

ENMAX CORPORATION CORPORATE RESPONSIBILITY 2018 GRI REPORT

May 2019



ENMAX Corporation's (ENMAX) 12th annual Corporate Responsibility (CR) Global Reporting Initiative's (GRI) Report has been prepared with reference to the internationally recognized [GRI Sustainability Reporting Standards](#) and the accompanying [Electric Utility Sector Supplement](#) for industry-specific guidance for sustainability reporting.

This report presents data and summary information, where material and available for disclosure, from January through December 2018. Key performance indicators were reviewed with representation of ENMAX's Board of Directors. The full CR-GRI Report was reviewed by ENMAX's Executive Leadership Team prior to its publication online. Embedded links throughout provide greater detail for the reader. For further context or information please read our [Corporate Responsibility, Direction and Leadership, Reports and Publications](#).

Financial data is presented in Canadian dollars and numerical data is rounded and presented using the metric system unless otherwise stated. A team of subject matter experts from across our organization made every effort to ensure the data is accurate and complete. In some instances, estimates are made based on best-available information and records at the time of writing. ENMAX's Internal Audit team verified key indicators to provide assurance of the methodology and accuracy of the values reported. These key indicators include our community investment, direct and indirect greenhouse gas emissions, employee safety, electric system availability and reliability, and customer satisfaction.

GENERAL DISCLOSURES

1. Organizational Profile				
102-1	Name of the Organization	ENMAX Corporation		
102-2	Activities, brands, products and services	ENMAX Group of Companies		
102-3	Location of organization's headquarters	Calgary Alberta		
102-4	Location of operations	Edmonton and Calgary Alberta, Canada		
102-5	Ownership and legal form	ENMAX Corporation is wholly owned by The City of Calgary		
102-6	Markets served	Alberta		
102-7	Scale of the reporting organization	About us, 2018 Financial Report		
102-8	Workforce profile – active employees	Note 1		
		2018	2017	2016
	Regular full-time	1647	1669	1,714
	Regular part-time	54	59	36
	Limited term full-time	42	62	43
	Limited term part-time	1	11	34
		1,744	1,801	1,827
	On leave (employees on short term leave)	43	46	NA
102-11	Application of the precautionary principle	Our Corporate Responsibility Commitment		

2. Strategy		
102-14	Statement from senior decision-maker	Our Corporate Responsibility Commitment
102-15	Description of key impacts, risks, and opportunities	CR objectives; Materiality; 2018 Financial Report

3. Ethics and integrity		
102-17	Internal and external mechanism for reporting concerns about unethical and unlawful behaviour	Principles of Business Ethics – a policy and an employee training requirements; anonymous 24/7 Safety and Ethics ConfidenceLine (website and phone) and boardofdirectors@enmax.com

4. Governance		
102-18	Governance structure including major Board Committees	Access this link for our governance structure
102-20	Report the executive-level position or positions with responsibility for economic, environmental and social topics, and whether post holders report directly to the highest governance body.	Our President and CEO, and Vice President Public Affairs have accountability for ENMAX's overall corporate responsibility framework and report directly to the Board on such matters. The Executive Vice President Power Services Delivery and COO, along with the Vice President, Safety, Environment and Support Services have accountability for ENMAX's safety, environment, and security reporting to the Safety and Human Resources Board Committee. Access this link for more information
102-21	Mechanisms for consulting stakeholders on economic, environmental and social topics	ENMAX participates in benchmarking and measurement exercises with our peers, leaders in corporate responsibility and with the Canadian Electricity Association. We complete regular surveys with our customers and community and are committed to providing meaningful consultation with stakeholders for proposed facilities
102-22	Number of independent, non-executive directors on the Board and, report the compensation of the highest governance body and its committee	8 of 11 Directors (73%), are independent, non-executive. See current version of our Report on Governance here
102-23	Confirm if Chair of the highest governance body is also an executive officer	No
102-24	Process for determining qualifications and expertise of the Board for guiding ENMAX's sustainability strategy	The Board maintains a skills matrix and uses this matrix to inform Board composition planning. See current version of our Report on Governance here
102-32	Highest committee or position that formally reviews and approves the organization's sustainability report and ensures that all material aspects are covered.	See the mandate in place for the Board of Directors here . The President & CEO and the Executive Team are ultimately accountable for the content of our reports
102-33	Process for communicating critical concerns to the highest governance body.	Principles of Business Ethics; anonymous 24/7 Safety and Ethics ConfidenceLine (and phone) and via email to boardofdirectors@enmax.com .
102-35	Remuneration policies for the highest governance body and senior executives	Refer to Board Governance and Executive Compensation available here
102-38	Ratio of the annual total compensation for the organization's highest paid individual to the median total compensation for all employees (excluding highest paid individual) ¹	20:1

102-39	Ratio of percentage increase in annual total compensation for highest paid individual to the median percentage increase in annual total compensation for all employees (excepting highest paid) ¹	0.3:1
	¹ Indicators 102-38, 39 - values stated are reported within the following parameters: Only employees active throughout 2018 (i.e., no leaves, new hires, terminations or Board members) On-call casual employees excluded.	

5. Stakeholder Engagement		
102-40	Stakeholder groups engaged	The stakeholder groups engaged include, but are not limited to: <ul style="list-style-type: none"> • Customers and potential customers • Employees and potential employees • Community residents, including indigenous communities • Our Shareholder and Board of Directors • Federal, provincial and municipal governments • Non-government organizations, non-profit organizations and special interest groups • Investors and credit rating entities
102-41	Percentage of employees covered by collective bargaining agreements	62 63 64
102-43	Approaches to stakeholder engagement	Materiality and Stakeholder Engagement; Generation Stakeholder Relations; T&D Stakeholder Relations
102-44	Key topics raised through stakeholder engagement and response	ENMAX regularly connects with our stakeholders to ensure our disclosure addresses material issues. Key topics raised are noted here

6. Reporting practice		
102-45	List all entities included in organization's consolidated financial statements/equivalent documents; report where certain entities are not covered by the report	ENMAX Group of Companies , Alberta Canada
102-46	Process for defining report content and boundary	Materiality ENMAX Group of Companies
	Specific limitation on the scope or boundary of the report and basis for reporting on non-wholly owned operations	Information of non-wholly owned operations provided as part of our generation portfolio.
102-47	List all the material aspects identified in the process for defining report content	Materiality
102-48	Explanation of information re-statements	None to report
102-49	Significant changes in the scope, boundary or measurement methods applied in the report	None to report
102-50	Reporting period	January through December 2018
102-51	Date of most recent previous report	2017 CR-GRI report, May 2018
102-52	Reporting cycle (annual, biannual, etc.)	Annual
102-53	Contact point regarding this CR report	cr@enmax.com

102-54	Claims of reporting in accordance with GRI standards	This report has been prepared with reference to the GRI Sustainability Reporting Standards, 2016, and the GRI G4 sector disclosure for Electric Utilities.
102-55	List of GRI Indicators addressed	This document
102-56	External assurance	ENMAX engages the London Benchmarking Group Canada (LBG) to support us in the management, measurement and reporting of impact with respect to our community investment, including employee volunteering and in-kind programs.

Electric Utility Sector Supplement – General Disclosures				
EU1	Installed capacity by source and regime			Note 2
EU2	Net energy output by source and regime			Note 3
EU4	Transmission and distribution infrastructure (km):	2018	2017	2016
	Transmission system lines – aboveground (km)	307	300	283
	Transmission system lines – underground (km)	15	15	14
	Distribution system circuit lines – aboveground	2,303	2,324	2,345
	Distribution system circuit lines – underground	5,982	5844	5580
	Downtown network cable – 13kV & 25 kV	400	378	NA
	Downtown network cable – secondary	744	735	NA
	Number of distribution transformers	53,540	52,644	52,281
	Number of utility poles	61,413	61,699	63,958
EU5	Allocation of CO2e emission allowances: In 2018, ENMAX Energy's compliance obligation for our natural gas-fueled generation portfolio was approximately 200,000 tonnes of GHG. For the compliance obligations arising from our generation portfolio, ENMAX is intending to use a combination of offset credits and contributions to the Climate Change Emissions Management Fund.			

ECONOMIC DISCLOSURE

201	ECONOMIC PERFORMANCE	Management approach Note 5		
201-1	Direct economic value generated and distributed (millions of dollars, and rounded) ²	2018	2017	2016
	Revenue	2,379	1,970	2,801
	Total assets	5,582	5,571	5,366
	Clean revenue ³	36	16	27
	Adjusted EBITDA	435	424	465 ³
	Electricity sold to customers in Alberta (GWh)	19,668	19,977	19,145
	Electricity delivered in Calgary service area (GWh)	9,520	9,500	9,295
	Investment in Calgary's Transmission and Distribution (T&D) System and other assets	228	290	94
	Total Employee compensation	260	253	246
	Community investment	3.8	3.6	3.4
	2018 Dividend payment to City of Calgary	40	48	47
	Results of surveys measuring customer satisfaction (% satisfaction)	86	82	82
	² Refer to our 2018 Financial Report for details and explanation of our 2018 economic performance.			
	³ Clean revenue reported is the total revenue from our wind farms and solar aspects. This is a new metric in our GRI report that ENMAX is reporting in participation with Corporate Knights to develop a detailed open-source industry specific clean revenue taxonomy.			

