

Supplemental Retail Market Report for Q1 2022

May 13, 2022

Taking action to promote effective competition and a culture of compliance and accountability in Alberta's electricity and retail natural gas markets

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THE SUPPLEMENTAL REPORT AT A GLANCE

- The MSA has published this standalone report regarding a selection of retail market topics for Q1 2022 to address several timely retail market topics and observations by the MSA. These analyses include forward-looking and structural retail market topics the MSA views as relevant to various retail market stakeholders. In most future quarters, as in the past, analysis of this type will be included in the MSA's Quarterly Report itself.
- Retail bills contain both variable (consumption-dependent) and fixed billing components. Variable billing costs paid by retail customers exceed energy costs, primarily due to transmission and distribution costs being partly recoverable through variable billing components. This has efficiency implications for the broader energy markets.
- Regulated rates increased significantly over 2021 and are expected to continue to increase in 2022.
- Regulated retail electricity rates reached record highs over the quarter, increasing regulated electricity bills by over 30% year-over-year.
- Over Q1 2022, the regulated rate outlook for the May 2022 to March 2023 period increased by 1.6 ¢/kWh for regulated electricity rates, while the outlook for regulated gas rates almost doubled to \$6.40/GJ over the quarter.
- Regulated rate customers on equalized billing plans may have faced significant end-of-term balances for the 2021 billing period, resulting from significant cost increases over the term. The repayment of high end-of-term balances conflicts with the purpose of equalized billing plans. High end-of-term balances can be mitigated by shortening the equalization term, increasing the frequency of bill forecasts, or smoothing account balance repayment in some other way, such as over a longer period.
- Regulated rate customers presently have significant short-to-medium term incentives to switch to competitive fixed rates.
- An increasing number of residential regulated rate customers switched to competitive retailers in Q4 2021. The MSA expects competitive rate switching to increase further into 2022 as regulated rate customers receive progressively higher energy bills.

1 QUARTERLY RETAIL UPDATE

Residential retail customers can choose from several retail energy rates. By default, retail customers are on regulated energy rates, which vary monthly and by distribution service area and are calculated in part based on monthly forward prices. The Regulated Rate Option (RRO) is the regulated electric energy rate, while the Default Rate Tariff (DRT) is the regulated natural gas energy rate.

Alternatively, customers may sign with a competitive retailer. Competitive retailers typically offer both fixed and variable energy rates. Fixed energy rates are typically set for a period between one and five years, while competitive variable energy rates vary monthly.

Residential RRO rates increased significantly in Q1 2022 relative to the previous year, averaging 14.31 ¢/kWh across major service areas throughout the quarter (Table 1).

Residential DRT rates increased by 40% year-over-year in Q1, averaging \$4.53/GJ.

Table 1: Monthly retail market summary for Q1 (residential customers)

		2022	2021	Change
RRO (Avg ¢/kWh)	Jan	16.20	7.95	104%
	Feb	16.18	8.70	86%
	Mar	10.72	7.33	46%
	Q1	14.31	7.97	79%
DRT (Avg \$/GJ)	Jan	3.65	2.62	39%
	Feb	5.05	2.93	72%
	Mar	4.94	4.09	21%
	Q1	4.53	3.22	40%
Competitive Variable Electricity Rate (Avg ¢/kWh)	Jan	10.67	8.78	22%
	Feb	12.20	17.26	-29%
	Mar	8.67	8.00	8%
	Q1	10.46	11.15	-6%
Competitive Variable Natural Gas Rate (Avg \$/GJ)	Jan	5.18	3.60	44%
	Feb	5.48	4.57	20%
	Mar	5.83	3.56	64%
	Q1	5.50	3.89	41%
Expected Cost, 3-Year Fixed Electricity Contract (Avg ¢/kWh)	Jan	7.61	6.33	20%
	Feb	7.46	6.15	21%
	Mar	7.66	6.13	25%
	Q1	7.58	6.21	22%
Expected Cost, 3-Year Fixed Gas Contract (Avg \$/GJ)	Jan	3.37	2.43	39%
	Feb	3.64	2.56	42%
	Mar	3.94	2.44	62%
	Q1	3.65	2.47	48%

Average competitive variable electricity rates experienced moderate declines in Q1 2022 compared to the previous year, driven largely by a relative decline in pool price variability across months. As a result, variable rate customers did not experience the month-to-month doubling in variable electricity rates experienced in February 2021, although variable rates were higher in January and March of 2022 compared to those the previous year.

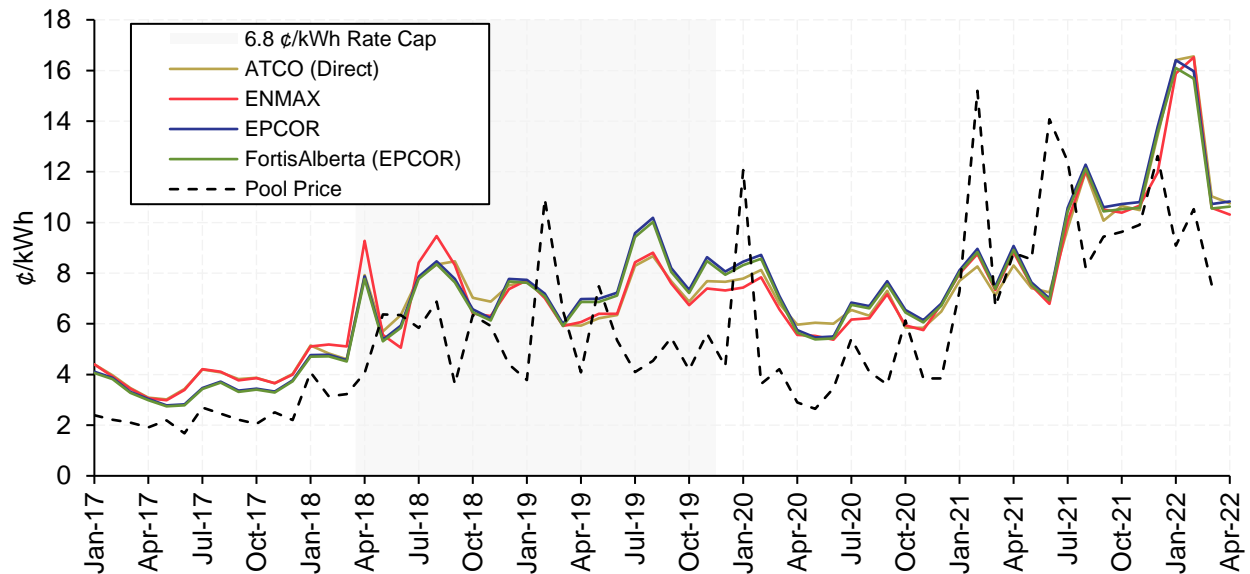
Average competitive variable natural gas rates increased by more than \$1.50/GJ in Q1 2022 year-over-year, reflecting higher daily natural gas prices in Alberta.

The MSA has projected retailers' expected cost of providing energy under fixed-rate retail contracts by looking at prevailing forward energy prices. Expected costs of fixed-rate retail energy contracts were higher in Q1 2022 compared to Q1 2021, driven by increases in electricity forward and gas futures prices over the past four quarters.

1.1 Regulated energy rates

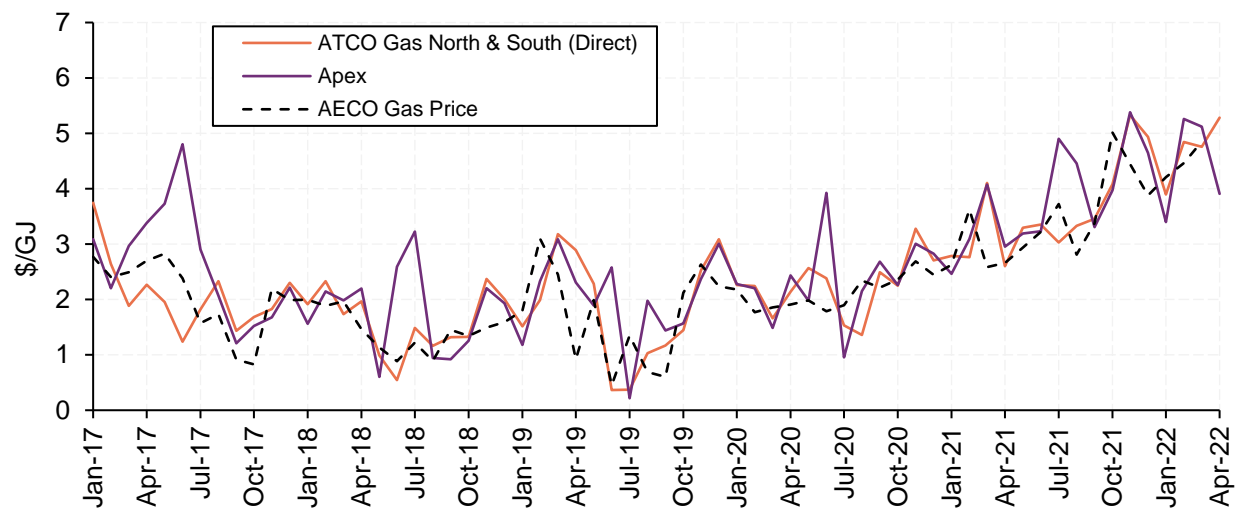
Residential RRO rates in January and February 2022 averaged around 16 ¢/kWh, exceeding the previous 15 ¢/kWh record set in January 2012. Record RRO rates in Q1 were the culmination of a steady increase in RRO rates beginning in 2021 (Figure 1). RRO rates subsequently fell to around 11 ¢/kWh in March and April 2022, resembling rates in the fall of 2021.

Figure 1: Residential RRO rates, January 2017 to April 2022



Residential DRT rates increased to around \$5/GJ in February and March 2022 following declines in the DRT from November 2021 to January 2022 (Figure 2).

Figure 2: Residential DRT rates, January 2017 to April 2022



1.2 Regulated energy bills

Average residential RRO electricity bills increased by between 30% and 36% year-over-year in Q1 2022 (Table 2), while average residential DRT natural gas bills increased by between 21% and 33% (Table 3). The increase in regulated energy bills is primarily attributable to year-over-year increases in regulated energy rates rather than increases in regulated fees.

Table 2: Estimated residential RRO bills, Q1 2022 vs. Q1 2021

	ENMAX	EPCOR	FortisAlberta	ATCO
Q1 2021	\$ 335	\$ 317	\$ 477	\$ 627
Q1 2022	\$ 454	\$ 419	\$ 621	\$ 854
Change (\$)	+ 119	+ 102	+ 144	+ 226
Change (%)	+ 36%	+ 32%	+ 30%	+ 36%

Table 3: Estimated residential DRT bills, Q1 2022 vs. Q1 2021

	ATCO Gas North	ATCO Gas South	Apex
Q1 2021	\$ 532	\$ 477	\$ 651
Q1 2022	\$ 701	\$ 637	\$ 786
Change (\$)	+ 169	+ 159	+ 138
Change (%)	+ 32%	+ 33%	+ 21%

1.3 Competitive fixed energy rates

Competitive retailers offering fixed rate energy products must form expectations of the future cost of serving their customer base and price their fixed rates accordingly. Competitive retailers may base their cost expectations in part on prevailing forward market prices or may purchase forward market hedges to provide additional certainty as to their future costs.

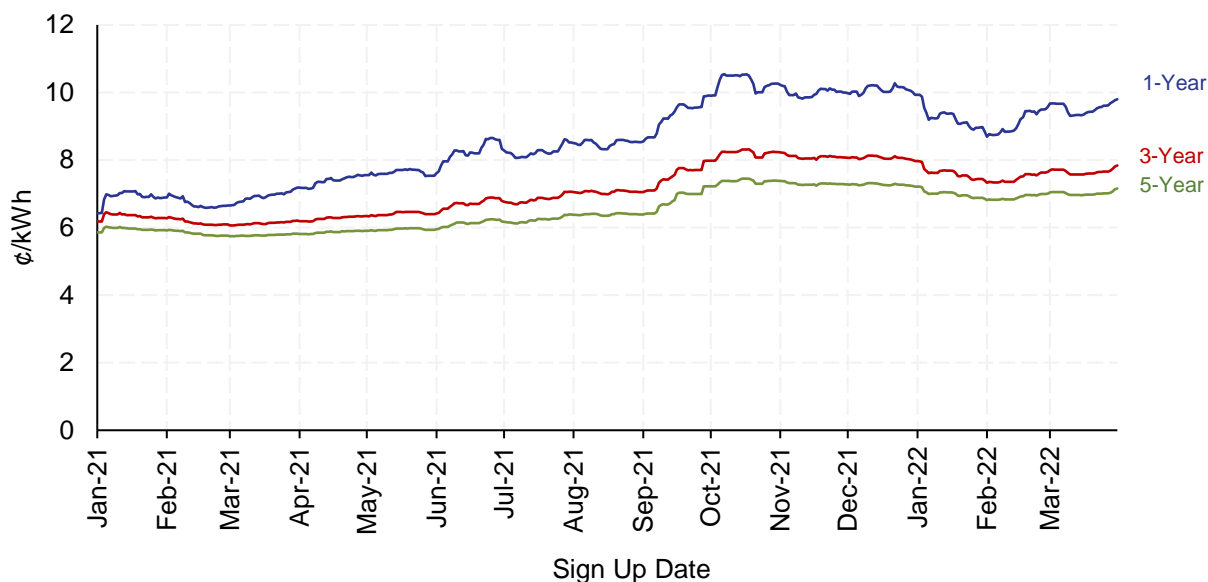
The MSA tracks expected energy costs associated with providing fixed rate contracts as it can explain differences in prices for contracts with different term lengths and can illustrate why retailers adjust fixed rate contract prices.

Expected costs associated with fixed rate electricity contracts declined over January as near-term forward electricity prices fell, lowering expected costs of a 1-year fixed rate contract by around 1 ¢/kWh, with lesser declines in expected costs for longer-term products (Figure 3). Subsequent

increases in near-term forward prices throughout February and March reversed much of the decline in expected costs experienced over January.

Expected costs remain higher for shorter-term 1-year fixed rate electricity contracts than 3 or 5-year contracts, reflective of higher forward prices for near-term forward market products and steadily lower forward market prices over the next few years.

Figure 3: Expected costs, competitive fixed rate electricity contracts, residential customers, January 2021 to March 2022



Some major retailers increased their fixed rate electricity contract prices over Q1 2022, although the timing of these price increases did not correspond directly with increases in expected cost (see Figure 4, Figure 5, Figure 6). Fixed rate offerings among major retailers were typically clustered into a lower priced group, with outlying offerings priced significantly higher. One retailer ceased offering fixed rate electricity contracts altogether in mid-January.

By the end of the quarter most major retailers were pricing 1-year fixed rates around 8.2 to 9.0 ¢/kWh, up from 8.2 to 8.3 ¢/kWh at the beginning of the quarter (Figure 4). Notably, most 1-year fixed rate prices remained below expected costs throughout the quarter, which may indicate retailers have hedged for the year ahead, have price expectations below forward market prices, or anticipate consumer stickiness.

3-year fixed rates began the quarter typically priced between 7.9 and 8.2 ¢/kWh. Retailers with higher priced 3-year fixed rates tended to increase their prices over the quarter, with offerings between 7.9 and 8.8 ¢/kWh available at the end of the quarter (Figure 5).

Fewer major retailers offer 5-year fixed rates; those that did offer such rates increased their rates over the quarter. Rates offered at the beginning of the quarter typically ranged from 6.9 to 8 ¢/kWh, while rates at the end of the quarter had increased to between 7.5 and 8.8 ¢/kWh (Figure 6).

