

# ESG Performance Index

## 2020



Algonquin



Liberty™

# 2020 Algonquin ESG Performance Index

Summary <sup>1</sup>		2020	2019	2018	2017
<b>Environment</b>					
Greenhouse gas (GHG) emissions (Mt CO <sub>2</sub> e)	Scope 1	2,133,528	2,749,976	2,837,896	3,179,210
	Scope 2	50,247	42,830	42,834	41,107
	Intensity (CO <sub>2</sub> e/Revenue)	0.0013	0.0017	0.0017	0.0021
Energy intensity ratios <i>(see page 21)</i>	MWh consumed / MWh generated	1.13	1.29	-	-
	MWh consumed / \$ revenue	0.007	0.009	-	-
	MWh consumed / customer connection	11.66	14.54	-	-
Water and wastewater utilities (ML)	Water delivered	73,130	57,533	59,897	63,992
	Withdrawal	69,033	54,046	68,581	64,586
	Discharge	26,188	-	-	-
<b>Social</b>					
Total number of employees		3,429	2,467	2,265	2,241
Female representation	Board	33.3%	33.3%	33.3%	33.3%
	Executive team	37.5%	37.5%	25%	12.5%
	Leadership roles <sup>2</sup>	32.2%	32.7%	32.1%	26.0%
	Workforce	32.8%	31.5%	32.0%	31.2%
Health & safety	Fatalities	0	0	0	0
	Lost time injury rate (LTIR)	0.04	0.04	0.18	0.41
	Recordable injury rate (RIR)	0.90	1.27	1.76	2.78
Service delivery and reliability	System Average Interruption Duration Index	115.92	218.96	139.20	147.72
	System Average Interruption Frequency Index	1.01	1.36	1.27	1.36
Community investment (\$USD millions)		18.1	19.0	17.9	15.6
<b>Governance</b>					
Incidents of corruption		0	0	0	-
Legal actions for anti-competitive practices <i>(see page 18)</i>		1	0	0	-
Incidents of violations involving rights of indigenous peoples		0	0	-	-
Substantiated complaints received regarding customer privacy		0	0	-	-

<sup>1</sup> See footnote 2 for scope of disclosure.

<sup>2</sup> See pg. 12 and footnote 16 for how Algonquin defines "Leadership roles".

**Operational metrics<sup>3 4 5 6</sup>**

	2020	2019	2018	2017
<b>Utility connections</b>				
Electricity	306,000	267,000	266,000	265,000
Natural gas	371,000	369,000	338,000	337,000
Water and wastewater	409,000	168,000	164,000	160,000
<b>Total</b>	<b>1,086,000</b>	<b>804,000</b>	<b>768,000</b>	<b>762,000</b>
<b>Energy delivered to our customers</b>				
Electricity (GWh) – Regulated (retail)	5,892	6,433	6,524	5,843
Electricity (GWh) – Unregulated (contractual agreements)	5,046	4,749	4,657	4,541
Total electricity (GWh)	10,937	11,182	11,181	10,384
Total electricity (PJ)	39.4	40.3	40.3	37.4
Natural gas (PJ)	45.6	37.9	36.5	32.0
<b>Total (PJ)</b>	<b>85.0</b>	<b>78.1</b>	<b>76.8</b>	<b>69.3</b>
<b>Water and wastewater services provided to our customers</b>				
Water provided (ML)	73,130	57,553	59,897	63,992
Wastewater treated (ML)	9,596	8,850	8,638	8,426

<sup>3</sup> Scope of disclosure: Unless explicitly notes, annual data herein is presented for the fiscal year beginning on January 1 and ending on December 31 of the specified year, and data reflecting a specific point in time is given as at December 31 of the specified year. Unless explicitly noted, data does not include 2020 acquisitions; ESSAL (Chile) closed October 2020, and Ascendant (Bermuda) closed November 2020. Data that does include acquisitions only includes months for which subsidiaries were under Algonquin's operational control.

<sup>4</sup> Operational metrics disclosed on page 3 and 4 include 2020 acquisitions.

<sup>5</sup> Disclosure interpretation: "0" is used when value of data is equal to zero. "-" is used when data is unavailable. Data is left blank when historical data is not applicable.

<sup>6</sup> All monetary values in United States dollars unless otherwise stated.

