
POWERING AHEAD: COMPARING ELECTRICITY PRICES ACROSS CANADA

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ONLINE APPENDIX

Electricity Rate Structures Across Consumer Classes and Provinces

Electricity rate structures in Canada differ significantly across provinces and consumer classes, reflecting a mix of regulatory approaches and system designs rooted in the Constitution, which grants provinces primary responsibility over energy and natural resources.

In provinces like Alberta and Ontario, electricity services are unbundled, meaning consumers pay separately for electricity generation (“energy” charges) and services such as transmission and distribution. Energy charges are usually expressed in cents per kilowatt-hour (¢/kWh) or dollars per megawatt-hour (\$/MWh). In contrast, other provinces operate with integrated monopolies where utilities provide all services under a single bundled rate, and consumption-based charges are categorized as “energy” rates.

Across jurisdictions, consumers may face a combination of energy, fixed, variable, and demand charges.¹ Fixed charges are flat daily or monthly fees, regardless of consumption. Variable charges

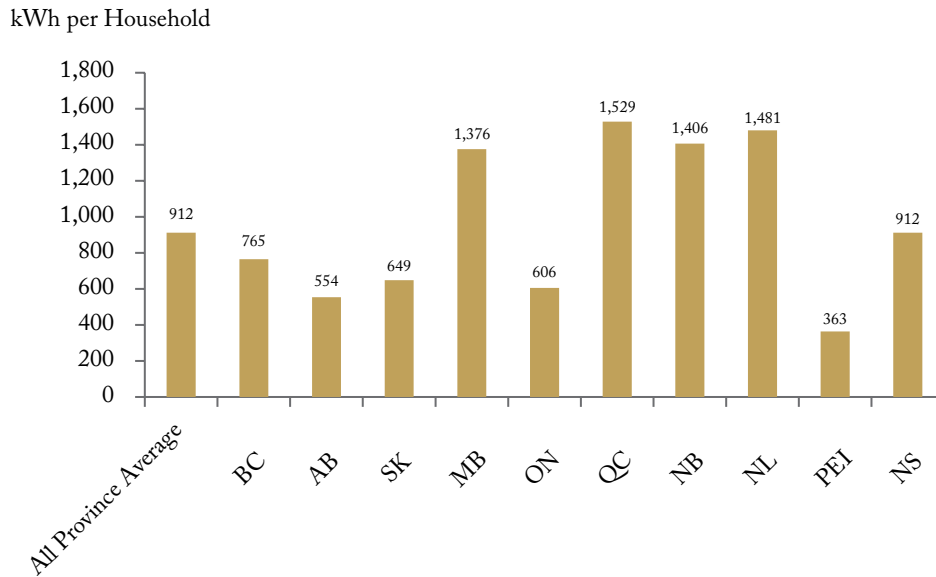
rise with electricity use, while demand charges are based on a customer’s peak electricity usage during a billing period, typically measured in kilowatts (kW) or kilovolt-amperes (kVA).

Rate structures also differ. Uniform rates remain constant regardless of usage or time. Tiered rates increase once consumption passes certain thresholds (e.g., residential consumers in BC and Quebec pay more after 675 or 1,200 kWh/month, respectively). Time-varying rates fluctuate based on when electricity is used. For instance, Ontario applies time-of-use pricing for residential and small commercial users, with different rates for on-peak, mid-peak, and off-peak periods depending on the season. In Alberta, some large commercial and industrial users face on/off-peak distribution and transmission rates or demand charges based on their share of substation capacity.

These pricing mechanisms are intended to reflect the actual cost of delivering electricity and to influence consumer behaviour by encouraging conservation, supporting industrial competitiveness, or improving system efficiency.

1 Provinces and utilities do not set tariff and other regulated rates on the same dates in a particular year. Our analysis uses rates consistent with those in effect during 2024, but acknowledges that some very minor differences may be present, depending on the time of year considered.

Figure A1: Residential Electricity Consumption by Province, 2023



Source: Statistics Canada - Energy Supply and Use (Table 2510003001) and Households (Table 17-10-0159-01).