201-2	Financial implications and other risks and opportunities due to climate change	2018 Financial Report
201-3	The organization's defined benefit plan obligations	2018 Financial Report
201-4	Financial assistance received from government	2018 Financial Report

202	Market presence	2018	2017	2016
202-2	Proportion of senior management hired from the local community	100%	80%	83%
Of the 367 positions filled in 2018, 183 were hired from outside Alberta, with two involving relocation. Of the 12 senior management roles filled (Director Level and above), three were internal promotions, and the remaining were local Calgarians.				

203	Indirect economic impacts			
203-1	Infrastructure investments	Generation and Wires; 2018 Financial Report		
203-2	<p>Significant indirect economic impacts: Public awareness of climate change and greenhouse gases is growing, and ENMAX expects regulation of greenhouse gases to become more restrictive over time. ENMAX also expects tightening restrictions on other air pollutants such as NOx, SO2, and mercury.</p> <p>Current provincial regulations, such as the Climate Leadership Plan and Carbon Competitiveness Incentive Regulation, seek to reduce generation from the worst polluters (coal plants) by increasing their carbon taxes and forcing them to retire before 2030. Recently proposed amendments to coal-fueled and natural-gas-fueled electricity regulations largely align with provincial regulations in requiring coal plants either to retire at the end of their useful life, or December 31, 2029, or achieve the same emissions intensity as natural gas-fueled power plants. The proposed regulations indirectly reward renewables and natural gas facilities by raising coal facilities' variable costs, forcing them to offer their power at higher prices. Besides investing in clean, environmentally friendly generation technology, ENMAX manages climate change regulatory risk by advocating for well-designed and cost-effective policy at the provincial and federal levels.</p> <p>Industry best practice for minimizing air pollution currently involves increasing intermittent renewable generation, backed by clean-burning, flexible, natural gas-fueled generation where no large-scale hydroelectric alternatives are available. Since renewable generation is highly variable, it must be supplemented by flexible generation sources. Power storage will play a bigger role in the future as costs decline. ENMAX also expects demand-side management to increase in the future, especially with the growing penetration of smart meters. However, power storage and demand management are currently too small to replace reliable, flexible natural gas-fueled generation as backup for renewables. Therefore, the best large-scale, economical alternative is clean-burning natural gas generation. ENMAX's wholesale generation portfolio is comprised entirely of wind power and natural gas-fueled generation, so ENMAX is well positioned for Alberta's green future. Refer to our 2018 Financial Report for additional detail.</p>			

205	Anti-corruption	Management approach Note 25		
		2018	2017	2016
205-2	Percentage of employees trained in organization's anti-corruption policies and procedures	Note 25, 27	Note 27	Note 27
205-3	Actions taken in response to incidents of corruption	Note 27	Note 27	Note 27
	Number of incidents of corruption	0	0	0
	Number of legal cases regarding corrupt practices	0	0	0

206	Anti-competitive behaviour	Management approach Note 25		
206-1	Number of significant legal actions for anti-competitive, anti-trust behavior	0	0	0
	Monetary value of significant fines and total number of non-monetary sanctions for non-compliance	0	0	0

<i>Electric Utility Sector Supplement for Economic Disclosures</i>				
EU6	Approach to electricity availability and reliability	Note 6		
EU7	Demand side management programs	Note 7		
EU8	Research and development activity and expenditure on providing reliable electricity and sustainable development	Note 8		
EU10	Planned capacity against projected electricity demand	Note 9		
		2018	2017	2016
EU12	Transmission losses as a percentage of total energy ⁴	0.38	0.44	0.45
	Distribution losses as a percentage of total energy ⁵	2.32	2.38	2.22
	Peak energy consumption (GWh)	9,674	9,835	9,665
<p>⁴ Hourly data on transmission losses is available from the AESO, which aggregates losses across all wire owners' facilities. ENMAX Power's portion of the overall transmission system losses is considerably below the system-wide average because, as an urban utility, ENMAX Power's lines are very short compared to those with more rural operations. The AESO aggregated system-wide average for 2016 was 3.84 per cent (https://www.aeso.ca/grid/loss-factors/).</p> <p>⁵ Based on settlement data as of January 15, 2019 (includes two months initial data, two months interim data, 8 months final readings)</p>				

ENVIRONMENT DISCLOSURE

		Management approach Note 10		
300	Materials			
301-1	Materials used (tonnes) (significant to operations)	2018	2017	2016
	Copper wire	1094	930	1,588
	Aluminum	221	281	269
	Steel	7	33	51
	Transformers	667	358	1,151
	Wood poles	934	1,030	1,157
	PCB – in use, high level (tonnes)	0.0	0.0	0.0
	PCB – in use, low level (tonnes)	0.0	0.0	0.0
	Mineral oil (litres)	256,241	577,307	297,523
301-2	Materials used that are recycled input materials			
	Mineral oil (litres)	111,186	83,889	48,925
	Wooden pole material recovery program	287	305 poles	520 poles
	• Poles scrapped (tonnes)	134	142	264
	• Total recovered (tonnes)	44	83	182
301-3	Total tonnes recovered % (wooden poles)	33%	59%	69%

302	Energy			
302-1	Direct energy consumption⁶			
	Owned generation (GWh)	2018	2017	2016
	Calgary Energy Centre – natural gas	3,766	2,454	1,627
	Crossfield Energy Centre – natural gas	654	267	84
	Cavalier Energy Centre – natural gas	1,550	1,126	1,018
	Shepard Energy Centre – natural gas	11,808	10,948	9,356
	District Energy Centre	79	55	45
	McBride Lake Wind Farm	1.7	1.7	1.23
	Taber Wind Farm	0.1	0.1	0.1
	ENMAX Kettles Hill Inc. Wind Farm	0.9	1.2	1.0
	Corporate Facilities, natural gas (GJ)	63,969	56,913	47,332
	Corporate Facilities, electricity (kWh)	9,774,760	10,085,232	10,428,936
	⁶ Includes electricity and natural gas consumption of our owned generation, office, warehouse and various substations in Calgary.			
302-2	Energy consumption outside the organization (GWh) to operate our facilities	19,668	19,364	19,145
302-4	Reduction of energy consumption (kWh) through rooftop solar at ENMAX Place	45,405.92	51,975.46	53,816.29
EN7	Initiatives to provide energy efficient or renewable energy-based services			Note 11

303	Water			
303-1	Total water withdrawals (m ³)	2018	2017	2016
	Calgary Energy Centre	1,403,147	1,019,810	698,713
	The Calgary Energy Centre's total water volume purchased from The City of Calgary is sourced from the Bow River and is largely used to condense steam. Water not evaporated in the cooling tower is recirculated an average of six times prior to discharge back to The City's sanitary sewer system.			
	Crossfield Energy Centre	9,247	5,396	1,908
	During winter months, the only water used at our Crossfield Energy Centre is potable water for the office facilities. In the summer, the facility uses water to cool the combustion air for the natural gas turbines and enhance power production. After use, the water is stored in an on-site tank, then trucked to a disposal facility.			
	Cavalier Energy Centre	523,103	433,329	330,879
	Water discharged from Cavalier is primarily discharged to a reservoir pressure-maintenance well that aids in the recovery of oil for an upstream oil producing company.			
	Shepard Energy Centre	432	324	325
	The major source of water used to condense steam at our Shepard Energy Centre is reclaimed wastewater, purchased from The City of Calgary, that is transported 14 kilometres through an underground pipeline from the Bonnybrook Wastewater treatment plant , thus eliminating the use of potable water for cooling (see 303-3). Water not evaporated in the cooling tower is recirculated multiple times prior to discharge back to The City's sanitary sewer system.			
	Corporate Facilities, Calgary (metered sites)	39,395	40,156	30,216
303-2	Water sources significantly affected by withdrawal	The majority of the water supply for our Energy Centres is sourced via permit from The City of Calgary from the Bow River; except our Crossfield Energy Centre where the water source is the Red Deer River.		

303-3	Reclaimed water use - The Shepard Energy Centre sources most of its water supply from reclaimed wastewater from the City of Calgary's Bonnybrook Wastewater Treatment Centre to avoid using clean potable water. In 2018 this volume was 5,535,675 m ³ (2017 - 5,623,715 m ³). Water sourced for our Energy Centres is recirculated for reuse at each facility prior to discharge; except the Cavalier Energy Centre, where the water is reused for oil recovery processes.		
304	Biodiversity		Note 12

