

MATERIAL TOPIC: ENERGY & EMISSIONS	2019	2020	2021	2022	2023	CONTEXT	GRI/SASB
<b>Methodology Note: all energy and emissions data, unless specifically noted otherwise, are based on operational control at the battery level.</b>							
Annual Production - Annual Report figure, financial control: boe	36,630,232	34,839,540	31,173,190	31,093,255	30,657,810		
Annual Production - Annual Report minus non-operated volumes as referenced in CDP submissions: boe	36,604,811	34,723,518	31,154,575	31,058,580	30,634,815		
Annual Production - Operated facility throughput including third-party volumes: boe	44,680,354	42,202,207	36,865,352	35,634,107	32,961,096	Use for energy and emissions intensity calculations to ensure numerator/denominator alignment	
<b>ENERGY</b>	<b>2019</b>	<b>2020</b>	<b>2021</b>	<b>2022</b>	<b>2023</b>		
<b>Scope 1: Energy consumption within organization, non-renewable (natural gas, propane liquid, diesel fuel and vehicle fuel): GJ</b>	<b>5,554,821</b>	<b>5,172,331</b>	<b>4,806,111</b>	<b>4,388,587</b>	<b>4,360,659</b>		<b>302-1</b>
Canada	3,592,038	3,223,562	2,907,176	2,496,328	3,017,477	2023 increase related to fuel gas in Canadian Mica region	
France	0	3,143	6,280	12,839	11,430		
Netherlands	72,585	73,037	74,841	70,352	64,140		
Australia	722,623	843,308	813,213	815,819	326,193		
United States	204,576	111,857	78,669	63,807	38,213	2023 decrease due to reduced fuel gas and no OPEX diesel	
Germany	135,350	108,675	112,212	101,099	126,554		
Central and Eastern Europe - Hungary and Croatia	9,236	5,119	16,544	0	0		
Ireland	818,413	803,630	797,175	828,343	776,651		
<b>Energy intensity ratio Scope 1: GJ/boe</b>	<b>0.12</b>	<b>0.12</b>	<b>0.13</b>	<b>0.12</b>	<b>0.13</b>		<b>302-3</b>
<b>Scope 2: Energy consumption outside organization, non-renewable (electricity): GJ</b>	<b>2,077,646</b>	<b>1,697,707</b>	<b>1,049,524</b>	<b>1,629,883</b>	<b>1,246,104</b>	<b>1 MWh = 3.6 GJ</b>	<b>302-2</b>
Canada	1,352,186	1,117,288	973,345	1,125,289	682,376	2023 decrease due to Queensdale divestment in Saskatchewan	
France	679,640	525,612	536,370	426,879	510,171	2020, 2021 and 2022 revised in 2023 to include nuclear	
Netherlands	0	0	0	0	0	Purchased from renewable sources 2017-2023; electricity consumed 2023 = 80,382 MWh	
Australia	587	383	463	476	518		
United States	30,803	45,119	45,273	52,198	51,803		
Germany	11,592	6,853	13,470	24,814	0	Purchased from renewable sources in 2023; electricity consumed 2023 = 9,462 MWh	
Central and Eastern Europe - Hungary and Croatia	0	229	210	227	1,235		
Ireland	2,838	2,224	0	0	0	Purchased from renewable sources 2021-2023; electricity consumed 2023 = 533.8 MWh	
<b>Energy intensity ratio Scope 2: GJ/boe</b>	<b>0.05</b>	<b>0.04</b>	<b>0.03</b>	<b>0.05</b>	<b>0.04</b>		<b>302-3</b>
<b>Energy intensity ratio Scope 1+2: GJ/boe</b>	<b>0.17</b>	<b>0.16</b>	<b>0.16</b>	<b>0.17</b>	<b>0.17</b>	<b>2014+: operated battery energy use/operated battery production</b>	<b>302-3</b>
<b>Renewable energy</b>	<b>2019</b>	<b>2020</b>	<b>2021</b>	<b>2022</b>	<b>2023</b>		
<b>Total amount invested in renewable energy, \$M CAD</b>	<b>\$447</b>	<b>\$568</b>	<b>\$2,890</b>	<b>\$1,502</b>	<b>\$792</b>		
Canada	\$220	\$230	\$2,461	\$696	\$393	Assorted solar including DCET, pump retrofits, leak detection and remote monitoring	
France	\$190	\$270	\$388	\$531	\$371	4 geothermal from produced water projects; hydrogen research (254k Euro)	
Netherlands	\$37	\$68	\$27	\$215	\$29	Harlingen biogas project	