Enabling Provincial Power Price Comparisons

Comparing electricity prices across provinces is complicated by the wide range of provincial and utility-specific customer classifications. There is no standard definition of an “average” customer, and many consumer classes contain multiple subcategories. This paper follows the methodology developed in an earlier C.D. Howe Institute paper (Bishop, Ragab, and Shaffer 2020). This approach enables comparison between disparate regions.

To standardize comparisons, the analysis uses representative residential, commercial, and industrial customer profiles. Table A2 provides a

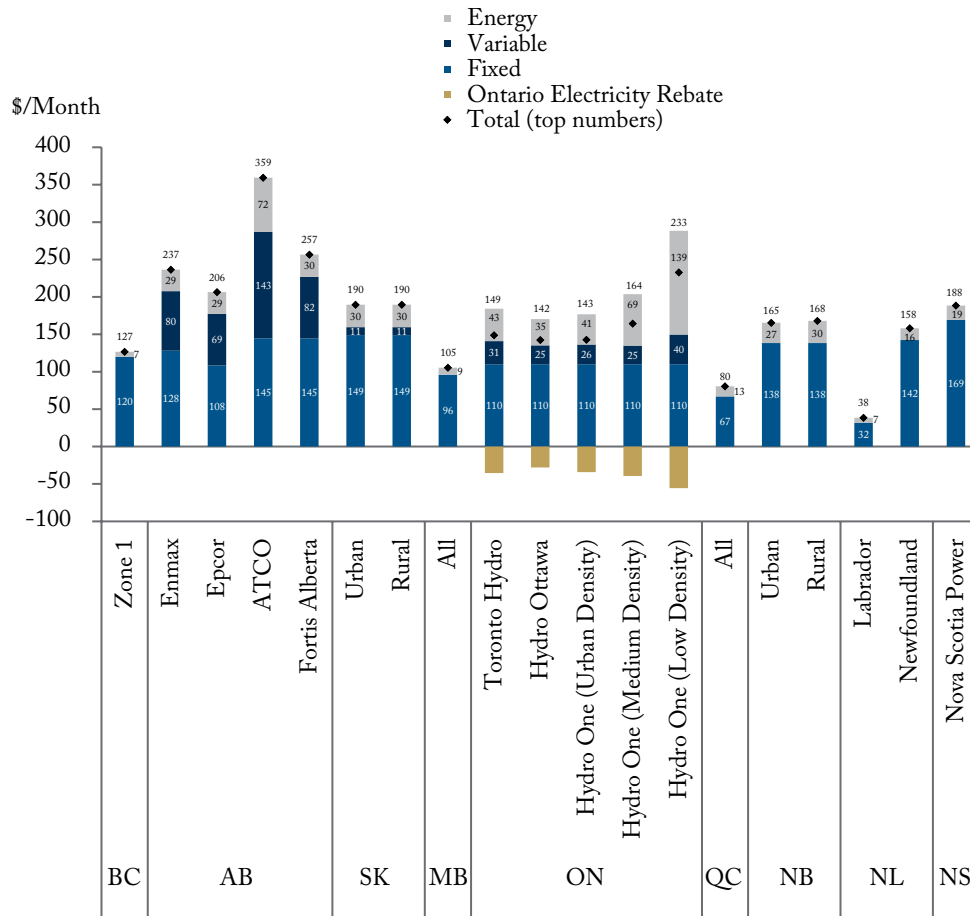
standard demand and consumption profile, as well as a load factor (a measure of average consumption over the month compared to the peak). Because electricity use varies widely within customer classes, the analysis distinguishes between small and large commercial consumers and between industrial consumers connected directly to transmission infrastructure and those connected to distribution systems. Though fewer in number than those connected to distribution networks, transmission-connected customers need the largest quantities of power and are usually important businesses in a region.

