Management's Discussion and Analysis

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This Management's Discussion and Analysis ("MD&A") should be read in conjunction with our 2022 audited annual consolidated financial statements (the "Consolidated Financial Statements") and our 2022 annual information form ("AIF") for the year ended Dec. 31, 2022. Our Consolidated Financial Statements have been prepared in accordance with International Financial Reporting Standards ("IFRS") for Canadian publicly accountable enterprises as issued by the International Accounting Standards Board ("IASB") in effect at Dec. 31, 2022. Certain financial measures included in this MD&A do not have a standardized meaning as prescribed by IFRS. These measures may not be comparable to similar measures presented by other issuers and should not be considered in isolation or as a substitute for measures prepared in accordance with IFRS. See the Non-IFRS Measures section of this MD&A for additional information. All dollar amounts in the tables are in millions of Canadian dollars, except amounts per share, which are presented in whole dollars to the nearest two decimals. All other dollar amounts in this MD&A are in Canadian dollars, unless otherwise noted. In this MD&A, unless the context otherwise requires, "we, "our," "us," "TransAlta Renewables," and the "Company" refer to TransAlta Renewables Inc. and its subsidiaries, and "TransAlta" refers to TransAlta Corporation and its subsidiaries, other than TransAlta Renewables. Capitalized terms not otherwise defined herein have the respective meanings set forth in the Glossary of Key Terms. This MD&A is dated Feb. 22, 2023. Additional information respecting TransAlta Renewables, including our AIF, is available on SEDAR at www.sedar.com and on our website at www.transaltarenewables.com. Information on or connected to our website is not incorporated by reference herein.

Forward-Looking Statements

This MD&A includes forward-looking statements within the meaning of applicable Canadian securities laws. All forward-looking statements are based on our beliefs as well as assumptions based on information available at the time the assumptions were 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,", “could”, “would”, “can”, "believe," "expect," "anticipate,", “estimate”, "intend," "plan," "foresee," "potential," "enable," "continue," "forecast" or other comparable terminology. These statements are not guarantees of our future performance, results or events and are subject to risks, uncertainties and other important factors that could cause our actual performance, results or events to be materially different from that set out in or implied by the forward-looking statements.

In particular, this MD&A contains forward-looking statements pertaining to our business and anticipated future financial performance including, but not limited to: our corporate strategy, including realizing growth opportunities and sustaining the dividend; the Northern Goldfields solar project and Mount Keith expansion project, including the timing and associated construction capital; the ability to secure other growth opportunities with BHP (as defined below); our 2023 Outlook, including adjusted earnings before interest, taxes, depreciation and amortization ("adjusted EBITDA"), free cash flow ("FCF") and cash available for distribution ("CAFD") (each, as defined below), interest expense, and sustaining capital and productivity expenditures; the remediation of the Kent Hills 1 and 2 wind facilities, inlcluding timing and costs; the dividend amounts on the tracking preferred shares; foreign exchange exposure and risk management; the cash taxes payable by the Company and the timing and amount of such taxes; liquidity and capital resources, including our ability to secure borrowings on acceptable terms; principal sources of liquidity and our ability to draw on such liquidity; expectations in terms of the cost of operations and maintenance, including maintenance performed by third parties, and the variability of those costs; the payment of future dividends; expectations in respect of generation availability, capacity[(1)] and production; actions to manage certain risks, including specific actions identified to manage liquidity risk, interest rate risk, project risks and reputation risk; expected governmental regulatory regimes, legislation and programs; expectations regarding seasonality of wind and hydro production and the resulting timing of carbon offset revenues; expectations on our ability to access capital markets on reasonable terms; and expectations regarding our decommissioning and restoration activities. The forward-looking statements contained in this MD&A are based on many assumptions including, but not limited to, the following: power and natural gas price forecasts; regulatory developments not differing significantly from the regulations in effect or being proposed; and the Company being able to fund incremental growth on reasonable terms.

[1] We measure capacity as net installed capacity, which is consistent with industry standards. Capacity figures represent capacity owned and in operation unless otherwise stated. The gross capacity reflects the basis of consolidation of underlying assets owned, plus those in which we hold an economic interest. Net capacity deducts capacity attributable to non-controlling interest in these assets. Megawatts are rounded to the nearest whole number.

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 MD&A include risks relating to: reduced labour availability impacting our ability to continue to staff our operations and facilities; our potential inability to idenitfy accredtive grwoth opportunities or to fund any such opportunities; our potential inability to acquire operating or development assets from TransAlta; restricted access to capital and increased borrowing costs; decreases in short-term and/or long-term electricity demand; any redcution to the value of environmental attributes; changes to commodity prices; reductions in production; disruptions to our supply chain; impairments and/or writedowns of assets; adverse impacts on our information technology systems and our internal control systems, including increased cybersecurity threats; changes in general economic conditions, including interest rates and inflation; fluctuations in the value of foreign currencies, including the Canadian, US and Australian dollars; 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-related risks; equipment failure and our ability to carry out or have completed the repairs in a cost-effective or timely manner, or at all, including as it pertains to the Kent Hills 1 and 2 wind facilities; counterparty credit risk; changes to our relationship with TransAlta Corporation; inadequacy or unavailability of insurance coverage; legal, regulatory and contractual disputes and proceedings involving the Company; the payout ratio remaining elevated and the ability to maintain the current dividend amount; disruptions in the source of water, wind, solar or gas resources required to operate our facilities; natural disasters; the need for additional financing and the ability to access financing at a reasonable cost; structural subordination of securities; counterparty credit risk; our provision for income taxes; contract expiries and the inability to re-contract facilities on favourable terms, or at all; reliance on key personnel and services provided by TransAlta; the regulatory and political environments in the jurisdictions in which we operate; changes to government incentives or grants for renewable energy production; and the risks associated with development projects and acquisitions. The foregoing risk factors, among others, are described in further detail in the "Risk Factors" section of our AIF for the year ended Dec. 31, 2022, which is available on SEDAR at www.sedar.com and on file with the Canadian provincial securities regulatory authorities. Further detail is also available under Risk Management in this 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 these forward-looking statements. 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. The purpose of the financial outlooks contained herein is to give the reader information about management's current expectations and plans and readers are cautioned that such information may not be appropriate for other purposes. In light of these risks, uncertainties and assumptions, the forward-looking events 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 performance results or events will be achieved.

Operations of the Company

TransAlta Renewables is one of the largest generators of wind power in Canada and is among the largest publicly traded renewable power generation companies in the country. Our asset platform is diversified in terms of geography, generation and counterparties.

Our operations span three countries: Canada, the United States and Australia. Our assets located in the United States and Australia are held through economic interests in those assets. As we have economic interests and not direct ownership, the operational results of these assets are not consolidated into our financial statement results. Instead, we receive finance income on the underlying investments, which is included in our consolidated net earnings.

Since the investments in these economic interests provide us with returns as though the assets were owned directly, presenting the operational information provides readers with information to assist them in assessing the financial performance of the assets that generate the finance income related to the economic interests. Please refer to the Discussion of Annual Operating Results section in this MD&A for further information.

In total, we own, directly or through economic interests, an aggregate of 2,993 MW of gross installed capacity[2] in operation. TransAlta manages and operates these facilities on our behalf under the terms of a Management, Administrative and Operational Services Agreement, as amended (the "Management Agreement").

	Owned Assets		Economic Interests					
	Canada		United States		Australia		Total	
As at Dec. 31, 2022	Gross installed capacity (MW)	Number of facilities	Gross installed capacity (MW)	Number of facilities	Gross installed capacity (MW)	Number of facilities	Gross installed capacity (MW)(1)	Number of facilities
Hydro(2)	109	11	—	—	—	—	109	11
Wind & Solar(3)	1,387	22	519	7	—	—	1,906	29
Gas	499	1	29	1	450	6	978	8
Total	**1,995**	**34**	**548**	**8**	**450**	**6**	**2,993**	**48**

(1) The total gross installed capacity reflects the basis of financial consolidation of underlying assets owned, plus those in which we hold an economic interest. Megawatts are rounded to the nearest whole number, and are as at Dec. 31, 2022.
(2) During 2022, the Company closed the sale of two hydro facilities, resulting in a reduction in capacity of 3 MW.
(3) Canadian Wind includes a wind battery storage facility. Canadian Wind gross installed capacity has been affected by the Kent Hills 1 and 2 wind facility outage. See the Significant and Subsequent Events section of this MD&A for further discussion.

[2] We measure capacity as net maximum capacity, which is consistent with industry standards. Capacity figures represent capacity owned and in operation unless otherwise stated. The gross capacity reflects the basis of consolidation of underlying assets owned, plus those in which we hold an economic interest. Net capacity deducts capacity attributable to non-controlling interest in these assets. Megawatts are rounded to the nearest whole number.

Highlights

Consolidated Financial Highlights

Year ended Dec. 31	2022	2021	2020
Renewable energy production (GWh)(1)	**4,658**	4,332	4,471
Revenues	**560**	470	436
Adjusted EBITDA(2)	**487**	463	462
Earnings before income taxes	**91**	150	122
Net earnings attributable to common shareholders	**74**	140	92
Cash flow from operating activities	**257**	336	267
Free cash flow(2)	**347**	357	377
Cash available for distribution(2)	**243**	275	304
Net earnings per share attributable to common shareholders, basic and diluted	**0.28**	0.52	0.35
Dividends declared and paid per common share(3)	**0.94**	0.94	0.94
Free cash flow per share(2)(4)	**1.30**	1.34	1.42
Cash available for distribution per share(2)	**0.91**	1.03	1.14

(1) Includes production from Canadian Wind, Canadian Hydro and US Wind and Solar and excludes Canadian, US and Australian gas-fired generation. Production is not a key revenue driver for gas-fired facilities as most of their revenues are capacity-based.
(2) These items are not defined and have no standardized meaning under IFRS. Please refer to the Discussion of Annual Operating Results, Non-IFRS Measures and Reconciliation of Non-IFRS Measures sections of this MD&A for further discussion of these items, including, where applicable, reconciliations to measures calculated in accordance with IFRS.
(3) Includes Dividend Reinvestment Plan ("DRIP") payments in 2020. The DRIP was suspended in the fourth quarter of 2020.
(4) FCF per share is calculated as free cash flow divided by the weighted average number of common shares outstanding during the year 267 million shares as at Dec. 31, 2022 (2021 - 267 million shares, 2020 - 266 million shares).

As at Dec. 31	2022	2021	2020
Gas installed capacity (MW)(1)	**978**	978	949
Renewables gross installed capacity (MW)(2)	**2,015**	2,018	1,616
Total assets	**3,229**	3,749	3,656
TEA demand loan(3)	**—**	167	195
Debt and lease obligations(4)	**790**	814	692
Total long-term liabilities	**1,118**	1,033	987

(1) Includes Canadian, US and Australian gas-fired generation in which we hold an economic interest.
(2) Includes Canadian Wind, Canadian Hydro and US Wind and Solar capacity. The gross installed capacity reflects the basis of consolidation of underlying assets owned, plus those in which we hold an economic interest. Megawatts are rounded to the nearest whole number.
(3) On Oct. 23, 2020, TransAlta Energy (Australia) Pty Ltd. ("TEA"), a subsidiary of TEA, issued AU$200 million of intercompany loans to the Company. The TEA demand loan was repaid during the current year.
(4) Including current portion.

Renewable energy production for the year ended Dec. 31, 2022, increased by 326 GWh compared to 2021. The increase was mainly due to the additions of the Windrise wind facility and the North Carolina Solar facility, higher wind resources in Ontario and in the US, partially offset by the extended outage at the Kent Hills 1 and 2 wind facilities and lower water resources in Western Canada.

The Company's revenue for the year ended Dec. 31, 2022, increased by $90 million compared to 2021 due to increases in steam revenue, higher renewable energy production and higher environmental credit sales. In addition, during 2021, the Company experienced unfavourable adjustments for unplanned steam supply outages and steam reconciliation adjustments that did not reoccur within the current period.

The Company's adjusted EBITDA for the year ended Dec. 31, 2022, increased by $24 million compared to 2021. The increase in adjusted EBITDA was a result of higher revenues, an increase from the commencement of a new power purchase agreement ("PPA") within the Australian Gas segment and recognition of liquidated damages recovery related to Windrise turbine availability. This was partially offset by higher operations, maintenance and administration ("OM&A") expenses from the addition of the Windrise wind and North Carolina Solar facilities and increased inflationary pressure on costs. In addition, the prior year included the unfavourable impact of liquidated damages recognized for steam supply outages within the Canadian Gas segment partially offset by the South Hedland PPA settlement and Solomon meter station revenues recognized in 2021.

Net earnings attributable to common shareholders for the year ended Dec. 31, 2022, decreased by $66 million compared to the same period in 2021, primarily due to lower finance income related to subsidiaries of TransAlta, higher asset impairments primarily related to higher discount rates, and higher OM&A, lower foreign exchange gains and higher interest expense from issuance of the Windrise green bond in late 2021. This was partially offset by higher revenues, the receipt of insurance proceeds for the replacement costs for the collapsed tower at the Kent Hills site and the Company recognized liquidated damages recoverable due to turbine availability being below the contractual target at the Windrise wind facility. Finance income related to subsidiaries of TransAlta was lower as higher distributions were classified as return of capital.

Overall, our cash flow from operating activities decreased by $79 million from 2021 primarily due to lower net earnings attributable to the common shareholder, the extended outage at the Kent Hills 1 and 2 wind facilities, lower finance income related to subsidiaries of TransAlta and movements in working capital, partially offset by higher wind resources in Ontario, the incremental production from the Windrise wind facility and higher environmental sales. In addition the Sarnia contract liquidated damages provision was settled.

Overall, our FCF and CAFD decreased by $10 million and $32 million from 2021 primarily due to the settlement of the Sarnia contract liquidated damages provision, higher interest costs associated with the financing of the Windrise wind facility and higher current income tax expenses, partially offset by higher adjusted EBITDA. In addition, CAFD was impacted by the commencement of principal repayments on the South Hedland debt in 2022 and higher tax equity distributions with the acquisition of the North Carolina Solar facility.

Our payout ratio of dividends to CAFD in 2022 (excluding the remediation capital associated with Kent Hills) was 103 per cent (2021 - 91 per cent), which is above our target range due to lower CAFD.

Sustaining Capital Expenditures

Sustaining capital spend ensures our facilities operate reliably and safely over a long period of time and relate to repair and maintenance activities expensed. Sustaining capital expenditures for assets we directly own, as well as the facilities in which we own economic interests, are noted below:

Year ended Dec. 31	Canadian Wind	Canadian Hydro	US Wind and Solar	Canadian Gas	US Gas	Australian Gas	Total
2022 Total sustaining capital expenditures	**15**	**3**	**3**	**20**	**—**	**5**	**46**
2021 Total sustaining capital expenditures	11	3	1	6	4	20	45

Sustaining capital expenditures remained consistent compared to 2021 mainly due to higher planned maintenance at our Canadian Gas facilities in 2022 and higher wind turbine component failures and refurbishments in Canadian Wind in 2022, partly offset by lower planned major maintenance at our Australian Gas facilities and US Gas facilities in 2022 and the purchase of a spare engine at our Australian Gas facilities in 2021. The Kent Hills foundation rehabilitation capital expenditures have not been included as part of the sustaining capital metric. Refer to the 2023 Outlook section of this MD&A for further details.

Significant and Subsequent Events

Competitive Outlook

The Company remains committed to creating shareholder value by focusing on owning and acquiring renewable projects supported by long-term power purchase agreements that provide highly contracted cash flows. The Company faces a number of changes to the competitive environment including rising interest rates, allocation of the majority of CAFD to dividends through 2023 which limits the amount of capital that can be allocated to growth opportunities. The Company also projects that will be cash taxable in both Canada and Australia in 2024, and has contract expires in the near- to medium-term that will reduce cash flow. The Company will be principally focused on the sustainment of its dividend in 2023 and beyond, with growth opportunities focused on expansions of its existing assets through the execution of its rights of first offer with TransAlta and potentially, through dropdowns from TransAlta that could partially offset the Company's tax horizon.

Executed Contract Renewals with the IESO at Sarnia Cogeneration and Melancthon 1 Wind Facilities

On Aug. 23, 2022, the Company announced that it was awarded capacity contracts for the Sarnia cogeneration facility and the Melancthon 1 wind facility from the Ontario Independent Electricity System Operator ("IESO") as part of the IESO's Medium-Term Capacity Procurement Request for Proposals (the "RFP"). The new capacity contracts for the Sarnia cogeneration facility and the Melancthon 1 wind facility run from May 1, 2026, to April 30, 2031. It is intended that the existing contracts for the Sarnia cogeneration facility and the Melancthon 1 wind facility will be extended from Dec. 31, 2025, and March 3, 2026, respectively, to April 30, 2026. The Company expects the gross margin from the Sarnia cogeneration facility to be reduced by approximately 30 per cent as a result of the IESO price cap under the new contract.

Executed Industrial Contract Extensions at Sarnia Cogeneration

During the second and fourth quarters of 2022, the Company executed contracts for the supply of electricity and steam, from the Sarnia cogeneration facility, with three of its legacy industrial customers and with three new customers' who were previously re-sold utilities as part of a legacy customer's contract. Following the contracting efforts in 2021 and 2022, the Sarnia cogeneration facility has been fully recontracted without interruption to the customers' delivery terms. The contracts extend from Jan. 1, 2023, to April 30, 2031, for four customers, and to Dec. 31, 2032 for the other three customers.

Kent Hills Wind Facilities Update

On June 2, 2022, the Company announced the rehabilitation plan for the Kent Hills 1 and 2 wind facilities. As part of the plan, the Company amended and extended PPAs with New Brunswick Power Corporation ("NB Power") in respect of each of the Kent Hills 1, 2 and 3 wind facilities providing for an additional 10-year contract term to December 2045 and an effective 10 per cent reduction to the original contract prices from January 2023 through December 2033. In addition, both parties have agreed to work in good faith to evaluate the installation of a battery energy storage system at Kent Hills and to consider a potential repowering of Kent Hills at the end of life in 2045. A waiver for the Kent Hills wind non-recourse bonds ("KH Bonds") was also obtained from the project bondholders and a supplemental indenture was entered into with the bondholders that facilitated the rehabilitation of the Kent Hills 1 and 2 wind facilities. Refer to the Liquidity and Capital Resources section of this MD&A for further detail.

Mount Keith 132kV Transmission Expansion

On May 3, 2022, the Company exercised its option to acquire an economic interest in the expansion of the Mount Keith 132kV transmission system in Western Australia that will support the Northern Goldfields-based operations of BHP Nickel West ("BHP"). The project is being developed under the existing PPA with BHP, which has a term of 15 years. It is expected to be completed in the second half of 2023. The project will facilitate the connection of additional generating capacity to our network to support BHP's operations and increase its competitiveness as a supplier of low-carbon nickel. This is included under the Australian Gas segment.

Board of Director Changes

On May 4, 2022, Mr. Paul Taylor, a member of the Board of Directors, passed away. Mr. Taylor had served on the Board since the Company's initial public offering in 2013 and has made important contributions to the Company given his insights on technology, operations and risk management. Mr. Taylor previously served in various roles at TransAlta Corporation, including President of TransAlta's U.S. Operations.

On Nov. 3, 2022, the Board of Directors appointed Mr. Michael Novelli to the Board of Directors as the TransAlta nominee director, pursuant to the Governance and Cooperation Agreement between TransAlta and the Company dated Aug. 9, 2013. Mr. Novelli retired from the role of Executive Vice President, Generation of TransAlta on Sept. 30, 2022. In this role, he oversaw TransAlta's global operations across all fuel types, including those owned by the Company.

Discussion of Annual Operating Results

The amounts discussed in this section include operational metrics and financial information related to our fuel types and include investments in the economic interests of TransAlta subsidiaries. Since the investments in these economic interests provide us with returns as if we owned the assets, presenting the operational information provides readers with information to assist them in assessing the financial performance of the assets that generate the finance income related to the economic interests. All the assets in the US Wind and Solar, US Gas and Australian Gas business segments are owned through investments in an economic interest.

The following table summarizes operational data and adjusted EBITDA by fuel type :

Year ended Dec. 31	Long-term average renewable energy production (GWh)[1]	Production (GWh)		Adjusted EBITDA[2]	
		2022	2021	2022	2021
Canadian Wind[3]	**3,668**	**2,999**	2,802	**182**	170
Canadian Hydro[4]	**425**	**410**	434	**13**	17
US Wind and Solar[5]	**1,282**	**1,249**	1,096	**91**	78
Total – Renewable energy	**5,375**	**4,658**	4,332	**286**	265
Canadian Gas		**1,379**	1,371	**85**	68
US Gas		**248**	193	**6**	8
Australian Gas		**1,681**	1,672	**132**	141
Corporate		**—**	—	**(22)**	(19)
Total		**7,966**	7,568	**487**	463
Total earnings before income taxes				**91**	150

(1) Long-term average is calculated on an annualized basis from the average annual energy yield predicted by our simulation model, which uses historical resource data and is run using typical periods of 15 years for wind and 30 years for hydro.
(2) This item is not defined and has no standardized meaning under IFRS. Please refer to the Non-IFRS Measures and Reconciliation of Non-IFRS Measures sections of this MD&A for further discussion of these items, including, where applicable, reconciliations to measures calculated in accordance with IFRS.
(3) Canadian Wind long-term average renewable energy production (GWh) excluding Kent Hills 1 and 2 wind facilities which are currently not in operation, is 3,281 GWh for the year ended Dec. 31, 2022.
(4) During 2022, the Company closed the sale of two hydro facilities resulting in a reduction in capacity of 3 MW. The long-term average has been adjusted for the sale of these facilities.
(5) US Wind and Solar includes the North Carolina Solar facility, which was acquired through an investment in tracking preferred shares on Nov. 5, 2021.

Changes in energy production and adjusted EBITDA are discussed below for each of our business segments:

Canadian Wind

Production for the year ended Dec. 31, 2022, increased by 197 GWh compared to 2021, mainly due to higher production from the addition of the Windrise wind facility and higher wind resources in Ontario, partially offset by lower production from the extended outage at the Kent Hills 1 and 2 wind facilities.

Adjusted EBITDA increased by $12 million compared to 2021, mainly due to higher production, recognition of liquidated damages payable to the Company related to Windrise turbine availability and higher environmental attribute revenues, partially offset by the extended outage at the Kent Hills 1 and 2 facilities and OM&A related to the addition of the Windrise wind facility.

Canadian Hydro

Production for the year ended Dec. 31, 2022, decreased by 24 GWh compared to 2021, mainly as a result of lower water resources in British Columbia, partly offset by higher production in Alberta and Ontario due to stronger availability.

Adjusted EBITDA decreased by $4 million compared to 2021, mainly due to lower production and higher OM&A related to increased maintenance activities.

US Wind and Solar

Production for the year ended Dec. 31, 2022, increased by 153 GWh compared to 2021, mainly due to the addition of the North Carolina Solar facility and higher wind resources partially offset by increased outages.

Adjusted EBITDA increased by $13 million compared to 2021, mainly due to increased production and recognition of liquidated damages recoveries, partially offset by lower environmental attribute revenues.

Canadian Gas

Canadian Gas is comprised solely of the Sarnia cogeneration facility. Production for the year ended Dec. 31, 2022, increased by 8 GWh compared to 2021, mainly due to stronger market demand in Ontario during the first two quarters of 2022, partially offset by lower customer loads and lower market demand in the last two quarters of 2022. Due to the nature of our contracts, changes in production do not have a significant financial impact as our contracts are structured as capacity payments with customer-supplied fuel or a passthrough of fuel costs.