Figure 4: 1-year fixed rate electricity contract offerings, residential customers, Q1 2022

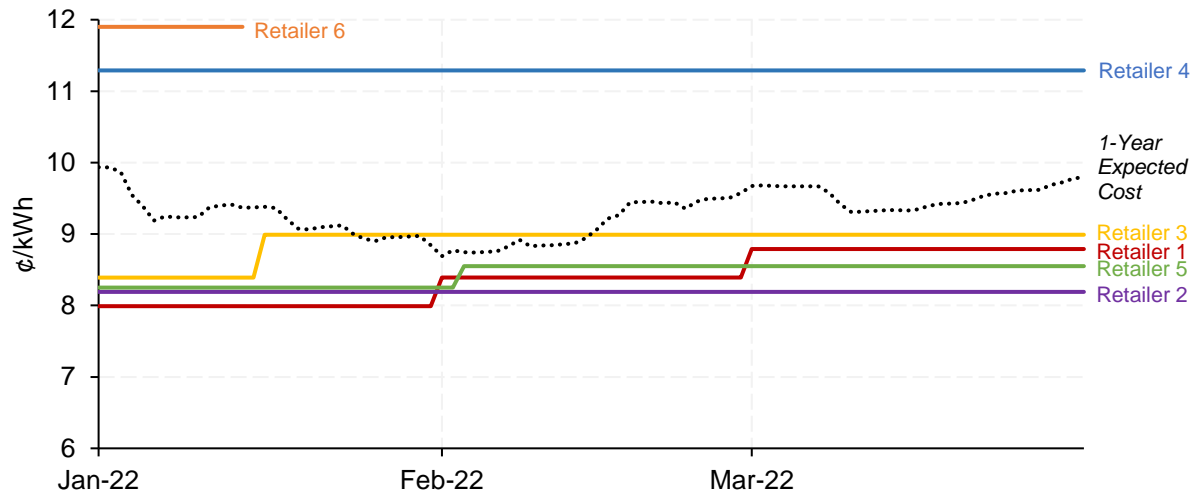


Figure 5: 3-year fixed rate electricity contract offerings, residential customers, Q1 2022

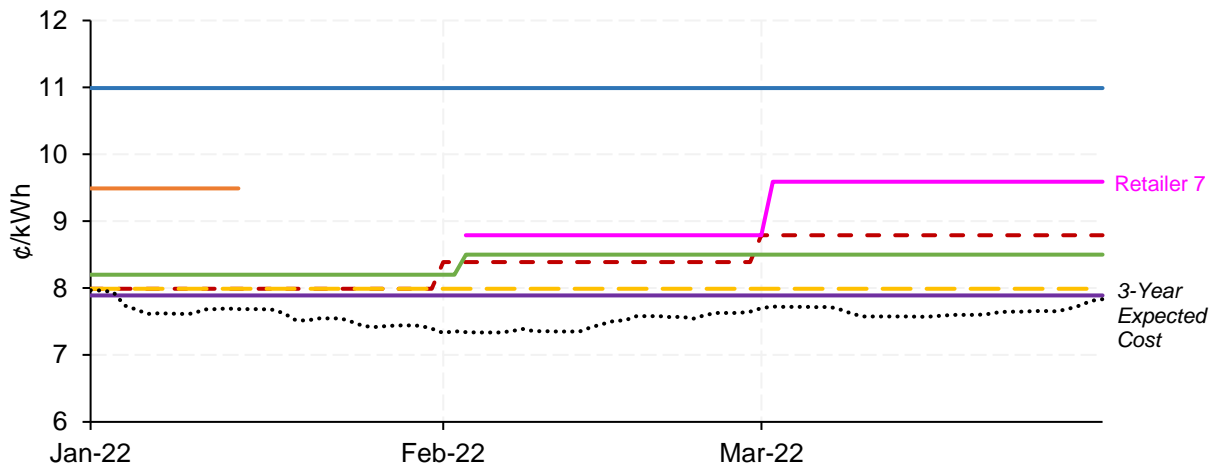
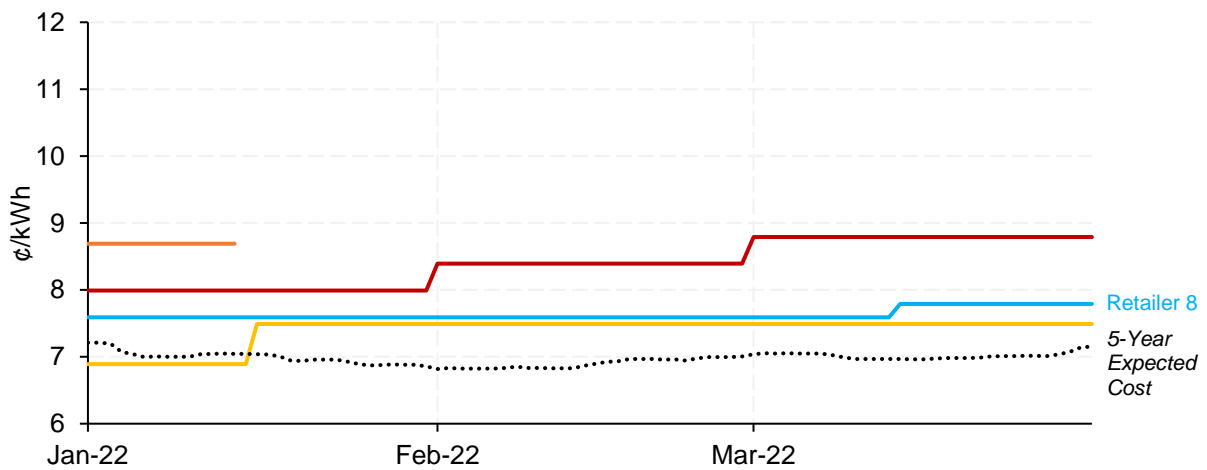


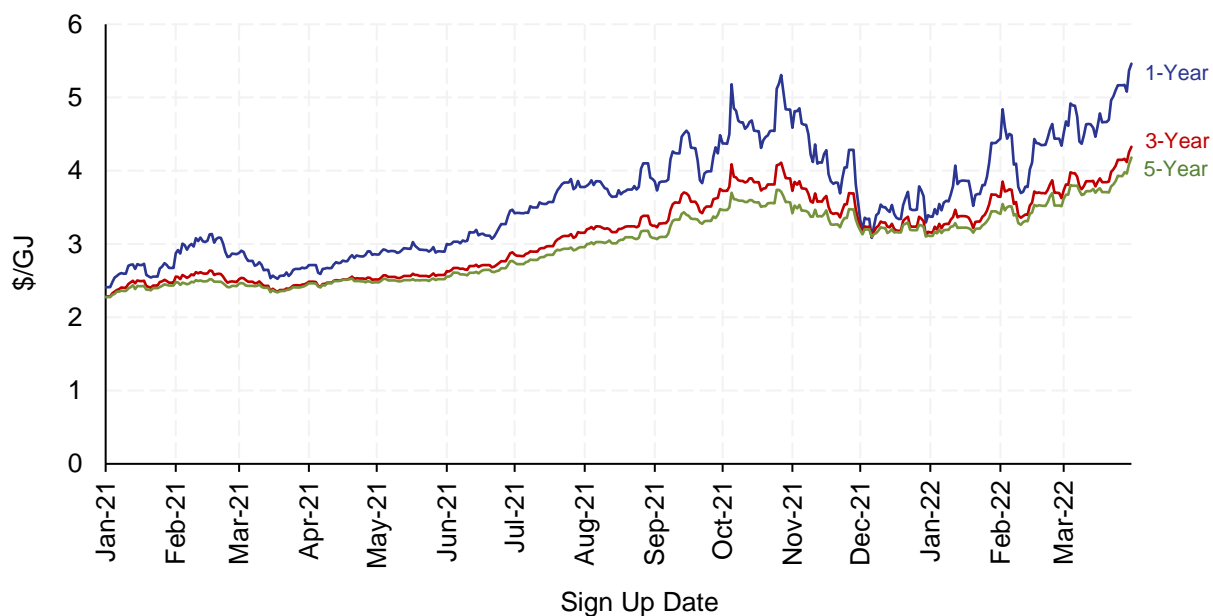
Figure 6: 5-year fixed rate electricity contract offerings, residential customers, Q1 2022



The expected costs of providing fixed rate natural gas contracts increased significantly over the quarter and exhibited significant volatility (Figure 7). Expected 1-year costs increased the most over the quarter (from around \$3.30 to \$5.50/GJ), while 3 and 5-year expected costs had more modest increases of around \$1.00/GJ.

The expected cost for 1-year natural gas fixed rates remains higher than the 3-year or 5-year expected costs, reflective of higher natural gas futures prices for the next 12 months than prices for subsequent years. As natural gas futures prices are similar for delivery periods over two years out, the difference between 3 and 5-year expected costs for fixed rate natural gas is reflective of the different weights of the comparatively higher near-term natural gas futures prices.

Figure 7: Expected costs, competitive fixed rate natural gas contracts, residential customers, January 2021 to March 2022



Major retailers generally did not change their 1 or 3-year fixed rate offerings over the quarter, despite increases in expected natural gas costs (Figure 8, Figure 9). The same retailer that ceased offering fixed rate electricity contracts in mid-January also stopped offering fixed rate natural gas contracts, although this retailer subsequently began offering 1-year fixed natural gas rates for a period in early March.

Three major retailers offered 1-year fixed rate natural gas contracts priced at \$4.39/GJ or \$4.59/GJ over the quarter, while two retailers priced their 1-year contracts higher than \$5.00/GJ (Figure 8). \$4.39/GJ and \$4.59/GJ was also the typical price for 3-year fixed rate natural gas contracts over the quarter (Figure 9).

5-year fixed rate natural gas prices were less stable over the quarter. 5-year contract rates offered by major retailers at the beginning of the quarter ranged from \$4.09/GJ to \$4.29/GJ, with the range rising to between \$4.09/GJ and \$4.59/GJ by the end of the quarter (Figure 10).

Figure 8: 1-year fixed rate natural gas contract offerings, residential customers, Q1 2022

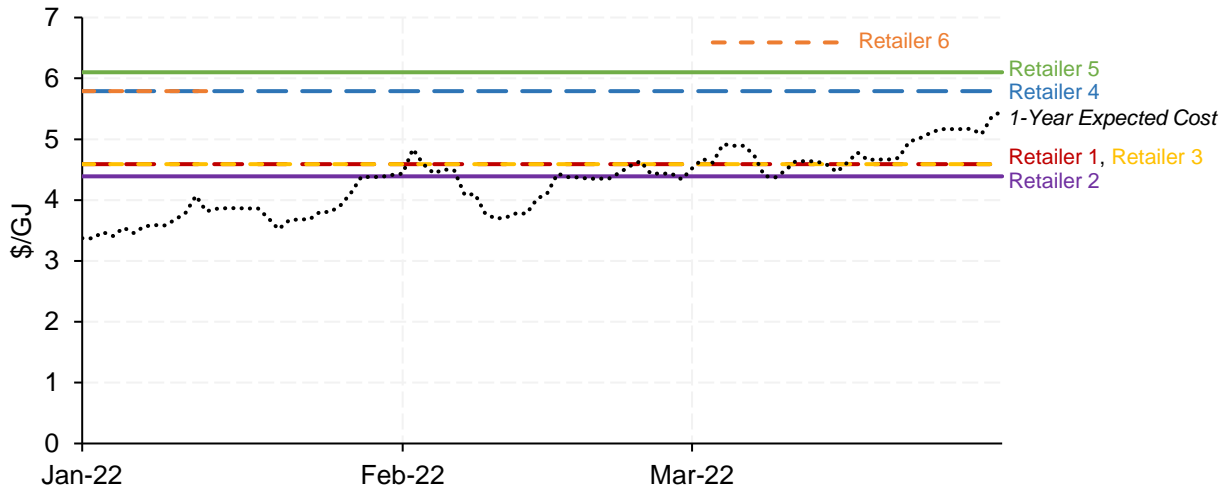


Figure 9: 3-year fixed rate natural gas contract offerings, residential customers, Q1 2022

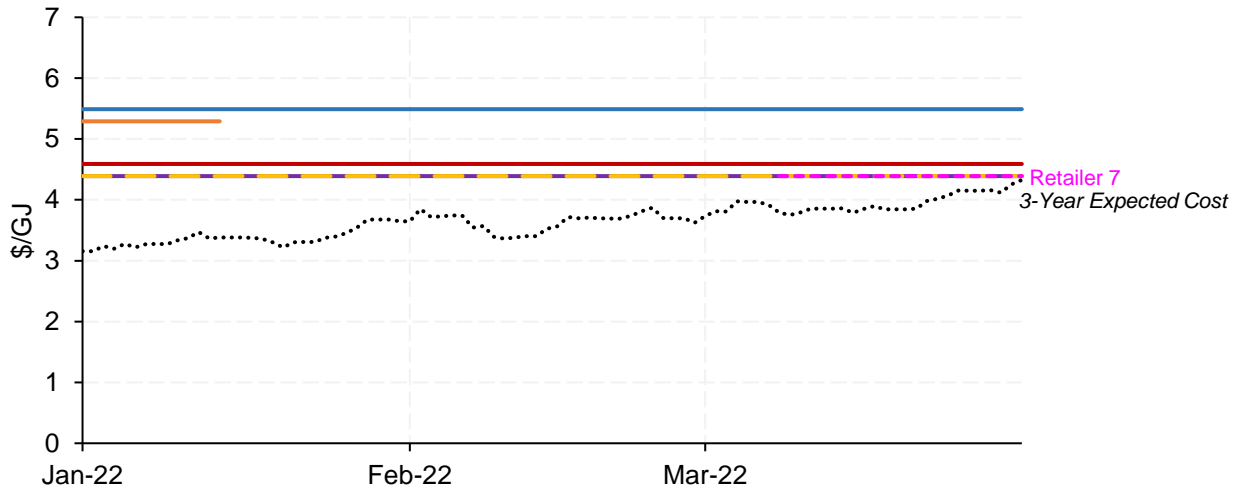
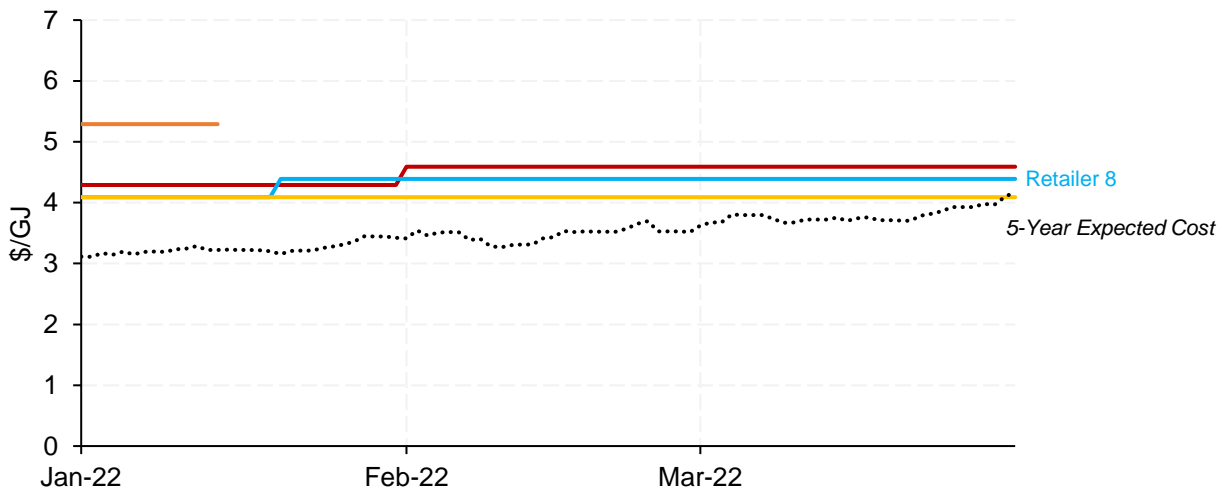


Figure 10: 5-year fixed rates natural gas contract offerings, residential customers, Q1 2022



1.4 Competitive variable energy rates¹

Competitive variable energy rates in Q1 2022 were similar to competitive variable rates in Fall 2021, reaching as high as 12 ¢/kWh in February before falling to around 9 ¢/kWh in March (Figure 11). Competitive variable electricity rates remain significantly higher than variable rates in 2020.

Continuous increases in daily natural gas prices pushed competitive variable natural gas rates above \$5.00/GJ in Q1 2022 (Figure 12). Competitive variable natural gas rates have shown a strong increasing trend since 2020.