305	Air Emissions⁷			Note 13
305-1	Direct greenhouse gas emissions (tCO₂e)	2018	2017	2016
	Corporate (incl Fleet, SF6-EPC, Facilities nat. gas)	7,925	7,080	7,311
	Generation (owned and controlled) (includes SF6)	3,253,680	2,699,535	2,211,939
	Total direct greenhouse gas emissions	3,261,605	2,708,616	2,219,250
305-2	Indirect greenhouse gas emissions (tCO₂e)			
	- Corporate Facilities (electricity only)	7,429	7,967	8,239
	- Generation (owned and controlled)	6,005	9,130	13,002
	Total indirect greenhouse gas emissions	13,434	17,097	21,241
	⁷ ENMAX reports GHG emissions in alignment with the World Resource Institute Greenhouse Gas Protocol: A Corporate Accounting and Reporting Standard. ENMAX has determined the company will use the Operational Control Approach for reporting the GHG emissions inventory. As such, ENMAX is reporting Scope 1 and 2 emissions for natural gas and electricity consumption for owned and operated buildings and generation, and have classified non-operated generation facilities as Scope 3, as per below, aligning with the GRI definition for other indirect emissions: emissions that are consequences of the activities of the reporting organization but are generated at sources owned or controlled by another organization.			
305-3	Other relevant indirect greenhouse gas emissions by weight (tCO₂e)	2018	2017	2016
	Keephills (coal) ^{8,9}	--	--	291,894
	Balzac Energy Centre ¹⁰	107,487	37,641	49,022
	McBride Lake Wind Farm ¹¹	1,068	1,067	790
	Total other indirect GHG	108,555	38,708	341,706
	⁸ Coal generation – Alberta. ⁹ At the end of April 2016 ENMAX terminated the Keephills Power Purchase Agreement. ¹⁰ Balzac Energy Centre emissions are reported as 'other relevant indirect' (scope 3), as per the World Resource Institute Greenhouse Gas Protocol: A Corporate Accounting and Reporting Standard Operational Control Approach and reflect 50% ownership and represents 50% ownership. Increase attributed to increased production associated with coal coming offline. ¹¹ The McBride Lake Wind farm is not operated by ENMAX. Since 2014 we have noted these emissions as Scope 3, to align with the GRI definition for other indirect emissions: emissions that are consequences of the activities of the reporting organization but are generated at sources owned or controlled by another organization.			
305-4	GHG emissions intensity (tCO ₂ e/MWH)	0.37	0.35	0.33
305-5	Reduction of GHG emissions			
	Facilities tCO ₂ e of emissions avoided	37.23	42.62	44.13
	Initiatives to reduce greenhouse gas emissions	Environment ; Solar ; District Energy ; Wind Power ; Note 14		
305-7	Nitrogen oxide (NOx) emissions (tonnes)	2018	2017	2016
	- Calgary Energy Centre	264	169	89.2
	- Crossfield Energy Centre	54	24.4	7.9
	- Cavalier Energy Centre	389	270.4	243.4
	- Shepard Energy Centre ¹²	857	735.7	390.8

	- District Energy Centre	4.9	4.0	3.3
	¹² Our Shepard Energy Centre and Calgary Energy Centre apply selective catalytic reduction technology to reduce our NOx emissions.			

306	Effluents and waste			
306-1	Total water discharge (m ³)	2018	2017	2016
	- Calgary Energy Centre	174,141	156,043	132,876
	- Crossfield Energy Centre	185	291	237
	- Cavalier Energy Centre	11,779	8,922	2,382
	- Shepard Energy Centre	1,221,679	1,678,996	1,313,236
306-2	Total weight of waste by type and disposal method			
	- recycled solids (tonnes)	1,087	1,373	1,410
	- recycled contaminated solids (tonnes)	1.8	3.3	3.61
	- solid waste (general and hazardous) to landfill (tonnes)	5.6	3503	1871
	- liquid waste incinerated (L)	646	205	205
	- recycled liquid waste (tonnes)	235,743	224,040	188,178
	- organics composted (%) ¹³	78%	72%	32%
306-3	Total number and volume of significant spills ¹⁴			
	- Total number	0	0	1
	- Total volume (litres)	0	0	559
	¹³ Percentage of the total organics diverted from landfill from our internal waste-reduction program (excludes operational and industrial waste)			
	¹⁴ Significant spills are spills ≥ 500 L in alignment with industry standards (including CEA) for sustainability reporting. At ENMAX all releases to the environment are reported to ENMAX's Environment personnel, who report to Alberta Environment and Parks (AEP) any release in excess of one gram of Polychlorinated Biphenyls (PCB) concentration from in-service equipment or two parts per million or greater of PCB from stored equipment, any release that has the potential to cause an adverse effect, or any release that has the potential to contravene a facility AEP operating approval.			
306-4	Weight of hazardous waste taken out of service and/or destroyed	0.69 tonnes of low-level PCB		
306-5	Water bodies affected by water discharges and/or runoff	At our energy centres, wastewater not evaporated is discharged back into the municipality's sewer system for treatment.		
EN27	Initiatives to mitigate environmental impacts of products and services	CR Objectives, Environment ; Solar ; District Energy ; Wind Power		

307	Environmental compliance	Management approach Note 10		
		2018	2017	2016
307-1	Non-compliance (fines, sanctions) with environmental laws and regulations. Refer to EUS for compliance costs associated with our Generation, including PPAs.	0	0	0

308	Supplier environmental assessment
308-1	Our Supply Management team engages a third-party assessment provider that includes an environment assessment on all vendors that are deemed safety sensitive. The process includes a requirement to submit all supporting documentation for verification. As well, all requests for proposal incorporate ENMAX's environmental responsibilities document. ENMAX's Supply Chain Management Policy states

	that vendor and product selection is based on best value taking into consideration the environmental cost of inputs, manufacturing processes, waste products, disposal, recycling and health and safety concerns. Environmental preferred materials or services will be procured where practical.
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SOCIAL DISCLOSURE

400	Employment	Management approach Note 15		
		2018	2017	2016
401-1	Total number of new employee hires	183	166	116
	Employee turnover rate	11.9%	7.0%	5.1%
401-2	Benefits provided to full-time employees that are not provided to part-time employees	Full time and part time employees receive similar benefits Note 17		

402	Labour Management Relations	Management approach Note 18		
402-1	Minimum notice period(s) regarding significant operational changes	Note 18		

403	Occupational Health and Safety			
403-1	Workers representation in formal joint management-worker health and safety committees	Our Safety Council includes the Field Resources Director, representatives from Overhead, Underground, Revenue Metering, ENMAX Power Services Corporation Field Services, Trouble Response, Field Resource Development, System Control Center, Meter Reading, Contracts and Inspection, Civil Works, Substation and Field Technical Services.		
		2018	2017	2016
403-2	Total recordable injury frequency (TRIF)	0.71	1.00	1.00
	Lost time injury frequency rate (LTIF)	0.13	0.27	0.07
403-4	Health and safety topics covered in formal agreements with trade unions	Topics include interpretation and direction on technical and occupational health and safety operational activities and practices for ENMAX Power Corporation. ENMAX believes that all workplace injuries and illnesses can be prevented through daily commitment to safety from all ENMAX employees and contractors. Learn more here		
	Health & Safety policies and requirements	our People, Safety		

404	Training and development	Management approach Note 19		
		2018	2017	2016
404-1	Average hours of training per year per employee	12	11	13
404-2 / EU14	Programs for skills management that support the continued employability of employees	Note 20		

405	Diversity and equal opportunity	Management approach Note 21					
405-1	Employee diversity (%)	2018		2017		2016	
		Female	Male	Female	Male	Female	Male
		33	67	33	67	34	66
405-2	Salary ratio of men to female (%)	101		101		105	

Electric Utility Sector Supplement – social disclosure				
EU15	Percentage of employees eligible to retire in five years (selected job profiles)			
		2018	2017	2016
	Schedulers / Planners	0	20	57
	Coordinators/Power Lineman / Power Station Electricians	2	3	18
	Maintenance / Utility Workers	0	2	23
	Engineers	2	2	14
	Management	5	7	NA
	Percentage of employees eligible to retire in ten years (categorized job profiles)			
	Schedulers / Planners	7	32	4
	Coordinators/Power Lineman / Power Station Electricians	5	11	10
	Maintenance / Utility Workers	0	5	9
	Engineers	5	4	8
	Management	12	17	NA
EU17	Hours worked by contractor and subcontractor employees involved in construction, operation and maintenance activities (as reported to ENMAX at time of writing; excludes prime contractor hours)	733,680	742,394	728,928
EU18	Percentage of contractor and subcontractor employees who have relevant health and safety training	Note 16		

406	Non discrimination	Management approach Note 24		
		2018	2017	2016
406-1	Total number of incidents of discrimination reported and actions taken	0	1	0

407	Freedom of association and collective bargaining			
	Management approach	Note 15		
407-1	Operations and suppliers in which the right of freedom of association and collective bargaining may be at risk	None		
410	Security practices			
	Management approach	Management approach Note 15 , Note 25		
		2018	2017	2016
410-1	Percentage security personnel and third-party security personnel who receive formal training in human rights issues as they relate to legal rights and responsibilities in the communities in which we operate ¹⁵	100	100	100

	¹⁵ All contracted guards receive training on legal rights and responsibilities as they relate to security work from the Alberta Security College, an accredited in-house department of the Commissionaires. They also have in-house respectful workplace and dealing with persons with psychological handicaps training.	
411	Rights of Indigenous Peoples	Management approach Note 25
411-1	Total number of identified incidents of violations involving rights of indigenous peoples	0

412	Human rights assessment	
412-2	Total hours of employee training	All employees, including our contractors who work side by side with ENMAX employees, are required to complete ENMAX Principles of Business Ethics training within 90 days of hire.