Adjusted EBITDA increased by $17 million compared to 2021, mainly due to higher market pricing and increased steam revenues. Additionally, a new customer was commissioned at the site during the year. During the second quarter of 2021, the Company experienced unplanned steam supply outages and steam reconciliation adjustments that did not reoccur within the current period. This was partially offset by higher OM&A costs from inflationary pressure.

US Gas

Production for the year ended Dec. 31, 2022, increased by 55 GWh compared to 2021, mainly due to higher customer demand.

Adjusted EBITDA decreased by $2 million compared to 2021, mainly due to higher fuel costs partially offset by higher production.

Australian Gas

Production for the year ended Dec. 31, 2022, increased by 9 GWh compared to 2021, mainly as a result of changes in customer demand. The contracts in Australia are capacity contracts and our results are largely unaffected by generation.

Adjusted EBITDA decreased by $9 million compared to 2021, mainly due to the South Hedland PPA settlement and Solomon meter station revenues recognized in 2021 and unfavourable foreign exchange impacts, partially offset by the full year of revenue from the commencement of the PPA with Fortescue Metals Group Ltd. ("FMG") at South Hedland during 2022 and lower legal fees.

Fourth Quarter Results

Consolidated Financial Highlights

Three months ended Dec. 31	2022	2021
Renewable energy production (GWh)[1]	**1,264**	1,319
Revenues	**154**	138
Adjusted EBITDA[2]	**134**	141
Earnings before income taxes	**50**	40
Net earnings attributable to common shareholders	**40**	43
Cash flow from operating activities	**89**	71
Free cash flow[2]	**94**	123
Cash available for distribution[2]	**58**	91
Net earnings per share attributable to common shareholders, basic and diluted	**0.15**	0.16
Dividends declared and paid per common share	**0.23**	0.23
Free cash flow per share[2][3]	**0.35**	0.46
Cash available for distribution per share[2]	**0.22**	0.34

(1) Includes production from Canadian Wind, Canadian Hydro and US Wind and Solar and excludes Canadian, US and Australian gas-fired generation. Production is not a key revenue driver for gas-fired facilities as most of their revenues are capacity-based.
(2) These items are not defined and have no standardized meaning under IFRS. Presenting these items from period to period provides management and investors with the ability to evaluate earnings trends more readily in comparison with prior periods' results. Please refer to the Discussion of Annual Operating Results, Non-IFRS Measures and Reconciliation of Non-IFRS Measures sections of this MD&A for further discussion of these items, including, where applicable, reconciliations to measures calculated in accordance with IFRS.
(3) FCF per share is calculated as free cash flow divided by the weighted average number of common shares outstanding during the period of 267 million shares for the three months ended Dec. 31, 2022 (three month ended Dec. 31, 2021 - 267 million shares).

Renewable energy production decreased by 55 GWh compared to 2021, mainly due to lower water resources in British Columbia, lower wind resources in the US and Western Canada, and increased US Wind outages. This decrease was partially offset by incremental production from the commissioning of the Windrise wind facility in the Canadian Wind segment and increased wind resources in Eastern Canada.

The Company's revenue increased by $16 million in the fourth quarter of 2022 due to increases in steam revenue and higher environmental credit sales partially offset by a lower renewable energy production.

Adjusted EBITDA decreased by $7 million in the fourth quarter of 2022, mainly due to the South Hedland PPA settlement and Solomon meter station revenues recognized in 2021 and a net decrease in production, partially offset by the commencement of a new PPA within the Australian Gas segment, higher environmental attribute revenues, and higher wind resources in eastern Canada.

Net earnings attributable to common shareholders decreased by $3 million, primarily due to lower finance income related to subsidiaries of TransAlta. Finance income related to subsidiaries of TransAlta was lower as greater distributions were classified as return of capital. This was partially offset by higher revenues.

Overall, our cash flow from operating activities increased by $18 million from 2021, primarily due to favourable changes in working capital balances.

FCF and CAFD decreased by $29 million and $33 million, respectively, in the fourth quarter of 2022 primarily due to higher current income tax expenses, increased sustaining capital expenditures and lower adjusted EBITDA. In addition, CAFD was impacted by the commencement of principal repayments on the South Hedland debt in 2022.

Discussion of Operational Results for the Three Months Ended Dec. 31, 2022

Presenting adjusted EBITDA from period to period provides management and investors with a proxy for the amount of cash generated from operating activities before net interest expense, non-controlling interest, income taxes and the impacts of timing and sustaining capital expenditures on finance income from subsidiaries of TransAlta.

Three months ended Dec. 31	Long-term average renewable energy production (GWh)[1]	Production (GWh)		Adjusted EBITDA[2]	
		2022	2021	2022	2021
Canadian Wind[3]	**1,155**	**885**	866	**59**	50
Canadian Hydro[4]	**76**	**42**	96	**(2)**	3
US Wind and Solar[5]	**344**	**337**	357	**26**	26
Total – Renewable energy	**1,575**	**1,264**	1,319	**83**	79
Canadian Gas		**338**	374	**26**	23
US Gas		**60**	60	**1**	1
Australian Gas		**405**	428	**30**	42
Corporate		**—**	—	**(6)**	(4)
Total		**2,067**	2,181	**134**	141
Total earnings before income taxes				**50**	40

(1) Long-term average is calculated on an annualized basis from the average annual energy yield predicted by our simulation model, which uses historical resource data and is run using typical periods of 15 years for wind and 30 years for hydro.
(2) This item is not defined and has no standardized meaning under IFRS. Please refer to the Non-IFRS Measures and Reconciliation of Non-IFRS Measures sections of this MD&A for further discussion of these items, including, where applicable, reconciliations to measures calculated in accordance with IFRS.
(3) Canadian Wind long-term average renewable energy production excluding Kent Hills 1 and 2 wind facilities, which are currently not in operation, is 1,043 GWh for the three months ended Dec. 31, 2022.
(4) During 2022 the Company closed the sale of two hydro facilities resulting in a reduction in capacity of 3 MW. The long-term average has been adjusted for the sale of these facilities.
(5) US Wind and Solar includes the North Carolina Solar facility, which was acquired through an investment in tracking preferred shares on Nov. 5, 2021.

Changes in energy production and adjusted EBITDA are discussed below for each of our business segments:

Canadian Wind

Production for the three months ended Dec. 31, 2022, increased by 19 GWh compared to the same period in 2021, as a result of high wind resources in Eastern Canada and the incremental production from the Windrise wind facility, partially offset by lower wind resources in Western Canada.

Adjusted EBITDA for the three months ended Dec. 31, 2022, increased by $9 million compared to the same period in 2021, mainly due to higher production and higher environmental attribute revenues. This increase was partially offset by lower wind resources in Western Canada and higher OM&A related to the addition of the Windrise wind facility.

Canadian Hydro

Production for the three months ended Dec. 31, 2022, decreased by 54 GWh compared to the same period in 2021, mainly due to lower production in British Columbia due to decreased water flows.

Adjusted EBITDA for the three months ended Dec. 31, 2022, decreased by $5 million compared to the same period in 2021, mainly due to lower production in British Columbia. The lower production resulted in a lower gross margin which did not cover the OM&A expenses resulting in a negative adjusted EBITDA.

US Wind and Solar

Production for the three months ended Dec. 31, 2022, decreased by 20 GWh compared to the same period in 2021, mainly due to increased outages and lower wind resources.

Adjusted EBITDA for the three months ended Dec. 31, 2022, remained consistent compared to the same period in 2021.

Canadian Gas

Canadian Gas is comprised solely of the Sarnia cogeneration facility. Production for the three months ended Dec. 31, 2022, decreased by 36 GWh compared to the same period in 2021 due to lower market demand.

Adjusted EBITDA for the three months ended Dec. 31, 2022, increased by $3 million compared to the same period in 2021, mainly due to increased steam revenues and a new customer commissioned at the site during the year, partially offset by a customer settlement, lower merchant pricing in the quarter and higher OM&A costs from inflationary pressure.

US Gas

Production and adjusted EBITDA for the three months ended Dec. 31, 2022, remained consistent compared to the same period in 2021.

Australian Gas

Production for the three months ended Dec. 31, 2022, decreased by 23 GWh compared to the same period in 2021. The contracts in Australia are capacity contracts, and our results are largely unaffected by generation.

Adjusted EBITDA for the three months ended Dec. 31, 2022, decreased by $12 million compared to the same period in 2021, mainly due to the South Hedland PPA settlement and additional revenues recognized in 2021 partially offset by the commencement of the PPA with FMG at South Hedland in 2022 and lower legal fees.

Selected Quarterly Information

	Q1 2022	Q2 2022	Q3 2022	Q4 2022
Revenue	143	139	124	**154**
Net earnings (loss) attributable to common shareholders	41	13	(20)	**40**
Cash flow from operating activities	103	28	37	**89**
Net earnings (loss) per share attributable to common shareholders, basic and diluted[1]	0.15	0.05	(0.07)	**0.15**

	Q1 2021	Q2 2021	Q3 2021	Q4 2021
Revenue	126	92	114	138
Net earnings attributable to common shareholders	52	25	20	43
Cash flow from operating activities	103	79	83	71
Net earnings per share attributable to common shareholders, basic and diluted[1]	0.19	0.09	0.07	0.16

(1) Basic and diluted earnings per share attributable to common shareholders are calculated each period using the weighted average common shares outstanding during the period. As a result, the sum of the earnings per share for the four quarters making up the calendar year may sometimes differ from the annual earnings per share.

Our business results fluctuate with seasonal variations, with the first and fourth quarters seeing the largest wind volumes and the second and third quarters recording higher hydro volumes. As wind forms a larger part of our renewable fleet, higher revenues and earnings are expected in the first and fourth quarters.

Net earnings attributable to common shareholders have been impacted by the following variations and events:

- Revenue related to the sale of Alberta carbon offsets and emissions performance credits to TransAlta occurred in the first, second and fourth quarters of 2022, and in the first, third and fourth quarters of 2021, respectively;
- Liquidated damages related to turbine availability at the Windrise wind facility in the first, second, third and fourth quarter of 2022;
- Recognized insurance proceeds for the single tower failure at Kent Hills wind facilities in the second quarter of 2022;
- The acquisition of an economic interest in the North Carolina Solar facility in the fourth quarter of 2021;
- The commissioning of the Windrise wind facility in the fourth quarter of 2021;
- The continued extended outage of the Kent Hills 1 and 2 wind facilities from the fourth quarter of 2021 through the fourth quarter of 2022. The extended outage is expected to continue into 2023;
- The impact on depreciation in the fourth quarter of 2021 with accelerating the depreciation of the foundations related to Kent Hills 1 and 2 wind facilities;
- The effects of asset impairments recognized in the second and third quarter of 2022 and the third and fourth quarter of 2021;
- The unplanned outages at the Sarnia cogeneration facility in the second quarter of 2021;
- The acquisition of an economic interest in Skookumchuck wind facility and the Ada cogeneration facility on April 1, 2021; and
- The impact of the updated provision estimates for the transmission line loss rule proceeding during the first quarter of 2021.

Net earnings attributable to common shareholders also include various effects arising from our economic interest investments through financial instruments as follows:

- Dividends or return of capital can vary each quarter depending on the pre-tax earnings from our economic interest investments;
- Fluctuations in the strength of the Canadian dollar relative to the US dollar result in foreign exchange gains and losses on US dollar-denominated promissory notes. Foreign exchange losses were recognized in the fourth quarter of 2021 when it was repaid in full; and
- Fluctuations in the strength of the Canadian dollar relative to the Australian dollar result in foreign exchange gains and losses on the Australian dollar-denominated TEA Demand loan. In the fourth quarter of 2022 it was repaid in full.

Additional IFRS Measures

An additional IFRS measure is a line item, heading or subtotal that is relevant to an understanding of the financial statements but is not a minimum line item mandated under IFRS, or the presentation of a financial measure that is relevant to an understanding of the financial statements, but is not presented elsewhere in the financial statements. We have included line items entitled "gross margin" and "operating income" in our Consolidated Statements of Earnings. Presenting these line items provides management and investors with a measure of ongoing operating performance that is readily comparable from period to period.

Non-IFRS Measures

We evaluate our performance using a variety of measures to provide management and investors with an understanding of our financial position and results. Certain of the measures discussed in this MD&A are not defined under IFRS and therefore should not be considered in isolation, as a substitute for, as an alternative to, or more meaningful than measures as determined in accordance with IFRS when assessing our financial performance or liquidity. These measures have no standardized meaning under IFRS and may not be comparable to similar measures presented by other issuers.

The Company's key non-IFRS measures are adjusted EBITDA, FCF and CAFD.

Adjusted EBITDA

Adjusted EBITDA is an important metric for management since it represents our core business profitability. Interest, taxes, depreciation and amortization are not included, as differences in accounting treatments may distort our core business results. We present adjusted EBITDA along with operational information of the assets in which we own an economic interest so that readers can better understand and evaluate the drivers of those assets in which we have an economic interest. Since the economic interests are designed to provide the Company with returns as if we owned the assets themselves, presenting the operational information and adjusted EBITDA provides a more complete picture for readers to understand the underlying nature of the investments and the resultant cash flows that would otherwise only be presented as finance income from the investments.

Adjusted EBITDA is comprised of our reported EBITDA adjusted to exclude the impact of unrealized mark-to-market gains and losses, asset impairments and insurance recoveries, plus the adjusted EBITDA of the facilities in which we hold an economic interest, which is the facilities' reported EBITDA adjusted for: 1) finance lease income and the change in the finance lease receivable amount; 2) contractually fixed management costs; 3) interest earned on the prepayment of certain transmission costs; 4) the impact of unrealized mark-to-market gains or losses; and 5) asset impairments.

Free Cash Flow

FCF represents the amount of cash that is available from operations and investments in subsidiaries of TransAlta in which we have an economic interest, to invest in growth initiatives, to make scheduled principal repayments on debt, repay maturing debt, pay common share dividends or repurchase common shares. Changes in working capital are excluded so that FCF is not distorted by changes that we consider temporary in nature, reflecting, among other things, the impact of seasonal factors and the timing of receipts and payments.

FCF is calculated as the cash flow from operating activities before changes in working capital, less sustaining capital expenditures, distributions paid to subsidiaries' non-controlling interest, finance income from economic interests and principal repayments on lease obligations, plus FCF of the assets owned through economic interests, which is calculated as adjusted EBITDA from the economic interests less interest expense, sustaining capital expenditures, current income tax expense, insurance recovery and working capital and other timing. FCF per share is calculated using the weighted average number of common shares outstanding during the period.

Cash Available For Distribution

CAFD can be used as a proxy for the cash that will be available to common shareholders of the Company. CAFD is calculated as FCF less tax equity distributions and scheduled principal repayments of amortizing debt.

One of the primary objectives of the Company is to provide reliable and stable cash flows and presenting FCF and CAFD helps readers assess our cash flows in comparison to prior periods. See the Reconciliation of Non-IFRS Measures section's of this MD&A for additional information.

Reconciliation of Non-IFRS Measures for the Three Months Ended Dec. 31, 2022

Reconciliation of Adjusted EBITDA to Earnings before Income Tax

Since the economic interests are designed to provide the Company with returns as if we owned the assets ourselves, presenting the operating information and adjusted EBITDA provides a more complete picture to help readers understand the underlying nature of the investments and the resultant cash flows that would otherwise only be presented as finance income from investments.

	Owned Assets				Economic Interests					
3 months ended Dec. 31, 2022	Canadian Wind	Canadian Hydro	Canadian Gas	Corporate	US Wind and Solar	US Gas	Australian Gas	Total	Investments in economic interests and adjustments	IFRS financials
Revenues[1]	73	3	78	—	31	7	46	238	(84)	**154**
Fuel, royalties and other costs[2]	4	1	40	—	1	4	6	56	(11)	**45**
Gross margin	**69**	**2**	**38**	**—**	**30**	**3**	**40**	**182**	**(73)**	**109**
Operations, maintenance and administration[3]	9	3	8	6	6	2	10	44	(18)	**26**
Taxes, other than income taxes	2	1	(1)	—	1	—	—	3	(1)	**2**
Net other operating (income) loss	(1)	—	5	—	(3)	—	—	1	3	**4**
Adjusted EBITDA[4]	**59**	**(2)**	**26**	**(6)**	**26**	**1**	**30**	**134**	**(57)**	**77**
Depreciation and amortization										**(34)**
Finance income related to subsidiaries of TransAlta										**16**
Interest income										**2**
Interest expense										**(13)**
Gain on sale of assets										**2**
Earnings before income tax										**50**

(1) Adjusted EBITDA excludes the impact of unrealized mark-to-market gains or losses. Amounts related to economic interests include finance lease income adjusted for change in finance lease receivable.
(2) Amounts related to economic interests include interest earned on the prepayment of certain transmission costs.
(3) Amounts related to economic interests include the effect of contractually fixed management costs.
(4) Adjusted EBITDA is a non-IFRS measure and has no standardized meaning under IFRS. Refer to Additional IFRS Measures & Non-IFRS Measures of this MD&A.

3 months ended Dec. 31, 2021	Owned Assets				Economic Interests					
	Canadian Wind	Canadian Hydro	Canadian Gas	Corporate	US Wind and Solar	US Gas	Australian Gas	Total	Investments in economic interests and adjustments	IFRS financials
Revenues[1]	65	6	68	—	32	6	52	229	(91)	138
Fuel, royalties and other costs[2]	3	—	38	—	—	4	1	46	(5)	41
Gross margin	62	6	30	—	32	2	51	183	(86)	97
Operations, maintenance and administration[3]	11	2	8	4	4	1	9	39	(14)	25
Taxes, other than income taxes	1	1	(1)	—	2	—	—	3	(2)	1
Adjusted EBITDA[4]	50	3	23	(4)	26	1	42	141	(70)	71
Depreciation and amortization										(49)
Asset impairment charges										(7)
Finance income related to subsidiaries of TransAlta										40
Interest income										1
Interest expense										(14)
Foreign exchange loss										(2)
Earnings before income tax										40

(1) Adjusted EBITDA excludes the impact of unrealized mark-to-market gains or losses. Amounts related to economic interests include finance lease income adjusted for change in finance lease receivable.
(2) Amounts related to economic interests include interest earned on the prepayment of certain transmission costs.
(3) Amounts related to economic interests include the effect of contractually fixed management costs.
(4) Adjusted EBITDA is a non-IFRS measure and has no standardized meaning under IFRS. Refer to Additional IFRS Measures & Non-IFRS Measures of this MD&A.

Reconciliation of Cash Flow from Operating Activities to FCF and CAFD

The table below reconciles our cash flow from operating activities to our FCF and comparable CAFD:

Three months ended Dec. 31	2022	2021
Cash flow from operating activities	**89**	71
Change in non-cash operating working capital balances	**(3)**	44
Cash flow from operations before changes in working capital	**86**	115
Adjustments:		
Sustaining capital expenditures – owned assets	**(19)**	(8)
Finance and interest income – economic interests[1]	**(16)**	(40)
FCF – economic interests[1]	**43**	56
FCF[2]	**94**	123
Deduct:		
Tax equity distributions	**(10)**	(9)
Principal repayments of amortizing debt	**(26)**	(23)
CAFD[2]	**58**	91
Weighted average number of common shares outstanding in the period (millions)	**267**	267
FCF per share[2]	**0.35**	0.46
CAFD per share[2]	**0.22**	0.34

(1) Refer to the Reconciliation of FCF to Finance Income Related to Subsidiaries of TransAlta below in this MD&A.
(2) These items are non-IFRS measures and have no standardized meaning under IFRS. Refer to the Additional IFRS Measures and Non-IFRS Measures sections for further details.

Reconciliation of FCF to Finance Income Related to Subsidiaries of TransAlta

Three months ended Dec. 31	2022	2021
Finance income related to subsidiaries of TransAlta	**16**	40
Tax equity distributions	**10**	9
Principal repayments of amortizing debt	**2**	—
Return of capital and redemptions	**12**	7
Effects of changes in working capital and other timing	**3**	—
FCF[1]	**43**	56

(1) This item is a non-IFRS measure and has no standardized meaning under IFRS. Refer to the Additional IFRS Measures and Non-IFRS Measures sections for further details.

Reconciliation of Adjusted EBITDA to FCF and CAFD

Three months ended Dec. 31, 2022	Owned Assets				Economic Interests			
	Canadian Wind	Canadian Hydro	Canadian Gas	Corporate	US Wind and Solar[1]	US Gas	Australian Gas	Total
Adjusted EBITDA[2]	**59**	**(2)**	**26**	**(6)**	**26**	**1**	**30**	**134**
Provisions and contract liabilities	**2**	**—**	**—**	**—**	**—**	**—**	**—**	**2**
Interest expense	**—**	**—**	**—**	**(8)**	**(2)**	**—**	**(6)**	**(16)**
Current income tax expense	**(2)**	**—**	**—**	**(2)**	**—**	**—**	**(5)**	**(9)**
Realized foreign exchange gain	**—**	**—**	**—**	**1**	**—**	**—**	**—**	**1**
Sustaining capital expenditures	**(5)**	**(1)**	**(13)**	**—**	**(1)**	**—**	**(2)**	**(22)**
Interest income	**—**	**—**	**—**	**2**	**—**	**—**	**2**	**4**
FCF[3]	**54**	**(3)**	**13**	**(13)**	**23**	**1**	**19**	**94**
Deduct:								
Tax equity distributions	**—**	**—**	**—**	**—**	**(10)**	**—**	**—**	**(10)**
Principal repayments of amortizing debt	**(24)**	**—**	**—**	**—**	**—**	**—**	**(2)**	**(26)**
CAFD[3]	**30**	**(3)**	**13**	**(13)**	**13**	**1**	**17**	**58**

(1) US Wind and Solar includes the North Carolina Solar facility, which was acquired through an investment in tracking preferred shares on Nov. 5, 2021. The economic benefit of the North Carolina Solar transaction was effective Nov. 5, 2021.
(2) Adjusted EBITDA is defined in the Additional IFRS Measures and Non-IFRS Measures sections and reconciled to earnings before income taxes above.
(3) FCF and CAFD are defined in the Additional IFRS Measures and Non-IFRS Measures sections and reconciled to cash flow from operating activities above.

Three months ended Dec. 31, 2021	Owned Assets				Economic Interests			
	Canadian Wind	Canadian Hydro	Canadian Gas	Corporate	US Wind and Solar	US Gas	Australian Gas	Total
Adjusted EBITDA[1]	50	3	23	(4)	26	1	42	141
Interest expense	—	—	—	(8)	(1)	—	(6)	(15)
Current income tax (expense) recovery[2]	12	—	—	(2)	—	—	(2)	8
Realized foreign exchange gain	—	—	—	1	—	—	—	1
Sustaining capital expenditures	(4)	(1)	(4)	—	—	(3)	—	(12)
Currency adjustment and interest income	—	—	—	1	—	—	—	1
Other[2]	—	—	—	—	(1)	—	—	(1)
FCF[3]	58	2	19	(12)	24	(2)	34	123
Deduct:								
Tax equity distributions	—	—	—	—	(9)	—	—	(9)
Principal repayments of amortizing debt	(23)	—	—	—	—	—	—	(23)
CAFD[3]	35	2	19	(12)	15	(2)	34	91

(1) Adjusted EBITDA is defined in the Additional IFRS Measures and Non-IFRS Measures sections and reconciled to earnings before income taxes above.
(2) During 2022, the tax withheld from dividend payments in the US Wind and Solar segment comparative figures was reclassified to other to conform to the current periods presentation.
(3) FCF and CAFD are defined in the Additional IFRS Measures and Non-IFRS Measures sections and reconciled to cash flow from operating activities above.