Figure 11: Competitive variable electricity rate estimates, January 2020 to March 2022²

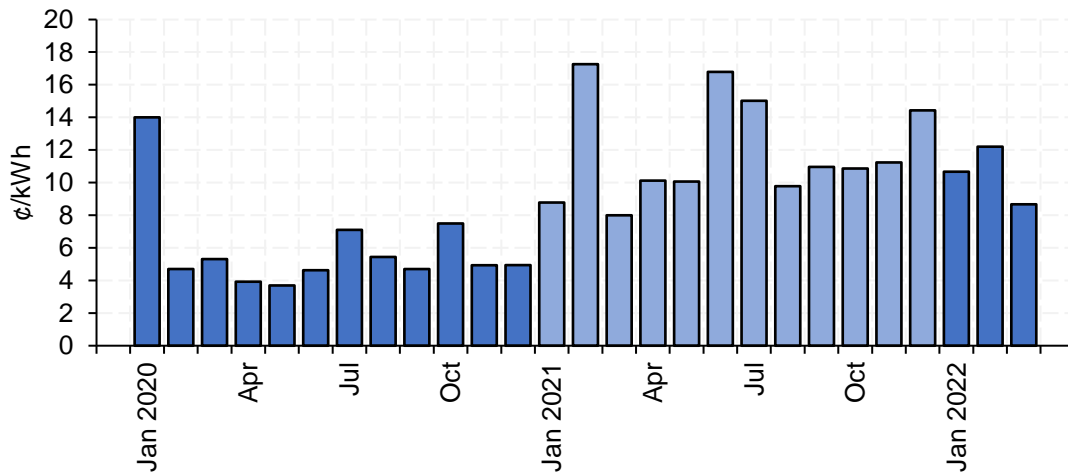
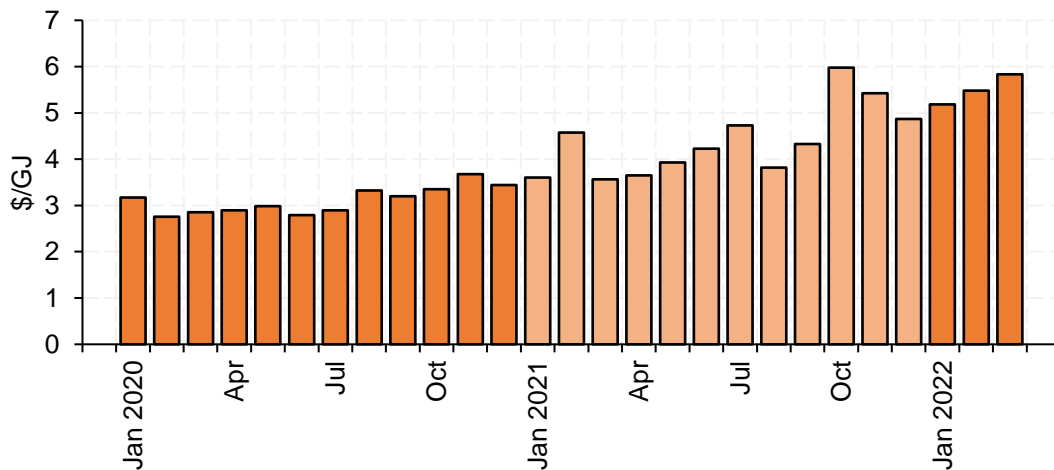


Figure 12: Competitive variable natural gas rate estimates, January 2020 to March 2022³



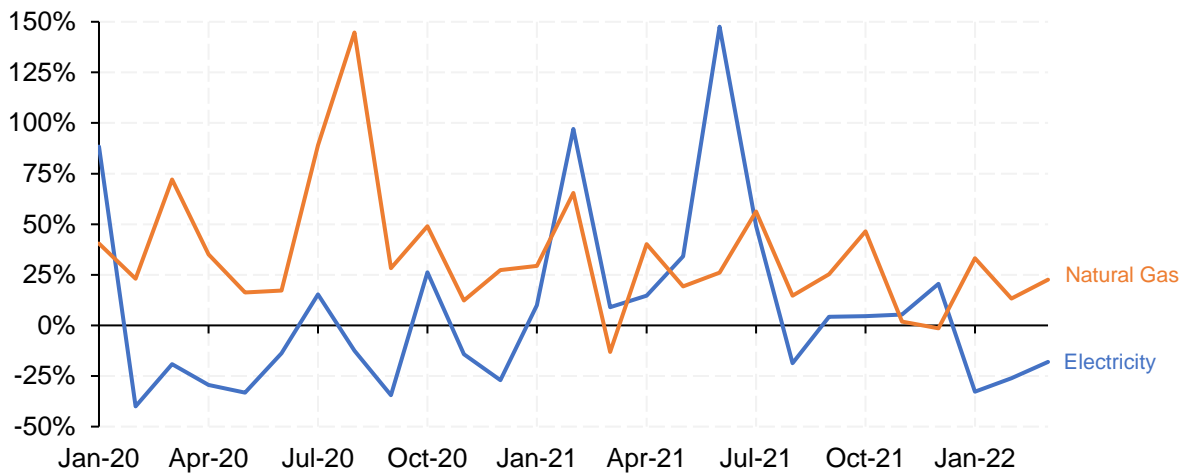
¹ “Competitive variable energy rates” here refers to energy rates based on wholesale market prices, not RRO or DRT rates. Competitive variable energy rates are sometimes referred to as “flow-through rates”.

² Includes a 1 ¢/kWh adder.

³ Includes a \$1/GJ adder.

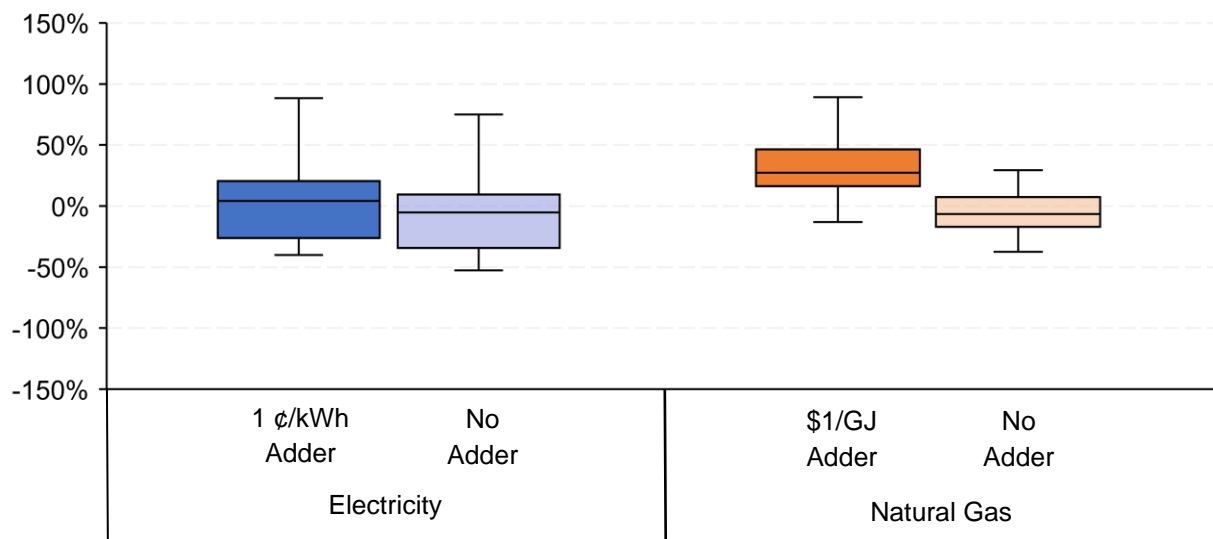
In the past two years, competitive variable natural gas rates have often exceeded DRT rates by between 25% and 50% for multiple months (Figure 13). While competitive variable electricity rates did not consistently exceed RRO rates in the past two years, in months where this was the case customers on competitive variable rates could face energy rates significantly greater than the RRO.

Figure 13: Competitive variable rate premium over regulated rate, January 2020 to March 2022



The amount a competitive variable rate can be expected to exceed a regulated rate may be highly dependent on the adder associated with the rate. Competitive variable natural gas rates – which often include adders around \$1.00/GJ – are considerably more impacted by adders than competitive variable electricity rates, which typically include an adder around 1.00 ¢/kWh (Figure 14).

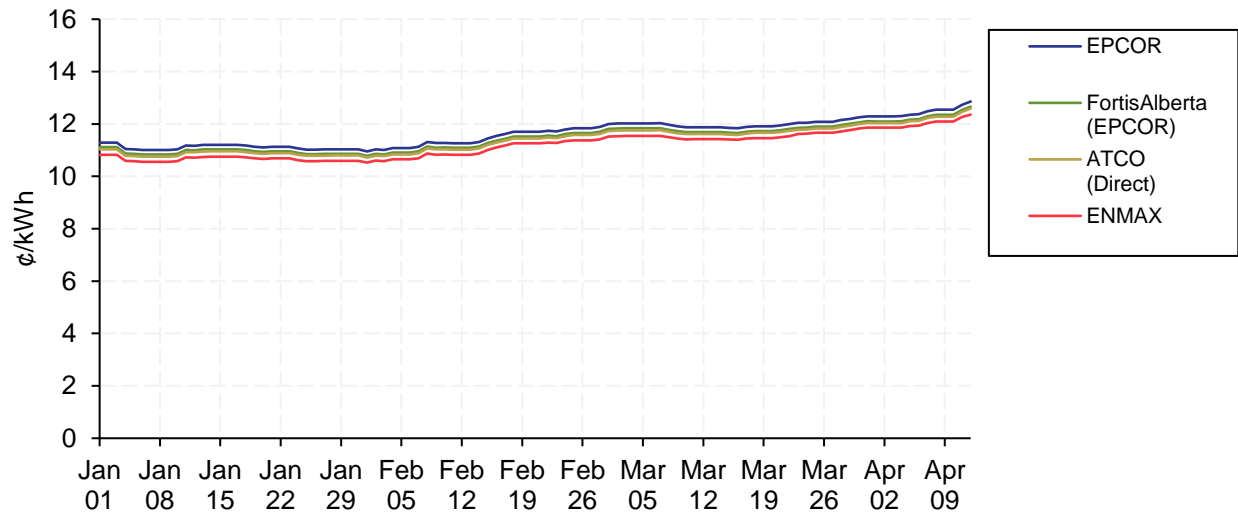
Figure 14: Impact of adders on distribution of variable rate premiums over regulated rate, January 2020 to March 2022 (interquartile range, outliers excluded)



2 REGULATED RATE OUTLOOK

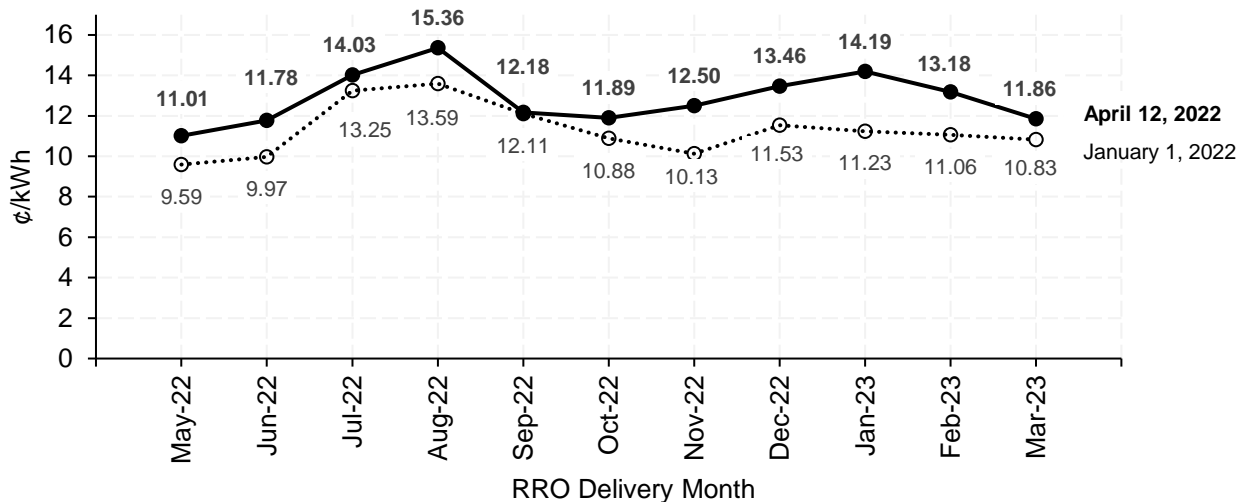
The MSA expects residential RRO rates to average 12.6 ¢/kWh in the four largest service areas between May 2022 and March 2023 based on prevailing forward market prices as of April 12, 2022. The RRO rate outlook for this period has increased by 1.6 ¢/kWh since the beginning of the year as forward prices have increased over Q1 2022 (Figure 15). For comparison purposes, residential RRO rates between May 2021 and March 2022 averaged 11.3 ¢/kWh.

Figure 15: Trends in average May 2022 to March 2023 residential RRO outlook, January 1 to April 12, 2022



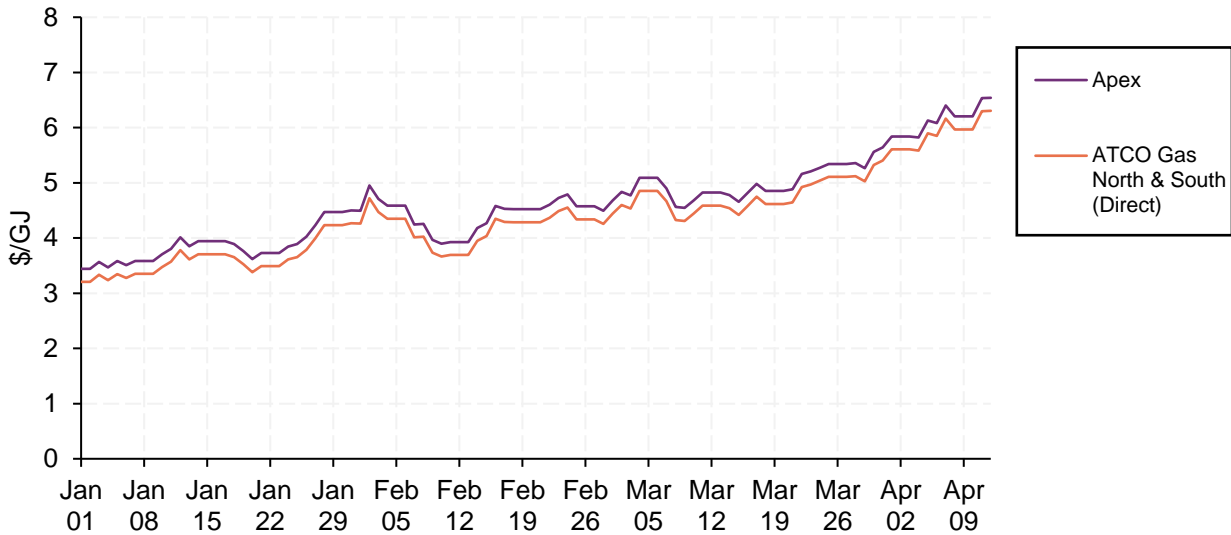
Residential RRO rates are expected to increase throughout the spring and summer, reaching highs of 14 to 15 ¢/kWh in August 2022. A subsequent increase in RRO rates to around 14 ¢/kWh is expected for January 2023 (Figure 16).

Figure 16: May 2022 to March 2023 residential RRO outlook (EPCOR service area), January 1 vs. April 12, 2022



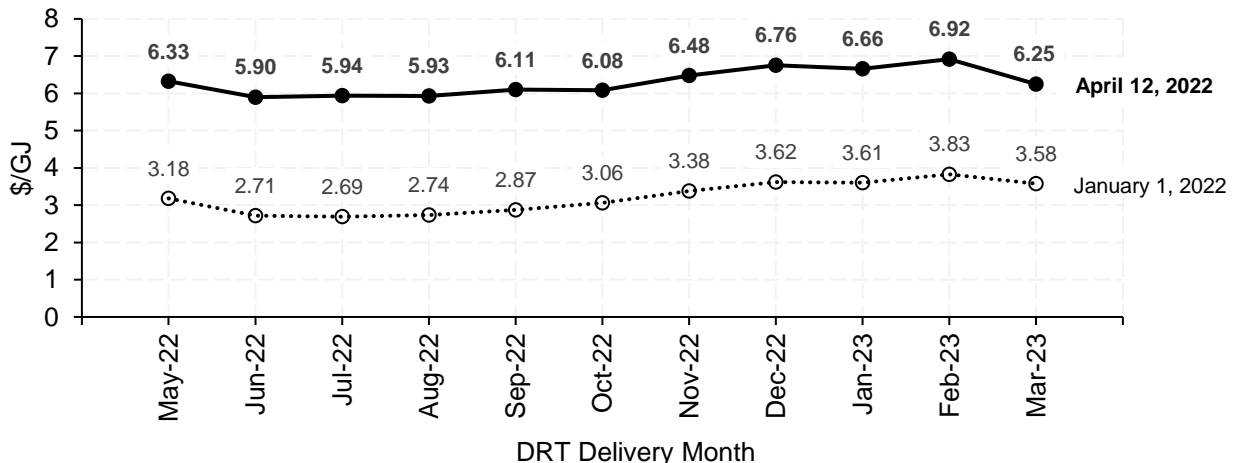
Residential DRT rates over the May 2022 to March 2023 period are expected to average \$6.40/GJ based on natural gas futures prices observed on April 12, 2022, a significant increase from the \$3.30/GJ DRT rates expected for the period at the beginning of the year (Figure 17). As natural gas futures prices remain significantly volatile, the DRT outlook presented here may differ significantly from realized DRT rates. For comparison purposes, residential DRT rates between May 2021 and March 2022 averaged around \$4.15/GJ.

Figure 17: Trends in average May 2022 to March 2023 residential DRT outlook, January 1 to April 12, 2022



Notwithstanding the rapid increase in natural gas futures prices over Q1 2022, the MSA’s DRT outlook indicates relative DRT rate stability over the May 2022 to March 2023 period (Figure 18). Notably, DRT rates are expected to exceed \$6.50/GJ between December 2022 and February 2023, indicating the threshold for the provincial natural gas rebate program may be met next winter.

