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Canada

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ecoENERGY Efficiency for Buildings

National Energy Code of Canada for Buildings 2011

New national code

It's a fact: energy consumption by Canadian commercial and institutional buildings is growing. Our buildings are getting older, our economy is growing, and building codes must keep up-to-date with the changing technology and practices of the 21st century.

Key to consistent and long-lasting savings

Strong building codes are affordable and effective tools for increasing the long-term energy efficiency of our buildings. Economic analysis indicates that every dollar spent on energy code compliance and enforcement initiatives yields \$6 in energy savings. Implementing energy codes will help improve the efficiency of our building stock, save Canadians millions of dollars annually and help reduce both our carbon emissions and the need to build new power stations to meet growing energy demands.

The concept of building energy codes was first addressed in Canada in 1997 with the publication of the *Model National Energy Code for Buildings 1997* (MNECB). The MNECB complemented the existing *National Building Code* with a set of cost-effective, minimum energy efficiency criteria for new building design.

2011 National Energy Code of Canada for Buildings

Building owners in the commercial and institutional sector, design professionals and the construction industry now have an updated code to make their new construction and major renovations more energy-efficient than ever.

When adopted by the provinces and territories, the *National Energy Code of Canada for Buildings* (NECB) will provide an overall 25 percent improvement in energy efficiency compared with the MNECB and will lead to significant energy savings over the lifespan of a building.

Published in 2011, the NECB replaces the 1997 MNECB and puts Canada on a comparable footing with other countries that lead the world in energy-efficient building construction.

The new code proposes minimum requirements for increasing energy efficiency across the sector, including in offices, stores, warehouses, hotels, arenas, hospitals and schools – reducing energy consumption for owners, operators and tenants.¹

The new code addresses the building envelope, systems and equipment for heating, ventilating and air-conditioning, service water heating, lighting, and electrical power systems and motors.

The NECB contains approximately 245 technical changes to address a host of issues and accommodate the many new technologies and construction practices that have emerged in Canada over the past 15 years. Another significant benefit is the additional compliance methods.

Compliance flexibility

Ensuring that designers and builders comply with the code is the best guarantee that it will achieve energy efficiency goals. The NECB is in the same objective-based format as the 2010 *National Building, Fire and Plumbing Codes of Canada*. This format allows engineers, architects and designers to choose between multiple paths to ensure that their proposed building designs are compliant to the standards. Code compliance can be achieved through one of three paths:

- a simple, prescriptive path, stating clear, specific requirements to follow
- a medium-complexity, trade-off path, that allows requirements within a part of the code to be traded with each other, as long as the overall energy performance goal is achieved
- a rigorous performance path, typically used when designing complex buildings such as hospitals or buildings targeting high efficiency goals, that is based on an engineering approach and energy software modelling assessments

¹ Regulations concerning housing and small buildings are addressed within the scope of the *National Energy Code of Canada for Houses*.



Canada

Collaborative approach responding to regional needs

Energy-efficient building construction is one of the fastest, greenest and most cost-effective ways to reduce greenhouse gases. The NECB was developed by using an extensive cross-country, consensus-based process that involved stakeholders from provinces, territories, municipalities and industry. It supports Canada's varying regional needs, with guidelines based on eight climate zones. Provinces and territories can adopt or adapt the new code to introduce it into law within their respective jurisdictions.

The NECB was developed by the Canadian Commission on Building and Fire Codes with technical and financial support from the National Research Council of Canada and Natural Resources Canada's (NRCan's) **ecoENERGY Efficiency for Buildings**.

An update to the NECB is currently underway with publication anticipated by late 2015 or early 2016.

For more information

Commit to yourself, your clients and all Canadians to improve the energy efficiency of Canada's buildings. Take a look at the NECB to understand what smart clients are asking for today and what will be standard practice in the construction sector in a few years.

The Government of Canada is committed to improving the energy efficiency of our nation's buildings. NRCan supports energy code development, adoption, implementation and compliance initiatives. Contact NRCan's **ecoENERGY Efficiency for Buildings** for tools, technical support and other information at oee.nrcan.gc.ca.

For additional information or for information on how to order the code, visit the National Research Council of Canada's Virtual Store at www.nrc.gc.ca.

Natural Resources Canada's Office of Energy Efficiency
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