



**TRANSALTA CORPORATION**  
**ANNUAL INFORMATION FORM**  
**FOR THE YEAR ENDED DECEMBER 31, 2018**

**February 26, 2019**

<b>TABLE OF CONTENTS</b>	
PRESENTATION OF INFORMATION	3
SPECIAL NOTE REGARDING FORWARD-LOOKING STATEMENTS	3
DOCUMENTS INCORPORATED BY REFERENCE	5
CORPORATE STRUCTURE	5
OVERVIEW	7
GENERAL DEVELOPMENT OF THE BUSINESS	8
BUSINESS OF TRANSALTA	14
Canadian Coal Business Segment	15
Canadian Gas Business Segment	17
Australian Gas Business Segment	19
Hydro Business Segment	20
Wind and Solar Business Segment	24
U.S. Coal Business Segment	28
Energy Marketing Segment	29
Corporate Segment	29
Non-Controlling Interests	30
PPAs	31
Competitive Environment	32
Regulatory Framework	34
Competitive Strengths	36
ENVIRONMENTAL RISK MANAGEMENT	37
Ongoing and Recently Passed Environmental Legislation	37
TransAlta Activities	39
RISK FACTORS	42
EMPLOYEES	54
CAPITAL STRUCTURE	55
Common Shares	55
First Preferred Shares	55
Credit Facilities	64
Long-Term Debt	64
Non-Recourse Debt	64
Tax Equity	64
Restrictions on Debt	64
CREDIT RATINGS	64
DIVIDENDS	67
Common Shares	68
Preferred Shares	68
MARKET FOR SECURITIES	70
Common Shares	71
Preferred Shares	72
DIRECTORS AND OFFICERS	76
INTERESTS OF MANAGEMENT AND OTHERS IN MATERIAL TRANSACTIONS	87
INDEBTEDNESS OF DIRECTORS, EXECUTIVE OFFICERS AND SENIOR OFFICERS	87
CORPORATE CEASE TRADE ORDERS, BANKRUPTCIES OR SANCTIONS	88
CONFLICTS OF INTEREST	88
LEGAL PROCEEDINGS AND REGULATORY ACTIONS	89
TRANSFER AGENT AND REGISTRAR	89
INTERESTS OF EXPERTS	89
ADDITIONAL INFORMATION	89
AUDIT AND RISK COMMITTEE	89
AUDIT AND RISK COMMITTEE CHARTER	A- 1
GLOSSARY OF TERMS	B- 1

## PRESENTATION OF INFORMATION

Unless otherwise noted, the information contained in this annual information form ("Annual Information Form" or "AIF") is given as at or for the year ended December 31, 2018. All dollar amounts are in Canadian dollars unless otherwise noted. Unless the context otherwise requires, all references to the "Corporation" and to "TransAlta", "we", "our" and "us" herein refer to TransAlta Corporation and its subsidiaries, including TransAlta Renewables Inc., on a consolidated basis. Reference to "TransAlta Corporation" herein refers to TransAlta Corporation, excluding its subsidiaries. Capitalized terms not defined in the body of this AIF shall have their respective meanings set forth in Appendix "B" – Glossary of Terms hereto.

### SPECIAL NOTE REGARDING FORWARD-LOOKING STATEMENTS

This Annual Information Form, including the documents incorporated herein by reference, includes "forward-looking information", within the meaning of applicable Canadian securities laws, and "forward-looking statements", within the meaning of applicable United States securities laws, including the United States Private Securities Litigation Reform Act of 1995 (collectively referred to herein as "forward-looking statements"). All forward-looking statements are based on our beliefs as well as assumptions based on information available at the time the assumption was made and on management's experience and perception of historical trends, current conditions and expected future developments, as well as other factors deemed appropriate in the circumstances. Forward-looking statements are not facts, but only predictions and generally can be identified by the use of statements that include phrases such as "may", "will", "can"; "could", "would", "shall", "believe", "expect", "estimate", "anticipate", "intend", "plan", "forecast" "foresee", "potential", "enable", "continue" or other comparable terminology. These statements are not guarantees of our future performance, events or results and are subject to risks, uncertainties and other important factors that could cause our actual performance, events or results to be materially different from that set out in the forward-looking statements.

In particular, this Annual Information Form (or a document incorporated by reference) contains forward-looking statements including, but not limited to: our transformation, growth, capital allocation and debt reduction strategies; growth opportunities from 2018 to 2031 and beyond; potential for growth in renewables, and greenfield development acquisitions; the amount of capital allocated to new growth or development projects; our business and anticipated future financial performance and anticipated results, including our outlook and performance targets; our expected success in executing on our growth and development projects; the timing and the completion of growth projects, including major projects such the Brazeau Pumped Storage Project and their attendant costs; our estimated spend on growth and sustaining capital and productivity projects; expectations in terms of the cost of operations, capital spend, and maintenance, and the variability of those costs; the conversion of our coal-fired units to natural gas, and the timing thereof; the form of any definitive agreement with Tidewater regarding the construction of a pipeline; the terms of the current or any further proposed Normal Course Issuer Bid and the acceptance thereof by the Toronto Stock Exchange, including timing, and number of shares to be repurchased pursuant to the Normal Course Issuer Bid; the mothballing of certain units; the impact of certain hedges on future earnings, results and cash flows; estimates of fuel supply and demand conditions and the costs of procuring fuel; expectations for demand for electricity, including for clean energy, in both the short-term and long-term, and the resulting impact on electricity prices; the impact of load growth, increased capacity, and natural gas and other fuel costs on power prices; expectations in respect of generation availability, capacity, and production; expectations regarding the role different energy sources will play in meeting future energy needs; expected financing of our capital expenditures; expected governmental regulatory regimes and legislation, including the change to a capacity market in Alberta and the expected impact on us and the timing of the implementation of such regimes and regulations, as well as the cost of complying with resulting regulations and laws; our trading strategy and the risks involved in these strategies; estimates of future tax rates, future tax expense, and the adequacy of tax provisions; accounting estimates and accounting policies; anticipated growth rates and competition in our markets; our expectations relating to the outcome of existing or potential legal and contractual claims, regulatory investigations, and disputes; expectations regarding the renewal of collective bargaining agreements; expectations for the ability to access capital markets at reasonable terms or at all; the estimated impact of changes in interest rates and the value of the Canadian dollar relative to the U.S. and other currencies in locations where we do business; the monitoring of our exposure to liquidity risk; expectations in respect to the global economic environment and growing scrutiny by investors relating to sustainability performance; and our credit practices.

The forward-looking statements contained in this Annual Information Form (or a document incorporated by reference) are based on many assumptions including, but not limited to, the following material assumptions: no significant changes to applicable laws, including any tax and regulatory changes in the markets in which we operate; no material adverse impacts to the investment and credit markets; assumptions related to 2019 guidance include: Alberta spot power price equal \$50 to \$60 per MWh; Alberta contracted power price equal to \$50 to \$55 per MWh; Mid-C spot power prices equal to US\$20 to US\$25 per MWh; Mid-C contracted power price of US\$47 to US\$53 per MWh; sustaining capital between \$160 million and \$190 million; productivity capital of \$10 to \$15 million; Sundance coal capacity factor of 30%; hydro and wind resource being approximately in-line with long-term average; our proportionate ownership of TransAlta Renewables not changing materially; no material decline in the dividends expected to be received from TransAlta Renewables; the expected life extension of the coal fleet and anticipated financial results generated on conversion; assumptions regarding the ability of the converted units to successfully compete in the Alberta capacity market; and assumptions regarding our current strategy and priorities, including as it pertains to our current priorities relating to the coal-to-gas conversions, growing TransAlta Renewables, and being able to realize the full economic benefit from the capacity, energy and ancillary services from our Alberta hydro assets once the applicable power purchase arrangement has expired.

Forward-looking statements are subject to a number of significant risks, uncertainties and assumptions that could cause actual plans, performance, results or outcomes to differ materially from current expectations. Factors that may adversely impact what is expressed or implied by forward-looking statements contained in this AIF (or a document incorporated herein by reference) include, but are not limited to, risks relating to: fluctuations in demand, market prices and the availability of fuel supplies required to generate electricity; changes in demand for electricity and capacity and our ability to contract our generation for prices that will provide expected returns and replace contracts as they expire; the legislative, regulatory and political environments in the jurisdictions in which we operate; environmental requirements and changes in, or liabilities under, these requirements; changes in general economic or market conditions including interest rates; operational risks involving our facilities, including unplanned outages at such facilities; disruptions in the transmission and distribution of electricity; the effects of weather and other climate-change related risks; unexpected increases in cost structure and disruptions in the source of fuels, water or wind required to operate our facilities; failure to meet financial expectations; natural and man-made disasters resulting in dam failures; the threat of domestic terrorism and cyberattacks; equipment failure and our ability to carry out or have completed the repairs in a cost-effective manner or timely manner; commodity risk management; industry risk and competition; the need to engage or rely on certain stakeholder groups and third parties; fluctuations in the value of foreign currencies and foreign political risks; the need for and availability of additional financing; structural subordination of securities; counterparty credit risk; changes in credit and market conditions; changes to our relationship with, or ownership of, TransAlta Renewables Inc.; risks associated with development projects and acquisitions, including capital costs, permitting, labour and engineering risks; increased costs or delays in the construction or commissioning of pipelines to converted units; changes in expectations in the payment of future dividends, including from TransAlta Renewables Inc.; insurance coverage; credit ratings; our provision for income taxes; legal, regulatory, and contractual disputes and proceedings involving the Corporation, including as it pertains to establishing commercial operations at the South Hedland Power Station; outcomes of investigations and disputes; reliance on key personnel; labour relations matters; and development projects and acquisitions, including delays in the development of the Brazeau Pumped Storage Project. The foregoing risk factors, among others, are described in further detail under the heading "Risk Factors" in this Annual Information Form or in a document incorporated by reference, including our management's discussion and analysis for the year ended December 31, 2018 (the "Annual MD&A").

Readers are urged to consider these factors carefully in evaluating the forward-looking statements and are cautioned not to place undue reliance on them, which reflect the Corporation's expectations only as of the date hereof. The forward-looking statements included in this document are made only as of the date hereof and we do not undertake to publicly update these forward-looking statements to reflect new information, future events or otherwise, except as required by applicable laws. In light of these risks, uncertainties and assumptions, the forward-looking statements might occur to a different extent or at a different time than we have described or might not occur at all. We cannot assure that projected results or events will be achieved.

## DOCUMENTS INCORPORATED BY REFERENCE

TransAlta's audited consolidated financial statements for the year ended December 31, 2018 and related annual management's discussion and analysis are hereby specifically incorporated by reference in this AIF. Copies of these documents are available on SEDAR at [www.sedar.com](http://www.sedar.com) and EDGAR at [www.sec.gov](http://www.sec.gov).

## CORPORATE STRUCTURE

### **Name and Incorporation**

TransAlta Corporation is a corporation organized under the *Canada Business Corporations Act* (the "CBCA"). It was formed by Certificate of Amalgamation issued on October 8, 1992. On December 31, 1992, a Certificate of Amendment was issued in connection with a plan of arrangement involving TransAlta Corporation and TransAlta Utilities Corporation ("TransAlta Utilities" or "TAU") under the CBCA. The plan of arrangement, which was approved by shareholders on November 26, 1992, resulted in common shareholders of TransAlta Utilities exchanging their common shares for shares of TransAlta Corporation on a one for one basis. Upon completion of the arrangement, TransAlta Utilities became a wholly owned subsidiary of TransAlta Corporation.

Effective January 1, 2009, TransAlta completed a reorganization, whereby the assets and business affairs of TAU and TransAlta Energy Corporation ("TransAlta Energy" or "TEC") (with the exception of the wind business) were transferred to TransAlta Generation Partnership, a then new Alberta general partnership, whose partners are TransAlta Corporation and TransAlta Generation Ltd., a wholly owned subsidiary of TransAlta Corporation. TransAlta Generation Partnership is managed by TransAlta Corporation pursuant to the terms of a partnership agreement and a management services agreement. Immediately following the transfer of assets by TAU and TEC to TransAlta Generation Partnership, TransAlta Corporation amalgamated with TAU, TEC, and Keephills 3 GP Ltd. pursuant to the provisions of the CBCA.

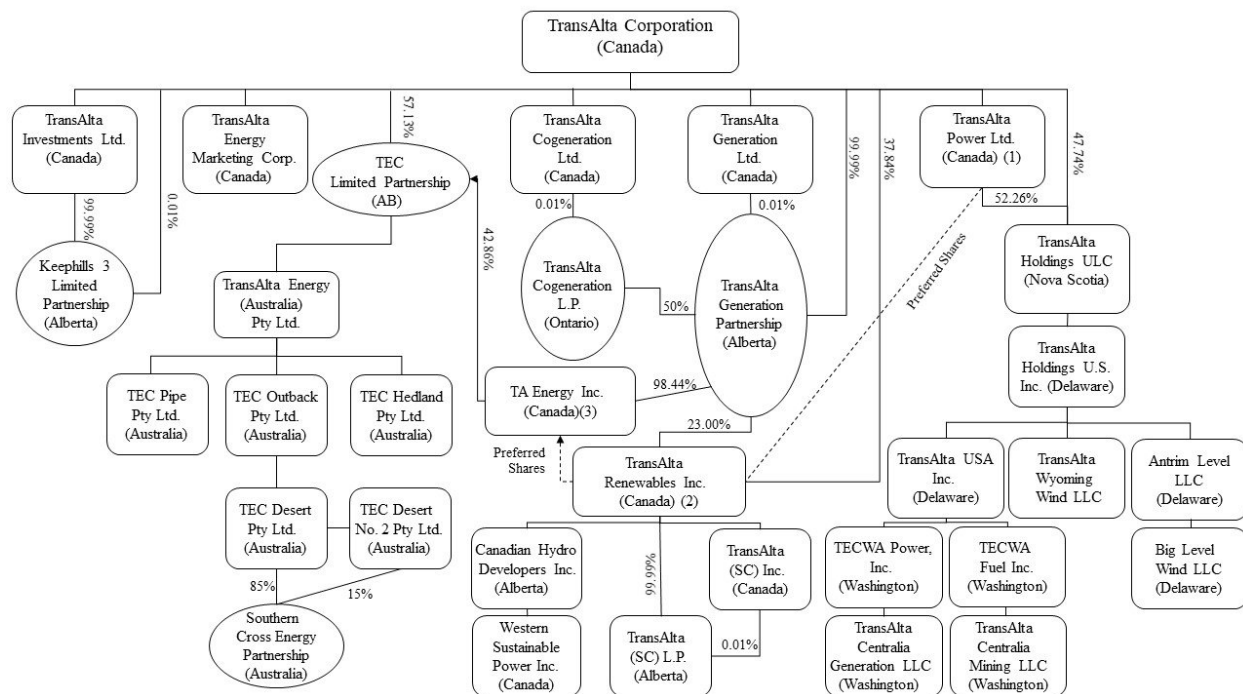
TransAlta amended its articles on December 7, 2010, to create the Series A Shares and Series B Shares; again on November 23, 2011, to create the Series C Shares and Series D Shares; again on August 3, 2012, to create the Series E Shares and Series F Shares; and then again on August 13, 2014, to create the Series G Shares and Series H Shares.

The registered and head office of TransAlta is located at 110 - 12<sup>th</sup> Avenue S.W., Calgary, Alberta, Canada, T2R 0G7.

## Our Subsidiaries

As at the date of this AIF, the principal subsidiaries of TransAlta Corporation and their respective jurisdictions of formation are set out below.<sup>(1)</sup>

Certain of our subsidiaries are not wholly-owned. The most significant of which is TransAlta Renewables Inc. ("TransAlta Renewables"), which completed its initial public offering in August 2013. In connection with the offering, TransAlta Corporation transferred to TransAlta Renewables certain wind and hydro power generation assets previously held directly or indirectly by TransAlta Corporation. As at December 31, 2018, TransAlta Corporation owned, directly or indirectly, approximately 61 per cent of the outstanding voting equity in TransAlta Renewables. See "*Business of TransAlta – Non-Controlling Interests – TransAlta Renewables*".



### Notes:

- Unless otherwise stated, ownership is 100 per cent. As noted elsewhere in this AIF, TransAlta Renewables has economic interests in a number of projects through preferred shares in the capital of TA Energy Inc. and TransAlta Power Ltd., which are both wholly-owned by TransAlta Corporation.
- We own, directly or indirectly, an aggregate interest of approximately 61 per cent of TransAlta Renewables, which includes 38 per cent through direct ownership and 23 per cent through TransAlta Generation Partnership. The remaining 39 per cent interest in TransAlta Renewables is publicly owned.
- The remaining 1.56 per cent of TA Energy Inc. is owned by TransAlta.

## OVERVIEW

### TransAlta

TransAlta and its predecessors have been engaged in the development, production and sale of electric energy since 1909. We are among Canada's largest non-regulated electricity generation and energy marketing companies with an aggregate net ownership interest in approximately 8,000 megawatts ("MW") of generating capacity<sup>(1)(2)</sup>. We operate facilities having approximately 9,331 MW of aggregate generating capacity. We are focused on generating and marketing electricity in Canada, the United States and Western Australia through our diversified portfolio of facilities fuelled by coal, natural gas, diesel, hydro, wind and solar.

### Our Segments

The Canadian Coal segment has a net ownership interest of approximately 3,033 MW of electrical generating capacity. All of the facilities in this segment are located in Alberta.

The U.S. Coal segment holds our Centralia thermal plant, which represents a net ownership interest of 1,340 MW of electrical generating capacity.

The Hydro segment has a net ownership interest of approximately 926 MW of electrical generating capacity. The facilities that comprise this segment are predominantly located in Alberta, British Columbia, and Ontario.

The Wind and Solar segment has a net ownership interest of approximately 1,353 MW of electrical generating capacity and includes facilities located in Alberta, Ontario, New Brunswick, Québec, Wyoming, Massachusetts, and Minnesota.

The Canadian Gas segment has a net ownership interest of approximately 837 MW of electrical generating capacity and includes facilities held in Alberta and Ontario.

The Australian Gas segment has a net ownership interest of approximately 450 MW of electrical generating capacity.

The Energy Marketing segment is responsible for marketing our production through short-term and long-term contracts, for securing cost effective and reliable fuel supply, and for maximizing margins by optimizing our assets as market conditions change.

The Corporate Segment supports each of the above segments and includes the Corporation's central finance, legal, administrative, and investor relation functions.

We regularly review our operations in order to optimize our generating assets and evaluate appropriate growth opportunities to maximize value to the Corporation. We have in the past, and may in the future, make changes and additions to our fleet of coal, natural gas, hydro, wind and solar fuelled facilities.

### TransAlta Renewables

TransAlta Corporation is the majority owner of TransAlta Renewables, with an approximate 61 per cent direct and indirect ownership interest as of the date of this Annual Information Form. TransAlta Renewables is one of the largest generators of wind power and among the largest publicly traded renewable power generation companies in Canada.

We formed TransAlta Renewables in 2013 to realize specific strategic and financial benefits, including: (i) establishing a focused vehicle for pursuing and funding growth opportunities in the renewable power generation sector; (ii) unlocking the value of TransAlta's renewable asset platform; (iii) retaining TransAlta's majority ownership and operatorship of the underlying assets; (iv) providing proceeds of approximately \$200-\$250 million to repay debt and support TransAlta's balance sheet; and (v) creating additional financial flexibility for TransAlta by providing another source of capital with a separate cost of capital. We continue to realize the benefit of having assets with different risk/return profiles in two different legal entities, including as it enables each company to secure appropriate financing and investors. TransAlta

- (1) The net ownership interest of 7,939 MW includes 100 per cent of the generating capacity of TransAlta Renewables. All references to "net ownership interest" in this Annual Information Form include 100 per cent of the generating capacity of TransAlta Renewables. As of the date of this Annual Information Form, TransAlta owns an approximate 61 per cent direct and indirect ownership interest in TransAlta Renewables.
- (2) MW information provided as of December 31, 2018.

holds mainly merchant assets in coal and hydro while TransAlta Renewables holds assets with long term contracts generating stable cash flows in wind, solar and gas. TransAlta's majority ownership of TransAlta Renewables has facilitated the Corporation in its overall strategy of developing, constructing or acquiring additional renewable assets.

TransAlta Renewables, or one or more of its wholly-owned subsidiaries, directly own certain of our wind, hydro and natural gas facilities. TransAlta Renewables also owns an economic interest in a number of our other facilities. TransAlta Corporation provides all management, administrative and operational services required for TransAlta Renewables to operate and administer its assets and to acquire additional assets pursuant to the Management and Operational Services Agreement and the Governance and Cooperation Agreement between TransAlta Corporation and TransAlta Renewables. See "*Business of TransAlta – Non-Controlling Interests – TransAlta Renewables*".

### TransAlta's Map of Operations

The following map outlines TransAlta's operations as of December 31, 2018.



**Note:**

- (1) Includes facilities directly owned by TransAlta Renewables or its subsidiaries, as well as facilities in which TransAlta Renewables or one of its subsidiaries has an economic interest. We own, directly or indirectly, an aggregate interest of approximately 61 per cent of TransAlta Renewables.

### GENERAL DEVELOPMENT OF THE BUSINESS

TransAlta is organized into eight business segments: Canadian Coal, U.S. Coal, Canadian Gas, Australian Gas, Wind and Solar, Hydro, Energy Marketing and Corporate. The Canadian Coal, U.S. Coal, Canadian Gas, Australian Gas, Wind and Solar, and Hydro segments are responsible for constructing, operating and maintaining our electrical generation. The Canadian Coal segment is also responsible for the operation and maintenance of our related mining operations in Canada. The Energy Marketing segment is responsible for marketing our production through short-term



and long-term contracts, for securing cost effective and reliable fuel supply, and for maximizing margins by optimizing our assets as market conditions change. In addition to serving our assets, our marketing team actively markets energy products and services to energy producers and customers. This segment also encompasses the management of available generating capacity as well as the fuel and transmission needs of the generation businesses. All the segments are supported by a Corporate segment which includes the Corporation's central financial, legal, administrative, and investor relation functions.

The past number of years have been marked by significant regulatory changes that have had extensive impacts on the Corporation's business and strategy. In 2015, the Government of Alberta announced the Alberta Climate Leadership Plan that set goals to reduce carbon emissions and phase out pollution from coal-generated electricity by 2030. TransAlta responded quickly and decisively to the Climate Leadership Plan to begin transforming itself into a leading clean energy company. We negotiated with the Government of Alberta, using a principles-based approach, to ensure that we have the certainty and capacity needed to invest in clean power and, in November 2016, the Government of Alberta and TransAlta entered into a binding Off-Coal Agreement that provides compensation for the stranded value on the Keephills 3, Genesee 3 and Sheerness coal plants that had useful lives beyond 2030.

The significant events and conditions affecting our business during the three most recently completed financial years, and during the current year to date, are summarized below. Certain of these events and conditions are discussed in greater detail under the heading "*Business of TransAlta*".

## **Recent Developments**

### **Generation and Business Development**

#### **2018**

##### **Pioneer Pipeline**

On December 17, 2018, we exercised our option to acquire 50 per cent ownership in the Pioneer gas pipeline ("Pioneer Pipeline"). Tidewater Midstream and Infrastructure Ltd. ("Tidewater") will construct and operate the 120 km natural gas pipeline, which will have an initial throughput of 130 million cubic feet of gas per day ("MMcf/d") with the potential to expand to approximately 440 MMcf/d. The Pioneer Pipeline will allow us to increase the amount of natural gas that can be co-fired at the Sundance and Keephills coal-fired units, resulting in lower carbon emissions and costs. As well, the Pioneer Pipeline will provide a significant amount of the gas required for the full conversion of the coal units to natural gas. Our investment will amount to approximately \$90 million. Construction of the pipeline commenced in November 2018 and the Pioneer Pipeline is expected to be fully operational by the second half of 2019. Our investment is subject to final regulatory approvals, which we are expecting to be finalized in the first half of 2019.

##### **Alberta Renewable Energy Program Project – Windrise**

Also on December 17, 2018, we announced that our 207 MW Windrise wind project was selected by the AESO as one of the two successful projects in the third round of the Alberta Renewable Electricity Program. The Windrise facility, which is located in the county of Willow Creek, is underpinned by a 20-year Renewable Electricity Support Agreement with the AESO. The project is expected to cost approximately \$270 million and is targeted to reach commercial operation during the second quarter of 2021.

##### **TransAlta Renewables' New Brunswick wind power expansion complete**

On October 19, 2018 TransAlta Renewables announced that the 17.25MW expansion of the wind facility at Kent Hills, in New Brunswick reached commercial operation, bringing total generating capacity to 167 MW. Under the 17-year PPA, New Brunswick Power Corporation receives both energy to the province's electricity grid and renewable energy credits. The Kent Hills 3 expansion is located on approximately 20 acres of Crown Land and consists of five Vestas V126 turbines. Natural Forces Technologies Inc., a wind-energy developer based in Atlantic Canada, co-developed and co-owns the wind farm with TransAlta Renewables.

##### **Retirement of Sundance Unit 1 and Unit 2 and Mothball Schedule Update**

Effective July 31, 2018, we retired Sundance Unit 2 due to its shorter useful life relative to other units, age, size, and the capital requirements needed to return the unit to service. In addition to the retirement of Sundance

Unit 2 our mothball outage schedule has been updated to provide for the following (Sundance Unit 1 has been permanently shutdown since January 1, 2018 and Sundance Unit 3 and Sundance Unit 5 have been mothballed since April 1, 2018): (i) Sundance Unit 3 will continue to be mothballed for a period of up to April 1, 2020; (ii) Sundance Unit 5 will now continue to be mothballed for a period of up to April 1, 2020; and (iii) Sundance Unit 4 is no longer expected to be mothballed on April 1, 2019, as had previously been scheduled.

#### **Sale of Three Renewable Assets**

On May 31, 2018, TransAlta Renewables acquired from us an economic interest in the 50 MW Lakeswind Wind Farm in Minnesota and 21 MW of solar projects located in Massachusetts. In addition, TransAlta Renewables acquired ownership of the 20 MW Kent Breeze Wind Farm located in Ontario. The total purchase price payable for the three assets, which have an average weighted contract life of 15 years, was \$166 million, including the assumption by TransAlta Renewables of \$62 million of tax equity obligations and project debt. TransAlta Renewables funded the equity portion of the acquisitions using its existing liquidity.

#### **Acquisition of U.S. Wind Projects**

On February 20, 2018, TransAlta Renewables entered into an arrangement to acquire two construction-ready projects in the Northeastern United States. The wind development projects consist of: (i) a 90 MW project located in Pennsylvania that has a 15-year PPA with Microsoft Corp. ("Big Level") and (ii) a 29 MW project located in New Hampshire with two 20-year PPAs ("Antrim") (collectively, the "US Wind Projects"). The acquisition of Antrim is subject to certain closing conditions, including the receipt of favourable regulatory ruling. We expect the Antrim acquisition to close in early 2019. The commercial operation date for both projects is expected during the second half of 2019.

### **2017**

#### **Acceleration of the Conversion from Coal-to-Gas**

On December 6, 2017, we announced the acceleration of the conversion of Sundance Units 3 to 6 and Keephills Units 1 and 2 from coal-fired generation to gas-fired generation in 2021 or 2022, a year earlier than originally planned. We also announced the temporary mothballing of a combination of Sundance units in 2018 and 2019 to enable two Sundance coal units to operate at high capacity utilizations with lower costs through to 2020. As part of our optimization plan for the Sundance facility, we subsequently mothballed Sundance Units 3 and 5 on April 1, 2018.

#### **Balancing Pool Terminates the Sundance Alberta Power Purchase Arrangements**

On September 18, 2017, we received formal notice from the Balancing Pool for the termination of the Alberta Power Purchase Arrangements for Sundance Unit B and Unit C effective March 31, 2018. We subsequently received \$157 million in the first quarter of 2018 as a result of the PPA termination. The Balancing Pool excluded certain mining assets that we believe should be included in the value calculation for an additional termination payment of \$56 million. The dispute is currently proceeding through the PPA arbitration process.

#### **Status of Commercial Operations at South Hedland Power Station**

On August 1, 2017, we responded to Fortescue Metals Group Limited's ("FMG") view that the South Hedland Power Station has not yet achieved commercial operation. In our view, all the conditions to establishing that commercial operations have been achieved under the terms of the power purchase agreement with FMG have been satisfied in full. These conditions include receiving a commercial operation certificate, successfully completing and passing certain test requirements, and obtaining all permits and approvals required from the North West Interconnected System and government agencies. On November 13, 2017, we received formal notice of termination of the South Hedland Power Purchase Agreement ("South Hedland PPA") from FMG. We commenced proceedings in the Supreme Court of Western Australia on December 4, 2017, to recover amounts invoiced under the South Hedland PPA. The South Hedland Power Station has been fully operational and able to meet FMG's requirements under the terms of the South Hedland PPA since July 2017.

#### **Fortescue Metals Group's Notice to Repurchase the Solomon Power Station**

On August 1, 2017, we received notice of FMG's intention to repurchase the Solomon Power Station from TEC Pipe Pty Ltd. ("TEC Pipe"), a wholly-owned subsidiary of the Corporation, for approximately US\$335

million. FMG completed its acquisition of the Solomon Power Station on November 1, 2017 and TEC Pipe received US\$325 million as consideration. While FMG withheld approximately AU\$43 million in tax applicable to the repurchase of the Solomon Power Station, TransAlta commenced court proceedings and was successful in recovering the total tax payable by FMG.

#### **Sale of Interest in Wintering Hills Facility**

On March 1, 2017, we sold our 51 per cent interest in the Wintering Hills merchant wind facility near Drumheller, Alberta for approximately \$61 million. Proceeds from the sale were used for general corporate purposes, including to reduce debt and to fund future renewables growth, including potential contracted renewable opportunities in Alberta.

### **2016**

#### **Mississauga Recontracting**

On December 22, 2016, we signed a Non-Utility Generator Enhanced Dispatch Contract (the "NUG Contract") with the Ontario Independent Electricity System Operator ("IESO") for our Mississauga cogeneration facility. The NUG Contract came into effect on January 1, 2017. In conjunction with the execution of the NUG Contract, we terminated, effective December 31, 2016, the Mississauga cogeneration facility's existing contract with the Ontario Electricity Financial Corporation ("OEF"), which would have otherwise terminated in December 2018. In December 2018, TransAlta exercised its option to terminate its lease agreement with Boeing Canada Inc. effective December 31, 2021. TransAlta is required to remove the plant and restore the site within the three-year time frame.

#### **TransAlta Reaches Agreement with the Government of Alberta**

On November 24, 2016, we entered into an agreement (the "Off-Coal Agreement") with the Government of Alberta for transition payments in consideration for our cessation of coal-fired emissions from the Keephills 3, Genesee 3 and Sheerness coal-fired plants on or before December 31, 2030. Under the terms of the Off-Coal Agreement, we are entitled to receive annual cash payments of approximately \$37.4 million, net to the Corporation, commencing in 2017 and terminating in 2030. Our receipt of these payments is subject to our satisfaction of certain terms and conditions, including our cessation of all coal-fired emissions on or before December 31, 2030. The affected plants are not, however, precluded from generating electricity at any time by any method other than the combustion of coal.

Additionally, we announced that we reached an understanding with the Government of Alberta pursuant to a Memorandum of Understanding to collaborate and cooperate in the development of a policy framework to facilitate the conversion of coal-fired generation to gas-fired generation, facilitate existing and new renewable electricity development through supportive and enabling policy, and ensure existing generation and new electricity generation are able to effectively participate in the capacity market to be developed for the Province of Alberta.

#### **Favourable Keephills 1 Force Majeure Ruling**

On November 18, 2016, an independent arbitration panel confirmed that we were entitled to *force majeure* relief for the 2013 Keephills 1 forced outage. Our 395 MW Keephills 1 facility tripped off-line on March 5, 2013 due to a suspected winding failure within the generator. After extensive testing and analysis, it was determined a full rewind of the generator stator was required. The unit returned to service on October 6, 2013. The buyer under this power purchase arrangement and the Balancing Pool are seeking to appeal or set the arbitration panel's decision aside, which we believe to be without merit. This application is scheduled from February 27, 2019 to March 1, 2019.

#### **Decommissioning of Cowley Ridge**

In February 2016, Cowley Ridge reached the end of its operating life and was decommissioned. Cowley Ridge, which began operating in 1993, was the first and oldest wind facility in Canada. Cowley Ridge had maximum capacity of 16 MW of renewable energy at its time of decommissioning.

## **Corporate and Energy Marketing**

### **2019**

#### **Retirement Plans for Directors**

On January 25, 2019, we announced the retirement decisions of Timothy Faithfull and Ambassador Gordon Giffin. Earlier in 2018, Mr. Faithfull had indicated to the Board his intention to retire from the Board of Directors immediately following TransAlta's 2019 Annual Shareholder Meeting and, also in 2018, Ambassador Gordon Giffin announced his intention to retire as director and Board Chair in 2020. The Board is undertaking a process to identify a new Chair through the course of 2019.

### **2018**

#### **Appointment of Chief Financial Officer**

On November 13, 2018, we appointed Christophe Dehout as our Chief Financial Officer, replacing Brett Gellner (our then interim Chief Financial Officer), who continues to serve as Chief Strategy and Investment Officer of TransAlta. Our prior Chief Financial Officer, Donald Tremblay, resigned his position effective May 8, 2018.

#### **Redemption of Medium Term Notes**

On August 2, 2018 we redeemed all of our then outstanding 6.40 per cent Medium Term Notes, due November 18, 2019 in the aggregate principal amount of \$400 million (the "Notes"). The redemption price for these Notes was \$1,061.736 per \$1,000 principal amount of the Notes (representing, in aggregate, \$425 million) including a prepayment premium and accrued and unpaid interest on the Notes to the redemption date.

#### **\$345 Million Bond Offering**

On July 2, 2018 our indirect wholly-owned subsidiary, TransAlta OCP LP (the "TransAlta OCP"), issued approximately \$345 million of bonds, sold by way of a private placement, which are secured by, among other things, a first ranking charge over all but a nominal percentage of the equity interests in TransAlta OCP and its general partner, and a first ranking charge over all of the TransAlta OCP's accounts and certain other assets. The amortizing bonds bear interest from their date of issue at a rate of 4.509 per cent per annum, payable semi-annually and mature on August 5, 2030.

#### **TransAlta Renewables Completes \$150 Million Bought Deal Offering of Common Shares**

On June 22, 2018, TransAlta Renewables issued, pursuant to an underwritten offering on a bought deal basis, 11,860,000 common shares in the capital of TransAlta Renewables at a price of \$12.65 per share for gross proceeds to TransAlta Renewables of approximately \$150 million. As a result of the offering, our interest in TransAlta Renewables was reduced from approximately 64 percent to 61 percent.

#### **Voting Results of Board of Directors**

At our 2018 annual and special meeting of shareholders held on April 20, 2018, Mr. Bryan Pinney was elected as a new member of the Board of Directors, replacing Thomas Jenkins. Mr. Pinney has over 30 years of experience serving many of Canada's largest corporations, primarily in energy and resources and construction. Mr. Pinney was a partner with Deloitte between 2002 and 2015. Mr. Pinney served as Calgary Managing Partner from 2002 through 2007 and as National Managing Partner of Audit & Assurance from 2007 to 2011 and Vice-Chair until June 2015.

#### **Normal Course Issuer Bid**

On March 9, 2018, the Toronto Stock Exchange ("TSX") accepted our notice to implement a normal course issuer bid ("NCIB"). Pursuant to the NCIB, we may purchase up to a maximum of 14,000,000 of our common shares. Purchases under the NCIB may be made through open market transactions on the TSX and any alternative Canadian trading platforms on which our common shares are traded, based on the prevailing market

price and subject to certain limitations. Any common shares purchased under the NCIB will be cancelled. As at February 26, 2019 we purchased and cancelled a total of 3,264,500 common shares at an average price of \$7.02 per common share for a total cost of approximately \$23 million.

#### **Redemption of Senior Notes**

On March 15, 2018, we redeemed all of our then outstanding US\$500 million 6.65 per cent senior notes maturing May 15, 2018. The redemption price for the notes was approximately \$617 million, including a \$5 million early redemption premium and accrued and unpaid interest on the notes to the redemption date.