Figure 18: May 2022 to March 2023 residential DRT outlook (ATCO Gas service area), January 1 vs. April 12, 2022



3 RETAIL BILLING VARIABLE COST

3.1 Overview

Numerous costs are incurred to provide electricity and natural gas services to consumers. These costs include the energy itself, as well as the transmission and distribution wires and pipelines that transfer the energy from producers to consumers. These costs are charged to consumers on their retail energy bills, which also include charges for municipal access fees, various types of rate riders, account administration and taxes.

Retail energy bills contain variable and fixed charges. Variable charges are charges that vary with consumption (i.e., that increase if a consumer consumes more energy) and are sometimes called “consumption charges”. Fixed charges are charges that do not vary with consumption (i.e., that do not increase if a consumer consumes more energy) and are typically levied on a per-day or per-month basis.

Retailers often do not identify the variable charges associated with non-energy billing components on retail bills. Instead, retailers often list non-energy charges as a single number. This may mistakenly lead customers to believe their energy consumption has no impact on non-energy components of their bill.

Variable charges that correspond to costs that increase when a consumer consumes more energy are economically efficient. However, to the extent that variable charges are used to recover fixed costs, they may result in economic inefficiency by causing a consumer to avoid consumption that they value in excess of cost. The magnitude of this inefficiency depends on how responsive consumers are to price changes (i.e., the own-price elasticity of demand). In the past, consumers may have been sufficiently non-responsive to price changes (price inelastic) that this inefficiency was negligible. However, technological change is likely to result in consumers or intermediaries acting on their behalf being more responsive to price changes, which would increase the inefficiency associated with using variable charges to recover fixed costs. By virtue of being fixed, fixed charges do not result in economic inefficiency.

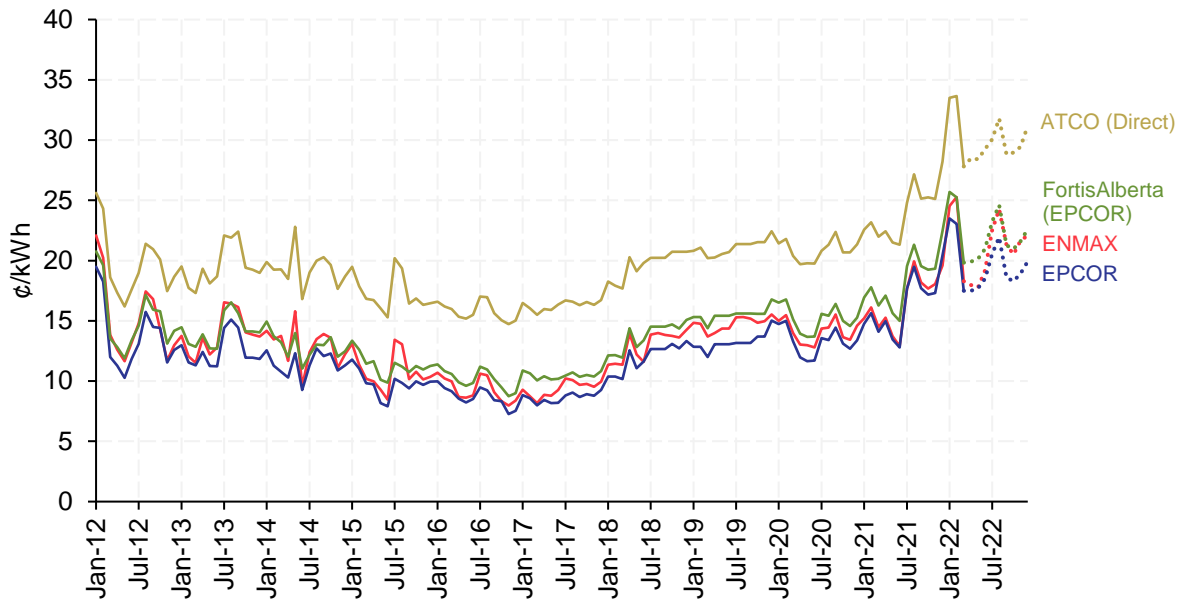
This section considers the components of the variable costs of retail bills. A key finding is that variable costs for both regulated electricity and natural gas have increased significantly since 2016, attributable to gradual increases in transmission and distribution variable costs, and more recently, significant increases in energy rates. Additionally, only some variable costs incurred by customers are attributable to their choice of retailer.

3.2 Analysis

Residential variable electricity costs have varied frequently over the past decade and differ between service areas (Figure 19). Declines in RRO rates between 2012 and 2016 were largely responsible for 5 ¢/kWh declines in variable electricity costs over that period, while steady increases in regulated variable charges since 2016 combined with increases in RRO rates in 2018 and 2021 caused variable electricity costs to increase by around 8 ¢/kWh between 2016 and 2021. Customers in comparatively rural service areas typically face higher variable electricity

rates, a result of the higher per-customer wire costs associated with serving customers in these areas.

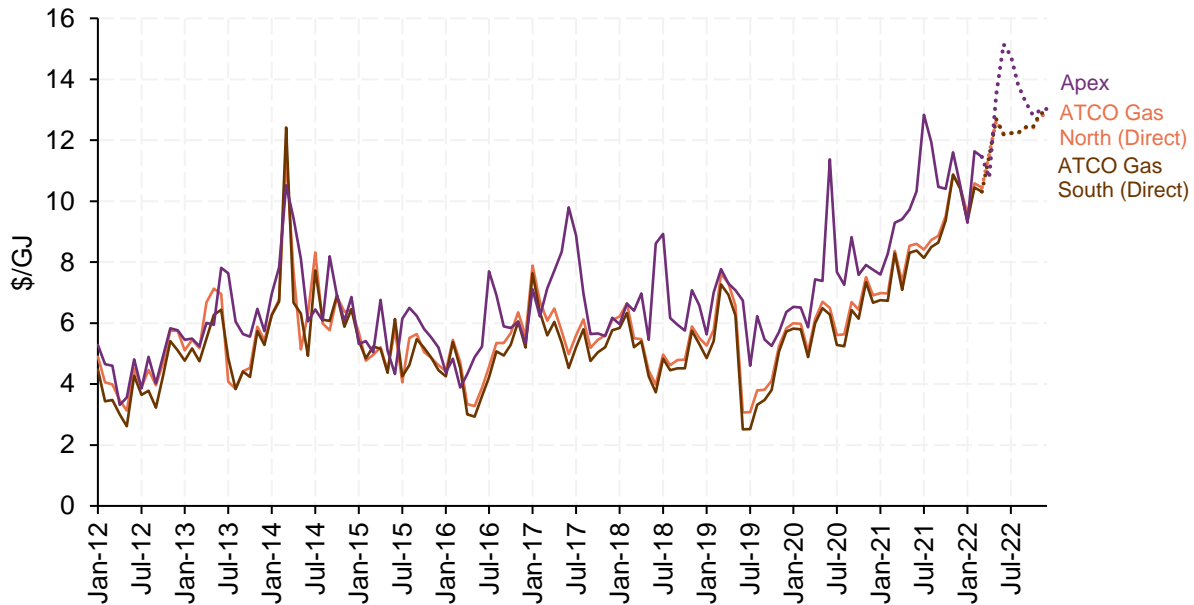
Figure 19: Monthly variable cost, residential RRO customer, 2012 to 2022



Residential variable natural gas costs faced by DRT customers ranged from between \$4.00 and \$7.00/GJ between 2012 and 2016, with some variation between service areas (Figure 20). Much like electricity, variation in variable natural gas costs over this period was largely driven by year-to-year changes in DRT rates. Between 2016 and 2020, variable natural gas costs increased by \$1.00 to \$2.00/GJ, with much of this increase a result of the initial imposition of a carbon levy on natural gas in 2017 and its subsequent increases in 2018 and 2020.⁴ Finally, significant increases in DRT rates in 2021 were in large part responsible for the \$2.00/GJ increase in variable natural gas costs observed in 2021.

⁴ The provincial carbon levy was repealed in mid-2019. A federal carbon levy came into effect in 2020.

Figure 20: Monthly variable cost, residential DRT customer, 2012 to 2022⁵



Although it is often not stated on energy bills, many variable charges are not avoidable by consumers' choice of energy retailer. This is particularly true of regulated charges such as distribution and transmission charges, as well as access fees or the carbon levy.

Since 2016, regulated variable charges for both electricity and natural gas have increased. Variable distribution and transmission costs have been the primary cost components driving the increase in regulated variable charges on electricity bills (Figure 21), while carbon pricing – and to a lesser extent gas distribution and transmission charges – has driven the majority of the increase in regulated variable charges on natural gas bills (Figure 22).

While increases in regulated variable charges were the primary drivers of year-to-year increases in variable costs between 2016 and 2020, increases in regulated energy rates in 2021 were the primary cause of higher variable costs in that year. Based on the MSA's RRO and DRT outlook, the MSA is forecasting additional increases in variable costs in 2022, although regulated rate customers can avoid much of this increase by switching to competitive rates.

⁵ Variable cost forecasts for the October to December 2022 period include the effect of the provincial natural gas rebate program on DRT rates.

Figure 21: Components of variable cost, residential RRO customer, 2016 to 2022

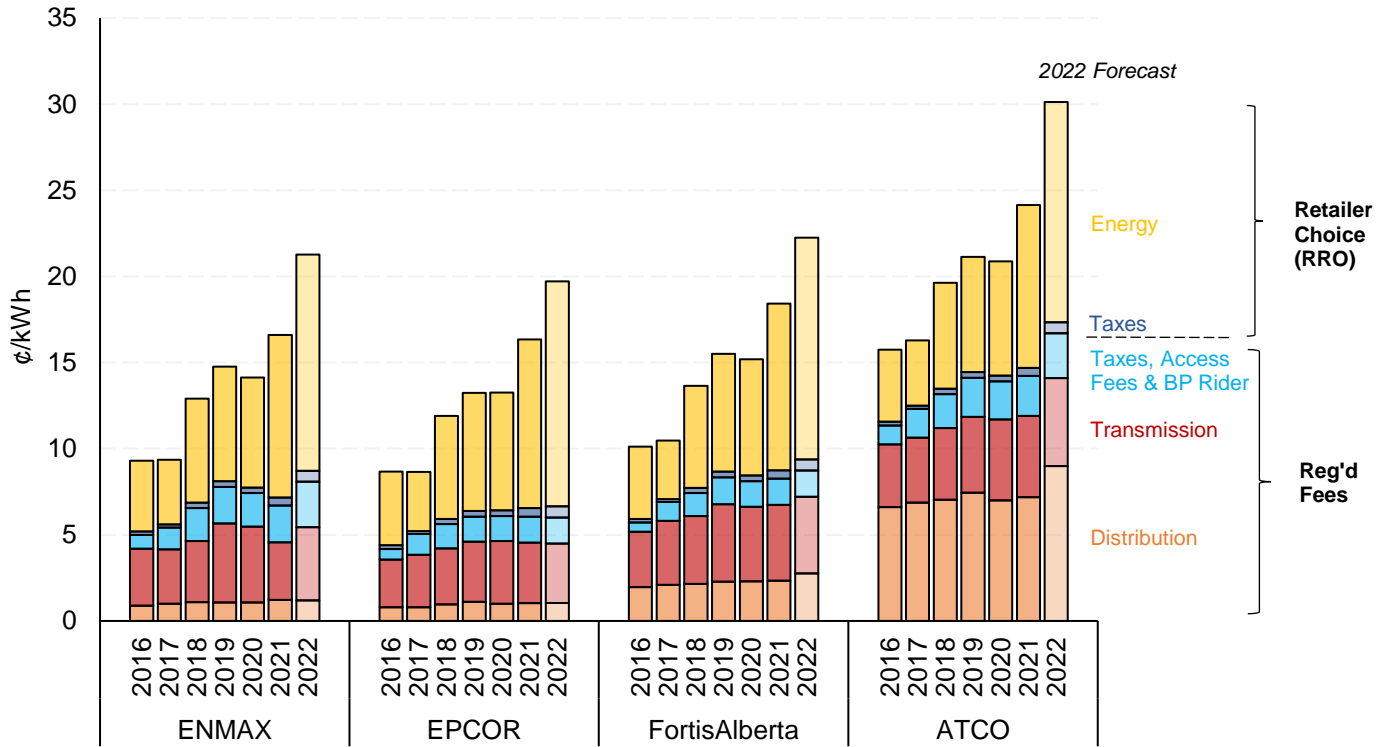


Table 4: Components of variable cost, residential RRO customer, 2016 to 2022 (¢/kWh)

	Retailer Choice (RRO)				Regulated Fees			
	ENMAX	EPCOR	FortisAlberta (EPCOR)	ATCO (Direct)	ENMAX	EPCOR	FortisAlberta (EPCOR)	ATCO (Direct)
2016	4.32	4.50	4.42	4.39	4.99	4.18	5.71	11.36
2017	3.94	3.62	3.58	3.97	5.43	5.04	6.90	12.32
2018	6.35	6.28	6.22	6.45	6.56	5.62	7.43	13.18
2019	6.98	7.20	7.18	7.02	7.78	6.05	8.33	14.12
2020	6.70	7.18	7.09	6.97	7.42	6.09	8.11	13.91
2021	9.89	10.29	10.16	9.93	6.70	6.06	8.27	14.22
2022 (Forecast)	13.18	13.71	13.52	13.42	8.09	6.00	8.73	16.70

Table 5: Total variable cost, residential RRO customer, 2016 to 2022 (¢/kWh)

	ENMAX	EPCOR	FortisAlberta (EPCOR)	ATCO (Direct)
2016	9.31	8.68	10.13	15.74
2017	9.37	8.66	10.48	16.29
2018	12.91	11.90	13.65	19.62
2019	14.77	13.24	15.51	21.13
2020	14.13	13.27	15.20	20.88
2021	16.60	16.35	18.43	24.15
2022 (Forecast)	21.27	19.72	22.25	30.13

Figure 22: Components of variable cost, residential DRT customer, 2016 to 2022

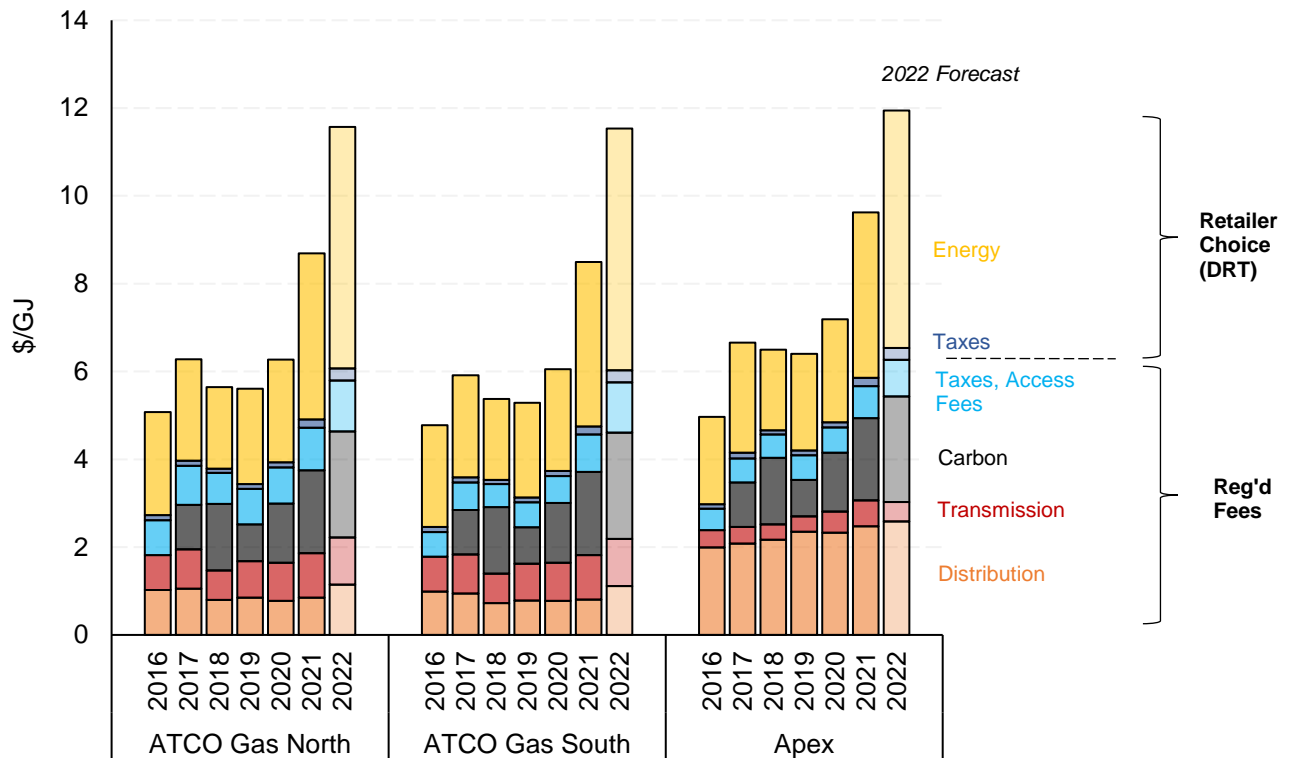


Table 6: Components of variable cost, residential DRT customer, 2016 to 2022 (\$/GJ)

