January 2023 Interest Rates

Issue Date	Amount of Debentures ($0)	Debenture Rate (%)	Note Rate (%)	Comparable Treasury Market Rate (%)	Spread Over Treasury Rate (%)	CDC Fee	0.625	1.000	0.625	1.000	0.625	1.000	0.625	1.000	0.625	1.000	0.625	1.000	0.625	1.000	0.625	1.000	0.625	1.000	0.625	1.000	0.625	1.000	0.625	1.000	0.625	1.000
						Borrower Fee	0.6970	0.6970	0.6420	0.6420	0.3680	0.3680	0.3205	0.3205	0.4517	0.4517	0.2475	0.2475	0.4405	0.4405	0.7310	0.7310	0.6820	0.6820	0.3950	0.3950	0.3220	0.3220	0.4865	0.4865	0.2590	0.2590	0.4559	0.4559
						CSA Fee	0.100	0.100	0.100	0.100	0.100	0.100	0.100	0.100	0.100	0.100	0.100	0.100	0.100	0.100	0.100	0.100	0.100	0.100	0.100	0.100	0.100	0.100	0.100	0.100	0.100	0.100	0.100	0.100
10-Year Debentures																																
Jan 21	4,135	0.67	0.69727	0.46	0.21		N/A	N/A	2.733	N/A	2.325	2.883	2.254	N/A	2.450	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	2.256	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Mar 21	9,478	0.91	0.94684	0.79	0.12		N/A	N/A	2.983	N/A	2.575	N/A	2.504	3.063	2.700	3.258	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
May 21	12,001	0.84	0.87394	0.79	0.05		N/A	N/A	N/A	N/A	N/A	3.056	2.428	2.985	2.623	3.180	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	2.674	N/A	N/A	N/A	N/A	N/A
July 21	9,501	0.82	0.85320	0.74	0.08		N/A	N/A	2.887	N/A	2.480	N/A	2.409	2.967	2.604	3.162	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	2.656	3.214	N/A	N/A	N/A	N/A
Sept 21	12,821	0.90	0.93642	0.81	0.09		N/A	N/A	N/A	3.528	2.563	N/A	2.492	3.050	2.687	3.245	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	2.739	3.297	N/A	N/A	N/A	N/A
Nov 21	16,778	1.31	1.36226	1.18	0.13		N/A	N/A	3.392	N/A	N/A	N/A	2.914	3.471	3.109	3.666	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	3.161	3.718	N/A	N/A	N/A	N/A
Jan 22	12,092	1.58	1.64224	1.47	0.11		N/A	N/A	N/A	N/A	3.257	N/A	3.187	3.741	3.381	3.935	N/A	3.633	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	3.432	3.986	3.096	N/A	N/A	N/A
Mar 22	17,227	2.30	2.38859	1.93	0.37		N/A	N/A	4.401	N/A	N/A	N/A	3.928	4.480	4.121	4.673	3.820	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	4.172	N/A	N/A	N/A	N/A	N/A
May 22	20,358	3.39	3.51524	3.01	0.38		N/A	N/A	N/A	N/A	N/A	N/A	5.037	5.583	5.228	5.774	4.931	5.477	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	4.948	N/A	N/A	N/A	N/A
July 22	19,312	3.43	3.55675	3.01	0.42		N/A	N/A	N/A	N/A	5.149	N/A	N/A	5.626	5.271	5.817	4.974	5.520	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	5.537	N/A	N/A
Sept 22	15,202	3.78	3.91809	3.38	0.40		N/A	N/A	N/A	N/A	N/A	N/A	5.438	N/A	5.629	6.174	5.332	5.877	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	5.349	5.894	N/A	N/A
Nov 22	16,930	4.70	4.86652	3.95	0.75		N/A	N/A	N/A	7.385	N/A	N/A	6.378	6.920	6.568	7.110	6.273	6.815	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	6.289	6.831	N/A	N/A
Jan 23	12,344	4.60	4.76278	3.95	0.65		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	6.460	7.001	6.166	6.707	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
20-Year Debentures																																