### **2017**

#### **New Brunswick Wind Asset Project Financing**

On October 2, 2017, TransAlta Renewables completed a \$260 million bond offering on behalf of its indirect wholly-owned subsidiary, Kent Hills Wind LP, which is secured by a first ranking charge over all assets of Kent Hills Wind LP. The bonds are amortizing and bear interest from their date of issue at a rate of 4.454 per cent, payable quarterly and mature on November 30, 2033. Net proceeds were used to fund a portion of the construction costs for the 17.25 MW Kent Hills 3 expansion (upon meeting certain completion tests and other specified conditions) and to make advances to Canadian Hydro Developers, Inc. ("CHD") and to an affiliate of Natural Forces Technologies Inc., the Corporation's partner who owns approximately 17 per cent of Kent Hills Wind LP. The proceeds of the advances to CHD were used to redeem all of CHD's outstanding debentures.

#### **TransAlta Appoints the Honourable Rona Ambrose to its Board of Directors**

Effective July 13, 2017, our Board of Directors appointed the Honourable Rona Ambrose to our Board of Directors. The Honourable Rona Ambrose was the former Leader of Canada's Official Opposition in the House of Commons and former leader of the Conservative Party of Canada. She also acted as Minister of the Crown across nine government departments, including serving as Vice Chair of the Treasury Board and Chair of the cabinet committee for public safety, justice and aboriginal issues.

### **2016**

#### **Poplar Creek Financing**

On December 7, 2016, we completed a \$202.5 million bond offering on behalf of our indirect wholly-owned subsidiary, TAPC Holdings LP ("TAPC"), which is secured by the equity interests in TAPC and its general partner, and a first ranking charge over all of TAPC's accounts and certain other assets. The bonds, which mature on December 31, 2030, are amortizing and bear interest for each quarterly interest period at a rate per annum equal to the three-month Canadian Dollar Offered Rate in effect on the first day of such quarterly interest period plus 395 basis points. Proceeds were used to provide financing to certain of TAPC's affiliates, reduce the indebtedness of certain of TAPC's affiliates (including the Corporation) and for other general business purposes.

#### **Québec Wind Asset Project Financing**

On June 3, 2016, TransAlta Renewables completed a \$159 million bond offering on behalf of its indirect wholly-owned subsidiary, New Richmond Wind LP ("NR Wind"), which is secured by a first ranking charge over all assets of NR Wind. The bonds are amortizing and bear interest from their date of issue at a rate of 3.963 per cent, payable semi-annually and mature on June 30, 2032. Proceeds were used to make advances to CHD on a subordinated basis pursuant to an intercompany loan agreement, the proceeds of which were used to finance certain facilities of NR Wind's affiliates and for other general business purposes.

#### **Listing of Series B Preferred Shares**

On March 31, 2016, 1,824,620 of our 12,000,000 cumulative redeemable rate reset first preferred shares, Series A (the "Series A Shares") were converted, on a one-for-one basis, into cumulative redeemable floating rate first preferred shares, Series B (the "Series B Shares"). As a result of the conversion, TransAlta has 10,175,380 Series A Shares and 1,824,620 Series B Shares issued and outstanding. For further details, see "*Capital Structure*".

#### **Dividend Resizing and Dividend Reinvestment Program Suspension**

On January 14, 2016, to support the Corporation's transition from coal to gas-fired and renewable power generation in the province of Alberta and to maximize the Corporation's financial flexibility, we announced the resizing of our dividend to \$0.16 per share on an annualized basis and the suspension of the Premium Dividend<sup>TM</sup>, Dividend Reinvestment and Optional Common Share Purchase Plans.

#### **Closing of \$540 Million Transaction with TransAlta Renewables**

On January 6, 2016, we announced the closing of the investment by TransAlta Renewables in the Corporation's Sarnia cogeneration plant, Le Nordais wind farm and Ragged Chute hydro facility (the "Canadian Assets") for a combined value of \$540 million. The Canadian Assets consist of approximately 611 MW of contracted power generation assets located in Ontario and Québec. The Corporation received cash proceeds of \$172.5 million, a \$215 million convertible unsecured subordinated debenture and approximately \$152.5 million in common shares in the capital of TransAlta Renewables. The cash proceeds were used to reduce corporate debt.

## BUSINESS OF TRANSALTA

Our Canadian Coal, U.S. Coal, Wind and Solar, Hydro, Canadian Gas and Australian Gas business segments are responsible for constructing, operating and maintaining our electrical generation facilities as well as the related mining operations in Canada and the U.S. The Energy Marketing segment is responsible for marketing our production and securing cost effective and reliable fuel supply. All the segments are supported by a Corporate segment.

As the Corporation transforms into a leading clean energy company, it is expected that the proportion of revenue attributable to the Canadian Coal and U.S. Coal business will decline relative to the other business units. In addition, the Corporation has been implementing Project Greenlight in order to facilitate the transition to a leaner organization with a reduced cost structure to support the new business model.

The following table identifies each business segment's contribution to revenues as at December 31, 2018:

	<u>2018 Revenues</u> <sup>(1)</sup>	<u>2017 Revenues</u> <sup>(1)</sup>
Canadian Coal	40%	43%
U.S. Coal	20%	19%
Canadian Gas	10%	11%
Australian Gas	7%	6%
Wind and Solar	13%	13%
Hydro	7%	5%
Energy Marketing	3%	3%
Corporate	0%	0%

**Notes:**

- (1) Includes 100% of the revenue of TransAlta Renewables or its subsidiaries, as well as facilities in which TransAlta Renewables or one of its subsidiaries has an economic interest. We own, directly or indirectly, an aggregate interest of approximately 61 per cent of TransAlta Renewables.

For further information on our segment earnings and assets, please refer to Note 34 of our audited consolidated financial statements for the year ended December 31, 2018, which financial statements are incorporated by reference herein. See "*Documents Incorporated by Reference*" in this AIF.

The following sections of this Annual Information Form provide detailed information on facilities by geographic location and fuel type.

## Canadian Coal Business Segment

The following table summarizes our Canadian Coal generation facilities:

Facility Name	Province	Ownership (%)	Net Capacity Ownership Interest (MW) <sup>(1)</sup>	Commercial Operation Date	Revenue Source	Contract Expiry Date <sup>(2)</sup>
Genesee 3	AB	50	233	2005	Merchant	-
Keephills Unit No. 1 <sup>(3)</sup>	AB	100	395	1983	Alberta PPA/Merchant	2020
Keephills Unit No. 2 <sup>(3)</sup>	AB	100	395	1984	Alberta PPA/Merchant	2020
Keephills Unit No. 3	AB	50	232	2011	Merchant	-
Sheerness Unit No. 1 <sup>(4)</sup>	AB	25	100	1986	Alberta PPA/Merchant	2020
Sheerness Unit No. 2	AB	25	98	1990	Alberta PPA	2020
Sundance Unit No. 3 <sup>(5)</sup>	AB	100	368	1976	Merchant	-
Sundance Unit No. 4 <sup>(5)</sup>	AB	100	406	1977	Merchant	-
Sundance Unit No. 5 <sup>(5)</sup>	AB	100	406	1978	Merchant	-
Sundance Unit No. 6 <sup>(5)</sup>	AB	100	401	1980	Merchant	-
<b>Total Canadian Coal Net Capacity</b>			<b>3,033</b>			

### Notes:

- (1) MW are rounded to the nearest whole number. Column may not add due to rounding.
- (2) Where no contract expiry date is indicated, the facility operates as merchant.
- (3) Merchant capacity includes a 12 MW uprate on units 1 and 2, which began operation in the second quarter of 2012.
- (4) Merchant capacity includes a 10 MW uprate completed in the first quarter of 2016.
- (5) The Balancing Pool elected to terminate the Sundance B PPA and Sundance C PPA effective on or before March 31, 2018.

The Genesee 3 facility, located approximately 50 kilometres west of Edmonton, Alberta, is jointly owned with Capital Power Corporation ("Capital Power"). Coal for the Genesee 3 facility is provided from the adjacent Genesee mine. The coal reserves of the mine are owned, leased or controlled jointly by Westmoreland Coal Company ("Westmoreland Coal") and Capital Power. We have entered into coal supply agreements with Westmoreland Coal, which operates the mine, to supply coal for the life of the facility.

Keephills Unit 1 and 2 and the Sundance facilities are located approximately 70 kilometres southwest of Edmonton, Alberta, and are both owned by TransAlta. Keephills Unit 1 and Unit 2 each have a maximum capacity of 395 MW. The Sheerness facility is located approximately 200 kilometres northeast of Calgary, Alberta and is jointly owned by TransAlta Cogeneration LP ("TA Cogen") and ATCO Power (2000) Ltd. ("ATCO Power"). See "*Business of TransAlta – Non-Controlling Interests*".

On November 24, 2016, we entered into the Off-Coal Agreement with the Government of Alberta pertaining to our cessation of coal-fired emissions from the Keephills 3, Genesee 3, and Sheerness coal-fired facilities. The Off-Coal Agreement provides that we are entitled to receive annual cash payments of approximately \$37.4 million, net to TransAlta, from the Government of Alberta commencing in 2017 and terminating in 2030, subject to satisfaction of certain terms and conditions including our cessation of all coal-fired emissions on or before December 31, 2030. Other conditions include maintaining prescribed spending on investment and investment related activities in Alberta, maintaining a significant business presence in Alberta (including through the maintenance of prescribed employment levels), maintaining spending on programs and initiatives to support the communities surrounding the plants and the employees of the Corporation negatively impacted by the phase-out of coal generation, and the fulfillment of all obligations to affected employees, in each case as prescribed by the Off-Coal Agreement. See "*General Development of the Business - Generation and Business Development*".

Fuel requirements for the Western Canadian thermal generation facilities that we operate are supplied by a surface strip coal mine located in close proximity to the facilities. We own the Highvale mine that supplies coal to the Sundance and Keephills facilities and perform the mining, reclamation and associated work at the Highvale mine. Prairie Mines & Royalty Ltd., under contract with TransAlta, operated the mine on our behalf until January 17, 2013. On that date, we assumed operating and management control of the Highvale mine through our wholly-owned subsidiary, SunHills



Mining Limited Partnership ("SunHills"). The decision to directly operate our facility was made to provide us with greater control over our costs and operations.

We estimate that the recoverable coal reserves contained in this mine are sufficient to supply the anticipated requirements for the life of the facilities it serves. We also own the Whitewood mine, which formerly supplied coal to the now decommissioned Wabamun facility. The Whitewood mine is no longer in operation and we have completed reclamation of the site.

TransAlta and Capital Power formed a joint venture through which each has a 50 per cent ownership interest of the Keephills 3 facility. Capital Power was responsible for the construction of the facility and TransAlta is responsible for operating the facility. Keephills 3 began commercial operations on September 1, 2011. Each partner independently dispatches and markets its share of the unit's electrical output. We provide the coal fuel to the facility from our Highvale mine.

Coal for the Sheerness facility is provided from the adjacent Sheerness mine. The coal reserves of the mine are owned, leased or controlled jointly by TA Cogen, ATCO Power and Westmoreland Coal. TA Cogen and ATCO Power have entered into coal supply agreements with Westmoreland Coal, which operates the mine. See "*Business of TransAlta – Non-Controlling Interests*".

On January 1, 2018 we retired Sundance Unit 1 and mothballed Sundance Unit 2. On April 1, 2018, we mothballed Sundance Unit 3 and Sundance Unit 5. On July 31, 2018, we permanently retired Sundance Unit 2 due to its shorter useful life relative to other units, age, size, and the capital requirements needed to return the unit to service. The retirement is consistent with our transition to clean power strategy.

During 2018, we updated our mothball outage schedule to provide for the following:

- Sundance Unit 3 will continue to be mothballed for a period of up to April 1, 2020;
- Sundance Unit 5 will continue to be mothballed for a period of up to April 1, 2020; and
- Sundance Unit 4 is no longer expected to be mothballed on April 1, 2019, as had previously been scheduled, and we will perform maintenance during the first half of 2019.

The decision to mothball selected units ensures that the remaining units operate at strong capacity utilization factors which ensure competitive cost structures. See "*General Development of the Business - Generation and Business Development*".

We have accelerated the conversion from coal to gas of Sundance Units 3 to 6 and Keephills Units 1 and 2 in the 2020 to 2023 time frame. The coal-fired plants we operate, once converted to gas, are anticipated to be able to run through to 2031 to 2039.

### Canadian Gas Business Segment

The following table summarizes our Canadian natural gas-fired generation facilities:

Facility Name	Province/ State	Ownership (%)	Net Capacity Ownership Interest (MW) <sup>(1)</sup>	Commercial Operation Date	Revenue Source	Contract Expiry Date <sup>(2)</sup>
Fort Saskatchewan <sup>(5)</sup>	AB	30	35	1999	LTC	2029
Poplar Creek <sup>(4)</sup>	AB	100	230	2001	LTC	2030
Ottawa <sup>(5)</sup>	ON	50	37	1992	LTC/Merchant	2019-2033
Sarnia <sup>(3)</sup>	ON	100	499	2003	LTC	2022-2025
Windsor <sup>(5)</sup>	ON	50	36	1996	LTC/Merchant	2031
<b>Total Cdn Gas Net Capacity</b>			<b>837</b>			

**Notes:**

- (1) MW are rounded to the nearest whole number. Net Capacity Ownership Interest includes 100 per cent of the generating capacity owned by TransAlta Renewables. As of the date of this Annual Information Form, TransAlta owns, directly or indirectly, approximately 61 per cent of the common shares in TransAlta Renewables.
- (2) Where no contract expiry date is indicated, the facility operates as merchant.
- (3) Facility is owned by TransAlta Renewables.
- (4) The Poplar Creek plant is operated by Suncor and ownership of the facility will transfer to Suncor Energy Inc. in 2030.
- (5) Our interests in these facilities are through our ownership interest in TA Cogen.
- (6) As of January 2018, the Mississauga facility is no longer actively generating electricity.

We have a net ownership interest of 30 per cent in the Fort Saskatchewan facility. See "*Business of TransAlta – Non-Controlling Interests*". The 118 MW natural gas-fired Combined-Cycle cogeneration Fort Saskatchewan plant is owned by TA Cogen and Prairie Boys Capital Corporation (previously known as Strongwater Energy Ltd). During the fourth quarter of 2017, we entered into a long-term contract for the Fort Saskatchewan facility providing for the delivery of energy and steam to the customer. The contract has an initial 10-year term, commencing on January 1, 2020, with the option for two five-year extensions. The contract allows our customer to continue to benefit from the operational flexibility of the plant.

Our Poplar Creek plant is located in Fort McMurray, Alberta. On August 31, 2015, the Corporation restructured its contractual arrangement for the power generation services of its Poplar Creek plant. The Poplar Creek co-generation facility had been built and contracted to provide steam and electricity to Suncor's oil sands operations. Under the terms of the new arrangement, Suncor acquired from the Corporation two steam turbines with an installed capacity of 126 MW and certain transmission interconnection assets. In addition, Suncor assumed full operational control of the co-generation facility and has the right to use the full 230 MW capacity of the Corporation's gas generators until December 31, 2030. Ownership of the entire Poplar Creek co-generation facility will transfer to Suncor in 2030.

The Mississauga cogeneration facility is owned by TA Cogen. See "*Business of TransAlta – Non-Controlling Interests*". It is a Combined-Cycle cogeneration facility designed to produce 108 MW of electrical energy. The capacity was contracted under a long-term contract with the OEFC which was terminated effective December 31, 2016. As of January 2017, the Mississauga facility is no longer actively generating electricity and on December 31, 2018, the enhanced dispatch contract with Ontario's IESO expired. In December 2018, TransAlta exercised its option to terminate its lease agreement with Boeing Canada Inc. effective December 31, 2021. TransAlta is required to remove the plant and restore the site within the three-year time frame.

The Ottawa plant is owned by TA Cogen. See "*Business of TransAlta – Non-Controlling Interests*" in this AIF. It is a Combined-Cycle cogeneration facility designed to produce 74 MW of electrical energy. On August 30, 2013, the Corporation announced the recontracting of the plant with the IESO for a 20-year term, effective January 2014. The Ottawa plant also provides steam, hot water, and chilled water to the member hospitals and treatment centers of the Ottawa Health Sciences Centre and the National Defence Medical Centre. The thermal energy contract with the Ottawa Health Sciences Centre expires January 1, 2024 and the thermal energy contract with the National Defence Medical Centre has automatically renewed to December 31, 2019.

The Sarnia plant is a 499 MW Combined-Cycle cogeneration facility that provides steam and electricity to nearby industrial facilities owned by ARLANXEO Canada Inc. (formerly LANXESS AG), Nova Chemicals (Canada) Ltd. ("NOVA") (which in turn supplies Styrolution, a Styrene production facility formerly owned by NOVA) and Suncor Energy Products Inc. In September 2009, we signed a new contract with the IESO, effective as of July 1, 2009 and terminating on December 31, 2025. This agreement includes provisions for the parties to share in the impact and benefit of changes in customer steam load or loss of steam customer. The current steam contracts expire at the end of 2022. TransAlta Renewables acquired an economic interest based, in part, on the cash flows of the Sarnia cogeneration facility on January 6, 2016 and subsequently, on November 30, 2016, the economic interest was replaced with direct ownership of the entity that owns the Sarnia cogeneration plant. See "*Business of TransAlta – Non-Controlling Interests*." In 2018 Sarnia's capacity was reduced from 506 MW to 499 MW due to the lay up of one generator. The reduction in capacity does not impact the plant's ability to meet its contractual requirements.

The Windsor plant is owned by TA Cogen. See "*Business of TransAlta – Non-Controlling Interests*". It is a Combined-Cycle cogeneration facility designed to produce 72 MW of electrical energy, of which, 50 MW was sold under a long-

term contract to the OEFC. This agreement with the OEFC expired November 30, 2016. Effective December 1, 2016, the Windsor plant began operating under an agreement with the IESO with a 15-year term for up to 72 MW of capacity. The Windsor plant also provides thermal energy to Fiat Chrysler Automobiles Canada Inc.'s minivan assembly facility in Windsor that expires in 2020.

### Australian Gas Business Segment

The following table summarizes our Australian natural gas-fired and diesel fired generation facilities:

Facility Name	Province/ State	Ownership (%)	Net Capacity Ownership Interest (MW) <sup>(1)</sup>	Commercial Operation Date	Revenue Source	Contract Expiry Date
Parkeston <sup>(2)(3)</sup>	WA <sup>(4)</sup>	50	55	1996	LTC	2026
South Hedland <sup>(2)</sup>	WA <sup>(4)</sup>	100	150	2017	LTC	2042
Southern Cross Energy <sup>(2)(5)</sup>	WA <sup>(4)</sup>	100	245	1996	LTC	2023
<b>Total Aus Gas Net Capacity</b>			<b>450</b>			

#### Notes:

- (1) MW are rounded to the nearest whole number. Net Capacity Ownership Interest includes 100 per cent of the generating capacity owned by TransAlta Renewables. As at December 31, 2018, TransAlta owned approximately 61 per cent of the common shares in TransAlta Renewables.
- (2) TransAlta Renewables owns an economic interest in the facility.
- (3) Plant contracted to October 2026 with early termination options beginning in 2021.
- (4) Western Australia.
- (5) Comprised of four facilities.

All of our Australian assets are owned, directly or indirectly, by TransAlta Energy (Australia) Pty Ltd. ("TEA"), a wholly-owned subsidiary of TransAlta. On May 7, 2015, TransAlta Renewables acquired tracking preferred shares that entitle TransAlta Renewables to an economic interest based on the cash flows broadly equal to the underlying net distributable profits of TEA, in consideration for a payment equal to \$1.78 billion, which amount included funding the remaining construction costs for South Hedland.

Pursuant to the terms of the preferred shares, TransAlta Renewables is entitled to receive, in priority to the common shares in the capital of TEA, quarterly preferential cash dividends. The preferred shares have no residual right to participate in the earnings of TEA. In the event of the liquidation, dissolution or winding-up of TEA or any other distribution of the assets of TEA among its shareholders for the purpose of winding up its affairs, TransAlta Renewables shall be entitled, subject to applicable law, to receive from TEA as the sole holder of preferred shares, before any distribution of TEA to the holders of the common shares or any other shares ranking junior to the preferred shares, an amount equal to the fair market value of the Australian assets.

The Parkeston plant is a 110 MW dual-fuel natural gas and diesel fired power station, which we own in partnership through a 50/50 joint venture with NP Kalgoorlie Pty Ltd., a subsidiary of Newmont Australia Limited. The Parkeston facility primarily supplies energy to Kalgoorlie Consolidated Gold Mines and the initial supply contract ended in 2016. The plant has been re-contracted effective November 1, 2016, and the agreement extends the previous contract to October 2026, with options for early termination available to either party beginning in 2021. Any merchant capacity and energy are sold into Western Australia's Wholesale Electricity Market ("WEM"). TransAlta Renewables acquired an economic interest based, in part, on the cash flows of the Parkeston facility on May 7, 2015.

Southern Cross Energy is composed of four natural gas and diesel-fired generation facilities with a combined capacity of 245 MW. Southern Cross Energy sells its output pursuant to a contract with BHP Billiton Nickel West which was renewed in October of 2013 for ten years. TransAlta Renewables acquired an economic interest based, in part, on the cash flows of the Southern Cross Energy facilities on May 7, 2015.

In 2014, we established the Fortescue River Gas Pipeline joint venture with DBP Development Group. The joint venture (of which TransAlta is a 43 per cent partner) was successfully awarded the contract to design, build, own and operate the 270 km Fortescue River Gas Pipeline to deliver natural gas to the Solomon Power Station. The pipeline was completed in the first quarter of 2015 and operates under a take-or-pay gas transport agreement with a subsidiary of

FMG for an initial term of 20 years. The 16-inch diameter pipeline has an initial free-flow capacity of 64 TJ per day. TransAlta Renewables acquired an economic interest based, in part, on the cash flows of the pipeline on May 7, 2015.

In 2014, TransAlta was selected as the successful bidder to design, build, own and operate a 150 MW combined cycle power station near South Hedland, Western Australia. Construction began in early 2015 and the plant achieved commercial operation on July 28, 2017. The plant was fully contracted with two customers for a 25-year term. The majority of the plant's capacity remains contracted to Horizon Power, the state-owned electricity supplier in the region. The second customer is the port operations of FMG for 35 MW of capacity. In November 2017, we received a notice from FMG purporting to terminate their power purchase agreement. We are continuing to dispute the notice purporting to terminate and we continue to invoice FMG for the contracted capacity. TransAlta Renewables acquired an economic interest based, in part, on the cash flows of the South Hedland facility on May 7, 2015.

## Hydro Business Segment

The Hydro business segment holds an interest in 926 net MWs. The facilities are located in British Columbia, Alberta, Ontario, and Washington State.

As well as contracting for power, long-term and short-term contracts are entered into to sell the environmental attributes from the merchant hydro facilities. These activities help to ensure earnings consistency from these assets. Generally, for facilities under long-term contract, the benefit of the environmental attributes generated flow through to the contract holder.

The following table summarizes our hydroelectric facilities:

Facility Name	Province/ State	Ownership (%)	Net Capacity Ownership Interest (MW) <sup>(1)</sup>	Commercial Operation Date	Revenue Source	Contract Expiry Date <sup>(2)</sup>
Barrier	AB	100	13	1947	Alberta PPA	2020
Bearspaw	AB	100	17	1954	Alberta PPA	2020
Cascade	AB	100	36	1942, 1957	Alberta PPA	2020
Ghost	AB	100	54	1929, 1954	Alberta PPA	2020
Horseshoe	AB	100	14	1911	Alberta PPA	2020
Interlakes	AB	100	5	1955	Alberta PPA	2020
Kananaskis	AB	100	19	1913, 1951	Alberta PPA	2020
Pocaterra	AB	100	15	1955	Merchant	-
Rundle	AB	100	50	1951, 1960	Alberta PPA	2020
Spray	AB	100	112	1951, 1960	Alberta PPA	2020
Three Sisters	AB	100	3	1951	Alberta PPA	2020
Belly River <sup>(3)(4)</sup>	AB	100	3	1991	Merchant	-
St. Mary <sup>(3)(4)</sup>	AB	100	2	1992	Merchant	-
Taylor <sup>(3)(4)</sup>	AB	100	13	2000	Merchant	-
Waterton <sup>(3)(4)</sup>	AB	100	3	1992	Merchant	-
Bighorn	AB	100	120	1972	Alberta PPA	2020
Brazeau	AB	100	355	1965, 1967	Alberta PPA	2020
Akolkolex <sup>(3)(4)</sup>	BC	100	10	1995	LTC	2046
Pingston <sup>(3)(4)</sup>	BC	50	23	2003, 2004	LTC	2023
Bone Creek <sup>(3)(4)</sup>	BC	100	19	2011	LTC	2031
Upper Mamquam <sup>(3)(4)</sup>	BC	100	25	2005	LTC	2025
Appleton <sup>(3)(4)</sup>	ON	100	1	1994	LTC	2030
Galetta <sup>(3)(6)</sup>	ON	100	2	1998	LTC	2030
Misema <sup>(3)</sup>	ON	100	3	2003	LTC	2027
Moose Rapids <sup>(3)</sup>	ON	100	1	1997	LTC	2030
Ragged Chute <sup>(3)(4)</sup>	ON	100	7	1991	LTC	2029
Skookumchuck <sup>(5)</sup>	WA	100	1	1970	LTC	2020
<b>Total Hydroelectric Net Capacity</b>			<b>926</b>			

**Notes:**

- (1) MW are rounded to the nearest whole number. Net Capacity Ownership Interest includes 100 per cent of the generating capacity owned by TransAlta Renewables. As at December 31, 2018, TransAlta owned, directly or indirectly, approximately 61 per cent of the voting equity common shares in TransAlta Renewables.
- (2) Where no contract expiry date is indicated, the facility operates as merchant.
- (3) Facility owned by TransAlta Renewables.
- (4) These facilities are EcoLogo® certified ("EcoLogo"). EcoLogo certification is granted to products with environmental performance that meet or exceed all government, industrial safety and performance standards.
- (5) This facility is used to provide a reliable water supply to Centralia Coal.
- (6) Galetta was originally built in 1907, but was retrofitted in 1998.

*Bow River System*

Barrier is a run-of-river hydroelectric facility with installed capacity of 13 MW located on the Kananaskis River in Seebe, Alberta. It has been operating since 1947. The facility operates under an Alberta PPA.

Bearspaw is a hydroelectric facility with installed capacity of 17 MW located on the Bow River in Calgary, Alberta. It has been operating since 1954. The facility operates under an Alberta PPA.

Cascade is a hydroelectric facility with installed capacity of 36 MW located on the Cascade River in Banff National Park, Alberta. We purchased this facility from the Government of Canada in 1941. The following year, we built a new dam and power plant to replace the original, and then, in 1957, added a second generating unit. The facility operates under an Alberta PPA.

Ghost is a hydroelectric facility with installed capacity of 54 MW located on the Bow River in Cochrane, Alberta. It has been operating since 1929. The facility operates under an Alberta PPA.

Horseshoe is a run-of-river hydroelectric facility with installed capacity of 14 MW located on the Bow River in Seebe, Alberta. It has been operating since 1911. The facility operates under an Alberta PPA.

Interlakes is a hydroelectric facility with installed capacity of 5 MW located at Kananaskis Lakes, Alberta. It has been operating since 1955. The facility operates under an Alberta PPA.

Kananaskis is a run-of-river hydroelectric facility with installed capacity of 19 MW located on the Bow River in Seebe, Alberta. It has been operating since 1913. It was expanded in 1951 and modified in 1994. The facility operates under an Alberta PPA.

Pocaterra is a hydroelectric facility with installed capacity of 15 MW located at Kananaskis Lakes, Alberta. It has been operating since 1955. Generation from the facility is sold in the Alberta spot market.

Rundle is a hydroelectric facility with installed capacity of 50 MW located in Canmore, Alberta on the Spray system. The plant uses water from the Spray Lakes Storage Reservoir. It has been operating since 1951. The facility operates under an Alberta PPA.

Spray is a hydroelectric facility with installed capacity of 112 MW located in Canmore, Alberta on the Spray system. The plant uses water from the Spray Lakes Storage Reservoir. It has been operating since 1951. The facility operates under an Alberta PPA.

Three Sisters is a hydroelectric facility with installed capacity of 3 MW located at the base of the Three Sisters Dam in Canmore, Alberta on the Spray system. The plant uses water from the Spray Lakes Storage Reservoir. It has been operating since 1951. The facility operates under an Alberta PPA.

### *Oldman River System*

The Belly River facility is owned by TransAlta Renewables. Belly River is a run-of-river hydroelectric facility with installed capacity of 3 MW located on the Waterton-St. Mary Headworks Irrigation Canal System, east of the Waterton Reservoir, approximately 75 kilometres southwest of Lethbridge in Southern Alberta. Due to its location along the irrigation canal, Belly River operates from April to October when water is diverted through the canal as part of the St. Mary Irrigation District Water Management Plan. It has been operating since 1991. We acquire the generation from the facility pursuant to a Renewables PPA (as defined below), and subsequently sell such generation in the Alberta spot market.

The St. Mary facility is owned by TransAlta Renewables. St. Mary is a run-of-river hydroelectric facility with installed capacity of 2 MW located at the base of the St. Mary Dam on the Waterton Reservoir, near Magrath, in Southern Alberta. It has been operating since 1992. We acquire the generation from the facility pursuant to a Renewables PPA, and subsequently sell such generation in the Alberta spot market.

The Taylor facility is owned by TransAlta Renewables. Taylor is a run-of-river hydroelectric facility with installed capacity of 13 MW and is located adjacent to the Taylor Coulee Chute on the Waterton-St. Mary Headworks Irrigation Canal System, which is owned by the Government of Alberta. It has been operating since 2000. We acquire the generation from the facility pursuant to a Renewables PPA, and subsequently sell such generation in the Alberta spot market.

The Waterton facility is owned by TransAlta Renewables. Waterton is a run-of-river hydroelectric facility with installed capacity of 3 MW located at the base of the Waterton Dam on the Waterton Reservoir, near Hillspring, southwest of Lethbridge, Alberta. It has been operating since 1992. We acquire the generation from the facility pursuant to a Renewables PPA, and subsequently sell such generation in the Alberta spot market.

### *North Saskatchewan River System*

Bighorn is a hydroelectric facility with installed capacity of 120 MW located in Nordegg, Alberta. It has been operating since 1972. The facility operates under an Alberta PPA.

Brazeau is a hydroelectric facility with installed capacity of 355 MW located in Drayton Valley, Alberta. It has been operating since 1965. The facility operates under an Alberta PPA.

### *Akolkolex River System*

The Akolkolex facility is owned by TransAlta Renewables. Akolkolex is a run-of-river hydroelectric facility with installed capacity of 10 MW located on the Akolkolex River, south of Revelstoke, British Columbia. It has been operating since 1995. In 2016, TransAlta entered into a new 30 year agreement to sell the output from the facility to British Columbia Hydro Power Authority ("BC Hydro").

Pingston is a run-of-river hydroelectric facility with installed capacity of 45 MW located on Pingston Creek, southwest of Revelstoke, British Columbia and down river of the Akolkolex facility. It has been operating since 2003. TransAlta Renewables owns the facility equally with Brookfield Renewable Power Inc. The output from the facility is sold to BC Hydro.

### *Thompson River System*

The Bone Creek facility is owned by TransAlta Renewables. Bone Creek is a run-of-river hydroelectric facility with installed capacity of 19 MW located on Bone Creek, 90 kilometres south of the town of Valemount, British Columbia. It has been operating since 2011. The output from the facility is under contract with BC Hydro. The facility also currently qualifies for payments of \$10/MWh until 2020 from Natural Resources Canada ("NRCan"), a division of the federal government, through the ecoEnergy for Renewable Power ("eERP") program.

### *Mamquam River System*

The Upper Mamquam facility is owned by TransAlta Renewables. Upper Mamquam is a run-of-river hydroelectric facility with installed capacity of 25 MW located on the Mamquam River, east of Squamish, British Columbia, and north of Vancouver. It has been operating since 2005. The output from the facility is sold to BC Hydro.

### *Mississippi River System*

The Appleton facility is owned by TransAlta Renewables. Appleton is a run-of-river hydroelectric facility with installed capacity of 1 MW located on the Mississippi River, near Almonte, Ontario. The facility has been operating since 1994. Generation from this facility is sold to Ontario's IESO under a contract that terminates December 31, 2030.

The Galetta facility is owned by TransAlta Renewables. Galetta is a run-of-river hydroelectric facility with installed capacity of 2 MW located on the Mississippi River, near Galetta, Ontario. This facility was originally built in 1907 and retrofitted in 1998. Generation from this facility is sold to the IESO under a contract that terminates December 31, 2030.

### *Misema River System*

The Misema facility is owned by TransAlta Renewables. Misema is a run-of-river hydroelectric facility with installed capacity of 3 MW located on the Misema River, close to Englehart, in northern Ontario. This facility has been operating since 2003. Generation from this facility is sold to the IESO under a contract that terminates May 3, 2027.

### *Wanapitei River System*

The Moose Rapids facility is owned by TransAlta Renewables. Moose Rapids is a run-of-river hydroelectric facility with installed capacity of 1 MW located on the Wanapitei River, near Sudbury, in northern Ontario. This facility has

been operating since 1997. Generation from this facility is sold to the IESO under a contract that terminates December 31, 2030.

#### *Montréal River System*

Ragged Chute is a run-of-river hydroelectric facility with installed capacity of 7 MW located on the Montréal River, south of New Liskeard, in northern Ontario. We lease this facility from Ontario Power Generation Inc. and it has been operating since 1991. Generation from this facility is sold to the IESO under a contract that terminates June 30, 2029. On January 6, 2016 TransAlta Renewables acquired from the Corporation tracking preferred shares that entitle TransAlta Renewables to an economic interest based on the cash flows, in part, from the Ragged Chute Facility; subsequently, on November 30, 2016, the economic interest was replaced with direct ownership of the entity that owns the Ragged Chute hydro facility. See "*Business of TransAlta – Non-Controlling Interests*" in this AIF.

#### *Centralia*

We own a 1 MW hydroelectric generating facility on the Skookumchuck River near Centralia, Washington, and related assets which are used to provide water supply to our generation facilities in Centralia. On December 10, 2010, we entered into an agreement with Puget Sound Energy ("PSE") for Skookumchuck to provide power until 2020.

#### **Wind and Solar Business Segment**

As at December 31, 2018, the Wind and Solar segment held interests in approximately 1,455 MW of gross wind generating capacity from 10 wind farms in Western Canada, four in Ontario, two in Québec, three in New Brunswick, and two in the United States, more specifically in the states of Wyoming and Minnesota. We also hold an interest in a 21 MW solar facility in the state of Massachusetts in the United States.

Wind and solar are not generally a dispatchable fuel; therefore, in merchant markets, wind and solar assets may not be able to secure the annual average pool price. As such, we make different assumptions in forecast revenue received for generation from a wind or solar asset compared to a base load asset. If these price assumptions and generation production forecasts are not correct, the corresponding revenue received may be reduced. Generation production forecasts are based on the long-term average production forecast for a site, reflecting historical climatic conditions. Within any year there may be variations from this long-term average. In order to forecast generation production, a number of factors have to be assumed based on historic on-site data. For a wind farm, this includes wind farm design including wake and array losses, wind shear and the electrical losses within the site. For a solar plant, long-term energy production depends on panel angle and row spacing, amount of sun, ambient conditions such as temperature and wind speed and losses at the site. If these assumptions are incorrect then actual production will be higher or lower than the long-term forecast for the site.

As well as contracting for the sale of the power generated, we also enter into long-term and short-term contracts to sell the environmental attributes from the merchant wind facilities including offsets and renewable energy credits. These activities help to ensure earnings consistency from these assets. Generally, for facilities under long-term contract, the purchaser under such long-term contracts also has the benefit of any environmental attributes.



