

EXPLORING VALUE & FEASIBILITY: ENERGY LABELLING FOR PART 3 MULTI- FAMILY BUILDINGS



EXECUTIVE SUMMARY



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PROJECT BACKGROUND

Multi-family residential buildings represent a large proportion of the province's housing stock and a significant potential for energy efficiency improvements. There are many highly visible factors which affect the choices that consumers make about their homes: number of bedrooms, location, design, and amenities, for example. However, there are other factors which also affect the value of a home, but that may not be similarly valued by prospective property owners and tenants due to their lack of visibility: window performance, wall thickness, appliance and system performance, and overall air tightness, for example. Since there is no standard way to compare the energy efficiency of multi-family homes (as there is with automobiles, for example), and since building energy and emission performance is not transparent to condo purchasers and rental apartment building owners, individuals typically do not appear to consider this information when making purchase decisions, limiting market transformation towards energy efficient, low emission buildings. Prior research has shown that broad adoption of home energy labelling is a necessary step to better integrate energy efficiency considerations into the housing market and to provide a structure for better regulations¹. While not sufficient in and of itself to drive these changes, home energy labelling provides the foundational information and shared language to enable a shift in expectation for housing performance driven by improved public energy literacy².

There are established labelling methodologies for other building types, but not for multi-family buildings (Part 3), for example Natural Resource Canada's EnerGuide Rating System for homes provides homeowners and homebuyers with standardized, validated information about the energy efficiency of houses, but is only applicable to homes which fall under Part 9 of the building code, which are primarily single family homes.

Meanwhile, the energy assessment of multi-family buildings can be more complex than those of single-family homes since they include both private and shared spaces, vary in size and amenities, and would typically require the participation of property managers or strata councils in order to adequately evaluate energy use. Unlike single-family homes, multi-family buildings contain several units, each with separate utility accounts and differing energy consumption habits. Furthermore, multi-family buildings typically include shared spaces linked to common area utility accounts. Thus, the energy consumption of a multi-family building can be evaluated at the scale of a whole-building or at the unit level. Physical building characteristics, ownership and governance structures, consent and access to data, as well as a lack of capacity among building owners and managers have all been identified in prior research as barriers and challenges for implementing home energy labelling programs in the Part 3 building sector³.

¹ Frappé-Sénéclauze, T., Thibault, B., & Pond, E. (2014). *Energy Labelling for New Homes: FAQs and Model Bylaw Amendments*. The Pembina Institute.

² Ibid.

³ Fisher, J. (2013). *Energy Labelling in Multi-Unit Residential Buildings*. Fisher Resource Efficiency Solutions Company Ltd. (FRESCO).

This project attempts to identify stakeholder perspectives regarding the value and feasibility of developing an energy label which would accurately reflect the energy performance of multi-family buildings. Establishing building energy labelling for the multi-family building sector could provide an impetus for more energy efficient design and construction, and greater energy conservation in a building type that is becoming increasingly significant in the Lower Mainland, and across BC and Canada.

RESEARCH OBJECTIVES AND METHODOLOGY

PURPOSE

This research will identify the value and feasibility of a consumer-facing energy labelling program for new Part 3 multi-family buildings. In doing so, the research will explore whether it is worthwhile to develop this type of program and whether stakeholders believe that energy labelling for Part 3 buildings would support market transformation toward low energy and low carbon multi-family homes. Furthermore, the purpose of this research is to identify the technical and political case for a local, provincial, or national energy labelling program for multi-family buildings, while determining the potential barriers and challenges to obtaining program buy-in from all necessary stakeholders.

The learnings from this research may additionally be utilized to inform the viability of implementing an energy labelling program that is specifically linked to the Residential Energy Assessment Program (REAP) at the University of British Columbia.

RESEARCH QUESTIONS

The research attempts to respond to two primary questions:

Question 1 What is the *value* and *feasibility* of implementing an energy labelling program for multi-family buildings?

- *How would such a program fit with within the overall sustainability values and mandates of key stakeholders and organizations?*
- *Where is there the potential for strategic partnerships and alignments which would support the development of such a program?*
- *What might be some of the barriers and challenges which could impact the feasibility of developing such a program?*

Question 2 Would a program to label multi-family buildings support market transformation?

