

Accuracy of the LTEP calculations of GHG emissions

According to a report from the Ontario Energy Board the Ontario consumption of natural gas amounts to about 1 Tcf (trillion-cubic-feet) per year. Nearly all of it is used for heating, cooling, DHW and electricity generation.

www.ontarioenergyboard.ca/.../ICF_Market_Report_20100820.pdf

Using the MIT conversion tables 1 Tcf of natural gas has a mass of 20,400,000 tonnes

Using the MIT tables burning that volume of natural gas will produce 55,000,000 tonnes of CO₂

The National Energy Board predicts that Ontario will soon switch to the use of shale gas

A review of the literature by Howarth (Dec SJ) showed that 3.4% of the shale gas is lost before it reaches the points of consumption.

3.4% of 20,400,000 tonnes is 692,000 tonnes

According to the IPCC the global warming potential factor is 72 (20 year averaging period)

72 x 692,000 tonnes = 49,800,000 tonnes of CO₂ (GHG equivalent)

Annual GHG emissions from natural gas in Ontario = 55,000,000 + 49,800,000 = 104,800,000 tonnes

There is a growing body of evidence that the amount of natural gas that escapes is considerably greater than 3.4% and that the GWP factor should be greater than 72.

Also to be considered is the trend for greater emissions if the LTEP is followed. The Ontario Ministry of Finance estimates that the population growth in Ontario will amount to 28.6% by 2036. The LTEP projects that the price of natural gas will remain low while the price of electricity will continue to increase which means that the 22% of homes that are presently heated electrically will switch to gas. The LTEP projects that the consumption of natural gas for power generation will increase. Put together these would bring the 2036 GHG total to about 173,000,000 tonnes of CO₂(eq).

The LTEP estimate for GHG emissions is about 5,000,000 tonnes, leaving a discrepancy of 168,000,000 tonnes to be explained.