ENERGY STAR® PortfolioManager®

Technical Reference

Estimating Fuel Mix and Energy Cost

OVERVIEW

EPA's Portfolio Manager and Target Finder software help you set whole-building energy performance targets by estimating how much energy your existing property or property design would need to consume annually to reach your energy performance target (expressed as either a 1 - 100 ENERGY STAR score or % better than the national median). If you choose, you may enter your actual energy use and cost (for an existing property) or estimated design energy use and cost (for a new design) to evaluate progress towards these targets relative to your specific fuel mix, cost, and operation.

When establishing energy performance targets early in a project's design stage, evaluating various design options and occupancy use assumptions, exact fuel mix and energy costs are often not known. In these cases, Portfolio Manager and Target Finder will provide an estimated fuel mix and energy cost to help you assess how to reach your target performance level.

- **Estimated Fuel Mix** – If you are unable to provide a fuel mix for your property design, then your estimated fuel mix is based on the state/province in which the property will be located and the property type. Typical values are computed based on the Commercial Building Energy Consumption Survey for the United States and on the Survey on Commercial and Institutional Energy Use for Canada.

- **Estimated Fuel Costs** – If you are unable to provide fuel costs for your property design, then your estimated fuel costs are based on the energy type(s) (either provided by you or estimated in Portfolio Manager) and the state where your property will be located, based on data from the Energy Information Administration for the United States. For Canada, the data is obtained from a combination of sources including Natural Resources Canada, Statistics Canada, and provincial utility rate reports.

This document explains the reference data used for these estimates and the exact values applied within Portfolio Manager. This document includes two sections:

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ESTIMATING FUEL MIX

When you enter a property design in Portfolio Manager or Target Finder, you will specify a target level of performance, either tied to the ENERGY STAR score or to the national median energy intensity of your property type. Portfolio Manager and Target Finder then compute the energy use you would need to have to reach this target.

Your target is first computed in Source Energy Intensity (Source EUI). Source energy is a complete accounting, including both the energy used on site and the energy associated with generation and transmission of energy to your property. Source Energy is the most equitable way to compare buildings with different fuel mixes because it ensures that buildings do not receive either a credit or a penalty based on their utility (learn more at www.energystar.gov/SourceEnergy). For two properties of the same type, with the same operation and climate zone, the Source EUI target is always identical, regardless of fuel mix. However, to convert from Source EUI into Site EUI, we must take into account the specific fuel mix of your property. If you have not specified any estimated energy use associated with your design, then we estimate your fuel mix based on your property type and location:

- **Property Type.** Your EPA-Calculated Property Type is defined as the property use type that accounts for 50% or more of your property's gross floor area. Your EPA-Calculated Property Type is then mapped into the 19 Principal Building Activity (PBA) Categories available in the Commercial Building Energy Consumption Survey (or, CBECS) for the United States and the Survey on Commercial and Institutional Energy Use (SCIEU) for Canada. Mapping between EPA-Calculated Property Type and reference survey data is included in the Technical Reference for the National Median[1].

- **Location.** Your location is primarily identified by your US State or Canadian Province. In order to be able to provide fuel mix estimates broken down by Property Type, it is necessary to combine states/provinces into broader regions. For the US, Census Regions are used; for Canada provinces or regions are used.

Available information from the reference survey is used to determine the expected percentage of electricity used by your property type and location[2]. Portfolio Manager and Target Finder will assume this percentage for your electricity use and then assume the rest of your energy use is natural gas. Figures 1 and 2 summarize the electric percentages used by property type and location for the U.S. and Canada, respectively.

If you know that your property design will use other forms of energy (oil, propane, etc.), it is recommended that you enter your own design energy estimates. When design energy estimates are provided, this fuel mix will be applied to convert your Source EUI into Site EUI and assess your target. It is possible for you to enter an estimated design energy use, without specifying estimated fuel costs. If you do this, we will assess both your consumption and target using the specified fuel mix and estimated costs, as described in the following section.

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[1] More information on how buildings are mapped into their peer comparison categories is available at http://www.energystar.gov/buildings/tools-and-resources/portfolio-manager-technical-reference-us-national-energy-use-intensity. Note that while the CBECS survey is used for the majority of property types, there are a handful of other reference surveys, too.

