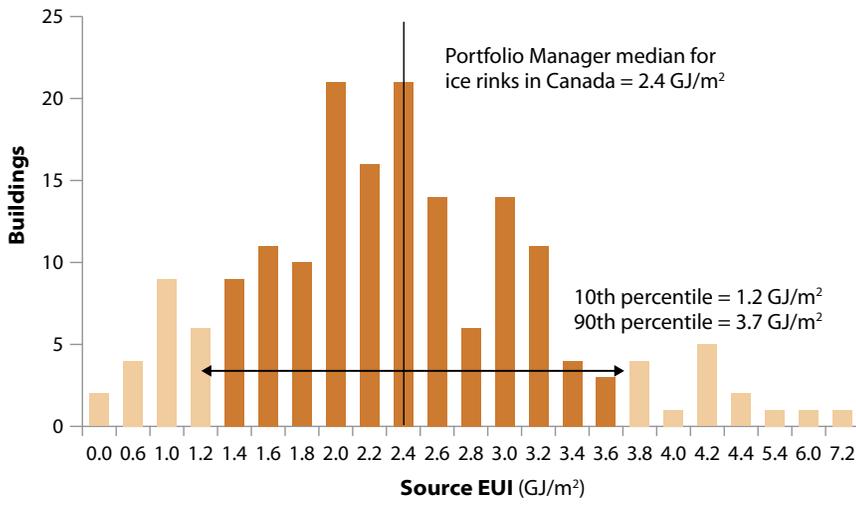
Table 1. Benchmarking by province and territory

Province or territory	Buildings	Floor area (m <sup>2</sup> )
Alberta	<20	–
British Columbia	<20	–
Manitoba	30	147,000
New Brunswick	<20	–
Nova Scotia	<20	–
Ontario	60	528,000
Quebec	30	182,000
Saskatchewan	<20	–
Other	<20	–
<b>Total</b>	<b>150</b>	<b>1,000,000</b>

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.



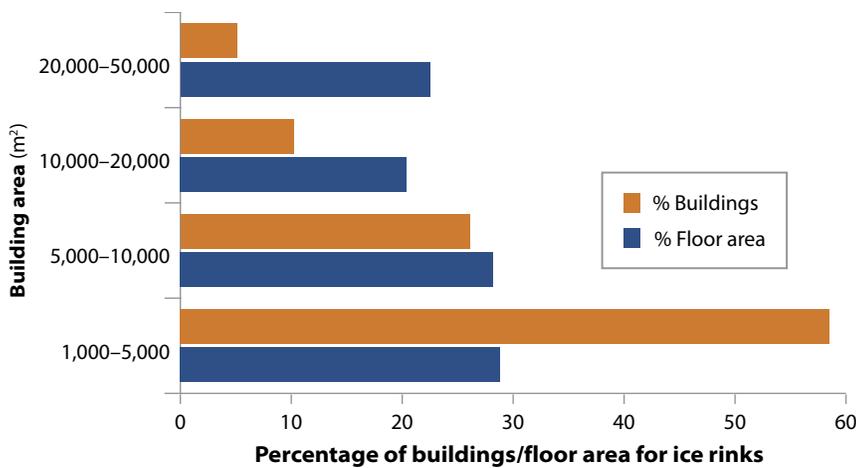
**Figure 2. Source EUI distribution**



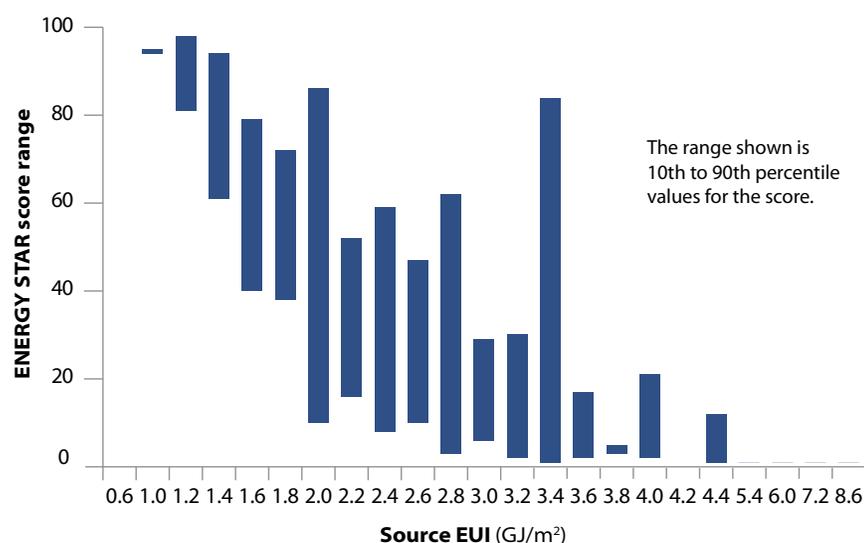
**Table 2. Characteristics of ice rinks – range of values**

Building characteristics	10th percentile	Median	90th percentile
Gross floor area (m <sup>2</sup> )	2,624.0	4,067.0	13,006.0
Heating degree days	3,221.0	4,008.0	5,877.0
Cooling degree days	37.0	238.0	397.0
Computer density	1.1	5.2	9.5
Worker density	1.6	1.9	2.5

**Figure 3. Distribution of floor area and buildings**



**Figure 4. ENERGY STAR score range – ice rinks**



## Source EUI distribution

The median source EUI for ice rinks in ENERGY STAR Portfolio Manager is 2.4 GJ/m<sup>2</sup>.

## Characteristics

The buildings in Table 2 represent 0.5% of the floor area and 0.9% of the buildings registered in Portfolio Manager in Canada.

## Distribution of floor area and buildings

Figure 3 shows that buildings of 1,000 to 5,000 m<sup>2</sup> account for almost 60% of the floor area benchmarked for ice rinks in Portfolio Manager. The median gross floor area is 4,067 m<sup>2</sup>.

## 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 2.4 GJ/m<sup>2</sup>, the range of ENERGY STAR scores was 8 to 59.

## 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.nrcan@canada.ca](mailto:nrcan.buildings-batiments.nrcan@canada.ca).