	Retailer Choice (DRT)			Regulated Fees		
	ATCO Gas North (Direct)	ATCO Gas South (Direct)	Apex	ATCO Gas North (Direct)	ATCO Gas South (Direct)	Apex
2016	2.46	2.43	2.09	2.61	2.35	2.88
2017	2.43	2.44	2.63	3.85	3.47	4.02
2018	1.96	1.94	1.93	3.69	3.44	4.57
2019	2.28	2.27	2.32	3.33	3.02	4.09
2020	2.45	2.44	2.46	3.82	3.62	4.73
2021	3.97	3.93	3.95	4.72	4.56	5.67
2022 (Forecast)	5.78	5.78	5.68	5.80	5.75	6.27

Table 7: Total variable cost, residential DRT customer, 2016 to 2022 (\$/GJ)

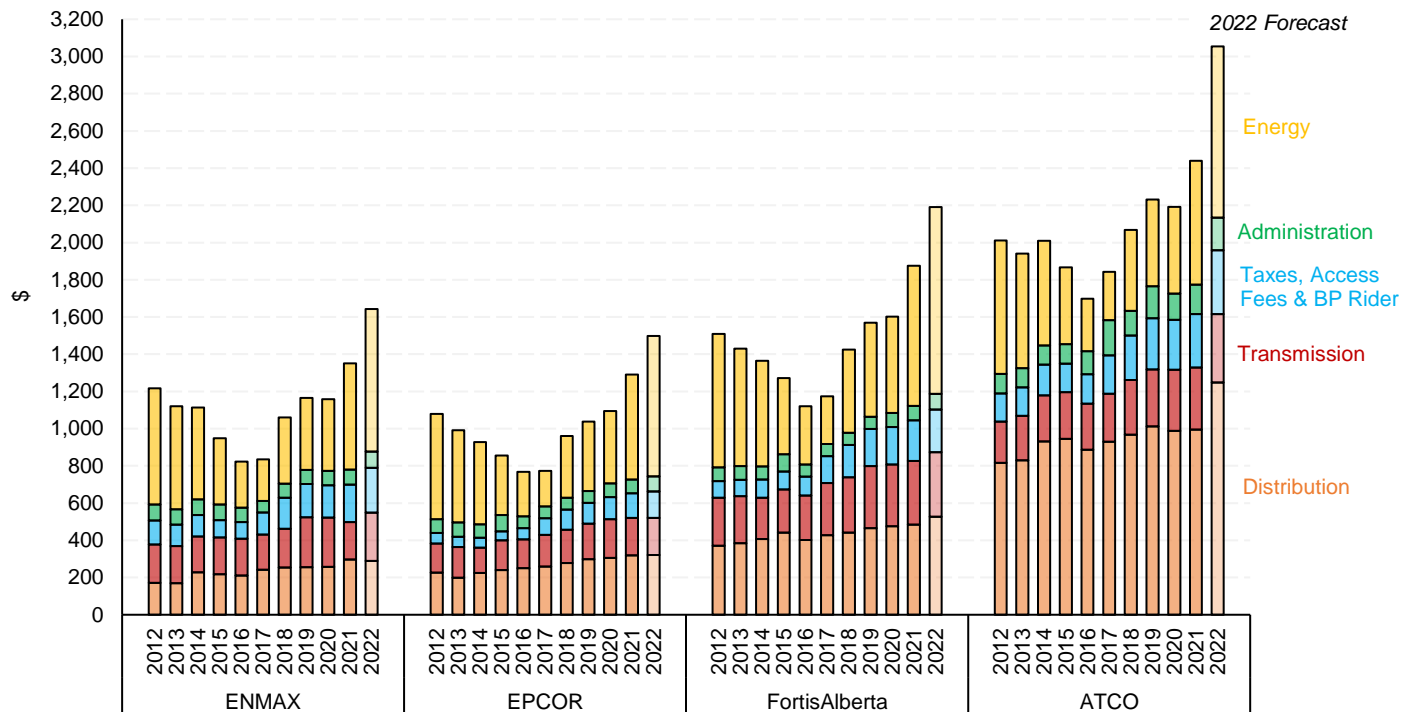
	ATCO Gas North (Direct)	ATCO Gas South (Direct)	Apex
2016	5.07	4.77	4.97
2017	6.28	5.91	6.66
2018	5.65	5.38	6.50
2019	5.61	5.29	6.41
2020	6.27	6.06	7.19
2021	8.69	8.49	9.62
2022 (Forecast)	11.57	11.53	11.94

4 BILLING

4.1 Composition of regulated bills⁶

The magnitude and composition of a residential RRO customer’s electricity bill have evolved considerably between 2012 and 2021 (Figure 23). Over the ten-year period, an average customer’s annual RRO bill increased by between 11 to 24% depending on service area.

Figure 23: Residential RRO bill composition, 2012 to 2022



As RRO rates declined between 2012 and 2016, the share of an RRO customer’s annual bill spent on energy fell by approximately 20%. By 2016, around 30% of an RRO customer’s annual bill was spent on energy in the ENMAX, EPCOR, and FortisAlberta service areas, while RRO customers in the ATCO service area spent a smaller share of their RRO bills (17%) on energy.

Transmission and distribution costs increased across all service areas between 2012 and 2021, with an average residential RRO customer paying around 30% more for transmission and distribution in 2021 compared to 2012 (an additional \$120 to \$290 per year). This increase in transmission and distribution costs is the primary cause of residential RRO bills being higher in 2021 than 2012 despite the similarity of energy charges in these two years.

Notwithstanding this trend in transmission and distribution costs, recent increases in residential RRO bills have been largely attributable to increases in energy costs. Over 80% of the \$200 to

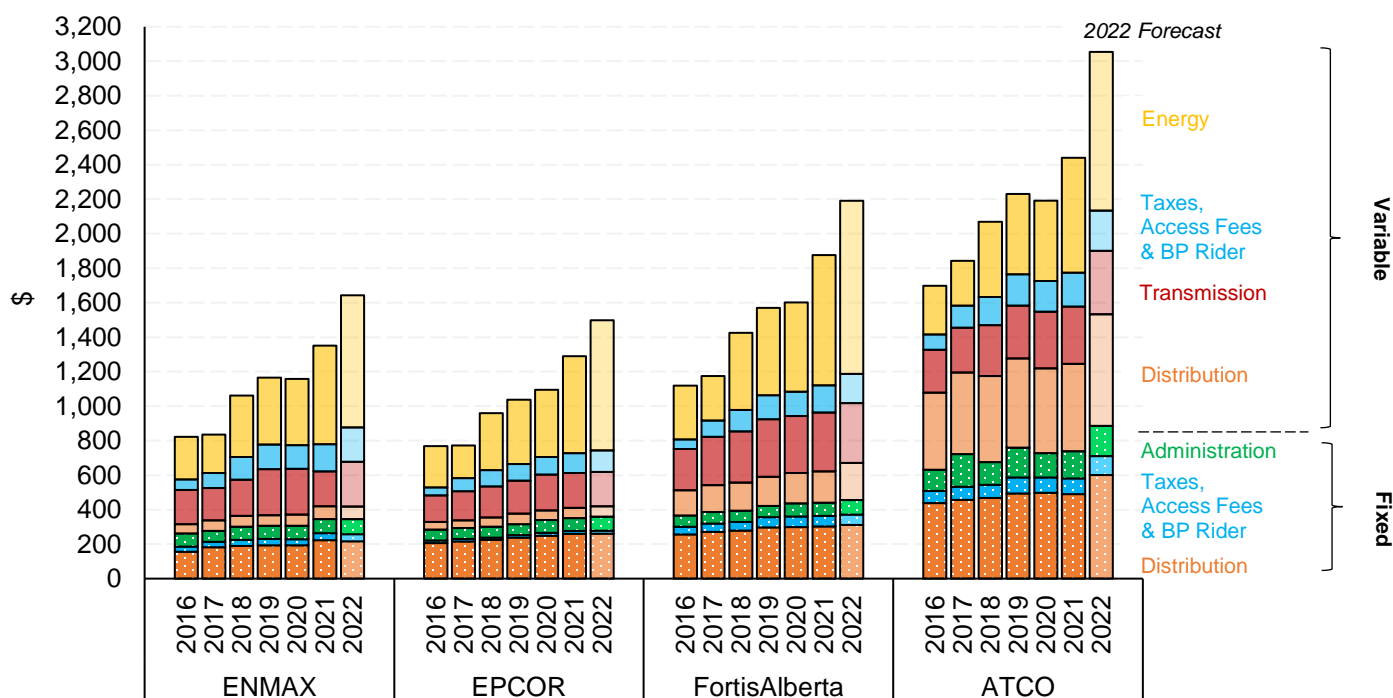
⁶ Regulated DRT billing estimates for 2022 presented in this section include the effect of the provincial natural gas rebate program on DRT bills over the October to December period.

\$300 increase in residential RRO bills from 2020 to 2021 is attributable to increases in energy costs.

Looking ahead in 2022, the MSA expects residential RRO customers will face an additional \$200 to \$600 increase in annual RRO bills based on the MSA's RRO outlook. For customers in the ENMAX, EPCOR, or FortisAlberta service areas, most of this increase is expected to be attributable to higher energy costs.

In 2016, fixed charges comprised between 32% and 38% of an average residential RRO customer's bill, primarily paid towards distribution (Figure 24). Much of the increase in RRO bills that followed in the years since 2016 has been towards variable cost elements of RRO bills.

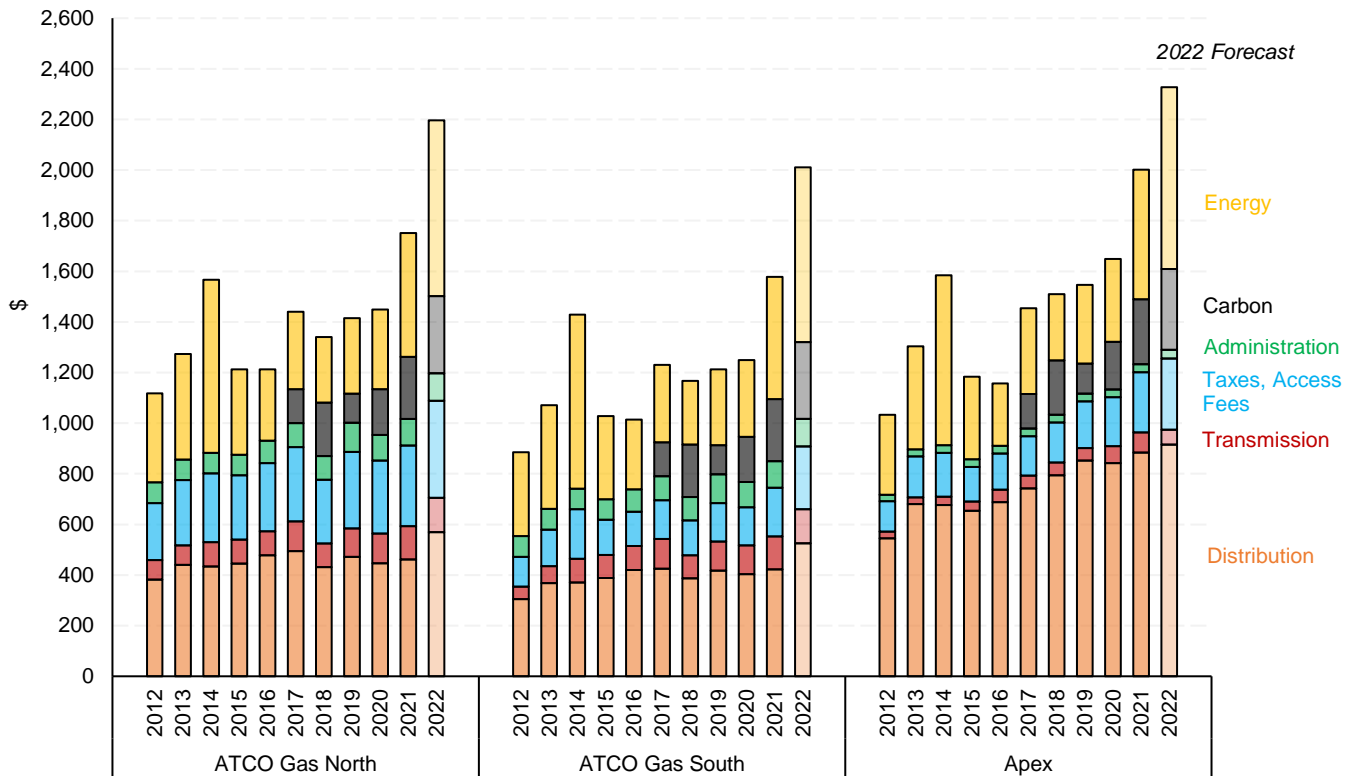
Figure 24: Fixed & variable billing components, residential RRO bill, 2016 to 2022



Annual fixed charges increased by between \$70 and \$110 from 2016 to 2021, while variable charges increased by \$450 to \$700 over the same period. As a result, fixed charges comprised significantly smaller shares of residential RRO customers' bills (23 to 30%) by 2021.

Residential DRT natural gas bills have risen considerably between 2012 and 2021, increasing by between 57% to 94% depending on service area (Figure 25). The increase in DRT bills was driven by three factors: progressive increases in distribution costs between 2012 and 2020, the 2017 introduction of the carbon levy and its increase in the years that followed, and significant increases in the DRT energy rates in 2021.

Figure 25: Residential DRT bill composition, 2012 to 2022



An average residential DRT customer paid between \$350 and \$575 for natural gas distribution and transmission in their DRT bills in 2012. By 2021 these regulated charges had increased by 30 to 68% depending on a customer’s service area (an additional \$130 to \$390).

The carbon levy on natural gas, initially adding around \$135 to annual residential DRT bills in 2017 when first introduced, had almost doubled by 2021 to around \$250 per year.

Apart from some higher priced years in 2013 and 2014, relatively low DRT rates kept the energy component of DRT bills low and stable between 2012 and 2020, averaging around \$300 per year.

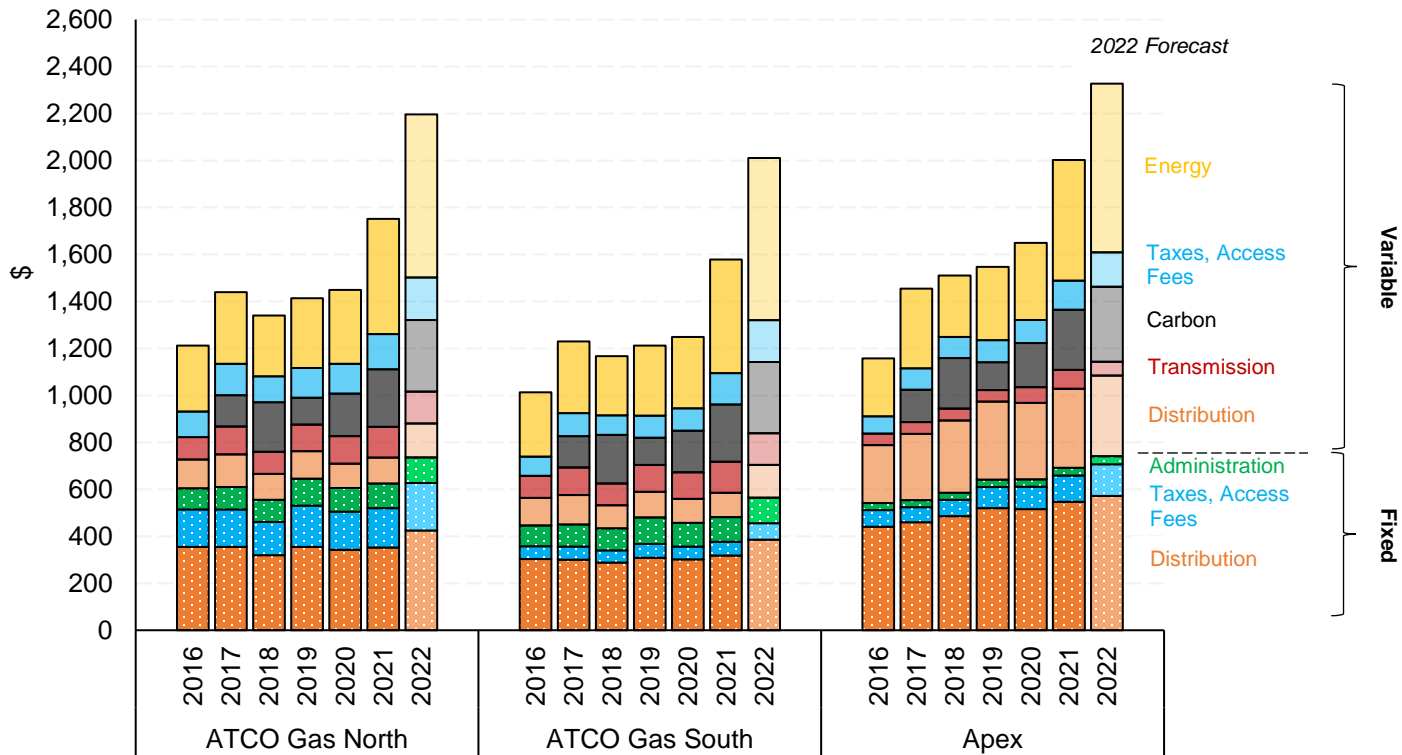
Rising DRT rates in 2021 contributed to increases in the energy component of DRT bills of around \$200 compared to 2020, representing between 52 to 58% of the total year-over-year bill increase. Other prominent factors that increased DRT bills in 2021 compared to 2020 include the increase in carbon levy charges (20% of the bill increase) and year-to-year increases in transmission and distribution (10 to 15% of the bill increase).

