

Policy Case for Regulating Energy Efficiency in Housing

Executive Summary

The Executive Committee of the CCBFC has assessed the request to add energy efficiency as an objective for NBC Part 9 housing against the CCBFC's Approved Protocol for Addressing New Objectives in Model National Codes.

It has determined that a building regulatory response related to energy efficiency is justifiable to effectively address an overall policy goal related to the environment with a series of possible policy goals related to resource conservation, reduced emissions, infrastructure capacity and energy security, as well as a policy goal of harmonization.

Background

The Canadian Commission on Building and Fire Codes (CCBFC) has received two requests related to adding an objective related to energy efficiency in houses.

The CCBFC reviewed both requests and determined that there was currently sufficient consensus to address energy efficiency as many jurisdictions have begun addressing energy efficiency in houses within their building regulations.

At its 21st meeting held in February 2009, the CCBFC confirmed that the development of the objectives on energy efficiency for both buildings and houses would follow the protocol developed by the Joint Task Group on Addressing New Objectives in the Codes. At the same meeting, the Joint CCBFC/ PTPACC Task Group on Energy Efficiency in Houses reported that step 2 of the protocol was completed.

This report is the analysis by the Executive Committee of the CCBFC on the request to add energy efficiency as an objective for NBC Part 9 housing. This analysis was informed by various sources that include discussions with PTPACC and other key stakeholders, the interim report from the Joint Task Group on the Energy Efficiency Objective, and various provincial and territorial documents and consultants' reports.

Analysis

Step 1- Request to add objective, and Step 2 – Initial Consideration

These steps have already been completed as noted in the Background section.

Step 3 - Executive Committee's analysis of the request to add energy efficiency as an objective for NBC Part 9 housing.

3.1 Develop policy goals and measurable outcomes. These could include societal benefit, uniformity of approach, leadership, etc

The following policy goals were determined from various sources and include discussions with PTPACC, consultants' reports, the interim report from the Joint Task Group on the Energy Efficiency Objective, and various provincial and territorial documents, as well as discussions with key stakeholders in open meetings.

Policy Goals	Measurable Outcomes
Environment	
Resource Conservation	Resource consumption (electricity, fossil fuels, ...)
Reduced Emissions	Greenhouse Gas Emissions
Reduced Pollutants	Toxic or deleterious compounds in environment (e.g. particulate matter and compounds in air and water)
Infrastructure Capacity	Energy consumption, time of day usage
Energy Demand Management	Time of day usage
Energy Security	Resource consumption (electricity, fossil fuels, ...)
Harmonization	Variance in national and provincial/territorial regulations

3.2 Identify and examine available instruments or mix of instruments to determine if a building regulatory response is appropriate

Mix of instruments:

The instruments considered for the analysis were:

- regulations
- product standards
- voluntary programs
- incentives (includes disincentives)
- market demand
- education

These instruments were then evaluated against each policy goal and the effectiveness of each was assessed. The results are summarized in the following table.

Policy Goals	Measurable Outcomes	Available Tools	Effective Tools
Environment			
Resource Conservation	Resource consumption (electricity, fossil fuels, ...)	Regulations, Product Standards, Voluntary Programs, Incentives, Market Demand*, Education	Regulations (product standards are referenced in this), voluntary programs and incentives should precede regulations to ensure industry readiness, education should precede regulation
Reduced Emissions	Greenhouse Gas Emissions	Regulations, Product Standards, Voluntary Programs, Incentives, Market Demand*, Education	Regulations (product standards are referenced in this), voluntary programs and incentives should precede regulations to ensure industry readiness, education should precede regulations
Reduced Pollutants	Toxic or deleterious compounds in environment (e.g. particulate matter and compounds in air and water)	Energy Source Regulations	Outside of current mandate of national codes

Policy Goals	Measurable Outcomes	Available Tools	Effective Tools
Infrastructure Capacity	Energy consumption, time of day usage	Re Energy Consumption: Regulations, Product Standards, Voluntary Programs, Incentives, Market Demand*, Education. Re Time of Day Usage: Metering	Re Energy Consumption: Regulations (product standards are referenced in this), voluntary programs and incentives should precede regulations to ensure industry readiness, education should precede regulations Re Time of Day Usage: Affects behaviour of occupants and operation of building - Outside of current mandate of national codes
Energy Demand Management	Time of day usage	Metering, Monitoring, Supply Distribution	Outside of current mandate of national codes
Energy Security	Resource consumption (electricity, fossil fuels, ...)	Regulations, Product Standards, Voluntary Programs, Incentives, Market Demand*, Education	Regulations (product standards are referenced in this), voluntary programs and incentives should precede regulations to ensure industry readiness, education should precede regulation
Harmonization	Variance in national and provincial/territorial regulations	Regulations, Product Standards, Voluntary Programs, Incentives, Market Demand*, Education	Regulations

* Market demand can have a significant impact, and may be created or augmented by voluntary programs, incentives, communication, . . .but is not a tool that can be managed for the purpose of justifying or establishing building regulations

3.3 Develop options for action demonstrating how each option will address the policy goals

The policy goals that are carried forward to the remaining steps are those for which building regulations are a viable effective tool.

Policy Goals	Measurable Outcomes	Effective Tools	Options for Achieving Goals
Environment Resource Conservation	Resource consumption (electricity, fossil fuels, ...)	Regulations (product standards are referenced in this), voluntary programs and incentives should precede regulations to ensure industry readiness, education should precede regulation	Voluntary programs and incentives create market pull and industry knowledge and readiness to facilitate new products, systems, techniques Education concurrent with and following voluntary programs, to ensure industry wide readiness preceding regulation. Mandatory regulation will reduce portion of resource depletion attributed to Part 9 housing.

