

## BuildingAdvice™ Building Performance Assessment System

By providing a platform to easily complete energy surveys in commercial buildings, the BuildingAdvice™ program addresses the basic industry need of identifying and justifying energy conservation measures in commercial buildings on a large scale.

BuildingAdvice is a web-enabled system of networked sensors and software to:

- Quickly rate the energy performance of commercial buildings against Energy Star databases
- Identify opportunities for reducing energy costs and improving the efficiency of HVAC and lighting systems
- Accurately model the energy savings potential and calculate the return on investment for proposed energy conservation measures to drive action

Studies of the HVAC system buying behaviors of building owners and facilities managers have shown that purchases are largely made in a very reactive manner. Less than 1 in 6 HVAC system replacements are done so as part of proactive, energy management based decision. The vast majority, over 85%, are simply replaced as the result of equipment failure. However, the study reported a single overwhelming factor in creating a proactive, energy-based decision to retrofit equipment – energy audits. 80% of HVAC retrofits conducted as part of an energy management based decision were preceded by an energy audit or commissioning study. The conclusion of the study was that energy audits are prime drivers of HVAC energy retrofits.

Through automated data collection, analysis, and reporting BuildingAdvice has dramatically reduced the time required to complete an on-site assessment of the energy performance of a building. As complexity is reduced it becomes feasible to develop a much larger base of potential service providers – drawing on HVAC contractors, engineering firms, and commissioning consultants, etc. – to support the scale needed to achieve the desired reductions in energy and carbon footprint.

The BuildingAdvice system has been released for sale, and service providers are beginning to use the system. One project that demonstrates the potential for energy savings has been completed in the Pacific Northwest. An HVAC service contractor used the BuildingAdvice system to conduct an energy survey of 8 medical office buildings. These buildings, ranging in size from 49,000 to 99,000 square feet, had a total energy consumption of 12.4 million kWh of electricity and 218,000 therms of natural gas. The BuildingAdvice assessments, which took about 2 hours per building to complete, produced a comprehensive report on the energy savings potential in each building. The total savings identified equaled 18% of the total energy expenditures. By using the results from this case study to determine the savings potential on a per building basis and scaling up through assumptions on the potential base of service providers yields the following estimate as to the total savings potential:

For more information visit:

<http://www.airadvice.com/commercial.php>

Case Study Example			
	Electricity (million kWh)	Gas (thousand Therms)	Carbon Footprint (tons of CO2)
Usage per building	1.6	27.3	880.5
Savings Potential	15%	15%	15%
Savings Potential per building	0.24	4.1	132.1

Estimated Savings Potential						
Period	# of service providers	# of assessments per year	Total # of buildings	Electricity (million kWh)	Gas (thousand Therms)	Carbon Footprint (tons of CO2)
Next 12 months	100	50	5,000	1,200	20,475	660,375
Annual rate at maturity	2000	50	100,000	24,000	409,500	13,207,500