The MSA expects residential DRT bills to increase by an additional \$300 to \$400 in 2022, primarily driven by increases in DRT rates, as well as increased distribution charges in some service areas.

In 2016, fixed charges comprised around 45 to 50% of residential DRT bills (Figure 26). Despite residential DRT customers paying anywhere between \$20 and \$150 more in fixed charges in

2021 compared to 2016, increases in variable carbon and energy charges over this period have resulted in the decline in the fixed charge share of residential DRT bills, constituting between 30 and 35% of residential DRT bills in 2021.

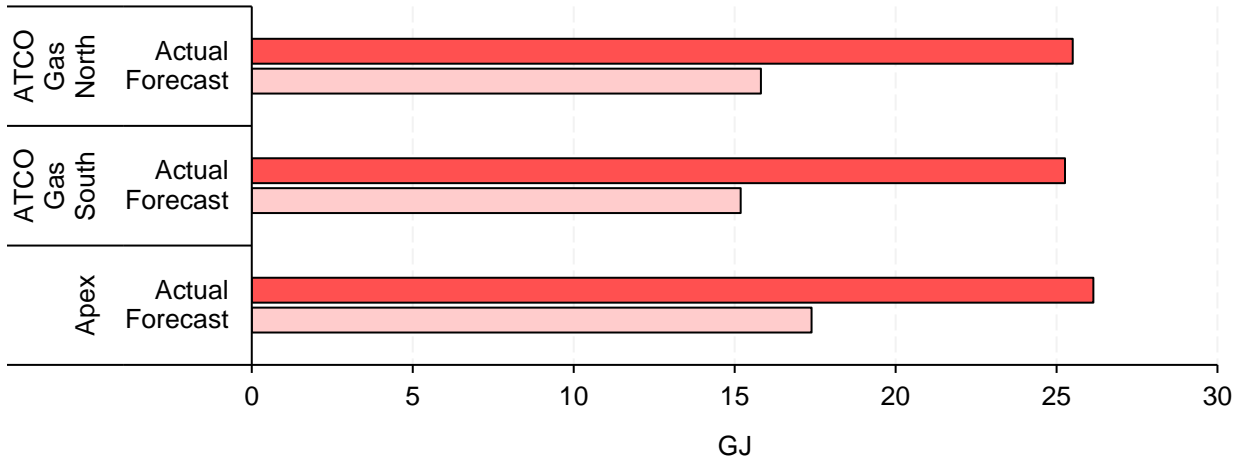
Figure 26: Fixed & variable billing components, residential DRT Bill, 2016 to 2022



4.2 December 2021 natural gas bills

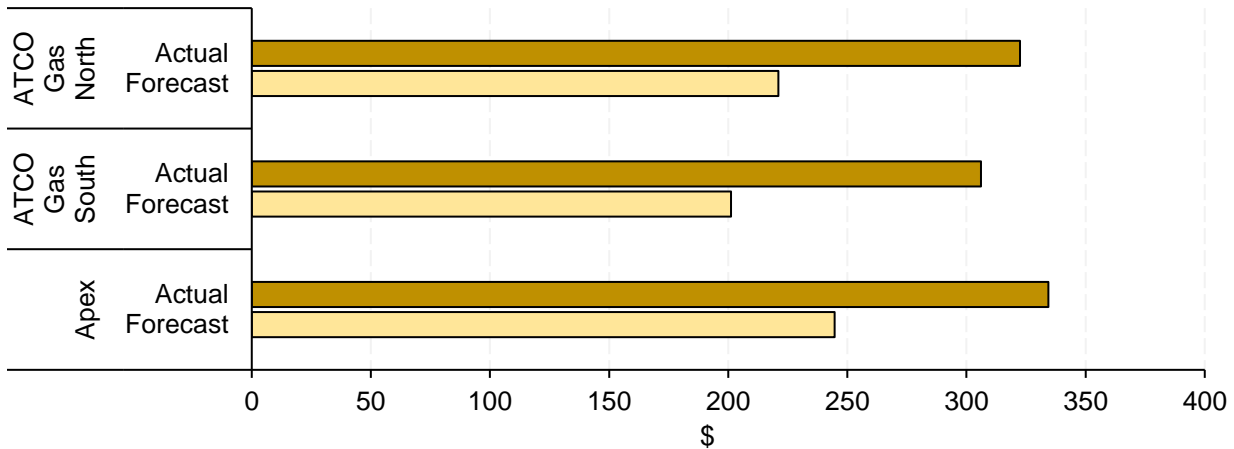
December 2021 was significantly colder than the previous December, with December 2021 experiencing around 1,085 heating degree days (HDD), compared to 768 HDD in December 2020. Higher heating demand in December 2021 increased residential natural gas consumption by 40 to 55% year-over-year and exceeded the MSA’s previous forecast of December natural gas consumption (Figure 27).

Figure 27: Average natural gas consumption, residential DRT customer, December 2021



As a result of this December 2021 consumption increase, residential DRT bills were \$100 higher than previously forecast (Figure 28) and were around \$150 higher year-over-year, contributing a significant share of the increase in annual DRT bills in 2021.

Figure 28: Average natural gas bill, residential DRT customer, December 2021



4.3 Natural gas carbon levy impact

Electricity and natural gas customers pay carbon costs differently. The carbon levy for natural gas is paid directly by natural gas customers as a retail billing line item, while carbon compliance costs associated with electricity generation are charged to carbon-emitting generators and are passed through indirectly to retail customers as higher energy rates resulting from higher wholesale electricity market offer prices.

On April 1, 2022 the carbon levy for natural gas increased from \$2.10/GJ to \$2.63/GJ. Residential natural gas customers can expect to pay around \$60 more in total over the April 2022 to March 2023 period as a result of the higher carbon levy rate (Table 8).

Notably, the increase in the carbon levy rate is only expected to account for 15% to 22% of the increase in residential DRT bills over the April 2022 to March 2023 period, with the remaining increase in these bills primarily resulting from higher energy and distribution charges.

Table 8: Impact of 2022 carbon levy increase, residential DRT customer, by service area

	ATCO Gas North	ATCO Gas South	Apex
April 2021 - March 2022 Carbon Levy Cost	\$ 283	\$ 282	\$ 298
<i>Expected April 2022 - March 2023 Carbon Levy Cost</i>	\$ 345	\$ 342	\$ 363
Change (\$)	+ 62	+ 60	+ 65
Change (%)	+ 22%	+ 21%	+ 22%
April 2021 - March 2022 Natural Gas Bill	\$ 1,921	\$ 1,737	\$ 2,137
<i>Expected April 2022 - March 2023 Natural Gas Bill</i>	\$ 2,310	\$ 2,132	\$ 2,438
Change (\$)	+ 389	+ 395	+ 301
Change (%)	+ 20%	+ 23%	+ 14%
<i>Change in Natural Gas Bill Attributable to Carbon Levy Increase (%)</i>	16%	15%	22%

4.4 Equalized billing

Equalized billing plans (also known as budget billing plans) enable retail customers to pay a fixed monthly payment for their energy bills over a prescribed term rather than paying energy bills that vary monthly. At the end of this term, customers pay (or receive) the difference between their equalized bill payments made over the term and the costs incurred by the retailer to serve the customer over the term. Notably, these plans do not affect the total cost of billing components over the length of the term.

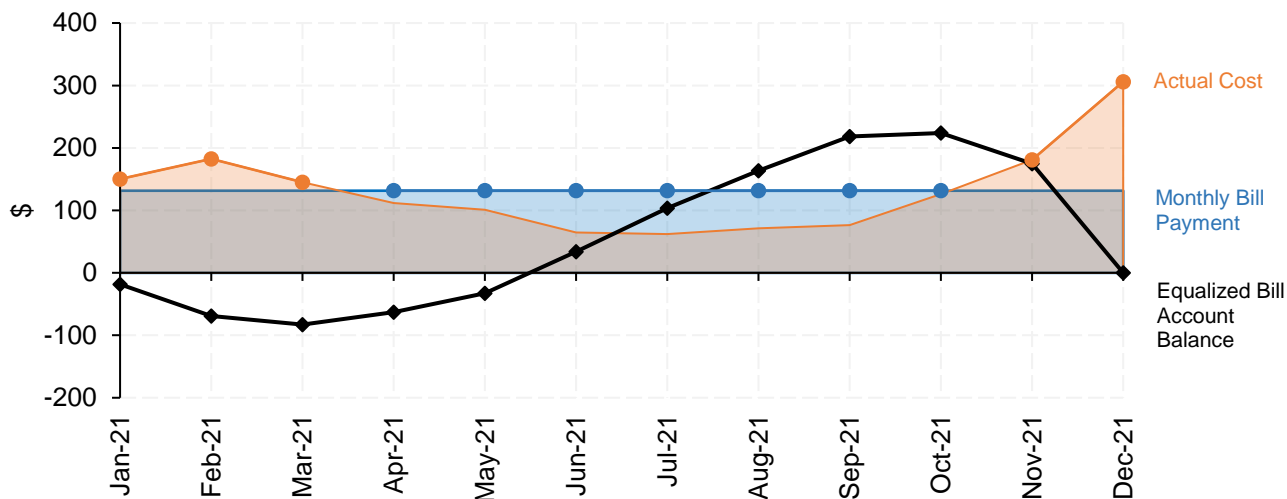
The *Regulated Rate Option Regulation* (AR 262/2015) requires that RRO providers offer equalized billing plans to customers on income support programs.⁷ Many other electricity retailers and natural gas retailers also offer equalized billing plans. The term of these plans can vary but are typically not more than one year in length.

To offer an equalized billing option to a customer, retailers must forecast a customer's billing costs over the term in advance, which can then be totalled and spread into monthly payments. If a retailer can perfectly forecast a customer's billing costs over an upcoming term, the customer's

⁷ [Regulated Rate Option Regulation](#) (AR 262/2015), Section 23, Page 11.

account will have no balance remaining at the end of the term, despite the customer’s monthly bill payment exceeding their billing costs in some months and falling short of their billing costs in others (Figure 29). Retailers may re-forecast a customer’s billing costs throughout the term and adjust the monthly payment to avoid excessive balances remaining at the end of the term.

Figure 29: Example of equalized billing (perfect cost forecasting)



The increase in regulated energy rates seen in the latter half 2021 may not have been anticipated by many retailers early in the year, as evidenced by the significant appreciation in monthly forward prices in beginning in April 2021.⁸ As a result, retailers that did not significantly update their forecasting methodology may have significantly underestimated customers’ billing costs over the equalized billing term, requiring them to collect significant end-of-term balances from customers.

To illustrate this, the MSA has constructed hypothetical equalized bills for average RRO and DRT customers in the ENMAX and ATCO Gas South service areas in 2020 and 2021 (Figure 30 and Figure 31). For each set of equalized bills, three simple bill cost forecasting methodologies were used to forecast the customer’s billing costs over each calendar year, and these costs were spread into equalized monthly bill payments.

These scenarios are:

1. Previous Year Bill: The customer’s costs over the term are assumed to be equal to those incurred over the previous year.
2. Expected Energy Rate Increases: Prevailing forward prices at the beginning of the term are assumed to reflect energy rates throughout the length of the term (all other bill costs unchanged).

⁸ See Figure 24 of the [Q3 2021 Quarterly Report](#), Page 31.

3. Actual Energy Rate Increases: Average energy rates over the length of the term are perfectly predicted (all other bill costs unchanged).

Figure 30: Equalized RRO bill account balances by cost forecasting scenario, average residential customer (ENMAX service area), 2021 vs. 2020

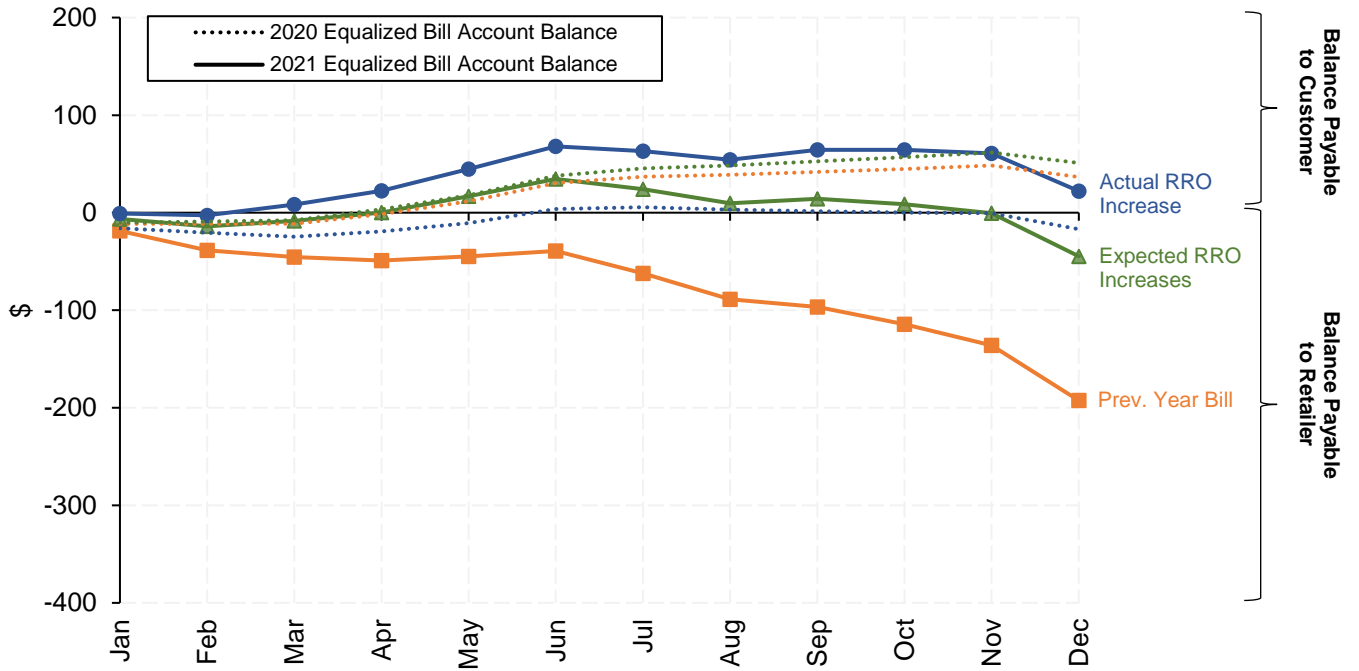
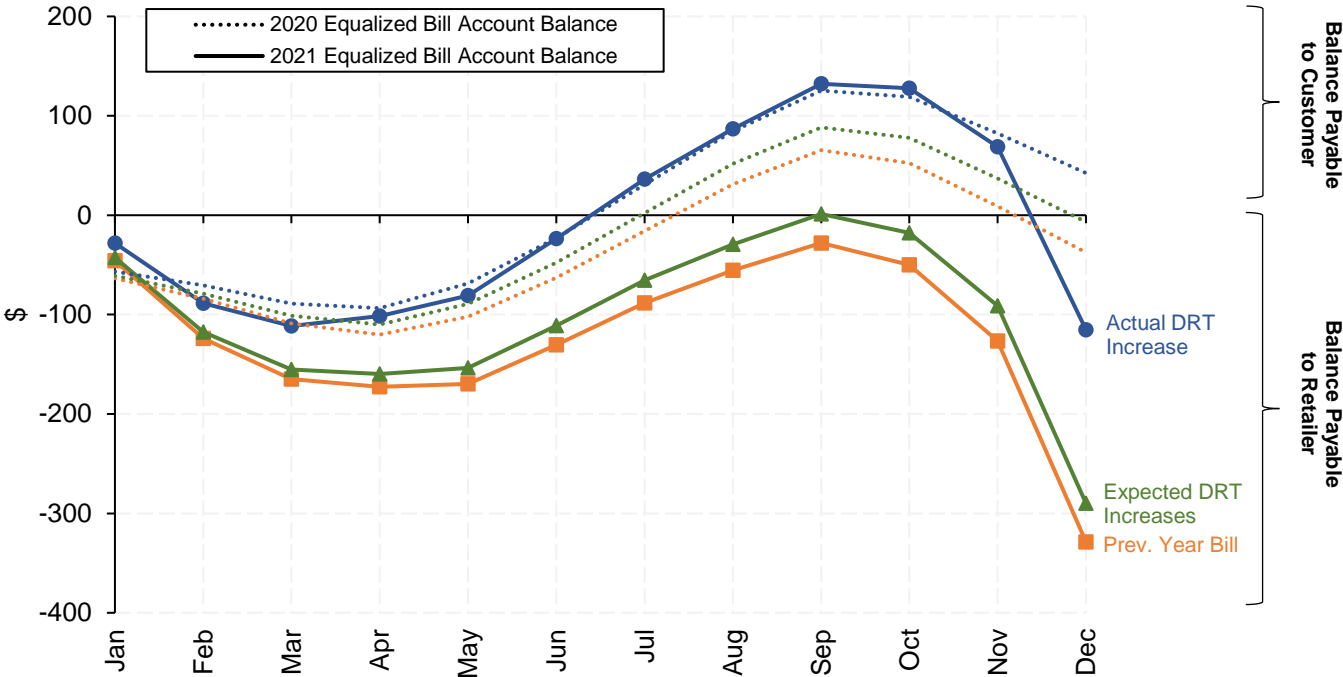


Figure 31: Equalized DRT bill account balances by cost forecasting scenario, average residential customer (ATCO Gas South service area), 2021 vs. 2020



Comparing the end-of-year account balances for each forecasting scenario between 2020 and 2021, it is evident that 2021 bills may have been more underestimated at the beginning of 2021 than 2020 bills were at the beginning of that year if similar forecasting approaches were used in both years (Table 9 and Table 10). As a result, retail customers on equalized bills may have faced unexpectedly large end-of-term account balances in 2021.