[2] CBECS Table C15. Electricity Consumption and Conditional Energy Intensity by Census Region for Non-Mall Buildings, 2003 http://www.eia.doe.gov/emeu/cbecs/cbecs2003/detailed_tables_2003/2003set10/2003pdf/c15.pdf, and CBECS table C5. Consumption and Gross Energy Intensity by Census Region for Sum of Major Fuels for Non-Mall Buildings, 2003. http://www.eia.doe.gov/emeu/cbecs/cbecs2003/detailed_tables_2003/2003set14/2003pdf/c5a.pdf. Percent electric is computed as the electricity (Table C15) divided by the total energy (Table C5) for each census region/principal building activity combination.
SCIEU data used for Canadian Buildings is not available to the public, but a summary report can be found here: http://oee.nrcan.gc.ca/publications/statistics/scieu09/scieu_e.pdf.

Figure 1 – % Electricity Use by Property Type and US Census Region

	Northeast	South	Midwest	West	U.S. Average
Adult Education	26%	66%	31%	45%	45%
Ambulatory Surgical Center	39%	76%	53%	62%	58%
Aquarium	22%	66%	36%	59%	45%
Automobile Dealership	50%	78%	45%	78%	66%
Bank Branch	56%	74%	56%	70%	63%
Bar/Nightclub	22%	66%	36%	59%	45%
Barracks	28%	60%	41%	48%	46%
Bowling Alley	22%	66%	36%	59%	45%
Casino	22%	66%	36%	59%	45%
College/University	26%	66%	31%	45%	45%
Convenience Store with Gas Station	39%	90%	78%	57%	83%
Convenience Store without Gas Station	39%	90%	78%	57%	83%
Convention Center	22%	66%	36%	59%	45%
Courthouse	39%	66%	44%	57%	45%
Data Center	100%	100%	100%	100%	100%
Distribution Center	49%	80%	41%	62%	54%
Drinking Water Treatment & Distribution	95%	95%	95%	95%	95%
Enclosed Mall	68%	83%	56%	74%	75%
Energy/Power Station	39%	66%	44%	57%	47%
Fast Food Restaurant	39%	58%	48%	42%	51%
Financial Office	56%	74%	56%	70%	63%
Fire Station	39%	66%	44%	57%	45%
Fitness Center/Health Club/Gym	22%	66%	36%	59%	45%
Food Sales	39%	90%	78%	57%	83%
Food Service	39%	58%	48%	42%	51%
Hospital (General Medical & Surgical)	39%	47%	34%	36%	37%
Hotel	28%	60%	41%	48%	46%
Ice/Curling Rink	22%	66%	36%	59%	45%
Indoor Arena	22%	66%	36%	59%	45%
K-12 School	26%	66%	31%	45%	45%
Laboratory	39%	66%	44%	57%	47%
Library	22%	66%	36%	59%	45%
Lifestyle Center	68%	83%	56%	74%	75%
Mailing Center/Post Office	29%	68%	43%	45%	48%
Manufacturing/Industrial Plant	39%	66%	44%	57%	47%
Medical Office	56%	74%	56%	70%	63%
Mixed Use Property	39%	66%	44%	57%	47%
Movie Theater	22%	66%	36%	59%	45%
Multifamily Housing	53%	85%	71%	79%	73%
Museum	22%	66%	36%	59%	45%
Non-Refrigerated Warehouse	49%	80%	41%	62%	54%
Office	56%	74%	56%	70%	63%
Other	39%	66%	44%	57%	47%
Other - Education	39%	66%	44%	57%	47%
Other - Entertainment/Public Assembly	22%	66%	36%	59%	45%
Other - Lodging/Residential	28%	60%	41%	48%	46%
Other - Mall	68%	83%	56%	74%	75%
Other - Public Services	39%	66%	44%	57%	45%
Other - Recreation	22%	66%	36%	59%	45%
Other - Restaurant/Bar	39%	58%	48%	42%	51%
Other - Services	29%	68%	43%	45%	48%
Other - Stadium	22%	66%	36%	59%	45%
Other - Technology/Science	39%	66%	44%	57%	47%
Other - Utility	39%	66%	44%	57%	47%
Other/Specialty Hospital	39%	47%	34%	36%	37%
Outpatient Rehabilitation/Physical Therapy	39%	76%	53%	62%	58%
Parking	39%	66%	44%	57%	47%
Performing Arts	22%	66%	36%	59%	45%
Personal Services	29%	68%	43%	45%	48%
Police Station	39%	66%	44%	57%	45%
Pre-school/Daycare	26%	66%	31%	45%	45%
Prison/Incarceration	39%	66%	44%	57%	45%
Race Track	22%	66%	36%	59%	45%
Refrigerated Warehouse	49%	80%	41%	62%	54%
Repair Services (Vehicle, Shoe, Locksmith, etc)	29%	68%	43%	45%	48%
Residential Care Facility	28%	60%	41%	48%	46%
Residence Hall/Dormitory	28%	60%	41%	48%	46%
Restaurant	39%	58%	48%	42%	51%
Retail Store	50%	78%	45%	78%	66%
Roller Rink	22%	66%	36%	59%	45%
Self-Storage Facility	49%	80%	41%	62%	54%
Senior Care Community	28%	60%	41%	48%	46%
Single Family Home	26%	65%	32%	43%	43%
Social/Meeting Hall	22%	66%	36%	59%	45%
Stadium (Closed)	22%	66%	36%	59%	45%
Stadium (Open)	22%	66%	36%	59%	45%
Strip Mall	68%	83%	56%	74%	75%
Supermarket/Grocery Store	39%	90%	78%	57%	83%
Swimming Pool	22%	66%	36%	59%	45%
Transportation Terminal/Station	22%	66%	36%	59%	45%
Urgent Care/Clinic/Other Outpatient	56%	74%	56%	70%	63%
Veterinary Office	39%	76%	53%	62%	58%
Vocational School	39%	66%	44%	57%	47%
Wastewater Treatment Plant	75%	75%	75%	75%	75%
Wholesale Club/Supercenter	50%	78%	45%	78%	66%
Worship Facility	21%	60%	29%	49%	38%
Zoo	22%	66%	36%	59%	45%