The following table summarizes our Wind and Solar generation facilities:

Facility Name	Province/ State	Ownership (%)	Net Capacity Ownership Interest (MW) <sup>(1)</sup>	Commercial Operation Date	Revenue Source	Contract Expiry Date <sup>(2)</sup>
Ardenville <sup>(4)(5)</sup>	AB	100	69	2010	Merchant	-
Blue Trail <sup>(4)(5)</sup>	AB	100	66	2009	Merchant	-
Castle River <sup>(4)(5)(6)</sup>	AB	100	44	1997-2001	Merchant	-
Cowley North <sup>(4)(5)</sup>	AB	100	20	2001	Merchant	-
Macleod Flats <sup>(4)</sup>	AB	100	3	2004	Merchant	-
McBride Lake <sup>(4)(5)</sup>	AB	50	38	2004	LTC	2024
Sinnott <sup>(4)(5)</sup>	AB	100	7	2001	Merchant	-
Soderglen <sup>(4)(5)</sup>	AB	50	35	2006	Merchant	-
Summerview 1 <sup>(4)(5)</sup>	AB	100	70	2004	Merchant	-
Summerview 2 <sup>(4)(5)</sup>	AB	100	66	2010	Merchant	-
Mass Solar <sup>(3)(8)</sup>	MA	100	21	2012-2015	LTC	2032-2045
Lakeswind <sup>(3)</sup>	MN	100	50	2014	LTC	2034
Kent Hills 1 <sup>(4)(5)</sup>	NB	83	80	2008	LTC	2035
Kent Hills 2 <sup>(4)(5)</sup>	NB	83	45	2010	LTC	2035
Kent Hills 3 <sup>(4)</sup>	NB	83	14	2018	LTC	2035
Kent Breeze <sup>(4)</sup>	ON	100	20	2011	LTC	2031
Melancthon I <sup>(4)(5)</sup>	ON	100	68	2006	LTC	2026
Melancthon II <sup>(4)(5)</sup>	ON	100	132	2008	LTC	2028
Wolfe Island <sup>(4)(5)</sup>	ON	100	198	2009	LTC	2029
Le Nordais <sup>(4)(5)(7)</sup>	QC	100	98	1999	LTC	2033
New Richmond <sup>(4)(5)</sup>	QC	100	68	2013	LTC	2033
Wyoming Wind <sup>(3)</sup>	WY	100	144	2003	LTC	2028
<b>Total Wind and Solar Net Capacity</b>			<b>1,353</b>			

**Notes:**

- (1) MW are rounded to the nearest whole number. Column may not add due to rounding. Net Capacity Ownership Interest includes 100 per cent of the generating capacity owned by TransAlta Renewables. As at December 31, 2018, TransAlta owned, directly and indirectly, approximately 61 per cent of the common shares in TransAlta Renewables.
- (2) Where no contract expiry date is indicated, the facility operates as merchant.
- (3) TransAlta Renewables owns an economic interest in the facility.
- (4) Facility owned by TransAlta Renewables.
- (5) These facilities are EcoLogo® certified. EcoLogo certification is granted to products with environmental performance that meet or exceed all government, industrial safety and performance standards.
- (6) Includes seven additional turbines at other locations.
- (7) Comprised of two facilities.
- (8) Comprised of multiple facilities.

The Ardenville facility is owned by TransAlta Renewables. Ardenville is a 69 MW wind farm located approximately eight kilometres south of Fort Macleod, Alberta adjacent to the Macleod Flats wind facility. We constructed the project, which commenced commercial operations on November 10, 2010. The Ardenville wind farm is entitled to receive payments of \$10/MWh until 2020 from NRCan, through the eERP program. We acquire the generation from the facility pursuant to a Renewables PPA, and subsequently sell such generation in the Alberta spot market.

The Blue Trail facility is owned by TransAlta Renewables. Blue Trail is a 66 MW wind farm located in southern Alberta which commenced commercial operations in November 2009. The Blue Trail wind farm is entitled to receive payments of \$10/MWh until 2019 from NRCan, through the eERP program. We acquire the generation from the facility pursuant to a Renewables PPA, and subsequently sell such generation in the Alberta spot market.

The Castle River facility is owned by TransAlta Renewables. Castle River is a 40 MW wind farm located in Pincher Creek, Alberta. We also own and operate seven additional turbines totaling 4 MW located individually in the Cardston

County and Hillspring areas of southwestern Alberta. We acquire the generation from the facility pursuant to a Renewables PPA, and subsequently sell such generation in the Alberta spot market.

The Cowley North facility is owned by TransAlta Renewables. Cowley North is a 20 MW wind farm, located in Pincher Creek, Alberta. It commenced commercial operations in the fall of 2001. We acquire the generation from the facility pursuant to a Renewables PPA, and subsequently sell such generation in the Alberta spot market.

The Macleod Flats facility is owned by TransAlta Renewables. Macleod Flats consists of a single 3 MW turbine and is located near Fort Macleod. It was commissioned in 2004 and was purchased by us in 2009. We acquire the generation from the facility pursuant to a Renewables PPA, and subsequently sell such generation in the Alberta spot market.

The McBride Lake facility is owned by TransAlta Renewables. McBride Lake is a 75 MW wind farm located at Fort Macleod, Alberta. We constructed the wind farm, which commenced commercial operations in 2004. McBride Lake is operated by us. TransAlta Renewables owns the facility equally with ENMAX Green Power Inc. The output from the facility is 100 per cent contracted in the form of a 20-year PPA with ENMAX Energy Corporation. We also indirectly own an interest in the 0.7 MW McBride Lake East facility in the same vicinity through our ownership interest in TransAlta Renewables.

The Sinnott facility is owned by TransAlta Renewables. Sinnott has a total installed capacity of 7 MW and is located in Pincher Creek, Alberta. It commenced commercial operations in the fall of 2001. We acquire the generation from the facility pursuant to a Renewables PPA, and subsequently sell such generation in the Alberta spot market.

The Soderghen facility is owned by TransAlta Renewables. Soderghen is a 71 MW facility located in southern Alberta, southwest of Fort Macleod and 40 kilometres from our wind operations near Pincher Creek. The facility began commercial operations in September 2006. TransAlta Renewables owns the facility equally with Nexen Energy ULC. We acquire the generation from the facility pursuant to a Renewables PPA, and subsequently sell 50 per cent of such generation in the Alberta spot market (which excludes that portion of generation that is owned by Nexen Energy ULC).

The Summerview 1 facility is owned by TransAlta Renewables. Summerview 1 is a 68 MW wind farm located approximately 15 kilometres northeast of Pincher Creek, Alberta. We constructed Summerview and it commenced commercial operations in 2004. The Summerview 1 facility, together with an existing 1.8 MW turbine in the area, brings the total wind generation capacity at that location to 70 MW. We acquire the generation from the facility pursuant to a Renewables PPA, and subsequently sell such generation in the Alberta spot market.

The Summerview 2 facility is owned by TransAlta Renewables. Summerview 2 is a 66 MW wind farm located northeast of Pincher Creek, Alberta. We constructed the facility, which began commercial operations in February 2010. The Summerview 2 wind farm expansion is entitled to receive payments of \$10/MWh until 2020 from NRCAN, through the eERP program. We acquire the generation from the facility pursuant to a Renewables PPA, and subsequently sell such generation in the Alberta spot market.

The Mass Solar Farm is a 21 MW solar project consisting of multiple facilities located in Massachusetts. The wind farm was acquired in 2015 from an affiliate of Rockland Capital LLC. The operational solar farm is contracted under a long-term PPA with several high-quality counterparties. On May 31, 2018 TransAlta Renewables acquired tracking preferred shares from the Corporation that provides TransAlta Renewables with an economic interest in the solar farm. See "*General Developments of the Business – Generation and Business Development*" and "*Business of TransAlta – Non-Controlling Interests – TransAlta Renewables*".

The Lakeswind Wind Farm is a 50 MW wind project located near Rollag, Minnesota. The wind farm was acquired in 2015 from an affiliate of Rockland Capital LLC. The wind farm is fully operational and contracted under a long-term PPA until 2034 with several high-quality counterparties. On May 31, 2018 TransAlta Renewables acquired tracking preferred shares from the Corporation that provides TransAlta Renewables with an economic interest in the wind farm. See "*General Developments of the Business – Generation and Business Development*".

The Kent Hills 1 facility is owned by TransAlta Renewables. Kent Hills is a 96 MW project located in Kent Hills, New Brunswick, and delivers power under a 25-year PPA with New Brunswick Power. Natural Forces Technologies Inc.

("Natural Forces"), an Atlantic Canada-based wind developer, is our co-development partner in this project and exercised its option to purchase 17 per cent of the Kent Hills project in May 2009. Kent Hills commenced commercial operations in 2008. On June 1, 2017, we extended the term of the Kent Hills 1 PPA by two years to 2035. The Kent Hills 1 facility is entitled to receive eERP payments until December 31, 2018.

The Kent Hills 2 facility is owned by TransAlta Renewables. This Kent Hills expansion is a 54 MW wind farm which also delivers power under a 25-year PPA with New Brunswick Power, expiring in 2035. Natural Forces exercised its option to purchase a 17 per cent interest in the Kent Hills 2 expansion project subsequent to the commencement of commercial operations. The facility commenced commercial operations in 2010. The Kent Hills 2 facility is owned by TransAlta Renewables and is entitled to receive eERP payments until 2020.

On June 1, 2017, we signed a PPA with New Brunswick Power for the further expansion of the Kent Hills wind farm. This expansion project, Kent Hills 3, reached commercial operations as of October 19, 2018 and adds five 3.45 MW turbines to the Kent Hills fleet for an additional 17.25 MW at the site, bringing total generating capacity of the three Kent Hills facilities to 167 MW. The Kent Hills 3 PPA expires in 2035. The Kent Hills 3 facility is owned by TransAlta Renewables. See "*General Developments of the Business – Generation and Business Development*".

Kent Breeze is a 20 MW wind project located in Thamesville, Ontario. This facility commenced commercial operations in 2011. Generation from this facility is sold to the IESO. Kent Breeze is entitled to receive eERP payments until 2021. On May 31, 2018 this facility was acquired by TransAlta Renewables. See "*General Developments of the Business – Generation and Business Development*".

The Melancthon I facility is owned by TransAlta Renewables. Melancthon I is a 68 MW wind project located in Melancthon Township near Shelburne, Ontario. It commenced commercial operations in 2006. Generation from this facility is sold to the IESO.

The Melancthon II facility is owned by TransAlta Renewables. Melancthon II is a 132 MW wind project located adjacent to Melancthon I, in Melancthon and Amaranth Townships. It commenced commercial operations in 2008. Generation from this facility is sold to the IESO. Melancthon II was entitled to receive eERP payments until November 30, 2018.

The Wolfe Island facility is owned by TransAlta Renewables. Wolfe Island is a 198 MW wind project located on Wolfe Island, near Kingston, Ontario. This facility commenced commercial operations in 2009. Generation from this facility is sold to the IESO. Wolfe Island is entitled to receive eERP payments until 2019.

Le Nordais is located at two sites on the Gaspé Peninsula of Québec: Cap-Chat and Matane with a combined 98 MW of installed capacity. It commenced commercial operations in 1999. Generation from this facility is sold to Hydro-Québec Production. On January 6, 2016, TransAlta Renewables acquired from the Corporation tracking preferred shares that entitle TransAlta Renewables to an economic interest based on the cash flows, in part, from the Le Nordais facilities; subsequently, on November 30, 2016, the economic interest was replaced with direct ownership of the entity that owns the Le Nordais wind farm. See "*Business of TransAlta – Non-Controlling Interests*".

The New Richmond facility is owned by TransAlta Renewables. New Richmond is a 68 MW wind project also located on the Gaspé Peninsula of Québec. New Richmond is contracted under a 20-year Electricity Supply Agreement with Hydro-Québec Distribution. It commenced commercial operations in 2013.

The Wyoming Wind Farm is a 144 MW wind project located near Evanston, Wyoming. The wind farm was acquired in December 2013 from an affiliate of NextEra Energy Resources, LLC. The wind farm is contracted under a long-term PPA until 2028 with an investment grade counterparty. TransAlta Renewables holds tracking preferred shares from the Corporation that provides TransAlta Renewables with an economic interest in the wind farm. See "*Non-Controlling Interests – TransAlta Renewables*".

All of the electricity generated and sold by our Wind segment within Canada, with the exception of Macleod Flats and Kent Breeze, are from facilities that are EcoLogo certified. We are an EcoLogo certified distributor of Alternative Source Electricity through Environment Canada's Environmental Choice program.

## U.S. Coal Business Segment

Our U.S. Coal facilities are summarized in the following table:

Facility Name	Province/ State	Ownership (%)	Net Capacity Ownership Interest (MW)	Commercial Operation Date	Revenue Source	Contract Expiry Date
Centralia Thermal No. 1	WA	100	670	1971	LTC/Merchant	2020
Centralia Thermal No. 2	WA	100	670	1971	LTC/Merchant	2025
<b>Total U.S. Coal Net Capacity</b>			<b>1,340</b>			

We own a two-unit 1,340 MW thermal facility in Centralia, Washington, located south of Seattle. We have entered into a number of multiple year medium and short-term energy sales agreements from the Centralia Thermal plant. In 2011, Washington State passed the TransAlta Energy Transition Bill (chapter 180, Laws of 2011) (the "Bill") allowing the Centralia Thermal plant to comply with the State's greenhouse gas ("GHG") emissions performance standards by ceasing coal generation in one of its two boilers by the end of 2020 and the other by the end of 2025. The Bill removed restrictions that had previously been imposed on the facility limiting the duration of new contracts from the facility and limiting the technology that the facility would be required to implement for nitrogen oxides ("NOx") controls. On July 25, 2012, we announced that we entered into an 11-year agreement to provide electricity from our Centralia Thermal plant to PSE. The contract began in 2014 and runs until 2025 when the plant is scheduled to stop burning coal. Under the agreement, PSE bought 180 MW of firm, base-load power starting in December 2014. In December 2015, the contract increased to 280 MW and from December 2016 to December 2024 the contract is for 380 MW. In the last year of the contract, the contracted volume is for 300 MW.

On July 30, 2015, we announced that we were moving ahead with plans to invest US\$55 million over 10 years to support energy efficiency, economic and community development, and education and retraining initiatives in Washington State. The initiative is part of Centralia's transition from coal-fired operations in Washington, beginning on December 31, 2020. The US\$55 million community investment is part of the Bill passed in 2011. The Bill was an agreement between policymakers, environmentalists, labour leaders and TransAlta to transition away from coal in Washington State, closing Centralia facility's two coal units, one in 2020 and the other in 2025. Approved funding for the three boards totals approximately US\$21.0 million as at December 31, 2018.

We sell electricity from the Centralia Thermal plant into the Western Electricity Coordinating Council ("WECC") and, in particular, on the spot market in the U.S. Pacific Northwest energy market. Our strategy is to balance contracted and non-contracted sales of electricity to manage production and price risk.

We also own a coal mine adjacent to the Centralia facility; however, we stopped mining operations at our Centralia coal mine on November 27, 2006. Although we estimate that certain coal reserves remain to be extracted, we have not yet received permits for, nor developed the new area from which this coal could be produced. Coal to fuel the Centralia plant is sourced from the Powder River Basin in Montana and Wyoming. TransAlta is currently party to a coal contract that expires at the end of 2020. We expect to continue to source our future coal needs from the Powder River Basin. In December 2014, we began fine coal recovery operations at our Centralia mine. This operation recovers previously wasted coal as part of the mine reclamation process and is expected to provide roughly two per cent of the fuel use by the Centralia plant in 2019.

Under the U.S. Federal Mine Safety and Health Act, TransAlta must report all citations at its Centralia mine. The mine is currently not in operation. There were seven injury incidents and one fatality at the mine during 2018. The total dollar value of all Mine Safety and Health Administration ("MSHA") assessments are not material. There are no pending legal actions before the Federal Mine Safety and Health Review Commission involving the Centralia mine and none occurred or were pending during 2018.

*Reportable Events – Centralia Mine*

Mine or Operating Name/MSHA Identification Number	Total Number of Section 104 Violations for which Citations Received (#)	Total Number of Orders Issued Under Section 104(b) (#)	Total Number of Citations and Orders for Unwarrantable Failure to Comply with Mandatory Health or Safety Standards Under Section 104(d) (#)	Total Number of Flagrant Violations Under Section 110(b)(2) (#)	Total Number of Imminent Danger Orders Issued Under Section 107(a) (#)	Total Dollar Value of MSHA Assessments Proposed (\$)	Total Number of Mining Related Fatalities (#)	Received Notice of Pattern Violations Under Section 104(e) (yes/no)	Received Notice of Potential to Have Pattern Under Section 104(e) (yes/no)	Legal Actions Initiated or Pending During Period (#)
4500416	25	0	0	0	0	1,389	1	No	No	0

On December 29, 2018, we were notified of an incident that occurred and resulted in the fatality of an employee of Coalview Centralia LLC, which operates a fine coal recovery project within the Centralia mine site. Coalview Centralia LLC is a company that provides reclamation services to TransAlta and is not otherwise affiliated with the Corporation. We are all deeply saddened by this situation and our thoughts and prayers are with the families, co-workers and friends impacted. Safety is an integral value at TransAlta and we continue to work every day to make our work environments safe.

**Energy Marketing Segment**

Our Energy Marketing segment provides a number of strategic functions, including the following:

- gathering and analyzing market trends to enable more effective strategic planning and decision making;
- negotiating and entering into contractual agreements with customers for the sale of output from our generation assets, including electricity, steam or other energy-related commodities;
- negotiating and managing fuel supply arrangements with third parties for our generation assets. This includes scheduling, billing and settlement of physical deliveries of natural gas and other fuels;
- the development and execution of our corporate hedging strategy within Board approved parameters; and
- the optimization of the asset fleet to maximize gross margin and mitigation of market risks.

The Energy Marketing segment also derives additional revenue by providing fee based asset management services to third parties, by earning margins on third party gas and power transactions, and by trading electricity and other energy commodities (i.e. fuels). The origination and trading activities are focused on the existing asset and customer footprint of the Corporation.

The segment seeks to measure and manage a number of risks for the assets and for our trading books. The key risk control activities of the Energy Marketing segment include the measurement and management of market, credit, operational, reputational, compliance, and legal risks.

The segment uses Value at Risk ("VaR"), Gross Margin at Risk ("GMaR"), and tail risk measures to monitor and manage the risks within our asset and trading portfolios. VaR and GMaR measure the potential losses that could occur over a given time period due to changes in market risk factors. Back tests are used to provide further sensitivities to the market risks within the portfolio. Compliance, reputational, and legal risks are managed within our legal and compliance policies, and monitoring tools are used to flag compliance risks. The Energy Marketing segment actively manages the risks within approved limits and our policies.

## **Corporate Segment**

Our Corporate segment includes the Corporation's central financial, legal, administrative and investor relations functions.

## **Non-Controlling Interests**

Our subsidiaries and operations that have non-controlling interests are as follows:

### ***TransAlta Renewables***

As of December 31, 2018, we held, directly and indirectly, approximately 61 per cent of the issued and outstanding common shares in TransAlta Renewables, which is a publicly traded entity. Our ownership interest was reduced from 64 per cent to 61 per cent following TransAlta Renewables' \$150 million bought deal offering. We remain committed to maintaining our position as the majority shareholder of TransAlta Renewables with a goal of maintaining our ownership interest between 60 to 80 per cent.

TransAlta Corporation provides all management, administrative and operational services required for TransAlta Renewables to operate and administer its assets and to acquire additional assets pursuant to the Management, Administrative and Operational Services Agreement between TransAlta Corporation and TransAlta Renewables. In connection with the services provided under the Management, Administrative and Operational Services Agreement, TransAlta Renewables pays us an annual fee, which is meant to cover our management, administrative, accounting, planning and other head office costs we incur in connection with providing services to TransAlta Renewables under the Management, Administrative and Operational Services Agreement (the "G&A Reimbursement Fee"). The G&A Reimbursement Fee is payable in equal quarterly installments. As at December 31, 2018, the G&A Reimbursement Fee was approximately \$16 million.

The Management, Administrative and Operational Services Agreement has an initial 20-year term; provided, however, that the agreement shall be automatically renewed for further successive terms of five years after the expiry of the initial term or any renewal term, unless terminated by either party not less than 180 days prior to the expiration of the initial term or any renewal term, as the case may be. The Management, Administrative and Operational Services Agreement may be terminated by: (a) mutual agreement; (b) TransAlta Renewables upon the occurrence of a material default by TransAlta; and (c) TransAlta (i) upon the occurrence of a material default by TransAlta Renewables or (ii) upon a "Change of Control" of TransAlta Renewables, being the acquisition by any person or group of persons acting jointly and in concert (other than us and our affiliates) of more than 50 per cent of the issued and outstanding common shares. In addition, the Management, Administrative and Operational Services Agreement may be terminated by TransAlta Renewables by a majority vote of our independent directors at any time if TransAlta's direct and indirect ownership in TransAlta Renewables falls below 20 per cent.

TransAlta Renewables completed its initial public offering in August of 2013. In connection with the offering, we transferred to TransAlta Renewables certain wind and hydro power generation assets. On December 20, 2013, we sold to TransAlta Renewables an economic interest in a 144 MW wind farm located in the State of Wyoming for payment equal to US\$102 million. The Wyoming wind farm is managed by TransAlta under the terms of the Management, Administrative and Operational Services Agreement and is operated by NextEra Energy Resources, LLC.

On May 7, 2015, we sold to TransAlta Renewables an economic interest based on the cash flows of our Australian assets. The portfolio, held by TEA, consists of six operating assets with an installed capacity of 450 MW as well as a 270 km gas pipeline. The combined value of the Australian transaction was approximately \$1.78 billion. At the closing of the Australian transaction, TransAlta Renewables paid us \$216.9 million in cash as well as approximately \$1,067 million through the issuance of a combination of common shares and Class B shares in the capital of TransAlta Renewables. On August 1, 2017, the Class B shares converted into common shares in the capital of TransAlta Renewables.

On January 6, 2016, we sold to TransAlta Renewables an economic interest in the Corporation's Sarnia cogeneration plant, Le Nordais wind farm and Ragged Chute hydro facility for a combined value of \$540 million. The Canadian

Assets consist of approximately 611 MW of contracted power generation assets located in Ontario and Québec. The Corporation received cash proceeds of \$172.5 million, a \$215 million convertible unsecured subordinated debenture and approximately \$152.5 million in common shares of TransAlta Renewables. In November 2016, the economic interest was converted to direct ownership of the entities that own the Sarnia cogeneration plant, Le Nordais wind farm and Ragged Chute hydro facility. The convertible debenture was redeemed on November 9, 2017.

On May 31, 2018, we sold to TransAlta Renewables an economic interest in the Corporation's 50 MW Lakeswind Wind Farm in Minnesota and 21 MW of solar projects located in Massachusetts. In addition, we sold to TransAlta Renewables the 20 MW Kent Breeze Wind Farm located in Ontario. The total purchase price payable to TransAlta for the three assets, which have an average weighted contract life of 15 years, was \$166 million, including the assumption by TransAlta Renewables of \$62 million of tax equity obligations and project debt.

### ***Kent Hills***

We indirectly hold, through our ownership of TransAlta Renewables, an 83 per cent interest in the 150 MW Kent Hills wind farm located in New Brunswick. Description of the facility is provided under the heading "*Wind and Solar Business Segment*" in this AIF. We also indirectly hold, through our ownership of TransAlta Renewables, an 83 per cent interest in the 17.25 MW expansion of the Kent Hills site which was completed on October 19, 2018 bringing the total generating capacity of the three Kent Hills facilities to 167 MW. See "*General Developments of the Business – Generation and Business Development*".

### ***TA Cogen***

We hold a 50.01 per cent limited partnership interest in TA Cogen, which is an Ontario limited partnership. The remaining 49.99 per cent ownership is held by Canadian Power Holdings Inc., a subsidiary of Cheung Kong Infrastructure Holdings Limited.

TA Cogen holds an interest in the 790 MW Sheerness thermal generation facility in Alberta and the 118 MW Fort Saskatchewan natural gas-fired cogeneration facility in Alberta. TA Cogen also holds an interest in three natural gas-fired cogeneration facilities located in Ontario: (i) the 108 MW Mississauga Facility, currently in the process of decommissioning, see "*General Developments of the Business – Generation and Business Development*"; (ii) the 74 MW Ottawa plant; and (iii) the 72 MW Windsor plant. Descriptions of these facilities, ownership levels and contract expiry dates are provided under the headings "*Canadian Gas Business Segment*" and "*Canadian Coal Business Segment*" in this AIF.

### **PPAs**

#### ***Renewables PPAs***

In August of 2013, we entered into long-term power purchase agreements with certain subsidiaries of TransAlta Renewables (each a "Merchant Subsidiary") providing for the purchase by TransAlta, for a fixed price, of all of the power produced at the Merchant Subsidiaries (the "Renewables PPAs"). The initial price payable in 2013 by TransAlta for output under the Renewables PPAs was \$30.00/MWh for wind facilities and \$45.00/MWh for hydroelectric facilities, which amounts are adjusted annually for changes in the Canadian consumer price index. The Canadian consumer price index adjusted prices for 2018 are \$32.14/MWh for wind facilities and \$48.36/MWh for hydroelectric facilities. Under the terms of each Renewables PPA, the Merchant Subsidiary is under no obligation to deliver any specified amount of energy and, in no event, shall any penalties or curtailment payments be payable under the Renewables PPA. The Merchant Subsidiary will assume all operating and generating risk and TransAlta will only be required to purchase power that is actually produced.

Each Renewables PPA has a term of 20 years or end of asset life, where end of asset life is less than 20 years. Each Renewables PPA may be terminated by: (a) the mutual agreement of the parties; (b) the Merchant Subsidiary upon the occurrence of a material default by TransAlta; and (c) TransAlta (i) upon the occurrence of a material default by the Merchant Subsidiary; (ii) upon a change of control of TransAlta Renewables; or (iii) upon a change of control of the Merchant Subsidiary.

## ***Alberta PPAs***

A number of our Alberta thermal and hydroelectric facilities are operated under Alberta power purchase arrangements ("Alberta PPAs"). The Alberta PPAs establish committed capacity and electrical energy generation requirements and Availability targets to be achieved by each thermal plant, energy and ancillary services obligations for the hydroelectric plants, and the price at which electricity is to be supplied. We bear the risk or retain the benefit of availability under or above a targeted Availability (except for those arising from events considered to be force majeure, in the case of the PPA thermal plants) and any change in costs (unless due to a change in law) required to maintain and operate the facilities.

In early 2016, the buyers gave notice to the Balancing Pool of the termination of the Alberta PPAs for Sundance A, B, and C, Sheerness, and Keephills. The Balancing Pool confirmed the terminations of the PPAs for Sundance A, B, C, and Sheerness in late 2016 and confirmed the termination of the Keephills PPA in late 2017. For those Alberta PPAs that were terminated, the Balancing Pool had assumed the role of buyer. On September 18, 2017, the Balancing Pool elected to terminate the Sundance B PPA and Sundance C PPA effective on or before March 31, 2018. In the first quarter of 2018 we received \$157 million in termination payments and we are seeking a further \$56 million in compensation from the Balancing Pool for the early termination. See "*General Developments of the Business - Generation and Business Development*".

Our hydroelectric facilities, other than Belly River, Pocaterra, St. Mary, Taylor and Waterton, are aggregated through one Alberta PPA (the "Hydro PPA") which provides for financial obligations for energy and ancillary services based on hourly targets. We meet these targeted amounts through physical delivery or third-party purchases.

## **Competitive Environment**

We are the largest generator of electricity in Alberta, measured by capacity. In addition, we own and operate generating assets in British Columbia, Ontario, Québec, New Brunswick, the State of Washington, the State of Wyoming, the State of Minnesota, the State of Massachusetts, and Western Australia.

The power generation industry in North America is highly competitive and includes a large number of power producers. We compete against independent power producers, utilities that produce power for sale in the merchant market, both public and private investors, and financial intermediaries. We compete in Alberta in a deregulated wholesale power market, and in other jurisdictions that range from partially-regulated to fully regulated wholesale power markets. The ability to compete in deregulated or partially regulated markets is often driven by our cost to produce power and our reliability.

We expect electricity demand growth to be consistent but restrained due to advancing energy efficiency initiatives amongst corporate, industrial and residential customers. In the longer term, most markets are still expected to show growing demand for electricity. In addition to increased longer-term demand, new investment in natural gas and renewable generation is expected to replace expected coal and nuclear retirements as depressed wholesale prices make their economic viability questionable. Many of the markets in which we participate have established renewable portfolio targets or standards that require new renewable power investments. As most forms of renewable generation also involve intermittent or uncertain levels and timing of production, higher levels of renewable generation may be accompanied by greater capacity requirements. We believe that continued and growing demand for electricity, renewable portfolio standards, and the potential of increasing amounts of renewable generation will require additional capacity, and will provide an opportunity to increase our generation capacity.

## ***Alberta***

Approximately 58 per cent of our gross capacity is located in Alberta and more than 50 per cent of this is subject to legislated Alberta PPAs, which were put in place in 2001 to facilitate the transition from regulated generation to the current energy market in the province. The Sundance A PPA expired at the end of 2017, the Sundance B PPA and Sundance C PPA were terminated effective March 31, 2018 and the Keephills 1 and 2 PPA, Sheerness PPA, and the Hydro PPA will expire at the end of 2020.



Coal generated power sold under certain Alberta PPAs retains some exposure to market prices as we pay penalties or receive payments for production below or above, respectively, targeted Availability based upon a rolling 30-day average of spot prices. We can also retain proceeds from the sale of energy and ancillary services in excess of obligations on our Hydro PPA ("hydro peaking"). We actively monitor our exposure to Alberta variable power prices and evaluate hedging positions and opportunities based on price outlook, generation estimates, market conditions and other factors that contribute to the Corporation's hedging strategy. The Corporation's hedge plan is approved annually by the Board of Directors.

Alberta's annual demand increased approximately three per cent from 2017 to 2018. The increase in demand was reflected in the average pool price which increased from \$22.19/MWh in 2017 to \$50.29/MWh in 2018. The majority of the pool price increase was due to higher carbon compliance costs from thermal generation. The higher prices also positively impacted our merchant wind and hydro portfolio.

The *Fair, Efficient and Open Competition Regulation* (Alberta) generally provides that an electricity market participant shall not hold offer control in excess of 30% of the total maximum capability of generating units in Alberta. A market participant's total offer control is measured as the ratio of megawatts under its control to the sum of maximum capability of generating units in Alberta. Our market share of offer control in Alberta in 2018 was approximately 22 per cent (16 per cent if the Sundance mothballed units are excluded from offer control).

In late November 2016, we announced that we had entered into an Off-Coal Agreement with the Government of Alberta that provides transition payments from the Government of Alberta in consideration for the cessation of coal-fired emissions from the Keephills 3, Genesee 3 and Sheerness coal-fired plants on or before December 31, 2030. The affected plants are not, however, precluded from generating electricity at any time by any method other than the combustion of coal. We also entered into the Memorandum of Understanding (the "MOU") with the Government of Alberta to collaborate and co-operate in the development of a capacity market in Alberta that ensures both current and new electricity generators will have a level economic playing field to build, buy, and sell electricity, and to develop a policy framework to facilitate the conversion of coal-fired generation to gas-fired generation.

We expect additional compliance costs as a result of the federal government's proposed framework in which each province is expected to implement a greenhouse gas policy equivalent to a carbon price of \$50 per tonne by 2022. We believe that our extensive portfolio of assets provides us with brownfield development opportunities in wind, solar, hydro, and gas that give us a cost advantage over many of our competitors when constructing generation facilities that use these fuel types.

### ***Coal-to-Gas Conversions***

The Corporation's coal-to-gas conversion plan offers compelling economics and we believe it is an attractive value proposition that compares favourably to the risk/return metrics of greenfield or brownfield investments or compared to staying on coal. With lower capital investment and lower sustaining costs, and being able to operate significantly longer once converted, TransAlta will enhance and extend the cash flows from the Alberta coal fleet. Following the conversion to gas-fired generation, we will also significantly improve our environmental performance as GHG, air emissions, waste generation, and water usage will all significantly decline. A conversion of coal-fired power generation to gas-fired generation is also expected to eliminate all mercury emissions and the majority of sulphur dioxide emissions as well as halving nitrogen oxide emissions.

On December 18, 2018, the federal government published the *Regulations Limiting Carbon Dioxide Emissions from Natural Gas-fired Generation of Electricity*. The final regulation provides specific provisions for coal-to-gas conversions. The rules for converted units will allow converted plants to operate for a set number of years following the end-of-life for the unit under the coal regulations based on a one-time performance test at the time of conversion.

We are planning the conversion of some or all of the units at Sundance and Keephills to gas-fired generation in the 2020 to 2023 time frame. The conversions will provide competitive, reliable, low cost power to the Alberta market and is expected to position them well in the proposed capacity market. We expect the first capacity auction to occur in 2020 for delivery in November 2021.

In July 2018, we retired the then mothballed Sundance Unit 2 due to its shorter useful life relative to other units, age, size, and the capital requirements needed to return the unit to service.

### ***U.S. Pacific Northwest***

Our capacity in the U.S. Pacific Northwest is represented by our 1,340 MW Centralia coal plant. Half of the plant capacity is scheduled to retire at the end of 2020 and the other half at the end of 2025.

System capacity in the region is primarily comprised of hydro and gas generation, with some wind additions over the last few years in response to government programs favouring renewable generation. Demand growth in the region has been limited and further constrained by emphasis on energy efficiency.

Our competitiveness is enhanced by our long-term contract with Puget Sound Energy for up to 380 MW over the remaining life of the facility. The contract and our hedges allow us to satisfy power requirements from the market during low-priced periods.

We maintain the right to redevelop Centralia as a gas plant after coal capacity retires, with an opportunity for expedited permitting provided for in our agreement for coal transition established with the State of Washington in 2011.

### ***Contracted Gas and Renewables***

The market for developing or acquiring gas and renewable generation facilities is highly competitive in all markets in which we operate. Our solid record as operator and developer supports our competitive position. We expect, where possible, to reduce our cost of capital and improve our competitive profile by using project financing and leveraging the lower cost of capital with TransAlta Renewables. In the United States, our substantial tax attributes further increase our competitiveness.

While depressed commodity prices have reduced sectoral growth in the oil, gas, and mining industries, the change is also creating opportunities for us as a service provider as some of our potential customers are more carefully evaluating non-core activities and driving for operational efficiencies. In renewables, we are primarily evaluating greenfield opportunities in Western Canada or acquisitions in other markets in which we have existing operations. We maintain highly qualified and experienced development teams to identify and develop these opportunities.

Some of our older gas plants are now reaching the end of their original contract life. The plants generally have a substantial cost advantage over new builds and we have been able to add value by re-contracting these plants with limited life-extending capital expenditures. We have recently extended the contracted life of our Ottawa plant (2033 expiry), Windsor (2031 expiry), and Parkeston (2026 expiry) and Fort Saskatchewan (2030 expiry) plants in this manner.

### ***Australia***

The Department of Treasury for Western Australia expects that the gross state product will continue to grow at relatively low rates by historical standards. The Department of Treasury for Western Australia has forecasted Western Australia's annual growth in gross state product to range from 3.0 per cent to 3.75 per cent for the period from 2019 to 2022. The Australian Energy Market Operator ("AEMO") expects electricity demand growth to be slow in response to much lower industrial investment in the region and the continued uptake of rooftop PV installations. The AEMO forecasts the 10-year energy consumption growth rates at about 0.9 per cent (2018/19 to 2027/28), with peak demand growth rates being forecast at 0.6 per cent over the same period.

### **Regulatory Framework**

Below is a description of the regulatory framework of the markets which are material to the Corporation.

## ***Canadian Federal Government***

In November 2016, the Canadian federal government announced that coal-fired generation would be phased out by 2030, following a similar commitment by the Alberta provincial government in November 2015. These decisions changed the coal plant closure requirements, which had previously been guided by federal regulations that became effective on July 1, 2015 which provided for up to 50 years of life for coal units. On February 16, 2018, Environment and Climate Change Canada announced draft regulations to phase out coal-fired generation by 2030, as well as draft regulations for gas-fired electricity generation including provisions for the conversion of boiler units from coal-fired generation to natural gas-fired generation. Please refer to the "*Environmental Risk Management - Ongoing and Recently Passed Environmental Legislation*" of this AIF for more information.

## ***Alberta***

Since January 1, 1996, new generating capacity initiatives in Alberta have been undertaken by independent power producers ("IPP") and have been subject to market forces, rather than rate regulation. Power from commercial generation is cleared through a wholesale electricity market. Power is dispatched in accordance with an economic merit order administered by the Alberta Electric System Operator ("AESO"), based upon offers by generators to sell power. The Market Surveillance Administrator for the Province of Alberta is an independent entity responsible for monitoring and investigating the market behaviour of market participants, including the AESO and the Balancing Pool, and enforcing compliance with all applicable legislation, regulations, AESO and Alberta Utilities Commission ("AUC") rules. The AUC oversees electricity industry matters, including new power plant and transmission facilities, the distribution and sale of electricity and retail natural gas. The AUC is also responsible for approving the AESO's rules and for determining penalties and sanctions on any participant found to have contravened market rules.

