



POWER NEEDS OF MINOR APPLIANCES A MAJOR CONCERN FOR THE GRID

By Don Horne

A recent load forecast discussion paper by the Ontario Power Authority estimated that the equivalent power of two nuclear reactors will be needed to meet the growth needs of minor appliances.

These minor appliances encompass everything from plasma screen TVs, DVD players, toaster ovens and iPod chargers — all the gadgets that fill residential households and represent the single largest contributor to residential energy growth in the next 20 years.

Gone are the days when there was one television per household. Now, TVs can be found in almost every room — and in many cases households have more than one computer.

The load forecast from the Ontario Power Authority (OPA) predicts the energy consumed by minor appliances will grow to 20.32 terawatt-hours in 2025 from 12.71 terawatt-hours in 2005, an increase of 7.61 terawatt-hours.

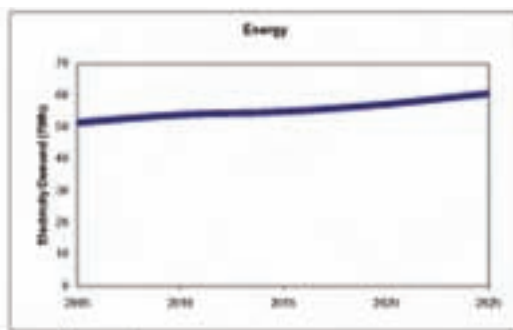
Put into perspective, it's the annual output of two Pickering A nuclear reactors — 1,000 megawatts.

However, those forecasted numbers are being questioned by the Pembina Institute as being artificially high, not taking into account improvements in technology to make more energy-efficient appliances. And as most small appliances have a short life-cycle, those upgrades would come at a fast pace.

The David Suzuki Foundation also questions the rate of growth estimates set by the OPA, pointing to recent annual consumption rates coming in below 1 per cent.

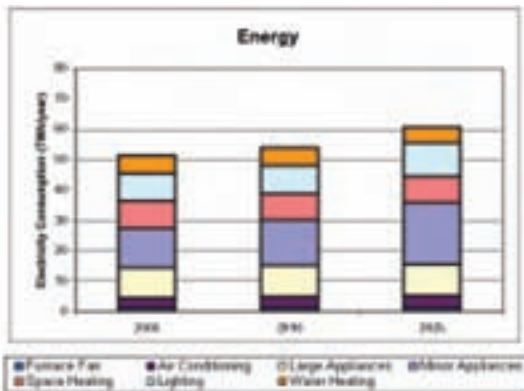
OPA's figures are based on the number of households growing 1.2 per cent annually (with commercial floor space growing 1.9 per cent), with the total consumption for commercial, industrial and residential sectors weighing in at 35.6 per cent, 33.4 per cent and 30.9 per cent respectively by the year 2025.

The Pembina Institute is an independent, not-for-profit environmental policy research and education organization. The



Source: Jaccard

Figure 4.4 – Growth in Residential Electricity Use, Energy, 2005 – 2025



Source: Jaccard, Navigant

Figure 4.5 – Electricity End-Use in 2005, 2010 and 2025, Residential Sector: Energy

David Suzuki Foundation is a group dedicated to finding ways for society to live in balance with the natural world, following the principles laid out by its namesake, Dr. David Suzuki.

The Pembina Institute argues that such forecasts have been wrong before, pointing to the 1970s when the government of the day predicted significant economic growth and began massive spending on several nuclear and oil-fired facilities. The growth never materialized, and many facilities ended up being delayed or mothballed altogether.

The rate of residential consumption growth can be argued either way — be it a

full percentage point a year or a fraction thereof; but there remains the inescapable fact that Ontario is in desperate need of more — much more — generation capacity.

The arguments raised by the Pembina Institute and the David Suzuki Foundation that the OPA's figure may be artificially high do have merit, but certainly if the OPA is to err, it should be on the side of too much rather than too little.

Ontario has transformed from a province of exportable generation to that of a net importer. The discussion paper — which makes a direct analogy between nuclear power and future load requirements — is a not-so-subtle argument for new nuclear construction.

But the reality is that for a dramatic increase in generational capacity, nuclear is the best route to take.

Renewables do play a crucial role in contributing to the grid, but they lack the flexibility and brute capacity that nuclear can produce, and fossil fuel generation is ironically going the way of the dinosaur.

The decision to go nuclear is certainly one that will be predicated on public support — and every study, forecast and discussion paper endorsing its use will win that backing. But the OPA should be mindful that today's consumer has come a long way from the one TV per household mentality, and won't be willing to swallow facts and figures whole without taking into consideration every side of the equation.