Note on Regions:

- Northeast includes: CT, MA, ME, NH, NJ, NY, PA, RI, VT.
- Midwest includes: IA, IL, IN, KS, MI, MN, MO, ND, NE, OH, SD, WI.
- South Includes: AL, AR, DC, DE, FL, GA, KY, LA, MD, MS, NC, OK, SC, TN, TX, VA, WV.
- West Includes: AK, AZ, CA, CO, HI, ID, MT, NM, NV, OR, UT, WA, WY.
- US Average is used as the default for buildings not located in either the US or Canada.

Figure 2 – % Electricity Use by Property Type and Canadian Province/Region

	Atlantic Region	Quebec	Ontario	Prairies Region	British Columbia	Territories
Adult Education	42%	42%	42%	42%	42%	42%
Ambulatory Surgical Center	61%	61%	61%	61%	61%	61%
Aquarium	34%	34%	39%	26%	34%	34%
Automobile Dealership	52%	52%	52%	52%	52%	52%
Bank Branch	80%	84%	53%	36%	54%	60%
Bar/Nightclub	60%	60%	60%	60%	60%	60%
Barracks	36%	36%	36%	36%	36%	36%
Bowling Alley	55%	55%	55%	55%	55%	55%
Casino	60%	60%	60%	60%	60%	60%
College/University	66%	66%	78%	66%	66%	66%
Convenience Store with Gas Station	78%	68%	52%	43%	50%	60%
Convenience Store without Gas Station	78%	68%	52%	43%	50%	60%
Convention Center	34%	34%	39%	26%	34%	34%
Courthouse	59%	59%	59%	59%	59%	59%
Data Center	100%	100%	100%	100%	100%	100%
Distribution Center	61%	54%	47%	20%	40%	44%
Drinking Water Treatment & Distribution	95%	95%	95%	95%	95%	95%
Enclosed Mall	64%	64%	64%	64%	64%	64%
Energy/Power Station	47%	50%	41%	32%	50%	44%
Fast Food Restaurant	45%	50%	46%	32%	45%	45%
Financial Office	80%	84%	53%	36%	54%	60%
Fire Station	55%	55%	55%	55%	55%	55%
Fitness Center/Health Club/Gym	55%	55%	55%	55%	55%	55%
Food Sales	78%	68%	52%	43%	50%	60%
Food Service	45%	50%	46%	32%	45%	45%
Hospital (General Medical & Surgical)	35%	36%	31%	36%	37%	36%
Hotel	59%	48%	48%	48%	37%	48%
Ice/Curling Rink	55%	55%	55%	55%	55%	55%
Indoor Arena	55%	55%	55%	55%	55%	55%
K-12 School	48%	54%	31%	31%	34%	39%
Laboratory	47%	50%	41%	32%	50%	44%
Library	34%	34%	39%	26%	34%	34%
Lifestyle Center	67%	67%	67%	67%	67%	67%
Mailing Center/Post Office	51%	48%	56%	51%	51%	51%
Manufacturing/Industrial Plant	49%	49%	49%	49%	49%	49%
Medical Office	61%	84%	61%	61%	50%	61%
Mixed Use Property	47%	50%	41%	32%	50%	44%
Movie Theater	60%	60%	60%	60%	60%	60%
Multifamily Housing	49%	49%	49%	49%	49%	49%
Museum	34%	34%	39%	26%	34%	34%
Non-Refrigerated Warehouse	61%	54%	47%	20%	40%	44%
Office	80%	84%	53%	36%	54%	60%
Other	47%	50%	41%	32%	50%	44%
Other - Education	43%	52%	40%	40%	46%	46%
Other - Entertainment/Public Assembly	34%	34%	39%	26%	34%	34%
Other - Lodging/Residential	59%	48%	48%	48%	37%	48%
Other - Mall	64%	64%	64%	64%	64%	64%
Other - Public Services	47%	50%	41%	32%	50%	44%
Other - Recreation	59%	59%	62%	59%	59%	59%
Other - Restaurant/Bar	45%	50%	46%	32%	45%	45%
Other - Services	78%	46%	50%	32%	34%	46%
Other - Stadium	55%	55%	55%	55%	55%	55%
Other - Technology/Science	47%	50%	41%	32%	50%	44%
Other - Utility	47%	50%	41%	32%	50%	44%
Other/Specialty Hospital	35%	36%	31%	36%	37%	36%
Outpatient Rehabilitation/Physical Therapy	61%	61%	61%	61%	61%	61%
Parking	49%	49%	49%	49%	49%	49%
Performing Arts	34%	34%	39%	26%	34%	34%
Personal Services	85%	41%	56%	31%	46%	46%
Police Station	59%	59%	59%	59%	59%	59%
Pre-school/Daycare	43%	52%	40%	40%	46%	46%
Prison/Incarceration	59%	59%	59%	59%	59%	59%
Race Track	59%	59%	62%	59%	59%	59%
Refrigerated Warehouse	65%	56%	48%	30%	48%	49%
Repair Services (Vehicle, Shoe, Locksmith, etc)	85%	41%	56%	31%	46%	46%
Residential Care Facility	36%	36%	36%	36%	36%	36%
Residence Hall/Dormitory	67%	61%	35%	21%	29%	44%
Restaurant	45%	50%	46%	32%	45%	45%
Retail Store	52%	52%	52%	52%	52%	52%
Roller Rink	55%	55%	55%	55%	55%	55%
Self-Storage Facility	61%	54%	47%	20%	40%	44%
Senior Care Community	67%	61%	35%	21%	29%	44%
Single Family Home	49%	49%	49%	49%	49%	49%
Social/Meeting Hall	34%	34%	39%	26%	34%	34%
Stadium (Closed)	55%	55%	55%	55%	55%	55%
Stadium (Open)	55%	55%	55%	55%	55%	55%
Strip Mall	67%	67%	67%	67%	67%	67%
Supermarket/Grocery Store	78%	68%	52%	43%	50%	60%
Swimming Pool	55%	55%	55%	55%	55%	55%
Transportation Terminal/Station	39%	39%	39%	20%	39%	39%
Urgent Care/Clinic/Other Outpatient	61%	61%	61%	61%	61%	61%
Veterinary Office	61%	61%	61%	61%	61%	61%
Vocational School	42%	42%	42%	42%	42%	42%
Wastewater Treatment Plant	75%	75%	75%	75%	75%	75%
Wholesale Club/Supercenter	52%	52%	52%	52%	52%	52%
Worship Facility	30%	30%	31%	30%	30%	30%
Zoo	34%	34%	39%	26%	34%	34%

