

Overbond hydro one

Case Study:

HYDRO ONE TREASURY

Overbond Algorithms and Reporting Tools Enhance Hydro One Treasury Bond Pricing and Market Surveillance

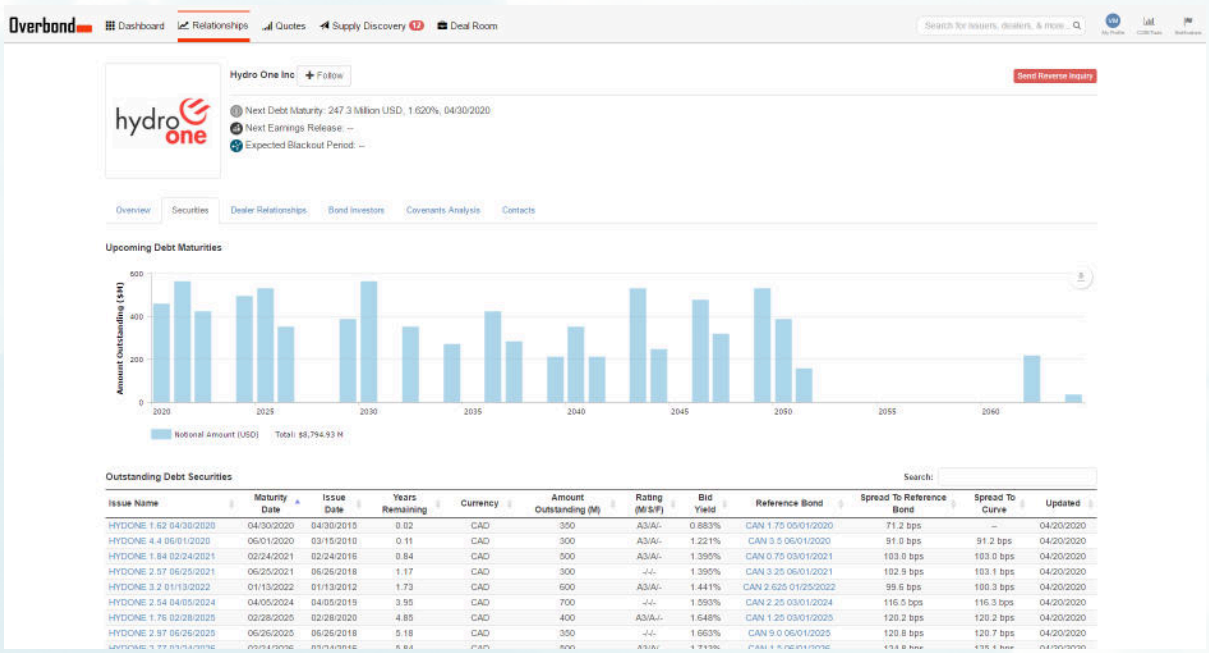
BOND PRICING | DATA AGGREGATION | DEBT CAPITAL MARKETS SURVEILLANCE

OVERVIEW

Hydro One Limited is an electricity transmission and distribution utility serving the Canadian province of Ontario. It is the largest electricity transmission and distribution service provider in Ontario, distributing electricity to nearly 1.4 million customers. The utility works with the transmission and distribution network by connecting generating facilities operated by Ontario Power Generation, Bruce Power and several other privately-owned companies. The generators produce and deliver electricity from their hydroelectric, natural gas, wind, solar and nuclear facilities to businesses and households across Ontario.

In November 2015, Hydro One Limited became a publicly traded company on Toronto Stock Exchange. Its wholly-owned subsidiary Hydro One Inc. has CAD$12.445 billion of outstanding bonds as of April 2020.