Australia	\$0	\$0	\$0	\$0	\$0		
United States	\$0	\$0	\$0	\$0	\$0		
Germany	\$0	\$0	\$0	\$0	\$0		
Central and Eastern Europe - Hungary and Croatia	\$0	\$0	\$0	\$50	\$0		
Ireland	\$0	\$0	\$14	\$10	\$0		
<b>Renewable energy investment: % of capital expenditure</b>	<b>0.1</b>	<b>0.2</b>	<b>0.8</b>	<b>0.3</b>	<b>0.1</b>		
<b>Renewable energy GHG emissions avoided: tCO2e</b>	<b>24,623</b>	<b>18,993</b>	<b>18,635</b>	<b>19,349</b>	<b>16,925</b>		
<b>Renewable energy generated by source (actual energy content transferred): MWh</b>	<b>77,095</b>	<b>59,330</b>	<b>58,004</b>	<b>59,197</b>	<b>42,641</b>		<b>302-1</b>
Canada	7	11	19	53	35		
France	77,088	59,319	57,985	59,144	42,606	Geothermal from produced water: Tom d'Aqui greenhouses/ Eco-neighborhood Arcachon / Fleur de Vie Vic Bilh / Condorcet	
Netherlands	0	0	0	0	0		
Australia	0	0	0	0	0		
United States	0	0	0	0	0		
Germany	0	0	0	0	0		
Central and Eastern Europe - Hungary and Croatia	0	0	0	0	0		
Ireland	0	0	0	0	0		

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<b>EMISSIONS</b>	<b>2019</b>	<b>2020</b>	<b>2021</b>	<b>2022</b>	<b>2023</b>		<b>GRI</b>
Percentage of total emissions under emissions-limiting regulations	91%	89%	87%	100%	100%	All BUs operate in regions under some form of emissions limiting regulations: e.g. EU ETS, carbon taxes, carbon pricing, methane regulations, etc.	EM-EP-110a.1.4
Scope 1 gross direct GHG emissions: tonne	858,823	793,203	648,337	616,184	559,325		EM-EP-110a.2 305-1
CO <sub>2</sub> Scope 1 emissions (excluding CH <sub>4</sub> and N <sub>2</sub> O): tonne	555,687	531,078	466,472	416,262	379,254	Hydrofluorocarbons, Perfluorocarbons, Sulfur hexafluoride, VOCs, particulates not tracked	305-1
Canada	374,495	354,167	283,298	241,688	226,390		
France	64,419	56,764	65,665	62,414	63,428		
Netherlands	11,403	8,393	6,803	5,035	4,524		
Australia	42,024	50,209	50,627	46,476	21,618		
United States	15,409	13,253	11,949	12,909	16,610		
Germany	4,069	7,262	6,408	6,111	7,916		
Central and Eastern Europe - Hungary and Croatia	2,260	357	1,146	0	0	Shifted to Scope 3 in 2022+ based on GHG Protocol definition of external contractors	
Ireland	41,608	40,673	40,576	41,628	38,768		
<b>Methane: tCO<sub>2</sub>e</b>	<b>302,027</b>	<b>261,051</b>	<b>180,987</b>	<b>199,123</b>	<b>179,328</b>		<b>GRI 11.1.5</b>
Canada	258,500	216,739	144,005	168,345	159,796		
France	8,499	8,752	8,009	6,932	6,919		
Netherlands	4,018	5,215	3,265	2,983	2,305		
Australia	18,601	21,373	18,655	11,112	2,104		
United States	3,981	4,436	4,739	4,684	5,097		
Germany	7,492	3,284	1,763	4,438	2,514		
Central and Eastern Europe - Hungary and Croatia	244	656	1.2	0	0	Shifted to Scope 3 in 2022+ based on GHG Protocol definition of external contractors	
Ireland	692	597	550	628	593		
<b>Methane as a % of total Scope 1 direct GHG emissions</b>	<b>35</b>	<b>33</b>	<b>28</b>	<b>32</b>	<b>32</b>		<b>EM-EP-110a.1.3</b>
<b>Nitrous Oxide (N<sub>2</sub>O): tCO<sub>2</sub>e</b>	<b>1,109</b>	<b>1,073</b>	<b>878</b>	<b>799</b>	<b>743</b>		<b>305-2</b>
Canada	465	505	290	310	262		
France	547	428	462	361	387		
Netherlands	7	28	12	10	6		
Australia	68	90	104	96	54		
United States	16	18	3	19	29		
Germany	1	4	4	4	5		
Central and Eastern Europe - Hungary and Croatia	5	0	3	0	0	Shifted to Scope 3 in 2022+ based on GHG Protocol definition of external contractors	
Ireland	0	0	0	0	0		