Operational metrics (continued)	2020	2019	2018	2017
<b>Electricity generation capacity (MW)<sup>7</sup></b>				
Coal <sup>8</sup>	0	213	213	213
Natural gas	1,496	1,496	1,496	1,496
Diesel <sup>9</sup>	140	0	0	0
Wind	1,302	1,101	1,101	1,026
Hydroelectric	134	134	134	134
Solar	258	230	165	90
<b>Total</b>	<b>3,329</b>	<b>3,173</b>	<b>3,108</b>	<b>2,958</b>
Renewable energy total	1,693	1,465	1,400	1,250
Renewable energy portfolio	51%	46%	45%	42%
<b>Net electricity generated (GWh)</b>				
Coal <sup>8</sup>	0	823	841	987
Natural gas	4,635	4,086	4,380	3,901
Diesel <sup>9</sup>	85	0	0	0
Wind	3,833	3,652	3,623	3,660
Hydroelectric	543	567	586	624
Solar	404	349	324	208
<b>Total</b>	<b>9,499</b>	<b>9,477</b>	<b>9,754</b>	<b>9,380</b>
Renewable energy total	4,779	4,568	4,533	4,492
Renewable energy portfolio	50%	48%	46%	48%

<sup>7</sup> MW capacity is based on installed generator nameplate capacity.

<sup>8</sup> Algonquin's sole coal-fired power plant closed in March 2020.

<sup>9</sup> Acquisition of Ascendant introduced 140MW of diesel-powered generation.

Operational metrics (continued)	2020	2019	2018	2017
<b>Customer satisfaction</b>				
JD Power CSAT Score <sup>10</sup>	686	665	642	683
Percentage of customers interviewed	25%	-	-	-
<b>Energy reliability</b>				
SAIDI – System Average Interruption Duration Index (minutes)	115.92	218.96	139.20	147.72
SAIFI – System Average Interruption Frequency Index (rate)	1.01	1.36	1.27	1.36
CAIDI – Customer Average Interruption Duration Index (minutes)	114.77	161.24	109.61	108.62
<b>Electricity transmission and distribution</b>				
Length of transmission lines (km)	2,279	2,287	2,128	2,028
Length of distribution lines (km)	13,616	13,383	11,932	11,696
Transmission losses in percentage	2.90%	2.87%	2.97%	2.98%
Distribution losses in percentage	4.20%	4.43%	4.32%	4.46%
<b>Natural gas transmission and distribution</b>				
Length of transmission lines (km)	20	21	18	18
Length of distribution lines (km)	13,486	12,276	11,641	11,690
Leakage rate in distribution infrastructure	0.0146	0.0098	0.0128	0.0119
<b>Water utility water mains and sewer pipes</b>				
Length of water mains (km)	3,208	3,976	3,594	3,522
Length of sewer pipes (km)	980	1,037	1,034	953

<sup>10</sup> Algonquin's JD Power Customer Satisfaction (CSAT) score is calculated internally based on JD Power CSAT scores for each of Algonquin's individual utilities. Scores are consolidated into an enterprise-wide value based on a customer connection weighting.

Operational metrics (continued)	2020	2019	2018	2017
<b>Cybersecurity</b>				
Substantiated complaints received concerning breaches of customer privacy	0	0	-	-
Identified leaks, thefts, or losses of customer data	0	1	-	-
<b>Economic value generated and distributed (\$USD millions)</b>				
Economic value generated (EVG) - Revenue	1,849.9	1,806.2	1,809.8	1,585.4
Economic value distributed (EVD)				
Operation Costs	740.6	667.9	695.9	650.4
Employee wages and benefits	294.7	259.9	242.8	227.5
Payments to providers of capital	453.1	376.4	329.7	302.3
Payments to government (US and Canada)	5.6	14.5	9.7	8.6
Community Investments	0.8	1.0	1.0	1.8
Economic value retained (regulated)	241.9	199.1	296.4	222.7
Economic value retained (unregulated)	113.1	106.5	89.7	51.8
<b>Total economic value retained</b>	<b>355.1</b>	<b>305.7</b>	<b>386.1</b>	<b>274.5</b>
<b>Community engagement</b>				
Operations with local community engagement	100%	100%	-	-
Payments under community contribution agreements, land rentals, or municipal taxes (\$USD millions)	18.1	19.0	17.9	15.6
Hours volunteered by employees (based on liberty Days used)	3,375	5,499	-	-

**Workforce and social indicators<sup>11</sup>**
**2020**
**2019**
**2018**
**2017**
**Health and safety<sup>12</sup>**
**Work-related injury**

Fatalities from work-related injury	Employees	0	0	0	0
	Non-employees	0	0	0	0
Recordable injuries	Employees	22	31	40	61
	Non-employees	2	3	0	0
Recordable injury rate (RIR)	Employees	0.85	1.27	1.76	2.76
	Non-employees	-	-	0	0
Work-related injuries included:		The primary work-related injuries identified for employees in 2020 are muscle strains, cuts, and abrasions. The primary work-related injuries identified for non-employees in 2020 are arc flash burns and broken bones.			
High-consequence work-related injuries	Employees	1	1	4	9
	Non-employees	2	3	0	0
Lost time injury rate (LTIR)	Employees	0.04	0.04	0.18	0.41
	Non-employees	-	-	0	0
Near miss reporting rate (NMRR)		32.97	27.75	23.85	30.28
Work-related hazards posing high-consequence injury risk:		Identified through job safety analysis and pre-job inspections, primary high-consequence work-related injuries include electrical shocks, falls from heights, and "struck against" injuries. High-consequence work-related injuries included in this reporting period are potential for electric shock or burn and manual work with ergonomic stressors.			
Injury elimination / mitigation strategy:		Algonquin's injury elimination/mitigation strategy follows local action plans and a 5-year occupational health and safety plan following the hierarchy of controls methodology.			
Total hours worked (employees)		5,204,161	4,886,529	4,845,080	4,418,636

<sup>11</sup> Employees in Bermuda and Chile are not represented in any metrics with the exception of total employee count.