Reconciliation of Non-IFRS Measures for the Year Ended Dec. 31, 2022

Reconciliation of Adjusted EBITDA to Earnings before Income Tax

	Owned Assets				Economic Interests					
12 months ended Dec. 31, 2022	Canadian Wind	Canadian Hydro	Canadian Gas	Corporate	US Wind and Solar	US Gas	Australian Gas	Total	Investments in economic interests and adjustments	IFRS financials
Revenues[1]	233	29	300	—	114	26	176	878	(318)	**560**
Fuel, royalties and other costs[2]	16	6	177	—	3	15	11	228	(29)	**199**
Gross margin	**217**	**23**	**123**	**—**	**111**	**11**	**165**	**650**	**(289)**	**361**
Operations, maintenance and administration[3]	40	8	33	22	18	5	33	159	(56)	**103**
Taxes, other than income taxes	7	2	—	—	5	—	—	14	(5)	**9**
Net other operating (income) loss	(12)	—	5	—	(3)	—	—	(10)	(4)	**(14)**
Adjusted EBITDA[4]	**182**	**13**	**85**	**(22)**	**91**	**6**	**132**	**487**	**(224)**	**263**
Depreciation and amortization										**(141)**
Asset impairment charges										**(31)**
Finance income related to subsidiaries of TransAlta										**40**
Interest income										**6**
Interest expense										**(50)**
Finance lease income										**1**
Foreign exchange gain										**1**
Gain on sale of assets										**2**
Earnings before income tax										**91**

(1) Adjusted EBITDA excludes the impact of unrealized mark-to-market gains or losses. Amounts related to economic interests include finance lease income adjusted for change in finance lease receivable.
(2) Amounts related to economic interests include interest earned on the prepayment of certain transmission costs.
(3) Amounts related to economic interests include the effect of contractually fixed management costs.
(4) Adjusted EBITDA is a non-IFRS measure and has no standardized meaning under IFRS.

12 months ended Dec. 31, 2021	Owned Assets				Economic Interests					
	Canadian Wind	Canadian Hydro	Canadian Gas	Corporate	US Wind and Solar	US Gas	Australian Gas	Total	Investments in economic interests and adjustments	IFRS financials
Revenues[1]	224	29	217	—	100	22	182	774	(304)	470
Fuel, royalties and other costs[2]	10	3	119	—	2	10	5	149	(17)	132
Gross margin	214	26	98	—	98	12	177	625	(287)	338
Operations, maintenance and administration[3]	38	7	30	19	15	4	36	149	(55)	94
Taxes, other than income taxes	6	2	—	—	5	—	—	13	(5)	8
Adjusted EBITDA[4]	170	17	68	(19)	78	8	141	463	(227)	236
Depreciation and amortization										(150)
Asset impairment charges										(17)
Finance income related to subsidiaries of TransAlta										108
Interest income										6
Interest expense										(42)
Finance lease income										1
Foreign exchange gain										8
Earnings before income tax										150

(1) Adjusted EBITDA excludes the impact of unrealized mark-to-market gains or losses. Amounts related to economic interests include finance lease income adjusted for change in finance lease receivable.
(2) Amounts related to economic interests include interest earned on the prepayment of certain transmission costs.
(3) Amounts related to economic interests include the effect of contractually fixed management costs.
(4) Adjusted EBITDA is a non-IFRS measure and has no standardized meaning under IFRS.

Reconciliation of Reported Cash Flow from Operating Activities to FCF and CAFD

Year ended Dec. 31	2022	2021
Cash flow from operating activities	**257**	336
Change in non-cash operating working capital balances	**(5)**	(13)
Cash flow from operations before changes in working capital	**252**	323
Adjustments:		
Sustaining capital expenditures – owned assets	**(38)**	(19)
Distributions paid to subsidiaries' non-controlling interest	**—**	(3)
Finance income – economic interests[1]	**(40)**	(108)
Principal repayments of lease obligations[2]	**(1)**	(1)
FCF — economic interest	**174**	165
FCF[3]	**347**	357
Deduct:		
Tax equity distributions	**(37)**	(30)
Principal repayments of amortizing debt	**(67)**	(52)
CAFD[3]	**243**	275
Weighted average number of common shares outstanding in the period (millions)	**267**	267
FCF per share[3]	**1.30**	1.34
CAFD per share[3]	**0.91**	1.03

(1) Refer to the Reconciliation of FCF to Finance Income Related to Subsidiaries of TransAlta below in this MD&A.
(2) Includes owned assets and economic interests.
(3) These items are non-IFRS measures and have no standardized meaning under IFRS. Refer to the Additional IFRS Measures and Non-IFRS Measures sections for further details.

Reconciliation of FCF to Finance Income Related to Subsidiaries of TransAlta

The following table is a reconciliation of the finance income recognized on those assets we hold an economic interest in to the FCF from those assets.

Year ended Dec. 31	2022	2021
Finance income related to subsidiaries of TransAlta	**40**	108
Tax equity distributions	**37**	30
Principal repayments of amortizing debt	**13**	—
Return of capital and redemptions	**92**	24
Effects of changes in working capital and other timing	**(8)**	3
FCF[1]	**174**	165

(1) This item is a non-IFRS measure and has no standardized meaning under IFRS. Refer to the Additional IFRS Measures and Non-IFRS Measures sections for further details.

Reconciliation of Adjusted EBITDA to FCF and CAFD

	Owned Assets				Economic Interests			
Year ended Dec. 31, 2022	Canadian Wind	Canadian Hydro	Canadian Gas	Corporate	US Wind and Solar[1]	US Gas	Australian Gas	Total
Adjusted EBITDA[2]	**182**	**13**	**85**	**(22)**	**91**	**6**	**132**	**487**
Provisions and contract liabilities	1	—	(11)	—	—	—	—	(10)
Interest expense	—	—	—	(41)	(4)	—	(24)	(69)
Current income tax expense	(1)	—	—	(2)	—	—	(20)	(23)
Realized foreign exchange gain	—	—	—	2	—	—	—	2
Sustaining capital expenditures	(15)	(3)	(20)	—	(3)	—	(5)	(46)
Currency adjustment and interest income	—	—	—	6	—	—	5	11
Principal repayments lease obligations	(1)	—	—	—	—	—	—	(1)
Other	—	—	—	—	(4)	—	—	(4)
FCF[3]	**166**	**10**	**54**	**(57)**	**80**	**6**	**88**	**347**
Deduct:								
Tax equity distributions	—	—	—	—	(37)	—	—	(37)
Principal repayments of amortizing debt	(54)	—	—	—	—	—	(13)	(67)
CAFD[3]	**112**	**10**	**54**	**(57)**	**43**	**6**	**75**	**243**

(1) US Wind and Solar includes the North Carolina Solar facility, which was acquired through an investment in tracking preferred shares on Nov. 5, 2021. The economic benefit of the North Carolina Solar transaction was effective Nov. 5, 2021.
(2) Adjusted EBITDA is defined in the Additional IFRS Measures and Non-IFRS Measures sections and reconciled to earnings before income taxes above.
(3) FCF and CAFD are defined in the Additional IFRS Measures and Non-IFRS Measures sections and reconciled to cash flow from operating activities above.

Year ended Dec. 31, 2021	Owned Assets				Economic Interests			
	Canadian Wind	Canadian Hydro	Canadian Gas	Corporate	US Wind and Solar	US Gas	Australian Gas	Total
Adjusted EBITDA[1]	170	17	68	(19)	78	8	141	463
Provisions	(6)	—	12	—	—	—	—	6
Interest expense	—	—	—	(33)	(2)	—	(24)	(59)
Current income tax expense[2]	—	—	—	(2)	—	—	(11)	(13)
Realized foreign exchange gain	—	—	—	3	—	—	—	3
Sustaining capital expenditures	(11)	(3)	(6)	—	(1)	(4)	(20)	(45)
Distributions paid to subsidiaries' non-controlling interest	(3)	—	—	—	—	—	—	(3)
Currency adjustment and interest income	—	—	—	6	—	—	2	8
Principal repayments lease obligations	(1)	—	—	—	—	—	—	(1)
Other[2]	—	—	—	—	(2)	—	—	(2)
FCF[3]	149	14	74	(45)	73	4	88	357
Deduct:								
Tax equity distributions	—	—	—	—	(30)	—	—	(30)
Principal repayments of amortizing debt	(52)	—	—	—	—	—	—	(52)
CAFD[3]	97	14	74	(45)	43	4	88	275

(1) Adjusted EBITDA is defined in the Additional IFRS Measures and Non-IFRS Measures sections and reconciled to earnings before income taxes above.
(2) During 2022, the tax withheld from dividend payments in the US Wind and Solar segment comparative figures was reclassified to other to conform to the current periods presentation.
(3) FCF and CAFD are defined in the Additional IFRS Measures and Non-IFRS Measures sections and reconciled to cash flow from operating activities above.

Liquidity and Capital Resources

Liquidity risk arises from our ability to meet general funding needs to manage the assets, liabilities and capital structure of the Company and to engage in hedging activities. Liquidity risk is managed by maintaining sufficient liquid financial resources to fund obligations as they come due in the most cost-effective manner. See the Risk Management – Risk Factors – Liquidity Risk section of this MD&A.

We expect to maintain adequate available liquidity to enable us to fund growth initiatives, operational expenses, capital expenditures, distributions to the non-controlling interest, interest and principal payments on debt and dividends. Principal sources of liquidity include cash generated from operations, capital markets and funding from our existing credit facility. The Company also depends on future growth to support liquidity and to maintain the amount of cash available for distribution.

Financial Position

The following table highlights significant changes in the Consolidated Statements of Financial Position from Dec. 31, 2021 to Dec. 31, 2022:

As at Dec. 31	2022	2021	Increase/ (decrease)	Primary factors explaining change
Cash and cash equivalents	**89**	244	(155)	Decreased due to the timing of receipts and payments.
Accounts receivable	**135**	120	15	Increased due to timing of receipts and collections and liquidated damages payable to the Company related to turbine availability at the Windrise wind facility.
Property, plant and equipment, net	**1,766**	1,897	(131)	Decreased due to depreciation, revised decommissioning provisions due to changes in discount rates, the reclassification of the Windrise wind facility transmission infrastructure from PPE to long-term other assets, and the impairment of Canadian Wind and Canadian Hydro assets, partially offset by sustaining capital and the Kent Hills rehabilitation.
Intangible assets	**81**	92	(11)	Decrease due to amortization expense.
Investments in subsidiaries of TransAlta	**1,037**	1,270	(233)	Decreased due to changes in fair value and increased return of capital. Refer to the Financial Instruments section of this MD&A for more details.
Accounts payable and accrued liabilities	**128**	82	46	Timing of payments and accruals.
Contract liabilities (including current portion)	**8**	19	(11)	Decreased due to the settlement of the liquidated damages due to the Sarnia outages.
TEA demand loan	**—**	167	(167)	Decreased due to the principal repayment upon maturity.
Long-term debt (including current portion)	**790**	814	(24)	Decreased due to principal repayments on the KH bonds, New Richmond Wind bond and the Melancthon Wolfe Wind bond, partly offset by the drawn on credit facility.
Decommissioning and other provisions	**117**	175	(58)	Decreased due to increase in discount rates.
Equity attributable to shareholders	**1,756**	2,074	(318)	Decrease due to dividends and other comprehensive loss from unfavourable fair value changes, partially offset by net earnings.

Debt and Lease Obligations

		Utilized		
As at Dec. 31, 2022	Total facility limit	Outstanding letters of credit[(1)]	Drawings	Available capacity
Committed credit facility	**700**	**98**	**33**	**569**

(1) Letters of credit were issued from the Company's $150 million non-committed demand facilities. These obligations are backstopped and reduce the available capacity on the syndicated credit facility.

As at Dec. 31, 2022, there was $33 million in drawings under the credit facility. During 2022, the term of the committed credit facility was extended by one year to June 30, 2026.

The Company has an uncommitted $150 million demand letter of credit facility, under which $98 million of letters of credit have been issued as at Dec. 31, 2022 (2021 – $98 million).

Debt and lease obligations, including the TEA demand loan, totaled $790 million as at Dec. 31, 2022, compared to $981 million as at Dec. 31, 2021. The decrease in debt is primarily due to the full repayment of the TEA demand loan on its maturity date and principal repayments on non-recourse bonds of $54 million, offset by credit facility drawings of $33 million. The funds repaid on the TEA demand loan will be reserved within TransAlta Energy (Australia) restricted for the Company's use to fund future growth in Australia, including the Northern Goldfields "Solar and Battery storage project" and the Mount Keith 132kV expansion project.

We are subject to customary positive and negative covenants related to debt and are not in violation of any of these covenants. During 2022, the Company obtained a waiver and entered into a supplemental indenture that facilitates the rehabilitation of the Kent Hills 1 and 2 wind facilities. Upon receipt of the waiver, the Company reclassified the bond outstanding to non-current liabilities, with the exception of the scheduled principal repayments due within 12 months. In accordance with the supplemental indenture, Kent Hills Wind LP cannot make any distributions to its partners until the foundation replacement work has been completed.

The Melancthon Wolfe, New Richmond, Kent Hills and Windrise wind bonds are subject to customary financing conditions and covenants that restrict the Company's ability to access funds generated by the facilities' operations. Upon meeting certain distribution tests, typically performed once per quarter, the funds can be distributed by the subsidiary entities to their respective parent entity. These restrictions include the ability to meet a debt service coverage ratio prior to distribution. Funds in these entities that have accumulated since the fourth quarter test will remain there until the next debt service coverage ratio can be calculated in the first quarter of 2023. As at Dec. 31, 2022, $89 million of cash was subject to these financial restrictions (2021 – $41 million).

The Company had no restricted cash as at Dec. 31, 2022, and Dec. 31, 2021.

Share Capital

On Dec. 31, 2022, we had approximately 266.9 million (2021 – 266.9 million) common shares issued and outstanding. As at Feb. 22, 2023, there was no change in common shares issued and outstanding.

Capital Structure

Our capital structure consists of the following components as shown below:

As at Dec. 31	2022		2021	
	Amount	%	Amount	%
Total debt[(1)]	**790**	**32**	981	34
Cash and cash equivalents	**(89)**	**(4)**	(244)	(9)
Non-controlling interest	**49**	**2**	49	2
Equity attributable to shareholders	**1,756**	**70**	2,074	73
Total capital	**2,506**	**100**	2,860	100

(1) Total debt includes long-term debt and lease obligations (see Note 18 of the Annual Financial Statements for more detail). The TEA demand loan was repaid on the maturity date of Oct. 26, 2022.

Total debt decreased mainly due to repayment of the TEA demand loan and the principal repayments on the KH Bond, New Richmond Wind bond and the Melancthon Wolfe Wind bond partially offset by the draws on credit facility. Cash and cash equivalents decreased compared to 2021, mainly due to the repayment of the TEA demand loan.

Certain facilities in which the Company holds economic interests are partially funded with project debt and tax equity that is not consolidated in our capital structure.

Commitments

Payments required under the Company's contractual obligations are as follows:

	Long-term service agreements(1)	General administrative services(2)	Kent Hills rehabilitation	Long-term debt and lease obligations	Interest on debt and lease obligations	Other(3)	Total
2023	61	21	45	109	30	38	**304**
2024	48	20	—	67	27	2	**164**
2025	35	19	—	70	25	2	**151**
2026	33	18	—	101	21	2	**175**
2027	21	17	—	70	17	2	**127**
2028 and thereafter	140	81	—	382	77	36	**716**
Total	**338**	**176**	**45**	**799**	**197**	**82**	**1,637**

(1) Long-term service agreements for wind and gas facilities, including economic interests.
(2) Includes the asset management and optimization fees for the Company's Sarnia cogeneration facility.
(3) Includes land access, other leases, purchase contracts and natural gas purchase and transportation.

Contingencies

In the normal course of business, the Company may become party to litigation, proceedings or regulatory investigations. As at Dec. 31, 2022, the company had no material contingencies.

Cash Flows

The following table highlights significant changes in the Consolidated Statements of Cash Flows for the year ended Dec. 31, 2022, compared to the year ended Dec. 31, 2021:

Year ended Dec. 31	2022	2021	Change	Primary factors explaining change
Cash and cash equivalents, beginning of year	**244**	582	(338)	
Provided by (used in):				
Operating activities	**257**	336	(79)	Cash flow from operating activities has decreased due to the lower finance income as a result of increased return of capital, reduction in production from the extended outage at the Kent Hills 1 and 2 wind facilities and the settlement of the Sarnia liquidated damages partially offset by increase in production from the newly added Windrise wind facility.
Investing activities	**34**	(525)	559	Cash flow from investing activities has increased as there were no acquisitions in the current period and due to higher return of capital from economic investments and the Kent Hills insurance recovery. In the prior period, the Company acquired the Windrise wind facility, funded its construction and acquired an economic interest in the Skookumchuck wind facility and the Ada cogeneration facility.
Financing activities	**(446)**	(149)	(297)	Cash flow used in financing activities has decreased primarily as a result of the full principal repayment on the TEA demand loan. These funds will be held to fund future growth projects.
Cash and cash equivalents, end of year	**89**	244	(155)	

Unconsolidated Structured Entities or Arrangements

Disclosure is required of all unconsolidated structured entities or arrangements such as transactions, agreements or contractual arrangements with unconsolidated entities, structured finance entities, special purpose entities or variable interest entities that are reasonably likely to materially affect liquidity or the availability of, or requirements for, capital resources. We currently have no such unconsolidated structured entities or arrangements.

Financial Instruments

Our financial instruments as at the end of the referenced periods are as follows:

As at Dec. 31	2022		2021	
	Fair value Level II	Fair value Level III	Fair value Level II	Fair value Level III
Preferred Shares Tracking Australia Cash Flows	**—**	**556**	—	697
Preferred Shares Tracking Earnings and Distributions of US Wind and Solar Facilities	**—**	**455**	—	539
Preferred Shares Tracking Earnings and Distributions of US Gas	**—**	**26**	—	34
Net risk management liabilities	**(2)**	**—**	(3)	—

The Company has invested in preferred shares of subsidiaries of TransAlta that pay dividends based on certain financial results of other subsidiaries of TransAlta.

At Dec. 31, 2022, Level III financial instruments were comprised of financial assets with a carrying value of $1,037 million (2021 – $1,270 million).

At Dec. 31, 2022, the investment in the Economic Interest Investments decreased by $233 million compared to Dec. 31, 2021. Of the decrease in fair value, $141 million was related to the Preferred Shares Tracking Australia Cash Flows, which reflects an increase in discount rates partially offset by foreign exchange impacts. The decrease in fair value of $84 million was related to the Preferred Shares Tracking Earnings and Distributions of US Wind and Solar Facilities, which was primarily due to an increase in discount rates, partially offset by strengthening forward merchant prices and foreign exchange impacts. Included in the decrease in fair value of the Economic Interest Investments was returns of capital of $92 million in the same period.

Refer to the Material Accounting Policies and Critical Accounting Estimates section of this MD&A for additional information on these Level III fair value measurements.

At Dec. 31, 2022, Level II financial instruments comprised financial assets with a carrying value of $2 million related to net risk management liabilities (2021 – $3 million).

Financial instruments give rise to credit risk, foreign currency risk, interest risk and liquidity risk. The Company is exposed to market risks based on changes in the fair value of the preferred shares tracking Australia Cash Flows, preferred shares tracking earnings and distributions of Wyoming, Big Level and Antrim, Lakeswind, Mass Solar, Skookumchuck, North Carolina and Ada (know collectively as "the Economic Interest Investments"). A five per cent increase (decrease) in the value of these securities would result in an $52 million increase (decrease) in other comprehensive income as at Dec. 31, 2022. We accept the market risk that arises from our Economic Interest Investments. Refer to the Risk Management section of this document for a discussion thereof and our management strategies.

Financial instruments can be used to manage exposure to interest rates, commodity prices and currency fluctuations, as well as other market risks. TransAlta enters into derivative contracts with external counterparties on our behalf. Derivative financial instruments are accounted for using the fair value method of accounting. The initial recognition of fair value and subsequent changes in fair value can affect reported earnings in the period the change occurs if hedge accounting is not elected. Otherwise, the effective portion of the changes in fair value will generally not affect earnings until the financial instrument is settled.

The two types of derivative financial instruments that we primarily use are: (i) those that are used in relation to energy trading activities, commodity hedging activities and other contracting activities; and (ii) those used in the hedging of foreign-denominated revenues, debt, projects and expenditures. See Note 13 of the Consolidated Financial Statements for additional information.

Other Consolidated Analysis

Interest Expense

The components of net interest expense for the referenced periods are shown below:

Year ended Dec. 31	2022	2021
Interest on long-term debt	**30**	31
Interest on lease obligations	**1**	1
Interest on TEA demand loan	**5**	8
Capitalized interest	**—**	(7)
Other net interest[1]	**4**	4
Accretion of provisions	**10**	5
Interest expense	**50**	42

(1) Consists of letters of credit and guarantees, credit facility commitments, other interest and banking fees (net of capitalized interest). For the year ended Dec. 31, 2022, interest on letters of credit and guarantees pledged by TransAlta was $1 million (2021 – $2 million).

For the year ended Dec. 31, 2022, interest expense increased compared to 2021, primarily as no interest was capitalized to projects and due to higher accretion as a result of the significant increase in discount rates, partially offset by the repayment of the TEA demand loan.

Income Taxes

Our income tax rates and tax expense are based on the earnings generated in each jurisdiction in which we operate and any permanent differences between how pre-tax income is calculated for accounting and tax purposes. If there is a timing difference between when an expense or revenue item is recognized for accounting and tax purposes, these differences result in deferred income tax assets or liabilities and are measured using the income tax rate expected to be in effect when these temporary differences reverse. The impact of any changes in income tax rates on deferred income tax assets or liabilities is recognized in earnings in the period the new rates are enacted.

In 2022, the deferred income tax expense related to changes in future tax rates was nil (2021 – nil).

Non-Controlling Interest

Natural Forces Technologies, Inc. owns a 17 per cent interest in Kent Hills Wind LP, which owns the Kent Hills 1, 2 and 3 wind facilities, which collectively have 167 MW of gross generating capacity.

Since we have a controlling interest in Kent Hills Wind LP, 100 per cent of the earnings, assets and liabilities are consolidated into our financial statements. The non-controlling interest on the Consolidated Statements of Earnings and Consolidated Statements of Financial Position relate to the earnings and net assets attributable to the portion of Kent Hills that we do not own. On the Consolidated Statements of Cash Flows, cash paid to the minority owners of Kent Hills is shown in the Financing Activities section as distributions to non-controlling interest.

Net earnings attributable to the non-controlling interest were nil for the year ended Dec. 31, 2022, a increase of $1 million compared to 2021, primarily due to the Kent Hills 1 and 2 wind facilities outages since the fourth quarter of 2021 as a result of a tower collapse that occurred during the third quarter of 2021.

Other Comprehensive Income

Other comprehensive income (loss) includes the changes in fair value for economic interest investments. These gains and losses are excluded from the Consolidated Statements of Earnings. To calculate the fair values of these investments, we use discounted cash flow models based on the underlying future cash flows of the related operations and make estimates and assumptions that are susceptible to change from period to period and often do impact the estimate of the fair values. Period-to-period fluctuations in fair value are generally attributed to changes in forward-looking cash flow assumptions, discount rates and foreign exchange rates.

During the year ended Dec. 31, 2022, we recognized a $141 million decrease in fair value in OCI (2021 – $73 million decrease). The decrease during 2022 is attributable to the fair value changes in the Economic Interest Investments. Refer to the Financial Instruments section of this MD&A for further details.

See Note 9 of the Consolidated Financial Statements for additional information related to the investments for which changes in fair value are recognized in OCI.