Scope 1 GHG emissions intensity, oil and gas production: tCO <sub>2</sub> e/boe	0.019	0.019	0.018	0.017	0.017	operated battery Scope 1 emissions/operated battery production	305-4
<b>Total Scope 2 GHG emissions: tCO<sub>2</sub>e</b>	<b>288,345</b>	<b>247,144</b>	<b>214,778</b>	<b>218,839</b>	<b>148,484</b>		<b>305-2</b>
Canada	269,349	222,010	194,319	192,833	131,804	2023 decrease due to Queensdale divestment in Saskatchewan	
France	6,808	8,628	2,661	6,617	1,750	Change due to updated grid intensity	
Netherlands	0	0	0	0	0	Electricity sourced from 100% renewables in 2023	
Australia	114	73	88	90	73		
United States	10,231	14,425	13,856	15,088	14,808		
Germany	1,575	1,735	3,845	4,200	0	Electricity sourced from 100% renewables in 2023	
Central and Eastern Europe - Hungary and Croatia	0	11	10	11	49		
Ireland	268	262	0	0	0	Electricity sourced from 100% renewables in 2023	
Scope 2 GHG emissions intensity: tCO <sub>2</sub> e per boe	0.006	0.006	0.006	0.006	0.005	operated battery Scope 2 emissions/operated battery production	305-4
Scope 1+2 GHG emissions intensity: tCO <sub>2</sub> e per boe	0.026	0.025	0.023	0.023	0.021	operated battery Scope 1+2 emissions/operated battery production	305-4
Scope 3 Gross other indirect GHG emissions: tCO <sub>2</sub> e	14,188,122	13,226,527	11,631,963	11,682,455	11,350,400	Categories previously publicly reported in CDP Climate annual submissions; added to this report in 2022	305-3
Biogenic CO <sub>2</sub> Scope 3 emissions	0	0	0	0	0		305-3
Purchased goods and services				79,047	45,881		
Capital goods				45,917	44,540		

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Fuel and energy-related activities not included in Scope 1 or 2				197,814	198,263		
Upstream transportation and distribution				109,222	116,689		
Waste generated in operations				6,649	3,330		
Business travel				3,401	2,819		
Employee commuting				1,020	1,020		
Downstream transportation and distribution				55,671	21,204		
Processing of sold products				600,529	527,108		
Use of sold products	12,937,168	12,176,323	10,624,199	10,584,186	10,389,547		305-3
Emissions of ozone-depleting substances	0	0	0	0	0		305-6
<b>NOx: tonne</b>	<b>2,136</b>	<b>1,190</b>	<b>977</b>	<b>1,579</b>	<b>1,417</b>		EM-EP-120a.1 305-7
Canada	1,912	1,011	818	1,193	1,142	From NPRI reporting	
France	51	45	50	46	47		
Netherlands	2	4	2	2	2		
Australia	171	131	104	336	222		
United States	Not Tracked	Not Tracked	Not Tracked	Not Tracked	Not Tracked		
Germany	Not Tracked	Not Tracked	2	2	3		
Central and Eastern Europe - Hungary and Croatia	Not Tracked	Not Tracked	Not Tracked	0	0		
Ireland	Not Tracked	Not Tracked	Not Tracked	Not Tracked	Not Tracked		
<b>SO2: tonne</b>	<b>2,488</b>	<b>2681</b>	<b>2219</b>	<b>1871</b>	<b>1486</b>		EM-EP-120a.1 305-7
Canada	1,800	1,935	1,360	1,059	613	From NPRI reporting, SO2 recalculated based on measured H2S	
France	682	737	851	803	864		
Netherlands	0	0	0	0	0		
Australia	-	1	1	1	1		
United States	5	8	7	8	8		
Germany	-	-	-	-	-		
Central and Eastern Europe - Hungary and Croatia	-	-	-	0	0		
Ireland	-	-	-	-	-		
<b>Volatile Organic Compounds (VOCs) (non-methane): tonne</b>	<b>68</b>	<b>145</b>	<b>621</b>	<b>938</b>	<b>2417</b>	Volatile organic compounds that participate in atmospheric photochemical reactions; excludes carbon monoxide, carbon dioxide and methane	EM-EP-120a.1 305-7
Canada	68	Not Tracked	138	455	1,945	From NPRI reporting	
France	Not Tracked	128	181	225	165		
Netherlands	Not Tracked	13	19	11	11		
Australia	Not Tracked	Not Tracked	Not Tracked	Not Tracked	Not Tracked		