Electric Utility Sector Supplement – employee disclosure				
EU15	Percentage of employees eligible to retire in five years (categorized job profiles)			
		2018	2017	2016
	Schedulers / Planners	0	20	57
	Coordinators/Power line worker/ Power Station Electricians	2	3	18
	Maintenance / Utility Workers	0	2	23
	Engineers	2	2	14
	Management	5	7	NA
	Percentage of employees eligible to retire in ten years (sample job profiles)			
	Schedulers / Planners	7	32	4
	Coordinators/Power line worker / Power Station Electricians	5	11	10
	Maintenance / Utility Workers	0	5	9
	Engineers	5	4	8
	Management	12	17	NA
EU17	Hours worked by contractor and subcontractor employees involved in construction, operation and maintenance activities (as reported to ENMAX at time of writing; excludes prime contractor hours)	733,680	742,394	728,928
EU18	Percentage of contractor and subcontractor employees who have relevant health and safety training			Note 15

413	Local communities	Management approach Note 26
413-1	Operations with local community engagement, impact assessments, and developing programs	Generation Stakeholder Relations; T&D Stakeholder Relations
413-2	Operations with significant actual and potential negative impacts on local communities	Generation Stakeholder Relations; T&D Stakeholder Relations

Electric Utility Sector Supplement – local community disclosure				
EU20	Approach to managing the impacts of displacement	Note 26		
EU21	Contingency planning measures, disaster/emergency management plan and training programs, recovery/restorative plans	Note 26		
414	Supplier social assessment	Note 23		
415	Public policy			
	Management approach	About us; News and Events		
415-1	Public policy positions and participation in public policy development and lobbying.	News Releases		
416	Customer health and safety	Note 26, Note 28		
	Management approach			
416-1	Percentage of significant product and service categories for which health and safety impacts are assessed for improvement	Note 28		
416-2	Incidents of non-compliance concerning health and safety impacts of products and services	0		
417	Product and service labelling			
417-1	Product and service labelling information compliance	Note 28		
		2018	2016	2016
417-2	Product and service information labeling non-compliance incidents	0	0	0
417-3	Total number of incidents of non-compliance with regulations and voluntary codes concerning marketing communications	0	0	0
418	Customer privacy			
	Management approach	Note 28		
		2018	2017	2016
418-1	Number of substantiated complaints re breaches of customer privacy and losses of customer data	0	0	0
419	Socioeconomic Compliance			
	Management approach	Note 28		
419-1	Products and services non-compliance fines	0	0	0
Electric Utility Sector Supplement – product responsibility				
EU23	Programs to improve or maintain access to electricity and customer support services	Your Community; Customer Care; Generation and Wires		
		2018	2017	2016
EU25	Number of public injuries	0	0	0
	Number of public fatalities	0	0	0
EU26	Percentage of population unserved in service area	0	0	0
EU27	Number of residential electricity disconnections	19,841	22,671	22,843

EU28	Power outage frequency (SAIFI) ¹⁶	0.80	0.64	0.59
EU29	Average power outage duration (SAIDI) (hours)	0.54	0.47	0.38
	¹⁶ ENMAX Power uses distribution automation (DA) technology to restore power quickly in the event of an outage. DA uses smart switches to isolate the power line where the outage occurred and then redistributes power from other areas in Calgary quickly. ENMAX Power estimates it saved 5.7 million customer outage minutes in 2018 (1.8 million in 2017). Electricity reliability is a key measure of our industry's success and is a high priority at ENMAX. Our Corporate Responsibility objective for community is that our SAIDI/SAIFI results remain in the top quartile for our industry across Canada. In 2018 we met this objective.			
EU30	Average plant availability factor by energy source and by regulatory regime ¹⁷	2018	2017	2016
	Calgary Energy Centre combustion turbine	90.7	92.2	92.6
	Calgary Energy Centre steam turbine	90.4	92.1	92.6
	Crossfield Energy Centre combustion turbine G1	98.8	74.7	97.5
	Crossfield Energy Centre combustion turbine G2	98.6	99.1	98.0
	Crossfield Energy Centre combustion turbine G3	97.4	99.1	85.7
	Cavalier Energy Centre combustion turbine GTA	98.2	99.0	97.8
	Cavalier Energy Centre combustion turbine GTB	98.4	96.4	97.4
	Cavalier Energy Centre steam turbine	96.7	97.9	97.4
	Shepard Energy Centre combustion turbine G1	93.2	97.1	90.3
	Shepard Energy Centre combustion turbine G2	91.4	97.2	88.1
	Shepard Energy Centre steam turbine	92.1	99.4	97.2
	Overall	93.4	95.3	90.8
	¹⁷ Plant availability includes planned maintenance and forced outages.			

NOTES TO THE 2018 GENERAL DISCLOSURES

1. Workforce Profile – active employees¹⁹

	Full-time Regular	Part-time Regular	Total Regular	Full-time Limited Term	Part-time Limited Term	Total Limited Term	Total All
IBEW	418	0	418	27	0	27	445
CUPE	574	48	622	8	0	8	630
MP	647	6	653	7	1	8	661
Board of Directors ²⁰	8	0	8				8
Total - all	1647	54	1701	42	1	43	1,744
Percentage of Total - male	69%	17%	68%	74%	100%	74%	68%
Percentage of Total - female	31%	83%	32%	26%	0%	26%	32%
Number of Employees covered by a Collective Bargaining agreement: 1,075							
Percentage of Employees covered by a Collective Bargaining agreement: 62%							

¹⁹Note: Active includes employees on Short Term Disability leave

²⁰Board of Directors count does not include City of Calgary council members

2. 2018 Installed Capacity by source and regime

Facility	Installed Capacity (MW)	Owned and Controlled (MW)	Fuel	Control detail (%)	Regime
Calgary Energy Centre	320	320	natural gas	100%	Alberta
Crossfield Energy Centre	144	144	natural gas	100%	Alberta
Cavalier Energy Centre	120	120	natural gas	100%	Alberta
Balzac Energy Centre ²¹	120	60	natural gas	50%	Alberta
Shepard Energy Centre	860	645	natural gas	75%	Alberta
McBride Lake Wind Farm	73	73	wind	100%	Alberta
Taber Wind Farm	81	81	wind	100%	Alberta
Kettles Hill Wind Farm	63	63	wind	100%	Alberta
Total²²	1,781	1,506			

²¹Not operated by ENMAX

²² 11% of Alberta's installed generation 16,157 MW

3. 2018 Net energy production (MWh) by source

Facility	2018	2017
Calgary Energy Centre	1,743,944	1,135,014
Crossfield Energy Centre	233,239	94,299
Cavalier Energy Centre	622,883	435,033
Balzac Power Station	244,492	169,954
Shepard Energy Centre	5,707,382	5,314,341
McBride Lake Wind Farm	207,122	214,599
Taber Wind Farm	211,704	228,694
Kettles Hill Wind Farm	187,028	193,486
District Energy Centre	8,412	--
Total	9,166,206	7,785,420

4. Corporate Memberships and Associations

ENMAX is a member of the [Canadian Electricity Association](#) (CEA), a national forum whose mission is to be the voice for safe, secure and sustainable electricity for all Canadians. As a member of the CEA's Sustainable Electricity Steering Committee, we signed off on the [CEA's Sustainability Electricity Program's](#) Sustainable Development – Corporate Responsibility Policy signifying the industry's collective membership commitment to the sustainability vision, goals, principles and aspirational performance targets.

ENMAX is also a founding member and contributor of the [Alberta Energy Efficiency Alliance](#) (the AEEA). The AEEA's mandate is to reduce the barriers to the adoption of energy efficiency technology and activities. Activities include supporting municipalities in their assessment of energy efficiency options for their communities, as well as participating in a citizen's dialogue program on energy efficiency knowledge and awareness. Other associations to which ENMAX belongs include, but are not limited to:

Alberta Electric Utility Safety Association	Clean Air Strategic Alliance
Alberta One-Call Corporation	Conference Board of Canada
Association of Professional Engineers and Geoscientists of Alberta	Decentralized Energy (DE) Canada
Building Owners and Managers Association	Edison Electric Institute
Calgary Chamber of Commerce	Edmonton Chamber of Commerce

Calgary Construction Association	Energy Policy Institute of Canada
Calgary Economic Development	Energy Sector Sustainability Leaders Initiative
Calgary Emergency Management Agency	Human Resources Institute of Alberta
Calgary Region Air Shed Zone	Independent Power Producers' Society of Alberta
Canadian District Energy Association	Joint Utility Safety Team of Alberta
Canadian Solar Industry Association	London Benchmarking Group and
Canadian Wind Energy Association	Imagine Canada

NOTES TO THE MATERIAL DISCLOSURES

The disclosures that follow describe our overarching management approaches related to the material aspects associated with our economy, environment, labour practice, decent work, human rights, society and our product. Details of our corporate governance and direction are located [here](#).

ECONOMIC

5. Management approach

Organizational responsibility - The Executive Vice President (EVP), Chief Financial Officer is responsible for ENMAX's financial management and reporting, enterprise risk management, treasury, internal controls and auditing, and taxation matters.

Economic performance – To meet the energy needs of our customers and provide dividends to our Shareholder, ENMAX must be financially strong. We define and manage our economic value not only in terms of our financial performance, but also in how we run our business and the impact of our activities on the communities where we operate. We know that providing cost-competitive electricity is good for our customers, which is good for our business. We also generate value through the jobs we create, the materials we purchase, our community investment and the annual dividend we pay to our Shareholder, which in 2018 was \$40.0 million.

ENMAX Corporation is rated BBB+ with a stable outlook by S&P Global. Dominion Bond Rating Service has assigned a credit rating of A (low). These ratings provide reasonable access to debt capital markets. For details on our financial performance including associated risks and impacts please refer to our [2018 Financial Report](#).

Investment in our community – Our community investment program helps create positive social change by aligning our strengths and core values to refine or improve the neighbourhoods we live and work in across Alberta. As a corporation we engage in multi-year commitments with key agencies who assist vulnerable Albertans. ENMAX employees volunteer their time to conduct energy efficiency workshops with clients of our partner agencies to help them understand their energy bill and learn tips to reduce their energy use.

We are committed to enhancing energy literacy in communities and organizations across Alberta through supporting energy literacy education in both the primary and secondary school systems, and sponsoring scholarships at the post-secondary level. By helping to cultivate informed electricity stewards, we hope to change how electricity is consumed and educate students about the possibilities in our industry today and into the future.