Hydro One Borrowing Program Summary on Overbond Platform

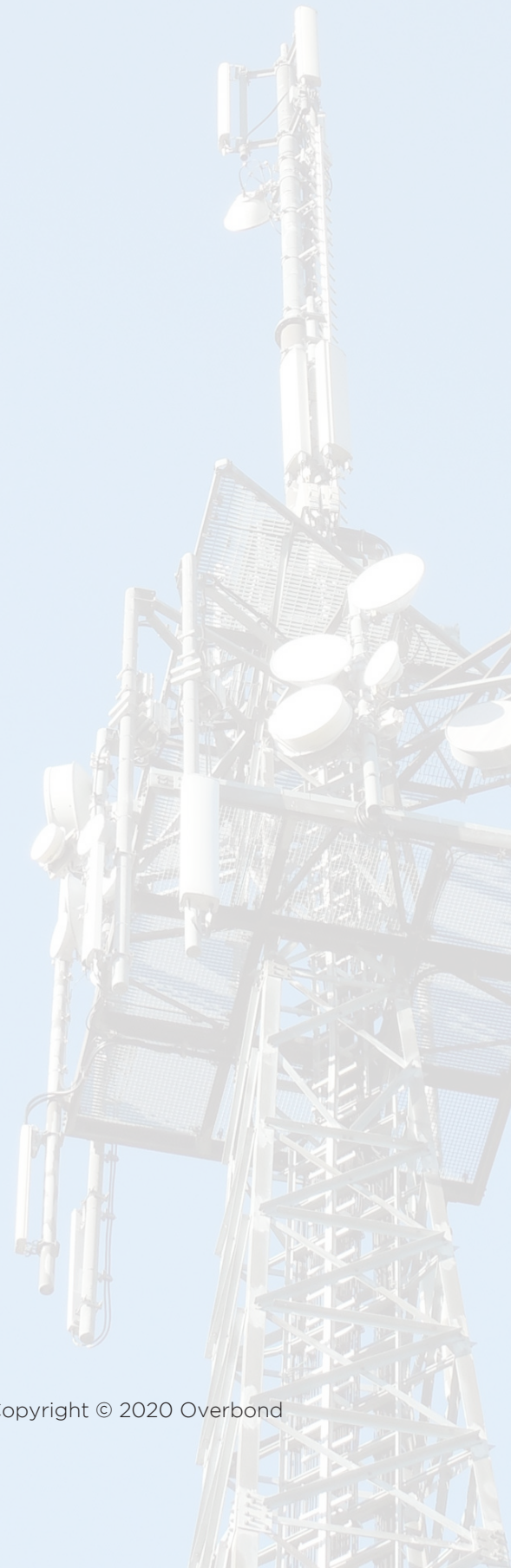


HYDRO ONE'S CHALLENGES

Hydro One had several challenges when it came to monitoring its credit spreads and those of its peers in order to issue bonds in the most cost effective manner. These pain points included:

1. Large amounts of fragmented new issue and secondary spread data from many dealers submitted in various formats that required manual pre-processing
2. Numerous data sources across e-mails in various formats, often without a "consolidated" view option
3. Manual processing required for timely benchmarking. This task was challenging due to intra-day capital market movements, especially during times of heightened market volatility
4. Processing times that engaged personnel and system resources

By working with the Overbond Treasury Debt Capital Service and automating its data intake and analytics, Hydro One can now identify opportunities to reduce the cost of funding faster and more efficiently. In short, "price tension" in markets, benchmarks, historical data and investor sentiment can now be identified more quickly.



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HOW HYDRO ONE OUTGREW ITS LEGACY PROCESSES

Hydro One started uploading data in August 2019. At that time, the utility's five-person treasury team was looking to improve the overall efficiency of its processes. They were experiencing information volume processing challenges and were looking for new methods to analyze fixed income markets and optimize interest costs. Hydro One was using Microsoft Excel to consolidate data and issuing bonds in Canadian dollars (CAD).

The treasury team had several key challenges to consider:

1. They needed to compare credit spreads with other regulated utilities/peers such as 407 International, Altalink, CU, Enbridge Gas and Toronto Hydro.
2. Hydro One had $1.15 billion in debt maturities in the next twelve months and typically issues $1.0 to $1.5 billion in long-term debt per year.
3. Optimal and efficient pricing in the debt capital markets was very important as the utility projected capital expenditures on its transmission and distribution business of approximately $10 billion over the next five years. These expenditures would need to be funded in part by new debt issuance.

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IMMEDIATE BENEFITS

Hydro One was first introduced to the Overbond Treasury Operations module in mid-2019 and saw immediate improvements in its capital markets data management, which freed up time for its treasury team to focus on capitalizing on market opportunities and corporate initiatives. Two major benefits the treasury team realized through the process were:

1. Improved pricing data for new bond issues: insightful data aggregation and sector peer comparison with predictive capabilities

2. Reduced financing risks: reduction in risk of data entry errors through automation

Going forward, Hydro One will be looking to incorporate Overbond's COBI Liquidity scoring feature to strengthen understanding of the liquidity of their own bonds as well as their peers' bonds in the secondary market surveillance capabilities. The COBI Liquidity module utilizes metrics such as bid-ask spreads, trade count and volume, and intraday price volatility for the wide spectrum of bonds to derive a daily liquidity score for each bond..