<sup>12</sup> Algonquin does not have total hours worked by contractors and cannot normalize OH&S metrics. Algonquin will be seeking to improve OH&S disclosure for contractors.

Health and safety (continued)

2020 2019 2018 2017

Work-related ill health

Fatalities from work-related ill health	Employees	0	0	0	0
	Non-employees	0	0	0	0
Recordable work-related ill health cases	Employees	0	1	0	0
	Non-employees	0	0	0	0

Work-related hazards posing ill health risks: Identified through job safety analysis and pre-job inspections, primary work-related hazards posing ill-health risks include soft muscle injury and chemical exposure. Zero work-related ill health injuries were reported in 2020.

Injury elimination / mitigation strategy: Algonquin's injury elimination/mitigation strategy follows local action plans and a 5-year occupational health and safety plan following the hierarchy of controls methodology.

Workers covered by an EHS management system

Employees and non-employees covered by EHS system	100%	100%	100%	100%
Employees and non-employees covered by internally audited EHS system	100%	100%	100%	100%
Employees covered by externally audited EHS system <sup>13</sup>	5%	5%	2%	5%

<sup>13</sup> Only Algonquin employees are included in this metric.



Employee demographics		2020	2019	2018	2017
<b>Number and geographical location of employees</b>					
Canada	Permanent	500	339	299	276
	Temporary	21	17	14	16
United States	Permanent	2,113	2,103	1,941	1,940
	Temporary	15	8	11	9
Bermuda		341			
Chile		439			
<b>Total Algonquin / Liberty workers</b>		<b>3,429</b>	<b>2,467</b>	<b>2,265</b>	<b>2,241</b>
Algonquin / Liberty employees		72.6%	87.4%	93.9%	96.6%
Non-employees		27.4%	12.6%	6.1%	3.5%
<b>Age cohorts</b>					
Age ranges	< 30 years	11.5%	10.9%	11.3%	9.8%
	30-50 years	52.4%	48.6%	48.1%	47.8%
	> 50 years	36.1%	40.5%	40.7%	42.3%
<b>Average age (years)</b>					
Female employees		45	46	44	45
Male employees		45	46	45	45
<b>All employees</b>		<b>45</b>	<b>46</b>	<b>45</b>	<b>45</b>

Employee demographics (continued)			2020	2019	2018	2017
<b>Gender and employment categories</b>						
Employee function by gender	Office	Female	42.7%	42.2%	43.2%	41.7%
		Male	57.3%	57.8%	56.8%	58.3%
	Field	Female	3.3%	6.7%	6.3%	7.0%
		Male	96.7%	93.3%	93.7%	93.0%
Employee level by gender	Senior managers and above <sup>14</sup>	Female	32.2%	32.7%	32.1%	26.0%
		Male	67.8%	67.3%	67.9%	74.0%
	Junior managers <sup>15</sup>	Female	35.8%	31.3%	31.4%	32.7%
		Male	64.2%	68.7%	68.6%	67.3%
<b>Age and employment categories</b>						
Employee function by age	Office	< 30 years	11.2%	10.2%	9.0%	6.4%
		30-50 years	52.5%	48.5%	46.0%	44.8%
		> 50 years	36.2%	41.3%	45.0%	48.9%
	Field	< 30 years	12.3%	10.1%	7.7%	6.3%
		30-50 years	52.0%	48.1%	48.6%	45.0%
		> 50 years	35.7%	41.8%	43.6%	48.7%
Employee level by age	Senior managers and above	< 30 years	0%	0%	0%	0%
		30-50 years	49.7%	41.4%	38.7%	32.7%
		> 50 years	50.3%	58.6%	61.3%	67.4%
	Junior managers	< 30 years	2.8%	2.7%	2.1%	1.1%
		30-50 years	59.9%	51.1%	48.2%	42.5%
		> 50 years	37.3%	46.2%	49.7%	56.4%

<sup>14</sup> "Senior managers and above" refers to employees in the following job levels: executive, senior vice president, vice president, president, senior director, director, and senior manager.

<sup>15</sup> "Junior managers" refer to employees in the following job levels: manager.