Table A1: Standard Consumer Profiles

Category		Monthly consumption	Demand	Load factor	Basis for profile
Residential		1,000 kWh	5 kW	28%	Statistics Canada average consumption for Canadian households.
Commercial	Small	5,000 kWh	20 kW	35%	Average consumption for ENMAX commercial consumer, and EPCOR medium commercial consumer.
	Large	50,000 kWh	100 kW	69%	Average consumption for Ontario General Service consumers.
Industrial	Distribution-connected	500,000 kWh	1,000 kW	69%	Average consumption for Ontario large General Service consumers and FortisAlberta industrial consumers.
	Transmission-connected	2,500,000 kWh	5,000 kW	69%	Average consumption for EPCOR and ATCO direct connects consumers.
Farm		500 kWh	10 kW	7%	Average consumption for ATCO and FortisAlberta company farm consumer.

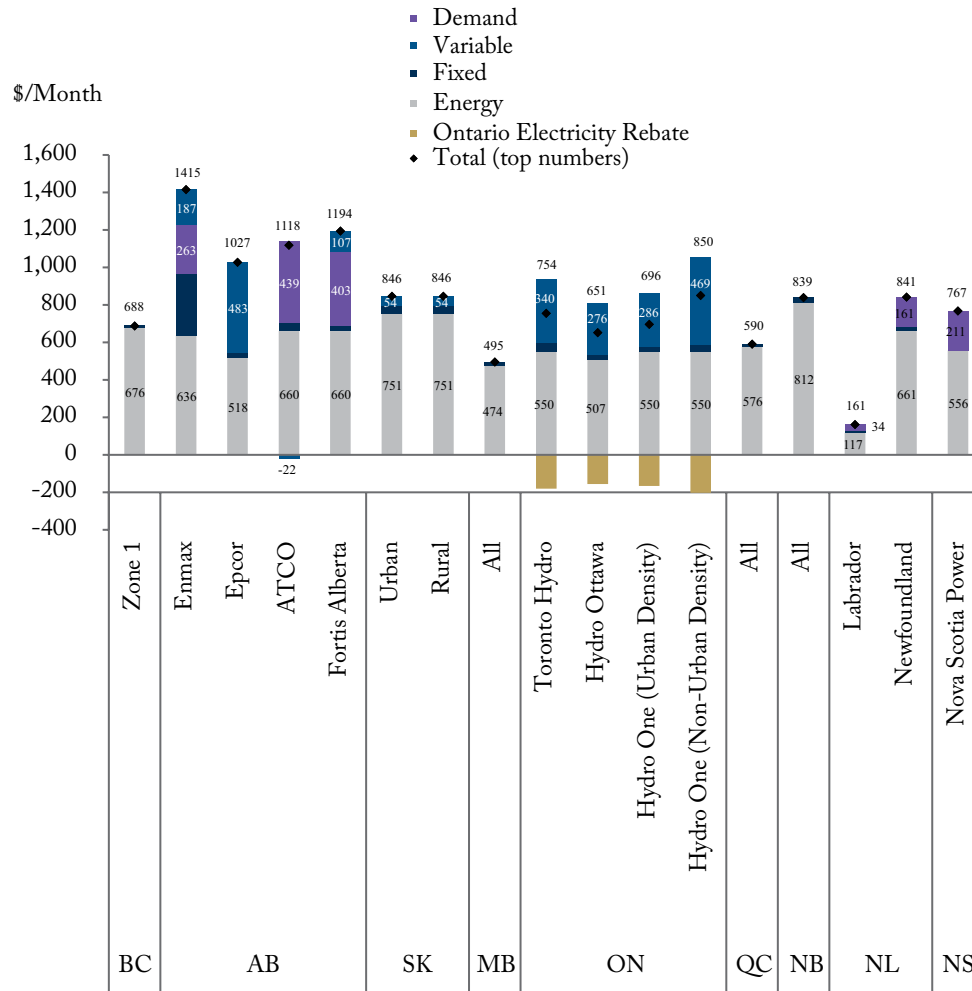
Source: Authors' compilation.

