Efficiency Canada
c/o Carleton University
1125 Colonel By Drive
Ottawa, ON K1S 5B6

Bill S-4: A once-in-a-decade opportunity to strengthen Canada's Energy Efficiency Act

Bill S-4, An Act to amend the Energy Efficiency Act,[1] was passed in the Senate in June and is currently awaiting second reading in the House of Commons. This brief highlights some key aspects of the bill and their benefits to Canadians, including the expanded definition of an energy efficiency standard and the proposed regulation of commercial entities.

Section 2 (2): The definition of *energy efficiency standard*

Bill S-4 would expand the scope of an energy efficiency standard beyond the current definition of energy and water conservation. Including other important product characteristics like interoperability, product durability, system design, and technological composition would modernize Canada's Energy Efficiency Act for the 21st century.

Interoperability

Interoperability standards that enable demand-flexible appliances and equipment to communicate and work together are essential to helping utilities reduce costly electricity peaks and bills for households and businesses.[2] The current patchwork of open-source and proprietary interoperability protocols increases the cost and limits the viability of utility demand-response programs. In the U.S., Oregon, Colorado, and Washington state have adopted regulations requiring interoperability and demand-

[1] Government Bill (Senate) S-4 (45-1) - Third Reading - An Act to Amend the Energy Efficiency Act, Senate of Canada First Session, Forty-fifth Parliament, 3-4 Charles III, 2025-2026 (2026), https://www.parl.ca/documentviewer/en/45-1/bill/S-4/third-reading.

[2] Viegand Maagøe et al., *Demand Flexibility Protocols* (IEA Technology Collaboration Programme on Energy Efficient End-Use Equipment (4E) – Efficient, Demand-flexible Networked Appliances (EDNA), 2026), https://www.iea-4e.org/wp-content/uploads/2026/06/2026-EDNA-DEMAND-FLEXIBILITY-PROTOCOLS-WEB.pdf.

Efficiency Canada
c/o Carleton University
1125 Colonel By Drive
Ottawa, ON K1S 5B6

response capabilities in new electric storage water heaters.[3] Similar regulations in Canada could progressively unlock the thermal storage potential of Canadian households' 8.3 million electric water heaters,[4] creating a valuable grid resource that utilities could harness to reduce costly peak demand. Many other technologies could also be made demand-flexible-ready through similar regulations.[5] See Efficiency Canada's "Why Canada's next generation of appliances needs to be smarter"[6] blog for more information.

Product durability

Product durability standards can offer households and businesses important protections against early failure of regulated appliances and equipment. They are particularly relevant for Canada: 86 per cent of Canadians surveyed believe home appliances and electronics are deliberately designed for shortened lifespans, and Canada ranks among the highest countries in waste per capita.[7] The European Union's Ecodesign energy-related products regulations expanded in 2024 to enable durability standards.[8] A 2015 European Commission report identified household refrigerators and electric ovens as ideal appliance categories for which to set product durability standards. Both appliances contain certain components that were consistently the

[3] Vivian Cox et al., "It's Flex Time: Using Flexible Demand Appliance Standards to Deliver Peak Load and CO2 Reductions," *ACEEE Summer Study on Energy Efficiency in Buildings*, 2024.

[4] Residential Sector - Canada - Table 34: Natural Resources Canada, "Comprehensive Energy Use Database," Government of Canada, 2026, https://oee.nrcan.gc.ca/corporate/statistics/neud/dpa/menus/trends/comprehensive_tables/list.cfm.

[5] ENERGY STAR, "Connected Criteria for Partners," United States Department of Energy, accessed November 3, 2026, https://www.energystar.gov/products/smart_home_tips/about_products_connected_functionality/connected_criteria_partners.

[6] Karen Gorecki, "Why Canada's next generation of appliances needs to be smarter," *Efficiency Canada*, November 10, 2026, https://www.efficiencycanada.org/canada-needs-smarter-appliances/.

[7] Annick Girard et al., *Obsolescence of Home Appliances and Electronics: What Is the Role of the Consumer?* (Équiterre, 2018), https://cms.equiterre.org/uploads/en_obsolescencereport_equiterremay2018.pdf; Emma Fillman, "Comprehensive Right to Repair: The Fight Against Planned Obsolescence in Canada," *Dalhousie Journal of Legal Studies* 32 (2023): 123, https://doi.org/https://canlii.ca/t/7n4dp.

[8] Directorate-General for Environment, "Implementing the Ecodesign for Sustainable Products Regultion," European Commission, accessed November 11, 2026, https://green-forum.ec.europa.eu/implementing-ecodesign-sustainable-products-regulation_en.

Efficiency Canada
c/o Carleton University
1125 Colonel By Drive
Ottawa, ON K1S 5B6

most likely to fail, reducing product lifespans.[9] Adopting durability testing requirements for these components would therefore save households money on repairs and early equipment replacement and generate less electronic waste.

System design

Regulating the efficiency of energy-using systems (hybrid heating systems, motors with variable frequency drives (VFDs), clothes washers with dryers, etc.), rather than just the individual appliances and equipment, can achieve far greater energy savings.[10] As an example, electric motor systems are responsible for more than half of global electricity use.[11] VFDs control the voltage and frequency supplied to an electric motor, better matching the speed and torque of a motor to the application. A U.S. study estimated that universal VFD integration would reduce electric motor energy consumption by 11 per cent nationally.[12] In comparison, increasing the standard for a 160 kW motor from the International Energy Efficiency (IE) 3 class to IE 4 would decrease its total energy consumption by 0.6 per cent.[13] Due to the significant number of electric motors in

[9] Thermostats, refrigerant tubing, compressors, etc. for refrigerators; hinges, controls and elements, etc. for ovens: European Commission: Directorate-General for Environment et al., *The Durability of Products – Standard Assessment for the Circular Economy under the Eco-Innovation Action Plan* (Publications Office, 2015), https://doi.org/10.2779/37050.