**Employee demographics (continued)**
**2020**
**2019**
**2018**
**2017**
**Collective bargaining agreement coverage**

Percentage of employees who are salaried	73%	71%	69%	68%
Percentage of employees covered by collective bargaining agreements	27%	29%	31%	32%

**Gender and self-identification**

Female	32.8%	31.5%	32.0%	31.2%
Male	67.2%	68.5%	68.0%	68.9%
Self-identified minorities	9.8%	8.3%	6.7%	0.1%
Self-identified veterans	2.0%	1.7%	1.9%	1.3%
Self-identified employees with disability	0.5%	-	-	-

**Gender and employment contract**

Permanent employees	Female	857	778	708	684
	Male	1,756	1,664	1,532	1,532
Temporary employees	Female	13	7	12	3
	Male	23	18	13	22

**Gender and employment type**

Full-time employees	Female	865	779	714	683
	Male	1,766	1,669	1,534	1,546
Part-time employees	Female	5	6	6	4
	Male	8	5	9	4
Casual employees	Female	0	0	0	0
	Male	5	8	2	4

Employee demographics (continued)	2020	2019	2018	2017
<b>Female representation</b>				
All manager positions and above	34.3%	-	-	-
Junior manager positions	35.8%	31.3%	31.4%	32.7%
Senior managers and above	32.2%	32.7%	32.1%	26.0%
Revenue-generating positions	31.9%	-	-	-
STEM-related positions	26.3%	-	-	-
<b>Leadership roles<sup>16</sup> (senior managers and above)</b>				
Female	32.2%	32.7%	32.1%	26.0%
Male	67.8%	67.3%	67.9%	74.0%
Self-identified minorities	8.6%	4.4%	4.8%	0.7%
<b>Executive team</b>				
Members	8	8	8	8
Female	37.5%	37.5%	25.0%	12.5%
Male	62.5%	62.5%	75.0%	87.5%
Self-identified minorities	12.5%	0%	0%	0%
<b>Self-identification of employees working in the United States<sup>17</sup></b>				
Percentage of employees working in the United States	80.3%	-	-	-
Share of racial, ethnic, and indigenous self-identifications	Asian	1.5%	-	-
	Black or African American	2.1%	-	-
	Hispanic	4.7%	-	-
	Caucasian	62.5%	-	-
	Indigenous or Native	1.1%	-	-
	Other	28.2%	-	-

<sup>16</sup> Leadership roles refer to employees in the following job levels; executive, senior vice president, vice president, president, director, and senior manager.

<sup>17</sup> Self-identification declarations are voluntary in Canada.

Employee demographics (continued)		2020	2019	2018	2017
<b>Employee pay ratios</b>					
Pay ratio of CEO total compensation to median employee total compensation		45.17	-	-	-
Pay ratio (highest base salary to median)	Canada	9.50	-	-	-
	United States	3.62	-	-	-
Salary growth ratio (highest base salary to median)	Canada	0.73	-	-	-
	United States	0.61	-	-	-
<b>Employee compensation by gender and level</b>					
Equal pay ratio (female/male) by level	Executive (base pay only)	0.85	-	-	-
	Executive (base pay + other)	0.61	-	-	-
	All managers and above (base pay only)	0.92	-	-	-
	All managers and above (base pay + other)	0.91	-	-	-
	Non-managers (base pay only)	0.75	-	-	-
Equal pay ratio (female/male) by function	Office	0.77	0.77	0.73	0.71
	Field	0.89	0.76	0.80	0.81
Equal pay ratio (female/male) by region	Canada	0.88	0.77	0.75	0.76
	United States	0.8	0.78	0.75	0.73
Women in top 10% of salaries		28.7%	29.7%	26.8%	24.3%
<b>Ratios of entry level wage to local minimum wage (by region and gender)</b>					
Canada	Female	1.76	1.67	1.65	1.99
	Male	1.46	1.62	1.92	2.03
United States	Female	1.26	1.90	1.97	1.96
	Male	2.52	2.47	2.52	2.43

Employee attraction and retention		2020	2019	2018	2017
<b>Hiring rates</b>					
Percentage of open positions filled by internal candidates		20.0%	20.0%	-	-
Total number of employee hires		458	320	274	274
Employees hired by age	< 30 years	0.32	0.31	0.28	0.20
	30-50 years	0.49	0.54	0.50	0.55
	> 50 years	0.19	0.15	0.23	0.24
Employees hired by gender	Female	0.39	0.38	0.38	0.41
	Male	0.61	0.62	0.62	0.59
Employees hired by region	Canada	0.32	0.30	0.24	0.28
	United States	0.68	0.70	0.76	0.72
<b>Turnover rates</b>					
Volunteer employee turnover rate		5.3%	7.0%	-	-
Total employee turnover rate		7.4%	9.7%	11.0%	11.4%
Employee turnover rate by age	< 30 years	11.9%	24.6%	9.2%	6.3%
	30-50 years	39.7%	39.9%	34.0%	42.4%
	> 50 years	48.5%	35.5%	56.8%	51.4%
Employee turnover rate by gender	Female	34.5%	40.9%	30.0%	35.3%
	Male	65.5%	59.1%	70.0%	64.7%
Employee turnover rate by region	Canada	13.9%	18.5%	18.8%	20.0%
	United States	86.1%	81.5%	81.2%	80.0%