> ***"Overbond has helped us aggregate our disparate data sets into a consolidated view. They have layered their comprehensive AI analytics to enable us to make financing decisions with more precision and confidence."***
>
> **– Ali Suleman,** Vice President and Treasurer, Hydro One

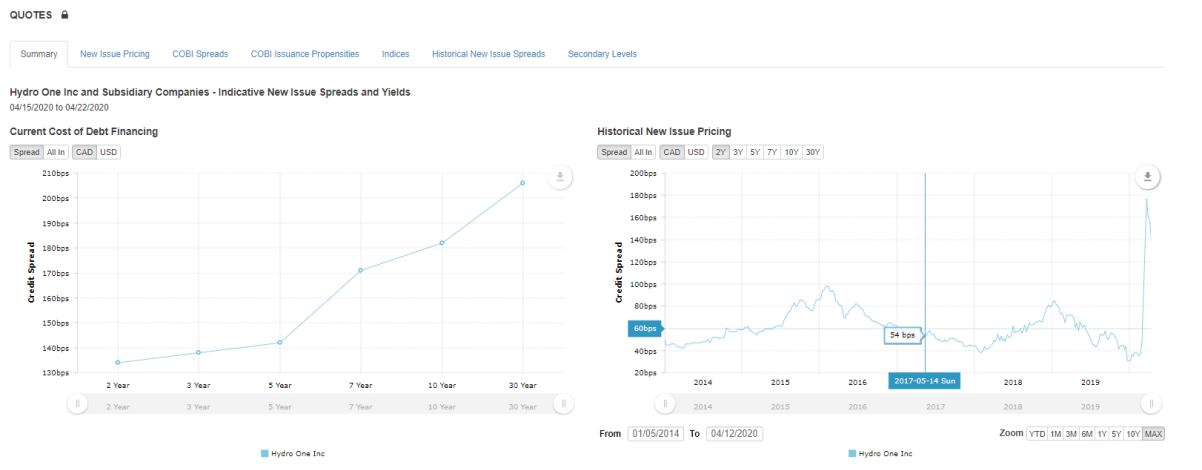
INSIDE THE HYDRO ONE - OVERBOND PORTAL

Overbond was able to deploy its AI-powered solution to help Hydro One aggregate data across various market vendors and data sources as well as dealer supplied runs. Overbond's models structured, cleansed and processed voluminous data and mapped the data to the Reference Master. Subsequently, various AI-powered pricing algorithms operated on the reference master to output all modeled benchmarks and generated automated reports on a scheduled basis.

Highlights of Hydro One – Overbond Portal Features:

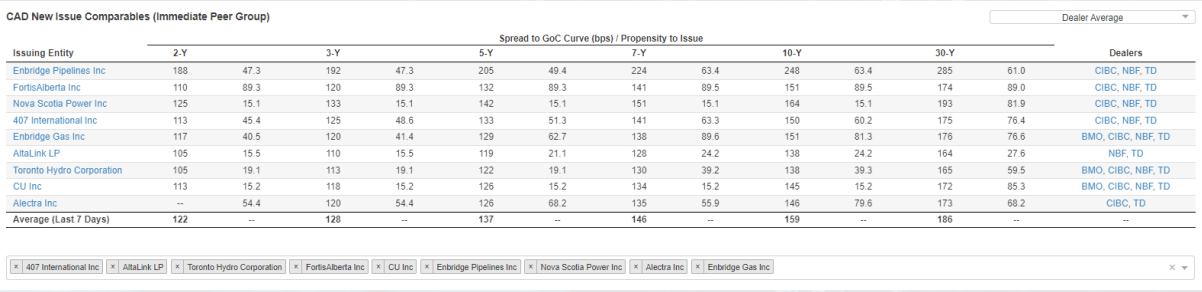
1. Auto-reports and CAD pricing summary by contributing dealer, current and historical

Improved access to CAD FXD and FRN Pricing provides Hydro One better understanding of current and historical borrowing cost.



2. Comparison of new issue spreads across the peer group companies and indication of their propensities to issue bonds in different tenors

Improved access to comparable pricing and issuance propensities provides Hydro One a better understanding of the pricing position in the industry.