Jan 21	50,211	1.18	1.20277	1.08	0.10		2.962	3.426	2.894	3.358	2.555	3.019	2.496	2.960	2.658	3.122	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	2.498	N/A	2.702	N/A	N/A	N/A	N/A	N/A
Feb 21	60,207	1.24	1.26377	1.15	0.09		3.024	N/A	2.956	3.420	2.617	3.081	2.558	3.022	2.720	3.185	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	2.560	3.024	2.764	N/A	N/A	N/A	N/A	N/A
Mar 21	57,071	1.52	1.54858	1.54	-0.02		3.305	3.768	3.237	3.700	2.899	3.362	2.840	N/A	3.002	3.465	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	3.045	N/A	N/A	N/A	N/A	N/A
April 21	59,703	1.54	1.56902	1.64	-0.10		3.324	3.787	3.256	3.719	2.918	3.381	2.859	3.322	3.021	3.484	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	2.861	N/A	3.064	3.527	N/A	N/A	N/A	N/A
May 21	63,539	1.37	1.39601	1.56	-0.19		3.152	N/A	3.084	3.547	2.746	3.209	2.687	3.150	2.849	3.312	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	2.689	N/A	2.892	N/A	N/A	N/A	N/A	N/A
June 21	70,555	1.29	1.31461	1.49	-0.20		3.074	3.538	3.006	3.470	2.667	3.131	2.608	3.072	2.770	3.234	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	2.813	N/A	N/A	N/A	N/A	N/A
July 21	90,067	1.22	1.24338	1.29	-0.07		3.003	N/A	2.934	3.398	2.596	3.059	2.537	3.001	2.699	3.163	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	2.742	3.206	N/A	N/A	N/A	N/A
Aug 21	68,384	1.27	1.29425	1.20	0.07		N/A	3.515	2.983	N/A	2.645	3.108	2.586	3.049	2.748	3.211	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	2.791	3.255	N/A	N/A	N/A	N/A
Sept 21	83,523	1.38	1.40620	1.33	0.05		3.164	3.627	3.096	N/A	2.757	N/A	2.698	3.162	2.860	3.324	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	2.903	3.367	N/A	N/A	N/A	N/A
Oct 21	71,529	1.54	1.56884	1.56	-0.02		3.323	N/A	3.255	3.718	2.917	3.380	2.859	3.321	3.021	3.483	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	3.063	N/A	N/A	N/A	N/A	N/A
Nov 21	96,582	1.55	1.57906	1.50	0.05		3.335	N/A	3.267	3.730	2.929	3.392	2.870	3.333	3.032	3.495	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	3.075	3.538	N/A	N/A	N/A	N/A
Dec 21	68,395	1.65	1.68071	1.48	0.17		3.435	N/A	3.367	N/A	3.029	3.491	2.970	3.433	3.132	3.595	2.880	3.343	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	3.175	3.638	2.894	N/A	N/A	N/A
Jan 22	62,330	1.84	1.87372	1.73	0.11		3.624	N/A	N/A	4.017	N/A	N/A	3.160	3.622	3.322	3.783	3.070	3.532	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	3.365	N/A	3.085	N/A	N/A	N/A
Feb 22	69,462	2.22	2.25968	1.99	0.23		N/A	N/A	3.939	4.400	3.602	4.063	3.544	4.005	3.705	4.166	3.454	3.915	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	3.748	N/A	3.469	3.929	N/A	N/A
Mar 22	75,960	2.53	2.57423	2.00	0.53		4.317	N/A	4.250	N/A	3.914	N/A	3.856	N/A	4.017	4.476	3.766	4.226	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	4.059	N/A	3.780	N/A	N/A	N/A
April 22	94,133	3.38	3.43547	2.65	0.73		N/A	N/A	5.100	5.557	4.766	N/A	4.709	N/A	4.868	5.325	4.620	5.076	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	4.911	5.367	4.634	N/A	N/A	N/A
May 22	81,487	3.82	3.88065	3.04	0.78		N/A	N/A	5.539	N/A	5.207	5.662	5.149	5.604	5.309	5.764	5.061	5.516	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	5.351	5.806	5.075	N/A	N/A	N/A