On November 22, 2015, the Government of Alberta announced its Climate Leadership Plan. The Climate Leadership Plan established several environmental and energy targets for Alberta, including the phase out of coal-fired electricity by 2030. Please refer to the "*Environmental Risk Management - Ongoing and Recently Passed Environmental Legislation*" of this AIF for more information.

On May 24, 2016, the Government of Alberta passed the *Climate Leadership Implementation Act* which established the carbon tax framework for its application to fuels. It is expected that additional regulations will be developed governing the treatment of large industrial emitters. The Climate Leadership Plan was implemented on January 1, 2018.

On November 23, 2016, the Government of Alberta announced reforms to the electricity market and an intent to transition to a new capacity market structure. The AESO has been tasked with designing and implementing the capacity market. The AESO began the design development in 2017 and formed industry working groups to develop recommendations on the capacity market. The final comprehensive market design proposal was issued on June 29, 2018 and will be supported by an expected filing of capacity market provisional rules is expected to be filed in the first quarter of 2019. Approval of the market rules and implementation is anticipated to occur in 2019 and 2020. The first capacity auction procurement is planned to take place in the fourth quarter of 2019 with first delivery starting in November 2021.

## ***Ontario***

Ontario's electricity market is a hybrid market that includes a wholesale spot electricity market, as well as regulated prices for certain electricity consumers and long-term contracts for the purchase of power issued by the IESO. The IESO is the successor organization resulting from the merger of the former IESO and Ontario Power Authority (OPA) in 2015. The Ontario Ministry of Energy, Northern Development and Mines takes a lead role in defining the electricity mix to be procured by the IESO/OPA, which has the mandate to undertake long-term planning of the electric system, to procure the electricity generation in that plan and to manage contracts for privately owned generation. The IESO is responsible for managing the Ontario wholesale market and for ensuring the reliability of the electric system in Ontario. The electricity sector is regulated by the Ontario Energy Board.

On February 25, 2016, Ontario released draft regulations for its GHG cap-and-trade program that were finalized on May 19, 2016. The regulations became effective January 1, 2017, and apply to all fossil fuels used for electricity

generation. The majority of our gas-fired generation in Ontario is not significantly impacted by virtue of change-in-law provisions within existing power purchase agreements. Ontario's cap-and-trade regulation was subsequently cancelled on July 3, 2018.

The IESO commenced a market renewal consultation which includes proposed fundamental changes to the electricity market. These include modifying the energy market, adding a capacity market and improving operability and reliability. The consultation is expected to last a few years as these are significant changes to the market with implementation expected between 2022 and 2023.

### ***Australia***

Australia has two separate major electricity markets, the National Electricity Market ("NEM") encompassing all the major population centres on the Eastern seaboard, and the Wholesale Electricity Market ("WEM") covering the South West of Western Australia including its capital city, Perth. A number of smaller, standalone electricity grids serve regional population centres including the North West Interconnected System ("NWIS") in the Pilbara region of Western Australia and the Darwin-Katherine System ("DKS") in the Northern Territory. AEMO is the market operator for both the WEM and the NEM.

### **Competitive Strengths**

We believe that we are well positioned to achieve our business strategy due to our competitive strengths, which include the following:

*Operating strength* – We continually benchmark ourselves against previous year performance in order to drive operating costs lower year over year, while also maintaining strong levels of generation performance. We have implemented a program to drive incremental value from our fleet through the development of initiatives to improve generating equipment efficiencies, refining processes and procedures, and optimizing cost structures. Our Sarnia Cogeneration Plant has demonstrated industry best practices through several O&M processes including the work management process and Environmental, Health & Safety scorecard. We believe the continued maturity of these programs will continue to drive further value in the operations of our facilities.

*Stable cash flow base* – Through the use of Alberta PPAs and long-term contracts, approximately 66 per cent of our capacity is contracted over the next two years and approximately 40 per cent is contracted after two-years. The net revenue received under these contractual arrangements helps to minimize short-term revenue fluctuations due to the variable price of electricity. Following the announcement by the Government of Alberta to reform the electricity market, we consider ourselves to be well positioned to compete in the capacity market which should provide an additional level of future cash flow certainty.

*Fuel diversity* – We have an interest in a diverse mix of fuels used for the generation of electricity, including coal, natural gas, hydro, wind, and solar. We believe that this mix reduces the impact on our performance in the event of external events affecting one fuel source.

*Management team* – Our management team has substantial industry, international, investment and market experience. In 2018, we bolstered our management by attracting Christophe Dehout, as the Chief Financial Officer, Jane Fedoretz, as Chief Talent and Transformation Officer, and Kerry O'Reilly Wilks, as Chief Legal & Compliance Officer.

*Energy Marketing expertise* – We believe that our Energy Marketing segment has enhanced returns from our existing generation base and has allowed us to obtain more favourable pricing for uncommitted electricity, secure fuel supply on a cost-effective basis and fulfill electricity delivery obligations in the event of an outage.

*Wind Generation* – Through our ownership interest in TransAlta Renewables, we are one of the largest owners and operators of wind generation in Canada. Our management team has developed key relationships with customers, suppliers and policy makers that provide a competitive advantage in the development, operations and marketing of wind generation.

*Environment* – We are a recognized leader in sustainable development and we have taken early preventative action on a number of environmental fronts in advance of regulation.

## **ENVIRONMENTAL RISK MANAGEMENT**

We are subject to federal, provincial, state and local environmental laws, regulations and guidelines concerning the generation and transmission of electrical and thermal energy and surface mining. We are committed to complying with legislative and regulatory requirements and to minimizing the environmental impact of our operations. We work with governments and the public to develop appropriate frameworks to protect the environment and to promote sustainable development.

### **Ongoing and Recently Passed Environmental Legislation**

Changes in current environmental legislation do have, and will continue to have, an impact upon our operations and our business. For further details, see below and "*Risk Factors*".

#### ***Canadian Federal Government***

##### *Federal Carbon Pricing*

On June 21, 2018, the *Greenhouse Gas Pollution Pricing Act* ("GGPPA") came into force. Under the GGPPA, the Canadian federal government implemented a national price on GHG emissions. The price will begin at \$20 per tonne of carbon dioxide equivalent ("CO<sub>2</sub>e") emissions in 2019, rising by \$10 per year until reaching \$50 per tonne in 2022.

On January 1, 2019, the GGPPA's backstop mechanisms came into force in provinces and territories that did not have an independent carbon pricing program or where the existing program was not deemed equivalent to the federal system. These included Ontario, Manitoba, New Brunswick, Saskatchewan, Prince Edward Island, Yukon and Nunavut. The backstop mechanism has two components: a carbon levy for small emitters and regulation for large emitters called the Output-Based Pricing Standard ("OPBS"). The carbon levy sets a carbon price per tonne of GHG emissions related to transportation fuels, heating fuels and other small emission sources.

##### *Gas Regulation*

On December 18, 2018, the Federal government published the *Regulations Limiting Carbon Dioxide Emissions from Natural Gas-fired Generation of Electricity*. Under the regulations, new and significantly modified natural gas fired electricity facilities with a capacity greater than 150 MW must meet a standard of 420 tCO<sub>2</sub>e per gigawatt hour ("tCO<sub>2</sub>e/GWh") to operate. For units with a capacity between 150 MW and 25 MW, their standard was set at 550 tCO<sub>2</sub>e/GWh.

Under the regulations, coal-to-gas conversions will also eventually have to meet a standard of 420 tCO<sub>2</sub>e/GWh. If the first year performance test after conversion meets certain emission standards it will not have to meet the 420 tCO<sub>2</sub>e/GWh standard for several additional years past the end of its useful life.

##### *Coal Regulation*

In November 2016, the Canadian federal government announced that coal-fired generation would be phased out by 2030, following a similar commitment by the Alberta provincial government in November 2015. According to the Canadian federal requirements, our older coal units (which retire prior to 2030) will be guided by the 50-year life rule, while newer units (which were previously scheduled to retire post-2030) will face the new 2030 shutdown date.

On February 16, 2018, Environment and Climate Change Canada announced draft regulations to phase out coal-fired generation by 2030, as well as draft regulations for gas-fired electricity generation including provisions for the conversion of boiler units from coal-fired generation to natural gas-fired generation. The draft regulations were published in Canada Gazette I on February 17, 2018. The rules for converted units will allow converted plants to operate for a set number of years following the end-of-life for the unit under the coal regulations based on a one-time

performance test at the time of conversion. For our units, we expect these rules provide 8 or 10 additional years of operating life to each of our unit.

On December 18, 2018, amendments to the Reduction of Carbon Dioxide Emissions from Coal-Fired Generation of Electricity Regulations came into force under the *Canadian Environmental Protection Act, 1999*. The amended regulations will require coal units to meet an emission level of 420 tCO<sub>2</sub>e/GWh by the earlier of end-of-life under the 2012 regulations or December 31, 2029.

### ***Alberta***

On November 22, 2015, the Government of Alberta announced the Climate Leadership Plan. The government has now largely delivered on its commitments through legislature to require:

- the elimination of coal generation by 2030;
- the creation of Renewable Energy Program ("REP") to meet the commitment that renewables account for 30 per cent of Alberta's electricity system by 2030. Under the REP, the AESO is tasked with running procurement processes for government approved volumes of renewable power. To date, the AESO has run three separate Requests for Proposals ("RFP"). The RFPs have resulted in 20 year contracts for approximately 1,360 megawatts of wind power projects. These projects are scheduled to be grid integrated between 2019 and 2021;
- the *Carbon Competitiveness Incentives Regulation* ("CCIR") replaces the previous large emitters regulation, *Specified Gas Emitters Regulation* ("SGER"), moving from facility specific compliance standard to a product or sector performance compliance standard; and
- a carbon levy was introduced on most carbon emissions not covered by the CCIR.

On January 1, 2018, the Alberta government transitioned from SGER to the CCIR. Under the CCIR, the regulatory compliance moved from a facility-specific compliance standard to a product or sectoral performance compliance standard. Currently, the provincial government has announced that the carbon price will remain at \$30/tCO<sub>2</sub>e going forward and will not increase to the federally mandated price increase of \$40/tCO<sub>2</sub>e in 2021 and \$50/tCO<sub>2</sub>e in 2022, however, increases may be implemented by the federal government under their program equivalency review. The electricity sector performance standard was set at 370 tCO<sub>2</sub>e/GWh, but will decline over time. All renewable assets that received crediting under the SGER will continue to receive credits under CCIR on a one-to-one basis. All other renewable assets that did not receive credits under the previous standard will now be able to opt in to the CCIR and get carbon crediting up to the electricity sector performance standard in perpetuity. Once wind projects' crediting standard under SGER protocol ends, these projects will also be able to opt in to the CCIR system and be credited up to the performance standard for the rest of their operational life.

### ***British Columbia***

Beginning April 1, 2018, BC increased its carbon tax rate to \$35/tCO<sub>2</sub>e and committed to raise the price \$5 per year until it reaches \$50 per tonne in 2021.

BC Hydro has indicated there will be no additional contracts for independent power producer renewable projects with capacity above 15 MW. It has also suspended the purchase of energy from its Standing Offer Program for small projects up to 15 MW pending a review of the program.

### ***Ontario***

On October 31, 2018, the Ontario government passed the *Cap and Trade Cancellation Act*. This Act removed all existing provincial carbon emission regulations and costs on large emitters.

The Canadian Federal *Greenhouse Gas Pollution Pricing Act* requires Provinces to have GHG gas regulations and prices in place that align with the federal GGPPA. On October 23, the federal government announced that the federal program would be implemented in Ontario as of January 1, 2019. Small emitters will face a carbon levy and large emitters, under covered industries, with annual GHG emission greater than 50,000 tCO<sub>2</sub>e will be subject to the OBPS.

Ontario is now subject to the federal government's backstop carbon levy price for small emitters and the OBPS for large emitters.

On November 29, 2018, the Ontario government unveiled a new climate change policy called Preserving and Protecting our Environment for Future Generations: A Made-In-Ontario Environment Plan. The plan aims to keep the province working toward meeting the emissions-reduction goal of achieving 30 per cent reduction of 2005 levels by 2030. The plan commits to developing emission performance standards to achieve reductions from large emitters and references Saskatchewan's policy as an example. The government will be consulting and developing the program in 2019. The plan's specifics related to the electricity sector have not yet been defined and will be determined through the program development process.

### ***Australia***

On December 13, 2014, the Australian government enacted legislation to implement the Emissions Reduction Fund (the "ERF"). The AU\$2.55 billion ERF is the centrepiece of the Australian government's policy and provides a policy framework to cut emissions by five per cent below 2000 levels by 2020 and 26 to 28 per cent below 2005 emissions by 2030. The ERF's safeguard mechanism, commencing from July 1, 2016, is designed to ensure emissions reductions purchased by the Australian government through the ERF are not displaced by significant increases in emissions elsewhere in the economy. The ERF and its safeguard mechanism provide incentives to reduce emissions across the Australian economy.

The Australian government has also committed to develop a National Energy Productivity Plan with a target to improve Australia's energy productivity by 40 per cent between 2015 and 2030. The ERF is not expected to have a material impact on our Australian assets as a result of the Australian assets being primarily composed of gas-fired generation. In addition, on June 23, 2015, the federal Australian government also reformed the Renewable Energy Target ("RET") scheme. The RET should add at least 33,000 GWh of renewable sources by 2020. This would double the amount of large-scale renewable energy being delivered compared to current levels and result in approximately 23.5 per cent of Australia's electricity generation being sourced from renewable projects.

### ***Pacific Northwest***

In 2010, the Washington Governor's office and Ecology negotiated agreements with TransAlta related to the operation of Centralia's two coal power electricity generating units. TransAlta agreed to retire its two Centralia coal units one in 2020 and the other in 2025. This agreement is formally part of the state's climate change program. We currently believe that there will be no additional GHG regulatory burden on U.S. Coal given these commitments. The related TransAlta Energy Transition Bill was signed into law in 2011 and provides a framework to transition from coal to other forms of generation in the State of Washington.

### **TransAlta Activities**

Reducing the environmental impact of our activities has a benefit not only to our operations and financial results, but to the communities in which we operate. We expect that increased scrutiny will continue to be placed on environmental emissions and compliance. We, therefore, take a proactive approach to minimizing risks to our results. Our Board provides oversight to our environmental management programs and emission reduction initiatives in order to ensure continued compliance with environmental regulations.

Our environmental management programs includes the elements summarized below:

### ***Renewable Power***

We continue to invest in and build renewable power resources.

The Brazeau Hydro Pumped Storage project is expected to have new capacity up to 900 MW, bringing the total Brazeau facility from 755 to 1,255 MW, post-completion. We estimate an investment in the range of \$1.5 billion to \$2.7 billion. During the first nine months of 2018, we invested approximately \$2 million to advance the environmental study, work

with stakeholders, and execute geotechnical work to help further our design and construction phase. Further advancement of the project is dependent on securing a long-term contract.

In May 2018, the AESO released a report stating that dispatchable renewable resources are not needed in the Alberta market before 2030. The value and benefit of the Brazeau Hydro Pumped Storage project would be well beyond the 2030 period. The Corporation still believes that generation from pumped storage should be part of future calls for power under the Alberta Renewables program. The Corporation is not spending additional development dollars on the project at this time but will continue to work with governments to find the appropriate financial mechanisms for bringing low cost, green, dispatchable renewables into the market to support low prices and emissions for Alberta customers.

On December 17, 2018 the AESO announced that our 207 MW Windrise wind project was selected as one of the two successful projects in the third round of Alberta's Renewable Electricity Program. The Windrise facility, which is in the county of Willow Creek, is underpinned by a 20-year Renewable Electricity Support Agreement with the AESO. The project is expected to cost approximately \$270 million and is targeted to reach commercial operation during the second quarter of 2021.

Also on December 17, 2018, we exercised our option to acquire 50 percent ownership in the Pioneer Pipeline. Tidewater will construct and operate the 120 km natural gas pipeline, which will have an initial throughput of 130 MMcf/d with the potential to expand to approximately 440 MMcf/d. The Pioneer Pipeline will allow TransAlta to increase the amount of natural gas it co-fires at its Sundance and Keephills coal-fired units, resulting in lower carbon emissions and costs. As well, the Pioneer Pipeline will provide a significant amount of the gas required for the full conversion of the coal units to natural gas. Our investment will amount to approximately \$90 million. Construction of the pipeline commenced in November 2018 and it is expected to be fully operational by the second half of 2019. The investment is subject to final regulatory approvals.

On June 1, 2017, a subsidiary of TransAlta Renewables signed a PPA with New Brunswick Power for the expansion of the Kent Hills wind farm. The PPA runs through to the end of 2035. At the same time, the Kent Hills 1 PPA was amended adding two years to its contract. The expiry dates of all three Kent Hills PPAs now coincide at a date of November 30, 2035. On October 19, 2018, we announced that the Kent Hills wind farm expansion was completed and is fully operational. The expansion adds five 3.45 MW turbines to the Kent Hills fleet for an additional 17.25 MW at the site. See "*General Development of the Business – Generation and Business Development*".

On February 20, 2018, TransAlta Renewables announced it had entered into an arrangement to acquire two construction-ready projects in the Northeast United States. The wind development projects consist of: (i) a 90 MW project located in Pennsylvania which has a 15-year PPA and (ii) a 29 MW project located in New Hampshire with two 20-year PPAs. See "*General Development of the Business – Generation and Business Development*".

We believe that a larger renewable portfolio provides increased flexibility in generation and creates incremental environmental value through renewable energy certificates or through emission offsets. In addition, we have developed policies and procedures in order to comply with regulatory guidance and to lessen any environmental disruption caused by our renewable power resources, which includes monitoring noise and the avian impacts at our wind generation facilities.



### ***Environmental Controls and Efficiency***

We continue to make operational improvements and investments to our existing generating facilities to reduce the environmental impact of generating electricity. We have installed mercury control equipment at all of our coal operations and we achieve an 80 per cent capture rate of mercury at all coal facilities. Our Keephills 3 and Genesee 3 plants use supercritical combustion technology to maximize thermal efficiency, as well as sulphur dioxide ("SO<sub>2</sub>") capture and low oxides of nitrogen ("NO<sub>x</sub>") combustion technology. Uprate or energy efficiency projects completed at our Keephills and Sundance plants, including a 15 MW uprate finalized in 2015 at Sundance 3, have improved the energy and emissions efficiency of those units. In 2018 we commenced co-firing with gas at our merchant coal facilities in Alberta. This has resulted in a material reduction in the volume of emissions of CO<sub>2</sub> per MWh from this fleet.

### ***Policy Participation***

We are active in policy discussions at a variety of levels of government and with industry participants. These have allowed us to engage in proactive discussions with governments and industry participants to meet environmental requirements over the longer term.

Following the announcement of Alberta Climate Leadership Plan, we negotiated with the Government of Alberta, using a principles-based approach, to ensure that we have the certainty and capacity needed to invest in clean power. An important aspect of these negotiations was the Government of Alberta's commitment to treat coal-fired generators fairly and not unnecessarily strand capital. In November 2016, the Government of Alberta and TransAlta entered into a binding Off-Coal Agreement that provides compensation for the stranded value on the Keephills 3, Genesee 3 and Sheerness coal plants that had useful lives beyond 2030.

Additionally, we reached an understanding with the Government of Alberta pursuant to the MOU to collaborate and cooperate in the development of a policy framework to facilitate the conversion of coal-fired generation to gas-fired generation, facilitate existing and new renewable electricity development through supportive and enabling policy, and ensure existing generation and new electricity generation are able to effectively participate in the capacity market to be developed for the Province of Alberta. Specifically, the parties undertook collaboration to, among other things:

- transition from the current energy-only market to a capacity market design that will procure capacity from generators on a forward basis to ensure system resource adequacy;
- develop a policy and facilitate the economic conversion of some coal-fired generation to natural gas-fired generation in Alberta, including securing regulatory cooperation from the Federal Government; and
- develop a policy to address the value of carbon reductions in the generation of electricity from existing wind and hydro production.

The MOU does not create any legally binding obligations between the Government of Alberta and the Corporation and does not impose any obligations on, or constrain the discretion and authority of the Government.

### ***Offsets Portfolio***

TransAlta maintains a GHG emissions offset portfolio with a variety of instruments that can be used for compliance purposes or otherwise banked or sold. We continue to examine additional emission offset opportunities that also allow us to meet emission targets at a competitive cost. We ensure that any investments in offsets will meet certification criteria in the market in which they are to be used.

### ***Environmental Regulations***

Recent or future changes to environmental laws or regulations may materially adversely affect us. As indicated under "*Risk Factors*" in this AIF and within the "*Governance and Risk Management*" section of the Annual MD&A, many of our activities and properties are subject to environmental requirements, as well as changes in our liabilities and obligations under these requirements, which may have a material adverse effect upon our consolidated financial results, operations or performance.

## RISK FACTORS

Readers should consider carefully the risk factors set forth below as well as the other information contained and incorporated by reference in this AIF. For a further discussion of risk factors affecting TransAlta, please refer to "Governance and Risk Management" in the Annual MD&A, which is incorporated by reference herein.

A reference herein to a material adverse effect on the Corporation means such an effect on the Corporation or its business, financial condition, results of operations, or its cash flows, as the context requires.

### ***The operation and maintenance of our facilities involves risks that may materially and adversely affect our business.***

The operation, maintenance, refurbishment, construction and expansion of power generation facilities involve risks, including breakdown or failure of equipment or processes, fuel interruption and performance below expected levels of output or efficiency. Certain of our generation facilities, particularly in Alberta, were constructed many years ago and may require significant capital expenditures to maintain peak efficiency or to maintain operations. There can be no assurance that our maintenance program will be able to detect potential failures in our facilities prior to occurrence or eliminate all adverse consequences in the event of failure. In addition, weather related interference, work stoppages and other unforeseen problems may disrupt the operation and maintenance of our facilities and may materially adversely affect us.

We have entered into ongoing maintenance and service agreements with the manufacturers of certain critical equipment. If a manufacturer is unable or unwilling to provide satisfactory maintenance or warranty support, we may have to enter into alternative arrangements with other providers if they cannot perform the maintenance themselves. These arrangements could be more expensive to us than our current arrangements and this increased expense could have a material adverse effect on our business. If we are unable to enter into satisfactory alternative arrangements, our inability to access technical expertise or parts could have a material adverse effect on us.

While we maintain an inventory of, or otherwise make arrangements to obtain, spare parts to replace critical equipment and maintain insurance for property damage to protect against certain operating risks, these protections may not be adequate to cover lost revenues or increased expenses and penalties which could result if we were unable to operate our generation facilities at a level necessary to comply with sales contracts (including the Alberta PPAs).

We may be subject to the risk that it is necessary to operate a plant at a capacity level beyond that which we have contracted for power in order to provide steam in fulfillment of such a contract. In such circumstances, the costs to produce the steam being sold may exceed the revenues derived therefrom.

### ***We may fail to meet financial expectations.***

Our quarterly revenue, earnings, cash flows and results of operations are difficult to predict and fluctuate from quarter to quarter. Our quarterly results of operations are influenced by a number of factors, including the risks described in this AIF, many of which are outside of our control, which may cause such results to fall below market expectations. Although we base our planned operating expenses in part on our expectations of future revenue, a significant portion of our expenses are relatively fixed in the short-term. If revenue for a particular quarter is lower than expected, we likely will be unable to proportionately reduce our operating expenses for that quarter, which will adversely affect our results of operations for that quarter.

### ***Many of our activities and properties are subject to environmental requirements and changes in, or liabilities under these requirements, may materially adversely affect our business.***

Our operations are subject to federal, provincial, state and local environmental laws, regulations and guidelines, relating to the generation and transmission of electrical and thermal energy and surface mining, pertaining to pollution and protection of the environment, health and safety and governing, among other things, air emissions, water usage and discharges, storage, treatment and disposal of waste and other materials and remediation of sites and land use responsibility (collectively, "environmental regulation"). These laws can impose liability and obligations for costs to investigate and remediate contamination without regard to fault and under certain circumstances liability may be joint and several, resulting in one responsible party being held responsible for the entire obligation. Environmental regulation

can also impose, among other things, restrictions, liabilities and obligations in connection with the generation, handling, use, storage, transport, treatment and disposal of hazardous substances and waste and can impose clean up, disclosure or other responsibilities with respect to spills, releases and emissions of various substances to the environment. Environmental regulation can also require that facilities and other properties associated with our operations be operated, maintained, abandoned and reclaimed to the satisfaction of applicable regulatory authorities. In addition, there is an increasing level of environmental regulation regarding the use, treatment and discharge of water and we anticipate the adoption of new or additional emission regulations at a national level in Canada, the United States and Australia, which may impose different compliance requirements or standards on our business. These various compliance standards may result in additional costs for our business or may impact our ability to operate our facilities.

To comply with environmental regulations, we must incur material capital and operating expenditures relating to environmental monitoring, emissions and effluent control equipment and processes; emissions measurement, verification and reporting; emissions fees and other compliance activities or obligations. We expect to continue to have environmental expenditures in the future. Stricter standards, new or greater regulation, increased enforcement by regulatory authorities, more extensive permitting requirements, an increase in the number and types of assets operated by the Corporation subject to environmental regulation and the implementation of provincial, state and national GHG emissions, mercury emissions or other air emissions regulation which in themselves may not be aligned and may impose varying obligations on us in the jurisdictions in which we operate and which could increase the amount of our expenditures. To the extent these expenditures cannot be passed through to our customers under our power purchase agreements, including Alberta PPAs or otherwise, our costs could be material. In addition, compliance with environmental regulation might result in restrictions on some of our operations. If we do not comply with environmental regulation, regulatory agencies could seek to impose statutory, administrative and/or criminal liabilities on us, curtail our operations, or require significant expenditures on compliance, new equipment or technology, reporting obligations and research and development.

In addition to environmental regulation, we could also face civil liability in the event that private parties seek to impose liability on us for property damage, personal injury or other costs and losses. We cannot guarantee that lawsuits or administrative or investigative actions will not be commenced against us and otherwise affect our operations and assets. If an action is filed against us or may otherwise affect our operations and assets, we could be required to make substantial expenditures to defend against or evidence our activities or to bring our Corporation, our operations and assets into compliance, which could have a material adverse effect on our business.

A number of recent federal, provincial, state and local regulatory efforts continue to focus on potential climate change or GHG emissions regulation, and mandatory GHG reporting requirements have become effective in both Canada and the United States. Mandatory GHG emissions reductions requirements are expected to impose increased costs on our business, as is expected to be the case generally for thermal power producers in North America. We are subject to other air quality regulations including mercury regulations. To the extent new or additional GHG, mercury or other air emission regulations may require us to incur costs that cannot be passed through to our customers under its power purchase agreements, the costs could be material and have a material adverse effect on our business. In terms of TransAlta's existing gas-fired facilities, we currently have change-in-law provisions allowing flow-through of carbon tax-related costs, and we expect that any new contracts will contain similar provisions.

Our surface mining operations are subject to laws and regulations establishing mining, environmental protection and reclamation standards for all aspects of surface mining. The estimated reclamation costs applicable to the Corporation's operations may be inaccurate and could require greater financial resources than currently anticipated. As a mine owner or operator, we must obtain permits from the applicable regulatory body providing for the authorization of certain mining operations that result in a disturbance of the surface. These requirements seek to limit the adverse impacts of coal mining and more restrictive requirements may be adopted from time to time. As a mine owner or operator, we may also be required to submit a bond or otherwise secure payment of certain long-term obligations including mine closure or reclamations costs. Surety bond costs have increased in recent years while the market terms of such bonds have generally become more unfavourable. In addition, the number of companies willing to issue surety bonds has decreased. We could be required to self-fund these obligations should we be unable to renew or secure the required surety bonds for our mining operations or if it becomes more economical to do so.

***We may be unsuccessful in legal actions.***

We are occasionally named as a defendant in claims and legal actions and as a party in commercial disputes which are resolved by arbitration or other legal proceedings. We may also bring legal actions against third parties as part of a commercial dispute through an arbitration or other legal proceeding. There can be no assurance that we will be successful in any such claim or defence or that any claim or legal action that is decided adverse to us will not materially and adversely affect us.

***Unexpected changes in the cost of maintenance or in the cost and durability of components for the Corporation's facilities may adversely affect its results of operations.***

Unexpected increases in the Corporation's cost structure that are beyond the control of the Corporation could materially adversely impact its financial performance. Examples of such costs include, but are not limited to: unexpected increases in the cost of procuring materials and services required for maintenance activities, and unexpected replacement or repair costs associated with equipment underperformance or lower-than-anticipated durability.

***Equipment failure may cause us to suffer a material adverse effect.***

There is a risk of equipment failure material to our operations due to wear and tear, latent defect, design error or operator error, among other things, which could have a material adverse effect on our business. Although our generation facilities have generally operated in accordance with expectations, there can be no assurance that they will continue to do so. In addition, there can be no assurance that any applicable insurance coverage would be adequate to protect our business from material adverse effects.

***We could be adversely affected by natural disasters or other catastrophic events.***

Our generation facilities and their operations are exposed to potential damage and partial or complete loss, resulting from environmental disasters (e.g. floods, high winds, fires and earthquakes), equipment failures and other events beyond our control. Climate change can increase the frequency and severity of these extreme weather events. The occurrence of a significant event which disrupts the operation or ability of the generation facilities to produce or sell power for an extended period, including events which preclude existing customers from purchasing electricity, could have a material adverse effect on us. Our generation facilities could be exposed to effects of severe weather conditions, natural or man-made disasters and other potentially catastrophic events such as a major accident or incident at our sites. In certain cases, there is the potential that some events may not excuse us from performing our obligations pursuant to agreements with third parties. The fact that several of our generation facilities are located in remote areas may make access for repair of damage difficult.

***Dam and dyke failures may result in lost generating capacity, increased maintenance and repair costs and other liabilities.***

A natural or man-made disaster, and certain other events, including natural or induced seismic activity, could potentially cause dam failures at our hydroelectric facilities. The occurrence of dam or dyke failures at any of our hydroelectric or coal facilities could result in a loss of generating capacity, damage to the environment or damages and harm to third parties or the public, and such failures could require us to incur significant expenditures of capital and other resources or expose us to significant liabilities for damages. There can be no assurance that our dam safety program will be able to detect potential dam failures prior to occurrence or eliminate all adverse consequences in the event of failure. Other safety regulations could change from time to time, potentially impacting our costs and operations. Reinforcing all dams or dykes to enable them to withstand more severe events could require us to incur significant expenditures of capital and other resources. The consequences of dam or dyke failures could have a material adverse effect on us.

***We may be adversely affected if our supply of water is materially reduced.***

Hydroelectric, natural gas and coal-fired plants require continuous water flow for their operation. Shifts in weather or climate patterns, seasonable precipitation, the timing and rate of melting, run off, and other factors beyond our control, may reduce the water flow to our facilities. Any material reduction in the water flow to our facilities would limit our ability to produce and market electricity from these facilities and could have a material adverse effect on us. There is

an increasing level of regulation respecting the use, treatment and discharge of water, and respecting the licensing of water rights in jurisdictions where we operate. Any such change in regulations could have a material adverse effect on us.

***Variation in wind levels may negatively impact the amount of electricity generated at our wind facilities.***

Wind is naturally variable. Therefore, the level of electricity produced from our wind facilities will also be variable. In addition, the strength and consistency of the wind resource at our wind facilities may vary from what we anticipate due to a number of factors including: the extent to which our site-specific historic wind data and wind forecasts accurately reflects actual long-term wind speeds, strength and consistency; the potential impact of climatic factors; the accuracy of our assumptions relating to, among other things, weather, icing, degradation, site access, wake and wind shear line losses and wind shear; and the potential impact of topographical variations.

A reduced amount of wind at the location of one or more of our wind facilities over an extended period may reduce the production from such facilities, as well as any environmental attributes that accrue to us related to that production and reduce our revenues and profitability.

***Changes in the price of electricity and availability of fuel supplies required to generate electricity may materially adversely affect our business.***

A significant portion of our revenues are tied, either directly or indirectly, to the market price for electricity in the markets in which we operate. Market electricity prices are impacted by a number of factors including: the strength of the economy, the available transmission capacity, the price of fuel that is used to generate electricity (and, accordingly, certain of the factors that affect the price of fuel described below); the management of generation and the amount of excess generating capacity relative to load in a particular market; the cost of controlling emissions of pollution, including potentially the cost of carbon; the structure of the particular market; increased adoption of energy efficiency and conservation initiatives, and weather conditions that impact electrical load. As a result, we cannot accurately predict future electricity prices and electricity price volatility could have a material adverse effect on us.

We buy natural gas and a portion of our coal to supply the fuel needed to generate electricity. We could be materially adversely affected if the cost of fuel that we must buy to generate electricity increases to a greater degree than the price that we can obtain for the electricity that we sell. Several factors affect the price of fuel, many of which are beyond our control, including:

- prevailing market prices for fuel;
- global demand for energy products;
- the cost of carbon and other environmental concerns;
- weather-related disruptions affecting the ability to deliver fuels or near-term demand for fuels;
- increases in the supply of energy products in the wholesale power markets;
- the extent of fuel transportation capacity or cost of fuel transportation service into our markets; and
- the cost of mining that, in turn, depends on various factors such as labour market pressures, equipment replacement costs and permitting.

Changes in any of these factors may increase our cost of producing power or decrease the amount of revenue received from the sale of power, which could have a material adverse effect on us.

***Disruption of fuel supply to certain of our thermal plants could have an adverse impact on our financial condition.***

Certain of our thermal facilities depend on third parties to supply fuel, including natural gas and coal. As a result, we face the risks of supply interruptions and fuel price volatility, as fuel deliveries may not exactly match those required for energy sales, due in part to our need to pre-purchase fuel inventories for reliability and dispatch requirements. Disruption of transportation services of fuel, whether because of weather-related problems, strikes, lock-outs, break-downs of locks and dams or other events could impair our ability to generate electricity and could adversely affect our results of operations. Significantly, the coal used to fuel the Centralia Thermal facility is sourced from the Powder River Basin in Montana and Wyoming through contracts to purchase and transport such coal to our Centralia Thermal facility. These existing coal contracts for the Centralia Thermal plant expire at the end of 2020. The loss of our suppliers or our inability to renew our existing coal contracts for Powder River Basin coal at favourable terms, or at all, could also significantly affect our ability to serve our customers and have an adverse impact on our financial condition and results of operations. Once the Tidewater pipeline is operational, we could face the risk of supply service interruptions beyond our control due to our reliance on Tidewater as the main provider of natural gas for our Sundance and Keephills Units.

***Changes in general economic and market conditions may have a material adverse effect on us.***

Adverse changes in general economic and market conditions and, more specifically, in the markets in which we operate could negatively impact demand for electricity, revenue, operating costs, timing and extent of capital expenditures, the net recoverable value of plant, property and equipment, results of financing efforts, or credit risk and counterparty risk, which could cause us to suffer a material adverse effect.

***The market price for our common shares may be volatile.***

The market price for our common shares may be volatile and subject to wide fluctuations in response to numerous factors, many of which are beyond our control, including: (a) actual or anticipated fluctuations in our results of operations; (b) recommendations by securities research analysts; (c) changes in the economic performance or market valuations of other companies that investors deem comparable; (d) the loss or resignation of executive officers and other key personnel; (e) sales or perceived sales of additional common shares; (f) significant acquisitions or business combinations, strategic partnerships, joint ventures or capital commitments by or involving [us or] our competitors; and (g) trends, concerns, technological or competitive developments, regulatory changes and other related issues in the power generation industry or our target markets.

Financial markets have experienced significant price and volume fluctuations in recent years that have particularly affected the market prices of equity securities of companies and such fluctuations have, in many cases, been unrelated to the operating performance, underlying asset values or prospects of such companies. Accordingly, the market price of our common shares may decline even if our operating results, underlying asset values or prospects have not changed. Additionally, these factors, as well as other related factors, may cause decreases in asset values which may result in impairment losses. Certain institutional investors may base their investment decisions on consideration of our environmental, governance and social practices and performance against such institutions' respective investment guidelines and criteria, and failure to meet such criteria may result in a limited or no investment in our common shares by those institutions, which could adversely affect the trading price of our common shares.