[10] Sarah Riddell et al., *How to Modernize Canada's Energy Efficiency Act* (Efficiency Canada, CLASP, Carleton University, Ottawa, ON., 2024), https://www.efficiencycanada.org/modernize-report/.

11 IEA Technology Collaboration Program, "Electric Motor Systems – a Key Element on the Way to Global Net Zero," 4E *Electric Motor Systems Platform (EMSA)*, December 19, 2025, https://www.iea-4e.org/emsa/news/electric-motor-systems-a-key-element-on-the-way-to-global-net-zero/.

[12] Prakash Rao et al., *U.S. Industrial and Commercial Motor System Market Assessment Report. Volume 3: Energy Saving Opportunity* (Lawrence Berkeley National Lab. (LBNL), Berkeley, CA (United States), 2022), https://doi.org/10.2172/1876861: tbl. 5.

[13] The same increase proposed in Amendment 19 to the Energy Efficiency Regulations: Natural Resources Canada, "Canada Gazette, Part 1, Volume 160, Number 25: Regulations Amending the Energy Efficiency Regulation, 2016 (Amendment 19)," Government of Canada, Government of Canada, Public Works and Government Services Canada, Integrated Services Branch, Canada Gazette, June 20, 2026, https://gazette.gc.ca/rp-pr/p1/2026/2026-06-20/html/reg4-eng.html; For 6 pole motors: Commission Regulation (EU) 2019/1781 of 1 October 2019 Laying down Ecodesign Requirements for Electric Motors and Variable Speed Drives Pursuant to Directive 2009/125/EC of the European Parliament and of the Council, Amending Regulation (EC) No 641/2009 with Regard to Ecodesign Requirements for Glandless Standalone Circulators and Glandless Circulators Integrated in Products and Repealing Commission Regulation (EC) No 640/2009, 272 OJ L (2019), http://data.europa.eu/eli/reg/2019/1781/oj/eng.

Efficiency Canada
c/o Carleton University
1125 Colonel By Drive
Ottawa, ON K1S 5B6

Canada, any efficiency improvements generate significant cumulative energy and cost savings. However, regulating system design unlocks by far the greatest savings for Canadian industry, improving competitiveness.

Technological composition

For many types of appliances and equipment, a small tweak to their design is all that is needed to unleash significant energy, cost-saving and other benefits for Canadians. However, the current Energy Efficiency Act cannot specify what technologies make up regulated equipment. For example, central air conditioners (CACs) and heat pumps both provide cooling and are virtually the same equipment, except the latter have reversing valves to allow heating. Almost 7,000 CACs are installed every week in Canadian homes, when installing only heat pumps instead would slash energy bills by $10.4 billion cumulatively over 10 years.[14] Establishing the power to regulate technological composition would enable these types of common-sense changes to appliance efficiency regulations in Canada.

What Bill S-4 means for industry

The definition of energy efficiency standard

There has been industry opposition to this expanded definition of an energy efficiency standard.[15] It is important to note, however, that when Bill S-4 passes, products regulated under the Energy Efficiency Regulations would not automatically have requirements on interoperability, durability, system design or technological composition. An amendment to the Energy Efficiency Regulations, which is a two- to three-year process, including two public consultations that manufacturers and distributors are encouraged to participate in, would still be required to introduce each of these new

[14] Alexander Gard-Murray et al., "The Cool Way to Heat Homes: Installing Heat Pumps Instead of Central Air Conditioners in Canada," *Building Decarbonization Alliance, Canadian Climate Institute, Efficiency Canada, Greenhouse Institute.*, August 2023.

[15] Standing Senate Committee on Energy, the Environment and Natural Resources, "Briefs and Other Documents - Bill S-4, An Act to Amend the Energy Efficiency Act," Senate of Canada, accessed November 4, 2026, https://sencanada.ca/en/committees/enev/.

Efficiency Canada
c/o Carleton University
1125 Colonel By Drive
Ottawa, ON K1S 5B6

standards for any category of appliance or equipment. The Energy Efficiency Act is only updated once a decade, so any weakening of Bill S-4 could stall vital energy system and consumer protection progress.

Section 2 (4): Regulating commercial entities

Beyond the expansion of the definition of an energy efficiency standard, another important change to the Act proposed in Bill S-4 is to close an important loophole by introducing the regulation of "commercial entities." Currently, commercial entities like landlords can import equipment that does not comply with the Energy Efficiency Regulations for their own commercial use, such as in their rental units. This includes appliances like fridges, stoves and dishwashers. This burdens tenants with higher energy bills due to poor-performing equipment they have no control over. Regulating commercial entities will close this loophole, so appliances in rental units will have to meet the same minimum efficiency as appliances sold on the Canadian market.

Conclusion

For the above reasons and more, Bill S-4 offers an opportunity to positively transform the Energy Efficiency Act for the benefit of all Canadians. Efficiency Canada urges Members of Parliament to pass Bill S-4 without any further changes or delays.