Related-Party Transactions and Balances

Related-Party Transactions

Amounts recognized from transactions with TransAlta or subsidiaries of TransAlta for the referenced periods, excluding those described in the Significant and Subsequent Events section of this MD&A, are as follows:

Year ended Dec. 31	2022	2021
Revenue from TransAlta PPAs (I)	**42**	40
Revenue from environmental attributes[1]	**25**	19
Finance income from investments in subsidiaries of TransAlta	**40**	108
Interest income – promissory notes and investments in subsidiaries of TransAlta	**—**	1
G&A reimbursement fee (II)	**18**	16
Natural gas purchases (III)	**39**	11
Financial power swap sales – gain (III)	**(1)**	—
Interest expense on TEA demand loan	**5**	8
Asset optimization fee[2]	**2**	2
Interest expense on credit facility and letter of credit and guarantee fees	**1**	2

(1) The value of environmental attributes was determined by reference to market information for similar instruments, including historical transactions with third parties.

(2) A subsidiary of TransAlta provides asset management and optimization services for the Company's Sarnia cogeneration facility. The Sarnia cogeneration facility is charged a fixed fee of approximately $0.125 million per quarter, plus a variable fee of 1.6 per cent of its gross margin.

I. TransAlta PPAs

We have agreements with TransAlta for certain wind and hydro facilities, providing for the purchase by TransAlta, for a fixed price, of all of the power produced by such facilities (the "TransAlta PPAs"). The price paid by TransAlta in 2022 for output under the TransAlta PPAs was approximately $34.9 per MWh for wind facilities and $52.4 per MWh for hydroelectric facilities and this price is adjusted annually for changes in the Consumer Price Index. TransAlta is only required to purchase power that is actually produced. Each TransAlta PPA has a term of 20 years or end-of-asset life, where end-of-asset life is less than 20 years.

II. Management Agreement

Under the Management Agreement between the Company and TransAlta, TransAlta provides the Company with general administrative services, including key management personnel services, as may be required or advisable for the management of the business affairs of the Company. As reimbursement for the services provided, we pay TransAlta a fee (the "G&A Reimbursement Fee"). TransAlta also provides operational and maintenance services under the Management Agreement, which generally includes all services as may be necessary or requested for the operation and maintenance of our wind, hydro, gas, battery storage and solar facilities. TransAlta is reimbursed for all out-of-pocket and third-party fees and costs, including salaries, wages and benefits associated with managing and operating the facilities not captured by the G&A Reimbursement Fee. The Management Agreement has an initial 20-year term, which is 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. The G&A Reimbursement Fee will be calculated quarterly in an amount equal to five per cent of adjusted EBITDA of the immediately prior fiscal quarter, without duplication for any indirect costs associated with the management, administrative, accounting, planning and other head office costs of TransAlta that reduce the dividends or distributions that would otherwise be payable to the Company on any of the tracking preferred shares. Further details concerning the Management Agreement are set out in our AIF. See also the Risk Management section of this MD&A.

III. Natural Gas Purchases, Sales and Power Swap Sales

Our subsidiary, TransAlta (SC) LP ("Sarnia"), and TransAlta Energy Marketing Corp. ("TEMC"), a Canadian subsidiary of TransAlta, are parties to a Gas Management Intercompany Agreement for the Sarnia cogeneration facility to obtain its natural gas at the Dawn Hub from TEMC in consideration of TEMC being allowed to trade and profit from Sarnia's storage position. The key terms of the Gas Management Intercompany Agreement are as follows:

- All gas burned at Sarnia is purchased by Sarnia from TEMC priced at the ICE NGX Union Gas Dawn Day-Ahead Index (previously NGX Union Dawn Daily Spot Price) published by the Canadian Gas Price Reporter on the day the gas is burned;
- TEMC will purchase all customer make-up gas from Sarnia at the ICE NGX Union Gas Dawn Day-Ahead Index at the day of occurrence;
- All gas not consumed and used by Sarnia for hedging purposes is purchased by TEMC at the ICE NGX Union Gas Dawn Day-Ahead Index; and
- In exchange for the gas, Sarnia grants TEMC the unlimited right to inject, store and withdraw gas from the Sarnia storage asset for proprietary purposes.

Additionally, Sarnia remains responsible for all storage and transportation costs, which are based on the volumes of gas transported on the Enbridge pipeline from the hub to the facility.

IV. Governance and Cooperation Agreement

Pursuant to the Governance and Co-operation Agreement between the Company and TransAlta, TransAlta serves as the primary vehicle through which we will acquire and/or develop renewable power projects. The Governance and Co-operation Agreement provides, among other things, that we will rely on TransAlta to: (i) identify acquisition and/or development opportunities for us (the "Opportunities"); (ii) evaluate the Opportunities for their suitability; (iii) present Opportunities suitable for, and meeting the strategic goals and objectives of the Company to the Board for assessment and approval; and (iv) execute and complete any Opportunities approved by the Board. TransAlta and its affiliates are not required to allocate any minimum level of dedicated resources for the pursuit of renewable electricity generation opportunities, nor shall TransAlta or its affiliates be required to offer any specific opportunities to us. Approval of any Opportunities involving a transfer of interests from TransAlta or its affiliates to us must be supported and approved by a majority of the independent directors of our Board. Further details concerning the Governance and Co-operation Agreement are set out in our AIF. See also the Risk Management section of this MD&A.

In 2021, we acquired the Windrise wind facility and economic interests in the Ada cogeneration facility, Skookumchuck wind facility and North Carolina Solar facility from TransAlta.

Related-Party Balances

Related-party balances include the following:

As at	Dec. 31, 2022	Dec. 31, 2021
Trade and other receivables	**38**	50
Finance lease receivable(1)	**7**	7
Long-term prepaid – management fee	**2**	2
Investments in subsidiaries of TransAlta	**1,037**	1,270
Accounts payable and accrued liabilities (including interest payable)	**20**	11
Dividends payable	**38**	38
TEA demand loan	**—**	167
Guarantees provided by TransAlta on behalf of the Company (I)(2)	**416**	583
Indemnification guarantee provided by the Company to TransAlta (II)(2)	**497**	516

(1) Finance lease receivable relates to the 10 MW WindCharger battery storage project.
(2) Not recognized as a financial liability on the Consolidated Statements of Financial Position.

All of these balances are with TransAlta or subsidiaries of TransAlta.

I. Guarantees

If the Company does not perform under the related agreements, the counterparty may present a claim for payment from TransAlta.

II. Indemnification Guarantee

As part of the acquisition of the Australian Assets, we entered into a Guarantee and Indemnification Agreement in favour of TransAlta related to certain guarantees it has provided to third parties in respect of certain obligations of TEA (the "TEA Guarantees"). We have agreed to indemnify TransAlta from and against all claims, actions, proceedings, liabilities, losses, costs, expenses or damages against or incurred by it arising out of or in connection with the TEA Guarantees and to reimburse TransAlta in full for the amount of any payment made by it under and in accordance with the TEA Guarantees, relating to actions, omissions, events and circumstances that occur on or after May 7, 2015. As consideration for this indemnity that we have provided, TransAlta is required to pay us the Canadian-dollar equivalent of the guarantor fees it receives from TEA in respect of any of the TEA Guarantees.

Material Accounting Policies and Critical Accounting Estimates

The preparation of financial statements requires management to make judgments, estimates and assumptions that could affect the reported amounts of assets, liabilities, revenues, expenses and disclosures of contingent assets and liabilities during the period. These estimates are subject to uncertainty.

Actual results could differ from those estimates due to factors such as fluctuations in interest rates, foreign exchange rates, inflation and commodity prices, and changes in economic conditions, legislation and regulations.

In the process of applying the Company's accounting policies discussed in Note 2 of the Consolidated Financial Statements, management has to make judgments and estimates about matters that are highly uncertain at the time the estimate is made and that could significantly affect the amounts recognized in the Consolidated Financial Statements. Different estimates with respect to key variables used in the calculations, or changes to estimates, could potentially have a material impact on the Company's financial position or performance. The key judgments and sources of estimation uncertainty are described below.

Financial Instruments

The fair value of a financial instrument is the price that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants at the measurement date. Fair values can be determined by reference to prices for that instrument in active markets to which the Company has access. In the absence of an active market, the Company determines fair values based on valuation models or by reference to other similar products in active markets.

Fair values determined using valuation models require the use of assumptions. In determining those assumptions, the Company looks primarily to external readily observable market inputs. In limited circumstances, the Company uses inputs that are not based on observable market data.

Level Determinations and Classifications

The Level I, II and III classifications in the fair value hierarchy utilized by the Company are defined below. The fair value measurement of a financial instrument is included in only one of the three levels, the determination of which is based on the lowest level input that is significant to the derivation of the fair value.

a. Level I

Fair values are determined using inputs that are quoted prices (unadjusted) in active markets for identical assets or liabilities that the Company has the ability to access at the measurement date.

b. Level II

Fair values are determined, directly or indirectly, using inputs that are observable for the asset or liability, either directly or indirectly.

Fair values within the Level II category are determined through the use of quoted prices in active markets, which in some cases are adjusted for factors specific to the asset or liability, such as basis, credit valuation and location differentials. The Company's commodity risk management Level II financial instruments may include over-the-counter derivatives with values based on observable commodity futures curves and derivatives with inputs validated by broker quotes or other publicly available market data providers. Level II fair values are also determined using valuation techniques, such as option pricing models and interpolation formulas, where the inputs are readily observable.

In determining Level II fair values of other risk management assets and liabilities measured and carried at fair value, the Company uses observable inputs other than unadjusted quoted prices that are observable for the asset or liability, such as interest rate yield curves and currency rates. For certain financial instruments where insufficient trading volume or lack of recent trades exists, the Company relies on similar interest or currency rate inputs and other third-party information, such as credit spreads.

c. Level III
Fair values are determined using inputs for the asset or liability that are not readily observable.

In estimating the fair value of the Economic Interest Investments, the Company uses a discounted cash flow method, and makes estimates and assumptions about sales prices, production, capital expenditures, asset retirement costs and other related cash inflows and outflows over the life of the facilities, as well as the remaining life of the facilities. In developing these assumptions, management uses estimates of contracted and merchant prices, anticipated production levels, planned and unplanned outages, changes to regulations, and transmission capacity or constraints for the estimated remaining life of the facilities. Appropriate discount rates reflecting the risks specific to TEA, Wyoming, Big Level, Antrim, Lakeswind, Skookumchuck, Mass Solar, North Carolina Solar and Ada cogeneration are used in the valuations. Management also develops assumptions in respect of ongoing financing and tax positions of the corporate entities that own these assets directly. These estimates and assumptions are susceptible to change from period to period and actual results can, and often do, differ from the estimates, and can have either a positive or negative impact on the estimate of the fair value of the instrument, and may be material.

The table below summarizes quantitative data regarding the unobservable inputs utilized in the discounted cash flow models as outlined in Note 9 of the Annual Financial Statements:

Unobservable input	Dec. 31, 2022	Dec. 31, 2021
Preferred Shares Tracking Earnings and Distributions of US Wind and Solar Facilities		
Discount rate (range)	**8.2 % - 10.7 %**	5.8 % - 8.5 %
Quarterly cash flows (range, in millions)	**Average of $0-$4**	Average of $1-$4
Foreign exchange rates	**1.35570**	1.27760
Preferred Shares Tracking Earnings and Distributions of US Gas		
Discount rate	**14.7 %**	12.4 %
Quarterly cash flows (millions)	**Average of $3**	Average of $3
Foreign exchange rates	**1.35570**	1.27760
Preferred Shares Tracking Australia Cash Flows		
Discount rate	**7.8 %**	5.5 %
Quarterly cash flows (millions)	**Average of $11**	Average of $11
Foreign exchange rates	**0.91523**	0.92728

The following table summarizes the impact on the fair value measurement of a change in the above unobservable inputs to reflect reasonably possible alternative assumptions:

Unobservable input	Alternative assumption	Change in fair value as at Dec. 31, 2022	Change in fair value as at Dec. 31, 2021
Preferred Shares Tracking Earnings and Distributions of US Wind and Solar Facilities			
Basis point change in discount rates	-100 basis points decrease	**36**	51
	+100 basis points increase	**(32)**	(44)
Quarterly cash flows	+5% increase[1]	**23**	27
	- 5% decrease[1]	**(23)**	(27)
Preferred Shares Tracking Earnings and Distributions of US Gas[2]			
Basis point change in discount rates	-100 basis points decrease	**—**	1
	+100 basis points increase	**—**	(1)
Quarterly cash flows	+5% increase[1]	**1**	2
	- 5% decrease[1]	**(1)**	(2)
Preferred Shares Tracking Australia Cash Flows			
Basis point change in discount rates	-100 basis points decrease	**40**	58
	+100 basis points increase	**(35)**	(50)
Quarterly cash flows	+5% increase[1]	**28**	35
	- 5% decrease[1]	**(28)**	(35)

(1) Quarterly cash flows could vary by a higher rate than the assumed five per cent factor.
(2) The fair value changes from the assumed discount rate changes as at Dec. 31, 2022, could vary, but by less than $1 million.

Significant Influence through Tracking Preferred Shares

The Company has invested in preferred shares of subsidiaries of TransAlta that pay dividends based on certain financial results of other subsidiaries of TransAlta. Under IFRS, a 20 per cent voting interest is presumed to provide the holder with significant influence over the investee. Significant influence is the power to participate in the financial and operating policy decisions of an investee.

The rights associated with the Company's investments in the preferred shares of a subsidiary of TransAlta tracking the financial results of certain US Wind and Solar assets provide the Company individually with a 2.4 per cent (cumulatively 16.8 per cent) voting interest in that subsidiary. In the event that any dividends on these preferred shares have not been paid within six months of the date at which the payout formula would have them paid, and while such amounts remain unpaid, the Company will have the right to appoint individually eight per cent (cumulatively 56 per cent) of the directors of that subsidiary.

The investment in the preferred shares of a subsidiary of TransAlta tracking the financial results of TEA does not provide the Company with any voting rights, unless and until the subsidiary fails to pay four quarterly dividends on the dates when due in accordance with the payout formula, whether or not consecutive, and whether or not such dividends have been declared. Thereafter, but only for so long as any such dividends remain in arrears, the Company is entitled to elect 30 per cent of the directors of the subsidiary. The investment agreement with TransAlta provides the Company with rights to financial information and further protections against adverse changes in the operation and financial structure of TEA through post-closing covenants. The investment agreement is discussed further in our AIF.

The Company determined that it does not have significant influence over the TransAlta subsidiaries, in consideration of TransAlta's block ownership of the voting shares and the existing rights afforded from the tracking preferred shares, the investments were determined to constitute financial assets.

Consolidation of Kent Hills 1, 2 and 3 Wind Facilities

Under IFRS, the Company is required to consolidate all entities that it controls. Kent Hills Wind LP is owned 83 per cent by the Company and 17 per cent by Natural Forces Technologies, Inc. Consolidation of Kent Hills Wind LP's financial results is required by the Company, as the Company controls Kent Hills Wind LP through an 83 per cent ownership.

Dividends as Income or Return of Capital

The Company receives dividends from its investments in the Economic Interest Investments. Determining whether a dividend represents in substance a return of capital requires significant judgment. The Company determines the amount of dividends that represent a return of capital based on the lower of: (i) the difference, if positive, between the cost base of the shares and their fair value, at the end of the reporting period; and (ii) the actual dividend declared on the shares during the reporting period. When it is determined that a dividend represents a return of capital, the carrying amount of the related investment is reduced. During 2022 $92 million (2021 — $24 million) dividends were recorded as a return of capital.

Income Taxes

Preparation of the Consolidated Financial Statements involves determining an estimate of, or provision for, income taxes in each of the jurisdictions in which the Company operates. The process also involves making an estimate of income taxes currently payable and income taxes expected to be payable or recoverable in future periods, referred to as deferred income taxes. Deferred income taxes result from the effects of temporary differences due to items that are treated differently for tax and accounting purposes. The tax effects of these differences are reflected in the Consolidated Statements of Financial Position as deferred income tax assets and liabilities. An assessment must also be made to determine the likelihood that the Company's future taxable income will be sufficient to permit the recovery of deferred income tax assets. To the extent that such recovery is not probable, deferred income tax assets must be reduced. Management must exercise judgment in its assessment of continually changing tax interpretations, regulations and legislation, to ensure deferred income tax assets and liabilities are complete and fairly presented. Differing assessments and applications from the Company's estimates could materially impact the amounts recognized for deferred income tax assets and liabilities.

Decommissioning and Restoration Provisions

We recognize decommissioning and restoration provisions for property, plant and equipment ("PP&E") in the period in which they are incurred if there is a legal or constructive obligation to reclaim the plant or site. The amount recognized as a provision is the best estimate of the expenditures required to settle the provision. Expected values are probability weighted to deal with the risks and uncertainties inherent in the timing and amount of settlement of many decommissioning and restoration provisions. Expected values are discounted at the risk-free interest rate adjusted to reflect the market's evaluation of our credit standing. The decommissioning and restoration provision has decreased by $65 million due to a significant increase in discount rates, largely driven by increases in market benchmark rates throughout 2022 and 2023.

Asset Impairment

Impairment exists when the carrying amount of an asset exceeds its recoverable amount, which is the higher of its fair value less costs of disposal and its value in use. An assessment is made at each reporting date as to whether there is any indication that an impairment loss may exist or that a previously recognized impairment loss may no longer exist or may have decreased. In determining fair value less costs of disposal, information about third-party transactions for similar assets is used and if none is available, other valuation techniques, such as discounted cash flows, are used. Value in use is computed using the present value of management's best estimates of future cash flows based on the current use and present condition of the asset. In estimating either fair value less costs of disposal or value in use using discounted cash flow methods, estimates and assumptions must be made about sales prices, production, asset retirement costs and other related cash inflows and outflows over the life of the facilities, which can range from 25 to 50 years. In developing these assumptions, management uses estimates of contracted prices, anticipated production levels, planned and unplanned outages, changes to regulations, and transmission capacity or constraints for the remaining life of the facilities. Appropriate discount rates reflecting the risks specific to the asset under review are used in the assessments. These estimates and assumptions are susceptible to change from period to period and actual results can, and often do, differ from the estimates and can have either a positive or negative impact on the estimate of the impairment charge and may be material. Substantially all of the Company's generating assets are contracted under the TransAlta PPAs or other PPAs with various third parties.

During 2022 the following impairments (reversals) were recognized: $21 million for four of our hydro facilities and $10 million on three wind facilities as a result of changes in key assumptions including significant increases in discount rates and changes in estimated future cash flows.

Useful Life of PP&E

Each significant component of an item of PP&E is depreciated over its estimated useful life. Estimated useful lives are determined based on current facts and past experience, and take into consideration the anticipated physical life of the asset, existing long-term sales agreements and contracts, current and forecasted demand, the potential for technological obsolescence, and regulations. The useful lives of PP&E are reviewed at least annually to ensure they continue to be appropriate.

Revenue from Contracts with Customers

Where contracts contain multiple promises for goods or services, management exercises judgment in determining whether goods or services constitute distinct goods or services or a series of distinct goods that are substantially the same and that have the same pattern of transfer to the customer. The determination of a performance obligation affects whether the transaction price is recognized at a point in time or over time. Management considers both the mechanics of the contract and the economic and operating environment of the contract in determining whether the goods or services in a contract are distinct.

In determining the transaction price and estimates of variable consideration, management considers past history of customer usage in estimating the goods and services to be provided to the customer. We also consider the historical production levels and operating conditions for our variable generating assets.

The satisfaction of performance obligations requires management to make judgments as to when control of the underlying good or service transfers to the customer. Determining when a performance obligation is satisfied affects the timing of revenue recognition. We consider both customer acceptance of the good or service, and the impact of laws and regulations such as certification requirements, in determining when this transfer occurs.

Management also applies judgment in determining whether the invoice practical expedient permits recognition of revenue at the invoiced amount, if that invoiced amount corresponds directly with the entity's performance to date.

Leases

In determining whether a contract is a lease, we apply judgment in determining whether an identified asset exists, whether the customer or supplier obtains substantially all of the economic benefits from use of the identified asset, and who has the right to control the use of the identified asset during the term of the contract.

For contracts that are considered to be leases, judgment is applied in making the following determinations at the lease commencement date, all of which affect the amount recognized for the right-of-use asset and lease liability:

- Lease term — whether the Company is reasonably certain to exercise renewal or, not to exercise, termination options;
- Lease payments — identifying in-substance fixed payments (included) and variable payments that are based on usage or performance factors (excluded); and
- Components of a contract — identifying lease and non-lease components (services that the supplier performs) and allocating contract payments to lease and non-lease components.

Accounting Changes

Current Accounting Changes

Amendments to International Accounting Standards ("IAS") 37 Provisions, Contingent Liabilities and Contingent Assets

On May 14, 2020, the IASB issued Onerous Contracts – Cost of Fulfilling a Contract and amendments to IAS 37 Provisions, Contingent Liabilities and Contingent Assets to specify which costs to include when assessing whether a contract will be loss-making. The amendments are effective for annual periods beginning on or after Jan. 1, 2022, and the Company adopted these amendments as of Jan. 1, 2022. The amendments are effective for contracts for which an entity has not yet fulfilled all its obligations on or after the effective date. No adjustments resulted on adoption of the amendments on Jan. 1, 2022.

Future Accounting Changes

Amendments to IAS 12 Deferred Tax Related to Assets and Liabilities Arising from a Single Transaction

On May 7, 2021, the IASB issued amendments to IAS 12 Deferred Tax Related to Assets and Liabilities Arising from a Single Transaction. The amendments clarify that the initial recognition exemption under IAS 12 does not apply to transactions such as leases and decommissioning obligations. These transactions give rise to equal and offsetting temporary differences in which deferred tax should be recognized.

The amendments are effective for annual periods beginning on or after Jan. 1, 2023, with early application permitted. The Company's current position aligns with the amendment and no financial impact is therefore expected upon adoption on the effective date.

Amendments to IAS 1 Classification of Liabilities as Current or Non-Current

In October 2022, the IASB issued amendments to clarify how conditions with which an entity must comply within 12 months after the reporting period affect the classification of a liability, in addition to the amendment from January 2020 where the IASB issued amendments to IAS 1 Presentation of Financial Statements, to provide a more general approach to the presentation of liabilities as current or non-current based on contractual arrangements in place at the reporting date. These amendments specify that the rights and conditions existing at the end of the reporting period are relevant in determining whether the Company has a right to defer settlement of a liability by at least 12 months, provided that management's expectations are not a relevant consideration as to whether the Company will exercise its rights to defer settlement of a liability and clarify when a liability is considered settled.

The amendments are effective for annual periods beginning on or after Jan. 1, 2024, and are to be applied retrospectively. The Company has not yet determined the impact of these amendments on its consolidated financial statements.

Amendments to IFRS 16 Lease Liability in a Sale-and-Leaseback

In September 2022, the IASB issued Lease Liability in a Sale and Leaseback, which amends IFRS 16 Leases to provide additional specifications when subsequently measuring the lease liability that require the seller-lessee to determine lease payments and revised lease payments in a way that does not result in the seller-lessee recognizing any amount of the gain or loss that relates to the right of use it retains. The current effective date is Jan. 1, 2024. The Company is currently reviewing the impacts of this amendment on its consolidated financial statements.

Strategy and Capability to Deliver Results

Since its initial public offering in 2013, TransAlta Renewables has created shareholder value by focusing on owning and acquiring renewable projects supported by long-term power purchase agreements that provide highly contracted cash flows. The Company remains committed to this objective and will be principally focused on the sustainment of its dividend in 2023 and beyond.

Our strategies and capabilities to deliver on our objectives are as follows:

Growth Strategy

Our growth strategy is to develop or acquire highly contracted renewable and customer-centred hybrid generation solutions and other infrastructure assets that generate stable cash flows, with the objective of achieving targeted returns on invested capital. The successful execution of our growth strategy requires careful timing and business judgment, as well as the resources to complete the due diligence and evaluation of such assets.

Our growth opportunities are focused on organic expansion of existing assets through the execution of our right of first offer with TransAlta and potentially, through dropdowns from TransAlta that could partially offset the Company's tax horizon. Acquisitions from TransAlta are subject to independent assessments and approval by the independent directors of the Board of Directors of TransAlta Renewables (the "Board").