***A downgrade of our credit ratings could materially and adversely affect us.***

Rating agencies regularly evaluate us, basing their ratings of our long-term and short-term debt on a number of factors. There can be no assurance that one or more of our credit ratings and the corresponding outlook will not be changed. Our borrowing costs and ability to raise funds are directly impacted by our credit ratings. Credit ratings may be important to suppliers or counterparties when they seek to engage in certain transactions with us. A credit rating downgrade could potentially impair our ability to enter into arrangements with suppliers or counterparties, to engage in certain transactions, and could limit our access to private and public credit markets and increase the costs of borrowing under our existing credit facilities. A credit rating downgrade could require us to post a material amount of new collateral to our counterparties. For further information on posting collateral, please see Note 15 section C of our audited consolidated

financial statements for the year ended December 31, 2018, which financial statements are incorporated by reference herein. Please also see "*Documents Incorporated by Reference*" in this AIF.

***Our cash dividend payments are not guaranteed.***

The payment of dividends is not guaranteed and could fluctuate. The Board has the discretion to determine the amount and timing of any dividends to be declared and paid to our shareholders. In addition, the payment of dividends on common shares is, in all cases, subject to prior satisfaction of preferential dividends applicable to each series of our first preferred shares. We may alter our dividend policy at any time. The Board's determination to declare dividends will depend on, among other things, results of operations; financial condition; current and expected future levels of earnings; operating cash flow; liquidity requirements; market opportunities; income taxes; maintenance and growth capital expenditures; debt repayments; legal, regulatory and contractual constraints; working capital requirements; tax laws and other relevant factors. Our short and long-term borrowings may prohibit us from paying dividends at any time at which a default or event of default would exist under such debt, or if a default or event of default would exist as a result of paying the dividend.

Over time, our capital and other cash needs may change significantly from our current needs, which could affect whether we pay dividends and the amount of any dividends we may pay in the future. If we continue to pay dividends at the current level, we may not retain a sufficient amount of cash to finance growth opportunities, meet any large unanticipated liquidity requirements or fund our operations in the event of a significant business downturn. The Board, subject to the requirements of our bylaws and other governance documents, may amend, revoke or suspend our dividend policy at any time. A decline in the market price or liquidity, or both, of our common shares could result if the Board establishes large reserves that reduce the amount of quarterly dividends paid or if we reduce or eliminate the payment of dividends.

We are dependent on the operations of our facilities for our cash availability. The actual amount of cash available for dividends to holders of our common shares will depend upon numerous factors relating to each of our generation facilities including: operating performance of our generation facilities, profitability, changes in revenues, fluctuations in working capital, capital expenditure levels, applicable laws, compliance with contracts and contractual restrictions contained in the instruments governing any indebtedness. Any reduction in the amount of cash available for distribution from our generation facilities will reduce the amount of cash available to pay dividends to holders of our common shares.

***We operate in a highly competitive environment and may not be able to compete successfully.***

We operate in a number of Canadian provinces, as well as in the United States and Australia. These areas of operation are affected by competition ranging from large utilities to small independent power producers, as well as private equity and international conglomerates. Some competitors have significantly greater financial and other resources than we do. Such competition could have a material adverse effect on our business.

***We could suffer lost revenues or increased expenses and penalties if we are unable to operate our generation facilities at a level necessary to comply with our PPAs.***

The ability of our facilities to generate the maximum amount of power which can be sold under PPAs is an important determinant of our revenues. Under certain PPAs, if the facility is not capable of generating electricity for the required Availability in a given contract year, penalty payments may be payable to the relevant purchaser by us. The payment of any such penalties could adversely affect our revenues and profitability.

***Our revenues may be reduced upon expiration or termination of PPAs.***

We sell power under PPAs that expire at various times. In addition, these PPAs may be subject to termination in certain circumstances, including default by the facility or plant owner or operator. When a PPA expires or is terminated, it could result in us having less stable cash flows and it is possible that the price received by the relevant facility or plant for power under subsequent selling arrangements may be reduced significantly. It is also possible that to the extent a PPA is negotiated after the initial PPAs have run their course, the new contract may not be available at prices that permit

the continued operation of the affected facility or plant on a profitable basis. If this occurs, the affected facility or plant may be forced to permanently cease operations.

***Variations in weather can affect demand for electricity and our ability to generate electricity.***

Due to the nature of our business, our earnings are sensitive to weather variations from period to period. Variations in winter weather affect the demand for electrical heating requirements. Variations in summer weather affect the demand for electrical cooling requirements. These variations in demand translate into spot market price volatility. Variations in precipitation also affect water supplies, which in turn affect our hydroelectric assets. Also, variations in sunlight conditions can have an effect on energy production levels from our solar farm. Variations in weather may be impacted by climate change resulting in sustained higher temperatures and rising sea levels which could have an impact on our generating assets.

Ice can accumulate on wind turbine blades in the winter months. The accumulation of ice on wind turbine blades depends on a number of factors, including temperature, and ambient humidity. The accumulation of ice on wind turbine blades can have a significant impact on energy yields, and could result in the wind turbine experiencing more down time. Extreme cold temperatures can also impact the ability of wind turbines to operate effectively and this could result in more downtime and reduced production.

In addition, climate change could result in increased variability to our water and wind resources.

***The laws and regulations in the various markets in which we operate are subject to change, which may materially adversely affect us.***

Most of the markets in which we operate and intend to operate are subject to significant regulatory oversight and control. We are not able to predict whether there will be any further changes in the regulatory environment, including potential regulation of the rates allowed to be charged and the capital structure of wholesale generating companies such as ours, changes in market structure or market design or what the ultimate effect of a changing regulatory environment will have on our business. Existing market rules, regulations and reliability standards are often dynamic and may be revised or re-interpreted and new laws and regulations may be adopted or become applicable to us or our facilities, which could have a material adverse effect on us. The impact of the intended capacity market expected to be implemented in Alberta on the Corporation is not yet known and may be material. The ability of the Corporation to successfully participate in the capacity market is not assured and may impact our capital allocation strategies, including as it pertains to the coal-to-gas conversions.

We manage these risks systematically through a regulatory and compliance program designed to reduce any potential negative impact on us. However, we cannot guarantee that we will be able to adapt our business in a timely manner in response to any changes in the regulatory regimes in which we operate, and such failure to adapt could have a material adverse effect on our business.

Regulatory authorities may also from time to time audit or investigate our activities in the markets in which we operate or pursue trading. Such audits or investigations may result in sanctions or penalties which may materially affect our future activities, our reputation or our financial status.

Our facilities are also subject to various licensing and permitting requirements in the jurisdictions in which we operate. Many of these licenses and permits need to be renewed from time to time. If we are unsuccessful in renewing such licenses or permits, or the terms of such licenses or permits are changed in a manner that is adverse to our business, we could be materially adversely affected.

Any changes in the rules and regulations of provincial or state public utility commissions or other regulatory bodies in the other markets in which we compete, or may compete in the future, may materially adversely affect us.

***Changes in opinions of our Corporation from external parties may have a material adverse effect on us.***

Reputation risk relates to the risk associated with our business because of changes in opinion from the general public, private stakeholders, governments and other entities. Our reputation is one of our most valued assets. The potential



for harming our reputation exists in every business decision and all risks can have an impact on reputation, which in turn can negatively impact our business and securities. Reputational risk cannot be managed in isolation from other forms of risk. Negative impacts from a compromised reputation could include revenue loss, reduction in customer base, and decreased value of our securities.

***We depend on certain partners that may have interests or objectives which conflict with our objectives and such differences could have a negative impact on us.***

We have entered into various types of arrangements with communities or joint venture partners for the operation of our facilities. Certain of these partners may have or develop interests or objectives which are different from or even in conflict with our objectives. Any such differences could have a negative impact on the success of our facilities. We are sometimes required through the permitting and approval process to notify and consult with various stakeholder groups, including landowners, First Nations and municipalities. Any unforeseen delays in this process may negatively impact our ability to complete any given facility on time or at all and could result in write-offs or give rise to reputational harm.

***We are dependent on access to parts and equipment from certain key suppliers and we may be adversely affected if these relationships are not maintained.***

Our ability to compete and expand will be dependent on having access, at a reasonable cost, to equipment, parts and components which are technologically and economically competitive with those utilized by our competitors. Although we have individual framework agreements with various suppliers, there can be no assurance that these relationships with suppliers will be maintained. If they are not maintained, our ability to compete may be impaired due to lack of access to these sources of equipment, parts or components.

***Our information technology systems are vulnerable to damages from computer viruses, natural disasters, unauthorized access, cyberattack and other similar disruptions, all of which could have a material adverse effect on our business.***

We rely on technology, mainly on computer, telephone, satellite, cellular and related networks and infrastructure, to conduct our business and monitor the production of our generation facilities. These systems and infrastructure could be vulnerable to unforeseen problems including, but not limited to, cyberattacks, breaches, vandalism and theft. We have put in place a number of systems, processes, practices and data backups designed to protect against intentional or unintentional misappropriation or corruption of our systems and information or disruption of our operations. Despite our implementation of security measures, our information technology systems are vulnerable to damages from computer viruses, natural disasters, unauthorized access, cyberattack and other similar disruptions.

Any damage or failure that causes an interruption in operations could have an adverse effect on our customers. Additionally, we actively protect our generation facility infrastructure against physical damage, security breaches and service disruption from any of a variety of causes. Cyberattacks, theft, vandalism, and other disruptions could jeopardize the security of information stored in and transmitted through our systems and network infrastructure, and could result in significant set-backs, potential liabilities, and deter future customers. While we have systems, policies, hardware, practices, data backups, disaster recovery and procedures designed to prevent, detect or limit the effect of the failure, interruptions or security breaches of our generation facility and infrastructure, there can be no assurance that these measures will be sufficient and that such failures, interruptions or security breaches will not occur or, if they do occur, that they will be adequately addressed in a timely manner.

***Cyberattacks may cause disruptions to our operations and could have a material adverse effect on our business.***

We rely on our information technology to process, transmit and store electronic information and data used for the safe operation of our assets. In today's continuously evolving cybersecurity threat landscape, any attacks or breaches of network or information systems may cause disruptions to our business operations or compromise proprietary, confidential or personal information of the Corporation, its customers, partners or others with whom the Corporation has dealings. Cyberattackers may use a range of techniques, from exploiting vulnerabilities within our user-base, to

using sophisticated malicious code on a single or distributed basis to try to breach our network security controls. Attackers may also use a combination of techniques in their attempt to evade safeguards such as firewalls, intrusion prevention systems and antivirus software that exist on our network infrastructure systems. A successful cyberattack may allow for the unauthorized interception, destruction, use, or dissemination of proprietary, confidential or personal information and may cause disruptions to our operations.

We continuously take measures to secure our infrastructure against potential cyberattacks that may damage our infrastructure, systems and data. Our cybersecurity program aligns with industry best practices to ensure that a holistic approach to security is maintained. We have implemented security controls to help secure our data and business operations including access control measures, intrusion detection and prevention systems, logging and monitoring of network activities, and implementing policies and procedures to ensure the secure operations of the business. We have also established security awareness programs to help educate our users on cybersecurity risks and their responsibilities in helping protect the business.

While we have systems, policies, hardware, practices, data backups and procedures designed to prevent or limit the effect of security breaches of our network and infrastructure, there can be no assurance that these measures will be sufficient and that such security breaches will not occur, if they do occur, that they will always be adequately addressed in a timely manner.

***Our facilities rely on national and regional transmission systems and related facilities that are owned and operated by third parties and have both regulatory and physical constraints that could impede access to electricity markets.***

Our power generation facilities depend on electric transmission systems and related facilities owned and operated primarily by third parties to deliver the electricity that we generate to delivery points where ownership changes and we are paid. These grids operate with both regulatory and physical constraints which in certain circumstances may impede access to electricity markets. There may be instances in system emergencies in which our power generation facilities are physically disconnected from the power grid, or our production curtailed, for periods of time. Most of our electricity sales contracts do not provide for payments to be made if electricity is not delivered.

Our power generation facilities may also be subject to changes in regulations governing the cost and characteristics of use of the transmission and distribution systems to which our power generation facilities are connected. Our power generation facilities in the future may not be able to secure access to this interconnection or transmission capacity at reasonable prices, in a timely fashion or at all, which could then cause delays and additional costs in attempting to negotiate or renegotiate PPAs or to construct new projects. In addition, we may not benefit from preferential arrangements in the future. Any such increased costs and delays could delay the commercial operation dates of any new projects and negatively impact our revenues and financial condition.

***Trading risks may have a material adverse effect on our business.***

Our trading and marketing business frequently involves the establishment of trading positions in the wholesale energy markets on both a medium-term and short-term basis. To the extent that we have long positions in the energy markets, a downturn in market prices will result in losses from a decline in the value of such long positions. Conversely, to the extent that we enter into forward sales contracts to deliver energy that we do not own, or take short positions in the energy markets, an upturn in market prices will expose us to losses as we attempt to cover any short positions by acquiring energy in a rising market.

In addition, from time to time, we may have a trading strategy consisting of simultaneously holding a long position and a short position, from which we expect to earn a profit based on changes in the relative value of the two positions. If, however, the relative value of the two positions changes in a direction or manner that we did not anticipate, we would realize losses from such a paired position.

If the strategy that we use to hedge our exposures to these various risks is not effective, we could incur significant losses. Our trading positions can be impacted by volatility in the energy markets that, in turn, depend on various factors, including weather in various geographical areas and short-term supply and demand imbalances, which cannot be

predicted with any certainty. A shift in the energy markets could adversely affect our positions which could also have a material adverse effect on our business.

We use a number of risk management controls conducted by our independent Risk Management group in order to limit our exposure to risks arising from our trading activities. These controls include risk capital limits, VaR, GMaR, tail risk scenarios, position limits, concentration limits, credit limits, and approved product controls. We cannot guarantee that losses will not occur and such losses may be outside the parameters of our risk controls.

***Because of our multinational operations, we are subject to currency rate risk and regulatory and political risk.***

We have exposure to various currencies as a result of our investments and operations in foreign jurisdictions, the cash flows from those operations, the acquisition of equipment and services from foreign suppliers, and our U.S. dollar denominated debt. Our exposures are primarily to the U.S. and Australian currencies. Changes in the values of these currencies relative to the Canadian dollar could negatively impact our operating cash flows or the value of our foreign investments. While we attempt to manage this risk through the use of hedging instruments, including cross-currency interest rate swaps, forward exchange contracts and matching revenues and expenses by currency at the Corporate level, there can be no assurance that these risk management efforts will be effective, and fluctuations in these exchange rates may have a material adverse effect on our business.

In addition to currency rate risk, our foreign operations may be subject to regulatory and political risk. Any change to the regulations governing power generation or the political climate in the countries where we have operations could impose additional costs and have a material adverse effect on us.

***Risks relating to TransAlta's development and growth projects and acquisitions may materially and adversely affect us.***

Development and growth projects and acquisitions that we undertake may be subject to execution and capital cost risks, including, but not limited to, risks relating to regulatory approvals, third party opposition, cost escalations, construction delays, shortages of raw materials or skilled labour and capital constraints. The occurrences of these risks could have a material and adverse impact on us, our financial condition, results of operations and cash flows.

Expansion of our business through development projects and acquisitions may place increased demands on our management, operating systems, internal controls and financial and physical resources. In addition, the process of integrating acquired businesses or development projects may involve unforeseen difficulties. Failure to successfully manage or integrate any acquired businesses or development projects could have a material adverse impact on us, our financial condition, results of operations and cash flows. Further, we cannot make assurances that we will be successful in integrating any acquisition or that the commercial opportunities or operational synergies of any acquisition will be realized as expected.

We may pursue acquisitions in new markets that are subject to regulation by various foreign governments and regulatory authorities and to the application of foreign laws. Such foreign laws or regulations may not provide for the same type of legal certainty and rights, in connection with our contractual relationships in such countries, as are afforded to us currently, which may adversely affect our ability to receive revenues or enforce our rights in connection with any such foreign operations. In addition, the laws and regulations of some countries may limit our ability to hold a majority interest in some of the projects that we may acquire, thus limiting our ability to control the operation of such projects. Any existing or new operations may also be subject to significant political, economic and financial risks, which vary by country, and may include: (a) changes in government policies or personnel; (b) changes in general economic conditions; (c) restrictions on currency transfer or convertibility; (d) changes in labour relations; (e) political instability and civil unrest; (f) regulatory or other changes in the local electricity market; and (g) breach or repudiation of important contractual undertakings by governmental entities and expropriation and confiscation of assets and facilities for less than fair market value.

With respect to acquisitions, we cannot make assurances that we will identify suitable transactions or that we will have access to sufficient resources, through our credit facilities, the capital markets or otherwise, to pursue and complete any identified acquisition opportunities on a timely basis and at a reasonable cost. Any acquisition that we propose or

complete would be subject to normal commercial risks that the transaction may not be completed on the terms negotiated, on time, or at all. An unavoidable level of risk remains regarding potential undisclosed or unknown liabilities relating to any acquisition. The existence of such undisclosed liabilities may have a material adverse impact on our business, financial condition, results of operations and cash flows.

***We may have difficulty raising needed capital in the future, which could significantly harm our business.***

To the extent that our sources of cash and cash flow from operations are insufficient to fund our activities, we may need to raise additional funds. Additional financing may not be available when needed, and if such financing is available, it may not be available on terms that are favourable to our business.

Recovery of the capital investment in power projects generally occurs over a long period of time. As a result, we must obtain funds from equity or debt financings, including tax equity transactions, or from government grants, to help finance the acquisition of projects and to help pay the general and administrative costs of operating our business. Our ability to arrange financing, either at the corporate level or at the subsidiary level (including non-recourse project debt), and the costs of such capital are dependent on numerous factors, including: (a) general economic and capital market conditions; (b) credit availability from banks and other financial institutions; (c) investor confidence and the markets in which we conduct operations; (d) our financial performance; (e) our level of indebtedness and compliance with covenants in our debt agreements; and (f) our cash flow.

An increase in interest rates or a reduction in the availability of project debt financing could reduce the number of projects that we are able to finance. If we are unable to raise additional funds when needed, we could be required to delay acquisition and construction of growth projects (including the coal-to-gas conversions), reduce the scope of projects, abandon or sell some or all of our projects or generation facilities, or default on our contractual commitments in the future, any of which could adversely affect our business, financial condition and results of operations.

***TransAlta Corporation's debt securities will be structurally subordinated to any debt of our subsidiaries that are currently outstanding or may be incurred in the future.***

We operate our business through, and a majority of our assets are held by, our subsidiaries, including partnerships. Our results of operations and ability to service indebtedness are dependent upon the results of operations of our subsidiaries, including TransAlta Renewables, and the payment of funds by these subsidiaries to TransAlta in the form of loans, dividends or otherwise. Our subsidiaries will not have an obligation to pay amounts due, or make any funds available for payment of, debt securities issued by TransAlta, whether by dividends, interests, loans, advances or other payments. In addition, the payment of dividends and the making of loans, advances and other payments to us by our subsidiaries may be subject to statutory or contractual restrictions.

In the event of the liquidation of any subsidiary, the assets of the subsidiary would be used first to repay the indebtedness of the subsidiary, including trade payables or obligations under any guarantees, prior to being used to pay TransAlta's indebtedness, including any debt securities issued by TransAlta. Such indebtedness and any other future indebtedness of such subsidiaries would be structurally senior for such subsidiary to any debt securities issued by TransAlta.

Our subsidiaries have financed some investments using non-recourse project financing. Each non-recourse project loan is structured to be repaid out of cash flow provided by the investment. In the event of a default under a financing agreement which is not cured, the lenders would generally have rights to the related assets. In the event of foreclosure after a default, our subsidiary may lose its equity in the asset or may not be entitled to any cash that the asset may generate. Although a default under a project loan will not cause a default with respect to any debt securities issued by TransAlta, it may materially affect our ability to service our outstanding indebtedness.

***Changes in statutory or contractual restrictions may have an adverse effect on our ability to service debt obligations.***

We conduct a significant amount of business through subsidiaries and partnerships. Our ability to meet and service debt obligations is dependent upon the results of operations of our subsidiaries, including TransAlta Renewables, and the payment of funds by our subsidiaries in the form of distributions, loans, dividends, or otherwise. In addition, our subsidiaries may be subject to statutory or contractual restrictions that limit their ability to distribute cash to us.

***The power generation industry has certain inherent risks related to worker health and safety and the environment that could cause us to suffer unanticipated expenditures or to incur fines, penalties or other consequences material to its business and operations.***

The ownership and operation of our power generation assets carry an inherent risk of liability related to worker health and safety and the environment, including the risk of government imposed orders to remedy unsafe conditions and/or to remediate or otherwise address environmental contamination, potential penalties for contravention of health, safety and environmental laws, licenses, permits and other approvals, and potential civil liability. Compliance with (and any future changes to) health, safety and environmental laws and the requirements of licenses, permits and other approvals are expected to remain material to our business. The occurrence of any of these events or any changes, additions to, or more rigorous enforcement of, health, safety and environmental laws, licenses, permits or other approvals could have a significant impact on our operations and/or result in additional material expenditures. As a consequence, no assurances can be given that additional environmental and workers' health and safety issues relating to presently known or unknown matters will not require unanticipated expenditures, or result in fines, penalties or other consequences (including changes to operations) material to our business and operations.

***Certain of the contracts to which we are a party require that we provide collateral against our obligations.***

We are exposed to risk under certain electricity and natural gas purchase and sale contracts entered into for the purposes of hedging and proprietary trading. The terms and conditions of these contracts require us to provide collateral when the fair value of these contracts is in excess of any credit limits granted by our counterparties and the contract obliges that we provide the collateral. The change in fair value of these contracts occurs due to changes in commodity prices. These contracts include: (i) purchase agreements, when forward commodity prices are less than contracted prices; and (ii) sales agreements, when forward commodity prices exceed contracted prices. Downgrades in our creditworthiness by certain credit rating agencies may decrease the credit limits granted by our counterparties and, accordingly, increase the amount of collateral that we may have to provide, which could materially adversely affect us.

***If counterparties to our contracts are unable to meet their obligations, we may be materially and adversely affected.***

If purchasers of our electricity and steam or other contractual counterparties default on their obligations, we may be materially and adversely affected. While we have procedures and controls in place to manage our counterparty credit risk prior to entering into contracts, all contracts inherently contain default risk. Moreover, while we seek to monitor trading activities to ensure that the credit limits for counterparties are not exceeded, we cannot guarantee that a party will not default. If counterparties to our contracts are unable to meet their obligations, we could suffer a reduction in revenue which could have a material adverse effect on our business.

***We are not able to insure against all potential risks and may become subject to higher insurance premiums.***

Our business is exposed to the risks inherent in the construction and operation of electricity generation facilities, such as breakdowns, manufacturing defects, natural disasters, injury, damage to third parties, theft, terrorist attacks and sabotage. We are also exposed to environmental risks. We maintain insurance policies, covering usual and customary risks associated with our business, with credit worthy insurance carriers. Our insurance policies, however, do not cover losses as a result of *force majeure*, natural disasters, terrorist or cyberattacks or sabotage, among other things. In addition, we generally do not maintain insurance for certain environmental risks, such as environmental contamination. Our insurance policies are subject to annual review by the respective insurers and may not be renewed at all or on similar or favourable terms. A significant uninsured loss or a loss significantly exceeding the limits of our insurance policies or the failure to renew such insurance policies on similar or favourable terms could have a material adverse effect on our business, financial condition and results of operations.

Our insurance coverage may not be available in the future on commercially reasonable terms or adequate insurance limits may not be available in the market. In addition, the insurance proceeds received for any loss or damage to any of our generation facilities may not be sufficient to permit us to continue to make payments on our debt.

***Provision for income taxes may not be sufficient.***

Our operations are complex, and the computation of the provision for income taxes involves tax interpretations, regulations, and legislation that are continually changing. In addition, our tax filings are subject to audit by taxation authorities. While we believe that our tax filings have been made in material compliance with all applicable tax interpretations, regulations, and legislation, we cannot guarantee that we will not have disagreements with taxation authorities with respect to our tax filings that could have a material adverse effect on our business.

The Corporation and its subsidiaries are subject to changing tax laws, treaties and regulations in and between countries. Various tax proposals in the countries we operate in could result in changes to the basis on which deferred taxes are calculated or could result in changes to income or non-income tax expense. There has recently been an increased focus on issues related to the taxation of multinational corporations. A change in tax laws, treaties or regulations, or in the interpretation thereof, could result in a materially higher income or non-income tax expense which can have a material adverse impact on us.

***We are subject to uncertainties regarding when we will become cash taxable.***

Our anticipated cash tax horizon is subject to risks, uncertainties and other factors that could cause the cash tax horizon to occur sooner than currently projected. In particular, our anticipated cash tax horizon is subject to risks pertaining to changes in our operations, asset base, corporate structure or changes to tax legislation, regulations or interpretations. In the event we become cash taxable sooner than projected, our cash available for distribution and our dividend could decrease, which could in turn have a material adverse impact on the value of our shares.

***If we fail to attract and retain key personnel, we could be materially adversely affected.***

The loss of any of our key personnel or our inability to attract, train, retain and motivate additional qualified management and other personnel could have a material adverse effect on our business. Competition for these personnel is intense and there can be no assurance that we will be successful in this regard.

If we are unable to successfully negotiate new collective bargaining agreements with our unionized workforce, as required from time to time, we will be adversely affected.

While we believe we have a satisfactory relationship with our unionized employees, we cannot guarantee that we will be able to successfully negotiate or renegotiate our collective bargaining agreements on terms agreeable to TransAlta. We expect to re-negotiate four collective bargaining agreements, involving 475 of our employees, in 2019. Four collective bargaining agreements representing a total of approximately 220 employees are anticipated to be negotiated in 2020. Any problems in negotiating these collective bargaining agreements could lead to higher employee costs and a work stoppage or strike, which could have a material adverse effect on us.

## **EMPLOYEES**

The Corporation is required to develop and retain skilled workforces for their operations. Many of the employees of the Corporation possess specialized skills and training and the Corporation must compete in the marketplace for these workers. As of December 31, 2018, we had 1,883 active employees, which includes full-time, part-time and temporary employees, of which 886 were employed in our Canadian Coal segment (including our SunHills mining operation), 202 were employed in our U.S. coal segment, 209 were employed in our Gas Segment, 80 were employed in our Wind and Solar business, 79 were employed in our Hydro business, 70 were employed in our Energy Marketing business, and the remaining 367 employees were employed in our Corporate segment. Approximately 50 per cent of our employees are represented by labour unions. We are currently a party to 10 different collective bargaining agreements. In 2018, we renewed four of the 10 collective bargaining agreements and we expect to re-negotiate four collective bargaining agreements in 2019.

## CAPITAL STRUCTURE

Our authorized share capital consists of an unlimited number of common shares and an unlimited number of first preferred shares, issuable in series. As at February 26, 2019, there were 284,638,967 common shares outstanding and 10,175,380 Series A Shares, 1,824,620 Series B Shares, 11,000,000 Series C Shares, 9,000,000 Series E Shares and 6,600,000 Series G Shares outstanding. The Corporation does not have any escrowed securities.

### Common Shares

Each common share of TransAlta Corporation entitles the holder thereof to one vote for each common share held at all meetings of shareholders of the Corporation, except meetings at which only holders of another specified class or series of shares are entitled to vote, to receive dividends if, as and when declared by the Board, subject to prior satisfaction of preferential dividends applicable to any first preferred shares, and to participate rateably in any distribution of our assets upon a liquidation, dissolution or winding up and subject to prior rights and privileges attaching to first preferred shares. The common shares are not convertible and are not entitled to any pre-emptive rights. The common shares are not entitled to cumulative voting.

On March 9, 2018, the TSX accepted our notice filed to implement a normal course issuer bid for a portion of its common shares. The Board has authorized repurchases of up to 14,000,000 of its common shares, representing approximately five per cent of TransAlta's public float. Purchases under the NCIB are expected to be made through open market transactions on the TSX and any alternative Canadian trading platforms, based on the prevailing market price. Any common shares purchased under the NCIB will be cancelled.

For the twelve months of 2018 we purchased and cancelled 3,264,500 common shares at an average price of \$7.01 per share.

On January 14, 2016, we announced the suspension of the Premium Dividend<sup>TM</sup>, Dividend Reinvestment and Optional Common Share Purchase Plan.

### First Preferred Shares

We are authorized to issue an unlimited number of first preferred shares, issuable in series and, with respect to each series, the Board is authorized to fix the number of shares comprising the series and determine the designation, rights, privileges, restrictions and conditions attaching to such shares, subject to certain limitations.

The first preferred shares of all series rank senior to all other shares of TransAlta Corporation with respect to priority in payment of dividends and with respect to distribution of assets in the event of liquidation, dissolution or winding up of the Corporation, or a reduction of stated capital. Holders of first preferred shares are entitled to receive cumulative quarterly dividends on the subscription price thereof as and when declared by the Board at the rate established by the Board at the time of issue of shares of a series. No dividends may be declared or paid on any other shares of TransAlta Corporation unless all cumulative dividends accrued upon all outstanding first preferred shares have been paid or declared and set apart. In the event of the liquidation, dissolution or winding up of the Corporation, or a reduction of stated capital, no sum shall be paid or assets distributed to holders of other shares of TransAlta Corporation until the holders of first preferred shares shall have been paid the subscription price of the shares, plus a sum equal to the premium payable on a redemption, plus a sum equal to the arrears of dividends accumulated on the first preferred shares to the date of such liquidation, dissolution, winding up, or reduction of stated capital, as applicable. After payment of such amount, the holders of first preferred shares shall not be entitled to share further in the distribution of our assets.

The Board may include, in the share conditions attaching to a particular series of first preferred shares, certain voting rights effective upon our failing to make payment of six quarterly dividend payments, whether or not consecutive. These voting rights continue for so long as any dividends remain in arrears. These voting rights are the right to one vote for each \$25.00 of subscription price on all matters in respect of which shareholders vote, and additionally, the right of all series of first preferred shares, voting as a combined class, to elect two directors of TransAlta if the Board then consists of less than 16 directors, or three directors if the Board consists of 16 or more directors. Otherwise, except

as required by law, the holders of first preferred shares shall not be entitled to vote or to receive notice of or attend any meeting of the shareholders of the Corporation.

Subject to the share conditions attaching to any particular series providing to the contrary, we may redeem the first preferred shares of a series, in whole or from time to time in part, at the redemption price applicable to each series and we have the right to acquire any of the first preferred shares of one or more series by purchase for cancellation in the open market or by invitation for tenders at a price not to exceed the redemption price applicable to the series.

### ***Series A Shares***

12.0 million Series A Shares were issued on December 10, 2010 with a coupon of 4.60 per cent, for gross proceeds of \$300 million. On March 31, 2016, 1,824,620 of the Series A Shares were converted into Series B Shares. Certain provisions of the Series A Shares are discussed below.

#### *Dividends on Series A Shares*

The holders of Series A Shares are entitled to receive, as and when declared by the Board out of moneys of TransAlta properly applicable to the payment of dividends, fixed cumulative preferential cash dividends payable quarterly on the last day of March, June, September and December in each year (less any tax that we are required to deduct and withhold). If any such date is not a business day, the dividend will be paid on the next succeeding business day.

For each five-year period after the Initial Fixed Rate Period (each a "Subsequent Fixed Rate Period"), the holders of Series A Shares shall be entitled to receive, as and when declared by the Board, fixed cumulative preferential cash dividends, payable quarterly on the last day of March, June, September and December in each year, in the amount per share determined by multiplying one-quarter of the Annual Fixed Dividend Rate for such Subsequent Fixed Rate Period by \$25.00 (less any tax that we are required to deduct and withhold). The Annual Fixed Dividend Rate for the ensuing Subsequent Fixed Rate Period will be determined by TransAlta on the Fixed Rate Calculation Date (30<sup>th</sup> day prior to the first day of such Subsequent Fixed Rate Period) and will be equal to the sum of the Government of Canada Yield (yield to maturity of a Government of Canada non-callable five year bond) on the Fixed Rate Calculation Date plus a spread of 2.03 per cent. This spread will apply to both the Series A Shares and the Series B Shares described below, and will remain unchanged over the life of the Series A Shares.

#### *Redemption of Series A Shares*

The Series A Shares are redeemable by TransAlta, at its option, in whole or in part, on March 31, 2016, and on March 31 in every fifth year thereafter by the payment of an amount in cash for each share to be redeemed equal to \$25.00 plus all accrued and unpaid dividends thereon to but excluding the date fixed for redemption (less any tax that we are required to deduct and withhold).

If we give notice to the holders of the Series A Shares of the redemption of all of the Series A Shares, the right of a holder of Series A Shares to convert such Series A Shares shall terminate and we shall not be required to give notice to the registered holders of the Series A Shares of an Annual Fixed Dividend Rate, a Floating Quarterly Dividend Rate or the conversion right of holders of Series A Shares.

#### *Conversion of Series A Shares into Series B Shares*

The holders of the Series A Shares have the right to convert all or any of their shares into cumulative redeemable floating rate first preferred shares, Series B of TransAlta (the "Series B Shares"), subject to certain conditions, on March 31, 2016 and on March 31 in every fifth year thereafter. The holders of the Series B Shares will be entitled to receive, as and when declared by the Board, quarterly floating rate cumulative preferential cash dividends payable on the last day of March, June, September and December in each year (each such quarterly dividend period is referred to as a "Quarterly Floating Rate Period"), in the amount per share determined by multiplying the "Floating Quarterly Dividend Rate" (which means, for any Quarterly Floating Rate Period, the annual rate of interest, (expressed as a percentage and rounded to the nearest one hundred-thousandth of one per cent), equal to the sum of the T-Bill Rate (the "T-Bill Rate") (which means, the average yield expressed as an annual rate on the 90 day Government of Canada treasury bill, as



reported by the Bank of Canada, for the most recent treasury bills auction preceding the applicable Floating Rate Calculation Date) on the applicable date and 2.03 per cent) for such Quarterly Floating Rate Period by \$25.00 and multiplying that product by a fraction, the numerator of which is the actual number of days in such Quarterly Floating Rate Period and the denominator of which is 365 or 366, depending upon the actual number of days in the applicable year (less any tax that we are required to deduct and withhold). If any such date is not a business day, the dividend will be paid on the next succeeding business day. The Floating Quarterly Dividend Rate will be the annual rate of interest equal to the sum of the T-Bill Rate on the applicable Floating Rate Calculation Date plus a spread of 2.03 per cent.

The Series A Shares and Series B Shares are series of shares in the same class. The conversion right entitles holders to elect periodically which of the two series they wish to hold and does not entitle holders to receive a different class or type of securities. Other than the different dividend rights and redemption rights attached thereto, the Series A Shares and Series B Shares are identical in all material respects.

On March 31, 2016, 1,824,620 of the Series A Shares were converted into Series B Shares on a one-for-one basis.

#### *Voting Rights*

The holders of the Series A Shares are not entitled to any voting rights or to receive notice of or to attend shareholders' meetings unless dividends on the Series A Shares are in arrears to the extent of six quarterly dividends, whether or not consecutive. Until all arrears of dividends have been paid, holders of Series A Shares will be entitled to receive notice of and to attend all shareholders' meetings at which directors are to be elected (other than separate meetings of holders of another class or series of shares) and to one vote in respect of each Series A Share held on all matters in respect of which shareholders vote, and additionally, the right of all series of first preferred shares, voting as a combined class, to elect two directors of the Corporation if the Board then consists of less than 16 directors, or three directors if the Board consists of 16 or more directors. Otherwise, except as required by law, the holders of first preferred shares shall not be entitled to vote or to receive notice of or attend any meeting of the shareholders of the Corporation.

#### *Modification*

The provisions attaching to the Series A Shares as a class may be amended with the written approval of all the holders of Series A Shares outstanding or by at least two-thirds of the votes cast at a meeting of the holders of such shares duly called for the purpose and at which a quorum is present.

#### ***Series B Shares***

1,824,620 Series B Shares were issued on March 31, 2016. Certain provisions of the Series B Shares are discussed below.

#### *Dividends on Series B Shares*

The holders of Series B Shares are entitled to receive, as and when declared by the Board out of moneys of TransAlta properly applicable to the payment of dividends, floating rate cumulative preferential cash dividends payable quarterly on the last day of March, June, September and December in each year (less any tax that we are required to deduct and withhold). If any such date is not a business day, the dividend will be paid on the next succeeding business day.

