



# Canada's *Energy Efficiency Awards 2000*

## Winner

### **Category:**

Equipment and Technology –  
Energy Management  
Technology

### **Contact:**

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## *Intelligent Parking Lot Controller*

About 4.8 million Canadian vehicles need their engines warmed in the winter. Many of these engines are plugged in both at home and work, increasing the number of electrical outlets used. The problem? Just plugging a car's block heater into an outlet isn't the most efficient way to keep the engine warm. In fact, it wastes a lot of energy. It also puts extra strain on power utilities, since people plug in their cars in the morning and evening. Meanwhile, power demand peaks as people turn on office lights and computers and later go home and turn on laundry machines, stoves and televisions.

Dr. Glenn Rosendahl of IPLC Corp. found an energy-efficient answer. He designed the "intelligent parking lot controller" (IPLC) for engine block heaters. The small, box-like device is installed on ordinary, outdoor electrical outlets on houses and in parking lots. The IPLC is programmable and controls how much power is available according to a flexible program. This takes into account such factors as the outdoor temperature and wind chill,

the amount of current drawn, the time of day it is in use and the length of time the block heater is plugged in. The IPLC also provides feedback to users on whether the car's block heater is operating correctly when it is plugged in. Users can reduce the amount of energy consumed by the heater according to the outdoor temperature and delay the heater's operation until the engine has cooled. The device can also record data and download information on its use and performance.

The IPLC saves money by not turning on until the engine has cooled to a certain temperature and by reducing the amount of heat as the engine's temperature rises. It can also be programmed to stay off above a certain temperature and reach full heating load only below a certain temperature.

The design pleases users, power utilities and building managers – a remarkable achievement. Users appreciate the IPLC's indicator lights, which tell them if their block heater is working properly. This also benefits automobile "rescue" companies. For example, approximately half of the requests for boosting by the Canadian Automobile Association (CAA) are the result of faulty block heaters; the IPLC offers the car owner early warning of such problems. The IPLC helps power utilities by distributing the power demand as evenly as possible, rather than in large, infrequent spurts that coincide with demand from other sources. Power utilities also use their least efficient



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generators to produce energy for these “spurt” demands, because the most efficient ones (i.e. those that run on hydro instead of gas turbines) are already in use. So the IPLC helps the utilities avoid even more energy inefficiency. Finally, building managers benefit by saving energy costs.

In fact, the IPLC costs \$150 and saves the consumer approximately \$66 in annual energy costs. The payback period, therefore, is just under 2<sup>1</sup>/<sub>2</sub> years. To sum up, the Intelligent Parking Lot Controller is saving energy, money and the environment – a great combination!

Aussi disponible en français.

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