June 22	100,238	3.89	3.95163	3.04	0.85		N/A	N/A	5.611	6.067	5.279	N/A	5.221	5.676	5.380	5.836	5.132	5.588	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	5.423	N/A	5.146	5.602	N/A	N/A
July 22	70,315	3.81	3.87069	2.96	0.85		5.597	N/A	5.530	N/A	5.198	N/A	5.140	5.595	5.299	5.755	5.051	5.507	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	5.342	N/A	5.065	5.521	N/A	N/A
Aug 22	79,827	3.65	3.70886	2.82	0.83		5.439	N/A	5.372	N/A	5.039	N/A	4.981	5.437	5.141	5.597	4.892	5.349	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	5.183	N/A	4.906	5.363	N/A	N/A
Sept 22	52,060	4.10	4.16385	3.26	0.84		N/A	N/A	N/A	N/A	5.489	N/A	5.431	N/A	5.590	6.045	5.343	5.797	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	5.357	5.811	N/A	N/A
Oct 22	50,244	4.89	4.96167	3.84	1.05		N/A	N/A	6.610	N/A	6.279	N/A	6.222	N/A	6.380	6.832	6.134	6.586	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	6.148	N/A	N/A	N/A
Nov 22	51,598	4.98	5.05266	3.83	1.15		N/A	N/A	6.702	N/A	N/A	N/A	6.314	6.766	6.472	6.925	6.226	6.678	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	6.240	N/A	N/A	N/A
Dec 22	40,251	4.56	4.62866	3.46	1.10		6.348	N/A	N/A	N/A	5.950	N/A	5.892	N/A	6.051	6.504	5.804	6.258	6.037	6.491	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	5.818	N/A	N/A	N/A
Jan 23	44,014	4.81	4.88083	3.76	1.05		N/A	N/A	6.529	N/A	6.199	N/A	6.142	N/A	6.300	6.752	6.054	6.506	6.286	6.739	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	6.067	N/A	N/A	6.757
25-Year Debentures																																
Jan 21	239,266	1.28	1.29911	1.08	0.20		N/A	N/A	2.922	3.367	2.597	3.042	2.540	2.985	2.696	3.141	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	2.542	2.987	2.737	3.182	N/A	N/A	N/A	N/A
Feb 21	355,019	1.34	1.36001	1.15	0.19		N/A	N/A	2.983	3.429	2.658	3.103	2.602	3.047	2.757	3.203	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	2.603	3.049	2.799	3.244	N/A	N/A	N/A	N/A
Mar 21	287,904	1.63	1.65364	1.54	0.09		N/A	N/A	3.274	N/A	2.949	3.393	2.893	3.337	3.048	3.492	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	2.894	N/A	3.089	N/A	N/A	N/A	N/A	N/A
April 21	382,679	1.66	1.68402	1.64	0.02		N/A	N/A	3.303	3.747	2.978	3.422	2.922	3.366	3.077	3.521	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	2.924	3.368	3.118	3.562	N/A	N/A	N/A	N/A
May 21	406,692	1.52	1.54221	1.56	-0.04		N/A	N/A	3.162	N/A	2.837	3.281	2.781	3.225	2.936	3.380	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	2.783	N/A	2.977	3.422	N/A	N/A	N/A	N/A
June 21	494,897	1.47	1.49161	1.49	-0.02		N/A	N/A	3.113	N/A	2.788	3.233	2.732	3.177	2.887	3.332	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	2.734	N/A	2.929	3.374	N/A	N/A	N/A	N/A
July 21	392,288	1.40	1.42068	1.29	0.11		N/A	N/A	3.042	N/A	2.717	3.162	2.661	3.106	2.817	3.261	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	2.663	N/A	2.858	3.303	N/A	N/A	N/A	N/A
Aug 21	396,375	1.45	1.47133	1.20	0.25		N/A	N/A	3.091	3.536	2.767	3.211	2.710	3.155	2.866	3.310	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	2.712	N/A	2.907	3.351	N/A	N/A	N/A	N/A
Sept 21	538,794	1.56	1.58273	1.33	0.23		N/A	N/A	3.203	N/A	2.878	3.323	2.822	3.266	2.977	3.422	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	3.268	3.019	3.463	N/A	N/A	N/A	N/A