United States	Not Tracked	Not Tracked	278	245	293		
Germany	Not Tracked	4	5	3	3		
Central and Eastern Europe - Hungary and Croatia	Not Tracked	Not Tracked	Not Tracked	0	0		
Ireland	Not Tracked	Not Tracked	Not Tracked	Not Tracked	Not Tracked	Ireland is below the regulatory reporting threshold for NMVOC	
<b>Particulate Matter (PM10): tonne</b>						Airborne finely divided solid or liquid material with an aerodynamic diameter ≤ 10 micrometers	EM-EP-120a.1 305-7
Canada	125	219	9	106	68	From NPRI reporting	
France	Not Tracked	3	2	2	2		
Netherlands	Not Tracked	Not Tracked	Not Tracked	Not Tracked	Not Tracked		
Australia	Not Tracked	8	12	13	9		
United States	Not Tracked	Not Tracked	Not Tracked	Not Tracked	Not Tracked		
Germany	Not Tracked	Not Tracked	Not Tracked	Not Tracked	Not Tracked		
Central and Eastern Europe - Hungary and Croatia	Not Tracked	Not Tracked	Not Tracked	0	0		
Ireland	Not Tracked	Not Tracked	Not Tracked	Not Tracked	Not Tracked		
<b>FLARING AND VENTING</b>	<b>2019</b>	<b>2020</b>	<b>2021</b>	<b>2022</b>	<b>2023</b>		EM-EP-110a.2
Volume of flared hydrocarbon: e3m3	78,962	83,116	66,563	58,260	53,375	Note that all flared volumes are reported, not just continuous flares	11.1.5

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Canada	55,526	62,108	42,144	36,437	27,655		
France	20,123	17,797	20,456	17,377	20,434		
Netherlands	235	236	287	250	168		
Australia	1,351	1,413	1,688	1,722	629		
United States	780	1,379	1,713	2,172	4,067		
Germany	23	31	58	218	313		
Central and Eastern Europe - Hungary and Croatia	763	0	0	0	0		
Ireland	161	152	206	84	109		
<b>Volume of continuously vented hydrocarbon: e3m3</b>	<b>14,222</b>	<b>9,758</b>	<b>10,441</b>	<b>10,064</b>	<b>8,096</b>		<b>11.1.5</b>
Canada	11,424	6,968	8,442	8,622	7,276		
France	729	765	696	634	595		
Netherlands	62	189	66	58	57		
Australia	1,390	1,446	1,158	597	80		
United States	48	45	24	74	45		
Germany	526	275	21	47	13		
Central and Eastern Europe - Hungary and Croatia	11	37	-	-	-		
Ireland	33	33	33	33	31		
<b>Flaring/Venting Intensity based on production: e3m3/boe</b>	<b>0.0021</b>	<b>0.0022</b>	<b>0.0021</b>	<b>0.0019</b>	<b>0.0019</b>	<b>2012-2013: operated battery flaring and venting/operated and financial production 2014+: operated battery flaring and venting emissions/operated battery production</b>	<b>11.1.5</b>
<b>Hydraulic Fracturing</b>						<b>Hydraulic fracturing used in Canadian and US operated production</b>	
Percentage of global production from hydraulic fracturing	42	37	49	51	57	2023: based on 100% fracked US, estimated 83% Canada, and 0% in Europe and Australia	
<b>Percentage of public disclosure of hydraulic fracturing fluids</b>						<b>All fracturing fluids are disclosed through FracFocus in Canada and US</b>	
Canada	100	100	100	100	100		EN-EP-140a.3
United States	100	100	100	100	100	No proprietary blends used	
<b>Enhanced Oil Recovery from Carbon Capture and Storage</b>						<b>Based on non-operated production</b>	
Volume of oil and NGLs produced from CCS ops: bbls/d, equity basis	2,045	2,098	1,753	1,784	1,805	Weyburn Carbon Capture and Storage project: non-operated	
CCS ops percentage of total (global) oil and NGLs produced: equity basis	4	4	4	4	5	Global oil & NGLs 2023 Equity/Financial Control: 39,023 bbl/d Global oil & NGLs 2022 Equity/Financial Control: 45,491 bbl/d Global oil & NGLs 2021 Equity/Financial Control: 46,468 bbl/d Global oil & NGLs 2020 Equity/Financial Control: 52,538 bbl/d	