ENMAX engages the [London Benchmarking Group Canada \(LBG\)](#) to review our community investment performance. LBG's assessment includes ENMAX's cash donations, donations in kind and employee volunteer time, resulting in a more holistic view of our overall community contribution. According to LBG criteria, ENMAX invested approximately \$3.8 million in Alberta communities in 2018. Examples of our community investment partners include:

Focus area	Partner
<i>Supporting grassroots initiatives that bring value to Alberta communities</i>	Calgary Stampede, Calgary Zoo, Beakerhead, Federation of Calgary Communities, Northern Alberta International Children's Festival, Calgary Folkfest, Minor Hockey – Alberta, Girls Hockey – Calgary, Lethbridge, Red Deer, Canadian Mental Health Association of Calgary, Missing Children Society of Canada, Edmonton and Calgary Pride Festival
<i>Assisting Albertans facing hard times to meet their basic needs and plan for the future.</i>	United Way Calgary and Edmonton, Aspen Family and Community Network Society, Distress Centre Calgary, Calgary Drop In Centre, Inn from the Cold, Bissell Centre Edmonton, Canadian Red Cross, Boys and Girls Club, Children's Cottage
<i>Enabling communities and organizations to increase energy literacy through education</i>	Inside Education, Relay Education, Education Matters, Lethbridge College, SAIT, University of Calgary, Bow Valley College, City of Calgary
<i>Encouraging employees to give their time to causes that are important to them</i>	United Way Calgary, Edmonton and area, Alberta Children's Hospital, Dream Centre Radiothon, Women In Need Society, Calgary Drop-in Centre, Aspen Family and Community Network Society, Lions Festival of Lights, Canadian Blood Services, Brenda's House – Calgary.
<i>In kind donations Lights, tickets, gift baskets</i>	United Way (Calgary, Edmonton, Lethbridge), Distress Centre Calgary, Calgary Food Bank, Kids Up Front, Wellspring, Big Brothers Big Sisters, Minor Hockey Alberta

We believe in measuring our impact and creating value in our community contributions and achieved our 2018 CR objective for Community Investment to ensure the percentage of our pre-tax profits invested in charitable and non-profit organizations meets the Imagine Canada criteria of one per cent over a five-year rolling average.

6. Long-term and short-term electricity availability and reliability

ENMAX Energy actively manages assets to match generation to consumption volumes and has peaking facilities that allow quick reaction to unexpected supply and demand factors.

ENMAX Power makes the reliability of the electrical system for Calgarians, its priority. Field crews are on call 24 hours a day to resolve outages, whether a result of wind storms or downed power lines. Our customers are able to contact us online or via telephone for any outage or billing inquiries. And while weather conditions play a role in power service interruptions, our commitment to consistently maintain and upgrade the electricity infrastructure in Calgary is exemplified by our CR Objectives. We track our reliability performance by monitoring the average number of power service interruptions of one minute or more experienced by a customer in a year (System Average Interruption Frequency Index - SAIFI) and the average duration of a power service interruption experienced by a customer throughout a year (System Average Interruption Duration Index - SAIDI). We maintained our top quartile rating for reliability as measured by the CEA member utilities SAIDI and SAIFI in 2018.

7. Demand side management programs

Demand side management is the modification of consumer demand for energy use intended to encourage consumers to use less energy during peak usage hours or to move energy use to off-peak times such as nighttime and weekends.

Through our Energy Management Office, ENMAX Energy has been active in supporting energy efficiency and demand side management projects with key industrial and commercial customers such as The City of Calgary and The City of Edmonton. Our efforts include advanced metering to help these customers better understand how and where electricity is used, as well as technology upgrades such as LED lighting on roadways in Calgary, solar electricity generation and combined heat and power (CHP).

8. Research and development aimed at reliable electricity and sustainable development

Electric Vehicle Fleet Project - ENMAX will pilot electric vehicle technology on two medium-duty trucks within our fleet. This first-in-Canada demonstration will test the technology in the operational environment of a utility and in all weather conditions, including harsh winters. The pilot, which will run until December 2021, will test and analyze both performance and capabilities and will involve the use of two overnight chargers and two high-speed chargers. The equipment is expected to help reduce 8.5 to 10.5 tonnes of GHG emissions over the duration of the pilot. Learn more [here](#).

Midstream Industrial Solar + Storage Project – By combining on-site solar generation with a lithium-ion battery, ENMAX will demonstrate the ability to reduce consumption of grid electricity and smooth out the demand profile at midstream energy facilities. Using Keyera Corporation’s Rimbey Gas Plant as the site of the demonstration, this project aims to provide proof-of-concept that could be replicated at other industrial facilities. Learn more [here](#).

Crossfield Hybrid Turbine Project – ENMAX participated in the Emissions Reduction Alberta (ERA) Industrial Efficiency Challenge, and from a field of 93 submissions, the Crossfield Hybrid EGT Project was selected to receive funding for its potential to significantly reduce greenhouse gas emissions in the province. With the addition of a new 10 MW, 4.3 MWh lithium ion battery to the existing natural gas turbine at our Crossfield Energy Plant we can provide electricity to Albertans at near-zero emissions. Learn more [here](#).

Next Generation Smart Grid Technology - Natural Resources Canada, through its Green Infrastructure Program is investing in a next-generation smart grid project with ENMAX Power on its secondary network to research the safe transmission of excess renewable electricity generated by our Calgary customers back to the electricity grid. The project will inform conditions for future small-scale clean energy resources in urban settings, ultimately lowering greenhouse gas emissions and removing barriers for customers to adopt renewable energy. Learn more [here](#)

Alberta Carbon Conversion Technology Centre - The NRG COSIA Carbon XPRIZE is challenging the world to find new ways to address CO₂ emissions through carbon conversion. In early 2017, the 860-megawatt Shepard Energy Centre (Shepard) in southeast Calgary was announced as host site for the Alberta Carbon Conversion Technology Centre (ACCTC) and the test site (providing the flue gas) for the natural gas track of the prestigious \$20 million [NRG COSIA Carbon XPRIZE](#), a global competition to develop breakthrough technologies that convert carbon dioxide (CO₂) into valuable products. [ACCTC](#) opened at the Shepard in May 2018.

9. Planned capacity against projected electricity demand

The [Shepard Energy Centre](#) (Shepard), our joint venture with Capital Power, in southeast Calgary is Alberta's largest natural gas-fuelled power facility. Shepard features the latest technology and was internationally ranked as one of the [top natural gas-fueled plants](#) in September 2015. It provides 860 megawatts (MW) of natural gas-fuelled energy to the provincial power grid, while producing about half the carbon emissions per MW of a conventional coal-fired plant in Alberta. Learn more [here](#).

The [Calgary Energy Centre](#) and [Crossfield Energy Centre](#), ENMAX Energy's existing natural gas-fueled facilities, lie on the outskirts of Calgary. Together, these facilities have the capacity to produce 464 MW. The Calgary Energy Centre is a combined-cycle generation facility, and the Crossfield Energy Centre is a peaking facility designed to produce electricity for Alberta's grid during high power consumption periods. By locating these facilities close to where power is most needed, they help make Alberta's system more efficient.

Two additional natural gas-fuelled electricity generation assets, the [Cavalier Energy Centre](#) and [Balzac](#) support our strategy of having flexible, efficient gas-fuelled generation plants to meet the growing electricity needs of our customers across Alberta.

ENVIRONMENT

10. Management approach

ENMAX's [Environment Policy](#) recognizes the importance of operating in an environmentally ethical and trustworthy manner and practicing sound environmental management. As an integrated electric utility, ENMAX recognizes that its operations have the potential to cause environmental impacts which should be minimized through responsible management practices that are intended to foster environmental sustainability. The main commitments of the policy are summarized in a PACCT to protect the environment:

- Prevention of pollution
- Awareness of environmental Policy and Environmental Aspects
- Compliance with environmental laws, regulations and policies
- Continual improvement of the management system and overall performance; and
- Training to ensure competence and minimize Environmental Impacts.

Organizational responsibility - Our EVP, Power Supply and Delivery, Chief Operating Officer, supported by the Vice President (VP) Safety, Environment and Support Services, is responsible for our Environment Policy, its ongoing interpretation and its integration into day-to-day practices. Business units and their respective executive team leaders are responsible for conducting their operations in accordance with the policy.

Training and awareness - A mandatory corporate-wide General Environmental Awareness Training is mandatory for all employees to complete bi-annually. The training reviews how our operations interact with the environment and how we mitigate adverse impacts. Our field staff regularly complete a more comprehensive environmental training that covers waste management, spill response, working around water bodies, avian nest management and other environmental aspects.

Monitoring and follow up - One of the critical ways ENMAX undertakes environmental due diligence and manages our overall environmental performance is through the continual strengthening of our Safety and Environment Management System. The management system sets out our Environment Policy and provides a framework to ensure that management of environmental objectives, risks and issues is systematically planned, implemented, checked for effectiveness and improved. Since 2002, ENMAX has maintained alignment with the International Standards Organization (ISO) standard 14001.

11. Initiatives to provide energy efficient or renewable energy-based services

Energy Efficiency - [My Energy IQ™](#) is an ENMAX Energy initiative to assist our energy plan customers in their efforts to be more energy efficient and provide the option of purchasing renewable energy certificates (RECs) or carbon offsets within their retail energy plans. The program provides energy saving insights, tools and tips to our retail customers. Similarly, any business on a retail plan has the option of purchasing [EcoLogo](#) Renewable Energy Certificates that support renewable energy initiatives plus the option of selecting [a green add-on](#) for natural gas that will contribute to the purchase of carbon offsets. To encourage energy savings ENMAX Energy also provides tools and tips [here](#).