Contracting Strategy

Through our PPAs, including the TransAlta PPAs (as defined below), our facilities and those in which we have an economic interest are highly contracted. Substantially all of our generating capacity is contracted over the next five years, gradually decreasing thereafter over a period extending to 24 years. The weighted average remaining contractual life of our PPAs is approximately 12 years[3]. During 2022, the following contracting activities have occurred:

- During the second and fourth quarters of 2022, the Company executed contracts for the supply of electricity and steam, from the Sarnia cogeneration facility, with three of its legacy industrial customers and with three new customers' who were previously re-sold utilities as part of a legacy customer's contract. Following the contracting efforts in 2021 and 2022, the Sarnia cogeneration facility has been fully recontracted without interruption to the customers' delivery terms. The contracts extend from Jan. 1, 2023, to April 30, 2031, for four customers, and to Dec. 31, 2032 for the other three customers.
- The Company was successful in its proposals to the IESO and extended the period of contracted revenues of the Sarnia cogeneration and Melancthon 1 facilities. The new capacity contracts for the Sarnia cogeneration facility and the Melancthon 1 wind facility will run from May 1, 2026 to April 30, 2031. It is intended that the existing contracts for the Sarnia cogeneration facility and Melancthon 1 wind facility will be extended from Dec. 31, 2025 and March 3, 2026, "respectively" to April 30, 2026.
- We have successfully executed blend-and-extend agreements with NB Power which will extend the existing PPA for an additional 10-year period through to December 2045.

See the Significant and Subsequent Events section of this MD&A for more details.

Operational Strategy

Our wind, hydro, solar and gas facilities have an established track record of operating history and performance. The assets as at Dec. 31, 2022, have been in operation from one year to 32 years, with the weighted average years of operation by capacity being 15 years, which includes facilities in which we own an economic interest.

TransAlta provides management, administrative and operational services to the Company. The members of TransAlta's management team who are responsible for managing our operations have extensive experience in the power generation business. The employees of TransAlta who provide operational services at our facilities are the same individuals who perform such services for TransAlta. Further details are set out in the Annual Information Form.

Financial Strategy

Our financial strategy is to maintain a strong financial position to provide a solid foundation for our core business and growth. A strong financial position improves our ability to create stable and consistent returns.

The metrics we use to track our performance are adjusted EBITDA, FCF and CAFD. Please refer to the Non-IFRS Measures section of this MD&A for further discussion of these metrics. The table below compares our previously disclosed targets to actual amounts:

Year ended Dec. 31		2022	2021
Adjusted EBITDA	Original Target	**485-525**	480-520
	Revised Target	**—**	450-480
	Actual	**487**	463
FCF	Original Target	**345-385**	365-395
	Revised Target	**—**	330-360
	Actual	**347**	357
CAFD	Original Target	**245-285**	285-315
	Revised Target	**—**	250-270
	Actual	**243**	275

[3] Weighted average based on capacity.

Environmental, Social and Governance Strategy

Sustainability or environmental, social and governance ("ESG") practices are a core value for the Company. Our actions support this; the Company was established as an investment vehicle to, among other things, pursue and capitalize on strategic growth opportunities in clean electricity generation and other infrastructure sectors.

In 2022, the Company was recognized on the Clean200 global list of publicly traded companies that are leading the way with solutions for the transition to a clean energy future by Corporate Knights and As You Sow.

2023 Outlook

The following table outlines our expectation on key financial targets for 2023:

Measure	2023 Target	2022 Actuals
Adjusted EBITDA[(1)]	**$495 million to $535 million**	**$487 million**
Free cash flow[(1)]	**$340 million to $380 million**	**$347 million**
Cash available for distribution[(1)]	**$230 million to $270 million**	**$243 million**

(1) These items are not defined and have no standardized meaning under IFRS. Please refer to the Reconciliation of Non-IFRS Measures section of this MD&A for further discussion of these items, including, where applicable, reconciliations to measures calculated in accordance with IFRS. See also the Additional IFRS Measures and Non-IFRS Measures sections of this MD&A.

Adjusted EBITDA is estimated to be between $495 million and $535 million and free cash flow is estimated to be between $340 million and $380 million. Adjusted EBITDA and free cash flow are expected to increase slightly due to achieving return to service of Kent Hills 1 and 2 wind facilities in the second half of 2023, reaching commercial operations of the Northern Goldfields solar and battery storage project in the first half of 2023, reaching commercial operations of the Mount Keith Transmission expansion project in the second half of 2023, and wind production being normalized to long-term average expectations. CAFD is estimated to be between $230 million and $270 million, in line with 2022, and excludes the impact of rehabilitation capital expenditures required at Kent Hills. Although 2023 adjusted EBITDA and free cash flow are expected to increase from 2022, this increase is offset by higher sustaining capital driven by maintenance events at Sarnia and an expected major overhaul in Australia, and higher financing costs for the scheduled principal payments at the Windrise facility.

The following are material assumptions used to develop these financial targets:

Operations

Production

In 2023, we expect renewable energy production from our wind, solar and hydroelectric assets, including those owned through economic interests, to be in the range of 4,900 GWh to 5,400 GWh. This is an increase from the prior year and is mainly due to the expected increase in production from Kent Hills 1 and 2 wind facilities coming back into service during 2023.

Kent Hills Wind Facility Outage

It is expected that the rehabilitation of the Kent Hills 1 and 2 wind facilities will be completed and they will fully return to service in the second half of 2023.

Contracted Cash Flows

Through the use of PPAs, including the TransAlta PPAs, our facilities and those in which we have an economic interest, have a weighted average remaining contractual life of approximately 12 years.

Operating Costs

We have established long-term service agreements with suppliers to stabilize operations and maintenance costs. Most of our generation from gas is sold under contracts with pass-through provisions for fuel. For gas generation with no pass-through provision, we purchase natural gas coincident with production and may also enter into fixed price hedges, thereby minimizing our exposure to changes in price.

Exposure to Fluctuations in Foreign Currencies

We are exposed to fluctuations in the exchange rates between the Canadian, Australian and US dollars as a result of our economic interests in the US Wind and Solar assets and the Australian assets. The securities acquired from TransAlta and the related dividends received are denominated in Canadian, Australian and US dollars. We aim to mitigate foreign exchange risk on foreign-denominated cash flows to ensure our ability to meet dividend requirements by entering into foreign exchange forwards to hedge Australian dollar cash flows related to the Australian assets. In addition, we enter into foreign exchange forwards to hedge US dollar cash flows primarily related to the US Wind and Solar assets. Any changes in foreign investments or foreign-denominated debt may change our exposure.

Interest Expense

Based on our current asset holdings, reported interest expense for 2023 is expected to be higher than 2022, mainly due to higher credit facility borrowings. The interest expense is also subject to any growth projects or acquisitions undertaken by the Company in 2023. Our syndicated credit facility gives us access to $700 million in direct borrowings at a variable interest rate. As a result, we have some exposure to interest rate risk, and changes in interest rates can affect the amount of interest expense incurred.

Finance Income

We expect distributions from our economic interest to be consistent with 2022.

Net Debt, Liquidity and Capital Resources

We expect to maintain adequate available liquidity under our credit facility. We currently have access to $658 million in liquidity, including $89 million in cash.

Income Taxes

The Company's statutory blended tax rate excluding economic interests is 25.01 per cent. The effective income tax rate can change depending on the blended earnings from various jurisdictions and certain deductions that do not fluctuate with earnings.

Current income tax in Canada is $3 million (2021 - $2 million) and in Australia, through its economic interest, is $20 million (2021 - $11 million). The Company expects current income taxes in Canada to increase in 2023; however, this will be offset by lower taxes in Australia due to the commissioning of new assets. The Company expects to be fully taxable in Canada and Australia by 2024 given the current asset base and projects under development. The Company actively looks for opportunities to extend and manage its tax horizon through tax planning and through the acquisition and development of growth projects, however in the event we are unable to lengthen our tax horizon our cash available for distribution could decrease.

The Company's anticipated cash tax horizon is subject to risks, uncertainties and other factors that could cause the cash tax horizon to be different than our projections. In particular, our anticipated cash tax horizon is subject to risk pertaining to a change in our operations, asset base, corporate structure or changes to tax legislation, regulations or interpretations.

Environmental Legislation

Alberta

Large Emitter Greenhouse Gas Regulations

On Dec. 15, 2022, amendments to the Technology Innovation and Emissions Reduction Regulation ("TIER") regulation and Administrative Penalty Regulation were announced following the approval from the federal government. These changes were effective Jan. 1, 2023. More detailed discussion is available in the Regulatory and Environmental Legislation section.

Ontario

Large Emitter Greenhouse Gas Regulations

In December 2022, Ontario announced changes to the Emissions Performance Standards ("EPS") that were approved by the federal government and effective Jan. 1, 2023. More detailed discussion is available in the Regulatory and Environmental Legislation section.

Capital Expenditures

Sustaining Capital

Our sustaining capital is comprised of the ongoing capital costs associated with maintaining the existing generating capacity of our facilities. The facilities of TransAlta in which we own economic interests also incur sustaining capital expenditures. While we are not required to fund these expenditures, they reduce the finance income received from these investments.

For 2023, our estimate for total sustaining capital expenditures for owned assets and those in which we own an economic interest ranges from $50 million to $60 million.

The Kent Hills foundation rehabilitation capital expenditure has been segregated from our sustaining capital range due to the extraordinary nature of this expenditure.

Kent Hills Rehabilitation

The Kent Hills 1 and 2 wind facilities are not currently in operation following the tower failure event that occurred in September 2021. This event has taken approximately 150 MW of gross production offline temporarily as the Company replaces all 50 turbine foundations at the Kent Hills 1 and 2 wind facilities. The extended outage is expected to result in foregone revenue of approximately $3 million per month on an annualized basis (assuming all 50 turbines at the Kent Hills 1 and 2 wind facilities are offline), based on average historical wind production, with revenue expected to be earned as the wind turbines are returned to service. Each turbine at Kent Hills 1 and 2 wind facilities will return to service as soon as its foundation is replaced and the turbine is reassembled and tested.

Rehabilitation for the Kent Hills 1 and 2 wind facilities is well underway. The majority of the towers have been fully disassembled including foundation removal. Construction of new foundations is progressing well and the team has now started to re-erect the first turbine tower segments on the new foundations. In addition, the new wind turbine components to replace the damaged unit have been delivered to site. Rehabilitation is targeted to be completed in the second half of 2023. The current estimate of the capital expenditures is approximately $120 million, inclusive of insurance proceeds.

The Company is actively evaluating all options that may be available to recover the rehabilitation costs.

Business Environment

Demand and Supply

Our business is cyclical due to the nature of electricity, which is generally consumed as it is generated. Wind and run-of-river hydro resources fluctuate based on both seasonal patterns and naturally occurring weather variations. Typically, run-of-river hydroelectric facilities generate most of their electricity and revenues during the spring and summer months when melting snow starts feeding watersheds and rivers. Wind generation is historically greater during the cold winter months and lower in the warm summer months.

Generally, market demand, supply conditions and changes in such conditions do not have a significant impact on our business operations due to our highly contracted position.

Contracted Cash Flows

Substantially all of our wind, hydroelectric, solar and gas facilities have contracts in place for the sale of electricity they produce. Most of our wind and hydroelectric facilities located in Alberta are contracted under long-term PPAs with TransAlta. The remaining wind and hydroelectric facilities are contracted with government-owned entities or with other private or public customers. The Sarnia cogeneration gas facility is contracted to supply steam and electricity to commercial users in various industries, with the remaining generation sold into the Ontario market via the IESO. The Australian gas facilities are predominantly contracted to mining companies in Western Australia and Horizon Power, a state-owned utility.

In addition to contracting for power, we have entered into long- and short-term contracts to sell the environmental attributes from our wind and hydroelectric facilities that do not sell the environmental attributes bundled with power sold under long-term contracts. These environmental attributes are sold to a variety of counterparties — ranging from government entities to commercial users — or used internally for TransAlta's regulatory obligations.

Regulatory and Environmental Legislation

Environmental Legislation

We are subject to federal, provincial, state and local environmental laws, regulations and guidelines concerning the generation and transmission of electrical and thermal energy. We are committed to complying with legislative and regulatory requirements to minimize 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. See also the Risk Management – Risk Factors section of this MD&A.

Canadian Federal Government

Federal Climate Plan

In April 2021, the Government of Canada announced a revised national greenhouse gas ("GHG") emissions reduction target of 40 per cent to 45 per cent below 2005 levels by 2030.

In March 2022, the Government of Canada's Department of Environment and Climate Change Canada ("ECCC") released a discussion document regarding a Clean Electricity Regulation to achieve a net-zero electricity sector in Canada by 2035. ECCC continues to engage on the proposed regulation with the publication of a draft regulation expected in the first half of 2023.

We will continue to actively engage with the federal government to understand the implication of these policies and initiatives to our business in order to manage risks and identify opportunities.

Federal Carbon Pricing on Greenhouse Gas Emissions

On June 21, 2018, the Canadian federal Greenhouse Gas Pollution Pricing Act ("GGPPA") came into force. Under the GGPPA, the Canadian federal government implemented a national price on GHG emissions. Amendments to Schedule 4 of the GGPPA were completed in October 2022. These amendments aligned facility emission charges with the government's updated carbon price trajectory of $65 per tonne of CO_2 in 2023 with increases of $15 per year to $170 per tonne by 2030.

Alberta

Large Emitter Greenhouse Gas Regulations

On Jan. 1, 2020, the Government of Alberta replaced the previous Carbon Competitiveness Incentive Regulation with the TIER.

Facilities with emissions above the set benchmark comply with TIER by: (i) paying into the TIER Fund (a government-controlled fund that invests in emissions reduction in the province) at the current carbon price; (ii) making reductions at their facility; (iii) remitting emission performance credits from other facilities; or (iv) remitting emission offset credits.

On Dec. 15, 2022, amendments to TIER and the Administrative Penalty Regulation were announced following approval from the federal government. Some of the changes to TIER, include:

- TIER fund schedule via a Ministerial Order for the 2023 - 2030 period from $65/tonne of CO2e in 2023, and increasing by $15/tonne CO_2e annually to $170/tonne CO_2e by 2030.
- Benchmark Tightening – Starting in 2023, a two per cent annual tightening rate will apply to the electricity high performance benchmark from 0.3700 tonnes CO_2e per MWh in 2022 to 0.3108 CO_2e tonnes per MWh by 2030.
- Credit Use Limit - The credit usage limit was set to 60% in 2023, 70% in 2024, 80% in 2025 and 90% in 2026 and beyond.
- Credit Expiry – Emission performance credits and emission offset credits were amended to expire in five and six years, as opposed to the eight and nine years, respectively.
- Project Crediting Period - 10 consecutive years for projects from 2023 with a potential for a five-year extension if the project is able to demonstrate financial need; pre-2023 projects will still enjoy the eight-year crediting period with a potential five-year extension.
- Expiry and Review – TIER will remain in effect through 2030, and will be reviewed on or before Dec. 31, 2026.

These changes will result in lower emissions crediting for new renewables projects but, all things being equal, higher demand for credits from TransAlta's renewables facilities.

Ontario

Large Emitter Greenhouse Gas Regulations
In December 2022, Ontario announced changes to the EPS that were approved by the federal government. Two electricity-related changes will impact the company's cogeneration facility in Ontario:

- Changing the electricity performance standard from 0.37 t/MWh to 0.31 t/MWh starting in 2023, remaining flat to 2030; and
- Allowing cogeneration units to utilize separate performance standards for electricity and heat to enable a level playing field for all electricity under the EPS.

The change in cogeneration performance standard treatment will benefit our facility by removing a previous, single cogeneration standard that was more stringent than utilizing separate standards for heat and electricity. The value from this change flows to contracted customers and to the Ontario market but helps make cogeneration more competitive as an energy solution.

Ontario is continuing its work on the natural gas transition and development of a voluntary clean energy credit market. TransAlta will continue to engage the government on relevant policy initiatives to mitigate risk and identify areas of potential opportunity.

United States

The US government has set out ambitious objectives for carbon emissions reductions, including achieving a 50 to 52 per cent national emissions reduction over 2005 levels by 2030, a net-zero electricity grid by 2035, and a net-zero national economy by 2050. The US does not have a national carbon pricing regime but does offer significant federal incentives for renewable generation and new technology and infrastructure, including spending under the Inflation Reduction Act.

State and regional climate and market policies have a significant impact on the pace of energy transition in the US with many governments operating under renewable portfolio standards and carbon pricing regimes. Similar to Canada, independent estimates suggest that the US will require substantial growth in zero-emissions generation to meet its national climate targets but significant new fiscal incentives will lead to competition in the market.

Australia

Following the May 2022 federal election, the newly elected Labor Government enacted more ambitious national GHG emissions reduction targets through the Climate Change Act 2022, which commits Australia to a 43 per cent emissions reduction below 2005 levels by 2030 and to a net-zero economy by 2050. The government also confirmed its intent to boost renewable electricity production to 82% of electricity supply by 2030. The government is currently considering changes to the Safeguard Mechanism but these changes are not expected to have a material impact on TransAlta's assets.

The Australian government's plan to achieve the necessary reductions is focused on a combination of technology development and cost reduction, enabling deployment at scale through incentives and infrastructure development as well as updating some of its regulatory mechanisms.

State-level policies continue to focus on moving toward greater reliance on renewables, hydrogen and energy storage and away from coal. TransAlta does not see any significant risk to our existing Australian assets. Policy and funding supporting continued industrial decarbonization could provide additional growth opportunities in the Australian market.

Market Regulatory Framework

Regulatory and political risk to our business is associated with potential changes to the existing regulatory structures and the political influence upon those structures. This risk can come from market regulation and re-regulation, increased oversight and control, structural or design changes in markets, or other unforeseen influences.

We manage these risks systematically through our legal and regulatory groups and our compliance program, which is reviewed periodically to ensure its effectiveness. We work with governments, regulators, electricity system operators and other stakeholders to resolve issues as they arise. We are actively monitoring changes to market rules and market design, and we engage in industry and government-agency-led stakeholder engagement processes. Through these and other avenues, we engage in advocacy and policy discussions at a variety of levels. These stakeholder negotiations have allowed us to engage in proactive discussions with governments and regulatory agencies over the longer term.

International investments are subject to unique risks and uncertainties relating to the political, social and economic structures of the respective country and such country's regulatory regime. We mitigate this risk through the use of non-recourse financing and insurance. See the Risk Management section of this MD&A.

Alberta

Alberta remains an energy-only market where generators make power supply offers that clear against power demand. The demand and supply dynamics determine market clearing prices. All market risk for the Company's assets is held by TransAlta pursuant to a fixed price contract between the two companies.

On April 27, 2022, the Government of Alberta introduced Bill 22: Electricity Statutes Amendment Act, which amends the Alberta Utilities Commission Act, Electric Utilities Act, and the Hydro and Electric Energy Act. Bill 22 introduced a definition of energy storage and the framework for regulatory permitting, competitive procurement for transmission and distribution utility service, and prohibits transmission and distribution utilities from participating in the power pool with any energy storage assets they may own. Bill 86 also enables unlimited self-supply and export and specifies that self-supplied energy that is not part of an Industrial System Designation may be subject to transmission rates. Finally, Bill 22 specifies that the Minister shall develop further regulation to provide greater transparency on the planning activities of distribution utilities. Bill 22 received royal assent on May 31, 2022.

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 by the IESO. The Ontario Ministry of Energy supports the IESO in defining the electricity mix to be procured by the IESO. The IESO 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.

The IESO is currently running a market renewal consultation that includes proposed fundamental changes to the electricity market. These include modifying the energy market, adding resource adequacy procurements, including medium- and long-term RFP and improving market operations and reliability. The energy market changes are planned to be implemented in May 2025, which has been delayed from its previous target date of November 2023.

The IESO has also actively engaged market participants on medium-term and long-term procurements of existing resources coming off of contract and new resources. On Aug. 23, 2022, the IESO announced that it awarded the Sarnia cogeneration facility and Melancthon 1 wind facility medium-term capacity contracts. The new medium-term capacity contracts will commence May 1, 2026 to April 30, 2031. The existing contracts for Sarnia cogeneration facility and Melancthon 1 will be extended until the start date of the new contracts. Due to the fact that all our units are almost entirely contracted, we expect market rule changes to have minimal near-term impact on the Company.

New Brunswick and Quebec

These electricity markets are vertically integrated with limited ability for independently developed electricity projects to enter the market or nearby markets. In all cases, independently owned facilities have long-term contracts with each utility and have no merchant exposure or power price risk.

British Columbia

British Columbia's electricity market is dominated by a vertically integrated Crown corporation, BC Hydro. The other provincial utility, FortisBC, has a small service territory in the interior of the province. Electricity is traded with other markets through BC Hydro's trading arm, Powerex, a wholly owned subsidiary. All electricity utilities are regulated by the British Columbia Utilities Commission ("BCUC").

Under government direction in the late 1990s and early 2000s, BC Hydro established a private power market through several competitive calls for power from independent power producers. In recent years, BC Hydro stopped its competitive power calls and contracting with independent power producers and also suspended its smaller Standing Offer Program for small projects below 15 MW.

BC Hydro is delaying discussions related to re-contracting assets until it has completed its new Integrated Resource Plan ("IRP"). In late summer 2021, BC Hydro started its Clean Power 2040 consultation process to feed into the development of the IRP. The purpose of the Clean Power 2040 process is to develop a long-term electricity system view to meet the climate change and energy supply objectives related to provincial policy and legislation. The first round of discussions were completed in late 2020. BC Hydro filed its IRP with the BCUC in December 2021. The BCUC will hold a formal, public regulatory process on the IRP prior to providing a decision on the IRP, which is expected in the second half of 2023.

Current Clean Power 2040 initial results indicate BC Hydro continues to find a need to renew Electricity Purchase Agreements with existing independent power producers like the Company's Pingston hydro facility.

US Wholesale Power Market

The Federal Power Act gives the US Federal Energy Regulatory Commission ("FERC") rate-making jurisdiction over public utilities engaged in wholesale sales of electricity and the transmission of electricity in interstate commerce. FERC oversees the market structure for all organized market rules and wholesale sales from generators, and these decisions can affect electricity prices. In states without an organized market, the local public utilities commission regulates the vertically integrated utilities that own and operate transmission, distribution and generation infrastructure. All of TransAlta Renewable's wind facilities hold long-term off-take agreements, which reduces exposure to changes in market design and regulatory frameworks for the contract term.

The Lakeswind, Antrim and Big Level wind facilities are located in organized markets operated by regional transmission operators or independent system operators with energy, capacity and ancillary services markets. These wind assets are under long-term contracts so we expect the market rule changes to have minimal impact on the Company's revenues. Antrim and Big Level offer capacity in the ISO New England and PJM capacity markets respectively. Antrim has a long-term capacity supply obligation, and as a result, the capacity market auction changes have no short-term impact on revenues. Big Level's capacity has been assigned to the customer so there are only offer requirements and no contract revenue impacts.

The Wyoming facility is not located in an integrated market, but qualifies as an exempt wholesale generator under the Federal Power Act and is not regulated by the local public utility commission. It also has a long-term contract that minimizes the impact of market changes on the Company's revenues.

The Massachusetts solar facilities are located in an organized market, and the portfolio consists of distributed-connected facilities contracted under net metering arrangements regulated by the state public utility commission. Their power is not directly offered in the ISO New England wholesale market. As a result, market changes have no impact on revenues.

