BERDO EMISSIONS FACTORS LIST

2023 EMISSIONS FACTORS

Last updated: June 2024

The following Emissions Factors shall be used to calculate Building's emissions from 2023.

FUEL / ENERGY SOURCE	EMISSIONS FACTOR	UNITS OF CO$_2$e	DATA SOURCE
FOSSIL FUELS			
Natural Gas	53.11	kg/mmBtu	EPA Energy Star Portfolio Manager
Propane	64.25	kg/mmBtu	EPA Energy Star Portfolio Manager
Fuel Oil (No. 1)	73.50	kg/mmBtu	EPA Energy Star Portfolio Manager
Fuel Oil (No. 2)	74.21	kg/mmBtu	EPA Energy Star Portfolio Manager
Fuel Oil (No. 4)	75.29	kg/mmBtu	EPA Energy Star Portfolio Manager
Fuel Oil (No. 5, 6)	75.35	kg/mmBtu	EPA Energy Star Portfolio Manager
Diesel Oil	74.21	kg/mmBtu	EPA Energy Star Portfolio Manager
Kerosene	77.69	kg/mmBtu	EPA Energy Star Portfolio Manager
DISTRICT ENERGY SYSTEMS			
District Steam (Vicinity, Boston)	55.2	kg/mmBtu	Submitted by District Energy System Operator in 2024*
District Steam (Vicinity, Longfellow Loop)	51.6	kg/mmBtu	
District Steam (MATEP)	63.7	kg/mmBtu	Submitted by District Energy System Operator in 2024*
District Chilled Water (MATEP)	62.5	kg/mmBtu	
District Electricity (MATEP)	71.1	kg/mmBtu	
Default District Hot Water	66.40	kg/mmBtu	EPA Energy Star Portfolio Manager
Default District Steam	66.40	kg/mmBtu	EPA Energy Star Portfolio Manager
Default District Chilled Water, Electric Driven Chiller	52.70	kg/mmBtu	EPA Energy Star Portfolio Manager
Default District Chilled Water, Absorption Chiller using Natural Gas	73.89	kg/mmBtu	EPA Energy Star Portfolio Manager
Default District Chilled Water, Engine-driven chiller natural gas	49.31	kg/mmBtu	EPA Energy Star Portfolio Manager
ELECTRIC GRID			
Projected ISO New England Electric Grid**	263	kg/MWh	Environment Department
	0.263	kg/kWh	
Annual ISO New England Electric Grid	270	kg/MWh	Environment Department*
	0.270	kg/kWh	

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HOW ARE BUILDING EMISSIONS CALCULATED?

Our ↗Emissions Calculator uses the following formulas to calculate emissions associated with energy use:

EMISSIONS FROM FOSSIL FUELS
$Fossil\ Fuel\ Emissions\ [kgco2e]\ =\quad Fossil\ Fuel\ Use\ [mmBtu]\ \times$ $\qquad\qquad Fossil\ Fuel\ Emissions\ Factor\ [kgco2e/mmBtu]$

EMISSIONS FROM DISTRICT ENERGY SYSTEMS PRODUCTS
$District\ Energy\ System\ (DES)\ Emissions\ [kgco2e]\ =\quad DES\ Product\ Use\ [mmBtu]\ \times$ $\qquad\qquad DES\ Product\ Emissions\ Factor\ [kgco2e/mmBtu]$

EMISSIONS FROM ELECTRIC GRID
$Electric\ Grid\ Emissions\ [kgco2e]\ =\quad Electricity\ consumed\ from\ ISO\ New\ England\ Grid\ \times$ $\qquad\qquad (100\%\ -\ RPS\ Class\ I\ annual\ minimum\ requirement\ ^{***})\ \times$ $\qquad\qquad Projected\ ISO\ New\ England\ Electric\ Grid\ Emissions\ Factor$

Total Building emissions are the sum of emissions from each type of energy use in the Building.

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* Per Section VIII.a.ii.a. of the Regulations, in the event that the annual electric grid Emissions Factor is higher than the projected electric grid Emissions Factor, the projected electric grid Emissions Factor shall be used for calculating compliance.

** Documentation for the calculations of these Emissions Factors are available upon request to energyreporting@boston.gov.

*** The Renewable Energy Portfolio Standard (RPS) Class I annual minimum requirements can be found in Section 14.07 of 225 CMR 14.00.

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