Table 9: 2020 equalized bill payments by cost forecasting scenario

		Equalized Bill Forecast Type		
		Previous Year Bill	Expected Energy Rate Increases	Actual Energy Rate Increases
Monthly Bill Payment	RRO	\$ 99.56	\$ 100.77	\$ 95.10
	DRT	\$ 101.00	\$ 103.54	\$ 107.66
	Total	\$ 200.56	\$ 204.31	\$ 202.76
End-of-year Account Balance (Payable to Retailer)	RRO	-\$ 36.42	-\$ 50.88	\$ 17.09
	DRT	\$ 37.39	\$ 6.86	-\$ 42.53
	Total	\$ 0.97	-\$ 44.01	-\$ 25.44

Table 10: 2021 equalized bill payments by cost forecasting scenario

		Cost Forecasting Scenario		
		Previous Year Bill	Expected Energy Rate Increases	Actual Energy Rate Increases
Monthly Bill Payment	RRO	\$ 96.53	\$ 108.85	\$ 114.42
	DRT	\$ 104.11	\$ 107.35	\$ 121.90
	Total	\$ 200.64	\$ 216.20	\$ 236.32
End-of-year Account Balance (Payable to Retailer)	RRO	\$ 192.54	\$ 44.69	-\$ 22.21
	DRT	\$ 328.64	\$ 289.80	\$ 115.18
	Total	\$ 521.17	\$ 334.49	\$ 92.97

As forward prices and natural gas futures prices continue to fluctuate, retailers seeking to lessen the risk of significant end-of-term balances for their customers may opt to reduce the length of the equalization term. This would enable retailers to update their billing cost forecasts more frequently, ensuring monthly bill payments more accurately reflect average billing costs.

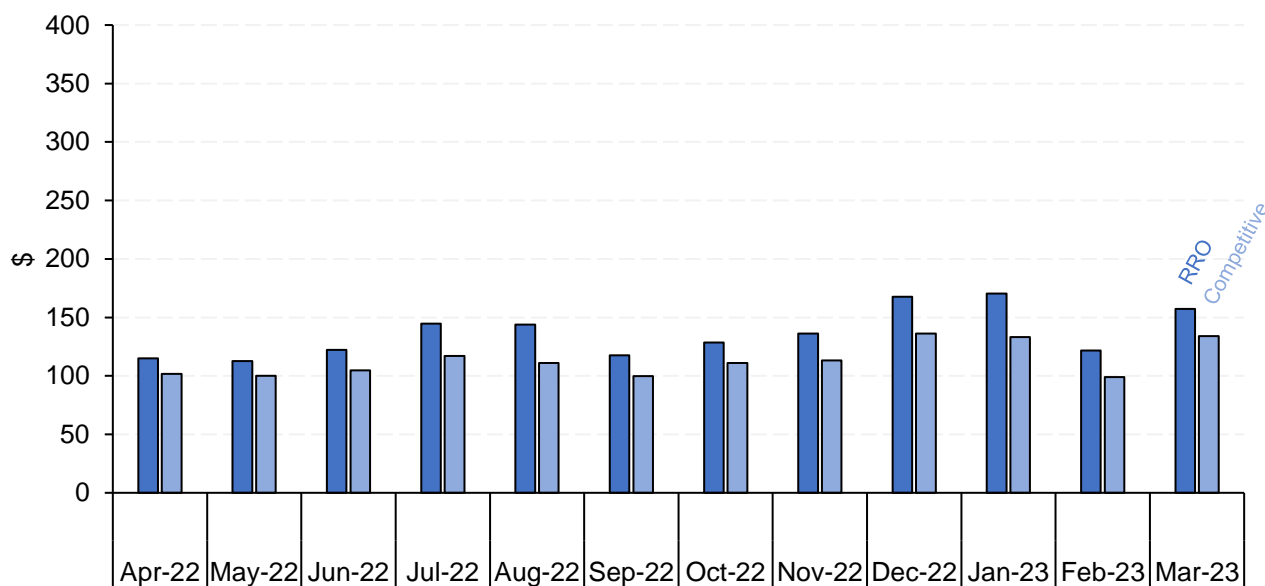
4.5 Switching incentives⁹

An average residential electricity customer on RRO rates had significant short-term incentive to switch to competitive fixed rates over Q1 2022, potentially saving as much as \$37/month, or 24% on their electricity bills over the quarter had they switched to a 3-year fixed rate by January 1.

However, an average residential natural gas customer on DRT rates had a significantly lower short-term incentive to switch to competitive 3-year fixed rates, only saving around \$4/month (2%) on their Q1 natural gas bills if they switched on January 1. DRT customers had limited short-term incentives to switch to competitive fixed rates in 2021.

With residential RRO rates expected to exceed 10 cents/kWh over the remainder of 2022 and the beginning of 2023, RRO customers are expected to continue to have significant short and medium-term incentives to switch to 3-year competitive fixed rates (Figure 32). A residential RRO customer that switched to competitive 3-year fixed rates on April 1 is expected to save \$277 by March 2023, an electricity bill reduction of \$23/month (17%).

*Figure 32: Expected residential electricity bills, RRO vs. competitive
April 2022 to March 2023*

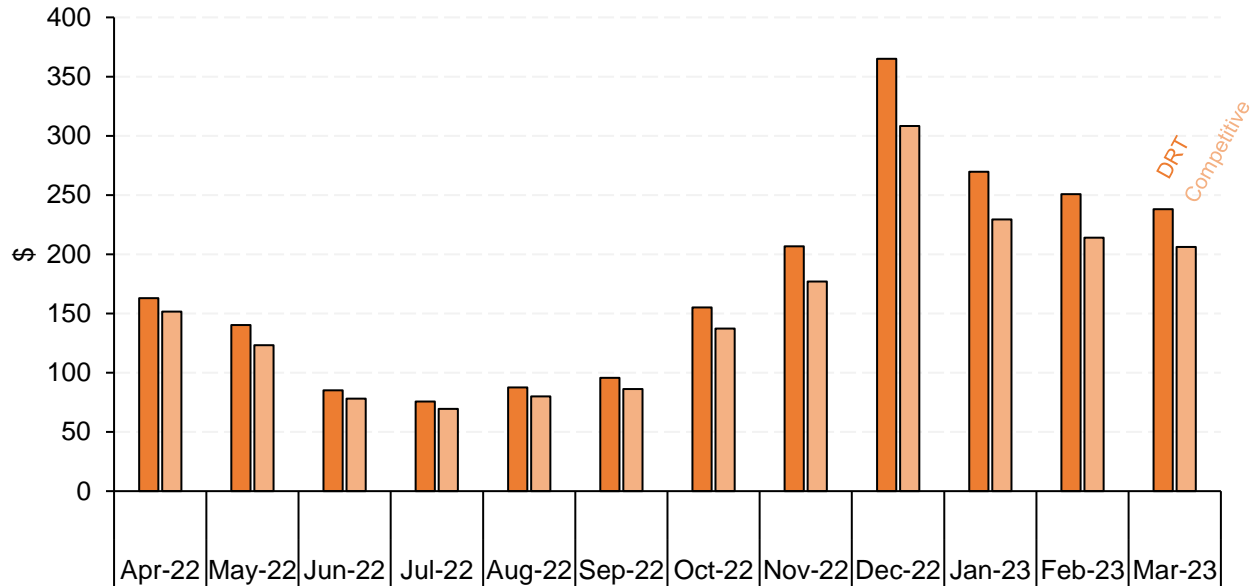


Unlike in prior months, residential DRT customers may now have short and medium-term incentives to switch to competitive fixed rates as a result of the Q1 increase in expected DRT rates over the next year. A residential DRT customer that switches to competitive 3-year fixed

⁹ This section considers competitive fixed rate contracts available on January 1, 2022 and April 1, 2022. On both dates the lowest priced 3-year contracts provided by a major retailer were the same contracts (7.89 ¢/kWh & \$6.99/month for electricity, \$4.39/GJ & \$6.99/month for natural gas). These competitive contracts have been used to construct competitive bills for modeling purposes. Billing values apply to a customer in the ENMAX and ATCO Gas South service areas.

rates on April 1 is expected to reduce their natural gas bills by a total of \$272, or \$23/month (13%) (Figure 33).

Figure 33: Expected residential natural gas bills, DRT vs. competitive, April 2022 to March 2023



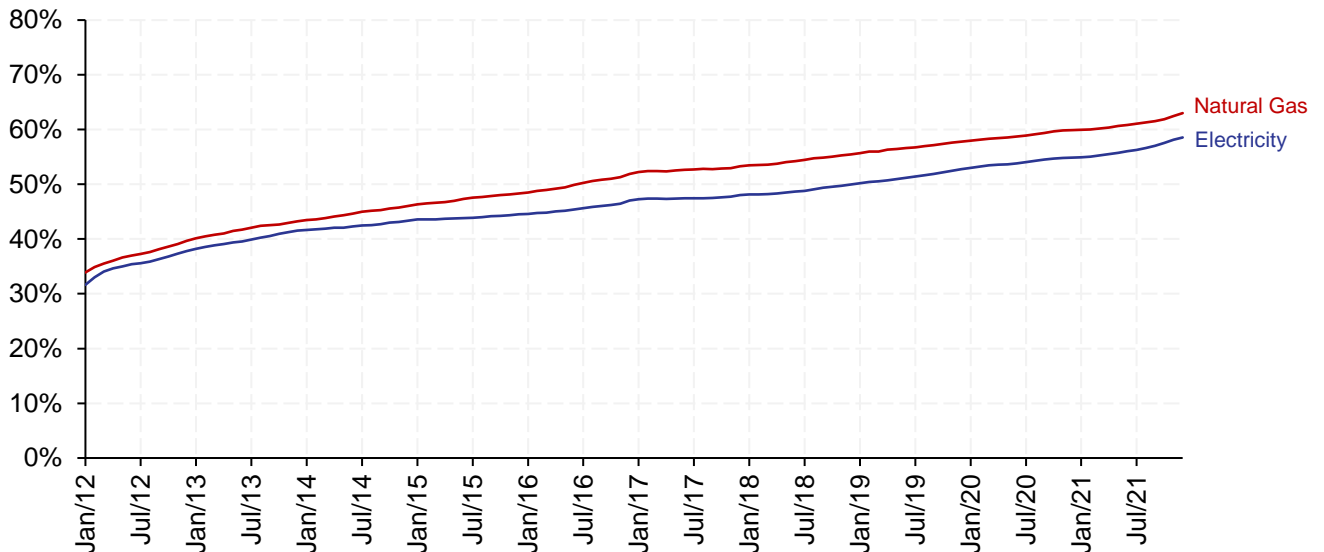
Holding the competitive administration fee constant at \$6.99/month, the highest competitive fixed-rate energy rate that might incentivize an average residential RRO customer to leave the RRO over the April 2022 to March 2023 period (the “breakeven fixed rate”) is approximately 12.2 ¢/kWh based on the MSA’s residential RRO billing projections. This breakeven fixed rate is well above a significant majority of competitive fixed rate offerings.

Similarly, the breakeven fixed rate for an average residential DRT customer is approximately \$6.48/GJ based on the MSA’s residential DRT billing projections. This breakeven fixed rate is also above most competitive fixed rate offerings.

5 RETAIL SWITCHING

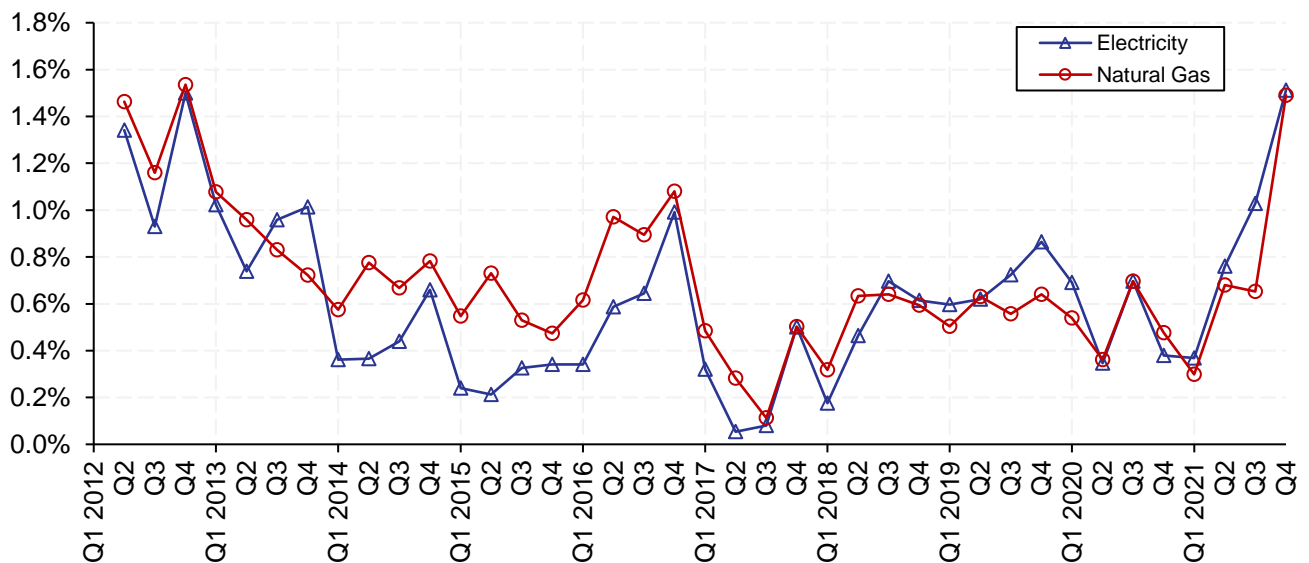
The market shares of competitive electricity and natural gas retailers among residential energy customers reached 58.5% and 63% by the end of 2021, an increase of around 4% and 3% year-over-year, respectively (Figure 34).

Figure 34: Competitive market share, residential customers, 2012 to 2021



Prior to 2021, competitive market shares among residential customers increased steadily, often by less than 1% per quarter. Competitive market shares increased at progressively higher rates in 2021, increasing by as much as 1.5% in Q4 2021, a rate similar to that observed a decade ago (Figure 35).

Figure 35: Quarterly change in competitive market share, residential customers, 2012 to 2021



This increase in competitive market share was not evenly spread across distribution service areas, with the largest competitive market share increases occurring in the EPCOR and FortisAlberta service areas and the ATCO Gas North service area, among electricity and natural gas customers, respectively (Table 11).

Table 11: Q4 2021 change in competitive market share, residential customers, by service area

	ENMAX	EPCOR	FortisAlberta	ATCO
Change (Q4 2021)	+ 1.1%	+ 2.0%	+ 1.8%	+ 0.8%
Competitive Share (December 2021)	73.2%	45.4%	52.7%	57.7%

	ATCO Gas North	ATCO Gas South	Apex
Change (Q4 2021)	+ 1.7%	+ 1.3%	+ 1.5%
Competitive Share (December 2021)	58.7%	71.0%	33.3%

5.1 Regulated electricity sites

Increases in the competitive market shares among residential customers are paralleled by declines in the number of RRO customers. Between 2012 and 2021, the RRO residential customer base declined by approximately 240,000 customers. 19% of those net losses (around 46,000 customers) occurred in 2021 (Figure 36).