Figure A2: Residential Power Costs by Component, 2024



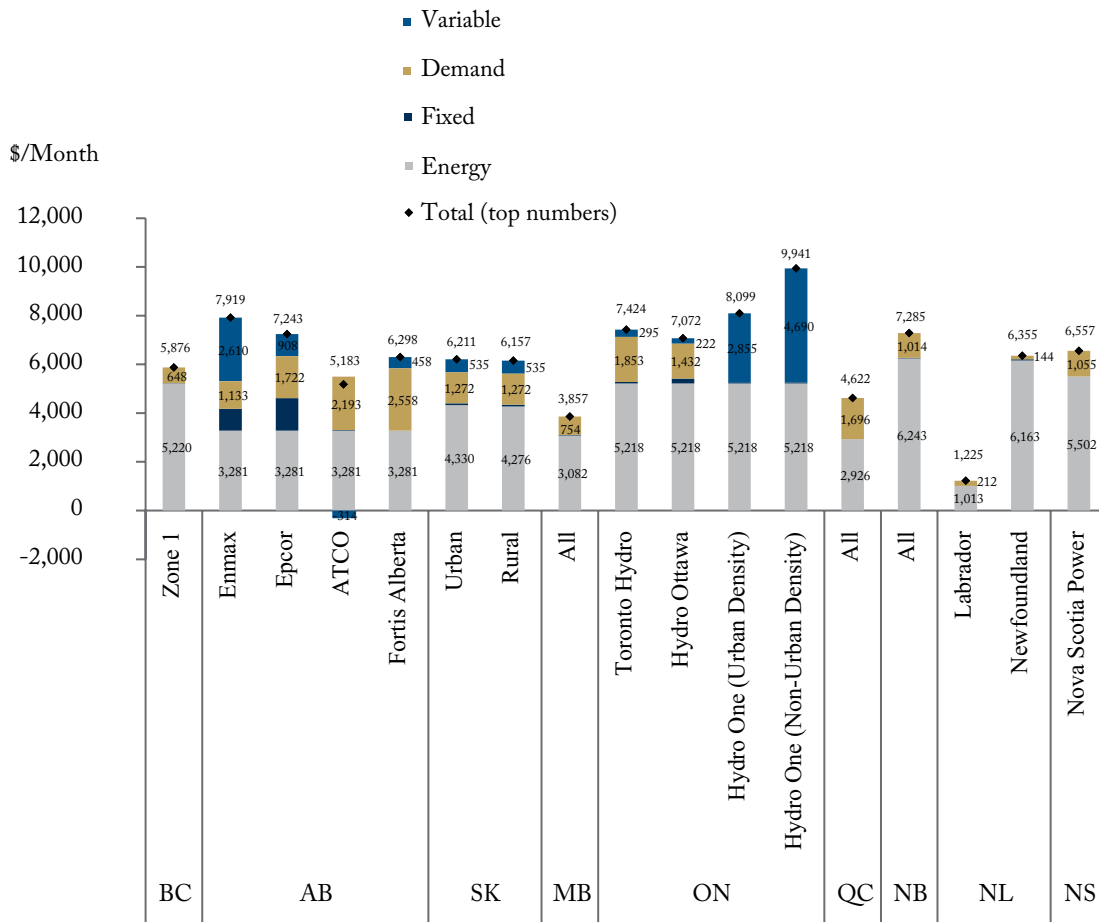
Source: Authors' calculations; data from provincial electricity utilities.

