



Energy Brief

CODES, REGULATIONS AND STANDARDS INFLUENCING ENERGY DEMAND

This briefing note is the latest in a series prepared by the National Energy Board (NEB) to look at specific energy supply and demand issues. On the demand side, the series will look at technology, statistics, policy, social trends, and how these are affecting energy demand in Canada. It also considers opportunities and challenges posed by energy demand shifts. This particular briefing note gives an overview of recently announced and / or approved amendments to energy demand applicable codes, standards, and regulations.

Over the years, energy efficiency in Canada has improved. We have gradually moved towards more efficiency, and it now takes less energy to achieve an equivalent or better level of output of service. This trend in efficiency is supported and shaped by multiple approaches, including awareness and promotion (i.e., labelling programs) to inform consumers about the efficiency of appliances, and regulatory action, which is directed at improving or excluding the most inefficient products within individual product groups. Codes, standards, and regulations are just one way to ensure that average energy performance continually improves. With the expansion of internationally recognized efficiency awareness programs such as Energy Star, and new levels of international cooperation on minimum energy performance standards, it is expected that codes, standards, and regulations will have an even larger presence on energy demand trends than in previous years.

Recently, the trend of energy efficiency is not specifically regulated efficiency, more and more it is about energy efficiency bundled within broader objectives of energy and environmental strategies, particularly climate change initiatives. As an example, Environment Canada has committed to drastically reducing Canada's greenhouse gas (GHG) emissions and air pollution, as set out in its Turning the Corner Plan. This plan has objectives for all sectors: buildings, appliances, transportation, and industrial, and at a high level, will help contribute to the proposed target of reduced emissions. An overview of some of these proposed or approved changes to codes, standards, and regulations is outlined below.

BUILDINGS

Energy performance for buildings is seen as one of the best opportunities for energy savings and GHG emissions reductions. In June 2007, the federal government announced new funding to support updates to the National Building Code (NBC). A comprehensive update to the section of the building code that covers energy performance will be published in 2012, and it is expected this revision should result in a 25 per cent improvement in residential and commercial building energy performance. Amendments that specifically address building shell issues (i.e., walls, windows) will be included in the next NBC update (2010). In addition to guiding new regulations, improved building performance is encouraged through the promotion of building programs that promote energy efficiency and environmental sustainability. Some of these programs are Leadership in Energy and Environmental Design (LEED Canada), R-2000, and Built Green in Alberta.

Although created nationally, building codes actually fall under provincial jurisdiction, therefore provinces (and some municipalities) have adapted and adopted elements of the national code to fit regional circumstances. Several provinces, such as British Columbia and Ontario have already preceded the release of the updated federal standard with announcements of tougher building standards for all new buildings.

APPLIANCES AND EQUIPMENT

Canada has been particularly successful in moving the market for appliances and equipment towards higher efficiency. The federal government in October 2006 announced new energy efficiency regulations on 20 products that were previously unregulated as well as more stringent requirements on 10 previously regulated products. The list includes refrigeration, heating, electronic appliances, and lighting products. This means that anyone in the market for a new appliance will soon only be able to purchase better technology that meets the minimum efficiency standard. Many of the items are not big power consumers, but due to an ever expanding market, it is becoming a more serious issue. Near term priorities include residential gas furnaces, standby power loss on electronic appliances, and a push to phase-out inefficient lighting by 2012. Many Canadians have already shifted towards using more efficient light bulbs due to the benefits they provide for home electricity costs. Regulating these small appliances will help make it even easier for consumers to transition to higher efficiency products.

TRANSPORTATION

Passenger-vehicle fuel consumption accounts for the majority of energy demand within the transportation sector. Vehicle fuel economy standards have a significant impact on shaping future energy demand trends. In November 2007, the federal government announced its intent to revise Canadian standards. It is expected the Canadian standard would be strongly guided by the recent proposed U.S. standard of 35 miles per gallon (mpg) by 2020. The current Canadian fuel economy standards are based on a Memorandum of Understanding (MOU) between the government and the auto industry that is set to expire in 2010. The present MOU is based on reducing emissions rather than a specific fuel efficiency improvement. As the new regulation is in the consultation stage, it's unclear at this point how the regulation will function. New standards are also expected in the other transportation sectors, including freight, air, rail, and off-road. It is likely these will be emissions based targets rather than specific fuel economy targets.

INDUSTRIAL

The major factor influencing energy efficiency in the industrial sector is the proposed regulation (set to be finalized in 2009) to reduce air emissions (air pollution and GHGs) from 10 key industrial sectors that includes, among others, fossil fuel fired electricity generation, oil and gas, iron and steel, cement, pulp and paper, and chemicals.

Improving efficiency is one option industry may adopt to achieve reductions; however, the regulation includes other compliance mechanisms such as carbon offset credits and investment in clean technology fund.

FUTURE ANALYSIS

The amount of recent activity related to modifying codes regulations and standards indicates that there is a heightened sense of urgency regarding energy and environmental priorities. What can be seen from the trends in efficiency in Canada is that regulations do indeed shift the entire curve of energy performance to higher levels, but regulations are only one tool out of many that are part of market transformation.