**Employee attraction and retention (continued)**
**2020**
**2019**
**2018**
**2017**
**Parental leave**

Employees entitled to parental leave	Female	842	773	704	680
	Male	1,720	1,663	1,529	1,530
Employees that took parental leave	Female	13	6	14	4
	Male	4	4	5	4
Employees that took parental leave and returned	Female	7	3	8	4
	Male	4	2	5	4
Return to work rate	Female	0.54	0.50	0.57	1.00
	Male	1.00	0.50	1.00	1.00
Employees that took parental leave and were retained	Female	6	3	6	2
	Male	4	2	5	3
Parental leave retention rate	Female	0.46	0.50	0.43	0.50
	Male	1.00	0.50	1.00	0.75

**Defined benefit plan**

Salary contributed by employee/employer	Employee	0%	0%	0%	0%
	Employer	4-8%	4-8%	4-8%	4-8%
Level of participation in retirement plans for eligible employees		100%	100%	100%	100%

- Defined benefits plan and other retirement plans:
- Plan's liabilities are met by organization's general resources
  - Separate fund exists to pay for the plan's pension liabilities
  - Scheme's liabilities are 100% covered, estimated on actuarial basis calculated annually

**Employee engagement**

Employee engagement score	73%	68%	70%	62%
Employee response rate	88%	87%	89%	86%

Learning and development		2020	2019	2018	2017
<b>Training</b>					
Average training hours by gender	Female	13.6	12.3	-	-
	Male	14.6	15.0	-	-
Average training hours by level	Senior managers and above	13.5	26.5	-	-
	Junior managers	17.3	18.5	-	-
Average training hours by job function	Office	13.1	13.5	-	-
	Field	17.8	15.8	-	-
Average training hours per employee		14.3	15.0	-	-
Average amount spent per employee on training (\$USD per employee)		1,361	938	-	-
Amount invested in employee training (\$USD millions) <sup>18</sup>		2.1	2.8	-	-
<b>Performance reviews</b>					
Percentage of employees who received performance review		100%	100%	100%	100%
<b>Discrimination Incidents</b>					
Number of incidents of discrimination		8	-	-	-
Number of incidents reviewed by Algonquin		8	-	-	-
Number of incidents no longer subject to action		8	-	-	-

Remediation plans implemented and/or being implemented

Recommendations in response to the incidents included additional workplace civility training, mediation sessions, coaching and workplace assessments. All actions that were recommended were completed.

<sup>18</sup> Investments in employee training only include hard costs (costs directly related to the development and administration of training initiatives).



Governance and policy	2020	2019	2018	2017
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Board of directors
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Experience and background
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Independent directors	8	7	7	7
Average tenure	5.8	8.2	6.8	5.8
Directors with utility/energy experience	8	8	6	6
Directors with governance and risk management experience	8	8	8	7
Directors with senior executive experience	6	6	6	6
<b>Total Board members</b>	<b>9</b>	<b>9</b>	<b>9</b>	<b>9</b>

Demographics
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By gender	Female	33%	33%	33%	33%
	Male	67%	67%	67%	67%
By age	< 30 years	0%	0%	0%	0%
	30-50 years	0%	0%	0%	0%
	> 50 years	100%	100%	100%	100%

Political influence
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Political spending (\$USD)
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Amount spent on lobbying	705,000	511,200	234,145	175,588
Amount spent on local, regional, national campaigns	13,500	20,500	-	-
Amount spent on trade associations	807,397	762,441	697,186	710,149

**Governance and policy (continued)**

2020

2019

2018

2017

**Compliance**
**Indigenous relations**

Incidents of violations involving rights of indigenous peoples	0	0	-	-
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**Human rights**

Operations subject to human rights reviews & impact assessments	100%	100%	-	-
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**Anti-corruption**

Operations assessed for corruption related risks (government relations, conflicts of interest, and foreign interests)	100%	100%	-	-
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Anti-corruption communications & policy training	Employees	100%	100%	100%	-
	Directors	100%	100%	100%	-

Contractors who have received anti-corruption communications	100%	100%	100%	-
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Incidents of corruption and actions taken	0	0	-	-
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Employees who completed annual Code of Business Conduct & Ethics training	100%	99.7%	-	-
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Number of times Ethics Reporting Line was used	10	5	-	-
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Number of times Ombudsperson was contacted	9	12	-	-
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**Anti-competitive**

Legal actions for anti-competitive behavior, anti-trust, and monopoly practices	1 <sup>19</sup>	0	-	-
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**Social and economic compliance**

Total monetary value of significant fines (\$USD millions) <sup>20</sup>	1.0	0	-	-
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Number of non-monetary sanctions	0	0	-	-
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<sup>19</sup> The National Economic Prosecutor's Office in Chile opened an investigation into unregulated businesses operated by any Chilean water utility, examining whether there has been any price manipulation. This case is still under investigation.