Note on Regions:

- Atlantic Region includes: Prince Edward Island, Nova Scotia, New Brunswick, and Newfoundland & Labrador.
- Prairies Region includes: Manitoba, Saskatchewan, and Alberta.
- Territories include: Yukon, Northwest Territories, and Nunavut.

ESTIMATING FUEL COSTS

To assess the fuel cost associated with a performance target for a design project (in either Target Finder or the Design Tab of Portfolio Manager), we begin with the Source and Site EUI of your target. As discussed in the previous section, your target Source and Site EUI are determined based on the design energy estimates you enter, or on values that are estimated based on your property type and location. To convert your target Source and Site EUI into a target $/ft^2 we will use the fuel rates you provide (if applicable). Otherwise, the fuel cost is estimated based on the fuel type and the state or province in which your property is located.

For the United States, average fuel costs are obtained from the Energy Information Administration (EIA) from regular reports including Electric Power Monthly and Natural Gas Monthly. Values and reference link for estimated U.S. costs are provided in Figure 3. For Canada, the data is obtained from a combination of sources including Natural Resources Canada, Statistics Canada, and provincial utility rate reports; specific reference links are provided in Figure 4. EPA and NRCan review available data and update reference costs on an annual basis.

Figure 3 – Average Fuel Costs by U.S State (in $/kBtu)