For each five-year period after conversion, the holders of Series B Shares shall be entitled to receive, as and when declared by the Board, quarterly floating rate cumulative preferential cash dividends, payable quarterly on the last day of March, June, September and December in each year (each such quarterly dividend period is referred to as a "Quarterly Floating Rate Period"), in the amount per share determined by multiplying the "Floating Quarterly Dividend Rate" (which means, for any Quarterly Floating Rate Period, the annual rate of interest, (expressed as a percentage and rounded to the nearest one hundred-thousandth of one per cent), equal to the sum of the T-Bill Rate (the "T-Bill Rate") (which means, the average yield expressed as an annual rate on the 90 day Government of Canada treasury bill, as reported by the Bank of Canada, for the most recent treasury bills auction preceding the applicable Floating Rate Calculation Date) on the applicable date and 2.03 per cent) for such Quarterly Floating Rate Period by \$25.00 and

multiplying that product by a fraction, the numerator of which is the actual number of days in such Quarterly Floating Rate Period and the denominator of which is 365 or 366, depending upon the actual number of days in the applicable year (less any tax that we are required to deduct and withhold). If any such date is not a business day, the dividend will be paid on the next succeeding business day. The Floating Quarterly Dividend Rate will be the annual rate of interest equal to the sum of the T-Bill Rate on the applicable Floating Rate Calculation Date plus a spread of 2.03 per cent. This spread will apply to both the Series A Shares described above and the Series B Shares and will remain unchanged over the life of the Series B Shares.

#### *Redemption of Series B Shares*

The Series B Shares are redeemable by TransAlta, at its option, in whole or in part, on March 31, 2021 and on March 31 in every fifth year thereafter by the payment of an amount in cash for each share to be redeemed equal to \$25.00 plus all accrued and unpaid dividends thereon to but excluding the date fixed for redemption (less any tax that we are required to deduct and withhold).

If we give notice to the holders of the Series B Shares of the redemption of all of the Series B Shares, the right of a holder of Series B Shares to convert such Series B Shares shall terminate and we shall not be required to give notice to the registered holders of the Series B Shares of an Annual Fixed Dividend Rate, a Floating Quarterly Dividend Rate or the conversion right of holders of Series B Shares.

#### *Conversion of Series B Shares into Series A Shares*

The holders of the Series B Shares have the right to convert all or any of their shares into cumulative redeemable fixed rate first preferred shares, Series A of TransAlta (the "Series A Shares"), subject to certain conditions, on March 31, 2021 and on March 31 in every fifth year thereafter. The holders of the Series A Shares will be entitled to receive, as and when declared by the Board, fixed cumulative preferential cash dividends payable on the last day of March, June, September and December in each year, in the amount per share determined by multiplying one-quarter of the Annual Fixed Dividend Rate for such Subsequent Fixed Rate Period by \$25.00 (less any tax that we are required to deduct and withhold). The Annual Fixed Dividend Rate for the ensuing Subsequent Fixed Rate Period will be determined by TransAlta on the Fixed Rate Calculation Date (30<sup>th</sup> day prior to the first day of such Subsequent Fixed Rate Period) and will be equal to the sum of the Government of Canada Yield (yield to maturity of a Government of Canada non-callable five year bond) on the Fixed Rate Calculation Date plus a spread of 2.03 per cent.

The Series A Shares and Series B Shares are series of shares in the same class. The conversion right entitles holders to elect periodically which of the two series they wish to hold and does not entitle holders to receive a different class or type of securities. Other than the different dividend rights and redemption rights attached thereto, the Series A Shares and Series B Shares are identical in all material respects.

#### *Voting Rights*

The holders of the Series B Shares are not entitled to any voting rights or to receive notice of or to attend shareholders' meetings unless dividends on the Series B Shares are in arrears to the extent of six quarterly dividends, whether or not consecutive. Until all arrears of dividends have been paid, holders of Series B Shares will be entitled to receive notice of and to attend all shareholders' meetings at which directors are to be elected (other than separate meetings of holders of another class or series of shares) and to one vote in respect of each Series B Share held on all matters in respect of which shareholders vote, and additionally, the right of all series of first preferred shares, voting as a combined class, to elect two directors of the Corporation if the Board then consists of less than 16 directors, or three directors if the Board consists of 16 or more directors. Otherwise, except as required by law, the holders of first preferred shares shall not be entitled to vote or to receive notice of or attend any meeting of the shareholders of the Corporation.

#### *Modification*

The provisions attaching to the Series B Shares as a class may be amended with the written approval of all the holders of Series B Shares outstanding or by at least two-thirds of the votes cast at a meeting of the holders of such shares duly called for the purpose and at which a quorum is present.

### *Series C Shares*

11.0 million cumulative redeemable rate reset first preferred shares, Series C (the "Series C Shares") were issued on November 30, 2011, with a coupon of 4.60 per cent, for gross proceeds of \$275 million. Certain provisions of the Series C Shares are discussed below.

#### *Dividends on Series C Shares*

The holders of Series C Shares are entitled to receive, as and when declared by the Board out of moneys of TransAlta properly applicable to the payment of dividends, fixed cumulative preferential cash dividends payable quarterly on the last day of March, June, September and December in each year (less any tax that we are required to deduct and withhold). If any such date is not a business day, the dividend will be paid on the next succeeding business day.

For each five-year period after the Initial Fixed Rate Period (each a "Subsequent Fixed Rate Period"), the holders of Series C Shares shall be entitled to receive, as and when declared by the Board, fixed cumulative preferential cash dividends, payable quarterly on the last day of March, June, September and December in each year, in the amount per share determined by multiplying one-quarter of the Annual Fixed Dividend Rate for such Subsequent Fixed Rate Period by \$25.00 (less any tax that we are required to deduct and withhold). The Annual Fixed Dividend Rate for the ensuing Subsequent Fixed Rate Period will be determined by TransAlta on the Fixed Rate Calculation Date (30<sup>th</sup> day prior to the first day of such Subsequent Fixed Rate Period) and will be equal to the sum of the Government of Canada Yield (yield to maturity of a Government of Canada non-callable five-year bond) on the Fixed Rate Calculation Date plus a spread of 3.10 per cent. This spread will apply to both the Series C Shares and the Series D Shares described below, and will remain unchanged over the life of the Series C Shares.

#### *Redemption of Series C Shares*

The Series C Shares were redeemable by TransAlta, at its option, in whole or in part, on June 30, 2017, and will be redeemable on June 30 in every fifth year thereafter by the payment of an amount in cash for each share to be redeemed equal to \$25.00 plus all accrued and unpaid dividends thereon to but excluding the date fixed for redemption (less any tax that we are required to deduct and withhold). On June 30, 2017, none of the Series C Shares were redeemed.

If we give notice to the holders of the Series C Shares of the redemption of all of the Series C Shares, the right of a holder of Series C Shares to convert such Series C Shares shall terminate and we shall not be required to give notice to the registered holders of the Series C Shares of an Annual Fixed Dividend Rate, a Floating Quarterly Dividend Rate or the conversion right of holders of Series C Shares.

#### *Conversion of Series C Shares into Series D Shares*

The holders of the Series C Shares had the right to convert all or any of their shares into cumulative redeemable floating rate first preferred shares, Series D of TransAlta (the "Series D Shares"), subject to certain conditions, on June 30, 2017 and will again have the right to convert on June 30 in every fifth year thereafter. The holders of the Series D Shares will be entitled to receive, as and when declared by the Board, quarterly floating rate cumulative preferential cash dividends payable on the last day of March, June, September, and December in each year (each such quarterly dividend period is referred to as a "Quarterly Floating Rate Period"), in the amount per share determined by multiplying the "Floating Quarterly Dividend Rate" (which means, for any Quarterly Floating Rate Period, the annual rate of interest, (expressed as a percentage and rounded to the nearest one hundred-thousandth of one per cent), equal to the sum of the T-Bill Rate on the applicable date and 3.10 per cent) for such Quarterly Floating Rate Period by \$25.00 and multiplying that product by a fraction, the numerator of which is the actual number of days in such Quarterly Floating Rate Period and the denominator of which is 365 or 366, depending upon the actual number of days in the applicable year (less any tax that we are required to deduct and withhold). If any such date is not a business day, the dividend will be paid on the next succeeding business day. The Floating Quarterly Dividend Rate will be the annual rate of interest equal to the sum of the T-Bill Rate on the applicable Floating Rate Calculation Date plus a spread of 3.10 per cent.

The Series C Shares and Series D Shares are series of shares in the same class. The conversion right entitles holders to elect periodically which of the two series they wish to hold and does not entitle holders to receive a different class or type of securities. Other than the different dividend rights and redemption rights attached thereto, the Series C Shares and Series D Shares are identical in all material respects.

On June 15, 2017, 827,628 Series C Shares were tendered for conversion into Series D Shares which is less than the one million shares required to give effect to conversions into Series D Shares. As a result, none of the Series C Shares were converted into Series D Shares on June 30, 2017.

#### *Voting Rights*

The holders of the Series C Shares are not entitled to any voting rights or to receive notice of or to attend shareholders' meetings unless dividends on the Series C Shares are in arrears to the extent of six quarterly dividends, whether or not consecutive. Until all arrears of dividends have been paid, holders of Series C Shares will be entitled to receive notice of and to attend all shareholders' meetings at which directors are to be elected (other than separate meetings of holders of another class or series of shares) and to one vote in respect of each Series C Share held on all matters in respect of which shareholders vote, and additionally, the right of all series of first preferred shares, voting as a combined class, to elect two directors of the Corporation if the Board then consists of less than 16 directors, or three directors if the Board consists of 16 or more directors. Otherwise, except as required by law, the holders of first preferred shares shall not be entitled to vote or to receive notice of or attend any meeting of the shareholders of the Corporation.

#### *Modification*

The provisions attaching to the Series C Shares as a class may be amended with the written approval of all the holders of Series C Shares outstanding or by at least two-thirds of the votes cast at a meeting of the holders of such shares duly called for the purpose and at which a quorum is present.

#### ***Series E Shares***

9.0 million cumulative redeemable rate reset first preferred shares, Series E (the "Series E Shares") were issued on August 10, 2012 for gross proceeds of \$225 million. Certain provisions of the Series E Shares are discussed below.

#### *Dividends on Series E Shares*

The holders of Series E Shares are entitled to receive, as and when declared by the Board out of moneys of TransAlta properly applicable to the payment of dividends, fixed cumulative preferential cash dividends payable quarterly on the last day of March, June, September, and December in each year (less any tax that we are required to deduct and withhold). If any such date is not a business day, the dividend will be paid on the next succeeding business day.

For each five-year period after the Initial Fixed Rate Period (each a "Subsequent Fixed Rate Period"), the holders of Series E Shares shall be entitled to receive, as and when declared by the Board, fixed cumulative preferential cash dividends, payable quarterly on the last day of March, June, September and December in each year, in the amount per share determined by multiplying one-quarter of the Annual Fixed Dividend Rate for such Subsequent Fixed Rate Period by \$25.00 (less any tax that we are required to deduct and withhold). The Annual Fixed Dividend Rate for the ensuing Subsequent Fixed Rate Period will be determined by TransAlta Corporation on the Fixed Rate Calculation Date (30<sup>th</sup> day prior to the first day of such Subsequent Fixed Rate Period) and will be equal to the sum of the Government of Canada Yield (yield to maturity of a Government of Canada non-callable five-year bond) on the Fixed Rate Calculation Date plus a spread of 3.65 per cent. This spread will apply to both the Series E Shares and the Series F Shares described below, and will remain unchanged over the life of the Series E Shares.

### *Redemption of Series E Shares*

The Series E Shares were redeemable by TransAlta Corporation, at its option, in whole or in part, on September 30, 2017, and will be redeemable on September 30 in every fifth year thereafter by the payment of an amount of \$25.00 in cash for each share to be redeemed plus all accrued and unpaid dividends thereon to but excluding the date fixed for redemption (less any tax that we are required to deduct and withhold). On September 30, 2017, none of the Class E Shares were redeemed.

If we give notice to the holders of the Series E Shares of the redemption of all of the Series E Shares, the right of a holder of Series E Shares to convert such Series E Shares shall terminate and we shall not be required to give notice to the registered holders of the Series E Shares of an Annual Fixed Dividend Rate, a Floating Quarterly Dividend Rate or the conversion right of holders of Series E Shares.

### *Conversion of Series E Shares into Series F Shares*

The holders of the Series E Shares had the right to convert all or any of their shares into cumulative redeemable floating rate first preferred shares, Series F of TransAlta (the "Series F Shares"), subject to certain conditions, on September 30, 2017 and will again have the right to convert on September 30 in every fifth year thereafter. The holders of the Series F Shares will be entitled to receive, as and when declared by the Board, quarterly floating rate cumulative preferential cash dividends payable on the last day of March, June, September, and December in each year (each such quarterly dividend period is referred to as a "Quarterly Floating Rate Period"), in the amount per share determined by multiplying the "Floating Quarterly Dividend Rate" (which means, for any Quarterly Floating Rate Period, the annual rate of interest, (expressed as a percentage and rounded to the nearest one hundred-thousandth of one per cent), equal to the sum of the T-Bill Rate on the applicable date and 3.65 per cent) for such Quarterly Floating Rate Period by \$25.00 and multiplying that product by a fraction, the numerator of which is the actual number of days in such Quarterly Floating Rate Period and the denominator of which is 365 or 366, depending upon the actual number of days in the applicable year (less any tax that we are required to deduct and withhold). If any such date is not a business day, the dividend will be paid on the next succeeding business day. The Floating Quarterly Dividend Rate will be the annual rate of interest equal to the sum of the T-Bill Rate on the applicable Floating Rate Calculation Date plus a spread of 3.65 per cent.

The Series E Shares and Series F Shares are series of shares in the same class. The conversion right entitles holders to elect periodically which of the two series they wish to hold and does not entitle holders to receive a different class or type of securities. Other than the different dividend rights and redemption rights attached thereto, the Series E Shares and Series F Shares are identical in all material respects.

On September 15, 2017, 133,969 Series E Shares were tendered for conversion into Series F Shares which is less than the one million shares required to give effect to conversions into Series F Shares. As a result, none of the Series E Shares were converted into Series F Shares on September 30, 2017.

### *Voting Rights*

The holders of the Series E Shares are not entitled to any voting rights or to receive notice of or to attend shareholders' meetings unless dividends on the Series E Shares are in arrears to the extent of six quarterly dividends, whether or not consecutive. Until all arrears of dividends have been paid, holders of Series E Shares will be entitled to receive notice of and to attend all shareholders' meetings at which directors are to be elected (other than separate meetings of holders of another class or series of shares) and to one vote in respect of each Series E Share held on all matters in respect of which shareholders vote, and additionally, the right of all series of first preferred shares, voting as a combined class, to elect two directors of the Corporation if the Board then consists of less than 16 directors, or three directors if the Board consists of 16 or more directors. Otherwise, except as required by law, the holders of first preferred shares shall not be entitled to vote or to receive notice of or attend any meeting of the shareholders of the Corporation.

### *Modification*

The provisions attaching to the Series E Shares as a class may be amended with the written approval of all the holders of Series E Shares outstanding or by at least two-thirds of the votes cast at a meeting of the holders of such shares duly called for the purpose and at which a quorum is present.

### *Series G Shares*

6.6 million cumulative redeemable rate reset first preferred shares, Series G (the "Series G Shares") were issued on August 15, 2014 for gross proceeds of \$165 million. Certain provisions of the Series G Shares are discussed below.

#### *Dividends on Series G Shares*

The holders of Series G Shares are entitled to receive, as and when declared by the Board out of moneys of TransAlta properly applicable to the payment of dividends, fixed cumulative preferential cash dividends payable quarterly on the last day of March, June, September, and December in each year (less any tax that we are required to deduct and withhold). If any such date is not a business day, the dividend will be paid on the next succeeding business day.

For each five-year period after the Initial Fixed Rate Period (each a "Subsequent Fixed Rate Period"), the holders of Series G Shares shall be entitled to receive, as and when declared by the Board, fixed cumulative preferential cash dividends, payable quarterly on the last day of March, June, September and December in each year, in the amount per share determined by multiplying one-quarter of the Annual Fixed Dividend Rate for such Subsequent Fixed Rate Period by \$25.00 (less any tax that we are required to deduct and withhold). The Annual Fixed Dividend Rate for the ensuing Subsequent Fixed Rate Period will be determined by TransAlta Corporation on the Fixed Rate Calculation Date (30<sup>th</sup> day prior to the first day of such Subsequent Fixed Rate Period) and will be equal to the sum of the Government of Canada Yield (yield to maturity of a Government of Canada non-callable five year bond) on the Fixed Rate Calculation Date plus a spread of 3.80 per cent. This spread will apply to both the Series G Shares and the Series H Shares described below, and will remain unchanged over the life of the Series G Shares.

#### *Redemption of Series G Shares*

The Series G Shares are redeemable by TransAlta Corporation, at its option, in whole or in part, on September 30, 2019, and on September 30 in every fifth year thereafter by the payment of an amount of \$25.00 in cash for each share to be redeemed plus all accrued and unpaid dividends thereon to but excluding the date fixed for redemption (less any tax that we are required to deduct and withhold).

If we give notice to the holders of the Series G Shares of the redemption of all of the Series G Shares, the right of a holder of Series G Shares to convert such Series G Shares shall terminate and we shall not be required to give notice to the registered holders of the Series G Shares of an Annual Fixed Dividend Rate, a Floating Quarterly Dividend Rate or the conversion right of holders of Series G Shares.

#### *Conversion of Series G Shares into Series H Shares*

The holders of the Series G Shares have the right to convert all or any of their shares into cumulative redeemable floating rate first preferred shares, Series H of TransAlta (the "Series H Shares"), subject to certain conditions, on September 30, 2019 and on September 30 in every fifth year thereafter. The holders of the Series H Shares will be entitled to receive, as and when declared by the Board, quarterly floating rate cumulative preferential cash dividends payable on the last day of March, June, September, and December in each year (each such quarterly dividend period is referred to as a "Quarterly Floating Rate Period"), in the amount per share determined by multiplying the "Floating Quarterly Dividend Rate" (which means, for any Quarterly Floating Rate Period, the annual rate of interest, (expressed as a percentage and rounded to the nearest one hundred thousandth of one per cent), equal to the sum of the T-Bill Rate on the applicable date and 3.80 per cent) for such Quarterly Floating Rate Period by \$25.00 and multiplying that product by a fraction, the numerator of which is the actual number of days in such Quarterly Floating Rate Period and the denominator of which is 365 or 366, depending upon the actual number of days in the applicable year (less any tax that we are required to deduct and withhold). If any such date is not a business day, the dividend will be paid on the next

succeeding business day. The Floating Quarterly Dividend Rate will be the annual rate of interest equal to the sum of the T-Bill Rate on the applicable Floating Rate Calculation Date plus a spread of 3.80 per cent.

The Series G Shares and Series H Shares are series of shares in the same class. The conversion right entitles holders to elect periodically which of the two series they wish to hold and does not entitle holders to receive a different class or type of securities. Other than the different dividend rights and redemption rights attached thereto, the Series G Shares and Series H Shares are identical in all material respects.

#### *Voting Rights*

The holders of Series G Shares are not entitled to any voting rights or to receive notice of or to attend shareholders' meetings unless dividends on the Series G Shares are in arrears to the extent of six quarterly dividends, whether or not consecutive. Until all arrears of dividends have been paid, holders of Series G Shares will be entitled to receive notice of and to attend all shareholders' meetings at which directors are to be elected (other than separate meetings of holders of another class or series of shares) and to one vote in respect of each Series G Share held on all matters in respect of which shareholders vote, and additionally, the right of all series of first preferred shares, voting as a combined class, to elect two directors of the Corporation if the Board then consists of less than 16 directors, or three directors if the Board consists of 16 or more directors. Otherwise, except as required by law, the holders of first preferred shares shall not be entitled to vote or to receive notice of or attend any meeting of the shareholders of the Corporation.

#### *Modification*

The provisions attaching to the Series G Shares as a class may be amended with the written approval of all the holders of Series G Shares outstanding or by at least two-thirds of the votes cast at a meeting of the holders of such shares duly called for the purpose and at which a quorum is present.

#### **Related Party Articles Provisions**

The articles of the Corporation contain provisions restricting the ability of the Corporation to enter into a "Specified Transaction" with a "Major Shareholder". A Specified Transaction requires the approval of a majority of the votes cast by holders of voting shares of the Corporation, as well as the approval of a majority of the votes cast by holders of such voting shares, excluding any Major Shareholder. A Major Shareholder generally means the beneficial owner of more than 20% of the outstanding voting shares of the Corporation. The articles contain a broad definition of beneficial ownership, and in particular, a person is considered to beneficially own shares owned by its associates and affiliates, as those terms are defined in the articles. Transactions which are considered to be Specified Transactions include the following: a merger or amalgamation of the Corporation with a Major Shareholder; the furnishing of financial assistance by the Corporation to a Major Shareholder; certain sales of assets or provision of services by the Corporation to a Major Shareholder or vice versa; certain issuances of securities by the Corporation which increase the proportionate voting interest of a Major Shareholder; a reorganization or recapitalization of the Corporation which increases the proportionate voting interest of a Major Shareholder; and the creation of a class or series of non-voting shares of the Corporation which has a residual right to participate in earnings of the Corporation and assets of the Corporation upon dissolution or winding up.

#### **Shareholder Rights Plan**

The Corporation implemented a shareholder rights plan (the "Rights Plan") pursuant to a Shareholder Rights Plan Agreement (the "Rights Plan Agreement") dated as of October 13, 1992, as amended and restated as of April 22, 2016, between the Corporation and AST Trust Company (Canada) (the successor to CST Trust Company). The Shareholder Rights Plan was last confirmed at our annual and special meeting of shareholders on April 22, 2016 and will expire at the close of business on the date of our 2019 annual meeting of shareholders, unless ratified and extended by a further vote of the shareholders. For further particulars, reference should be made to the Rights Plan Agreement, as amended and restated. A copy of the Rights Plan Agreement may be obtained by contacting the Corporate Secretary, TransAlta Corporation, 110 - 12th Avenue S.W., Calgary, Alberta T2P 2M1; telephone: (403) 267-7110; or by email: corporate\_secretary@transalta.com. A copy of the Rights Plan Agreement is also available electronically on SEDAR under our profile, which can be accessed at [www.sedar.com](http://www.sedar.com), and on the SEC's EDGAR system at [www.sec.gov](http://www.sec.gov).

## **Credit Facilities**

In 2018, we renewed and upsized our syndicated credit agreement giving us access to a \$1.25 billion committed credit facility. The agreement is fully committed for four years, expiring in 2022. The credit facility is subject to a number of customary covenants and restrictions in order to maintain access to the funding commitments. This credit facility has been made available for general corporate purposes including financing ongoing working capital requirements, providing financing for construction capital, growth opportunities and for the repayment of outstanding borrowings.

On July 24, 2017, TransAlta Renewables entered into a syndicated credit agreement giving it access to a \$500 million committed credit facility. The credit agreement is fully committed for four years, expiring in 2022 with the 2018 renewal and extension. The credit facility is subject to a number of customary covenants and restrictions in order to maintain access to the funding commitments. For further information please see Note 22 of our audited consolidated financial statements for the year ended December 31, 2018, which financial statements are incorporated by reference herein. Please also see "*Documents Incorporated by Reference*" in this AIF.

## **Long-Term Debt**

The long-term debt of the Corporation consists of \$651 million face value of debentures outstanding, which bear interest at fixed rates ranging from 5.0 per cent to 7.3 per cent and have maturity dates ranging from 2029 to 2030. In addition, we have US\$700 million face value in senior notes outstanding that bear interest at fixed rates ranging from 4.5 per cent to 6.5 per cent and have maturity dates ranging from 2022 to 2040. For further information please see Note 22 of our audited consolidated financial statements for the year ended December 31, 2018, which financial statements are incorporated by reference herein. Please also see "*Documents Incorporated by Reference*" in this AIF.

## **Non-Recourse Debt**

The Corporation has non-recourse debt outstanding in an amount equal to approximately \$1,250 million face value, which are represented by bonds and debentures that bear interest at rates ranging from 3.83 per cent to 6.20 per cent and have maturity dates ranging from 2028 to 2032. For further information please see Note 22 of our audited consolidated financial statements for the year ended December 31, 2018, which financial statements are incorporated by reference herein. Please also see "*Documents Incorporated by Reference*" in this AIF.

## **Tax Equity**

The Corporation assumed US\$24 million in tax equity financing as part of the Lakeswind acquisition, which is included as debt in our consolidated financial statements. For further information on tax equity please see Note 22 of our audited consolidated financial statements for the year ended December 31, 2018, which financial statements are incorporated by reference herein. Please also see "*Documents Incorporated by Reference*" in this AIF.

## **Restrictions on Debt**

The syndicated credit facilities include a number of customary covenants and restrictions in order to maintain access to the funding commitments. Non-recourse bonds are subject to customary financing conditions and covenants that may restrict the Corporation's ability to access funds generated by the facilities' operations. Upon meeting certain distribution tests, typically performed once per quarter, the funds are able to be distributed by the subsidiary entities to their respective parent entity. These conditions include meeting a debt service coverage ratio prior to distribution.



## CREDIT RATINGS

The following information concerning our credit ratings is provided as it relates to our financing costs, liquidity and operations. Specifically, credit ratings affect our ability to obtain short-term and long-term financing and the cost of such financing. Additionally, our ability to engage in certain collateralized business activities on a cost effective basis depends on our credit ratings. A reduction in the current rating on our debt by our rating agencies, particularly a downgrade below investment grade ratings, or a negative change in our ratings outlook could adversely affect our cost of financing and access to sources of liquidity and capital. In addition, changes in credit ratings may affect our ability to, and the associated costs of, (i) entering into ordinary course derivative or hedging transactions and may require us to post additional collateral under certain of our contracts, and (ii) entering into and maintaining ordinary course contracts with customers and suppliers on acceptable terms.

	<b>DBRS</b>	<b>Fitch</b>	<b>Moody's</b>	<b>S&amp;P</b>
Issuer Rating	BBB (low)	BBB-	Not Applicable	BBB-
Corporate Family Rating	Not Applicable	Not Applicable	Ba1	Not Applicable
Preferred Shares	Pfd-3 (low) <sup>(1)</sup>	Not Applicable	Not Applicable	P-3 <sup>(1)</sup>
Unsecured Debt/MTNs	BBB (low)	BBB-	Ba1/LGD4	BBB-
Rating Outlook	Stable	Stable	Positive	Negative

**Note:**

<sup>(1)</sup> The outstanding Preferred Shares all have the same rating.

On December 17, 2015, TransAlta Corporation was downgraded to Ba1 (stable) by Moody's and Moody's also assigned the Corporation a Ba1 Corporate Family rating. As expected, the direct financial impact of this downgrade has been limited. We have posted additional collateral to certain counterparties, and the cost of borrowing under US\$400 million of debt has been stepped-up in line with contractual provisions. The Corporation maintains investment grade ratings from three credit rating agencies including BBB- (negative outlook) by S&P, BBB (low) (stable outlook) by DBRS and BBB- (stable outlook) by Fitch.

### **DBRS**

DBRS Corporate rating analysis begins with an evaluation of the fundamental creditworthiness of the issuer, which is reflected in an "issuer rating". Issuer ratings address the overall credit strength of the issuer. Unlike ratings on individual securities or classes of securities, issuer ratings are based on the entity itself and do not include consideration for security or ranking. Ratings that apply to actual securities (secured or unsecured) may be higher, lower or equal to the issuer rating for a given entity. As of December 31, 2018, our issuer rating was BBB (low) (stable) from DBRS. A BBB rating is the fourth highest out of ten categories.

The DBRS preferred share rating scale is used in the Canadian securities market and is meant to give an indication of the risk that a borrower will not fulfill its full obligations in a timely manner, with respect to both dividend and principal commitments. Every DBRS rating is based on quantitative and qualitative considerations relevant to the borrowing entity. Each rating category is denoted by the subcategories "high" and "low". The absence of either a "high" or "low" designation indicates the rating is in the middle of the category. Preferred shares rated Pfd-3 are of adequate credit quality. While protection of dividends and principal is still considered acceptable, the issuing entity is more susceptible to adverse changes in financial and economic conditions, and there may be other adverse conditions present which detract from debt protection. Each of the Series A Shares, Series B Shares, Series C Shares, Series E Shares and Series G Shares have been rated Pfd-3 (low) (stable) by DBRS. The Pfd-3 rating is the third highest out of six categories.

The DBRS long-term rating scale provides an opinion on the risk of default. That is, the risk that an issuer will fail to satisfy its financial obligations in accordance with the terms under which an obligation has been issued. Ratings are based on quantitative and qualitative considerations relevant to the issuer, and the relative ranking of claims. All rating categories other than AAA and D also contain subcategories "(high)" and "(low)". The absence of either a "(high)" or "(low)" designation indicates the rating is in the middle of the category. Debt securities rated BBB are of adequate

credit quality. The capacity for the payment of financial obligations is considered acceptable, but may be vulnerable to future events. As of December 31, 2018, our senior unsecured long-term debt is rated BBB (low) (stable) by DBRS. The BBB rating category is the fourth highest of ten categories for long term obligations.

### ***Fitch***

As of December 31, 2018, our Fitch long term Issuer Default Rating (IDR) and senior unsecured rating was BBB- with a stable outlook. The Fitch rating system describes a BBB rating as good credit quality. 'BBB' ratings indicate that expectations of default risk are currently low. The capacity for payment of financial commitments is considered adequate but adverse business or economic conditions are more likely to impair this capacity. The modifiers + or - may be appended to a rating to denote relative status within major rating categories. Such suffixes are added to Long-Term Issuer Default Ratings between AA and B. A BBB rating is the fourth highest of 11 rating categories.

Ratings of individual securities or financial obligations of a corporate issuer address relative vulnerability to default on an ordinal scale. As of December 31, 2018, our senior unsecured rating was BBB-. The Fitch rating system describes a BBB rating as good credit quality. 'BBB' ratings indicate that expectations of default risk are currently low. The capacity for payment of financial commitments is considered adequate but adverse business or economic conditions are more likely to impair this capacity. The modifiers + or - may be appended to a rating to denote relative status within major rating categories. Such suffixes are added to obligation rating categories, or to corporate finance obligation ratings between AA and CCC. A BBB rating is the fourth highest of nine rating categories.

### ***Moody's***

Moody's Corporate Family Ratings (CFRs) are long-term ratings that reflect the relative likelihood of a default on a corporate family's debt and debt-like obligations and the expected financial loss suffered in the event of default. A CFR is assigned to a corporate family as if it had a single class of debt and a single consolidated legal entity structure. A CFR does not reference an obligation or class of debt and thus does not reflect priority of claim. As at December 31, 2018, our Corporate Family Rating was Ba1 with a positive outlook. Obligations rated Ba are judged to be speculative and are subject to substantial credit risk. Moody's appends numerical modifiers 1, 2, and 3 to each generic rating classification from Aa through Caa. The modifier 1 indicates that the obligation ranks in the higher end of its generic rating category; the modifier 2 indicates a mid-range ranking; and the modifier 3 indicates a ranking in the lower end of that generic rating category. The Ba rating category is the fifth highest rating out of nine rating categories.

Moody's long-term ratings are assigned to issuers or obligations with an original maturity of one year or more and reflect both on the likelihood of a default on contractually promised payments and the expected financial loss suffered in the event of default. As of December 31, 2018, our senior unsecured long-term debt is rated Ba1 (positive) / LGD4 by Moody's. The Ba rating category is the fifth highest rating out of nine rating categories. Obligations rated Ba are judged to be speculative and are subject to substantial credit risk. Moody's appends numerical modifiers 1, 2, and 3 to each generic rating classification from Aa through Caa. The modifier 1 indicates that the obligation ranks in the higher end of its generic rating category; the modifier 2 indicates a mid-range ranking; and the modifier 3 indicates a ranking in the lower end of that generic rating category.

Moody's Loss Given Default (LGD) assessments are opinions about expected loss given default expressed as a per cent of principal and accrued interest at the resolution of the default. One of the six LGD assessments are assigned to individual loan, bond, and preferred stock issues. The firm-wide or enterprise expected LGD rate generally approximates a weighted average of the expected LGD rates on the firm's liabilities (excluding preferred stock), where the weights equal each obligation's expected share of the total liabilities at default. As of December 31, 2018, our Loss Given Default Assessment from Moody's was LGD4 which represents a loss range of greater than or equal to 50 per cent and less than 70 per cent. LGD4 is the fourth highest assessment category out six categories.

### ***S&P***

A Standard & Poor's issuer credit rating is a forward-looking opinion about an obligor's overall creditworthiness. This opinion focuses on the obligor's capacity and willingness to meet its financial commitments as they come due. It does

not apply to any specific financial obligation, as it does not take into account the nature of and provisions of the obligation, its standing in bankruptcy or liquidation, statutory preferences, or the legality and enforceability of the obligation. As at December 31, 2018, our issuer credit rating was BBB- with a negative outlook with S&P. This is the fourth highest of 11 ratings categories. An obligor rated 'BBB' has adequate capacity to meet its financial commitments. However, adverse economic conditions or changing circumstances are more likely to lead to a weakened capacity of the obligor to meet its financial commitments. The ratings from 'AA' to 'CCC' may be modified by the addition of a plus (+) or minus (-) sign to show relative standing within the major rating categories.

A Standard & Poor's issue credit rating is a forward-looking opinion about the creditworthiness of an obligor with respect to a specific financial obligation, a specific class of financial obligations, or a specific financial program (including ratings on medium-term note programs and commercial paper programs). It takes into consideration the creditworthiness of guarantors, insurers, or other forms of credit enhancement on the obligation and takes into account the currency in which the obligation is denominated. The opinion reflects Standard & Poor's view of the obligor's capacity and willingness to meet its financial commitments as they come due, and may assess terms, such as collateral security and subordination, which could affect ultimate payment in the event of default. As at December 31, 2017, our senior unsecured rating was BBB- with a negative outlook with S&P. An obligation rated 'BBB' exhibits adequate protection parameters. However, adverse economic conditions or changing circumstances are more likely to lead to a weakened capacity of the obligor to meet its financial commitment on the obligation. This is the fourth highest of 11 ratings categories. The ratings from 'AA' to 'CCC' may be modified by the addition of a plus (+) or minus (-) sign to show relative standing within the major rating categories.

The Standard & Poor's Canadian preferred share rating scale serves issuers, investors, and intermediaries in the Canadian financial markets by expressing preferred share ratings (determined in accordance with global rating criteria) in terms of rating symbols that have been actively used in the Canadian market over a number of years. A Standard & Poor's preferred share rating on the Canadian scale is a forward-looking opinion about the creditworthiness of an obligor with respect to a specific preferred share obligation issued in the Canadian market, relative to preferred shares issued by other issuers in the Canadian market. There is a direct correspondence between the specific ratings assigned on the Canadian preferred share scale and the various rating levels on the global debt rating scale of Standard & Poor's. Each of our outstanding Preferred Shares Series have been rated P-3 by S&P. The P-3 rating is the third highest of eight categories. A P-3 rating corresponds to a BB rating on the global preferred share rating scale. Obligor's rated 'BB', 'B', 'CCC', and 'CC' are regarded as having significant speculative characteristics, of which 'BB' indicates the least degree of speculation and 'CC' the highest. While such obligors will likely have some quality and protective characteristics, these may be outweighed by large uncertainties or major exposures to adverse conditions. An obligor rated 'BB' is less vulnerable in the near term than other lower-rated obligors. However, it faces major ongoing uncertainties and exposure to adverse business, financial, or economic conditions which could lead to the obligor's inadequate capacity to meet its financial commitments.

We are focused on maintaining a strong financial position and cash flow coverage ratios to support our business. Our available credit facilities, funds from operations, and debt financing options provide us with financial flexibility. As a result, we can be selective as to if and when we go to the capital markets for funding.

### ***Note Regarding Credit Ratings***

Credit ratings are intended to provide investors with an independent measure of credit quality of an issue of securities. The credit ratings accorded to our outstanding securities by S&P, Moody's, DBRS and Fitch, as applicable, are not recommendations to purchase, hold or sell such securities. There is no assurance that the ratings will remain in effect for any given period or that a rating will not be revised or withdrawn entirely by S&P, Moody's, DBRS or Fitch in the future if, in its judgement, circumstances so warrant.

