
ELECTRIC GENERAL RATE APPLICATION 2015**Manitoba Hydro Undertaking #69**

Manitoba Hydro to provide the capital costs associated with a electric furnace and electric water tank, and a natural gas furnace and natural gas water tank.

Response:

As per the report filed with the PUB under Directive 17 in September of 2012 titled, "Economic, Load, and Environmental Impacts of Fuel Switching in Manitoba" the following are the capital costs, including equipment, material and labour associated with electric and natural gas space and water heating equipment:

Technology	Low Capital Cost	High Capital Cost	Average Capital Cost
Electric Forced Air Furnace	\$2,000	\$3,000	\$2,500
High Efficiency Natural Gas Furnace (92% AFUE)	\$3,500	\$5,500	\$4,500
Electric Tank Water Heater (60 Imperial Gallon)	\$800	\$1,200	\$1,000
Natural Gas Tank Conventional Water Heater (40 Imperial Gallon)	\$800	\$1,000	\$900
Natural Gas Side Vent Tank Type Water Heater (40 Imperial Gallon)	\$1,500	\$2,000	\$1,750

Note: A 40 gallon natural gas water heater has the equivalent performance of a 60 gallon electric water heater. Therefore a customer who is replacing a 40 gallon natural gas water heater with an electric water heater typically increases the size of the water heater to a 60 gallon tank.