<sup>20</sup> On January 5, 2021, FERC issued a public order approving a stipulation and consent agreement between FERC's Office of Enforcement and Algonquin Power Windsor Locks LLC, which included a civil penalty of \$1 million (and a disgorgement amount of \$1,119,073.15).

Environment <sup>21</sup>	2020	2019	2018	2017
<b>Greenhouse gas (GHG) emissions (Mt CO<sub>2</sub>e)<sup>22 23 24 25 26</sup></b>				
<b>Scope 1 emissions</b>				
Power generation - thermal <sup>27</sup>	1,981,730	2,649,076	2,742,513	3,084,242
Power generation - hydroelectric	101	63	121	118
Power generation - solar	44	34	87	0
Power generation - wind	376	159	145	1
Utilities - electric, gas, and water/wastewater	151,277	100,644	95,030	94,849
<b>Total Scope 1 emissions</b>	<b>2,133,528</b>	<b>2,749,976</b>	<b>2,837,896</b>	<b>3,179,210</b>
Owned-vehicle emissions	14,271	10,899	-	-
SF <sub>6</sub> emissions (Mt CO <sub>2</sub> e)	904	995	-	-
<b>Scope 2 emissions</b>				
Power generation - thermal <sup>27</sup>	2,528	422	411	705
Power generation - hydroelectric	139	423	616	631
Power generation - solar	596	540	193	129
Power generation - wind	910	953	1,049	1,041
Utilities - electric, gas, and water/wastewater	46,074	40,492	40,565	38,601
<b>Total Scope 2 emissions</b>	<b>50,247</b>	<b>42,830</b>	<b>42,834</b>	<b>41,107</b>
<b>Scope 1 and Scope 2 emissions</b>				
<b>Total Scope 1 + 2 emissions</b>	<b>2,183,775<sup>28</sup></b>	<b>2,792,806</b>	<b>2,880,730</b>	<b>3,220,317</b>
Total emissions from power generation	1,986,424	2,651,670	2,745,135	3,086,867
Power generation GHG emission intensity (Mt CO <sub>2</sub> e/MWh)	0.2091	0.2798	0.2814	0.3291
Algonquin's GHG emission intensity (Mt CO <sub>2</sub> e/\$USD revenue)	0.0013	0.0017	0.0017	0.0021

<sup>21</sup> All Environment metrics (excluding biodiversity) include 2020 acquisitions of ESSAL (Chile) and Ascendant (Bermuda).

<sup>22</sup> Scope 1 and 2 emissions have been verified by a 3<sup>rd</sup> party. Please see *2020 GHG Verification Report* on Algonquin's website.

<sup>23</sup> Greenhouse gases included in calculations: CO<sub>2</sub>, CH<sub>4</sub>, N<sub>2</sub>O, and SF<sub>6</sub>. 2017 and 2018 do not include SF<sub>6</sub>.

<sup>24</sup> Emissions are calculated using activity data. Emission factors sourced from *Greenhouse Gas Inventories (USEPA 2020)* and *Canadian National Inventory Report (NIR)*.

<sup>25</sup> GHG emissions are calculated through an operational-control approach.

<sup>26</sup> Base year identification: 2017. Comprehensive base year recalculation expected to be performed in 2021 calendar year disclosure.

<sup>27</sup> Includes emissions from open and combined-cycle natural gas-fired generation facilities, coal-fired generation facilities, and diesel and fuel oil-fired generation facilities.

<sup>28</sup> 2020 Scope 1 and 2 emissions represent a reduction of over 1 million metric tons of CO<sub>2</sub>e, achieving Algonquin's 2023 GHG reduction target.

Greenhouse gas (GHG) emissions (Mt CO <sub>2</sub> e) (continued)		2020	2019	2018	2017
<b>Scope 3 emissions</b>					
	Purchased goods and services <sup>29</sup>	54,970	-	-	-
	Capital goods <sup>30</sup>	170,544	-	-	-
	Fuel production and extraction	371,413	373,872	-	-
	Generation of distributed electricity	353,434	-	-	-
Upstream	Production & transmission of distributed natural gas	633,579	-	-	-
	T&D losses for purchased grid electricity	1,710	1,369	-	-
	Transportation and distribution <sup>31</sup>	0	5,897	-	-
	Business travel	3,664	-	-	-
	Employee commuting	2,936 <sup>32</sup>	7,628	-	-
Downstream	Natural gas combustion	3,392,132	1,906,237	-	-
	Investments <sup>33</sup>	2,108,307	127,618	-	-
<b>Other emissions from electricity generation (Mt)</b>					
	NO <sub>x</sub> emissions	493	1,162	1,274	1,360
	SO <sub>x</sub> emissions	10	734	753	918
	Mercury emissions	0.00003	0.0008	0	0
	Particulate matter emissions	100	139	167	171
	Lead emissions	0.0001	0.0001	0	0
	Persistent organic pollutants	0	0	-	-
	Volatile organic compounds	84	93	-	-
	Hazardous air pollutants	5	6	-	-
	Ozone-depleting substances	0	0	-	-
<b>Coal Combustion Residuals (CCR)</b>					
	Percentage of CCRs recovered	0% <sup>34</sup>	45.6%	45.8%	42.6%

<sup>29</sup> Scope 3 purchased goods and services reflect emissions from engineering and construction services.

