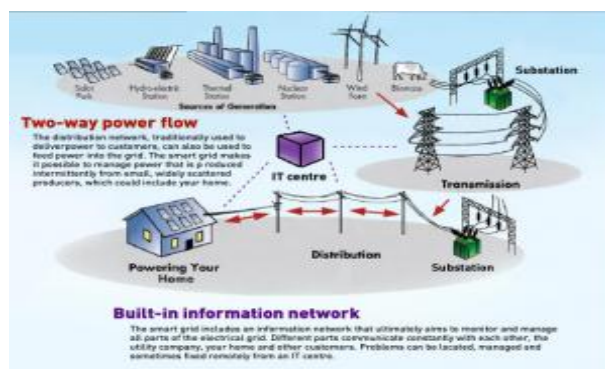


# DO SMART METERS SAVE ENERGY?

Smart meters have become a hotly debated topic everywhere they have been installed. Are wireless transmitters that automatically send meter readings to the utility company accurate? Can these transmitters be hacked? Do they result in higher costs for most consumers?

Utility companies have installed smart meters in homes in many countries worldwide recording exactly how much and when energy is used. Ideally, smart meters should promote better resource use by charging customers more for energy consumed during peak daytime hours. The potential to elicit changes in customer behaviour comprises the value of smart meters, contributing particularly to reductions in energy use at peaks. Given the growing penetration of renewables in power grids, utilities will place greater value on peak-shaping in the future. Given present difficulties in significantly predicting or altering consumer behaviour, smart meters attempt to deliver the required demand flexibility.



Some advantages of smart metered energy use include knowledge of power outages, time of power restoration, automated meter readings and billings, automated alerts of operational issues and power theft. Smart meter systems can include smart thermostats that can be controlled via an Internet connection that can restrict energy use when no one is home. A similar principle could be applied to smart appliances, which are designed to run during non-peak hours to save the consumer money. Smart meters also allow customers to feed their own wind, solar and biomass power back into the system, making it easy to make use of small, renewable power sources.

Despite all these advantages, smart meters do not yet deserve an A+. One disadvantage is the issue of inoperability, where the lack of international standards will always result in unnecessarily complicated installation. A central challenge of smart metering is dealing with cynicism from customers who view changes to billing structure as another means of boosting rates, particularly given recent rises in fuel prices. It is important to consider is the generational gap, where some may view smart meter technology with a mixture distrust and bewilderment. The security implications of smart meters must also be considered, as insufficient security can potentially allow criminals to use energy data to determine customer movements and facilitate burglaries.

Among many others, Ontario's privacy commissioner has expressed concerns about companies knowing private habits of cooking, showering and sleeping. Pike Research estimates global investment in smart meter security to total US\$1.6 billion from 2010 to 2015. Another disadvantage is for users who own their own businesses or small agricultural enterprises, as well as stay-at-home parents, who have no choice but to carry on business as usual, despite increased operating costs.



Following the blackout in 2003, the province of Ontario began a major upgrade of its electrical infrastructure, with an aim to build a grid that could automatically detect problems and reconfigure itself to contain them. The Green Energy Act of 2009 promoted the role of smart technologies to increase energy conservation and to better integrate renewable energy sources, partially through a smart grid. By June this year, an estimated 3.6 million Ontarians will be paying for their electricity through time-of-use tariffs. According the Vancouver Sun, electricity bills went up an average of \$9.38 per month in 57 percent of households with smart meters.

In April, the Ontario Energy Board announced smart meter users will see rate further increases of 0.8 cents per kilowatt hour, causing an increase of \$3.80 for the average residential user. Despite increases, the Ontario Energy Board predicts consumer costs to remain unaffected due to a 10 percent government tax rebate. The Liberal government has also warned electricity rates will jump 46 percent over the next 5 years to cover the increased cost of renewable energy as well as system and infrastructure upgrades.

Ontario is not the only province using smart meters. CBC news reports that Quebec, Alberta, Prince Edward Island, New Brunswick and British Columbia have spent millions on smart meters and power system upgrades. BC Hydro recently unveiled a report entitled, “The Smart Metering Business Case,” which claims the introduction of smart metering in BC will deliver over CAD\$500 million in net benefits over the next 20 years. The utility had hoped to deploy in 2010, with completion estimated in late 2012. Now BC Hydro says cost and benefit analysis have stalled the process. The raising price of electricity has consumers questioning smart metering use.



In this day and age, electricity is not a luxury. In the Western world, electricity is a necessity. Forcing people to pay bills that rise faster than incomes degrades their standard of living. Smart meters run the risk of marginalizing those who have no choice of time in their energy use. Providing governments ensure vulnerable consumers are not penalized, smart meters have the potential to be genuinely transformative for green economies. While smart meters are noble in their intentions for precise readings, efficient consumer management, their additional costs must be recovered from consumers. If consumers are to be convinced, utility companies need to offer full public accounting including all advantages, disadvantages and increased costs involved in saving energy.

Source: <http://www.sassweb.ca/3bb3/systems/smart-meters-saving-energy>