State	Electricity (Grid)	Natural Gas	Propane	Fuel Oil #1, 2 & Diesel	Fuel Oil #4, 5, 6	Coal	District Heat	District Chilled Water	Wood
Alabama	$0.0326	$0.0110	$0.0200	$0.0129	$0.0089	$0.0042	$0.0149	$0.0261	$0.0084
Alaska	$0.0533	$0.0078	$0.0194	$0.0191	$0.0089	$0.0050	$0.0149	$0.0198	$0.0035
Arizona	$0.0307	$0.0103	$0.0205	$0.0149	$0.0089	$0.0042	$0.0149	$0.0249	$0.0113
Arkansas	$0.0238	$0.0082	$0.0205	$0.0132	$0.0089	$0.0042	$0.0149	$0.0151	$0.0077
California	$0.0444	$0.0082	$0.0209	$0.0151	$0.0083	$0.0042	$0.0149	$0.0310	$0.0032
Colorado	$0.0283	$0.0063	$0.0186	$0.0132	$0.0089	$0.0036	$0.0149	$0.0195	$0.0113
Connecticut	$0.0461	$0.0084	$0.0237	$0.0155	$0.0103	$0.0042	$0.0149	$0.0260	$0.0057
Delaware	$0.0297	$0.0093	$0.0215	$0.0122	$0.0075	$0.0042	$0.0149	$0.0216	$0.0084
District of Columbia	$0.0344	$0.0108	$0.0227	$0.0145	$0.0089	$0.0030	$0.0149	$0.0265	$0.0084
Florida	$0.0267	$0.0103	$0.0167	$0.0138	$0.0094	$0.0042	$0.0149	$0.0256	$0.0058
Georgia	$0.0282	$0.0075	$0.0164	$0.0136	$0.0167	$0.0052	$0.0149	$0.0244	$0.0077
Hawaii	$0.0722	$0.0263	$0.0202	$0.0146	$0.0089	$0.0042	$0.0149	$0.0629	$0.0016
Idaho	$0.0229	$0.0069	$0.0191	$0.0162	$0.0089	$0.0038	$0.0149	$0.0166	$0.0086
Illinois	$0.0256	$0.0071	$0.0203	$0.0146	$0.0160	$0.0025	$0.0149	$0.0163	$0.0084
Indiana	$0.0286	$0.0074	$0.0204	$0.0138	$0.0104	$0.0051	$0.0149	$0.0178	$0.0025
Iowa	$0.0274	$0.0063	$0.0202	$0.0135	$0.0089	$0.0027	$0.0149	$0.0160	$0.0033
Kansas	$0.0300	$0.0087	$0.0203	$0.0135	$0.0089	$0.0042	$0.0149	$0.0213	$0.0084
Kentucky	$0.0275	$0.0077	$0.0202	$0.0135	$0.0089	$0.0047	$0.0149	$0.0204	$0.0084
Louisiana	$0.0249	$0.0079	$0.0200	$0.0129	$0.0089	$0.0042	$0.0149	$0.0217	$0.0084
Maine	$0.0356	$0.0138	$0.0235	$0.0154	$0.0103	$0.0042	$0.0149	$0.0255	$0.0037
Maryland	$0.0322	$0.0088	$0.0228	$0.0125	$0.0080	$0.0036	$0.0149	$0.0228	$0.0044
Massachusetts	$0.0454	$0.0092	$0.0237	$0.0148	$0.0103	$0.0042	$0.0149	$0.0258	$0.0067
Michigan	$0.0313	$0.0067	$0.0202	$0.0138	$0.0103	$0.0044	$0.0149	$0.0179	$0.0026
Minnesota	$0.0290	$0.0071	$0.0204	$0.0135	$0.0104	$0.0040	$0.0149	$0.0170	$0.0038
Mississippi	$0.0282	$0.0077	$0.0206	$0.0132	$0.0089	$0.0042	$0.0149	$0.0239	$0.0084
Missouri	$0.0266	$0.0077	$0.0199	$0.0133	$0.0089	$0.0036	$0.0149	$0.0189	$0.0065