Environmental, Social and Governance

The Company places a high priority on ESG or sustainability management and performance. TransAlta has reported on sustainability for over 25 years and fiscal 2022 reporting marks TransAlta's eighth year of integrated financial and sustainability disclosure. TransAlta's management, administrative and operational services to the Company. As a result, the Company benefits from the well-established sustainability practices at TransAlta. This is our fourth year reporting on the environmental and social impacts with respect to the Company's exposure from TransAlta.

Key elements of the following disclosure are guided by our sustainability materiality assessment. To help inform discussion and provide context on how ESG affects our business, our content is guided by key criteria from leading ESG reporting frameworks, including the Global Reporting Initiative, Sustainability Accounting Standards Board ("SASB") and Task Force on Climate-related Financial Disclosures ("TCFD"). GHG emissions data for scopes 1 and 2 follow the accounting and reporting standards of the GHG Protocol. We continue to monitor the development of sustainability disclosure standards to assess our future reporting, such as the International Sustainability Standards Board and the Taskforce on Nature-related Financial Disclosures.

In 2022, the Company was recognized on the Clean200 global list of publicly traded companies deemed to be leading the way with solutions for the transition to a clean energy future by Corporate Knights and As You Sow.

Sustainability Strategy

Sustainability is a core value for the Company. The Company was established as an investment vehicle to, among other things, pursue and capitalize on strategic growth opportunities in clean electricity generation. Our assets cover both renewable and natural gas facilities. Natural gas plays an important role in the electricity sector as a transition fuel, providing low-emission baseload and dispatchable generation to support system demands and enable intermittent renewable generation as renewables proliferate and new technologies commercialize. Our focus on clean electricity generation also supports the mitigation of potential adverse regulatory developments in response to emerging environmental regulation including, but not limited to, a regulated cost of carbon. In 2021, the Company's indirect wholly owned subsidiary, Windrise Wind LP, secured a $173 million green bond financing. This demonstrates our commitment to delivering on our customers' needs for clean electricity.

Environmental and Social Risk and Materiality

We consider a sustainability factor material if it could substantively affect our ability to create value. Our Enterprise Risk Management ("ERM") program is designed to help the Company focus its efforts on key enterprise risks, within the planning horizon, that could significantly impact the success of its strategy, including its sustainability objectives. Our major environmental risk factors include weather, environmental disasters, climate change, exposure to the elements, environmental compliance risk (with respect to biodiversity, land use, GHG, air emissions, water use, waste, etc.) and current and emerging environmental regulations. Our major social risk factors include public health and safety, employee and contractor health and safety, local communities, employee recruitment and retention, reputation management, and Indigenous and stakeholder relationships.

Further guidance on our risk factors can be found in the Risk Management section of this MD&A.

Environmental Risk

A high-level overview of the major environmental risk factors affecting the Company is as follows:

- 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; and
- Our activities are subject to stringent environmental laws and regulations promulgated and administered by federal, provincial, state and municipal governments where we operate. These laws and regulations generally concern use of water, wildlife protection, wetlands preservation, remediation of contamination, waste disposal requirements, preservation of archaeological artifacts, endangered species preservation and noise limitations, among others. Changes to regulations may affect our strategy, financial position and earnings by reducing the operating life of generating facilities, imposing additional costs on the generation of electricity, requiring additional capital investments to reduce emissions or requiring us to invest in offset credits.

Refer to the Risk Management section of this MD&A for additional information on risk factors affecting the Company. See also Risk Factors in our AIF.

Social Risk

A high-level overview of the major social risk factors affecting the Company is as follows:

- We depend on certain partners, including TransAlta, that may have interests or objectives that conflict with our objectives and such differences could have a negative impact on us;
- 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;
- The electricity 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 our business and operations; and
- TransAlta manages and operates our facilities and if they fail to attract and retain key personnel, we could be materially and adversely affected. The loss of any such key personnel or the inability to attract, train, retain and motivate additional qualified management and other personnel could have a material adverse effect on our business.

Further information on all of our risk factors can be found in the Risk Management section of this MD&A and under Risk Factors in our AIF.

Climate Change Management and Performance

We recognize the impact of climate change on society and our business both today and into the future. Our climate change-related reporting is guided by the TCFD. This framework helps inform discussion and provide context on how climate change affects our business.

Climate Change Governance

The General Governance Guidelines of the Board sets out that the Board, either directly or through the Audit and Nominating Committee, is responsible for assessing the effectiveness of programs and initiatives that support the climate change policies and programs of the Company, including assessing the physical and transitional risks associated with climate change. TransAlta provides management, operational and administrative services to the Company pursuant to the Management Agreement, which includes providing environment, health and safety services to the Company.

Climate Change Strategy

The development and continuous improvement of our climate change strategy is informed by our climate-related risks and opportunities assessment and by the Company's growth strategy to develop or acquire highly contracted renewable and customer-centred hybrid generation solutions and other infrastructure assets. We remain committed to creating a path to resiliency in a decarbonizing world in support of the goals proposed under the Paris Agreement and those agreed during subsequent international meetings.

Our customers are increasingly relying on clean electricity and environmental attributes to manage their ESG risks; therefore, we see an advantage in growing our clean power business to support our customers' sustainability goals. Our assets include both renewable and natural gas assets. Natural gas is a low-emissions fuel that plays an important role in the electricity sector, providing low-emission baseload and peaking generation to support system demands and intermittent renewable generation.

To combat the challenges of renewable energy intermittency, TransAlta continues to invest in battery storage. In 2020, we launched WindCharger, a "first of its kind" battery storage project in Alberta that stores energy produced by our Summerview II wind facility and discharges electricity into the Alberta grid during system supply shortages. Further, in 2021, we agreed to provide renewable solar electricity supported with a battery energy storage system to BHP Nickel West through the construction of the Northern Goldfields solar project in Western Australia. Construction began in 2022 and is on track to be completed in early 2023. This project will support BHP in meeting its emissions reduction targets and delivering lower-carbon, sustainable nickel to its customers. With a target operation date in early 2023, the Northern Goldfields solar project is expected to reduce BHP's scope 2 electricity GHG emissions by 540,000 tonnes of CO_2e over the first 10 years of operation. In 2022, the Company reached agreement with BHP to expand the Mount Keith transmission system to support its Northern Goldfields-based operations of BHP.

For further details, please refer to the Significant and Subsequent Events section of this MD&A.

Another way we contribute to our customers' sustainability goals is through environmental attributes. The environmental attributes we generate include carbon offsets, renewable energy credits and emissions offsets. Our customers can use environmental attributes to lower compliance costs attributed to carbon policies or renewable portfolio standards. Further, environmental attributes can help achieve voluntary corporate sustainability or carbon reduction goals.

Climate Change Risk Management

Our climate risks are divided into two major categories as per guidance from the TCFD, which include: (i) risks related to the transition to a lower-carbon economy, and (ii) risks related to the physical impacts of climate change.

1. Transition Risks to a Lower Carbon Economy

Policy and Legal Risks

Changes in current environmental legislation do have, and will continue to have, an impact upon our operations and our business in Canada, the US and Australia.

For a more detailed assessment of policy and regulatory risks, please refer to the Risk Management section of this MD&A.

Canada

The Government of Canada has set out ambitious objectives for carbon emissions reduction, including achieving a 40 to 45 per cent national emissions reduction over 2005 levels by 2030, a net-zero electricity grid by 2035 and a net-zero national economy by 2050. The government plans to rely on several policy tools to achieve its emissions objectives, including carbon pricing, emissions performance regulations, funding for industrial energy transition, a Clean Fuel Regulation and incentives for consumers.

Canada's provinces have significant authority over their respective electricity sectors and play an important role in setting carbon pricing policy, emissions performance standards, and in developing and operating their own funding and incentive programs. The negotiation to align carbon pricing, funding and regulatory standards will likely require significant effort and create the risk of tension and misalignment between federal and provincial governments.

Risks

- Escalation in carbon prices and emissions performance regulation may impact the Company's cogeneration in Ontario as governments escalate policy stringency to meet 2030, 2035 and 2050 targets.
- Increased government funding for industrial energy transition may create out-of-market incentives for competing generation.
- Regulatory incentives, including emissions reduction crediting, may create out-of-market incentives for competing generation.
- Lack of federal/provincial coordination with respect to climate policy and regulation may lead to investment uncertainty.

Opportunities

- Independent estimates suggest that achieving Canada's climate targets will require, at a minimum, of twice Canada's current non-emitting generation. This presents strong policy alignment with the Company's growth plans and TransAlta's Clean Electricity Growth Plan.
- Government funding for innovative technology to reduce emissions from the electricity sector offers the Company the potential opportunity to gain project support for uneconomic new technologies, which will enable the Company to grow its clean generation and its energy storage fleet.
- Government support for industrial electrification and consumer-incentive mandates for electrification, such as for the purchase of electric vehicles, will grow electricity load over time creating opportunities for contracted clean generation.

Management Response

- The Company's clean electricity growth trajectory will reduce the proportional corporate exposure to potential policy and regulatory decision that negatively impact natural gas generation.
- We are focused on developing and acquiring contracted assets that provide long-term certainty with respect to revenue and eligibility for government incentive programs. TransAlta actively assesses available government renewable tax legislation and programs to maximize, wherever possible, access to project incentives.
- Our clean and contracted growth reduces the proportional Company exposure to potential policy and regulatory decisions that negatively impact natural gas generation.
- TransAlta actively engages with the federal and provincial governments in Canada to inform and influence policy development to ensure that our generating fleet continues to serve our customers as the country undertakes a broader energy transition.
- Our natural gas facilities operate under contract, reducing the exposure to changes in carbon pricing.
- We actively work, directly and through industry associations, to encourage governments to adopt a level playing field within funding and crediting programs so that all new projects receive equitable government incentives and funding.
- TransAlta actively engages with all relevant Canadian governments to seek policy alignment across carbon pricing and regulatory and funding programs to create the greatest possible degree of investment certainty.

United States

The US government has set out ambitious objectives for carbon emissions reduction, including achieving a 50 to 52 per cent national emissions reduction over 2005 levels by 2030, a net-zero electricity grid by 2035 and a net-zero national economy by 2050. The US does not have a national carbon pricing regime but does offer federal incentives for renewable generation and energy storage.

State and regional climate and market policies have a significant impact on the pace of energy transition in the US with many governments operating under renewable portfolio standards and carbon pricing regimes. Similar to Canada, independent estimates suggest that the US will require substantial growth in zero-emissions generation to meet its national climate targets.

Risks

- Significant new federal incentives for clean energy could increase competition in the clean energy space.

Opportunities

- Achieving US climate goals requires continued growth in zero-emission electricity generation. The Company's growth plans and TransAlta's Clean Electricity Growth Plan is focused on providing renewable electricity to contracted customers in a manner aligned with federal and, where applicable, state goals.
- US tax incentive programs offer significant support for new renewable projects, making the US an attractive growth market.

Management Response

- The Company's growth plans are focused on developing and acquiring contracted assets that provide long-term certainty with respect to revenue and eligibility for government incentive programs.
- The Company actively assesses government renewable tax legislation and programs to maximize, wherever possible, access to project incentives.

Australia

The Government of Australia has a 43 per cent national emissions reduction target over 2005 levels by 2030 and a goal to achieve a net-zero national economy by 2050. The government is currently considering changes to the Safeguard Mechanism, but these changes are not expected to have a material impact on TransAlta's assets. Australian state governments have all adopted net-zero goals, and a number of states have interim targets for 2030 and 2040. These state policies are driving demand for zero-emission electricity and energy storage.

Risks

- Our Australian natural gas assets may face policy risk related to changes in government policies but remain well-positioned to mitigate those risks (please refer to Management Response below).

Opportunities

- The Company's growth plans and TransAlta's Clean Electricity Growth Plan are focused on building new, clean generation in Australia and other markets. Government policies and funding programs are generally supportive of the types of projects contemplated within TransAlta's strategy.
- Strong corporate demand for clean energy solutions in Australia's natural resource sectors present opportunities for TransAlta to leverage its existing expertise to help customers reach their decarbonization objectives.

Management Response

- Through the Company's growth plans and TransAlta's Clean Electricity Growth Plan, we continue to deliver clean energy solutions to natural resource customers in Western Australia. Our growing suite of technologies, including renewables and energy storage, positions us to provide contracted solutions to customers focused on the need for reliable and sustainable energy.
- TransAlta also continues to assess opportunities to grow our clean energy generation in alignment with Australia's national and state climate goals.
- The Company's assets are predominantly contracted with the ability to pass-through carbon compliance costs and serve a remote industrial load. As a result, the Company faces reduced policy risk.

Technology Risks

Technological changes to support the low-carbon transition present both risks and opportunities. We evaluate existing and emerging impacts of technology through our technologies team and our ERM process. Examples of technology risks and opportunities include infrastructure changes (shift to distributed energy and away from large-scale power generation infrastructure assets and projects) and digitization combined with greater adoption of energy efficiency (less use of our end product). Cost-competitive battery storage will enable greater adoption of renewables and a shift to a distributed power generation model. In 2020, we completed our first battery storage (10 MW) project at one of our wind farms in southern Alberta. In 2021, we agreed to deliver a hybrid system of solar with battery storage (48 MW) in Western Australia. Construction began in 2022 and is on track to be completed in early 2023. Our teams continuously adopt improved technology, which helps protect our shareholder value and maintain reliable and affordable electricity delivery. We will continue monitoring new technologies such as energy storage, hydrogen and CCUS technologies for future deployment.

Market Risks

Our major market risks are associated with our natural gas assets. Increased costs for natural gas supply due, in part, to carbon pricing changes could impact our future operating costs or ability to contract these assets. We actively monitor market risks through our energy marketing and asset optimization teams and our ERM process. TransAlta's Corporate function applies regionally specific carbon pricing, both current and anticipated, as a mechanism to manage future risks pertaining to uncertainty in the carbon market. This information is directed to the business unit level for further integration. Identified climate change risks or opportunities and carbon pricing are recognized in the annual TransAlta long- and medium-range forecasting processes. We capture economic profit through generation of environmental attributes (such as carbon offsets and renewable energy credits) and through TransAlta's emission trading function, which seeks to commoditize and profit from carbon trading. To simultaneously manage our risks and leverage market opportunities, we continue operating our hydro, wind and solar facilities and are investing in expanding our renewable energy fleet.

Reputation Risks

Negative reputational impacts, including revenue loss and reduced customer base, are evaluated through our ERM process. As consumer trends move in favour of renewable and clean electricity, we are investing in a diversified mix of renewable generation and optimizing our natural gas fleet. We continue to actively monitor and manage reputational risks by delivering renewable power solutions while maintaining competitive costs and reliability.

2. Physical Risks of Climate Change

Acute Physical Risks

We are continuing to evaluate the potential impact of acute climate-related impacts to our business. Our facilities, construction projects and operations are exposed to potential interruption or loss from environmental disasters (e.g., floods, strong winds, wildfires, ice storms, earthquakes, tornados, cyclones). A significant climate change event could disrupt our ability to produce or sell power for an extended period. Therefore, we strive to mitigate future impacts with climate adaptation solutions.

For example, our gas facility at South Hedland, Australia, is built with climate adaptation in mind. We designed the facility to withstand a category 5 cyclone (the highest cyclone rating). We have mitigated the risk of floods that can occur in the area by constructing the facility above normal flood levels. In 2019, a category 4 cyclone hit this facility but did not impact operations. We were able to continue generating electricity through the storm despite widespread flooding and the shutdown of the nearby port.

Chronic Physical Risks

We continuously investigate the physical impacts of longer-term shifts in climate patterns on our operating assets and actively integrate climate modelling into our long-term planning. For example, changes to water flow or wind patterns could impact our hydro and wind businesses and associated revenue generation.

Climate Change Metrics and Targets

Our GHG emissions are calculated using a number of different methodologies depending on the measurement technologies available at our facilities. Emissions data for scopes 1 and 2 have been aligned with the "Setting Organizational Boundaries: Equity Share" methodology set out in the GHG Protocol: A Corporate Accounting and Reporting Standard developed by the World Resources Institute and the World Business Council for Sustainable Development. We report emissions on an equity share basis, which means we report the percentage of emissions based on the percentage of equity we hold at the particular facility.

The GHG Protocol Corporate Accounting and Reporting Standard classifies a company's GHG emissions into three scopes. Scope 1 emissions are direct emissions from owned or controlled sources. Scope 2 emissions are indirect emissions from the generation of purchased energy. Scope 3 emissions are all indirect emissions (not included in scope 1 or 2) that occur in the value chain of the reporting company, including both upstream and downstream emissions.

All of our scope 1 emissions (100 per cent) are reported to national regulatory bodies with emissions reporting mandates in the countries where we operate. This includes Australia (National Greenhouse and Energy Reporting), Canada (Greenhouse Gas Reporting Program, National Pollutant Release Inventory) and the US (Environmental Protection Agency).

We compile our corporate GHG inventory using our business segment GHG calculations. As a result, emission factors and global warming potentials used in GHG calculations can vary due to variances in regional compliance guidance. The Clean Energy Regulator in Australia amended global warming potentials in August 2020. Therefore, the use of global warming potentials in our Australia GHG calculations differs from the rest of our fleet. Applying harmonized global warming potentials across our fleet would result in a minor variance to our overall calculated GHG totals.

We do not currently have any established long-term GHG reduction targets due to the current low exposure of GHG emissions in our business.

In 2022, CDP (the global disclosure system for environmental impacts known formerly as Carbon Disclosure Project) recognized TransAlta's climate change practices with an A- score. This is higher than the North America regional average of C, and higher than the thermal power generation sector average of B.

GHG Disclosures

The following tables detail our GHG emissions by scope and country in million tonnes of CO_2e. Some values do not sum to the indicated total due to rounding of tabulated emissions. Zeros (0.0) indicate truncated values:

GHG emissions by scope	2022	2021	2020
Scope 1 (million tonnes CO_2e)	**2.2**	2.1	2.0
Scope 2 (million tonnes CO_2e)	**0.0**	0.0	0.0
Total GHG emissions from operations (million tonnes CO_2e)	**2.2**	2.1	2.1
GHG emission intensity all facilities (tonnes CO_2e/MWh)	**0.18**	0.29	0.27

GHG emissions by country	2022	2021	2020
Australia (million tonnes CO_2e)	**0.9**	0.9	1.0
Canada (million tonnes CO_2e)	**1.1**	1.1	1.0
United States (million tonnes CO_2e)	**0.1**	0.1	0.0
Total GHG emissions (million tonnes CO_2e)	**2.2**	2.1	2.1

Our GHG emissions exposure in 2022 was 2.2 million tonnes CO2e (2021 – 2.1 million tonnes CO2e). Our eight gas facilities were responsible for the majority of our GHG emissions. GHG emissions from our renewable fleet are minor. The majority of our GHG emissions are scope 1 emissions. Our production from renewable energy in 2022 offset the equivalent of approximately 1.7 million tonnes of CO2e. These offsets support our customers in achieving their renewable energy procurement and/or GHG reduction goals. In 2022, our carbon intensity exposure was 0.18 tonnes CO2e/MWh (2021 – 0.29 tonnes CO2e/MWh). The reduction in GHG intensity is due to the recalculation of our total generation production methodology to include steam generation for our gas cogeneration facilities. Our total 2020 GHG emissions were revised to 2.1 million tonnes CO2e from 2.0 million tonnes CO2e reported in the 2020 MD&A due to a revision in rounding and truncation methodology.

Our 2022 GHG data is reported to a number of different regulatory bodies throughout the year for regional compliance and, as a result, may incur minor revisions as we review and report data. Any historical revisions will be captured and reported in future disclosure. As per the Kyoto Protocol, GHGs include carbon dioxide, methane, nitrous oxide, sulphur hexafluoride, nitrogen trifluoride, hydrofluorocarbons and perfluorocarbons. Our exposure is limited to carbon dioxide, methane, nitrous oxide and a small amount of sulphur hexafluoride. All of our scope 1 emissions (100 per cent) are reported to national regulatory bodies in the country in which we operate. This includes: Australia (National Greenhouse and Energy Reporting), Canada (Greenhouse Gas Reporting Program, National Pollutant Release Inventory) and the US (Environmental Protection Agency). Emission factors and global warming potentials used in our GHG calculations can vary due to difference in regional compliance guidance.

Environmental Management

Reducing the environmental impact of our activities benefits not only our operations and financial results, but also the communities in which we operate. We seek continuous improvement on numerous performance metrics such as GHG emissions, safety, and land and water impacts to minimize both risk to the environment and our compliance risk. The following environmental performance data are also reported by TransAlta as part of its overall reporting on ESG. Hence, it is important to note that comparing TransAlta and the Company's ESG data would result in double-counting.

We strive to be in compliance with all environmental regulations relating to our operations and facilities. Compliance with both regulatory requirements and management system standards is regularly verified through TransAlta's performance assurance policy and results are reported quarterly.

Environmental Governance

TransAlta employees operate and maintain the Company's assets pursuant to the Management Agreement, which includes providing environment, health and safety services to the Company. We do not specifically include environmental oversight within the General Governance Guidelines of the Board; however, the Board is generally responsible for understanding the principal risks associated with the Company's business and for ensuring that TransAlta has identified the principal risks and has implemented appropriate strategies and systems to monitor, manage and mitigate these risks, which include environmental risks. Accordingly, the Board maintains oversight on environmental-related business impacts to those facilities we own (including those held through economic interests), and TransAlta reports to the Board quarterly on environmental impacts, if any.

Environmental Policy

We have a proactive approach to minimizing environmental risks and we anticipate this strategy will benefit our competitive position as stakeholders and society place an increasing emphasis on successful environmental management. Our new Environmental Policy defines how we are integrating the protection of nature and the environment within TransAlta's strategy, Total Safety Management System, as well as the principles of conduct for the management of natural resources.

Environmental Management Systems

TransAlta operates our facilities in line with best practices related to environmental management standards. The environmental management processes are verified annually to ensure we continuously improve our environmental performance. Our knowledge of environmental management systems ("EMS") has matured since we aligned our processes in accordance with the internationally recognized ISO 14001 EMS standard. In addition to our environmental management practices, we comply with robust environmental laws and regulations that govern our operations, including air emissions, water quality, wastewater discharges and the generation, transport and disposal of waste and hazardous substances. These laws and regulations require us to obtain and comply with a variety of environmental registrations, licenses, permits and other approvals.

Environmental Performance

Biodiversity

The importance of environmental protection and biodiversity is outlined in our Environmental Policy as a corporate responsibility for TransAlta and its employees, and contractors working on TransAlta's behalf.

Overseeing Biodiversity-Related Issues
The Board, either directly or through the Audit and Nominating Committee, is responsible for assessing the effectiveness of programs and initiatives that support the environment policies and programs of the Company. This includes the integration of new growth projects and assessing any environmental related business impacts arising from our existing operations. The Board is also responsible for understanding the principal risks associated with the Company's business and for ensuring that TransAlta has identified the principal risks and has implemented appropriate strategies and systems to monitor, manage and mitigate these risks, which includes environmental risks. In addition, TransAlta provides management, operational and administrative services to the Company pursuant to the Management Agreement, which includes providing environment, health and safety services to the Company.

Assessing Biodiversity Impacts of Our Value Chain
We consider the biodiversity impact at all of our existing operations and the biodiversity impacts of all new growth projects are evaluated in line with regulatory compliance and with respect to TransAlta's focus on supporting biodiversity health. Details on how we asses biodiversity impacts of our value chain are presented in the following sections.

Growth
Each new development project must complete an in-depth environmental assessment (as prescribed by the local regulations and in line with the Company's assessment practices) describing baseline environmental conditions, identifying potential effects and developing mitigations for identified environmental sensitivities prior to construction and operation. These assessments have been specifically designed to meet the environmental information requirements of the jurisdictions in which we operate while identifying alignment with the intent of the standards and/or regulations applicable to these jurisdictions. Typically our renewable projects are greenfield development projects that require a higher level of evaluation compared to a number of our gas projects, which integrate into existing industrial facilities.

