
**AN ASSESSMENT OF ENERGUIDE AS
A REQUIREMENT FOR
NEW HOMES – FURTHER ELABORATION**

Prepared for:

Canadian Home Builders' Association

By:

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Buchan, Lawton, Parent Ltd. was asked by the Canadian Home Builders' Association (CHBA) to provide further elaboration on certain key issues raised in an earlier report *An Assessment of EnerGuide as a Requirement for New Homes*.

The earlier analysis conducted for the CHBA examined issues and concerns related to EnerGuide for New Homes in the context of building codes.

It should be noted that in this follow-up report, EnerGuide for New Homes (EGNH) is now referred to as the EnerGuide Rating System (ERS), reflecting a name change currently being introduced by Natural Resources Canada (NRCan).

Today, the ERS is used on a voluntary basis across the country. In some cases, builders are choosing to have new homes rated solely using ERS. More commonly, the ERS provides a tool used in other voluntary labeling programs such as EnergyStar™ and Built Green™.

Building codes have the force of law. This has very significant implications for builders, inspectors, municipalities and regulators—for everyone involved in the development and application of codes. That was the focus of our previous analysis, and of the elaboration presented here: the identification of issues that will arise if ERS requirements are put into building codes.

Were ERS labeling to be made mandatory, typically under the authority of provincial building codes, it is not clear if this would be limited to the application of HOT2000 or would include other ERS requirements such as on-site testing. Either way, several problems arise.

Lack of a transparent, consensus-based development and updating process for the ERS.

This observation is simply a statement of fact. The development and updating of the ERS is in no way comparable to the process in place that governs the development and updating of the Model National Building Code.

Criteria have been established for developing and updating building code requirements. The requirements are determined on a consensus basis, which involves the review of technical, policy and practical concerns, and debate on the implications of these concerns. The process is transparent, the proceedings are open, the science is disciplined, the participants are representative of all affected groups and the outcomes are submitted to public review. These same criteria are placed on documents referenced in the Building Code and on the referenced provisions within those documents.

Were the ERS to be incorporated into building codes, all parties involved would expect it to have been subjected to the same level of oversight and examination as would any other element in the Code. Builders would expect the Building Code process to be respected.

Issues related to updating of the ERS software

This is an issue that is of little consequence so long as the use of the ERS is at the builder's discretion, or is simply a component of another voluntary program. However, if the ERS becomes a component of building codes, the situation changes significantly.

Changes to the technical underpinnings of building codes are subject to the same oversight and review process as any other requirements. This means that changes are not made by government in an arbitrary fashion, but through thorough research and consultation. In addition to providing the basis for oversight and consensus, this also ensures that builders do not get caught off-guard by new or altered code provisions that can impact on construction practices.

As the ERS is owned by NRCan, they have complete freedom to modify or alter the software that supports the rating system whenever they wish. This process takes place entirely outside of the National Building Code development process.

Many builders pre-sell homes well in advance of construction. Their specifications are based on the code requirements in place at the time the sales agreement is signed. If attainment of a specific ERS level is a code requirement, the builder would need to meet the ERS requirements in place at the time of construction. This could involve changes if the ERS parameters are modified by NRCan in the interim, which could result in varying interpretations by building officials.

Unlike the National Building Code development process, which ensures that builders have adequate advance notice of changes, the current updating process for the ERS provides no such assurance. Builders could easily face "surprise" code-enforced requirements if the software was updated, as it has been in the past. So long as the management of the ERS takes place outside the Code process, this will remain an issue.

Problems with the ERS scale

Inherent to its structure, the ERS 100 point scale does not communicate effectively the comparative energy efficiency of new homes. In fact, the ERS scale actually makes it difficult to demonstrate to consumers the increased energy efficiency of new homes. This problem is widely recognized by all parties involved, including NRCan.

The ERS scale is logarithmic. At the low end of the scale, this has the effect of making modest differences in energy efficiency in older homes appear quite significant, which can encourage homeowners to take retrofitting actions, as they can easily see the results in terms of a higher ERS number.

Unfortunately, at the top of the scale the reverse is true—the logarithmic structure makes very substantial differences in energy efficiency appear to be fairly minor. At the time the scale was developed, use of the ERS on new homes was not the primary focus, so this effect was of less concern.

The result of this logarithmic bias is that when used to label new, more energy efficient homes, the ERS significantly under-represents the comparative performance of homes.

Two examples of this effect are as follows:

- Comparing a home with an ERS rating of 67 and one with a rating 80. Given that the ERS scale is 1 to 100, many consumers would likely conclude that there is a 13% difference in energy efficiency between the two homes. In reality, the ERS 80 home will use 50% less energy than the ERS 67 home.
- Comparing a home with an ERS rating of 80 and one with a rating 86. Many consumers would likely conclude that there is only a 6% difference in energy efficiency between the two homes. Once again, in reality, the ERS 86 home will use 50% less energy than the ERS 80 home.

Note that, in addition to the fundamental under-representation of comparative energy performance, this problem gets worse as the energy efficiency gets better. In the first case, a 50% improvement in energy efficiency represents 13 ERS “points”. In the second example, the same 50% improvement achieves only 6 “points”. These sorts of results will not make it easier for builders to sell energy performance using ERS ratings.

Summary

Taking something that has been voluntary and making it mandatory increases liability for the builder. In the first instance, if the builder fails to meet the standard, it is a matter between the builder and the customer and a range of resolutions is possible. In the second instance, this is not the case. Code requirements must be met. The builder is legally obliged to meet them and the municipality is legally obliged to enforce them.