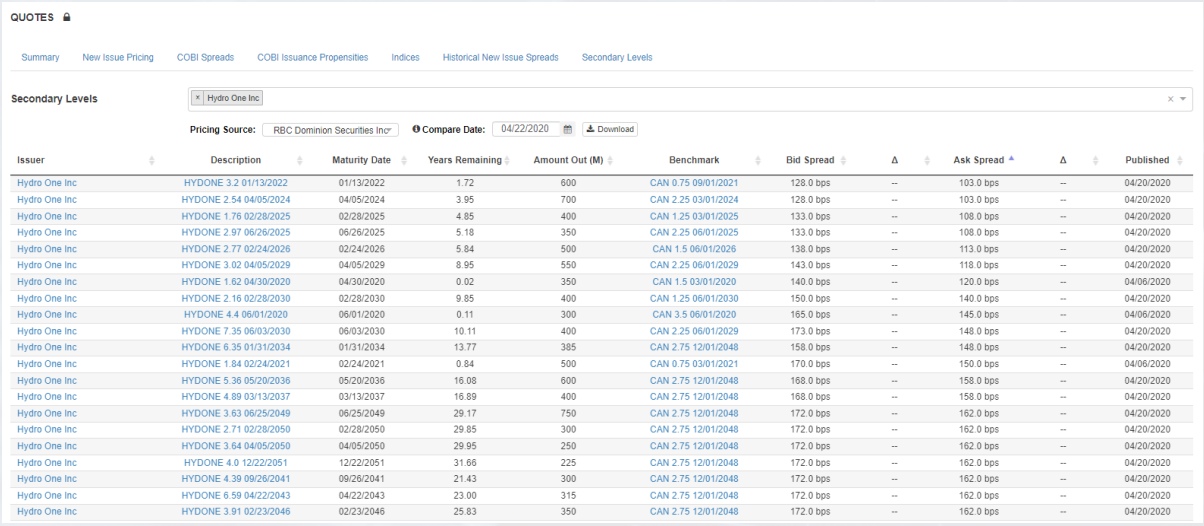


Issuing Entity	2-Y		3-Y		5-Y		7-Y		10-Y		30-Y		Dealers
Enbridge Pipelines Inc	188	47.3	192	47.3	205	49.4	224	63.4	248	63.4	285	61.0	CIBC, NBF, TD
FortisAlberta Inc	110	89.3	120	89.3	132	89.3	141	89.5	151	89.5	174	89.0	CIBC, NBF, TD
Nova Scotia Power Inc	125	15.1	133	15.1	142	15.1	151	15.1	164	15.1	193	81.9	CIBC, NBF, TD
407 International Inc	113	45.4	125	48.6	133	51.3	141	63.3	150	60.2	175	76.4	CIBC, NBF, TD
Enbridge Gas Inc	117	40.5	120	41.4	129	62.7	138	89.6	151	81.3	176	76.6	BMO, CIBC, NBF, TD
AltaLink LP	105	15.5	110	15.5	119	21.1	128	24.2	138	24.2	164	27.6	NBF, TD
Toronto Hydro Corporation	105	19.1	113	19.1	122	19.1	130	39.2	138	39.3	165	59.5	BMO, CIBC, NBF, TD
CU Inc	113	15.2	118	15.2	126	15.2	134	15.2	145	15.2	172	85.3	BMO, CIBC, NBF, TD
Alectra Inc	--	54.4	120	54.4	126	68.2	135	55.9	146	79.6	173	68.2	CIBC, TD
Average (Last 7 Days)	**122**	--	**128**	--	**137**	--	**146**	--	**159**	--	**186**	--	--

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3. Data aggregation of all Hydro One bonds secondary pricing levels, peer group secondary bonds pricing levels, organized per underlying data source

Improved access to secondary credit spreads from different dealers as well and market data sources enables Hydro One Treasury to better gauge the prices of the secondary bonds when pricing a new bond issue.



QUOTES

Summary | New Issue Pricing | COBI Spreads | COBI Issuance Propensities | Indices | Historical New Issue Spreads | Secondary Levels