Montana	$0.0298	$0.0069	$0.0181	$0.0129	$0.0139	$0.0023	$0.0149	$0.0172	$0.0113
Nebraska	$0.0260	$0.0062	$0.0201	$0.0135	$0.0159	$0.0042	$0.0149	$0.0164	$0.0046
Nevada	$0.0235	$0.0084	$0.0208	$0.0150	$0.0089	$0.0042	$0.0149	$0.0184	$0.0113
New Hampshire	$0.0423	$0.0133	$0.0223	$0.0146	$0.0097	$0.0042	$0.0149	$0.0285	$0.0048

State	Electricity (Grid)	Natural Gas	Propane	Fuel Oil #1, 2 & Diesel	Fuel Oil #4, 5, 6	Coal	District Heat	District Chilled Water	Wood
New Jersey	$0.0364	$0.0077	$0.0230	$0.0147	$0.0074	$0.0042	$0.0149	$0.0206	$0.0029
New Mexico	$0.0289	$0.0056	$0.0202	$0.0130	$0.0089	$0.0042	$0.0149	$0.0198	$0.0113
New York	$0.0424	$0.0059	$0.0223	$0.0145	$0.0078	$0.0042	$0.0149	$0.0248	$0.0030
North Carolina	$0.0254	$0.0081	$0.0165	$0.0137	$0.0093	$0.0050	$0.0149	$0.0209	$0.0057
North Dakota	$0.0268	$0.0053	$0.0200	$0.0134	$0.0102	$0.0033	$0.0149	$0.0182	$0.0084
Ohio	$0.0289	$0.0062	$0.0202	$0.0133	$0.0089	$0.0043	$0.0149	$0.0173	$0.0067
Oklahoma	$0.0219	$0.0079	$0.0200	$0.0133	$0.0089	$0.0042	$0.0149	$0.0175	$0.0084
Oregon	$0.0260	$0.0098	$0.0194	$0.0141	$0.0153	$0.0042	$0.0149	$0.0200	$0.0091
Pennsylvania	$0.0271	$0.0091	$0.0228	$0.0141	$0.0090	$0.0045	$0.0149	$0.0187	$0.0040
Rhode Island	$0.0433	$0.0109	$0.0239	$0.0156	$0.0104	$0.0042	$0.0149	$0.0266	$0.0067
South Carolina	$0.0297	$0.0082	$0.0167	$0.0138	$0.0094	$0.0042	$0.0149	$0.0245	$0.0084
South Dakota	$0.0278	$0.0055	$0.0199	$0.0133	$0.0089	$0.0042	$0.0149	$0.0180	$0.0084
Tennessee	$0.0294	$0.0083	$0.0204	$0.0136	$0.0089	$0.0048	$0.0149	$0.0230	$0.0084
Texas	$0.0226	$0.0067	$0.0204	$0.0131	$0.0170	$0.0042	$0.0149	$0.0195	$0.0054
Utah	$0.0259	$0.0072	$0.0191	$0.0136	$0.0147	$0.0042	$0.0149	$0.0164	$0.0043
Vermont	$0.0425	$0.0065	$0.0236	$0.0162	$0.0103	$0.0042	$0.0149	$0.0267	$0.0060
Virginia	$0.0234	$0.0079	$0.0166	$0.0140	$0.0169	$0.0033	$0.0149	$0.0187	$0.0026
Washington	$0.0245	$0.0095	$0.0207	$0.0136	$0.0089	$0.0042	$0.0149	$0.0184	$0.0100
West Virginia	$0.0274	$0.0076	$0.0167	$0.0139	$0.0089	$0.0042	$0.0149	$0.0163	$0.0084
Wisconsin	$0.0321	$0.0066	$0.0200	$0.0136	$0.0089	$0.0048	$0.0149	$0.0183	$0.0065
Wyoming	$0.0277	$0.0064	$0.0188	$0.0134	$0.0089	$0.0027	$0.0149	$0.0180	$0.0113
US Average	***$0.0304***	***$0.0071***	***$0.0203***	***$0.0143***	***$0.0089***	***$0.0042***	***$0.0149***	***$0.0215***	***$0.0043***