We have been investing in a cleaner future for more than a decade and pioneered investment in energy efficient systems that use renewable or waste energy, including our [District Energy Centre](#). [Combined heat and power \(CHP\)](#), also commonly referred to as cogeneration, is a way to increase the efficiency of power plants. Standard power plants effectively use just 40 per cent of the fuel they burn to produce electricity while sixty per cent of the fuel used in the electric production process is wasted up the smokestack. The waste heat from a power plant can be used to heat buildings in a surrounding area through a district energy system. CHP is only possible when there is an area near the plant that has a need for the heat – a downtown area, a college campus or an industrial development.

ENMAX partnered with The City of Calgary to establish a cogeneration system along the north east exterior of the Village Square Leisure facility. This is the first CHP unit to be integrated with a recreation facility in Calgary. We continue to work with The City of Calgary to integrate CHP systems like the one at Village Square with other leisure facilities. Read more [here](#) on The City of Calgary's recreation page.

One hundred per cent of the electricity used for The City of Calgary's Light Rail Transit (LRT) system is provided through a power purchase agreement by our wind farms. This is the only LRT system in North America that uses wind-generated electricity.

Renewable Energy - We are committed to supporting Albertans in increasing renewable energy generation by providing turn-key solutions for both residential and commercial customers whose projects qualify under Alberta's micro-generation regulation.

ENMAX Energy's [solar](#) options allow customers to select any number of solar modules for their home or business to meet up to 100 per cent of their annual electricity needs. Commercial solar offerings allow businesses to take advantage of rooftop solar photovoltaic under innovative lease and purchase options.

In 2013 we installed 216 solar panels that cover 8,160 square feet of roof on our corporate head office, ENMAX Place, as part of a micro-generation pilot program. Our 50kW solar photovoltaic array, one of the largest grid-connected systems in Alberta at the time, is helping us learn more about larger scale systems

and the design, permitting and installation work that goes into them. In 2018 this solar array provided approximately 45,400 kWh of renewable energy to ENMAX Place.

As microgeneration continues to expand in Alberta, with solar being the largest source of total installed capacity at 39 MW (refer to [AESO](#) report), ENMAX Energy continues to maintain our position as one of Alberta’s leading solar retailers, with over fifty percent of the province’s grid-connected solar. One great example is our work with the Town of Raymond to help them meet their objective of 100 per cent of its operational electricity needs through solar power. For additional information follow this [link](#).

We also have a strong portfolio in [wind energy](#), owning and operating two wind farms, Taber Wind Farm and ENMAX Kettles Hill Inc. Wind Farm, and 50 per cent interest in the McBride Lake Wind Farm, all delivering renewable power to the grid. For additional information follow this [link](#).

12. Biodiversity

Avian management program - Birds often use power poles or substation equipment for perching, roosting and nesting. This creates risk of fire and power outages, as well as harm to the birds themselves. ENMAX works to protect birds while helping to ensure the reliability of our services by identifying high risk areas and installing measures to prevent nesting.

To prevent osprey from using double cross arm structures as nest sites, specially designed nesting deterrents are installed prior to the breeding season. In addition, ENMAX maintains and monitors 20 nesting platforms within Calgary. Learn more [here](#).

Nesting deterrents designed and tested to protect Intellirupter switches have been installed on 25 switches across the city to prevent birds such as hawks and crows from nesting.

Training courses and detailed procedures are provided to field crews to guide their actions when birds and or nests are discovered. Environmental Specialists are on call to help identify the species of bird and recommend the appropriate action. Nests that are inactive can be removed in some situations. Active nests found on power poles, substations and construction sites are protected and monitored until the young birds leave the nest. Follow [this link](#) for more information on environmental programs.

13. Total direct and indirect greenhouse gas (GHG) emissions²³

		2018	2017	2016
CORPORATE GHG (tCO2e)				
Direct	Fleet/Vehicles	3,494	3,607	3,518
	SF6	1,155	559	1,369
	Corporate Facilities – natural gas	3,276	2,914	2,424
Indirect	Corporate Facilities – electricity	7,429	7,967	8,239
Total Corporate GHG (tCO2e)		15,354	15,048	15,550

GENERATION (Owned, Controlled) GHG (tCO2e)				
Direct	Calgary Energy Centre	683,390	439,215	292,766
	Crossfield Energy Centre	119,185	48,423	14,682
	Cavalier Energy Centre	279,218	202,783	183,126

	District Energy Centre	16,412	9,792	8,061
	Shepard Energy Centre	2,155,475	1,999,322	1,713,304
	SF6	0	0	0
Indirect	Calgary Energy Centre	1,227	4,484	7,856
	Crossfield Energy Centre	2,081	2,663	2,719
	Cavalier Energy Centre	9	77	264
	District Energy Centre	721	872	829
	Shepard Energy Centre	1,326	210	643
	Kettles Hill Wind Farm	547	736	630
	Taber Wind Farm	94	88	61
Total Generation GHG (tCO2e)		3,259,685	2,708,665	2,224,941
Total Corporate and Generation (owned, controlled) GHG (tCO2e)		3,275,039	2,723,713	2,240,491

²³ENMAX reports GHG emissions in alignment with the *World Resource Institute Greenhouse Gas Protocol's* Operational Control approach for reporting the GHG emissions inventory. As such, ENMAX is reporting Scope 1 and 2 emissions for natural gas and electricity consumption for owned, controlled buildings and generation.

14. Initiatives to reduce greenhouse gas emissions

With the termination of our Battle River and Keepphills Power Purchase Arrangements our fleet is only comprised of renewable wind farms and modern natural gas-fuelled generation. This supports our CR Objective for environment to reduce the GHG emissions footprint of our generation portfolio. A timeline summary of removing coal-fired electricity generation from our portfolio is provided [here](#).

Refer to [Note 8](#): Research and Development Activity for additional initiatives we took towards reducing GHG emissions associated with our business.

LABOUR PRACTICES, DECENT WORK AND HUMAN RIGHTS

15. Management approach

ENMAX's [Principles of Business Ethics](#) policy provides a framework to cultivate a safe, respectful and ethical workplace and ensure employees operate with integrity when purchasing goods and services and conducting business. In addition, ENMAX has policies and practices related to employee relations, including: Occupational Health and Safety, Safe and Respectful Workplace, Alcohol and Drug Standard, Progressive Discipline Standard and Learning, Development and Training Standard.

Organizational responsibility - Our VP, People and Culture, Chief Human Resources Officer is responsible for ENMAX's human resource functions encompassing labour practices, decent work and human rights matters, including collective bargaining. Executive leaders of each business unit are directly responsible for implementation of policies and practices related to these areas supported by Human Resources Business Partners. Human rights considerations related to procurement practices are the responsibility of all Executive Team members, supported by the VP, Municipal Partnerships and Supply Chain Management. Our EVP Power Supply and Delivery and Chief Operating Officer, with support of the VP Safety, Environment, and Support Services have organizational responsibility for employee safety and security, including field personnel and operating facilities.

Employment - ENMAX's standard for compensation ensures that we are competitive within the market in which we work and compete for talent. Overall, we target our level of pay to be at the median (50th

percentile); however, individual compensation levels may vary above or below this level based on qualifications and experience. ENMAX believes benefit programs are a significant part of an employee's overall compensation and we offer competitive, innovative options that provide employees with meaningful choices and flexibility.

Each employee participates in performance measurement, goal setting and evaluation. Development goals are also included within this process to help employees build the skills and experience they need for personal and career development. Best practices and standards for employee compensation, benefits and programs are continually monitored, and our programs are improved as necessary to maintain and retain our highly skilled workforce. All employees participate in mandatory training about safety, environment, respectful workplace, Code of Conduct and business ethics.

Occupational health and safety – At ENMAX, safety is a core value and our highest priority. Our ultimate objective is to have an injury free workplace. This is aligned with the City of Calgary's 2020 Sustainability Direction for a safe and resilient community.

We measure our Total Recordable Injury Frequency (TRIF) rate to track our safety performance and we follow the [CEA's](#) standard for recordable injury classification. TRIF represents the number of recordable injuries per 100 employees on an annualized basis and includes injuries that result in medical treatment beyond first aid, restricted work arrangements and/or time away from work. The lower the TRIF, the better our safety performance. ENMAX rewards employees for their role in keeping ENMAX safe, with TRIF comprising one of three Corporate measures for our Annual Variable Pay Program.

We believe all injuries can be prevented and we aim for continuous improvement in our safety performance. In 2018, our TRIF of 0.71 reflects 11 recordable injuries. This is our third best annual performance of the past decade. This is a positive trend and is reflective of our proactive safety culture where we identify and manage hazards before they lead to injuries.

Contractor and subcontractor health and safety training – It is an ENMAX standard that all contractors and subcontractors receive training on our: location emergency procedures, Alcohol and Drug Standard, Distracted Driver Standard, incident reporting standard, applicable safe work procedures, general safety responsibilities and specific hazards and controls. In addition, ENMAX ensures all contractors and subcontractors are competent to perform within their hired job scope.