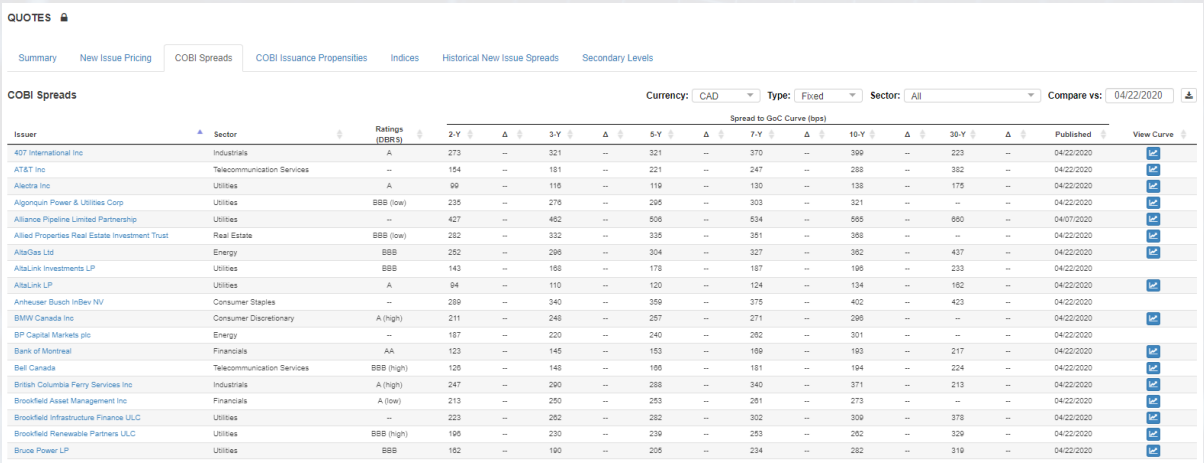
Secondary Levels — Hydro One Inc

Pricing Source: RBC Dominion Securities Inc — Compare Date: 04/22/2020 — Download

Issuer	Description	Maturity Date	Years Remaining	Amount Out (M)	Benchmark	Bid Spread	Δ	Ask Spread	Δ	Published
Hydro One Inc	HYDONE 3.2 01/13/2022	01/13/2022	1.72	600	CAN 0.75 09/01/2021	128.0 bps	--	103.0 bps	--	04/20/2020
Hydro One Inc	HYDONE 2.54 04/05/2024	04/05/2024	3.95	700	CAN 2.25 03/01/2024	128.0 bps	--	103.0 bps	--	04/20/2020
Hydro One Inc	HYDONE 1.76 02/28/2025	02/28/2025	4.85	400	CAN 1.25 03/01/2025	133.0 bps	--	108.0 bps	--	04/20/2020
Hydro One Inc	HYDONE 2.97 06/26/2025	06/26/2025	5.18	350	CAN 2.25 06/01/2025	133.0 bps	--	108.0 bps	--	04/20/2020
Hydro One Inc	HYDONE 2.77 02/24/2026	02/24/2026	5.84	500	CAN 1.5 06/01/2026	138.0 bps	--	113.0 bps	--	04/20/2020
Hydro One Inc	HYDONE 3.02 04/05/2029	04/05/2029	8.95	550	CAN 2.25 06/01/2029	143.0 bps	--	118.0 bps	--	04/20/2020
Hydro One Inc	HYDONE 1.62 04/30/2020	04/30/2020	0.02	350	CAN 1.5 03/01/2020	140.0 bps	--	120.0 bps	--	04/06/2020
Hydro One Inc	HYDONE 2.16 02/28/2030	02/28/2030	9.85	400	CAN 1.25 06/01/2030	150.0 bps	--	140.0 bps	--	04/20/2020
Hydro One Inc	HYDONE 4.4 06/01/2020	06/01/2020	0.11	300	CAN 3.5 06/01/2020	165.0 bps	--	145.0 bps	--	04/06/2020
Hydro One Inc	HYDONE 7.35 06/03/2030	06/03/2030	10.11	400	CAN 2.25 06/01/2029	173.0 bps	--	148.0 bps	--	04/20/2020
Hydro One Inc	HYDONE 6.35 01/31/2034	01/31/2034	13.77	385	CAN 2.75 12/01/2048	158.0 bps	--	148.0 bps	--	04/20/2020
Hydro One Inc	HYDONE 1.84 02/24/2021	02/24/2021	0.84	500	CAN 0.75 03/01/2021	170.0 bps	--	150.0 bps	--	04/06/2020
Hydro One Inc	HYDONE 5.36 05/20/2036	05/20/2036	16.08	600	CAN 2.75 12/01/2048	168.0 bps	--	158.0 bps	--	04/20/2020
Hydro One Inc	HYDONE 4.89 03/13/2037	03/13/2037	16.89	400	CAN 2.75 12/01/2048	168.0 bps	--	158.0 bps	--	04/20/2020
Hydro One Inc	HYDONE 3.63 06/25/2049	06/25/2049	29.17	750	CAN 2.75 12/01/2048	172.0 bps	--	162.0 bps	--	04/20/2020
Hydro One Inc	HYDONE 2.71 02/28/2050	02/28/2050	29.85	300	CAN 2.75 12/01/2048	172.0 bps	--	162.0 bps	--	04/20/2020
Hydro One Inc	HYDONE 3.64 04/05/2050	04/05/2050	29.95	250	CAN 2.75 12/01/2048	172.0 bps	--	162.0 bps	--	04/20/2020
Hydro One Inc	HYDONE 4.0 12/22/2051	12/22/2051	31.66	225	CAN 2.75 12/01/2048	172.0 bps	--	162.0 bps	--	04/20/2020
Hydro One Inc	HYDONE 4.39 09/26/2041	09/26/2041	21.43	300	CAN 2.75 12/01/2048	172.0 bps	--	162.0 bps	--	04/20/2020
Hydro One Inc	HYDONE 6.59 04/22/2043	04/22/2043	23.00	315	CAN 2.75 12/01/2048	172.0 bps	--	162.0 bps	--	04/20/2020
Hydro One Inc	HYDONE 3.91 02/23/2046	02/23/2046	25.83	350	CAN 2.75 12/01/2048	172.0 bps	--	162.0 bps	--	04/20/2020