- *How might a labelling program lead to greater public awareness lead to a better understanding of home energy efficiency and its value in the residential marketplace?*
- *How might a labelling program increase the demand for low-energy/low-carbon homes in the long-term?*

RESEARCH OBJECTIVES

- To review relevant building energy labelling programs.
- To identify and consult key stakeholders and topic experts across multiple sectors (local, provincial, federal governments, utilities, NGOs, etc.) to better understand the motivations and opportunities for implementing an energy labelling program for multi-family buildings.
- To explore the value and feasibility of developing and implementing a consumer facing energy labelling program for new Part 3 multi-family buildings at various scales.
- To explore the existing barriers and challenges for the implementation of a home energy labelling program for Part 3 multi-family buildings.
- To support market transformation to low-energy, low-carbon multi-family homes in the building sector and with the public.

RATIONALE AND SIGNIFICANCE

Energy labelling can improve public energy literacy and provide customers with third-party verified and comparative information to allow them to make informed decisions which consider home energy efficiency when purchasing or renting a home. However, Part 3 multi-family residential buildings do not have a recognizable home energy labelling system, despite the fact that this typology makes up nearly 30 percent of BC's housing stock⁴.

Research in this area is timely, as the Province of British Columbia has recently launched the Energy Step Code, a priority action to support energy efficiency in the residential building sector which could provide the necessary energy performance data to support a labelling program.

Furthermore, UBC is well-positioned to be a leader in this area, as it already requires developers of market multi-family buildings to meet energy efficiency standards, and would benefit from a recognized energy labelling program in order to raise market awareness for these buildings. The future coordination of stakeholders to develop a common labelling program has the potential to increase public awareness of home energy consumption, driving action to reduce energy use in the residential sector.

RESEARCH METHODS

This research was co-designed alongside the University of British Columbia's Community Energy Manager, Ralph Wells and conducted as part of the University of British Columbia's Sustainability Scholars Program. The UBC Sustainability Scholars Program facilitates paid internship opportunities for UBC graduate students from all academic disciplines working under the mentorship of partner organizations.

⁴ Pape-Salmon, A. et al. (2012). Multi-unit residential buildings in BC: A vision for energy efficiency. *Innovation: Journal of The Association of Professional Engineers and Geoscientists of BC*, pp. 21-24

The research methodology included background research and analysis, key informant interviews, and stakeholder consultation via a workshop held in September 2017 in Vancouver, BC. The multi-stakeholder approach aimed to develop a cohesive snapshot of the value and feasibility of developing and implementing a consumer facing energy labelling program for new Part 3 multifamily buildings in British Columbia.

Literature review was conducted through keyword searches initiated through online scholarly databases and included several sources of academic and grey literature. Eighteen (18) structured qualitative interviews were conducted in June, July, and August 2017, all via telephone, with the exception of one in-person interview. The interviews ranged from 15 to 40 minutes in length and were each anonymized and transcribed in full. Keywords were coded across all eighteen interview transcripts in order to identify pertinent themes and topics. Key informants were sectorized into the following groups: local government (6 participants), provincial government (3 participants), utilities (3 participants), non-governmental organizations (1 participant), industry associations (3 participants), and private sector (2 participants). Finally, the workshop included several topic experts and key stakeholders from all levels of government, utilities, industry, non-governmental organizations, advisory organizations, real estate, the private sector, and academia. A summary of workshop findings was produced based on notes recorded throughout the event.

KEY FINDINGS

The themes summarized below featured prominently in findings from both key informant interviews and literature review. Finally, the stakeholder 'key actions' table suggests roles and responsibilities, and preliminary pathways forward for developing an energy labelling program for Part 3 multi-family buildings.

1. Rating metrics should be meaningful to consumers, and labels visually compelling and understandable to the public

The importance of creating a label that provides value to the consumer, and which includes information that the public finds meaningful was a prominent finding. The European Union's required label, the Energy Performance Certificate (EPC), was often cited as an example of an energy label which was highly visible and understandable by consumers (it is posted in building lobbies, and includes intuitive colour-coded letter grades). Thus, visualization of data, visual communication, and consumer awareness of the label were often cited as important prerequisites for developing a valuable energy labelling program. For multi-family buildings, making this information legible from a unit-level perspective was also cited as being valuable. Some stakeholders stated that letter grades, numeric ratings, and percentages were not understandable by the public, and suggested that translating energy into dollars by speaking to consumers in terms of financial savings would make energy label information more meaningful to consumers. Furthermore, continued consumer awareness and education was seen as crucial to developing a sustainable energy labelling program.