<sup>30</sup> Scope 3 capital goods reflect emissions from manufactured equipment.

<sup>31</sup> Scope 3 transportation and distribution reflects emissions from freight shipments of coal to Algonquin's Asbury facility (which was retired in 2020).

<sup>32</sup> Scope 3 employee commuting emissions reduced as approximately 65% of employees were working from home due to COVID-19.

<sup>33</sup> Scope 3 investment emissions are from a 7.52% and 12% ownership in Plum Point and Iatan coal power plants respectively, and a 44.2% stake in Atlantica Sustainable Infrastructure PLC. 2019 Scope 3 emissions from investments do not include Atlantica Sustainable Infrastructure PLC.

<sup>34</sup> Retirement of Asbury Coal Facility removed CCR recovery obligations in 2020.

Energy consumption and generation		2020	2019	2018	2017
<b>Internal energy consumption (MWh)</b>					
Non-renewable sources	Gasoline/Petrol	17,369	24,889	-	-
	Diesel	48,282	28,331	-	-
	LPG	5,246	6,090	-	-
	Coal	0	2,758,931	-	-
	Natural gas	10,583,263	9,469,790	-	-
	Fuel oil	164,138	42,717	-	-
Electricity consumption		91,954	70,805	-	-
<b>Total internal energy consumption</b>		<b>10,910,252</b>	<b>12,401,553</b>	-	-
Electricity sold		9,499,073	9,477,091	-	-
Energy intensity ratios	MWh consumed / MWh generated <sup>35</sup>	1.13	1.29	-	-
	MWh consumed / \$ revenue <sup>36</sup>	0.007	0.009	-	-
	MWh consumed / customer connection <sup>37</sup>	11.66	14.54	-	-

<sup>35</sup> MWh consumed and MWh generated applies only to generation assets (regulated and unregulated)

<sup>36</sup> MWh consumed and \$ revenue applies to all Algonquin operations

<sup>37</sup> MWh consumed and customer connection applies to Algonquin's regulated utilities (with 2020 acquisitions pro-rated for operational months)

Energy consumption and generation (continued)		2020	2019	2018	2017
<b>Generation capacity</b>					
Nameplate capacity of generation assets by source (MW) <sup>38</sup>	Coal	0	213	213	213
	Natural gas	1,496	1,496	1,496	1,496
	Diesel <sup>39</sup>	140	0	0	0
	Hydroelectric	134	134	134	134
	Solar	258	230	165	90
	Wind	1,302	1,101	1,101	1,026
	<b>Total generation capacity (MW)</b>	<b>3,329</b>	<b>3,173</b>	<b>3,108</b>	<b>2,958</b>
Energy capacity mix (%)	Coal	0%	7%	7%	7%
	Natural gas	45%	47%	48%	51%
	Diesel <sup>39</sup>	4%	0%	0%	0%
	Hydroelectric	4%	4%	4%	5%
	Solar	8%	7%	5%	3%
	Wind	39%	35%	35%	35%
	<b>Total renewable generation capacity (%)</b>	<b>51%</b>	<b>46%</b>	<b>45%</b>	<b>42%</b>

<sup>38</sup> MW capacity is based on installed generator nameplate capacity.

<sup>39</sup> Acquisition of Ascendant introduced 140MW of diesel-powered generation.

Water and effluents <sup>40</sup>		2020	2019	2018	2017
<b>Water withdrawal (ML)</b>					
Water withdrawal by source	Surface water	9,545	-	-	-
	Ground water	79,486	-	-	-
	Third-party water	9,599	-	-	-
	Other source	164	-	-	-
<b>Total water withdrawal</b>		<b>98,795</b>	-	-	-
<b>Water withdrawal from water stressed regions by source</b>					
Water withdrawal from water stressed regions by source	Surface water	2,861	-	-	-
	Ground water	11,754	-	-	-
	Third-party water	9,537	-	-	-
	Other source	164	-	-	-
<b>Water discharge (ML)</b>					
Water discharge by source	Surface water	12,967	-	-	-
	Ground water	350	-	-	-
	Seawater	7,806	-	-	-
	Third-party water	5,064	-	-	-
<b>Total water discharge</b>		<b>26,188</b>	-	-	-
<b>Water discharge in water stressed regions by source</b>					
Water discharge in water stressed regions by source	Surface water	824	-	-	-
	Ground water	0.005	-	-	-
	Third-party water	459	-	-	-
<b>Water consumption (ML)</b>					
Total water consumption		25,665	-	-	-
Total water consumption in water stressed regions		20,362	-	-	-
<b>Water Utility energy usage</b>					
Water supplied to customers (ML)		73,130	57,553	-	-
Energy used by water utilities (MWh)		81,313	63,120	-	-
Energy intensity of water supply (MWh/ML)		1.11	1.10	-	-

<sup>40</sup> 2019 water and effluent data has been removed due to methodology improvements in 2020. Algonquin believes that the 2020 data more appropriately reflects its baseline water activity.