Figure A3: Small Commercial Costs by Component, 2024



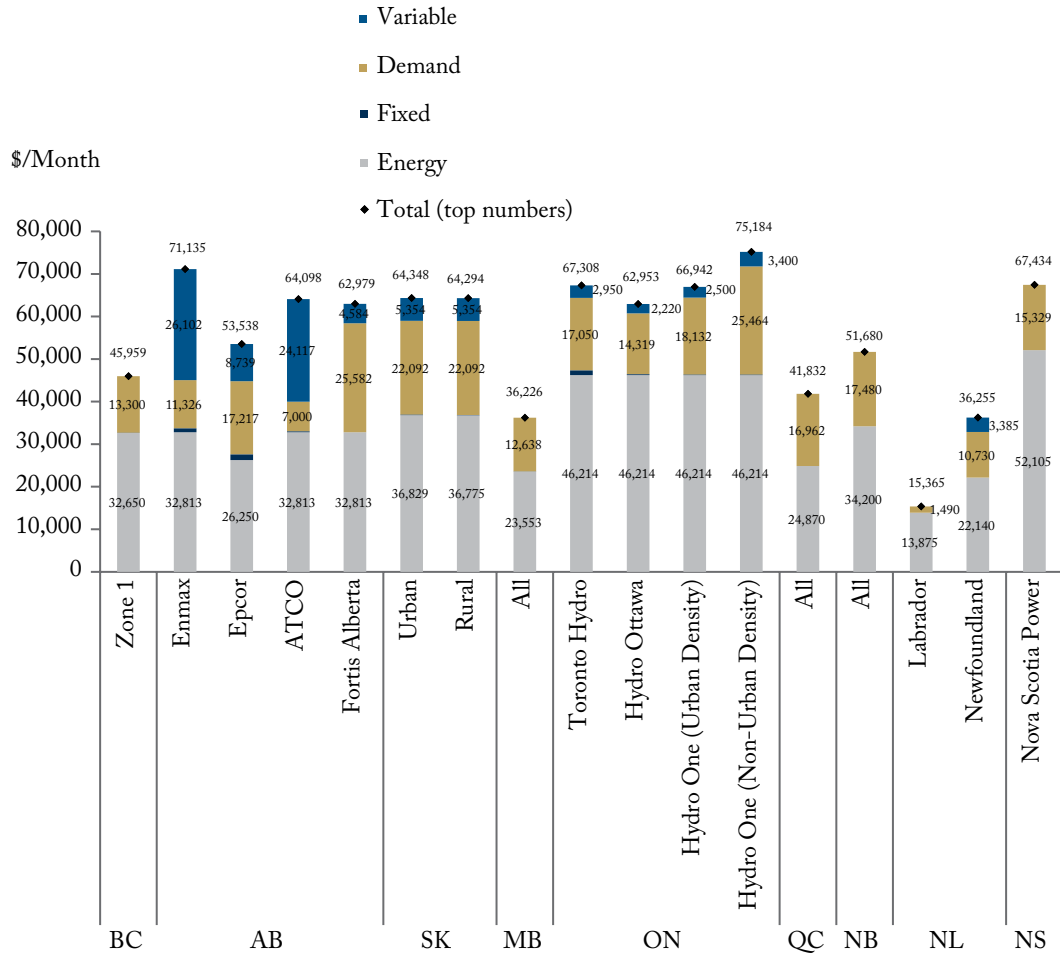
Source: Authors' calculations; data from provincial electricity utilities.