We have paid fees for rating services to S&P, DBRS, Moody's and Fitch during the last two years. We have also paid fees to DBRS for certain other services provided to the Corporation during the last two years.

## DIVIDENDS

### Common Shares

Dividends on our common shares are at the discretion of the Board. In determining the payment and level of future dividends, the Board considers our financial performance, our results of operations, cash flow and needs, with respect to financing our ongoing operations and growth, balanced against returning capital to shareholders. The Board continues to focus on building sustainable earnings and cash flow growth.

TransAlta has declared and paid the following dividends per share on its outstanding common shares for the past three years:

<b>Period</b>		<b>Dividend per Common Share</b>
2016	First Quarter	\$0.18
	Second Quarter	\$0.04
	Third Quarter	\$0.04
	Fourth Quarter	\$0.04
2017	First Quarter	\$0.04
	Second Quarter	\$0.04
	Third Quarter	\$0.04
	Fourth Quarter	\$0.04
2018	First Quarter	\$0.04
	Second Quarter	\$0.04
	Third Quarter	\$0.04
	Fourth Quarter	\$0.04

### Preferred Shares

#### *Series A Shares*

<b>Period</b>		<b>Dividend per Series A Share</b>
2016	First Quarter	\$0.2875
	Second Quarter	\$0.16931
	Third Quarter	\$0.16931
	Fourth Quarter	\$0.16931
2017	First Quarter	\$0.16931
	Second Quarter	\$0.16931
	Third Quarter	\$0.16931
	Fourth Quarter	\$0.16931
2018	First Quarter	\$0.16931
	Second Quarter	\$0.16931
	Third Quarter	\$0.16931
	Fourth Quarter	\$0.16931

*Series B Shares*

<b>Period</b>		<b>Dividend per Series B Share</b>
2016	Second Quarter <sup>(1)</sup>	\$0.15490
	Third Quarter	\$0.16144
	Fourth Quarter	\$0.15974
2017	First Quarter	\$0.15651
	Second Quarter	\$0.15645
	Third Quarter	\$0.16125
	Fourth Quarter	\$0.17467
2018	First Quarter	\$0.17889
	Second Quarter	\$0.19951
	Third Quarter	\$0.20984
	Fourth Quarter	\$0.22301

**Note:**

(1) On March 31, 2016, 1,824,620 of the Series A Shares were converted into Series B Shares on a one-for-one basis.

*Series C Shares*

<b>Period</b>		<b>Dividend per Series C Share</b>
2016	First Quarter	\$0.2875
	Second Quarter	\$0.2875
	Third Quarter	\$0.2875
	Fourth Quarter	\$0.2875
2017	First Quarter	\$0.2875
	Second Quarter	\$0.2875
	Third Quarter	\$0.25169
	Fourth Quarter	\$0.25169
2018	First Quarter	\$0.25169
	Second Quarter	\$0.25169
	Third Quarter	\$0.25169
	Fourth Quarter	\$0.25169

*Series E Shares*

<b>Period</b>		<b>Dividend per Series E Share</b>
2016	First Quarter	\$0.3125
	Second Quarter	\$0.3125
	Third Quarter	\$0.3125
	Fourth Quarter	\$0.3125
2017	First Quarter	\$0.3125
	Second Quarter	\$0.3125
	Third Quarter	\$0.3125
	Fourth Quarter	\$0.32463
2018	First Quarter	\$0.32463
	Second Quarter	\$0.32463
	Third Quarter	\$0.32463
	Fourth Quarter	\$0.32463

*Series G Shares*

<b>Period</b>		<b>Dividend per Series G Share</b>
2016	First Quarter	\$0.33125
	Second Quarter	\$0.33125
	Third Quarter	\$0.33125
	Fourth Quarter	\$0.33125
2017	First Quarter	\$0.33125
	Second Quarter	\$0.33125
	Third Quarter	\$0.33125
	Fourth Quarter	\$0.33125
2018	First Quarter	\$0.33125
	Second Quarter	\$0.33125
	Third Quarter	\$0.33125
	Fourth Quarter	\$0.33125

## MARKET FOR SECURITIES

### Common Shares

Our common shares are listed on the Toronto Stock Exchange (the "TSX") under the symbol "TA" and the New York Stock Exchange (the "NYSE") under the symbol "TAC". The following table sets forth the reported high and low trading prices and trading volumes of our common shares as reported by the TSX for the periods indicated:

Month	Price (\$)		Volume
	High	Low	
<b><u>2018</u></b>			
March	7.55	6.88	17,597,382
April	7.00	6.70	8,347,063
May	7.00	6.51	10,130,939
June	6.72	6.36	8,309,916
July	7.50	6.53	16,752,842
August	7.90	7.27	17,751,039
September	7.69	7.10	10,377,877
October	7.31	6.57	11,292,500
November	7.27	6.75	8,276,883
December	7.19	5.44	16,024,404
<b><u>2019</u></b>			
January	7.21	5.50	14,239,607
February 1-25	7.64	7.16	6,889,858

## Preferred Shares

### *Series A Shares*

Our Series A Shares are listed on the TSX under the symbol "TA.PR.D".

<b>Date of Issuance</b>	<b>Number of Securities <sup>(2)</sup></b>	<b>Issue Price per Security</b>	<b>Description of Transaction</b>
December 10, 2010 <sup>(1)</sup>	12,000,000 Series A Shares	\$25.00	Public Offering

**Notes:**

- (1) Series A Shares were issued pursuant to a public offering by way of a prospectus supplement dated December 3, 2010 to a short form base shelf prospectus dated October 19, 2009.
- (2) On March 31, 2016, 1,824,620 of the Series A Shares were converted into Series B Shares on a one-for-one basis.

<b>Month</b>	<b>Price (\$)</b>		<b>Volume</b>
	<b>High</b>	<b>Low</b>	
<b><u>2018</u></b>			
March	15.45	14.58	76,960
April	14.80	14.02	350,908
May	15.04	14.32	106,626
June	14.55	14.12	106,921
July	15.10	14.23	49,387
August	16.00	15.05	78,373
September	15.85	15.21	41,839
October	15.70	13.90	164,848
November	15.14	13.30	391,944
December	13.65	10.78	196,049
<b><u>2019</u></b>			
January	12.38	11.36	119,970
February 1-25	12.08	11.48	95,915



### ***Series B Shares***

Our Series B Shares are listed on the TSX under the symbol "TA.PR.E".

<b>Date of Issuance</b>	<b>Number of Securities</b>	<b>Issue Price per Security</b>	<b>Description of Transaction</b>
March 31, 2016 <sup>(1)</sup>	1,824,620 Series B Shares	N/A	Conversion of Series A Shares

**Note:**

(1) On March 31, 2016, 1,824,620 of the Series A Shares were converted into Series B Shares on a one-for-one basis.

<b>Month</b>	<b>Price (\$)</b>		<b>Volume</b>
	<b>High</b>	<b>Low</b>	
<b><u>2018</u></b>			
March	15.41	15.01	35,102
April	15.15	14.87	12,806
May	15.41	15.00	114,723
June	15.05	14.81	58,375
July	15.66	14.90	12,142
August	16.01	15.33	3,225
September	16.20	15.50	24,852
October	16.00	14.96	64,020
November	15.39	14.28	33,586
December	14.60	12.04	19,440
<b><u>2019</u></b>			
January	13.33	12.65	9,552
February 1-25	13.05	12.65	20,546

### *Series C Shares*

Our Series C Shares are listed on the TSX under the symbol "TA.PR.F".

<b>Date of Issuance</b>	<b>Number of Securities</b>	<b>Issue Price per Security</b>	<b>Description of Transaction</b>
November 30, 2011 <sup>(1)</sup>	11,000,000 Series C Shares	\$25.00	Public Offering

**Note:**

(1) Series C Shares were issued pursuant to a public offering by way of a prospectus supplement dated November 23, 2011 to a short form base shelf prospectus dated November 15, 2011.

<b>Month</b>	<b>Price (\$)</b>		<b>Volume</b>
	<b>High</b>	<b>Low</b>	
<b><u>2018</u></b>			
March	18.70	17.97	95,284
April	18.47	17.62	65,197
May	18.68	17.95	83,122
June	18.26	17.70	95,708
July	18.59	17.72	72,208
August	18.93	18.45	74,683
September	18.84	18.42	63,861
October	18.73	16.35	269,488
November	17.70	15.75	89,486
December	15.88	13.50	207,024
<b><u>2019</u></b>			
January	15.68	14.38	77,085
February 1-25	15.15	13.90	81,626

### ***Series E Shares***

Our Series E Shares are listed on the TSX under the symbol "TA.PR.H".

<b>Date of Issuance</b>	<b>Number of Securities</b>	<b>Issue Price per Security</b>	<b>Description of Transaction</b>
August 10, 2012 <sup>(1)</sup>	9,000,000 Series E Shares	\$25.00	Public Offering

**Note:**

(1) Series E Shares were issued pursuant to a public offering by way of a prospectus supplement dated August 3, 2012 to a short form base shelf prospectus dated November 15, 2011.

<b>Month</b>	<b>Price (\$)</b>		<b>Volume</b>
	<b>High</b>	<b>Low</b>	
<b><u>2018</u></b>			
March	21.85	21.10	251,722
April	21.50	20.67	48,033
May	21.87	21.10	64,241
June	21.44	20.84	91,491
July	21.56	20.87	37,062
August	21.92	21.50	56,075
September	21.68	21.32	43,844
October	21.48	19.13	96,427
November	20.25	17.83	189,405
December	18.50	15.45	343,592
<b><u>2019</u></b>			
January	18.28	16.75	190,298
February 1-25	17.53	16.82	163,337

### ***Series G Shares***

Our Series G Shares are listed on the TSX under the symbol "TA.PR.J".

<b>Date of Issuance</b>	<b>Number of Securities</b>	<b>Issue Price per Security</b>	<b>Description of Transaction</b>
August 15, 2014 <sup>(1)</sup>	6,600,000 Series G Shares	\$25.00	Public Offering

**Note:**

(1) Series G Shares were issued pursuant to a public offering by way of a prospectus supplement dated August 8, 2014 to a short form base shelf prospectus dated December 9, 2013.

<b>Month</b>	<b>Price (\$)</b>		<b>Volume</b>
	<b>High</b>	<b>Low</b>	
<b><u>2018</u></b>			
March	22.70	21.90	60,393
April	22.44	21.83	55,314
May	22.80	22.08	93,432
June	22.30	21.71	53,141
July	22.64	21.70	45,449
August	23.12	22.58	73,504
September	23.06	22.66	71,746
October	23.06	21.05	107,524
November	22.00	19.75	65,293
December	20.30	16.80	127,768
<b><u>2019</u></b>			
January	19.34	17.80	69,528
February 1-25	18.63	17.62	33,216

### **DIRECTORS AND OFFICERS**

The name, province or state and country of residence of each of our directors as at December 31, 2018, their respective position and office and their respective principal occupation during the five preceding years, are set out below. The year in which each director was appointed to serve on the Board is also set out below. Each director is appointed to serve until the next annual meeting of TransAlta or until his or her successor is elected or appointed.

Name, Province (State) and Country of Residence	Year first became Director	Principal Occupation
<p><b>Rona H. Ambrose</b> Alberta, Canada</p>	2017	<p>The Honourable Rona Ambrose is a national leader, former Leader of Canada's Official Opposition in the House of Commons and former leader of the Conservative Party of Canada.</p> <p>As a member of the federal cabinet for a decade, Ms. Ambrose acted as a minister of the Crown across nine government departments, including serving as Vice Chair of the Treasury Board for several years and Chair of the cabinet committee for public safety, justice and aboriginal issues. She is also the former environment minister responsible for overseeing the GHG regulatory regime across several industrial sectors.</p> <p>Ms. Ambrose was responsible for the development of several federal policies, ranging from industrial strategies in military procurement to health innovation to improvements to sexual assault laws.</p> <p>She is a passionate advocate for women in Canada and around the world and led the global movement to create the "International Day of the Girl" at the United Nations. She is responsible for ensuring that Aboriginal women in Canada were finally granted equal matrimonial rights and successfully fought for the creation of a Canadian refugee program to bring Yazidi women and girls who have been sexually enslaved by ISIS to safety in Canada.</p> <p>In addition to serving as an independent corporate director, Ms. Ambrose is a Global Fellow at the Wilson Centre Canada Institute in Washington DC focusing on key Canada-U.S. bilateral trade and competitiveness issues.</p> <p>Ms. Ambrose serves on the advisory board of the Canadian Global Affairs Institute and is a director of Manulife Financial Corporation. Ms. Ambrose has a BA from the University of Victoria and a MA from the University of Alberta. She is also a graduate of the Harvard Kennedy School of Government Senior Leaders Program.</p> <p>Ms. Ambrose brings to the Corporation and the Board significant experience in leadership, government affairs, public policy and environmental, climate change and regulatory matters. Ms. Ambrose also brings expertise in communications and human resources / compensation matters.</p>

Name, Province (State) and Country of Residence	Year first became Director	Principal Occupation
<b>John P. Dielwart</b>  Alberta, Canada	2014	<p>Mr. Dielwart is the Chair of the Governance, Safety and Sustainability Committee of the Board. Mr. Dielwart was formerly Chief Executive Officer of ARC Resources Ltd., which owns and operates oil and gas properties in Western Canada. He oversaw the growth of ARC Resources Ltd. from start-up in 1996 to a company with a total capitalization of approximately \$10 billion at the time of his retirement.</p> <p>After his retirement from ARC Resources Ltd. on January 1, 2013, Mr. Dielwart re-joined ARC Financial Corp. ("ARC Financial") as Vice-Chairman. ARC Financial is Canada's leading energy-focused private equity manager. He is a member of ARC Financial's Investment and Governance committees, and currently represents ARC Financial on the boards of Modern Resources Ltd. and Aspenleaf Energy Limited. Prior to joining ARC Financial in 1994, Mr. Dielwart spent 12 years with a major Calgary-based oil and natural gas engineering consulting firm, as senior vice-president and a director, where he gained extensive technical knowledge of oil and natural gas properties in Western Canada.</p> <p>Mr. Dielwart has a Bachelor of Science with distinction (civil engineering) degree from the University of Calgary. He is a member of the Association of Professional Engineers and Geoscientists of Alberta (APEGA) and is a past-Chairman of the Board of Governors of the Canadian Association of Petroleum Producers (CAPP). In 2015, Mr. Dielwart was inducted into the Calgary Business Hall of Fame and in 2018 he received the Oil and Gas Council's Canadian Lifetime Achievement Award. Mr. Dielwart is a director and former Co-Chair of the Calgary and Area Child Advocacy Centre. Effective March 7, 2018, Mr. Dielwart will become a director of Crescent Point Energy Corp.</p> <p>The Board believes that Mr. Dielwart is a diligent, independent director who provides the Company with a wealth of experience in leadership, finance and entrepreneurship along with a strong understanding of the commodity markets in which we operate, specifically the oil and gas markets.</p>

Name, Province (State) and Country of Residence	Year first became Director	Principal Occupation
<b>Timothy W. Faithfull</b>  London, U.K.	2003	<p>Mr. Faithfull is a 36 year veteran of Royal Dutch/Shell plc (energy), where he held diverse international roles principally in oil products and LNG project development. As President and Chief Executive Officer of Shell Canada Limited, he was responsible for bringing the \$6 billion Athabasca Oil Sands Project on line in 2003, the first fully integrated oil sands mining and upgrading venture in 25 years. Mr. Faithfull has extensive experience with commodity exposure and risk management, the result of his time directing the global crude oil trading operations of Shell International Trading and Shipping Company from 1993 to 1996. He was Chairman and Chief Executive Officer of Shell Eastern Petroleum in Singapore from 1996 to 1999, including Shell's largest refinery, and its oil products trading business in Asia Pacific.</p> <p>In the United Kingdom, he is the Senior Independent Director and a member of the Risk and Audit Committee of ICE Futures Europe ("IFEU"), a leading global electronic exchange for energy, commodities, and financial futures. He is a member of the Oversight Committee of the ICE Brent Index, used in settlement of Brent Crude oil futures contracts, for which IFEU is the regulated benchmark administrator. He is a past director of Enerflex Systems Income Fund, Canadian Pacific Railway, AMEC plc, and Shell Pension Trust Limited.</p> <p>In Calgary, he served on the board of the Calgary Health Trust and the Epcor Arts Centre. In the United Kingdom, he is Chairman of the trustees of Starehe UK, which supports schools for disadvantaged children in Nairobi, Kenya, and a trustee of Canada UK Colloquium, all non-public entities. He serves on the Committee to Review Donations to the University of Oxford.</p> <p>Mr. Faithfull holds a Master of Arts (Philosophy, Politics and Economics) from the University of Oxford, U.K. He is a Distinguished Friend of the University of Oxford and of the London Business School.</p> <p>Mr. Faithfull brings to the Corporation and the Board many years of experience in leadership and, in particular, knowledge of large project development and commodity risk management in the oil and gas industry.</p> <p>In 2018, Mr. Timothy Faithfull indicated to the Board that he intended to retire from the Board immediately following the 2019 annual and special meeting of shareholders, and would not be standing for re-election.</p>

Name, Province (State) and Country of Residence	Year first became Director	Principal Occupation
Dawn L. Farrell Alberta, Canada	2012	<p data-bbox="672 281 1474 390">Mrs. Farrell became President and Chief Executive Officer of TransAlta Corporation on January 2, 2012. Prior to her appointment, she served as Chief Operating Officer from 2009 to 2011 and as Executive Vice-President, Commercial Operations and Development from 2008 to 2009.</p> <p data-bbox="672 415 1474 653">Mrs. Farrell has over 30 years of experience in the electric energy industry, holding roles at TransAlta and BC Hydro. She has served as Executive Vice-President, Commercial Operations and Development; Executive Vice-President, Corporate Development; Executive Vice-President, Independent Power Projects; and Vice-President, Energy Marketing and IPP Development at TransAlta Corporation. From 2003 to 2006, Mrs. Farrell served as Executive Vice-President, Generation at BC Hydro. From 2006 to 2007, she served as BC Hydro's Executive Vice-President Engineering, Aboriginal Relations and Generation.</p> <p data-bbox="672 678 1474 894">Mrs. Farrell sits on the board of directors of The Chemours Company, a NYSE-listed chemical company, The Conference Board of Canada and the Business Council of Canada. She is a member of the Trilateral Commission and The Canada-U.S. Council for Advancement of Women Entrepreneurs and Business Leaders. Her past boards include the Calgary Stampede, the Mount Royal College Board of Governors, Fording Coal Income Fund, New Relationship Trust Fund, Mount Royal College Foundation and Vision Quest Windelectric.</p> <p data-bbox="672 919 1474 1001">Mrs. Farrell holds a Bachelor of Commerce with a major in Finance and a Master's degree in Economics from the University of Calgary. She has also attended the Advanced Management Program at Harvard University.</p> <p data-bbox="672 1026 1474 1157">As the President and Chief Executive Officer of the Company, Mrs. Farrell has responsibility for the overall stewardship of TransAlta, including providing strategic leadership to the Company. She has proven herself to be a strong leader that is capable of transforming TransAlta into Canada's leading clean energy company.</p>



Name, Province (State) and Country of Residence	Year first became Director	Principal Occupation
Alan J. Fohrer California, U.S.A.	2013	<p>Mr. Fohrer was Chairman and Chief Executive Officer of Southern California Edison Company ("SCE"), a subsidiary of Edison International ("Edison") and one of the largest electric utilities in the United States. He was elected Chief Executive Officer in 2002 and Chairman in 2007. In 2000, Mr. Fohrer was elected as President and Chief Executive Officer of Edison Mission Energy ("EME"), a subsidiary of Edison that owns and operates independent power facilities. During his tenure at EME, Mr. Fohrer restructured a number of the international projects, which enhanced the value of the assets sold in subsequent years. Mr. Fohrer also served as Executive Vice-President, Treasurer and Chief Financial Officer of both Edison and SCE from 1995 to 1999. After 37 years with Edison, Mr. Fohrer retired in December 2010.</p> <p>Mr. Fohrer currently sits on the boards of PNM Resources, Inc., a publicly held energy holding company, Blue Shield of California, a non-profit health insurance provider, and Synagro, a waste management company.</p> <p>Mr. Fohrer has served on boards of directors of the Institute of Nuclear Power Operations, the California Chamber of Commerce, Duratek, Inc., and Osmose Utilities Services, Inc. He is also a member of the Viterbi School of Engineering Board of Councilors for the University of Southern California and Chair of the California Science Centre Foundation.</p> <p>Mr. Fohrer holds a Master of Science in civil engineering from the University of Southern California, Los Angeles, as well as a Master of Business Administration from California State University in Los Angeles.</p> <p>Mr. Fohrer brings to the Corporation and the Board experience in accounting, finance and the utilities industry from both a regulated and deregulated market perspective. He also holds expertise in banking, human resources/compensation and risk management matters.</p>

Name, Province (State) and Country of Residence	Year first became Director	Principal Occupation
<b>Amb. Gordon D. Giffin</b> Georgia, U.S.A.	2002	<p>Ambassador Giffin is Senior Partner of the law firm of Dentons (formerly McKenna Long &amp; Aldridge LLP), where he maintains offices in Washington, D.C. and Atlanta. His practice focuses on international transactions related to trade, energy and public policy. He has been engaged in the practice of law or government service for more than 40 years. He served as the United States Ambassador to Canada with responsibility for managing Canada/U.S. bilateral relations, including energy and environmental policy from August 1997 to April 2001. Prior to that, he served as Chief Counsel and Legislative Director to United States Senator Sam Nunn, with responsibility for the legal and legislative operations of the office.</p> <p>Ambassador Giffin has spent three decades as an attorney in the energy industry as an advisor, trying multiple energy regulatory cases before state and federal tribunals and courts, and handling transactions including mergers and acquisitions. During a decade in public service, he was a senior attorney and advisor in the United States Senate where, among other matters, he worked on major energy public policy initiatives. During his four years as United States Ambassador to Canada, he was Chief Executive Officer of a large government enterprise with in excess of a thousand people across Canada. His substantive responsibilities included the entire array of policy matters in the Canada-U.S. context including energy policy. He has substantial experience in dealing with issues at the intersection of industry and public policy.</p> <p>Since leaving public office, he resumed his continental law practice and remains actively engaged in public policy initiatives and international affairs through membership in the Council on Foreign Relations and the Trilateral Commission.</p> <p>Ambassador Giffin holds a Bachelor of Arts from Duke University (Durham, NC) and a Juris Doctorate from Emory University School of Law (Atlanta, GA).</p> <p>Ambassador Giffin brings to the Corporation and the Board experience in law, regulatory and governmental affairs that have assisted the Corporation in addressing the changing regulatory landscape. Mr. Giffin also brings strong leadership and strategy development skills to the Corporation. The Corporation previously announced in January 2019 that Ambassador Giffin intends to retire as a director and Board Chair of TransAlta Corporation in 2020, following a process to identify a new Chair and facilitate an orderly transition.</p>

Name, Province (State) and Country of Residence	Year first became Director	Principal Occupation
Yakout Mansour California, U.S.A.	2011	<p>Mr. Mansour has over 40 years of experience as both a professional engineer and executive in the electric utility business in Canada, the United States, and abroad. He retired as President and Chief Executive Officer of the California Independent System Operator Corporation ("CAISO") in 2011, a position he had held since 2005. CAISO is responsible for operating and controlling 80 per cent of the California electric grid, designing and operating the California electricity market, and for settlements of over \$8 billion annually. Under Mr. Mansour's leadership, the California market structure was completely redesigned, and CAISO established the market and technical foundation to accommodate one of the most aggressive renewable portfolio standards in the world. Prior to that, Mr. Mansour served in senior executive roles at BC Hydro and British Columbia Transmission Corporation where he was responsible for operation, asset management, and inter-utility affairs of the electric grid.</p> <p>A Professional Engineer and a Fellow of the Institute of Electrical and Electronics Engineers, Mr. Mansour has authored and co-authored numerous publications. He is recognized internationally in the field of power engineering and received several distinguished awards for his contributions to the industry.</p> <p>In 2009, Mr. Mansour was named to the U.S. Department of Energy Electricity Advisory Committee as a vice chair. He also served on the various committees of the North American Electric Reliability Corporation and its predecessor organization, CEGRE, the Transmission Council of the Canadian Electric Association, and the Board of Directors of the Electric Power Research Institute.</p> <p>Mr. Mansour holds a Bachelor of Science in electrical engineering from the University of Alexandria (Alexandria, Egypt) and a Master of Science from the University of Calgary (Calgary, AB).</p> <p>Mr. Mansour brings to the Corporation and the Board decades of experience in our industry in generation, transmission and energy competitive markets in both a regulated and deregulated market environment. Mr. Mansour also has significant knowledge of risk management, engineering and technical and environmental matters.</p>

Name, Province (State) and Country of Residence	Year first became Director	Principal Occupation
Georgia Nelson Illinois, U.S.A.	2014	<p>At TransAlta, Ms. Nelson is the Chair of the Human Resources Committee of the Board. Ms. Nelson is President and Chief Executive Officer of PTI Resources, LLC, an independent consulting firm established in 2005. Ms. Nelson has had a 35-year career in the power generation industry, serving in various senior executive capacities for Edison International and its subsidiaries between 1971 and 2005. She was President of Midwest Generation Edison Mission Energy (EME), an independent power producer, from 1999 to her retirement in 2005 and General Manager of EME Americas, from 2002 to 2005. Ms. Nelson has extensive experience in international business negotiations, environmental policy matters and human resources.</p> <p>Ms. Nelson is currently a director of Cummins Inc., Ball Corporation, and Sims Metal Management Ltd. She was a director of CH2MHILL Corporation, a privately held company, until December 2017. Ms. Nelson is a past director of Nicor, Inc. Ms. Nelson was a member of the Executive Committee of the National Coal Council from 2000 to 2015 and served as Chair from 2006 to 2008. She serves on the advisory committee of the Center for Executive Women at Northwestern University. Ms. Nelson was named to the 2012 National Association of Corporate Directors ("NACO") Directorship 100. She is an NACO Board Fellow. Ms. Nelson holds a Bachelor of Science from Pepperdine University and a Master of Business Administration from the University of Southern California.</p> <p>Ms. Nelson brings to the Company and the Board specialized knowledge in the energy, independent power and coal and mining industries as well as human resources management/compensation, and engineering and technical expertise. As Chair of the Human Resources Committee of the Board, Ms. Nelson leads the Committee in effective decision-making.</p>

Name, Province (State) and Country of Residence	Year first became Director	Principal Occupation
Beverlee F. Park British Columbia, Canada	2015	<p>Ms. Park is the Chair of the Audit and Risk Committee of the Board as of April 19, 2018. Ms. Park is currently a director of Teekay LNG Partners, a NYSE-listed public company, where she chairs the Audit Committee and Conflicts Committee. Teekay LNG Partners is one the world's largest independent owners of LNG and LPG carriers. She is also a director of SSR Mining Inc. (TSX/NASDAQ-listed), a public mining company, focused on the operation, development, exploration and acquisition of precious metals projects in North and South America. Ms. Park was a member of the Board of Governors at the University of British Columbia until June 30, 2018. In addition, until October 2018 she was a director of InTransit BC, a privately held light rapid transit company where she chaired the Audit Committee. Ms. Park was previously a director of the BC Transmission Corporation, where she also chaired the Audit Committee.</p> <p>Ms. Park has executive and board experience in a range of industries, including electricity transmission, forest products, shipping, mining, transportation and real estate. Ms. Park spent 17 years of her career with TimberWest Forest Corp. where she was most recently Chief Operations Officer until her retirement in 2013. Over that time, she also held the roles of Interim Chief Executive Officer, President of the real estate division (Couverdon Real Estate) and Executive Vice President and Chief Financial Officer.</p> <p>Ms. Park holds a Bachelor of Commerce with distinction from McGill University (Montreal, QB), a Master of Business Administration from the Simon Fraser University Executive program and is also a Fellow of the Chartered Professional Accountants (FCPA) and Fellow of the Institute of Chartered Accountants (FCA) of British Columbia.</p> <p>Ms. Park brings to the Company and to the Board over 30 years of experience in finance and accounting as well as senior leadership experience in organizational change. Ms. Park's extensive experience delivering shareholder value together with her strong financial expertise has made her a valuable contributor to the Board.</p>

<b>Name, Province (State) and Country of Residence</b>	<b>Year first became Director</b>	<b>Principal Occupation</b>
<b>Bryan D. Pinney</b> Alberta, Canada	2018	<p>Bryan Pinney is the principal of Bryan D. Pinney Professional Corporation, which provides financial advisory and consulting services.</p> <p>Mr. Pinney is currently the lead director for North American Energy Partners Inc. He is also a director on a Hong Kong-listed oil and gas company, Persta Resources Inc. Mr. Pinney was also the recent chair of the Board of Governors of Mount Royal University and has previously served on a number of non-profit boards. He is also a director on one private company. He is a Fellow of the Institute of Chartered Accountants, a Chartered Business Valuator and is a graduate of the Ivey Business School at the University of Western Ontario with an honours degree in Business Administration. He is also a graduate of the Canadian Institute of Corporate Directors.</p> <p>Mr. Pinney has over 30 years of experience serving many of Canada's largest corporations, primarily in energy and resources and construction. Mr. Pinney was a partner with Deloitte between 2002 and 2015. Mr. Pinney served as Calgary Managing Partner from 2002 through 2007 and as National Managing Partner of Audit &amp; Assurance from 2007 to 2011 and Vice-Chair until June 2015.</p> <p>Mr. Pinney was a past member of Deloitte's Board of Directors and chair of the Finance and Audit Committee. Prior to joining Deloitte, Mr. Pinney was a partner with Andersen LLP and served as Calgary Managing Partner from 1991 through May of 2002.</p> <p>Mr. Pinney's extensive leadership accomplishments, financial expertise, knowledge of regulatory and compliance matters and diverse range of industry experience make Mr. Pinney an important contributor to the Board.</p>

### **Officers**

The name, province or state and country of residence of each of our senior officers as at February 26, 2019, their respective position and office and their respective principal occupation are set out below.

<b>Name</b>	<b>Principal Occupation</b>	<b>Residence</b>
Dawn L. Farrell	President and Chief Executive Officer	Alberta, Canada
Wayne Collins	Executive Vice-President, Coal and Mining Operations	Alberta, Canada
Dawn E. de Lima	Chief Officer, Business and Operational Services	Alberta, Canada
Christophe Dehout	Chief Financial Officer	Alberta, Canada
Jane Fedoretz	Chief Talent and Transformation Officer	Alberta, Canada
Brett M. Gellner	Chief Strategy and Investment Officer	Alberta, Canada
John H. Kousinioris	Chief Growth Officer	Alberta, Canada
Kerry O'Reilly	Chief Legal and Compliance Officer	Alberta, Canada
Jennifer M. Pierce	Senior Vice-President, Business Development	Alberta, Canada
Todd J. Stack	Managing Director, Corporate Controller	Alberta, Canada
Brent Ward	Managing Director, Treasurer	Alberta, Canada
Aron J. Willis	Senior Vice-President, Commercial, Gas and Renewables	Alberta, Canada

All of the senior officers of TransAlta have held their present principal occupation or position for the past five years, except for the following:

- Prior to May 2014, Mr. Collins was Chief Operating Officer of Stanwell Corporation Limited (electricity corporation) in Australia.
- Prior to July 2018, Ms. de Lima was Chief Administrative Officer. Prior to July 2015, Ms. de Lima was Chief Human Resources Officer of TransAlta. Prior to April 2012, Ms. de Lima was Chief Human Resources Officer and Executive Vice-President, Communications of TransAlta.
- Prior to November 2018, Mr. Gellner was Interim Chief Financial Officer and Chief Strategy and Investment Officer of the Corporation. Prior to July 2018, Mr. Gellner was Chief Investment Officer of the Corporation. Prior to August 2013, Mr. Gellner was Chief Financial Officer of the Corporation.
- Prior to November 2018, Mr. Dehout was Project Director and Deputy Head of Performance and Group Transformation of Engie SA (utilities).
- Prior to July 2018, Mr. Kousinioris was Chief Legal and Compliance Officer and Corporate Secretary of the Corporation. Prior to October 2015, Mr. Kousinioris was Chief Legal and Compliance Officer of TransAlta. Prior to December 2012, Mr. Kousinioris was a Partner and co-head of the Corporate Commercial Group at Bennett Jones LLP, Barristers and Solicitors (law firm).
- Prior to October 2015, Ms. Pierce was Vice-President, Commercial Management of TransAlta. Prior to April 2014, Ms. Pierce was Vice-President, Commercial Management – Alberta Coal and PPA's of TransAlta.
- Prior to February 2017, Mr. Stack was Managing Director and Treasurer of TransAlta. Prior to October 2015, Mr. Stack was Vice-President and Treasurer of TransAlta. Prior to November 2012, Mr. Stack was Treasurer of TransAlta.
- Prior to April 2017, Mr. Ward was Manager, Treasury and Corporate Finance.
- Prior to January 2017, Mr. Willis was Managing Director, Australia of TransAlta. Prior to September 2015, Mr. Willis was Vice-President, Australia of TransAlta. Prior to October 2014, he was Country Manager, Australia of TransAlta.
- Prior to November 2018, Ms. O'Reilly Wilks was Head of Legal, North Atlantic & UK, for Vale S.A. (Base Metal Business), one of the largest companies in the world.
- Prior to November 2018, Ms. Fedoretz was Counsel, Energy Group at Blake, Cassels & Graydon LLP.

As of February 26, 2019, the directors and executive officers of TransAlta, as a group, beneficially owned, directly or indirectly, or exercised control or direction over less than one per cent of our outstanding common shares.

#### **INTERESTS OF MANAGEMENT AND OTHERS IN MATERIAL TRANSACTIONS**

No director or executive officer of TransAlta, no person or company that is the direct or indirect beneficial owner of, or who exercises control or direction over more than 10 per cent of our common shares, and no associate or affiliate of any of them, has or has had any material interest, direct or indirect, in any transaction involving TransAlta within the three most recently completed financial years or to date in 2019 or in any proposed transactions that has materially affected or will materially affect us.

## INDEBTEDNESS OF DIRECTORS, EXECUTIVE OFFICERS AND SENIOR OFFICERS

Since January 1, 2018, there has been no indebtedness outstanding to TransAlta from any of our directors, executive officers, senior officers or associates of any such directors, nominees or senior officers.

## CORPORATE CEASE TRADE ORDERS, BANKRUPTCIES OR SANCTIONS

### *Corporate Cease Trade Orders and Bankruptcies*

Except as noted below, no director, executive officer or controlling security holder of TransAlta Corporation is, as at the date of this Annual Information Form, or has been, within the past 10 years before the date hereof, a director or executive officer of any other issuer that, while that person was acting in that capacity:

- (i) was the subject of a cease trade or similar order or an order that denied the relevant company access to any exemption under securities legislation for a period of more than 30 consecutive days; or
- (ii) was subject to an event that resulted, after the person ceased to be a director or executive officer, in the company being the subject of a cease trade or similar order or an order that denied the relevant company access to any exemption under securities legislation for a period of more than 30 consecutive days; or
- (iii) within a year of that person ceasing to act in that capacity, became bankrupt, made a proposal under any legislation relating to bankruptcy or insolvency or was subject to or instituted any proceedings, arrangement or compromise with creditors or had a receiver, receiver manager or trustee appointed to hold its assets.

Mr. Giffin was a director of AbitibiBowater Inc. ("Abitibi") from October 29, 2007 until his resignation on January 22, 2009. In April 2009, Abitibi and certain of its U.S. and Canadian subsidiaries filed voluntary petitions in the United States Bankruptcy Court for the District of Delaware for relief under the provisions of Chapter 11 and Chapter 15 of the United States Bankruptcy Code, as amended, and sought creditor protection under the *Companies' Creditors Arrangement Act* (Canada) (the "CCAA") with the Superior Court of Québec in Canada. On September 14, 2010, Abitibi announced that it had received approval for its plan of reorganization from unsecured creditors under the CCAA in Canada. On September 21, 2010, Abitibi announced it had received the necessary creditor approval for its plan of reorganization under Chapter 11 of the U.S. Bankruptcy Code. On December 9, 2010, Abitibi announced that it had successfully completed its reorganization and emerged from creditor protection under the CCAA in Canada and Chapter 11 of the U.S. Bankruptcy Code.

