The CO2 Impacts of Bottled Water and a Comparison to Tap Water

The Pacific Institute has done a detailed analysis of bottled water and energy.

In a recent fact sheet (**http://www.pacinst.org/topics/water_and_sustainability/bottled_water/bottled_water_and_energy.pdf**), they estimate that the total energy needed to provide a commercial bottle of water, including the plastic, filling them at the factory, transporting them in all the means of freight used, cooling them in the retail store, and recovering or disposing the empty bottles is on average, equivalent to filling a plastic bottle a fourth full with oil.

The Energy Information Administration factors for petroleum (**http://www.eia.doe.gov/oiaf/1605/coefficients.html**) varies by product. Choosing residual fuel as the petroleum product for "oil" in the above analysis, gives a factor of 26 lbs of CO2 per gallon. A fourth of the oil will give 26/4 or 6.5 lbs CO2 per gallon of bottled water (average of all size containers).

In March of 2008, in response to an e-mail request, the Fairfax County Water Authority estimated that based on the average energy use, about 2,500 Kwh is used to pump, treat, transmit and distribute a million gallons of water in their service area. Using a factor of 1.25 lbs CO2 per Kwh (a value that approximates consumption in the PJM Interconnection, the grid serving our area) gives 3.125 lbs CO2 per 1000 gallons of tapwater. (Note: This value for water will be more than double if sewage treatment is included)

Therefore bottled water at 6.5 lbs/gal compared to .00313 lbs/gal of tapwater is a factor of over 2000 times the CO2 impact.

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