Waste <sup>41</sup>		2020	2019	2018	2017
<b>Water generation (Mt)</b>					
Waste generated	Hazardous waste	20,797	-	-	-
	Non-hazardous waste	312,827	-	-	-
<b>Total waste generated</b>		<b>333,624</b>	-	-	-
<b>Waste diverted (Mt)</b>					
Hazardous waste diverted by recovery type (offsite)	Reuse	2	-	-	-
	Recycling	9,678	-	-	-
	Other	0	-	-	-
<b>Total hazardous waste diverted</b>		<b>9,680</b>	-	-	-
Non-hazardous waste diverted by recovery type (offsite)	Reuse	1,689	-	-	-
	Recycling	221,672	-	-	-
	Other	0	-	-	-
<b>Total non-hazardous waste diverted</b>		<b>223,362</b>	-	-	-
<b>Waste directed to disposal (Mt)</b>					
Hazardous waste disposed by disposal operation (offsite)	Incineration with energy recovery	23	-	-	-
	Incineration without energy recovery	49	-	-	-
	Landfilling	10,754	-	-	-
	Other	292	-	-	-
<b>Total hazardous waste disposed</b>		<b>11,117</b>	-	-	-
Non-hazardous waste disposed by disposal operation (offsite)	Incineration with energy recovery	549	-	-	-
	Incineration without energy recovery	0	-	-	-
	Landfilling	77,754	-	-	-
	Other	11,162	-	-	-
<b>Total non-hazardous waste disposed</b>		<b>89,465</b>	-	-	-

<sup>41</sup> Waste generation, diversion and disposal data does not include waste generated from offsite contractor-led capital projects for our regulated utilities



Biodiversity		2020	2019	2018	2017
<b>Species impact</b>					
Land developed for pollinators	Acres	32.5	25.1	20.0	-
	Square feet	47,542	26,800	2,000	-
IUCN Red List species and national conservation list species with habitats in areas affected by operations <sup>42</sup>	Critically endangered	2	0	-	-
	Endangered	52	11	-	-
	Vulnerable	13	8	-	-
	Near threatened	2	7	-	-
	Least concern	0	0	-	-
<b>Fleet and compliance</b>					
<b>Fleet</b>					
Vehicle fleet using low emission fuel		44.9%	-	-	-
Number of CNG capable vehicles		279	266	-	-
Volume of CNG gas gallon equivalent used (GGE)		52,700	50,210	-	-
EV chargers installed for employee vehicles		97	-	-	-
Percentage of employees with access to electric vehicle charging at office		51%	-	-	-
<b>Compliance with environmental laws and regulations</b>					
Number incidents of non-compliance with discharge limits		10	-	-	-
Number of violations with environmental laws and regulations		7	-	-	-
Monetary value of environmental fines (\$USD)		674,830	-	-	-
Environmental liability accrued at year end		0	-	-	-

<sup>42</sup> Disclosures aligned with GRI304 include Algonquin's utilities based out of Arkansas, California, Kansas, Missouri, Nevada, and Oklahoma. Integration for Algonquin's remaining service territories is targeted for 2022. 2019 values represent Algonquin's utilities based out of Arkansas, Kansas, Missouri, and Oklahoma.

## Glossary

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### Measurements

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CO <sub>2</sub> e	Carbon dioxide equivalent
GGE	Gasoline gallon equivalent
GWh	Gigawatt hours
km	Kilometer
ML	Megaliter
Mt	Metric ton
MW	Megawatt
MWh	Megawatt hours
PJ	Petajoule
USD	United States dollar

### Abbreviations

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CAIDI	Customer average interruption duration index (in minutes)
CCR	Coal combustion residual
EHS	Environment, health, and safety
EVD	Economic value distributed
EVG	Economic value generated
FERC	Federal Energy Regulatory Commission
GHG	Greenhouse gas
LTIR	Lost time injury rate (per 200,000 hours)
NMRR	Near miss reporting rate
NO <sub>x</sub>	Nitrous oxide
RIR	Recordable injury rate (per 200,000 hours)
SAIDI	System average interruption duration index (in minutes)
SAIFI	System average interruption frequency index (rate)
SO <sub>x</sub>	Sulfur oxides

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# Algonquin