Policy Goals	Measurable Outcomes	Effective Tools	Options for Achieving Goals
Reduced Emissions	Greenhouse Gas Emissions	Regulations (product standards are referenced in this), voluntary programs and incentives should precede regulations to ensure industry readiness, education should precede regulations	<p>Voluntary programs and incentives create market pull and industry knowledge and readiness to facilitate new products, systems, techniques</p> <p>Education concurrent with and following voluntary programs, to ensure industry wide readiness preceding regulation.</p> <p>Mandatory regulation will reduce portion of greenhouse gas emissions attributed to Part 9 housing.</p>

Policy Goals	Measurable Outcomes	Effective Tools	Options for Achieving Goals
<p>Infrastructure Capacity</p>	<p>Energy consumption, time of day usage</p>	<p>Re Energy Consumption: Regulations (product standards are referenced in this), voluntary programs and incentives should precede regulations to ensure industry readiness, education should precede regulations</p> <p>Re Time of Day Usage: Outside of current mandate of national codes</p>	<p>Voluntary programs and incentives create market pull and industry knowledge and readiness to facilitate new products, systems, techniques</p> <p>Education concurrent with and following voluntary programs, to ensure industry wide readiness preceding regulation.</p> <p>Mandatory regulation will reduce portion of energy usage attributed to Part 9 housing.</p> <p>Time of day usage outside of current mandate of national codes</p>

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Energy Security	Resource consumption (electricity, fossil fuels, ...)	Regulations (product standards are referenced in this), voluntary programs and incentives should precede regulations to ensure industry readiness, education should precede regulation	<p>Voluntary programs and incentives create market pull and industry knowledge and readiness to facilitate new products, systems, techniques</p> <p>Education concurrent with and following voluntary programs, to ensure industry wide readiness preceding regulation.</p> <p>Mandatory regulation will reduce portion of energy usage attributed to Part 9 housing.</p>
Harmonization	Variance in national and provincial/territorial regulations	Regulations	Establish core national codes

3.4 Conduct impact analysis of each option by:
a. Examine legal and enforcement implications
b. Assess the effectiveness, and efficiency

Policy Goals	Measurable Outcomes	Effective Tools	Impact Analysis
<p>Environment</p> <p>Resource Conservation</p>	<p>Resource consumption (electricity, fossil fuels, ...)</p>	<p>Regulations (product standards are referenced in this), voluntary programs and incentives should precede regulations to ensure industry readiness, education should precede regulation</p>	<p>For portion of resource consumption attributed to Part 9 housing:</p> <p>Voluntary programs and incentives ≈ 20% market impact.</p> <p>Regulations ≈ 80% market impact for new construction (i.e. that segment that is not already addressed by voluntary programs and incentives).</p> <p>Enforcement implications can include:</p> <ul style="list-style-type: none"> • increased areas of responsibility and potential liability • training implications for staff • additional staffing

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Reduced Emissions	Greenhouse Gas Emissions	Regulations (product standards are referenced in this), voluntary programs and incentives should precede regulations to ensure industry readiness, education should precede regulations	<p>For portion of greenhouse gas emissions attributed to Part 9 housing:</p> <p>Voluntary programs and incentives ≈ 20% market impact.</p> <p>Regulations ≈ 80% market impact for new construction (i.e. that segment that is not already addressed by voluntary programs and incentives).</p> <p>Enforcement implications can include:</p> <ul style="list-style-type: none"> • increased areas of responsibility and potential liability • training implications for staff • additional staffing

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Policy Goals	Measurable Outcomes	Effective Tools	Impact Analysis
Harmonization	Variance in national and provincial/territorial regulations	Regulations	Varies up to 100% depending on degree of adoption. Enforcement implications can include: <ul style="list-style-type: none"> • increased areas of responsibility and potential liability • training implications for staff • additional staffing

3.5 Assess timelines for implementation of the various options

The timeline for including energy efficiency for Part 9 housing in national model codes has been established in consultation with PTPACC to be late 2012.

Status Quo Option

One solution that must be considered is status quo, i.e. do not establish energy efficiency requirements for NBC Part 9 housing. This option is supported by various reports that the performance of new housing stock is much better than that of the existing stock. However, market penetration of levels established by voluntary programs has not exceeded 20%. Also, some jurisdictions already have established building code requirements for energy efficiency for Part 9 housing, and many others are under directives to establish them in the near future. The development of core national code requirements for energy efficiency in Part 9 housing is consistent with the needs of the provinces and territories, will promote harmonization of energy codes requirements for Part 9 housing, and will advance the energy efficiency of new Part 9 housing construction beyond the current levels. For these reasons, status quo is not an appropriate response.

Conclusions of Step 3

Based on the analysis of the policy goals and tools available to achieve them, a building regulatory response related to energy efficiency is justifiable to effectively address the overall policy goal related to the environment with possible sub-goals of resource conservation, reduced emissions, infrastructure capacity and energy security, and the policy goal of harmonization. The development of core national codes facilitates harmonization of energy requirements for construction across Canada. It has the benefit

of establishing these requirements through an established process that is recognized as being fair, open, transparent and accountable.

The establishment of core national codes sets the minimal acceptable standard for construction for energy efficiency. Voluntary programs continue to push the boundaries and create market pull, potentially leading to enhanced core code levels.

Step 4 – Formation of JTG to Scope the Objective

A Joint Task Group of the CCBFC and PTPACC was formed to scope the development of the objective code. That JTG made an interim report that was received by the Executive Committee at its January 2010 meeting. Since then, the work has been furthered by joint and separate meetings of the Executive Committee and PTPACC. A final recommendation was presented to the CCBFC at its June meeting.

Step 5 – Public Review

The energy objectives will undergo public review in October, November 2010.