2. Access to data should be facilitated through strategic partnerships

Stakeholders felt that the challenges presented by the physical attributes and ownership structures of multi-family buildings would require strategic partnerships and data sharing initiatives between building owners, utilities, and governments in order to facilitate data access.

3. A valuable energy labelling program for multi-family buildings should eventually become mandatory, and include existing buildings within its scope

Stakeholders almost uniformly saw energy labelling as a pathway to better energy codes and better energy performance requirements for multi-family buildings. Energy labelling for multi-family buildings was seen as another step in preparing the industry for adopting more stringent codes over time and getting the market ready and to a state where it could be building to higher levels through the official code evolution process. The benefits of a mandatory labelling program were often mentioned, and conversely, the lack of uptake and value in voluntary programs. Furthermore, stakeholders appeared to see value in an energy labelling program that would apply to both new and existing multi-family buildings.

4. The capacity concerns of strata building owners and property managers should be adequately recognized and planned for, similarly with the real estate and development sectors

Ensuring strong engagement at the outset with condominium and homeowners associations, as well as with select groups of stratas was suggested by several stakeholders as an important planning approach, particularly given their perceived capacity issues. Furthermore, the development and real estate industry was also identified as a key sector which would require early engagement in order to ensure commitment and buy-in. Indeed, the real estate industry was difficult to engage for the purpose of this research, which might indicate a capacity issue, as they do not appear readily equipped to engage on these issues, or have yet to have the opportunity to provide meaningful input into the design of energy labelling programs.

5. A successful labelling program should be piloted by a small number of champions and early adopters, then scaled up to ensure feasibility

The majority of respondents thought that a national program would be preferable, however, recognized that this would require a large-scale investment and commitment from the federal government. Alternately, several respondents felt that a provincial program could be linked to the Energy Step Code, or that a regional program could have high viability and resonance given that the high concentration of multi-family buildings in BC is primarily within the Lower Mainland. Piloting the program at a micro-scale with a few local governments and other key stakeholders was seen as a core element of successful program design. Providing incentives or rewarding and recognizing high performers by showcasing leading buildings was seen as a way to reward early adopters and champions of any new program.

6. An energy label for multi-family buildings would be most feasible if it capitalized on existing industry resources and tools

Barriers such as competition with existing and recognizable labels (i.e. LEED), and BC's inexpensive energy costs were often noted as disincentives for supporting a new program to label multi-family buildings. Connecting labelling efforts to local government efforts and responsibilities appeared to be essential, and utilizing and capitalizing on existing policies and tools was said to increase feasibility. For example, by using Portfolio Manager as a tool to generate a label's metrics, or leveraging the work that is already underway with the Energy Step Code.

7. Multi-stakeholder collaboration throughout program design and implementation would be a key indicator of success

Getting the right stakeholders at the table in order to understand what it takes to run the program, and how to work together as a collective and across industries was seen as an essential action to remove or lighten the barriers for people to adopt. Governance structures such as advisory committees, councils, or technical groups that would provide broader input in terms of how the program is iteratively developed, tested, and prototyped were highlighted. Furthermore, ongoing capacity building, training, and education was seen as an important tool for ensuring future collaboration.

Table 1: Key Stakeholder Actions for Consideration

STAKEHOLDER	KEY ACTIONS
Local government	<ul style="list-style-type: none"> ▪ Champion home energy labelling for multi-family buildings ▪ Develop partnerships ▪ Identify long-term objectives and goals
Provincial government	<ul style="list-style-type: none"> ▪ Provide funding support ▪ Provide pilot project support
Federal government	<ul style="list-style-type: none"> ▪ Develop national labelling standard applicable to multi-family buildings
Utilities	<ul style="list-style-type: none"> ▪ Promote data sharing ▪ Provide pilot project support
Non-governmental organizations	<ul style="list-style-type: none"> ▪ Inform program development through best practice research ▪ Monitor and evaluate progress ▪ Support capacity building and awareness
Industry associations	<ul style="list-style-type: none"> ▪ Advance industry and consumer education ▪ Increase pilot project visibility
Private sector	<ul style="list-style-type: none"> ▪ Provide leadership and showcase industry buy-in