Diversity and equal opportunity - We value the backgrounds, experience, viewpoints and talents of our employees, and recognize the diversity of our employees is critical to our business success. We do not discriminate in hiring and employment practices on the basis of race, gender, culture, origin, age, religion, marital or family status, physical disabilities or sexual orientation. Our Principles of Business Ethics policy and Safe and Respectful Workplace standard illustrate our commitment to a workplace environment that is based on safety, trust, honesty, integrity, respect and dignity.

16. 2018 Employee turnover by age group, gender and employment category

	21-30	31-40	41-50	51-60	61-64	65+	Total All	Female	Male
IBEW									
Turnover Rate (%)	2.8	1.5	0.0	56.1	125	150	11.7	16.7	11.7
CUPE									
Turnover Rate (%)	14.7	6.4	8.8	5.4	17.6	175	9.2	7.9	10.8
MP									
Turnover Rate (%)	5.8	10.1	13.3	26.1	66.7	50	14.6	16.7	13.7
Turnover Rate (all)							11.9	11.3	12.3

17. Benefits provided to employees

	Full Time	Part Time ¹	Limited Term
Employee Life Insurance	C ²	C	C
Spousal/Child Life Insurance	E ²	E	E
Short Term Disability	C	C	C
Long Term Disability	E	E	E
Extended Health	C	C	C
Dental	C	C	C
Vision	C	C	C
Provincial Health Care	E	E	E
Employee AD&D Insurance	E	E	E
Spousal/Child AD&D Insurance	E	E	E
Optional Critical Illness Insurance	E	E	E
Flex Time	C/E	C/E	C/E
Pension Plan	C/E	C/E	N ²
Maternity Leave with Top Up	C	C	N
Paternity Leave	E	E	N
Employee Assistance	C	C	C
Child Care	E	E	E
Fitness Facility	C	C	C
Training & Educational Assistance	C	C	N
Health Spending Account	C	C	C

¹ employee must work more than 20 hours per week to be eligible for benefits
²C – Company paid; E – Employee paid; N – Not offered

18. Labour relations

With more than 60 per cent of ENMAX employees being union members in either the International Brotherhood of Electrical Workers (IBEW) or the Canadian Union of Public Employees (CUPE), we welcome contributions of organized labour and the right of our employees to associate for mutual benefit.

Minimum notice periods are not required for significant operational or organizational changes as part of our Unionized Collective Bargaining Agreements unless these changes result in the layoff of employees, in which case minimum collective agreement requirements would apply. However, ENMAX consults with union representatives in advance of policies or business initiatives that directly impact union members.

19. Training and development

Our Leadership Development team manages the ENMAX Learning Centre. The Learning Centre provides employees with access to internal training in core business, professional and leadership skills, facilitated by highly trained and experienced professionals.

Human Resources manage the Learning Management System (LMS) to provide technical system support to the Organization. The following provides an overview of our corporate-wide training participation in 2018:

Employee Type	Number of Hours (Instructor Led)	Number of Hours (Online)	Total hours	Number of Participants (Instructor Led)	Number of Participants (Online)	Total Participants ²⁴	Hours training per participant
Individual Contributors	29,463	8,740	38,203	1,320	1,660	2,980	13
Employees with Direct Reports	4,080	1,157	5,237	212	222	434	12
Directors and Above	854	353	1,207	73	78	151	8
Inactive Employees ²⁴	4,908	2,175	7,084	285	524	809	49
Totals	39,306	12,425	51,731	1,890	2,484	4,374	112

²⁴ Data for employees who took training in 2018 but who are currently not employed with ENMAX. This is calculated separately as the employee type is not available once an employee is terminated in the system.

Year	Number of Participants ²⁵	Total Hours Training	Hours Training per Participant
2018	4,374	51,731	12
2017	3,423	37,205	11
2016	2,841	35,642	13
2015	4,182	45,099	11

²⁵ Number of participants includes each employee once per training type, i.e., online or instructor led; no matter how many training sessions they attend, i.e., one employee attending 10 training sessions is only included once in this count.

20. Programs and processes to ensure the availability of a skilled workforce

ENMAX welcomes recent graduates to our engineer-in-training (EIT) program, which introduces them to the challenges of the utility industry and the opportunities available at ENMAX. Graduates are offered the chance to rotate through different areas within ENMAX over a 10-month period to help them gain an understanding of the entire organization and determine the department they may eventually want to work in permanently.

On the technical training side, highly skilled and specialized workers are needed for our electrical operations to ensure system reliability, customer satisfaction and employee and public safety. ENMAX Power supports and operates a Technical Training Centre (TTC) that provides skills training and upgrading through a mix of apprentice development, upgrading for new staff, and keeping experienced staff current.

In addition to the TTC, two committees ensure the technical training programs fit with the needs of our employees and the organization. The Joint Apprenticeship Training Council is comprised of an equal number of ENMAX and union representatives and oversees the operation of ENMAX apprentice training programs including job rotation, work experience and links to provincial training. The Technical Training Advisory Council involves stakeholders from across ENMAX who determine course content, delivery methodology, scheduling of technical training and offer guidance and feedback on programs.

21. 2018 Demographic profile

Employment Category ²⁶	Female	Male	Total
Board of Directors	3	5	8
- % of total	37.5	62.5	100
CEO	1		1
- % of total	100		100
Executive Committee	2	2	4
- % of total	50	50	100
Vice President	4	16	20
- % of total	20	80	100
Middle Management	85	188	273
- % of total	31	69	100
Individual Contributor	502	979	1,481
- % of total	34	66	100
TOTAL	597	1,190	1,787
- % of total	33	67	100

²⁶Information on the Board of Directors does not include The City of Calgary councillors

22. 2018 Ratio of basic salary of men to women²⁷

	Number of Females	Number of Males	Total All	Competitive Positioning Ratio Female to Male
Board of Directors ²⁸	3	5	8	N/A
CEO	1		1	N/A
Executive Committee ²⁹	2	2	4	93.8%
Vice Presidents ²⁹	4	16	20	89.2
Middle Management ³⁰	85	188	273	98.2%
Individual Contributor ³⁰	502	979	1,481	101.8%
	597	1,190	1,787	101.2%

²⁷ Union employees are not included as salary is determined by collective bargaining.

²⁸ Information on the Board of Directors does not include The City of Calgary councillors.

²⁹ Salary ratio calculated as per cent of market.

³⁰ Salary ratio calculated as per cent of competitive objective.

The methodology used to calculate the salary ratio of our female to male employees considers both the job family as well as the level of the role. 'Job Family' describes the subject matter or area of

expertise. Examples of job family include human resources, information technology, finance, legal, operations, administrative, sales, etc. To assess roles against similar roles in the organization we look at the average difference of male and female salaries to the competitive value for the job band.

As a result, the measure provided is the ratio of male and female salaries from the Competitive Objective for the band rather than the ratio of the dollar amount of the salary. For VPs and Executives, the measure is the ratio of male to female salaries from the market match for the specific role.

23. Investment and procurement practices

Our procurement is performed in accordance with ENMAX's Principles of Business Ethics policy, and at an arm's-length basis free from real or perceived conflict of interest. ENMAX is committed to fair competition in all its dealings with suppliers. Employees must use good judgment and act in the best interests of ENMAX to ensure transparency, prudence, accountability and corporate responsibility in all spending decisions.

ENMAX uses a third-party service provider to assist with the collection and management of vendor related safety, environmental, risk and financial information. The information is reviewed, verified and monitored to ensure ENMAX is conducting business with vendors that are compliant with our policies.

24. Non-discrimination

ENMAX strives to be an employer of choice by offering a work environment that is healthy, secure and respectful. Our Safe and Respectful Workplace Standard supports this commitment. Employees and contractors can report incidents or concerns of discrimination in confidence through our [Safety and Ethics ConfidenceLine](#), available 24/7 or anonymously to the Alberta Human Rights and Citizenship Commission (the Commission).

In 2018 no incidents of discrimination were brought to ENMAX's attention. In 2017 the one incident of discrimination received has not yet been investigated by the Commission. Two incidents received in 2015 as Human Rights complaints have been dismissed by the Commission, one complainant is challenging the decision, the other complainant has accepted the dismissal.

No incidents of violations of the rights of indigenous people or displacement were reported in 2018.

SOCIETY

25. Management approach

Our policies governing societal aspects include the Compliance Policy, Code of Conduct Compliance Plan, Principles of Business Ethics policy, Safe and Respectful Workplace Standard, Employee Spending Policy, Supply Chain Management Standard, Sponsorship, Donations and Tickets Standard.

Organizational responsibility - Our VP, Public Affairs with support from the Community team, oversees our investments and donations in the community and our corporate sponsorships. The Manager, Customer and Stakeholder Relations supports our Power Delivery business to manage stakeholder relations' aspects.

Through the generation projects we develop, the electrical infrastructure we manage and the products and services we sell, we know our customers and community are counting on us to be consultative and transparent. Our Compliance Policy, Principles of Business Ethics Policy, corporate values guide our employees as they make decisions that impact our community.

As we plan and manage our operations, we take a solutions-focused approach based on open two-way dialogue that promotes consultative and respectful relationships with our stakeholders. We keep stakeholders informed through tools such as our website, social media, newsletters, in-person meetings and open houses.

ENMAX invests in community initiatives to help make Alberta a better place to live, work and play, to help create positive social change by aligning our strengths and core values. Our online application system and our Sponsorship, Donations and Tickets Standard helps us to evaluate funding requests fairly and consistently. We engage [LBG](#) to guide how we measure and communicate the impact of our investment programs.