4. COBI Pricing AI by Overbond handles the problem of sparse bond transaction data, especially in times of great volatility and price shifting

Model optimizes across data gaps with balance sheet fundamentals and applies deep historical benchmarking and curve fitting. COBI Pricing AI builds curves systematically for 10,000+ issuers in various real-time liquidity scenarios to arrive at best executable price. AI pricing offers Hydro One diversified way to understand the market.



QUOTES

Summary | New Issue Pricing | COBI Spreads | COBI Issuance Propensities | Indices | Historical New Issue Spreads | Secondary Levels

COBI Spreads — Currency: CAD — Type: Fixed — Sector: All — Compare vs: 04/22/2020

Issuer	Sector	Ratings (DBRS)	Spread to GoC Curve (bps) 2-Y	Δ	3-Y	Δ	5-Y	Δ	7-Y	Δ	10-Y	Δ	30-Y	Δ	Published	View Curve
407 International Inc	Industrials	A	273	--	321	--	321	--	370	--	399	--	223	--	04/22/2020	
AT&T Inc	Telecommunication Services	--	154	--	181	--	221	--	247	--	288	--	382	--	04/22/2020	
Alectra Inc	Utilities	A	99	--	116	--	119	--	130	--	138	--	175	--	04/22/2020	
Algonquin Power & Utilities Corp	Utilities	BBB (low)	235	--	276	--	295	--	303	--	321	--	--	--	04/22/2020	
Alliance Pipeline Limited Partnership	Utilities	--	427	--	462	--	506	--	534	--	565	--	660	--	04/07/2020	
Allied Properties Real Estate Investment Trust	Real Estate	BBB (low)	282	--	332	--	335	--	351	--	368	--	--	--	04/22/2020	
AltaGas Ltd	Energy	BBB	252	--	296	--	304	--	327	--	362	--	437	--	04/22/2020	
AltaLink Investments LP	Utilities	BBB	143	--	168	--	178	--	187	--	196	--	233	--	04/22/2020	
AltaLink LP	Utilities	A	94	--	110	--	120	--	124	--	134	--	162	--	04/22/2020	
Anheuser Busch InBev NV	Consumer Staples	--	289	--	340	--	359	--	375	--	402	--	423	--	04/22/2020	
BMW Canada Inc	Consumer Discretionary	A (high)	211	--	248	--	257	--	271	--	296	--	--	--	04/22/2020	
BP Capital Markets plc	Energy	--	187	--	220	--	240	--	262	--	301	--	--	--	04/22/2020	
Bank of Montreal	Financials	AA	123	--	145	--	153	--	169	--	193	--	217	--	04/22/2020	
Bell Canada	Telecommunication Services	BBB (high)	126	--	148	--	166	--	181	--	194	--	224	--	04/22/2020	
British Columbia Ferry Services Inc	Industrials	A (high)	247	--	290	--	288	--	340	--	371	--	213	--	04/22/2020	
Brookfield Asset Management Inc	Financials	A (low)	213	--	250	--	253	--	261	--	273	--	--	--	04/22/2020	
Brookfield Infrastructure Finance ULC	Utilities	--	223	--	262	--	282	--	302	--	309	--	378	--	04/22/2020	
Brookfield Renewable Partners ULC	Utilities	BBB (high)	196	--	230	--	239	--	253	--	262	--	329	--	04/22/2020	
Bruce Power LP	Utilities	BBB	162	--	190	--	205	--	234	--	282	--	319	--	04/22/2020	

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