In addition, each greenfield development project has a detailed community engagement plan designed to ensure all potentially impacted host landowners, stakeholders, agencies, businesses, non-governmental organizations ("NGOs"), environmental NGOs and Indigenous communities understand the projects, have multiple and varied opportunities for meaningful engagement and feedback with the Company and its representatives. The ultimate goal is identifying, addressing, resolving and mitigating stakeholder or Indigenous community concerns prior to filing major permit applications for all of our projects.

Day-to-day Operations
Our gas operations have a relatively limited impact on biodiversity. The facilities are frequently constructed adjacent to existing industrial operations, and TransAlta may not always be the holder of the environmental permits. The land area these facilities occupy is also generally relatively small. One exception is our Sarnia cogeneration facility. This facility is made up of 260 acres of brownfield industrial land, some of which contains areas with tall grasses and potential wildlife. Care will be taken at the time of redevelopment of this land to minimize impact to species at risk through the completion of species at risk surveys as well as performing certain construction activities outside of nesting periods. For all sites that are under our environmental scope, we adhere to all relevant environmental compliance permits.

At our hydro facilities, a major focus is reducing the impact on fish and fish habitat. We adhere to provincial and federal regulations and operate in accordance with facility approvals. We continue to work towards operational improvement and review our Environmental Operational Management Plans regularly to ensure our operating parameters are met.

At our wind and solar operations, an Operational Environmental Management Plan has been developed for each asset to ensure that our facilities use environmentally sound and responsible practices that are based on a philosophy of continuous improvement of environmental protection. Examples of environmental initiatives to support our biodiversity focus include our bird and bat protection practices (installation of covers to protect birds from possible electrocution), a bird and bat mortality database (records all injuries and mortalities), environmentally sensitive resource monitoring (monitoring sensitive wildlife features in and around our operating wind facilities) and long-term dataset collections (e.g., wildlife studies pre-construction and post-construction). In addition, we continue to collaborate with industry and the scientific community to address environmental concerns and impacts pertaining to biodiversity.

Environmental Incidents and Spills

Protecting and minimizing our impact on the environment supports healthy ecosystems and mitigates our environmental compliance risk and reputational risk. We maintain corporate incident management procedures as part of our Total Safety Management System for appropriate initial response, investigation and lessons learned to minimize environmental incidents. In 2022, we recorded zero (0) significant environmental incidents (2021 – zero incidents). We recorded one (1) regulatory non-compliance environmental incident in 2022 (2021 – one incident). The incident occurred at our Sarnia facility and involved a wastewater discharge exceedance from our neutralization sump during water treatment.

Environmental incidents	2022	2021	2020
Significant environmental incidents	**0**	0	6
Regulatory environmental incidents	**1**	1	2

Regarding spills and releases, typical spills that could occur at our operation sites are hydrocarbon based. Spills generally happen in low environmental impact areas and are almost always contained and fully recovered. It is extremely rare for large spills to occur. Efforts are placed on providing immediate response to all spills to ensure assessment, containment and recovery of spilled materials result in minimal impact to the environment. The estimated volume of spills in 2022 was approximately 246 m3 (2021 – 2 m3). Spill volumes in 2022 were higher due to one environmental incident recorded at our Sarnia facility and had negligible environmental impacts.

Air Emissions

Our eight natural gas generation facilities, including those held through economic interests, emit low levels of nitrogen dioxide ("NO_x") that triggers reporting to national regulatory bodies. These gas facilities also produce trace amounts of sulphur dioxide ("SO_2") and particulate matter ("PM"), but at levels that are deemed negligible and do not trigger any reporting requirements or compliance issues. The air emissions at all six Australian facilities occur in very remote and unpopulated regions, away from dense urban areas. Our Sarnia facility in Ontario and Ada facility in Michigan are our only gas facilities within 49 kilometres of dense or urban environments.

The following represents our total air emissions over the last three years. Based on their orders of magnitude, the NO_x figures below have been rounded to the nearest 100 tonnes and the PM and SO_2 figures below have been rounded to the nearest 10 tonnes:

Air emissions	2022	2021	2020
NO_x emissions (tonnes)	**3,600**	3,600	3,400
SO_2 emissions (tonnes)	**10**	10	10
PM emissions (tonnes)	**170**	180	160

Water Use

Our principal use of water is for water flow in our hydro operations and for cooling and steam generation in our gas facilities. Water for gas operations is withdrawn primarily from rivers where we hold permits and must adhere to regulations on the quality of discharged water. We return or discharge on average 95 per cent of the water used for gas operations back to the source and meet the regulatory quality levels that exist in the various locations in which we operate. The difference in volume between withdrawal and discharge, representing consumption, is largely due to evaporation loss. Water consumption fluctuates based on several factors such as facility availability and weather.

In 2022, our gas facilities returned 97 percent of the water withdrawn to the environment. Our Sarnia gas cogeneration facility, which produces both electricity and steam for our customers, operates a once-through, non-contact cooling system for our steam turbines. This means large amounts of water flow in and out of the system. Water from this source is currently at low risk as per analysis from the SASB-endorsed Aqueduct Water Risk Atlas tool. Ada is a smaller facility with less water use; water in the area is rated as low risk.

The Aqueduct Water Risk Atlas tool highlights that water risk is high at our interior and southern Western Australia facilities due to high interannual variability in the region. Interannual variability refers to wider variations in regional water supply from year to year. Our water supply at these facilities is provided at no cost under PPAs with our mining customers, hence our risk is significantly mitigated. In addition, our customers have developed conservation and re-use strategies aimed at recycling water for mining operational needs. All water used in the region is sourced from scheme water, and with respect to gas and diesel turbine water use, water wash techniques and frequency of activities are continually modified to minimize consumption and environmental impact. Water used in our operations is returned to our customers, who repurpose this water for vegetation and dust suppression in their mining operations.

At our South Hedland facility in northern Western Australia, water risk is also high due to the risk of flooding in the region. The South Hedland facility was built above normal flood levels to mitigate potential risk from flooding. During a category 4 cyclone event in the area and associated flooding in the region in 2019, the South Hedland facility continued to generate power for the region. In addition, the South Hedland facility has developed a Water Efficiency Management Plan with Water Company WA, the principal supplier of water, wastewater and drainage services in Western Australia. Initiatives are aimed at reducing water consumption and costs through innovative technology and efficiencies identified through facility management.

The following represents our total water consumption (million m^3) over the last three years. Figures below have been rounded to the nearest 10 million m^3:

Water management	2022	2021	2020
Water intake (million m^3)	**210**	210	190
Water discharge (million m^3)	**200**	200	180
Water consumption (million m^3)	**10**	10	10

Land Use

Land use associated with our operations is approximately 1,805 hectares. We evaluated the definition of our land use and determined more area should be included for our Sarnia facility, increasing our land use compared to what was reported last year. We work closely with all of our neighbouring stakeholders and rights holders in all of our operating regions.

Waste

In 2022, the facilities we own, directly and through economic interests, generated approximately 26,000 tonnes of non-hazardous and hazardous waste (2021 – 28,300 tonnes). Waste diversion from landfill is a focus area for TransAlta and in 2022, approximately 95 per cent (2021 – 98 per cent) of total waste was diverted away from landfills through recycling efforts. Less than 0.5 per cent of hazardous waste generation was directed to landfills, which reflects this focus on waste diversion from landfills. Of the total waste generated, hazardous waste accounted for 87 per cent (2021 – 87 per cent). Non-hazardous waste generation accounted for six (13) per cent (2021 – 13 per cent) of total waste. Our waste volumes typically fluctuate year-over-year based on the level of maintenance required to sustain our facilities.

The following represents our total waste production over the last three years. Figures have been rounded to the nearest 100 tonne equivalent ("eq."). Zeros (0) indicate true values:

Waste management	2022	2021	2020
Total waste generation (tonnes eq.)	**26,000**	28,300	23,800
Waste to landfill (tonne eq.)	**1,300**	500	200
Waste recycled (tonne eq.)	**24,700**	27,800	23,600
Waste reuse (tonne eq.)	**0**	0	0
% of total waste to landfill	**5**	2	1
% of total waste: hazardous	**87**	87	91
% hazardous waste to landfill	**<0.5**	<0.5	<0.5

Energy Use

We use energy in a number of different ways. At our gas facilities, we burn predominantly natural gas, but also a small amount of diesel in dual gas and diesel turbines in Australia. We harness the kinetic energy of water and wind to generate electricity. We also generate electricity from the sun. In addition to combustion of fuel sources, we also track combustion of gasoline or diesel in our vehicles and the electricity use and fuel use for heating (such as natural gas) in the buildings we occupy. Knowledge of how much energy we use allows us to optimize and create energy efficiencies. As an electricity generator, we continually and consistently look for ways to optimize and create efficiencies related to the use of energy.

The following highlights our operational resource or energy use. Figures have been rounded to the nearest thousand:

Resource or energy use	2022	2021	2020
Natural gas (GJ): combustion/power generation and heating	**50,333,000**	49,727,000	39,875,000
Diesel (L): combustion/power generation and vehicle use	**4,787,000**	4,813,000	4,873,000
Gasoline (L): vehicle use	**152,000**	171,000	175,000
Propane (L): vehicle use and heating	**93,000**	76,000	82,000
Electricity (MWh): building operations	**16,000**	17,000	14,000
Total resource or energy use (GJ)	**50,588,000**	49,988,000	40,126,000

Social Management and Performance

TransAlta provides management, administrative and operational services to the Company pursuant to the Management Agreement. As a result, the Company benefits from the well-established social sustainability practices at TransAlta.

Social Governance

TransAlta employees operate and maintain the Company's assets pursuant to the Management Agreement, which includes providing environment, health and safety services to the Company. The General Governance Guidelines of the Board provide that the Board is responsible for monitoring the actions of TransAlta, including reviewing and monitoring compliance with all significant policies and procedures, such as the Corporate Code of Conduct that includes principles of fair dealing and ethical conduct. The Board maintains oversight on social impacts associated with those facilities we own (including those held through economic interests), and TransAlta regularly reports to the Board on any applicable social developments, including as it pertains to any safety incidents, customer interactions, or community and Indigenous developments.

Human Rights

The Company is committed to upholding domestic and internationally accepted labour standards and supports the protection of human rights of all its employees, contractors, suppliers, partners, Indigenous partners and other stakeholders. We abide by human rights and modern slavery legislation in Canada, the US and Australia. We have a zero-tolerance approach to discrimination based on age, disability, gender, race, religion, colour, national origin, political affiliation or veteran's status or any other prohibited ground as defined by human rights legislation in the jurisdictions in which we operate. We afford equal opportunities for men and women, support the right to freedom of association and the right to organize unions and bargain collectively. We do not conduct operational human rights reviews or impact assessments, but we do have governance practices in place for the protection of human rights.

Our corporate human rights-related policies include the Human Rights and Discrimination Policy, Corporate Code of Conduct, Supplier Code of Conduct and Whistleblower Policy. In Australia, we report Modern Slavery Act Statements under the Australian modern slavery legislation.

Employment Standards

The Company does not have any direct employees. All management, administrative and operational services are provided by TransAlta under the Management Agreement. TransAlta is an attractive employer in all three countries in which it operates. TransAlta provides compensation to its employees at levels that are competitive in relation to their respective location. It strives to be an employer of choice through its total rewards program, which includes recognition pay for special contributions, participation in TransAlta's incentive program for eligible employees, benefits that can include extended health, medical, vision and dental, retirement plans, pension plans, educational assistance for courses and workshops, and association memberships. In 2022, 20 per cent of TransAlta's annual incentive plan was linked to achieving specific ESG objectives.

In addition to monetary rewards, TransAlta also offers non-monetary incentives, which include competitive paid time-off programs to encourage work/life balance, time off for volunteer activities, discounted rates on home and auto insurance, financial planning tools and resources, ongoing learning and development, employee assistance programs, culture and purpose (namely, by being part of a company that is recognized for a sustainability legacy and at the forefront of energy transition), and being part of a company that invests in community organizations like the Calgary Stampede, United Way and many more.

Health and Safety

The safety of our people, communities and environment is one of our core values. The Company operates large and often complex facilities. The environments in which we work, including Canadian winters and the Australian outback, can add additional challenges to keeping our employees, contractors and visitors safe. Each year we invest significant resources into improving our safety performance, including positively enhancing safety culture. The safety of people at our facilities, including TransAlta employees, staff, contractors and visitors, is a top priority of our social performance.

Our Total Recordable Injury Frequency ("TRIF") result for 2022 was 0.58 compared to 1.62 in 2021. TRIF tracks the number of more serious injuries, and excludes minor first aids, relative to exposure hours worked. Our TRIF decreased year-over-year due to a reduction in minor medical aid incidents. In 2022, substantial progress was made on initiatives related to our three key targets: maturing the safety culture, assess and address risk tolerance, and standardize safety information and technology. In 2022, TransAlta expanded behavioural safety training to all employees in order to provide them with tools to take control of their behaviours, and consequently, improve our safety results. This training reinforces our journey to create a psychologically safe environment in our workplace as it encourages personal accountability towards safety.

The following highlights our safety statistics over the last three years. Exposure hours have been rounded to the nearest thousand:

Safety management	2022	2021	2020
Medical aid incidents	**2**	4	1
Lost-time injury incidents	**0**	1	1
Restricted working injury incidents	**0**	0	0
Exposure hours	**695,000**	617,000	589,000
Total recordable injury frequency rate	**0.58**	1.62	0.76

Indigenous Relationships

At the Company, we value our relationships and partnerships with stakeholders and our Indigenous partners. Our Indigenous Relations team focuses on community engagement, employment, economic development and community investment. We ensure that our principles for engagement are upheld and that the Company fulfils its commitments to Indigenous communities. Efforts are focused on building and maintaining solid relationships and establishing strong communication channels that enable the Company to share information regarding operations and growth initiatives, gather feedback to inform project planning, and understand priorities and interests from communities to better address concerns.

Methods of engagement include:

- Relationship building through regular communication and in-person meetings with representatives at various levels within Indigenous community organizations;
- Hosting company-community activities that share both business information and cultural lessons;
- Maintaining consistent communications with each community and following appropriate community protocols and procedures;
- Participating in community events such as pow wows and blessing ceremonies; and
- Providing both monetary and in-kind sponsorships for community initiatives.

We work with communities to build relationships based on a foundation of ongoing communication and mutual respect. This is recognized in our Indigenous Relations Policy, which was recently updated to include our acknowledgement and understanding of the intent of the recommendations of the United Nations Declaration on the Rights of Indigenous Peoples.

Support for Indigenous Youth, Education and Employment

We recognize the importance of investing in Indigenous students and our financial support helps students complete their education, become self-sufficient and give back to their communities. We are keen to help young Indigenous students reach their full potential and achieve their dreams. We also believe in providing financial support to Indigenous primary school students, helping to instill a passion for lifelong learning. In 2022, TransAlta provided more than $457,000 to support Indigenous youth, education and employment programs, representing 20 per cent of TransAlta's total community investment. Highlights include:

- Mother Earth's Children's Charter School ("MECCS") – Located in Treaty 6 territory, Alberta, MECCS offers education for students from kindergarten to Grade 9 and is cited as Canada's first and only Indigenous children's charter school. The student population is diverse and includes Métis, Cree, Nakota Sioux and Stoney. Volunteers from TransAlta travel to the school to deliver Christmas gifts, providing both our employees and the students the opportunity to engage with each other.
- Spirit North – TransAlta is proud to support Spirit North, a national charitable organization that uses land-based activities to improve the health and well-being of Indigenous youth. Through the transformative power of sport and play, participants learn important lessons, discover untold potential and build the confidence and courage needed to overcome the hardships Indigenous youth often face.
- The Read On Literacy Program – In 2022, TransAlta supported the development of an Indigenous literacy program that seeks to mentor young people in First Nation schools to achieve their maximum academic, personal and social development by promoting the core values of education, literacy, taking pride in ones's culture and making good decisions in one's life. TransAlta has sponsored the Read On Literacy Program to provide this initiative to elementary students in Alberta in 2023.
- Books In Homes – Funding supports an early literacy program for the children of Tjiwarl Aboriginal Corporation members in Western Australia.

Stakeholder Relationships and Local Communities

Fostering relationships with our stakeholders is important to the Company. We take a proactive approach to building relationships and understanding the impacts our business may have on local stakeholders. To act in the best interests of the Company and to optimize the balance between financial, environmental and social value for both our stakeholders and the Company, we seek to:

- Engage regularly with stakeholders about our operations, growth prospects and future developments;
- Consider feedback and make changes to project designs and plans to resolve and/or accommodate concerns expressed by our stakeholders; and
- Respond in a timely and professional manner to stakeholder inquiries and concerns and work diligently to resolve issues or complaints.

Major stakeholder categories include shareholders, debt holders, business partners, contractors, suppliers, customers, community organizations, employees, industry and professional bodies, media, NGOs, government and regulatory agencies, and neighbouring residents.

In 2022, TransAlta contributed approximately $2.3 million in donations and sponsorships (2021 – $3.0 million), with a continued focus in three priority areas: youth and education, environmental leadership and community health and wellness.

Customers

As a customer-centred clean energy leader, our mission is to provide safe, low-cost and reliable clean electricity to our customers. We continue to develop renewable energy facilities to support customers achieving their sustainability goals and targets, such as 100 per cent clean electricity targets and/or GHG in reduction targets. Production from renewable electricity in 2022 resulted in the avoidance of approximately 1.7 million tonnes of CO_2e for our customers.

Examples of renewable energy projects in 2022 include the construction of our Northern Goldfields solar project with a battery energy storage system in Western Australia, which has a 48 MW capacity and is subject to a PPA with BHP Nickel West. Construction began in 2022 and is on track to be completed in early 2023. In 2022, the Company reached an agreement with BHP to expand the Mount Keith transmission system to support the Northern Goldfields-based operations.

For further details, please refer to the Significant and Subsequent Events section of this MD&A.

In consultation with TransAlta, we assess renewable and hybrid projects that can be custom built to secure energy production and reduce the environmental footprints of our customers in Canada, the US and Australia. By supporting the development of our customers' sustainability goals we also advance our own clean electricity and decarbonization strategy.

Supply Chain and Sustainable Sourcing

We continue to seek solutions to advance supply chain sustainability. As we explore major projects, we assess vendors both at the evaluation stage and as part of information requests on such elements as safe work practices, environmental practices and Indigenous spend. This means, for example, getting information on:

- Estimated value of services that will be procured though local Indigenous businesses;
- Estimated number of local Indigenous persons that will be employed;
- Understanding overall community spend and engagement; and
- Understanding the state of community relations through interview processes and stakeholder work.

Our Supplier Code of Conduct applies to all vendors and suppliers of TransAlta. Under this code, suppliers of goods and services to TransAlta are required to adhere to our core values, including as they pertain to health and safety, ethical business conduct and environmental leadership. The code also allows suppliers to report ethical or legal concerns via TransAlta's Ethics Helpline.

Sustainability Governance

The General Governance Guidelines of the Board provide that the Board, either directly or through the Audit and Nominating Committee, is responsible for assessing the effectiveness of programs and initiatives that support the environment, health and safety, sustainability, corporate social responsibility, and climate change policies and programs of the Company, including assessing the physical and transitional risks associated with climate change. TransAlta provides management, operational and administrative services to the Company pursuant to the Management Agreement, which includes providing environment, health and safety services to the Company.

The following policies help us govern sustainability:

- Corporate Code of Conduct
- Supplier Code of Conduct
- Whistleblower Policy
- Total Safety Management Policy
- Human Rights and Discrimination Policy
- Indigenous Relations Policy
- Board and Workforce Diversity Policy and Diversity and Inclusion Pledge
- Environmental Policy

Our sustainability memberships include key sustainability organizations and working groups such as the EXCEL Partnership, the Canadian Business for Social Responsibility and the Electricity Canada Sustainable Electricity Steering Committee, which all provide validation and support of our sustainability strategy and practices.

For additional details on governance, please refer to the Risk Management section of this MD&A.

Risk Management

Our business activities expose us to a variety of risks, including, but not limited to, operational and commercial risks, increased regulatory changes, rapidly changing market dynamics and volatility in commodity markets. Our goal is to manage these risks so that we are reasonably protected from an unacceptable level of earnings, cash available for distribution or financial exposure while still enabling business development. We use a multilevel risk management oversight structure to manage the risks arising from our business activities, the markets in which we operate and the political environments and structures with which we interface.

The responsibilities of various stakeholders in our risk management oversight structure are described below:

The Board is responsible for the stewardship of the Company. Subject to the provisions of the Canada Business Corporations Act, the Board may delegate certain of its powers and authority that the Board, or independent members of the Board, as applicable, deem necessary or desirable to effect the actual administration of the duties of the Board. Pursuant to the Management Agreement, the Board has delegated broad discretion to administer and manage the business and affairs of the Company to TransAlta. Nonetheless, the Board retains certain responsibilities that are described in the Board of Directors' Governance Guidelines, a copy of which is available on our website and on SEDAR under the electronic profile of the Company. The Board includes four independent members.

The Audit and Nominating Committee's primary role is to assist the Board in fulfilling its oversight responsibilities regarding our internal controls, financial reporting and ERM processes. The Audit and Nominating Committee is made up entirely of independent members of the Board.

The Audit and Nominating Committee is directly responsible for overseeing the work of the external auditor engaged for the purpose of preparing and issuing an auditor's report or performing other audit, review or attestation services, including the resolution of disagreements between the external auditor and management. The external auditor reports directly to the Audit and Nominating Committee. In addition, the Audit and Nominating Committee pre-approves all non-audit services undertaken by the external auditor.

The Audit and Nominating Committee is responsible for establishing and maintaining satisfactory procedures for the receipt, retention and treatment of complaints and for the confidential, anonymous submission of questionable accounting or auditing matters. The Audit and Nominating Committee is accountable to the Board and provides a report to the Board at each regularly scheduled Board meeting outlining the results of the Audit and Nominating Committee's activities and any reviews it has undertaken.

The Audit and Nominating Committee is also responsible for the identification and recommendation of individuals to the Board for nomination as members of the Board and its committees.

Risk Controls

Our risk controls have several key components:

Enterprise Tone

We strive to foster beliefs and actions that are true to, and respectful of, our many stakeholders. We do this by investing in communities where we live and work, operating and growing sustainably, putting safety first, and being responsible to the many groups and individuals with whom we work.

Policies

Under the Management Agreement, TransAlta provides all the general administrative and operational services as may be required or advisable for the management of the affairs of the Company and operation and maintenance of our facilities. TransAlta maintains a comprehensive set of enterprise-wide policies. These policies establish delegated authorities and limits for business transactions, as well as allow for an exception approval process. Periodic reviews and audits are performed to ensure TransAlta's compliance with these policies. All TransAlta employees are required to comply with a corporate code of conduct. Our directors and officers are also required to sign a code of conduct on an annual basis.

Risk Factors

Risk is an inherent factor of doing business. We are exposed to a number of risks through the pursuit of our strategic objectives. Some of these risks impact the electricity industry as a whole and others are unique to the Company. The impact of any risk or a combination of risks may adversely affect, among other things, the Company's business, reputation, financial condition, results of operations and cash flows, which may reduce or restrict our ability to pursue our strategic priorities, respond to changes in our operating environment or fulfil our obligations (including debt servicing requirements). The effect of these risks may materially affect the market price of our securities or ability to pay dividends to our shareholders. In determining the payment and level of dividends, the Board considers a number of factors, including our liquidity, financial performance, and results of operations.

The following section addresses some, but not all, risk factors that could affect our future results and our activities in mitigating those risks. These risks do not occur in isolation, but must be considered in conjunction with each other. For a more comprehensive discussion of those inherent risks, see "Risk Factors" in our most recent AIF on file with the Canadian provincial securities regulatory authorities. Also see the "Forward-Looking Statements" on page 2 of this MD&A for discussion on forward-looking information.