We monitor our performance in community investment through our [Corporate Responsibility Objective for Community](#) which reports our commitment as an Imagine Canada Caring Company, wherein ENMAX invests a minimum of one per cent of pre-tax profits in the Alberta community on a five year rolling average basis. In 2018 our investment according to ImagineCanada criteria was 10.6 per cent.

Anti-competitive behaviour and compliance – ENMAX is subject to two Codes of Conduct: a regulation overseen by the Market Surveillance Administrator (MSA) that ensures a level playing field for customers and competitive electricity retailers; and the Inter-Affiliate Code of Conduct that is an order of the Alberta Utilities Commission (AUC) ensuring utilities do not favour their affiliates. Each Code has similar compliance obligations: to have [compliance plans](#), to report quarterly and annually on compliance, and to undergo compliance audits. To support these obligations, ENMAX has a Compliance Policy, provides mandatory training annually to all employees including officers, directors, and affected contractors.

ENMAX participates in the wholesale electricity market in Alberta and therefore must comply with market trading legislation and rules of the Alberta Electric System Operators (AESO). The AESO also monitors Alberta electricity market participants to ensure participants follow all applicable requirements under the Alberta Reliability Standards (ARS). The ARS ensure that sufficient and continuous supply of electricity is available during expected and unforeseen circumstances that reduce the amount of total available electricity. Meeting these standards also helps ensure reliable electricity is available in the North American bulk electric system, even in the event of unexpected equipment failures or other factors that could impact the amount of available electricity. The MSA has authority to issue specified penalties to market participants for non-compliance with ARS. The ARS applies to the operations of both ENMAX Power and ENMAX Energy.

26. Customer and Public Health and Safety

Managing impacts to relocation - To date, ENMAX has not had to manage any impacts to relocation. However, should such an incident arise with respect to our generation facilities, ENMAX is required by law to defer all aspects of management to the Calgary Emergency Management Agency ([CEMA](#)).

Emergency Response Planning - ENMAX ensures that an appropriate number of employees are trained in emergency management using the Incident Command System (ICS). The ICS establishes standardized incident management protocols that all incident responders use to enable a coordinated response. As well, personnel from both ENMAX Energy and ENMAX Power include day-to-day operational training and exercises to help ensure our System Control Centre, field and plant employees are equipped to respond safely, while maintaining compliance to all legislative requirements with respect to the continued operation of the Alberta Interconnected Electrical System.

ENMAX Energy's Emergency Management Program includes both discussion-based and operations-based exercises which vary from tabletop to full scale exercises. In 2018 full-scale exercises were held at the Calgary Energy Centre, Cavalier Energy Centre, District Energy Centre and Shepard Energy Centre. A tabletop exercise was also held at each facility. In addition to the exercises, multiple emergency response and procedural training sessions were held.

ENMAX Energy activated its Emergency Response program twice in 2018. Both events took place at the District Energy Centre and were handled appropriately and followed by After Action reports and lessons learned. The first event, in April, was a plant blackout and the second event in September was a security incident. The Emergency Operations Centre was activated for both incidents. The program's focus for 2019 is to continue to increase familiarity of the program with all ENMAX Energy Generation employees and to have external agencies participate in exercises whenever possible.

In 2018, members of ENMAX Power's Incident Management Team participated in various Business Continuity and Emergency Management training activating the Electrical Event Command Centre (E2C2). One was in conjunction with a high wind event, and another, a pole fire event affecting multiple Calgary neighbourhoods over a two-day period.

Other planned exercises held throughout the year involved a train derailment exercise held with the Calgary Emergency Management Agency's (CEMA) spring exercise a Flood exercise, a Canadian Mutual Assistance Group exercise with 25 utilities across Canada and participating in an Active Shooter Scenario held at the Calgary Emergency Management Agency Emergency Operation Centre.

ENMAX Power's regular cycle of risk assessment, prevention, mitigation, and preparedness measures, along with strong partnerships with CEMA and our neighbouring utilities helps ensure public and staff safety, minimize damage to electrical infrastructure and allows for faster recovery and return to normal operations, meaning less disruption to our customers. ENMAX Power continues to build and strengthen our relationships with North American electrical utilities to ensure we are ready to offer assistance, and when needed, ask for support.

Trouble call response - When trouble occurs, such as downed lines from a storm or a vehicle collision with a power pole, ENMAX Power relies on our Trouble Response crews to get the power up and running for customers as soon as possible. Our Trouble Response crews are the first on the scene and it's their job to secure the site, make the area electrically safe, manage any environmental releases and restore power when it is safe to do so. In 2018, 7,209 incidents were logged (2017 - 7,860 incidents), and our trouble call response time averaged 63.5 minutes (26 minutes in 2017). Response time includes time to acknowledge, travel and resolve the trouble call.

27. Anti Corruption Practices, Programs

Risk analysis related to corruption - By operating primarily within Alberta, we are not exposed to foreign corruption risk and we have policies, training and internal controls to address conflicts of interest and procurement practices. Additionally, Internal Audit considers fraud risk as part of all of its reviews.

Our Principles of Business Ethics policy is managed under the guidance of our Board of Directors. The policy establishes the appropriate and expected behaviour of all employees for maintaining ENMAX's reputation for honesty and integrity and compliance with applicable laws, rules and regulations.

All employees, including our contractors that work side by side with ENMAX employees, are required to complete training on the ENMAX Principles of Business Ethics Policy, Safe and Respectful Workplace and Code of Conduct. To ensure our employees can report compliance and ethics concerns, we established a confidential [Safety and Ethics ConfidenceLine](#) that is available 24/7. Employees are also encouraged to speak to their leader or any member of management if they suspect inappropriate or unethical behavior. There were nine reports to the ConfidenceLine in 2018. None of the reports were deemed a critical concern and a summary of all reports is provided to the Board of Directors Governance Committee on a semi-annual basis. All reports made in 2018 were fully investigated with the assistance of the Director of Legal Services.

PRODUCT RESPONSIBILITY

28. Management Approach

ENMAX has policies in place to ensure our service delivery is responsible, safe and respectful, including the Principles of Business Ethics Policy, Compliance Policy, Privacy Policy, and the Occupational Health and Safety Policy. ENMAX Power and ENMAX Energy also maintain a Code of Conduct Regulation [Compliance Plan](#).

Organizational responsibility – The management of marketing aspects associated with ENMAX Energy products and their development, including renewables, was brought together under our EVP, Energy Services encompassing our customer experience, which serves our residential and small business customers; and our industrial, commercial and institutional accounts, energy marketing, trading and commercial services.

Oversight of ENMAX's regulated transmission and distribution business along with regulated market services is under the EVP, Power Supply and Delivery and Chief Operating Officer. The VPs of Power Deliver Customer Service and System Operations, and Field Operations and Project Delivery have oversight for ensuring safe and reliable product delivery to customers. Oversight of the management of our energy generation and wholesale also resides with the EVP Power Supply and Delivery and Chief Operating Officer.

Each business unit and its executive team leader, supported by our EVP, Regulatory and Chief Legal Officer, are responsible for compliance with competition and privacy laws.

Customer health and safety – We ensure the infrastructure, systems and people are in place to provide the most reliable and safest service to our customers. We also respond to customer inquiries regarding electric and magnetic fields (EMF), including on-site EMF measurement.

Customer satisfaction - One of our CR Objectives is to deliver an exemplary customer experience as measured by achieving top quartile customer satisfaction comparable to North American energy companies. In 2018 our overall satisfaction survey was 86% when customers were asked about their experience with ENMAX.

Product and service labeling compliance – Products and services with respect to our solar panel equipment are subject to labeling laws such as the *Consumer Product Safety Act* and the *Competition Act*. We follow both internal and external service quality standards and try to use clear language on our bills and contracts. No non-compliance incidents were identified in 2018.

Sale of banned or disputed products – The ENMAX Group of Companies does not sell any products that are banned. We adhere to the rules related to marketing communications set out in the *Code of Conduct Regulation*, the *Fair Trading Act*, the *Competition Act* among others. Marketing communications are reviewed for compliance with these rules by ENMAX’s Legal Services group. In accordance with the *Code of Conduct Regulation*, reviews of compliance with these standards are undertaken quarterly and instances of non-compliance are reported to the Alberta Utilities Commission (AUC).

The AUC mandates stakeholder engagement for transmission and generation projects. ENMAX strives to exceed AUC requirements because we believe transparent, two-way dialogue helps reach a mutually beneficial outcome. We take a consultative approach contacting potential stakeholders in advance of all construction or upgrade projects. Our CR Objective for Stakeholder Relations is to have no compliance issues under AUC Rule 007, a rule that mandates a participant involvement program for substations and transmission lines. We achieved that goal in 2018.

Significant incidents of non-compliance with regulations and voluntary codes concerning marketing communications, including advertising, promotion and sponsorship – none identified.

Customer privacy – Alberta’s *Personal Information Protection Act* (PIPA) came into effect in 2004 and sets the standard for how businesses in Alberta should handle personal information. ENMAX’s PIPA compliance structure includes a Privacy Policy, a [Personal Information Commitment](#), and the designation of a Privacy Officer to establish and manage PIPA compliance issues.

Significant non-compliance concerning the provision and use of products and services – None identified.

Training and awareness - Every customer service representative in our Customer Care Centre receives in-depth market, business and service training when hired. They are also provided with regular training updates, as well as quality assurance reviews and coaching opportunities on a monthly basis.

Monitoring and follow up – Any instances of disclosure of customer data without consent are contrary to the *Code of Conduct Regulation* and are reported to the AUC quarterly.