Canadian Ratings Warming Up

by Deborah Rider Allen

With a three-year pilot program, the Canadian government is working to launch a nationwide home energy rating system. Now in its second year of operation, the program is on target to meet its goals.

Last year, the Canadian Office of Energy Efficiency at Natural Resources Canada (NRCan) committed $9 million Canadian toward a three-year voluntary home energy efficiency rating program. In developing the program, EnerGuide for Houses, NRCan first ran focus groups to determine the public's interest in a house energy efficiency label, its reaction to ratings, and the acceptability of a range of prices for a rating. By March 1999, more than 5,000 homes had been evaluated under the EnerGuide program (see Table 1). NRCan's goal is to see an additional 10,000 homes evaluated in the second year and 13,000 homes in the third year of the program.

All ratings in this program are conducted by trained energy efficiency evaluators from NRCan-approved companies. NRCan selected each participating company based on its ability to deliver the service over a wide geographic area—an entire province, at a minimum; on its background in the field of home energy assessment; and on its ability to deliver electronic data files that comply with NRCan's specifications. NRCan provides the training, technical support, database maintenance, and methodology for the program.

The energy rating assessment begins with a site evaluation. Using a blower door test, an evaluator gathers data about the home's airtightness. He or she also conducts an exterior and interior visual examination of the home to get information on the heating system, the domestic hot-water system, the ventilation system, lighting usage, appliance usage, and mechanical systems.

This information is then analyzed using the HOT 2XP software program, which was developed by researchers at the Canadian Mining and Energy Technology Centre (CANMET), to produce an energy efficiency rating based on the home's annual energy consumption. The ratings range from 0 to 100. A rating of 0 would indicate that the home has major air leakage, has no insulation, consumes an extremely high amount of energy, and is uncomfortable to live in. A rating of 50 denotes an average house with moderate air leakage and insulation in all the exterior walls. A house with a 100 rating requires no purchased energy—which is theoretically possible, but not very likely in Canada.

A house built in compliance with Canada's Model National Energy Code would rate 70 to 75. A house that meets Canada's specifications for being the most energy efficient while still using readily available construction methods—a standard known as R-2000—would earn a rating of 80 to 85. The scale has a top end to allow for energy technology improvements and state-of-the-art energy applications that are not currently in common use.

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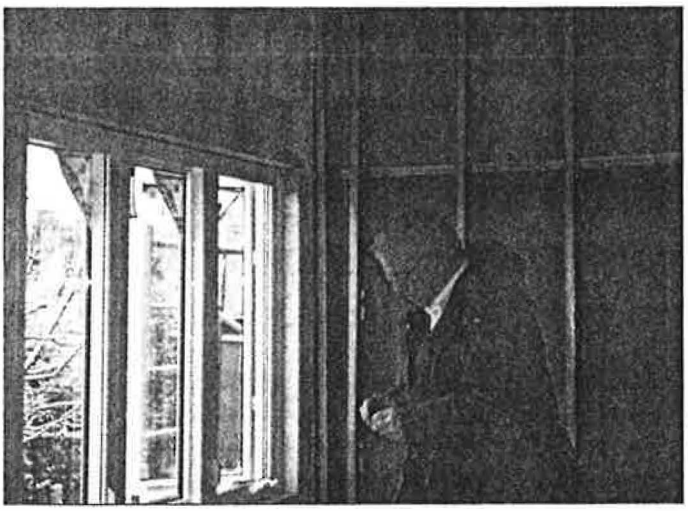
After getting efficiency renovation suggestions as a part of an energy rating, the owner of this house decided to replace the siding.



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New windows and soon-to-be-installed drywall will block next winter's winds more effectively.

The evaluator provides the homeowner with the energy efficiency rating label and explains the rating. The evaluator also identifies and prioritizes energy efficiency improvements that can be made to the home to increase the homeowner's comfort, reduce the energy bill, and raise the home's rating. NRCan says that homeowners are particularly interested in

this improvement advice. A second rating evaluation, to be done after the improvements are completed, can be included as part of a package. This second rating quantifies the invisible energy improvements, which may help the homeowner to sell the house at some point in the future. The homeowner is responsible for finding a contractor to complete any desired improvements. In some cases, the energy evaluator may provide renovation services, but NRCan requires all agents to advise their customers that they should obtain quotes from other sources before they use a NRCan agent as a contractor.

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Added insulation is a commonly recommended energy efficiency improvement.

NRCan uses the data from both evaluations to tabulate the CO_2 reductions that can be expected to result from all of the potential improvements identified by the evaluation, and from the improvements that the homeowners actually choose to have done. The results provide important data on the program's actual and potential contributions to Canada's climate change strategy.

Costs for the home evaluation vary, depending on the region. In the Yukon, for example, where the program is supported by provincial funding, the rating is free. Everywhere else in Canada, prices currently range from $50 to $175 Canadian.

By supporting the development of a ratings industry in its early years, NRCan hopes to provide high quality information to homeowners that will lead to improvements in the energy efficiency of the Canadian resale housing stock. The rating label is voluntary, and NRCan has found that in the resale market, the label itself is of limited value—basically, it shows that the house is more energy-efficient than other, similar homes in the area.

In the new housing market, where the rating is presently being pilot-tested, NRCan thinks it may have more influence. Through the program, energy efficiency upgrades could be developed as an option that consumers could purchase from builders. NRCan says that the more labels there are out there, the more people will look for them, and slowly awareness of the value of ratings will build.

NRCan anticipates that after the first three-year commitment, energy efficiency ratings will be established in the marketplace as a Canada-wide program. EnerGuide for Houses is the fourth in a line of EnerGuide products and labels that the government has developed to influence the consumer market. The other three programs identify the energy use of household appliances, HVAC equipment, and new vehicles, respectively.

Deborah Rider Allen is a freelance writer based in Richmond, Virginia.

European Union Not Unified on Home Ratings

by Véronique Richalet and George Henderson

Legislation requiring home energy ratings has been in force in the European Union since 1993. But the corresponding directive defines ratings loosely enough that each member country has its own version of a home energy rating system.

Since 1993, all countries in the European Union (EU) have been required by the Specific Actions for Vigorous Energy Efficiency (SAVE) directive to "certify" the energy efficiency of their homes. As the directive does not specify either the certification procedure or exactly which energy uses should be assessed, each member country has a different interpretation of the word "certification." Some countries, such as the United Kingdom and Denmark, have already institutionalized their rating schemes, while others, such as France and Portugal, are still working on defining certification.

Generally, the key components of a certification process are: some form of a building components inspection, either from an audit or from the design drawings, to assess energy performance; a report describing performance and sometimes recommending improvements; and, in some countries, the