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- **Other**: If you have energy designated as "other" then no costs are estimated/assumed. Any cost metrics will show Not Available.

Figure 4 – Average Fuel Costs by Province (in $/kBtu)

Province / Territory	Electricity (Grid)	Natural Gas	Propane	#2 Fuel Oil & Diesel	Fuel Oil #4, 5, 6	Coal	District Heat	District Chilled Water	Wood
Newfoundland and Labrador	$0.0368	$0.0090	$0.0381	$0.0319	$0.0319	$0.0022	$0.0230	$0.0230	$0.0131
Prince Edward Island	$0.0466	$0.0090	$0.0399	$0.0301	$0.0301	$0.0022	$0.0230	$0.0230	$0.0131
Nova Scotia	$0.0447	$0.0090	$0.0271	$0.0312	$0.0312	$0.0022	$0.0230	$0.0230	$0.0131
New Brunswick	$0.0364	$0.0067	$0.0271	$0.0317	$0.0317	$0.0022	$0.0230	$0.0230	$0.0131
Quebec	$0.0296	$0.0084	$0.0337	$0.0340	$0.0340	$0.0022	$0.0230	$0.0230	$0.0131
Ontario	$0.0391	$0.0074	$0.0217	$0.0343	$0.0343	$0.0022	$0.0230	$0.0230	$0.0131
Manitoba	$0.0234	$0.0054	$0.0324	$0.0326	$0.0326	$0.0022	$0.0230	$0.0230	$0.0131
Saskatchewan	$0.0341	$0.0041	$0.0381	$0.0298	$0.0298	$0.0022	$0.0230	$0.0230	$0.0131
Alberta	$0.0405	$0.0034	$0.0280	$0.0320	$0.0320	$0.0022	$0.0230	$0.0230	$0.0131
British-Columbia	$0.0275	$0.0071	$0.0286	$0.0342	$0.0342	$0.0022	$0.0230	$0.0230	$0.0131
Yukon	$0.0507	$0.0457	$0.0379	$0.0382	$0.0382	$0.0022	$0.0230	$0.0230	$0.0131
Northwest Territories	$0.0469	$0.0457	$0.0379	$0.0340	$0.0340	$0.0022	$0.0230	$0.0230	$0.0131
Nunavut	$0.2068	$0.0457	$0.0379	$0.0340	$0.0340	$0.0022	$0.0230	$0.0230	$0.0131

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