Figure A4: Large Commercial Costs by Component, 2024



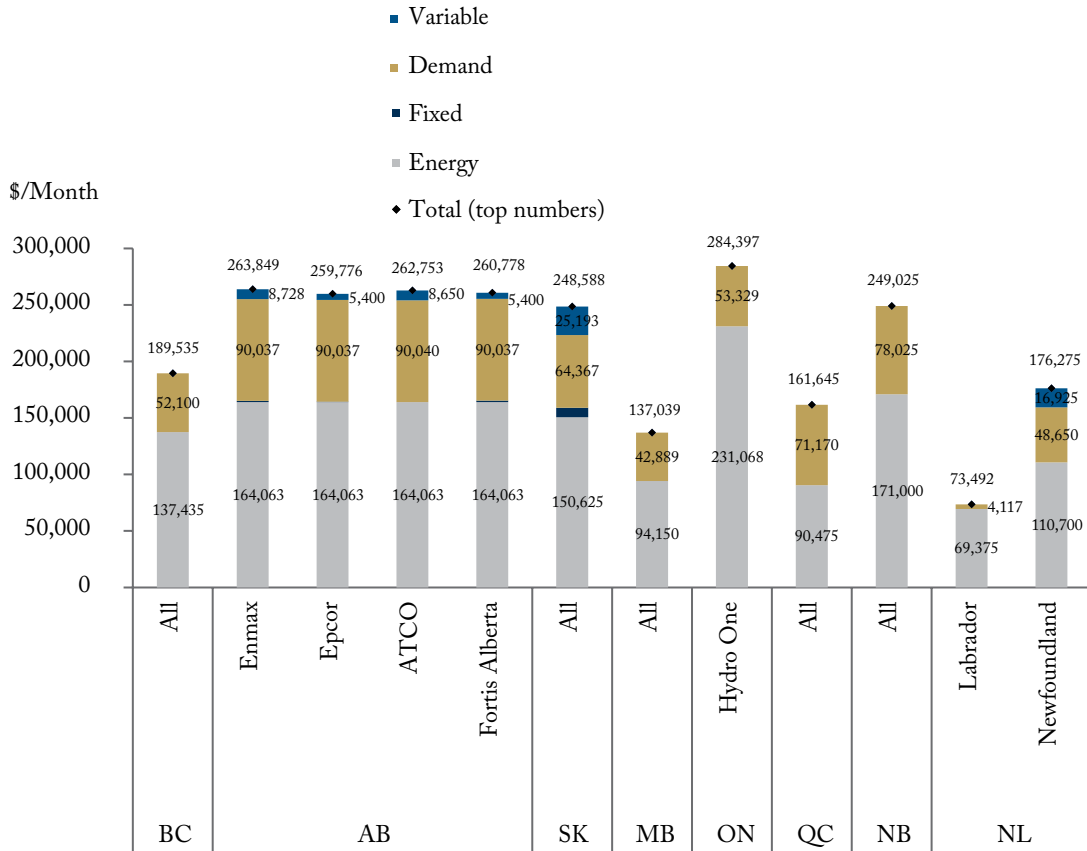
Source: Authors' calculations; data from provincial electricity utilities.

Figure A5: Industrial Costs by Component (Distribution-connected), 2024



Source: Authors' calculations; data from provincial electricity utilities.

Figure A6: Industrial Costs by Component (Transmission-connected), 2024



Source: Authors' calculations; data from provincial electricity utilities.

Table A2: Major Electricity Utilities in Canada by Province

Province	System Operator	Generator	Major Transmitters	Major Distributors
Alberta	Alberta Electric System Operator	<ul style="list-style-type: none"> • TransAlta • ATCO EnPower • Capital Power • Suncor • ENMAX Power Corp 	<ul style="list-style-type: none"> • AltaLink • ATCO Electric • EPCOR Energy Inc • ENMAX Power Corp 	<ul style="list-style-type: none"> • FortisAlberta • EPCOR Energy Inc • ENMAX Power Corp • ATCO Electric
Ontario	Independent Electricity System Operator	<ul style="list-style-type: none"> • Ontario Power Generation • Bruce Power • Brookfield Renewable Power • TransAlta 	<ul style="list-style-type: none"> • Hydro One 	<ul style="list-style-type: none"> • Hydro One • Toronto Hydro Energy • Services Limited • Alectra Utilities • Ottawa Hydro • Elexicon Energy
British Columbia	BC Hydro			
Saskatchewan	SaskPower			
Manitoba	Manitoba Hydro			
Quebec	Hydro-Québec			
New Brunswick	NB Power			
Prince Edward Island	N/A			
Nova Scotia	Nova Scotia Power (Emera)			
Newfoundland and Labrador	Newfoundland & Labrador Hydro, Newfoundland Power (Fortis)			

Notes: This list is illustrative and not exhaustive. PEI's system cost was not included in this report's analysis as it hosts a relatively unique market structure and presents challenges for direct comparison. As Canada's smallest province, PEI has limited local electricity generation and relies on imports from New Brunswick via submarine cables.

Source: Authors' compilation.