### *Personal Bankruptcies*

No director, executive officer or controlling security holder of TransAlta Corporation has, within the 10 years before the date hereof, become bankrupt, made a proposal under any legislation relating to bankruptcy or insolvency, or became subject to or instituted any proceedings, arrangement or compromise with creditors, or had a receiver, receiver manager or trustee appointed to hold such person's assets.

### *Penalties or Sanctions*

No director, executive officer or controlling security holder of TransAlta Corporation has:

- (i) been subject to any penalties or sanctions imposed by a court relating to securities legislation or by a securities regulatory authority or has entered into a settlement agreement with a securities regulatory authority, other than penalties for late filing of insider reports; or
- (ii) been subject to any other penalties or sanctions imposed by a court or regulatory body that would likely be considered important to a reasonable investor in making an investment decision.



## **CONFLICTS OF INTEREST**

Circumstances may arise where members of the Board serve as directors or officers of corporations which are in competition to the interests of TransAlta. No assurances can be given that opportunities identified by such member of the Board will be provided to us. However, our policies provide that each director and executive officer must comply with the disclosure requirements of the CBCA regarding any material interest. If a declaration of material interest is made, the declaring director shall not vote on the matter if put to a vote of the Board. In addition, the declaring director and executive officer may be requested to recuse himself or herself from the meeting when such matter is being discussed.

## **LEGAL PROCEEDINGS AND REGULATORY ACTIONS**

TransAlta is occasionally named as a party in claims and legal proceedings which arise during the normal course of its business. We review each of these claims, including the nature of the claim, the amount in dispute or claimed and the availability of insurance coverage. There can be no assurance that any particular claim will be resolved in our favour or that such claim may not have a material adverse effect on TransAlta. For further information, please refer to Note 33 (I) of our audited consolidated financial statements for the year ended December 31, 2018 which financial statements are incorporated by reference herein. See "*Documents Incorporated by Reference*".

## **TRANSFER AGENT AND REGISTRAR**

The transfer agent and registrar for our common shares and Series A Shares, Series B Shares, Series C Shares, Series E Shares and Series G Shares is AST Trust Company (Canada). AST Trust Company (Canada) changed its name from CST Trust Company effective July 20, 2017. CST Trust Company succeeded CIBC Mellon Trust Company as our transfer agent. On November 1, 2010, CIBC Mellon Trust Company sold its issuer services business to Canadian Stock Transfer Company Inc. which operated the business on their behalf until August 30, 2013, at which time CST Trust Company, an affiliate of Canadian Stock Transfer Company Inc., received federal approval to commence business. Common shares are transferable in Vancouver, Calgary, Toronto, Montréal, and Halifax. Series A Shares, Series B Shares, Series C Shares, Series E Shares and Series G Shares are transferable in Calgary and Toronto. The transfer agent and registrar for our common shares in the United States is Computershare Trust Company at its principal office in Jersey City, New Jersey.

## **INTERESTS OF EXPERTS**

The Corporation's auditors are Ernst & Young LLP, Chartered Professional Accountants, 2200, 215 – 2<sup>nd</sup> Street, S.W., Calgary, Alberta, T2P 1M4.

Our auditors, Ernst & Young LLP, are independent within the meaning of the Chartered Professional Accountants of Alberta Rules of Professional Conduct.

## **ADDITIONAL INFORMATION**

Additional information in relation to TransAlta may be found under TransAlta's profile on SEDAR at [www.sedar.com](http://www.sedar.com) and EDGAR at [www.sec.gov](http://www.sec.gov).

Additional information including directors' and officers' remuneration and indebtedness, principal holders of our securities and securities authorized for issuance under equity compensation plans (all where applicable), is contained in our Management Proxy Circular for the most recent annual meeting of shareholders that involved the election of directors and can be obtained upon request from our Investor Relations department, or as filed on SEDAR at [www.sedar.com](http://www.sedar.com) and EDGAR at [www.sec.gov](http://www.sec.gov).

Additional financial information is provided in our audited consolidated financial statements as at and for the year ended December 31, 2018 and in the related Annual MD&A, each of which is incorporated by reference in this AIF. See "*Documents Incorporated by Reference*".

## AUDIT AND RISK COMMITTEE

### ***General***

The members of TransAlta's Audit and Risk Committee ("ARC") satisfy the requirements for independence under the provisions of Canadian Securities Regulators, National Instrument 52-110 *Audit Committees*, Section 303A of the NYSE Rules and Rule 10A-3 under the U.S. Securities and Exchange Act of 1934. The ARC's Charter requires that it be comprised of a minimum of three independent directors. The ARC is currently comprised of five independent members, Beverlee F. Park (Chair), John P. Dielwart, Alan J. Fohrer, Bryan D. Pinney, and Timothy Faithfull. As previously announced by the Corporation, Mr. Faithfull has indicated to the Board that he intends to retire from the Board following TransAlta's 2019 annual and special meeting of the shareholders.

All members of the committee are financially literate pursuant to both Canadian and U.S. securities requirements and Ms. Park and Mr. Pinney have each been determined by the Board to be an "*audit committee financial expert*", within the meaning of Section 407 of the United States Sarbanes Oxley Act of 2002 ("Sarbanes Oxley Act").

### ***Mandate of the Audit and Risk Committee***

The ARC provides assistance to the Board in fulfilling its oversight responsibilities with respect to (i) the integrity of the Corporation's financial statements and financial reporting process, (ii) the systems of internal financial controls and disclosure controls established by management of TransAlta ("Management"), (iii) the risk identification and assessment process conducted by Management including the programs established by Management to respond to such risks, (iv) the internal audit function, (v) compliance with financial, legal and regulatory requirements and (vi) the external auditors' qualifications, independence and performance. In so doing, it is the ARC's responsibility to maintain an open avenue of communication between it and the external auditors, the internal auditors and management.

The function of the ARC is oversight. Management is responsible for the preparation, presentation and integrity of the interim and annual financial statements and related disclosure documents. Management is also responsible for maintaining appropriate accounting and financial reporting policies and systems of internal controls and disclosure controls and procedures to comply with accounting standards, applicable laws and regulations which provide reasonable assurance that the assets of the Corporation are safeguarded and transactions are authorized, executed, recorded and properly reported.

While the ARC has the responsibilities and powers summarized in its Charter, it is not the duty of the ARC to plan or conduct audits or to determine that the Corporation's financial statements are complete and accurate and in accordance with generally accepted accounting principles. This is the responsibility of the Corporation's management and the external auditors.

The designation of a member or members as an "*audit committee financial expert*" is based on that individual's education and experience, which the individual will bring to bear in carrying out his or her duties on the ARC. Designation as an "*audit committee financial expert*" does not impose on such person any duties, obligations and liability that are greater than the duties, obligations and liability imposed on another member of the ARC and Board in the absence of such designation.

Management is also responsible for the identification and management of the Corporation's risks and the development and implementation of policies and procedures to mitigate such risks. The ARC's role is to provide oversight in order to ensure that the Corporation's assets are protected and safeguarded within reasonable business limits. The ARC reports to the Board on its risk oversight responsibilities.

### ***Audit and Risk Committee Charter***

The Charter of the ARC is attached as Appendix "A".

### ***Relevant Education and Experience of Audit and Risk Committee Members***

The following is a brief summary of the education or experience of each member of the ARC that is relevant to the performance of his or her responsibilities as a member of the ARC, including any education or experience that has provided the member with an understanding of the accounting principles that we use to prepare our annual and interim financial statements.

<b>Name of ARC Member</b>	<b>Relevant Education and Experience</b>
<b>J. P. Dielwart</b>	Mr. Dielwart is currently the Vice-Chairman of ARC Financial Corp., an energy focused private equity manager. Mr. Dielwart served as the chief executive officer of a Canadian publicly listed company for sixteen years during which time he had extensive experience actively supervising the finance and accounting functions and public accountants.
<b>T. W. Faithfull</b>	Mr. Faithfull is a 36-year veteran of Royal Dutch/Shell plc (energy), where he held diverse international roles principally in oil products and LNG project development. As President and CEO of Shell Canada Limited, he was responsible for bringing the \$6 billion Athabasca Oil Sands Project on line in 2003, the first fully integrated oil sands venture in 25 years. Mr. Faithfull has extensive experience with commodity exposure and risk management, the result of his time directing the global crude oil trading operations of Shell International Trading and Shipping Company from 1993 to 1996.
<b>A. J. Fohrer</b>	Prior to his retirement in December 2010, Mr. Fohrer was Chairman and CEO of SCE, a subsidiary of Edison and one of the largest electric utilities in the United States. Prior to that, Mr. Fohrer served as Executive Vice-President, Treasurer and Chief Financial Officer of both Edison and SCE. Mr. Fohrer also serves on the audit committee of PNM Resources Inc., a public company.
<b>B. Park (Chair)</b>	Ms. Park has executive experience in a range of industries, including forest products, shipping, mining, transportation, real estate, and electricity transmission. Ms. Park spent seventeen years of her career with TimberWest Forest Corp. where she was most recently Chief Operations Officer. Over that time, she also held the roles of Interim Chief Executive Officer, President of the real estate division (Couverdon Real Estate) and Executive Vice President and Chief Financial Officer. Ms. Park is currently a director of Teekay LNG Partners, a public company, where she chairs the Audit Committee. Ms. Park holds a Bachelor of Commerce with distinction from McGill University (Montreal, QB), a Master of Business Administration from the Simon Fraser University Executive program and is a Chartered Accountant. She is also a Fellow of the Institute of Chartered Accountants of British Columbia.
<b>Bryan D. Pinney</b>	Mr. Pinney has more than 30 years of experience in financial auditing, valuation and advising companies in energy and natural resources. He has been an Independent Director of North America Energy Partners Inc. since 2015 and its Lead Director since October 31, 2017. He served as Member of Deloitte's Board of Directors. He has been the Chair of the Board of Governors and Member of the Board of Governors of Mount Royal University from September 2014 and May 2009 respectively and has previously served on a number of nonprofit boards. He has been an Independent Non-Executive Director at Persta Resources Inc., a Hong Kong listed oil and gas exploration company. He has been a Chartered Accountant since December 1978, a Fellow of the Chartered Professional Accountants of Alberta since January 2009 and a Chartered Business Valuator of Canada since December 1990. Mr. Pinney obtained a Bachelor of Arts in Business Administration from the University of Western Ontario in 1975 and also completed the Directors Education Program offered by the Institute of Corporate Directors in Canada in 2012.

### ***Other Board Committees***

In addition to the ARC, TransAlta has two other standing committees: the Governance, Safety and Sustainability Committee and the Human Resources Committee. The members of these committees as at December 31, 2018 are:

<b>Governance, Safety and Sustainability Committee</b>	<b>Human Resources Committee</b>
<b>Chair: John P. Dielwart</b>	<b>Chair: Georgia R. Nelson</b>
Rona Ambrose	Rona Ambrose
Timothy W. Faithfull	Alan Fohrer
Yakout Mansour	Yakout Mansour
Georgia Nelson	Bryan D. Pinney
Beverlee F. Park	

The Charters of the Governance, Safety and Sustainability Committee and the Human Resources Committee may be found on our website under Governance Board Committees at [www.transalta.com](http://www.transalta.com). Further information about the Board and our corporate governance may also be found on our website or in our Management Proxy Circular which is filed on SEDAR at [www.sedar.com](http://www.sedar.com) and EDGAR at [www.sec.gov](http://www.sec.gov).

For the years ended December 31, 2018 and December 31, 2017, Ernst & Young LLP and its affiliates were paid \$3,303,359 and \$2,799,884, respectively, as detailed below:

<b><i>Ernst &amp; Young LLP</i></b>		
<b>Year Ended December 31</b>	<b>2018</b>	<b>2017</b>
Audit Fees	\$ 3,022,276	\$ 2,708,884
Audit-related fees	166,328	91,000
Tax fees	104,255	0
All other fees	10,500	0
<b>Total</b>	<b>\$ 3,303,359</b>	<b>\$ 2,799,884</b>

No other audit firms provided audit services in 2018 or 2017.

The nature of each category of fees is described below:

#### ***Audit Fees***

Audit fees are for professional services rendered for the audit and review of our financial statements or services provided in connection with statutory and regulatory filings and providing comfort letters associated with securities documents.

#### ***Audit-Related Fees***

Assurance and related services that are reasonably related to the performance of the audit or review of our financial statements that are not included under "*Audit Fees*".

#### ***Tax Fees***

Tax fees are tax-related services for review of tax returns, assistance with questions on tax audits, and tax planning.

### *All Other Fees*

Products and services provided by the Corporation's auditor other than those services reported under "*Audit Fees*", "*Audit-Related Fees*" and "*Tax Fees*". This includes fees related to training services provided by the auditor.

### ***Pre-Approval Policies and Procedures***

The ARC has considered whether the provision of services other than audit services is compatible with maintaining the auditors' independence. In May 2002, the ARC adopted a policy that prohibits TransAlta from engaging the auditors for "prohibited" categories of non-audit services and requires pre-approval of the ARC for other permissible categories of non-audit services, such categories being determined under the Sarbanes Oxley Act. This policy also provides that the Chair of the ARC may approve permissible non-audit services during the quarter and report such approval to the ARC at its next regularly scheduled meeting.

## APPENDIX "A"

### AUDIT AND RISK COMMITTEE CHARTER

#### TRANSALTA CORPORATION (the "Corporation")

##### A. Establishment of Committee and Procedures

###### 1. Composition of Committee

The Audit and Risk Committee (the "Committee") of the Board of Directors (the "Board") of TransAlta Corporation (the "Corporation") shall consist of not less than three Directors. All members of the Committee shall be determined by the Board to be independent as required under the provisions of Canadian Securities Regulators' Multilateral Instrument 52-110 Audit Committees, Section 303A of the New York Stock Exchange rules and Rule 10A-3 of the U.S. Securities and Exchange Act of 1934, as such rules apply to audit committee members. All members of the Committee must be financially literate pursuant to both Canadian and U.S. securities requirements and at least one member must be determined by the Board to be an "audit committee financial expert" within the meaning of Section 407 of the United States Sarbanes-Oxley Act of 2002 (the "Sarbanes-Oxley Act"). Determinations as to whether a particular director satisfies the requirements for membership on the Committee shall be made by the Board at the recommendation of the Governance and Environment Committee.

###### 2. Appointment of Committee Members

Members of the Committee shall be appointed from time to time by the Board, on the recommendation of the Governance and Environment Committee, and shall hold office until the next annual meeting of shareholders, or until their successors are earlier appointed, or until they cease to be Directors of the Corporation.

###### 3. Vacancies

Where a vacancy occurs at any time in the membership of the Committee, it may be filled by the Board and on the recommendation of the Governance and Environment Committee. The Board shall fill any vacancy if the membership of the Committee is less than three directors.

###### 4. Committee Chair

The Board shall appoint a Chair for the Committee on the recommendation of the Governance and Environment Committee.

###### 5. Absence of Committee Chair

If the Chair of the Committee is not present at any meeting of the Committee, one of the members of the Committee who is present at the meeting shall be chosen by the Committee to preside at the meeting.

###### 6. Secretary of Committee

The Committee shall appoint a Secretary who need not be a director of the Corporation.

7. Meetings

The Chair of the Committee may call a regular meeting of the Committee. The Committee shall meet at least quarterly and at such other time during each year as it deems appropriate to fulfill its responsibilities. In addition, the Chair of the Committee or any two members may call a special meeting of the Committee at any time.

The Committee shall also meet in separate executive session.

8. Quorum

A majority of the members of the Committee, present in person or by telephone or other telecommunication device that permits all persons participating in the meeting to speak to each other shall constitute a quorum.

9. Notice of Meetings

Notice of the time and place of every meeting shall be given in writing (including by way of written facsimile communication or email) to each member of the Committee at least 48 hours prior to the time fixed for such meeting, provided, however, that a member may in any manner waive notice of a meeting; and attendance of a member at a meeting constitutes a waiver of notice of the meeting, except where a member attends for the express purpose of objecting to the transaction of any business on the ground that the meeting is not lawfully called. Notice of every meeting shall also be provided to the external and internal auditors.

10. Attendance at Meetings

At the invitation of the Chair of the Committee, other Board members the President and Chief Executive Officer ("CEO"), other officers or employees of the Corporation, the external auditors, and other experts or consultants may attend a meeting of the Committee.

11. Procedure, Records and Reporting

Subject to any statute or the articles and by-laws of the Corporation, the Committee shall fix its own procedures at meetings, keep records of its proceedings and report to the Board generally not later than the next scheduled meeting of the Board.

12. Review of Charter and Evaluation of Committee

The Committee shall evaluate its performance and review and assess the adequacy of its Charter at least annually or otherwise, as it deems appropriate. All changes proposed by the Committee are reviewed and approved by the Governance and Environment Committee and the Board.

13. Outside Experts and Advisors

The Committee Chair, on behalf of the Committee, or any of its members is authorized, at the expense of the Corporation, when deemed necessary or desirable, to retain independent counsel, outside experts and other advisors to advise the Committee independently on any matter. The retention of such counsel, expert or advisor in no way requires the Committee to act in accordance with the recommendations of such counsel, expert or advisor.

**B. Duties and Responsibilities of the Chair**

The fundamental responsibility of the Chair of the Committee is to effectively manage the duties of the Committee.

The Chair is responsible for:

1. Chairing meetings of the Committee and ensuring that the Committee is properly organized so that it functions effectively and meets its obligations and responsibilities.
2. Establishing the frequency of Committee meetings, duly convening the same and confirming that quorum is present when required.
3. Working with the CEO, the Chief Financial Officer (the "CFO"), the Corporate Secretary and Assistant Corporate Secretary, as applicable, on the development of agendas and related materials for the meetings.
4. Providing leadership to the Committee and assisting the Committee in ensuring the proper and timely discharge of its responsibilities.
5. Reporting to the Board on the recommendations and decisions of the Committee.

### **C. Mandate of the Committee**

The Committee provides assistance to the Board in fulfilling its oversight responsibilities with respect to i) the integrity of the Corporation's financial statements and financial reporting process, ii) the systems of internal financial controls and disclosure controls established by Management, iii) the risk identification and assessment process conducted by Management including the programs established by Management to respond to such risks, iv) the internal audit function, v) compliance with financial, legal and regulatory requirements and vi) the external auditors' qualifications, independence and performance. In so doing, it is the Committee's responsibility to maintain an open avenue of communication between it and the external auditors, the internal auditors and the Management of the Corporation.

The function of the Committee is oversight. Management is responsible for the preparation, presentation and integrity of the interim and annual financial statements and related disclosure documents. Management of the Corporation is also responsible for maintaining appropriate accounting and financial reporting policies and systems of internal controls and disclosure controls and procedures to comply with accounting standards, applicable laws and regulations which provide reasonable assurance that the assets of the Corporation are safeguarded and transactions are authorized, executed, recorded and properly reported.

While the Committee has the responsibilities and powers set forth herein, it is not the duty of the Committee to plan or conduct audits or to determine that the Corporation's financial statements are complete and accurate and in accordance with generally accepted accounting principles. This is the responsibility of Management and the external auditors.

The Committee must also designate at least one member as an "audit committee financial expert". The designation of a member or members as an "audit committee financial expert" is based on that individual's education and experience, which the individual will bring to bear in carrying out his or her duties on the Committee. Designation as an "audit committee financial expert" does not impose on such person any duties, obligations and liability that are greater than the duties, obligations and liability imposed on another member of the Committee and Board in the absence of such designation.

Management is also responsible for the identification and management of the Corporation's risks and the development and implementation of policies and procedures to mitigate such risks. The Committee's role is to provide oversight in order to ensure that the Corporation's assets are protected and safeguarded within reasonable business limits. The Committee reports to the Board on its risk oversight responsibilities.



**D. Duties and Responsibilities of the Committee**

1. Financial Reporting, External Auditors and Financial Planning

*A) Duties and Responsibilities Related to Financial Reporting and the Audit Process*

- (a) Review with Management and the external auditors the Corporation's financial reporting process the work to be conducted in conjunction with the annual audit and the preparation of the financial statements, including, without limitation, the annual audit plan of the external auditors, the judgment of the external auditors as to the quality, not just the acceptability, of and the appropriateness of the Corporation's accounting principles as applied in its financial reporting and the degree of aggressiveness or conservatism of the Corporation's accounting principles and underlying estimates;
- (b) Review with Management and the external auditors the Corporation's audited annual financial statements, including the notes thereto, "Management's Discussion and Analysis", the related earnings release, and recommend their approval to the Board for release to the public;
- (c) Review with Management and the external auditors the Corporation's interim financial statements, including the notes thereto, "Management's Discussion and Analysis", the related earnings release, and approve their release to the public as required;
- (d) In reviewing the financial statements and related financial disclosure, the Committee shall review and discuss with Management and the external auditors:
  - (i) any changes in accounting principles, practices or policies considering their applicability to the business and financial impact;
  - (ii) Management's processes for formulating sensitive accounting estimates and the reasonableness of the estimates;
  - (iii) the use of "pro forma" or "non-comparable" information and the applicable reconciliation;
  - (iv) alternative treatments of financial information within generally accepted accounting principles that have been discussed between Management and the auditors, ramifications of the use of such alternative disclosures and treatments and the treatment preferred by the external auditors; and
  - (v) disclosures made to the Committee by the CEO and CFO during their certification process for the relevant periodic/annual report filed with securities regulators to ensure that information required to be disclosed is recorded, processed, summarized and reported within the time periods specified for the reporting period. Obtain assurances from the CEO and CFO as to the adequacy and effectiveness of the Corporation's disclosure controls and procedures and systems of internal control over financial reporting and that any fraud involving Management or other employees who have a significant role in the Corporation's internal controls is reported to the Committee.
- (e) In reviewing the financial statements and related financial disclosure, the Committee shall also, with the external auditors:

- (i) discuss the cooperation they received from Management during the course of their review and their access to all records, data and information requested; and
  - (ii) satisfy itself that there are no unresolved issues between Management and the external auditors that could reasonably be expected to materially affect the financial statements.
- (f) Review quarterly with senior Management, the Chief Legal and Compliance Officer and Corporate Secretary (or, as necessary, outside legal advisors), and the Corporation's internal and external auditors, the effectiveness of the Corporation's internal controls to ensure the Corporation is in compliance with legal and regulatory requirements and the Corporation's policies;
  - (g) Review with Management and the external auditors the processes relating to the assessment of potential fraud, programs and controls to mitigate the risk of fraud, and the processes put in place for monitoring the risks within the targeted areas; and
  - (h) Discuss with Management and the external auditors any correspondence from or with regulators or governmental agencies, any employee complaints or any published reports that raise material issues regarding the Corporation's financial statements or accounting policies.

*B) Duties and Responsibilities Related to the External Auditors*

- (a) The Committee shall have direct responsibility for the compensation and oversight of the external auditors including nominating the external auditors to the Board for appointment by the shareholders at the Corporation's general annual meeting. In performing its function, the Committee shall:
  - (i) review and approve annually the external auditors audit plan;
  - (ii) review and approve the basis and amount of the external auditors' fees and ensure the Corporation has provided appropriate funding for payment of compensation to the external auditors;
  - (iii) subject to the delegation granted to the Chair of the Committee, pre-approve all audit related services including all non-prohibited non-audit services provided by the external auditors; the Chair of the Committee is authorized to approve all audit related services including non-prohibited non-audit services provided by the external auditors, and shall report all such approvals to the Committee at its next scheduled meeting;
  - (iv) review and discuss annually with the external auditors all relationships that the external auditors and their affiliates have with the Corporation and its affiliates in order to determine the external auditors' independence, including, without limitation, (a) requesting, receiving and reviewing, at least annually, a formal written statement from the external auditors delineating all relationships that may reasonably be thought to bear on their independence with the Corporation; (b) discussing with the external auditors any relationships or services that the external auditors believe may affect their objectivity and professional skepticism; (c) reviewing with the external auditors the experience and qualifications of the senior personnel who are providing audit services to the Corporation; (d) reviewing the quality control procedures of the external auditors, including obtaining confirmation that the external auditors are in compliance with Canadian and U.S.

regulatory registration requirements; and (e) evaluating the communication and interaction with the external auditor including quality of service considerations;

- (v) in the year preceding the change of the lead (or coordinating) audit partner (having primary responsibility for the audit), and in any event not less than every five years, perform a comprehensive review of the external auditor which takes into consideration (a) the impact of the tenure of the audit firm on audit quality, trends in the audit firm's performance and expertise in the industry, incidences of independence threats and the effectiveness of safeguards to mitigate those threats, (b) the responsiveness of the audit firm to changes in the entity's business and suggestions for improvement from regulators, the audit committee and/or management, (c) the consistency and rigour of the professional skepticism applied by the external auditor, and the quality of the engagement team and its communications, review of Canadian Public Accountability Board (CPAB) inspection findings since the previous comprehensive review and how the audit firm responded to these findings, and following this comprehensive review, determine whether the audit firm should be nominated to the Board as the external auditors for appointment by the shareholders at the Corporation's next general annual meeting;
- (vi) inform the external auditors and Management that the external auditors shall have direct access to the Committee at all times, as well as the Committee to the external auditors;
- (vii) instruct the external auditors that they are ultimately accountable to the Committee as representatives of the shareholders of the Corporation; and
- (viii) at least annually, obtain and review the external auditors' report with respect to the auditing firm's internal quality-control procedures, any material issues raised by the most recent internal quality-control review or peer review of the auditing firm, any inquiry or investigation by governmental or professional authorities within the preceding five years undertaken respecting one or more independent audits carried out by the external auditors, and any steps taken to deal with any such issues.

*C) Duties and Responsibilities Related to Financial Planning*

- (a) Review and recommend to the Board for approval the Corporation's issuance and redemption of securities (including the review of all public filings to effect any of the issuances or redemptions), financial commitments and limits, and any material changes underlying any of these commitments;
- (b) Review annually the Corporation's annual tax plan;
- (c) Receive regular updates with respect to the Corporation's financial obligations, loans, credit facilities, credit position and financial liquidity;
- (d) Review annually with Management the Corporation's overall financing plan in support of the Corporation's capital expenditure plan and overall budget/medium range forecast; and
- (e) Review with Management at least annually the approach and nature of earnings guidance and financial information to be disclosed to analysts and rating agencies.

## 2. Internal Audit

- (a) Approve whether the internal audit function should be outsourced and if outsourced, approve the audit firm to perform such internal audit service; provided that in no event shall the external auditor be retained to also perform the internal audit function;
- (b) Review and consider, as appropriate, any significant reports and recommendations made by internal audit relating to internal audit issues, together with Management's response thereto;
- (c) Review annually the scope and plans for the work of the internal audit group, the adequacy of the group's resources, the internal auditors' access to the Corporation's records, property and personnel;
- (d) Recognize and advise senior Management that the internal auditors shall have unfettered access to the Committee, as well as the Committee to the internal auditors;
- (e) Meet separately with Management, the external auditors and internal auditors to review issues and matters of concern respecting audits and financial reporting;
- (f) Review with the Corporation's senior financial Management and the internal audit group the adequacy of the Corporation's systems of internal control and procedures; and
- (g) Recommend to the Human Resources Committee the appointment, termination or transfer of the lead individual responsible for internal audit, provided that if the internal audit function has been, or is being, outsourced to an audit firm, the Committee itself shall approve the appointment, termination or transfer of such audit firm.

## 3. Risk Management

The Board is responsible for ensuring that the Corporation has adopted processes and key policies for the identification, assessment and management of its principal risks. The Board has delegated to the Committee the responsibility for the oversight of Management's identification, and evaluation, of the Corporation's principal risks, and the implementation of appropriate policies, processes and systems to manage or mitigate the risks within the Corporation's risk appetite. The Committee reports to the Board thereon.

The Committee shall:

- (a) Review, at least quarterly, Management's assessment of the Corporation's principal risks; discuss with Management the processes for the identification of these risks and the efficacy of the policies and procedures for mitigating and/or addressing these risks;
- (b) Receive and review Managements' quarterly risk update including an update on residual risks;
- (c) Review the Corporation's enterprise risk management framework and reporting methodology;
- (d) Review annually the Corporation's Financial and Commodity Exposure Management Policies and approve changes to such policies;
- (e) Review and approve the Corporation's strategic hedging program, guidelines and risk tolerance;

- (f) Review and monitor quarterly results of financial and commodity exposure management activities, including foreign currency and interest rate risk strategies, counterparty credit exposure and the use of derivative instruments;
- (g) Review the Corporation's annual insurance program, including the risk retention philosophy, potential exposure and corporate liability protection programs;
- (h) Periodically consider the respective roles and responsibilities of the external auditor, the internal audit department, internal and external counsel concerning risk management and review their performance in relation to such roles and responsibilities; and
- (i) Annually, together with Management, report and review with the Board:
  - (i) the Corporation's principal risks and overall risk appetite/profile;
  - (ii) the Corporation's strategies in addressing its risk profile;
  - (iii) the processes, policies, procedures and controls in place to manage or mitigate the principal risks; and
  - (iv) the overall effectiveness of the enterprise risk management process and program.

#### 4. Governance

##### *A) Public Disclosure, Legal and Regulatory Reporting*

- (a) On behalf of the Committee, the Chair shall review all public disclosure inclusive of material financial information extracted or derived from the Corporation's financial statements prior to dissemination to the public;
- (b) Review quarterly with the Chief Legal and Compliance Officer and Corporate Secretary, and, if necessary, outside legal advisors, significant legal, compliance or regulatory matters that may have a material effect on the Corporation's financial statements;
- (c) Discuss with the external auditors their perception of the Corporation's financial and accounting personnel, any recommendations which the external auditors may have, including those contained in the Management letter, with respect to improving internal financial controls, choice of accounting principles or management reporting systems, and review all Management letters from the external auditors together with Management's written responses thereto;
- (d) Review with Management, the external auditors and internal legal counsel (external counsel if necessary), any litigation, claim or contingency, including tax assessments, that could have a material effect upon the financial position of the Corporation, and the manner in which these may be or have been disclosed in the financial statements;
- (e) Review annually the Insider Trading Policy and approve changes as required; and
- (f) Review annually the Corporation's Disclosure Policy and Social Media Policy to ensure continued applicability with the law and the Corporation's disclosure principles.

##### *B) Pension Plan Governance*

- (a) Review annually the Annual Pension Report and financial statements of the Corporation's pension plans including the actuarial valuation, asset/liability forecast, asset allocation,

manager performance and plan operating costs and reporting thereon to the Board annually;  
and

- (b) Together with the Human Resources Committee of the Board, review annually, and as required, the overall governance of the Corporation's Pension Plans, approving the broad objectives of the plans, the statement of investment policy, the appointment of investment managers, and reporting thereon to the Board annually.

*C) Information Technology – Cybersecurity*

- (a) Receive bi-annually a system status update with respect to the Corporation's core IT operating systems; and
- (b) Review annually the Corporation's cybersecurity programs and their effectiveness. Receive an update on the Corporation's compliance program for cyber threats and security.

*D) Administrative Responsibilities*

- (a) Review the annual audit of expense accounts and perquisites of the Directors, the CEO and her direct reports and their use of Corporate assets;
- (b) Establish procedures for the receipt, retention and treatment of complaints received by the Corporation regarding accounting, internal and disclosure controls or auditing matters and the confidential, anonymous submission by employees, contractors, shareholders and other stakeholders of concerns regarding accounting, auditing, ethical or legal violations;
- (c) Review all incidents, complaints or information reported through the Ethics Help Line and/or Management;
- (d) Initiate investigations of complaints or allegations as necessary, report to the Board thereon and ensure that appropriate action is taken as necessary to address the matter;
- (e) Review and approve the Corporation's hiring policies for employees or former employees of the external auditors and monitor the Corporation's adherence to the policy; and
- (f) Report annually to shareholders on the work of the Committee during the year.

## APPENDIX "B"

### GLOSSARY OF TERMS

This Annual Information Form includes the following defined terms:

**AESO** – Alberta Electric System Operator.

**AEMO** – Australian Energy Market Operator.

**Air Emissions** – Substances released to the atmosphere through industrial operations. For the fossil-fuel-fired power sector, the most common air emissions are sulphur dioxide, oxides of nitrogen, mercury, and greenhouse gases.

**Alberta Power Purchase Arrangement (Alberta PPA)** – A long-term arrangement established by regulation for the sale of electric energy from formerly regulated generating units to PPA buyers.

**AUC** – Alberta Utilities Commission.

**Availability** – A measure of time, expressed as a percentage of continuous operation 24 hours a day, 365 days a year that a generating unit is capable of generating electricity, regardless of whether or not it is actually generating electricity.

**Balancing Pool** – The Balancing Pool was established in 1999 by the Government of Alberta to help manage the transition to competition in Alberta's electric industry. Their current obligations and responsibilities are governed by the *Electric Utilities Act* (effective June 1, 2003) and the *Balancing Pool Regulation*. For more information go to [www.balancing.pool.ca](http://www.balancing.pool.ca)

**Boiler** – A device for generating steam for power, processing or heating purposes, or for producing hot water for heating purposes or hot water supply. Heat from an external combustion source is transmitted to a fluid contained within the tubes of the boiler shell.

**Capacity** – The rated continuous load-carrying ability, expressed in megawatts, of generation equipment.

**Cogeneration** – A generating facility that produces electricity and another form of useful thermal energy (such as heat or steam) used for industrial, commercial, heating, or cooling purposes.

**Combined-Cycle** – An electric generating technology in which electricity is produced from otherwise lost waste heat exiting from one or more gas (combustion) turbines. The exiting heat is routed to a conventional boiler or to a heat recovery steam generator for use by a steam turbine in the production of electricity. This process increases the efficiency of the electric generating unit.

**eERP** – ecoEnergy for Renewable Power program, a program established by the federal Government of Canada.

**Force Majeure** – Literally means "greater force". These clauses excuse a party from liability if some unforeseen event beyond the control of that party prevents it from performing its obligations under the contract.

**GGPPA** – *Greenhouse Gas Pollution Pricing Act* (Canada).

**Gigawatt** – A measure of electric power equal to 1,000 megawatts.

**Gigawatt hour (GWh)** – A measure of electricity consumption equivalent to the use of 1,000 megawatts of power over a period of one hour.

**Greenhouse Gas (GHG)** – Gases having potential to retain heat in the atmosphere, including water vapour, carbon dioxide, methane, nitrous oxide, hydrofluorocarbons, and perfluorocarbons.

**IESO** – Independent Electricity System Operator.

**LTC** – Long term contract.

**Megawatt (MW)** – A measure of electric power equal to 1,000,000 watts.

**Megawatt hour (MWh)** – A measure of electricity consumption equivalent to the use of 1,000,000 watts of power over a period of one hour.

**Million cubic feet of gas per day (MMcf/d)** – A measure of natural gas one million cubic feet per day.

**MOU** – Memorandum of Understanding between the Corporation and the Government of Alberta to collaborate and co-operate in the development of a capacity market in Alberta that ensures both current and new electricity generators will have a level economic playing field to build, buy, and sell electricity, and to develop a policy framework to facilitate the conversion of coal-fired generation to gas-fired generation.

**Net Capacity** – The maximum capacity or effective rating, modified for ambient limitations, that a generating unit or power plant can sustain over a specific period, less the capacity used to supply the demand of station service or auxiliary needs.

**NO<sub>x</sub>** – Nitrogen Oxide.

**OBPS** – Output Based Pricing Standard.

**OEFC** – Ontario Electricity Financial Corporation.

**Off-Coal Agreement** – Off-Coal Agreement dated November 24, 2016 between, among others, TransAlta and Her Majesty the Queen in Right of Alberta.

**PPA** – Purchase power agreement.

**Renewables PPA** - Long-term power purchase agreements with certain subsidiaries of TransAlta Renewables providing for the purchase by TransAlta, for a fixed price, of all of the power produced at such subsidiaries.

**S<sub>02</sub>** – Sulphur Dioxide.

**Supercritical Combustion** – The most advanced coal-combustion technology in Canada employing a supercritical boiler, high-efficiency multi-stage turbine, flue gas desulphurization unit (scrubber), bag house, and low nitrogen oxide burners.

**TA Cogen** – TransAlta Cogeneration LP.

**tCO<sub>2e</sub>/GWh** – Tonnes of carbon dioxide equivalent per gigawatt hour.

**TSX** – Toronto Stock Exchange.

**Uprate** – To increase the rated electrical capability of a power generating facility or unit.