Significant numbers of RRO customers left the RRO beginning in Q2 2021, increasing to around 50,000 customers lost in each of Q3 and Q4 2021 (Figure 37). Notably, the number of new customers on the RRO increased in Q2 and Q3 2021 compared to the previous year, partially offsetting the high quarterly losses in RRO customers.

The MSA expects the net losses of residential RRO customers will continue to increase into 2022 based on differences between prevailing competitive electricity rates and RRO rates.

Figure 36: Quarterly change in residential RRO customers, 2020 to 2021

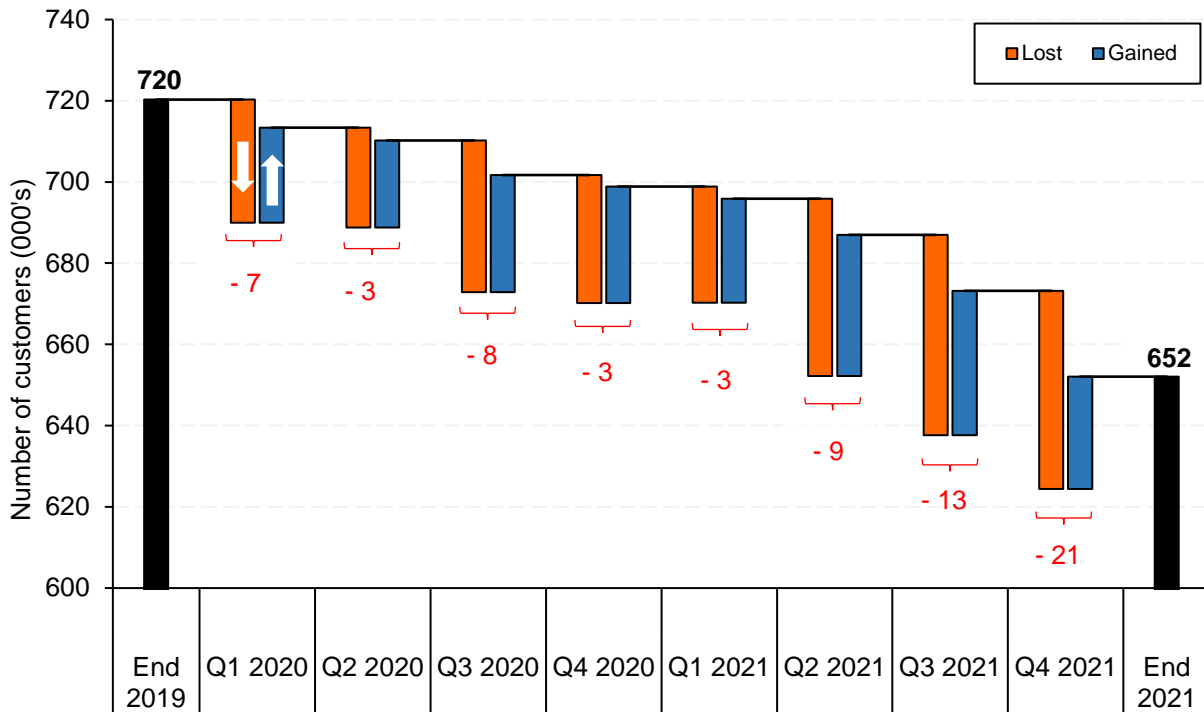
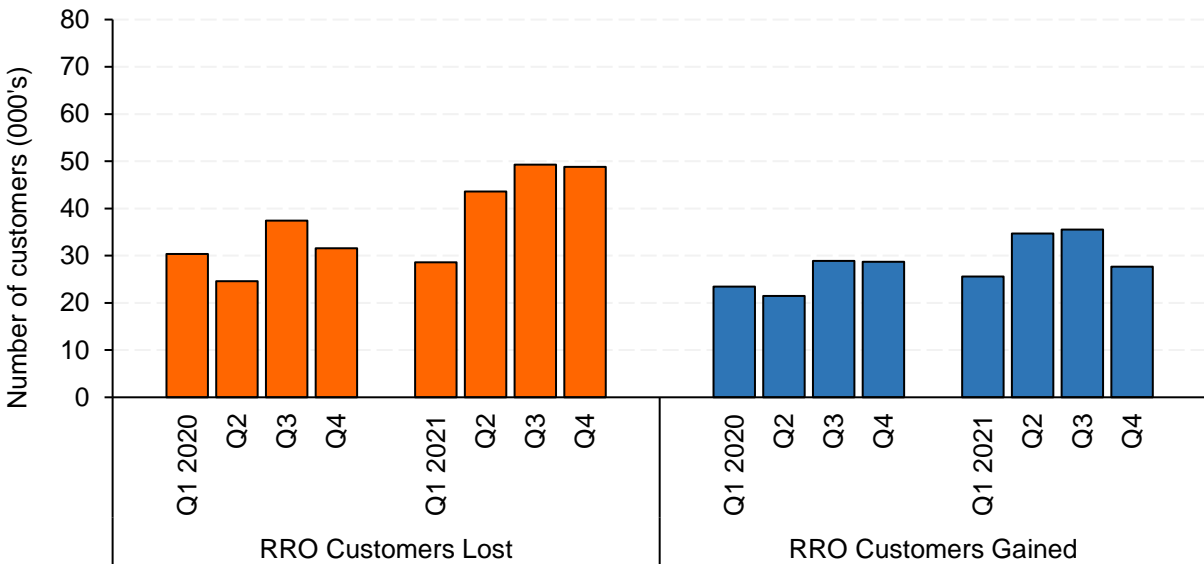


Figure 37: Residential RRO customers lost, gained, 2020 to 2021



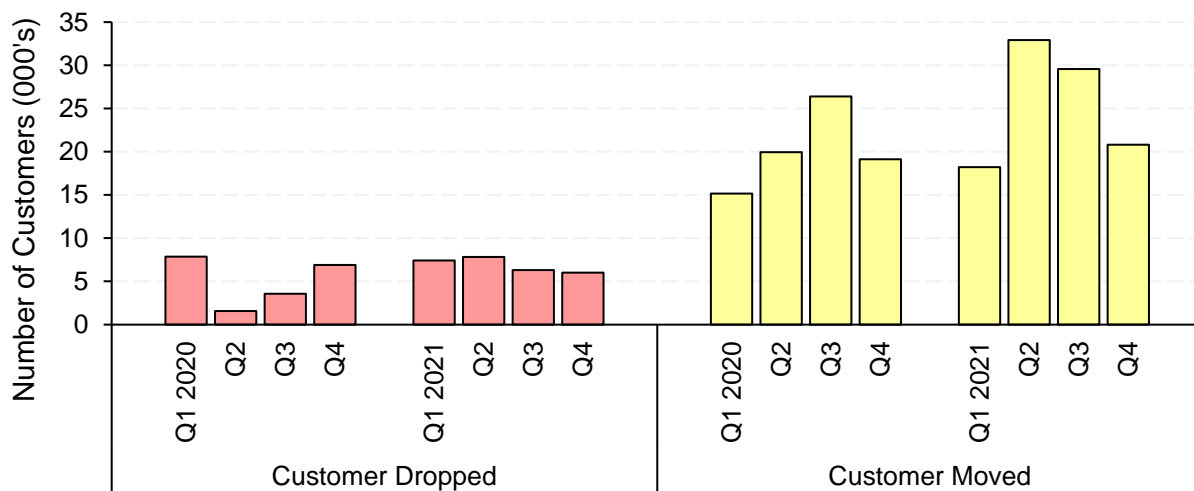
5.2 Competitive electricity sites

Between 2012 and 2021 the number of residential electricity customers on competitive rates doubled from 445,000 to 920,000, with 15% of this net customer increase (around 70,000) occurring in 2021.

While residential customers leaving the RRO will typically become a competitive retail customer (if they remain in the province), a customer leaving their competitive retailer can either switch competitive retailers or may become an RRO customer.

Despite the net increase in residential electricity competitive customers, more residential electricity customers on competitive contracts left their competitive retailer in 2021 (189,000 customers) than in the previous year (151,000). The majority of this increase in 2021 competitive customer losses is attributable to higher competitive customer drop rates in 2021, and an increase in the number of customers moving, particularly in Q2 and Q3 2021 (Figure 38). The MSA expects some of the customers that moved were at least temporarily on RRO rates before once again signing with a competitive retailer.

Figure 38: Subset of residential electricity competitive customers lost, 2020 to 2021



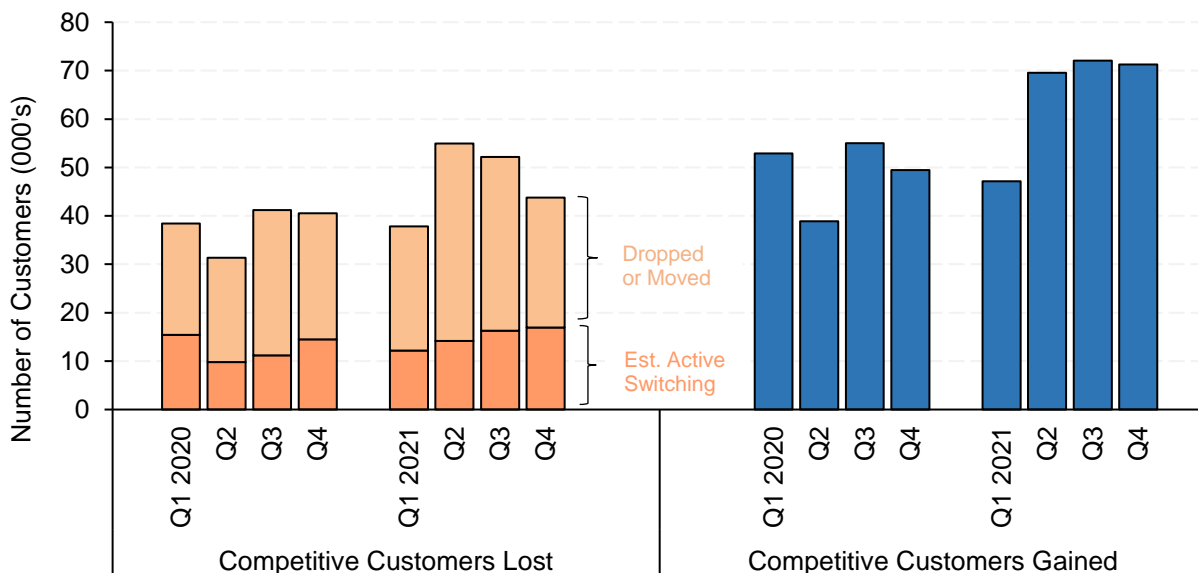
Customers dropped by competitive retailers¹⁰ become RRO customers and may remain RRO customers if they do not subsequently sign up with another competitive retailer. The MSA expects drop rates were higher in 2021 compared to 2020 due to the lack of utility payment deferral program in 2021. Significant increases in competitive variable rates over 2021 may have also contributed to customer drops if these customers were unable to pay their electricity bills.

The MSA considers the remaining competitive customer losses (i.e., losses excluding drops and customer moves) as representative of competitive customers that choose to actively switch retailers (Figure 39). Estimated active retailer switching amounted to around 60,000 residential

¹⁰ Includes customers that choose to no longer be served by their competitive retailer.

customers in 2021, up from 51,000 in the previous year. This year-over-year increase may be attributable to a depressive effect on retail switching during the first few months of the Covid-19 pandemic in 2020, increases in competitive variable rates in 2021, or additional switching motivated by higher fixed rates for contract renewals.

Figure 39: Residential electricity competitive customers lost & gained, 2020 to 2021



5.3 Regulated retail churn

Churn rates represent the share of a retailer’s customer base that leave the retailer in a given month. Churn rates among regulated retailers (RRO and DRT) increased significantly over 2021, reaching record highs in excess of 2.5% by Q4 (Figure 40, Figure 41).

Figure 40: Residential RRO churn vs. previous 10-month average energy bill index, 2012 to 2021

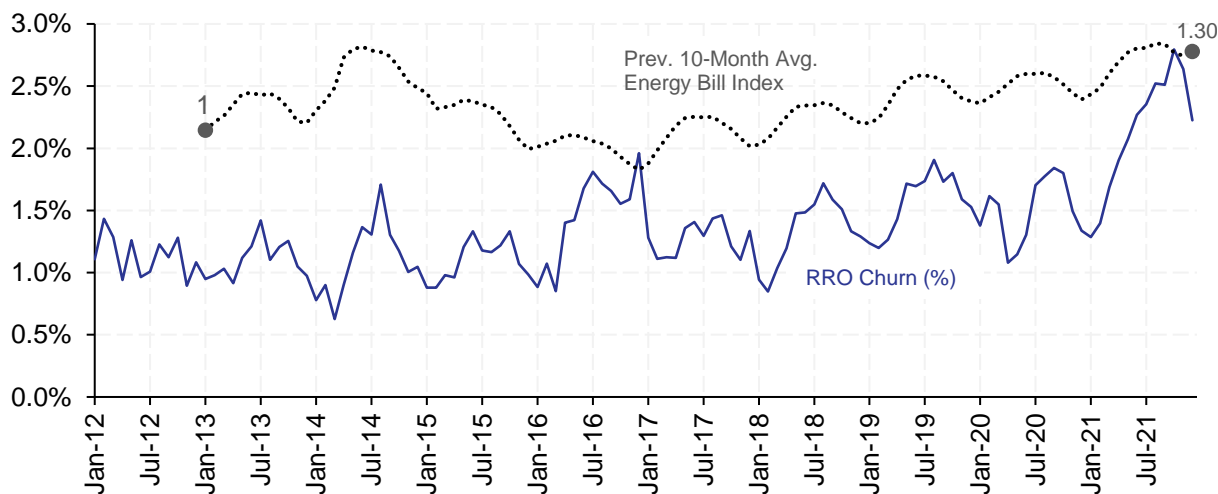
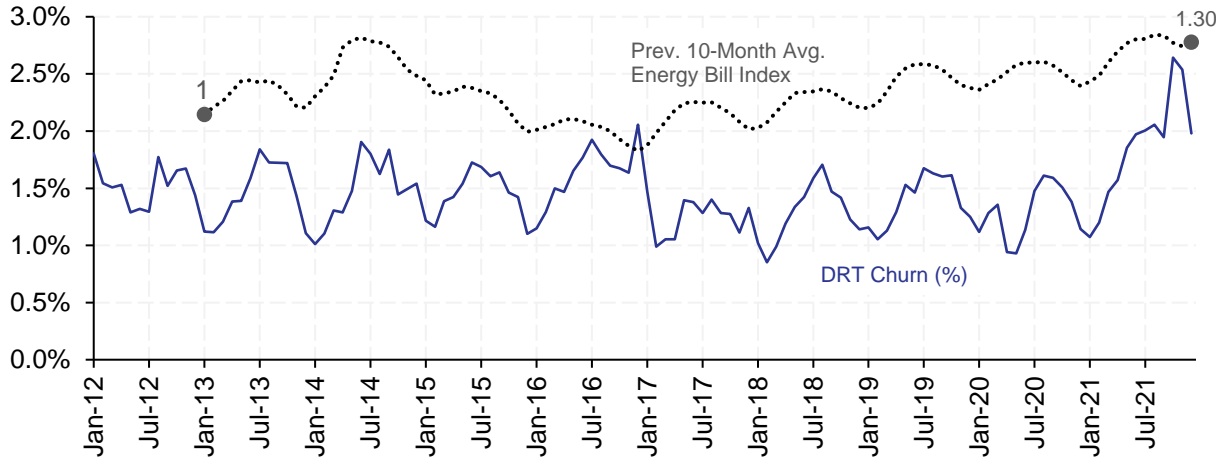


Figure 41: Residential DRT churn vs. previous 10-month average energy bill index, 2012 to 2021



Several factors may have caused this sharp increase in regulated churn rates. Regulated customers' expectations of future regulated energy bills may have been influenced by public discourse in news media and from government officials in late 2021. This discourse may have also introduced many regulated customers to competitive retail alternatives.

Customers may also form expectations about future regulated bills from previous bills they have received. A residential regulated customer's average total energy bill (combined electricity and natural gas) spent over the previous ten months (the "previous 10-month average energy bill index") is well correlated with regulated churn rates, particularly after 2016.

Given the significant increase in public discourse regarding retail energy prices so far in 2022, the MSA expects regulated retail churn to continue to increase in early 2022. Significant increases in the previous 10-month average energy bill index, which are expected over the remainder of 2022 may further incentivize regulated churn rates (Figure 42).

Figure 42: Forecast previous 10-month average energy bill, January 2013 to March 2023

