



DELIVER

Energy More Intelligently

BUILDINGS | CARBON CAPTURE AND STORAGE | FUEL CELLS | NUCLEAR | POLICY | PLANNING
RENEWABLES | SMART GRID | STORAGE | SUSTAINABLE MOBILITY | SUSTAINABILITY ANALYSES

HELPING HOUSEHOLDS SAVE ELECTRICITY



Ian Rowlands & Paul Parker

Around the world, governments, utility companies and environmental organizations alike are encouraging consumers to use electricity more wisely. And with good reason. Reducing electricity consumption or shifting it to off-peak hours can cut greenhouse gas emissions, postpone the need for new generating stations and reduce the pressure on electricity grids.

What exactly does that look like at the household level? Three WISE researchers decided to find out.

Ian Rowlands, Paul Parker and Ivan Kantor examined electricity consumption and conservation in 18 Ontario homes — right down to the level of individual appliances. The first-of-its kind study tracked electricity use circuit by circuit. And not only did the investigators see the data, so did the consumers.

Instead of waiting for their monthly bill to arrive, residents could get detailed information in near-real time. Thanks to an online portal, they could see precisely how many kilowatts they used when they turned on the TV, tossed a load of clothes in the dryer, cranked up the space heater and so on.

As a result, 28 per cent of households shifted their time of use, waiting until off-peak hours to switch on media centres, laundry machines and dishwashers. Meanwhile, 11 per cent of households cut their overall use. For these conservers, the biggest savings came from reducing air conditioning.

Although the study was too small to draw broad conclusions, the real-world snapshot of consumer behaviour offers insights for policy makers and energy planners, as well as new approaches to analyzing household energy consumption.

Researchers: [Ian Rowlands](#), [Paul Parker](#) and [Ivan Kantor](#)

Partners: [Ontario Centres of Excellence](#), [Hydro One Networks Incorporated](#), [Milton Hydro Distribution Incorporated](#), [Energent Incorporated](#)

[Full Article Available Here](#)

wise.uwaterloo.ca



UNIVERSITY OF
WATERLOO