Oct 21	408,179	1.74	1.76496	1.56	0.18		N/A	N/A	3.382	3.826	3.058	3.502	3.002	3.445	3.157	3.601	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	3.198	3.642	N/A	N/A	N/A	N/A
Nov 21	517,789	1.75	1.77517	1.50	0.25		N/A	N/A	3.394	3.838	3.069	3.513	3.013	3.457	3.168	3.612	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	3.015	N/A	3.210	3.654	N/A	N/A	N/A	N/A
Dec 21	435,708	1.85	1.87631	1.48	0.37		N/A	N/A	N/A	N/A	3.169	3.612	3.113	3.556	3.268	3.711	3.026	3.470	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	3.115	N/A	3.309	3.753	3.040	N/A	N/A	N/A
Jan 22	376,608	2.04	2.06849	1.73	0.31		N/A	N/A	3.682	4.125	3.358	3.801	3.302	3.745	3.457	3.900	3.216	3.659	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	3.304	N/A	3.498	3.941	3.230	3.672	N/A	N/A
Feb 22	453,820	2.42	2.45266	1.99	0.43		N/A	N/A	4.063	N/A	3.740	4.182	3.684	4.126	3.839	4.281	3.598	4.040	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	3.880	4.322	3.612	4.054	N/A	N/A
Mar 22	518,023	2.75	2.78601	2.00	0.75		N/A	N/A	N/A	4.834	4.071	4.512	4.015	4.456	4.169	4.610	3.929	4.370	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	4.210	4.651	3.943	4.384	N/A	N/A
April 22	530,747	3.50	3.54268	2.65	0.85		N/A	N/A	N/A	N/A	4.821	5.259	4.765	5.203	4.918	5.357	4.680	5.118	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	4.959	5.398	4.693	5.132	N/A	N/A
May 22	582,785	3.94	3.98600	3.04	0.90		N/A	N/A	5.579	N/A	5.260	5.697	5.204	5.642	5.357	5.794	5.119	5.556	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	5.206	N/A	5.398	N/A	5.133	5.570	N/A	N/A
June 22	720,567	4.01	4.05664	3.04	0.97		N/A	N/A	5.651	N/A	5.331	5.768	5.276	5.713	5.429	5.866	5.191	5.628	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	5.469	5.907	5.204	5.641	N/A	N/A
July 22	507,976	3.93	3.97598	2.96	0.97		N/A	N/A	N/A	N/A	5.250	5.688	5.195	5.632	5.348	5.785	5.110	5.547	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	5.389	N/A	5.123	5.561	N/A	N/A
Aug 22	612,245	3.80	3.84514	2.82	0.98		N/A	N/A	5.442	N/A	5.122	5.560	5.066	5.504	5.219	5.658	4.981	5.419	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	5.260	N/A	4.994	5.432	N/A	N/A
Sept 22	468,908	4.26	4.30832	3.26	1.00		N/A	N/A	N/A	N/A	5.581	6.017	5.525	5.962	5.678	6.115	5.440	5.877	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	5.719	N/A	5.454	5.890	N/A	N/A
Oct 22	409,101	5.04	5.09293	3.84	1.20		N/A	N/A	6.676	N/A	6.359	N/A	6.304	6.738	6.456	6.890	6.219	6.654	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	6.496	N/A	6.233	6.667	N/A	N/A
Nov 22	571,696	5.13	5.18356	3.83	1.30		N/A	N/A	6.768	N/A	6.450	6.885	6.395	6.830	6.547	6.982	6.311	6.745	6.534	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	6.324	6.758	N/A	N/A
Dec 22	443,896	4.71	4.76114	3.46	1.25		N/A	N/A	6.348	N/A	6.030	6.466	5.975	N/A	6.127	6.563	5.890	6.326	6.114	6.550	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	5.904	6.339	6.132	6.568
Jan 23	377,944	4.91	4.96213	3.76	1.15		N/A	N/A	6.546	N/A	6.229	N/A	6.174	6.608	6.326	6.760	6.089	6.524	6.313	6.748	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	6.103	6.537	6.331	6.765