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The Reality of Energy Efficiency

In recent years the topic of energy efficiency and the role it will play in reducing our energy use and carbon dioxide emissions has become increasingly popular. There is a societal belief that if we make cars, appliances and houses more fuel and energy efficient, then we are doing 'our part' to combat climate change.

The challenge is that we really need to focus on reducing the amount of energy we use, and unfortunately, improving energy efficiency does not always lead to energy reduction. This may seem counter-intuitive at first, so let's look at some interesting statistics.

I found a car advertisement dated October 20th, 1983. It was taken from The Daily Telegraph - a British newspaper - and advertises the 'new' Peugeot 205. This vehicle seems rather unremarkable at first - very 80's - and does little to grab your attention until you start to read. This car was capable of getting 60 MPG (or 3.9 L / 100 km) on the highway, and 43 MPG in the city (5.4 L / 100 km). By today's standards that is phenomenal. It is on par with today's best performing hybrids, and far exceeds the fuel economy of most conventional cars available at present.

So what happened? Did we forget how to build fuel-efficient cars? Actually no, we didn't. In fact, since 1983 we have made huge strides in improving fuel efficiency. In 2007, the average car being sold in the United States used almost exactly half the amount of fuel per horsepower compared with cars built in 1983. Unfortunately, that same car weighs over 25% more than it did 1983. We've dropped the average 0 - 100 km/h acceleration time from 14 seconds to less than 10 in the same time period, and most importantly - to make our heavier cars go faster - we've more than doubled the horsepower in the average car, from 107 to 223.

So while our scientists and engineers worked hard to make our engines twice as fuel efficient, we also decided to double the size of them. The end result is that our average vehicle today consumes about the same amount of gas it did over 25 years ago.

Unfortunately, this problem isn't just limited to cars - it applies to our homes as well. Between 1990 and 2006, the energy used by the average refrigerator sold in Canada dropped by a staggering 50%; dishwashers by an even more impressive 64%; electric stoves by 31%; and the list goes on. In that same time period, however, total energy use in Canadian households actually increased by 5%. Why? Population growth is part of it - but what is more concerning is that we started to build bigger houses (up 4%), and then started to put fewer people inside each of them (down 8%).

It is for these reasons that, despite all the talk we hear about energy efficiency and conservation, the World Energy Outlook still predicts a 9% increase in the amount of energy used in North America between 2006 and 2030.

We have an incredible amount of talent in this country and around the world to make massive gains in terms of energy efficiency, but we need to be careful not to negate those gains by always demanding bigger and better. Buying a new energy efficient fridge is a progressive step – but not if you put your old one in the basement to keep your beer cold!

Energy efficiency is important, but it's critical that it go hand in hand with maintaining or reducing the size and power of the goods we consume so that our total energy consumption begins a downward trend. So next time you're out buying a vehicle, ask yourself whether you really need 225 horsepower, or whether 150 (or less) would do just fine.

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