For some risk factors we show the after-tax effect on net earnings of changes in certain key variables. The analysis is based on business conditions in 2022 and includes the indirect effects of risks on the facilities in which we have an economic interest. The actions that we describe as being part of our management of these risks include those carried out by TransAlta as owner of those facilities. Each item in the sensitivity analysis assumes all other potential variables are held constant. While these sensitivities are applicable to the period and the magnitude of changes on which they are based, they may not be applicable in other periods, under other economic circumstances or for a greater magnitude of changes. The changes in rates should also not be assumed to be proportionate to earnings in all instances.

Volume Risk

Volume risk relates to the variances from our expected production. The financial performance of our hydro, wind and solar operations is highly dependent upon the availability of their input resources in a given year. Shifts in weather or climate patterns, seasonal precipitation and the timing and rate of melting and runoff may impact the water flow to our facilities. The strength and consistency of the wind resource at our facilities impacts production. The operation of thermal facilities can also be impacted by ambient temperatures and the availability of water and fuel. Where we are unable to produce sufficient quantities of output in relation to contractually specified volumes, we may be required to pay penalties or purchase replacement power in the market.

The volume risk is managed by TransAlta by:

- Actively managing our assets and their condition in order to be proactive in facility maintenance so that our facilities are available to produce when required;
- Placing our facilities in locations we believe to have adequate resources to generate electricity to meet the requirements of our contracts. However, we cannot guarantee that these resources will be available when we need them or in the quantities that we require; and
- Diversifying our fuels and geography as one way of mitigating regional or fuel-specific events.

Generation Equipment and Technology Risk

There is a risk of equipment failure due to wear and tear, latent defect, design error or operator error, among other things, which could have a material adverse effect on the Company. Although our generation facilities have generally operated in accordance with expectations, there can be no assurance that they will continue to do so. Our facilities are exposed to operational risks such as failures due to damage in generators and turbines, and other issues that can lead to outages and increased volume risk. If facilities do not meet production targets specified in their PPA or other long-term contracts, we may be required to compensate the customer for the loss in the availability of production or record reduced energy or capacity payments, or may result in a default in the PPA or the project financing.

As well, we are exposed to procurement risk for specialized parts that may have long lead times. If we are unable to procure these parts when they are needed for maintenance activities, we could face an extended period where our equipment is unavailable to produce electricity.

This generation equipment and technology risk is managed by TransAlta by:

- Operating our generating facilities within defined industry standards that optimize availability over their commercial operating life;
- Performing preventive maintenance in accordance with applicable industry practices, major equipment supplier recommendations and our operating experience;
- Adhering to comprehensive maintenance programs and regular turnaround schedules;
- Adjusting maintenance plans by facility to reflect equipment type, age and commercial risk;
- Having adequate business interruption coverage in place to cover extended forced outages;
- Having clauses in our PPAs and other long-term contracts that allow us to declare force majeure in the event of an unforeseen failure;
- Selecting and applying proven technology in our generating facilities, where practical;
- Where technology is newer, ensuring that service agreements with equipment suppliers include appropriate availability and performance guarantees;
- Monitoring our fleet against industry performance to identify issues or advancements that may impact performance and adjusting our maintenance and investment programs accordingly;
- Negotiating strategic supply agreements with selected vendors to ensure key components are readily available in the event of a significant outage;
- Monitoring the condition of our assets and performing predictive analytics, and adjusting our maintenance programs to maintain availability;
- Entering into long-term arrangements with our strategic supply partners to ensure availability of critical spare parts; and
- Implementing long-term asset management strategies that optimize the life cycles of our existing facilities and/or identify replacement requirements for our generating assets.

Environmental Compliance Risk

Our activities are subject to stringent environmental laws and regulations promulgated and administered by federal, provincial, state and municipal governments where we operate. These laws and regulations generally concern use of water, wildlife protection, wetlands preservation, remediation of contamination, waste disposal requirements, preservation of archaeological artifacts, endangered species preservation and noise limitations, among others.

Environmental compliance risks are risks to our business associated with existing, new and/or revised environmental regulations. New emissions reduction objectives for the power sector are being established by governments in Canada, the US and Australia. We anticipate continued and growing scrutiny by investors relating to sustainability performance. These changes to regulations may affect our earnings by reducing the operating life of generating facilities, imposing additional costs on the generation of electricity, such as emissions caps or taxes, requiring additional capital investments in emissions capture technology, or requiring us to invest in offset credits. It is anticipated that these compliance costs will increase due to increased political and public attention on environmental concerns.

This environmental compliance risk is managed by TransAlta by:

- Seeking continuous improvement in numerous performance metrics such as emissions, safety, land and water impacts, and environmental incidents;
- Having an International Organization for Standardization and Occupational Health and Safety Assessment Series-based environmental health and safety management system in place that is designed to continuously improve performance;
- Committing significant experienced resources to work with regulators in Canada, the US and Australia to advocate that regulatory changes are well designed and cost-effective;
- Purchasing environmental attributes (such as carbon or emissions offset credits);
- Investing in renewable energy projects, such as wind, solar and hydro generation, and storage technologies; and
- Incorporating change-in-law provisions in contracts that allow recovery of certain compliance costs from our customers.

We strive to be in compliance with all environmental regulations relating to operations and facilities. Compliance with both regulatory requirements and management system standards is regularly audited through our performance assurance policy and results are reported quarterly.

Credit Risk

Credit risk is the risk to our business associated with changes in the creditworthiness of entities with which we have commercial exposures. This risk results from the ability of a counterparty to either fulfil its financial or performance obligations to us or where we have made a payment in advance of the delivery of a product or service. The inability to collect cash due to us or to receive products or services may have an adverse impact upon our net earnings and cash flows. We are also exposed indirectly to the credit risks of TEA and other TransAlta subsidiaries through our economic interest investments.

This exposure to credit risk is managed by TransAlta by:

- Establishing and adhering to policies that define credit limits based on the creditworthiness of counterparties, contract term limits and the credit concentration with any specific counterparty;
- Requiring formal sign-off on contracts that include commercial, financial, legal and operational reviews;
- Requiring security instruments, such as parental guarantees, letters of credit, cash collateral or third-party credit insurance if a counterparty goes over its limits. Such security instruments can be collected if a counterparty fails to fulfil its obligation; and
- Reporting our exposure using a variety of methods that allow key decision-makers to assess credit exposure by counterparty. This reporting allows us to assess credit limits for counterparties and the mix of counterparties based on their credit ratings.

If established credit exposure limits are exceeded, we take steps to reduce this exposure, such as requesting collateral, if applicable, or by halting commercial activities with the affected counterparty. However, there can be no assurances that we will be successful in avoiding losses as a result of a contract counterparty not meeting its obligations.

Our credit risk management profile and practices have not changed materially from Dec. 31, 2021. We had no material counterparty losses in 2022. We continue to keep a close watch on changes and trends in the market and the impact these changes could have on our business activities and will take appropriate actions as required, although no assurance can be given that we will always be successful.

A summary of our direct and indirect credit exposures at Dec. 31, 2022, is provided below:

	Direct exposure	Indirect exposure[2]
Counterparty credit rating	**Receivables[1]**	**Trade accounts receivable**
Investment grade	**41**	**90**
Non-investment grade	**56**	**3**
TransAlta and subsidiaries of TransAlta	**45**	—
No external rating	**37**	**—**

(1) Includes trade accounts receivable, distributions receivable from subsidiaries of TransAlta and a loan receivable.
(2) Includes accounts receivable of TEA. Receivables of other economic interest investments were approximately $18 million in total and are with investment-grade and other high-quality counterparties.

Currency Rate Risk

We are exposed to fluctuations in the exchange rates between the Canadian and the Australian and US dollars as a result of our investments in and loans from subsidiaries of TransAlta. Changes in the values of these currencies relative to the Canadian dollar may affect our earnings or the value of our foreign investments to the extent that these positions or cash flows are not hedged or the hedges are ineffective.

We manage currency rate risk on our Australian and US dollar cash flows, primarily related to the Australian Gas and US Wind and Solar assets, with foreign exchange forward contracts.

As at Dec. 31, 2022, a three cent increase or decrease in the Australian dollar relative to the Canadian dollar would not significantly increase or decrease net earnings of the Company, but it would result in an increase or decrease in other comprehensive income of $16 million primarily as a result of changes in the values of our investments in subsidiaries being recorded in other comprehensive income.

The Wyoming, Big Level, Antrim, Lakeswind, Mass Solar, Skookumchuck, Ada cogeneration and North Carolina Solar tracking preferred shares contain embedded US-denominated cash flows. A three cent increase or decrease in the US dollar relative to the Canadian dollar would not significantly increase or decrease net earnings of the Company, but it would result in an increase or decrease in other comprehensive income of $12 million.

Liquidity Risk

Liquidity risk arises from our ability to meet general funding needs and manage the assets, liabilities and capital structure of the Company. Our liquidity needs are met through a variety of sources, including capital markets, cash generated from operations and funding from our credit facility. Our primary uses of funds are operational expenses, capital expenditures, interest and principal payments on debt, funding growth and dividends.

We manage liquidity risk by:

- Maintaining sufficient liquid financial resources to fund obligations as they come due in the most cost-effective manner;
- Preparing and revising longer-term financing plans to reflect changes in business plans and the market availability of capital; and
- Maintaining a $700 million syndicated credit facility to support potential liquidity requirements.

Interest Rate Risk

Changes in interest rates can impact our borrowing costs, and changes in our cost of capital may also affect the feasibility of new growth initiatives.

We manage interest rate risk by establishing and adhering to policies that include:

- Employing a combination of fixed and floating rate debt instruments; and
- Monitoring the mixture of floating and fixed rate debt and adjusting where necessary to ensure a continued efficient mixture of these types of debt; and
- Opportunistically hedging for known debt issuances.

At Dec. 31, 2022, five per cent of our total debt portfolio was subject to changes in interest rates. At Dec. 31, 2021, nil was subject to changes in interest rates.

Project Management Risk

On capital projects, we face risks associated with cost overruns, delays and performance.

These project risks are managed by TransAlta by:

- Ensuring all projects are reviewed to monitor that established processes and policies are followed, risks have been properly identified and quantified, input assumptions are reasonable, and returns are realistically forecasted prior to senior management and Board approvals (including, where applicable, independent Board approval);
- Using consistent and disciplined project management methodologies and processes;
- Performing detailed analysis of project economics prior to construction or acquisition and by determining our asset contracting strategy to ensure the right mix of contracted and merchant capacity before starting construction;
- Developing and following through with comprehensive plans that include critical paths identified, key delivery points and backup plans;
- Managing project closeouts so that any learnings from the project are incorporated into the next significant project;
- Fixing the price and availability of the equipment, foreign currency rates, warranties and source agreements as much as is economically feasible before proceeding with the project; and
- Entering into labour agreements to provide security around cost and productivity.

Human Resource Risk

Human resource risk relates to the potential impact upon our business as a result of changes in the workplace. Human resource risk can occur in several ways:

- Potential disruption as a result of labour action at our generating facilities;
- Reduced productivity due to turnover in positions;
- Inability to complete critical work due to vacant positions;
- Failure to maintain fair compensation with respect to market rate changes; and
- Reduced competencies due to insufficient training, failure to transfer knowledge from existing employees or insufficient expertise within current employees.

We do not have employees, but rather rely on the Management Agreement with TransAlta for the provision of all our management, administrative and operational services, including making available appropriate personnel. The Human Resources risk is managed by TransAlta by:

- Possessing a labour relations strategy;
- Applying a human-centric approach that emphasizes the employee experience, including actively improving our workplace culture, focusing on ED&I strategies and offering health and wellness programming and initiatives;
- Focusing on employee learning and development;
- Monitoring industry compensation and aligning salaries with those benchmarks;
- Using incentive pay to align employee goals with corporate goals;
- Monitoring and managing target levels of employee turnover; and
- Ensuring new employees have the appropriate training and qualifications to excel in their jobs.

Regulatory and Political Risk

Regulatory and political risk is the risk to our business associated with potential changes to the existing regulatory structures and the political influence upon those structures. This risk can come from market regulation and re-regulation, increased oversight and control, structural or design changes in markets, or other unforeseen influences. Market rules are often dynamic and we are not able to predict whether there will be any material changes in the regulatory environment or the ultimate effect of changes in the regulatory environment on our business. This risk includes, among other things, uncertainties associated with the development of carbon pricing policies and funding.

We manage these risks systematically through TransAlta's legal and regulatory compliance programs, which are reviewed periodically to ensure their effectiveness. TransAlta works with governments, regulators, electricity system operators and other stakeholders to resolve issues as they arise. TransAlta actively monitors changes to market rules and market design and engages in industry and government-agency-led stakeholder engagement processes. Through these and other avenues, TransAlta engages in advocacy and policy discussions at a variety of levels. These stakeholder negotiations have allowed us to engage in proactive discussions with governments and regulatory agencies over the longer term.

International investments are subject to unique risks and uncertainties relating to the political, social and economic structures of the respective country and such country's regulatory regime. We mitigate this risk through the use of non-recourse financing and insurance.

Transmission Risk

Access to transmission lines and transmission capacity for existing and new generation is key to our ability to deliver energy produced at our power facilities to our customers. The risks associated with the aging existing transmission infrastructure in the markets in which we operate continue to increase because new connections to the power system are consuming transmission capacity faster than it is being added by new transmission developments.

Reputational Risk

Our reputation is one of our most valued assets. 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.

We manage reputation risk by:

- Striving as a neighbour and business partner in the regions where we operate to build viable relationships based on mutual understanding leading to workable solutions with our neighbours and other community stakeholders;
- Clearly communicating our business objectives and priorities to a variety of stakeholders on a routine basis;
- Maintaining positive relationships with various levels of government;
- Pursuing sustainable development as a longer-term corporate strategy;
- Ensuring that each business decision is made with integrity and in line with our corporate values;
- Communicating the impact and rationale of business decisions to stakeholders in a timely manner; and
- Maintaining strong corporate values that support reputation risk management initiatives, including an annual code of conduct sign-off.

Corporate Structure Risk

TransAlta

TransAlta is the largest shareholder of the Company and is responsible for the management and operation of the Company pursuant to the Management Agreement and is also able to nominate directors to the Board. As a result, TransAlta exercises substantial influence over our operations, administration and growth. In addition, we rely on TransAlta to identify acquisition and growth opportunities. TransAlta is not required to allocate any minimum level of dedicated resources for the pursuit of renewable power generation opportunities for the Company, nor is TransAlta required to offer any specific opportunities to us. In 2023, TransAlta announced that it is positioned as the primary growth vehicle for the consolidated TransAlta group. While TransAlta also announced that it will support organic expansions and opportunities to manage the Company's current Canadian and Australian tax horizons, as well as support the sustainability of the Company's dividend, our growth may not continue at historical rates due to TransAlta's new strategy. Any failure to effectively manage our operations or to support our growth strategy could have a material adverse effect on our business, financial condition and results of operations. Our risk management procedures in respect of this corporate structure risk include having conflict of interest procedures and having Board members that are independent of TransAlta.

Other

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 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.

General Economic Conditions

Changes in general economic conditions impact product demand, revenue, operating costs, the timing and extent of capital expenditures, the net recoverable value of PP&E, financing costs, credit and liquidity risk, and counterparty risk.

Investments in Subsidiaries of TransAlta

The investments in economic interests of the Australian Assets, Wyoming, Lakeswind, Big Level, Antrim, Mass Solar, Skookumchuck, Ada and North Carolina Solar facility, which are all owned by TransAlta, present additional risk factors that could affect our future results, which are outlined below along with our activities in mitigating those risks :

Nature of interests

The Company indirectly retains an economic interest in, and has no legal rights in respect of, the Australian Assets, Wyoming, Lakeswind, Big Level and Antrim, Mass Solar, Skookumchuck wind facility, Ada cogeneration facility and North Carolina Solar facility. We own securities providing an economic interest based on the cash flows from the assets broadly equal to the underlying net distributable profits. This means that we are not able to dispose of these assets or exercise other rights of ownership, nor do we have any ability to directly oversee or manage the ownership and operation of these assets. Consequently, the rights to us in relation to these assets may be of less value compared to direct ownership of these assets.

Dependence on financial performance

The value of our common shares depends, in part, on the financial performance and profitability derived from these assets. Any decline in the financial performance of these assets or adverse change in such other factors could have an adverse effect on us and the value and market price of our common shares. In addition, these assets are potentially subject to the liabilities attributed to TransAlta, even if those liabilities arise from lawsuits, contracts or indebtedness that do not relate or are otherwise attributed to the assets or the Company.

Insufficient funds to satisfy distributions

We are entitled to receive quarterly preferential cash dividend payments on the Australian Tracking Preferred Shares. This subsidiary's only source of income is the distributions it receives from a 43 per cent owned limited partnership with TransAlta. In turn, the assets the limited partnership owns are the Australian Assets. There can be no certainty that the Australian Assets will generate sufficient income, such that the distributions it pays will, in aggregate, be sufficient to satisfy the dividend payments in respect of the Australian Tracking Preferred Shares.

Effective Jan. 6, 2016, TransAlta and a subsidiary of TransAlta signed a funding support agreement under which, among other things, TransAlta agreed to subscribe for securities of the subsidiary that issued the Australian Tracking Preferred Shares upon receipt of a funding notice to ensure that the subsidiary of TransAlta has sufficient funds to satisfy the dividend payable on the Australian Tracking Preferred Shares.

Income Tax Risk
Our operations are complex and located in several jurisdictions. The computation of the provision for income taxes involves tax interpretations, regulations and legislation that are continually changing. Our tax filings are subject to audit by taxation authorities. Management believes that it has adequately provided for income taxes as required by IFRS, based on all information currently available.

The Company and the subsidiaries of TransAlta in which we hold economic interests are subject to changing 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 companies.

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 that could have a material adverse impact to the Company.

Factor	Increase or decrease (%)	Approximate impact on net earnings
Tax rate	1	**1**

Legal Contingencies
We are occasionally named as a party in various disputes, claims and legal or regulatory proceedings that arise during the normal course of our business. We review each of these claims, including the nature and merits of the claim, the amount in dispute or the remedy claimed and the availability of insurance coverage. There can be no assurance that any particular dispute, claim or proceeding will be resolved in our favour or our liabilities with respect to such claims will not have a material adverse effect on us or our business, operations or financial results.

Other Contingencies
We maintain a level of insurance coverage deemed appropriate by management. During renewal of the insurance policies on Dec. 31, 2021, a coverage restriction was added for losses resulting from a foundation failure at the Kent Hills 1 and 2 wind facilities only. There were no other significant changes to our insurance coverage during renewal of the insurance policies on Dec. 31, 2022. Our insurance coverage may not be available in the future on commercially reasonable terms. There can be no assurance that our insurance coverage will be fully adequate to compensate for potential losses incurred. In the event of a significant economic event, the insurers may not be capable of fully paying all claims. All insurance policies are subject to standard exclusions.

Cybersecurity
We rely on our information technology to process, transmit and store electronic information and data used for the safe operation of our assets. Over the past few years, geopolitical tensions and the pandemic have significantly impacted the cybersecurity ecosystem, increasing the frequency and diversity of cyberattacks, including threats of war driven cyberattacks (i.e., terrorism) against critical infrastructure, and threat actors taking advantage of the pandemic (e.g., charity scams) and hybrid working environments. We anticipate the cyber threat landscape to continue evolving, increasing threats of ransomware, compromised insider threats, supply chain attacks, advanced targeted phishing and artificial intelligence.

Cyber threats originate from various sources and vectors, from nation states, organized hacking groups, or malware/ransomware. The cyber threat landscape continues to evolve, as we see cyber threats shift their focus from traditional attacks against perimeter information technology systems, to more effective attacks, such as phishing and ransomware.

We have established a comprehensive cybersecurity program, forming the foundation to implement effective security practices, comprising of structured and tailored plans to manage cybersecurity risks. As information technology operation technology systems are integral to TransAlta's business operations, the risk of a cybersecurity incident threatens the safety of the public, TransAlta personnel, and/or business functions, service delivery, reputation and profitability.

We maintain compliance to regulatory, legislative, and business requirements (e.g. NERC CIP, SOX, Privacy) by adopting industry endorsed standards and frameworks (e.g., National Institute of Standards and Technology, CIP/Reliability Standards) to implement a pragmatic fit-for-purpose cybersecurity program, implementing cybersecurity controls and processes under the following domains:

- Identify: TransAlta conducts comprehensive risk assessments to identify and document the organization's assets, systems and data, as well as potential risks and vulnerabilities.
- Protect: TransAlta implements security controls, policies and procedures to safeguard the organization's assets, systems and data from unauthorized access, use, disclosure, disruption, modification, or destruction. This includes implementing access controls, encryption, firewalls and intrusion detection/prevention systems to protect the organization's networks and systems.
- Detect: TransAlta implements incident detection and response capabilities to detect and respond to cyber incidents. This includes monitoring systems, networks and data for suspicious activity.
- Respond: TransAlta has developed incident response plans, procedures and teams, as well as provided training and conducted exercises to ensure that these plans and procedures are operating effectively.
- Recover: TransAlta has developed disaster recovery and business continuity plans, as well as conducts test exercises of these plans to ensure their effectiveness. This includes identifying critical systems, data and process to ensure the continuity of business operations, as well as implementing backup and recovery solutions to ensure that the organization's data can be restored in the event of a disaster.

Although complete cyber risk elimination is not achievable given the evolving cyber threat landscape, the security controls implemented to detect, prevent and respond to a cyber incident significantly reduce our cyber risk and potential incident impact to acceptable levels. In addition, cyber insurance is utilized to further manage and transfer residual cyber risk to our business. We continue to improve our overall security maturity and defense capabilities against cyber threats and align cybersecurity practices to industry standards, business objectives and regulatory compliance requirements.

Growth Risk

The Company is principally focused on the sustainment of its dividend in 2023 and beyond, with growth opportunities focused on organic expansions of its existing assets through the execution of its rights of first offer with TransAlta and potentially, through dropdowns from TransAlta that could partially offset the Company's tax horizon. There can be no assurance that we will be able to secure attractive growth opportunities in the future (whether through our relationship with TransAlta or otherwise), that we will be able to complete growth opportunities that sustain the current amount of cash available for distribution, or that growth opportunities will be successfully integrated into our existing operations.

Disclosure Controls and Procedures

Management is responsible for establishing and maintaining adequate internal control over financial reporting ("ICFR") and disclosure controls and procedures ("DC&P"). Management has reviewed the changes as a result of changes implemented in response to COVID-19 and is reasonably assured that adjustments to process have not materially affected, or are reasonably likely to materially affect, our ICFR or DC&P.

ICFR is a framework designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of Consolidated Financial Statements for external purposes in accordance with IFRS. Management has used the Internal Control – Integrated Framework issued by the Committee of Sponsoring Organizations of the Treadway Commission (2013 framework) in order to assess the effectiveness of the Company's ICFR.

DC&P refer to controls and other procedures designed to ensure that information required to be disclosed in the reports we file or submit under securities legislation is recorded, processed, summarized and reported within the time frame specified in securities legislation. DC&P include, without limitation, controls and procedures designed to ensure that information required to be disclosed by us in our reports that we file or submit under securities legislation is accumulated and communicated to management, including our Chief Executive Officer and Chief Financial Officer, as appropriate to allow timely decisions regarding our required disclosure.

Together, the ICFR and DC&P frameworks provide internal control over financial reporting and disclosure. In designing and evaluating our ICFR and DC&P, management recognizes that any controls and procedures, no matter how well designed and operated, can provide only reasonable assurance of achieving the desired control objectives and as such may not prevent or detect all misstatements, and management is required to apply its judgment in evaluating and implementing possible controls and procedures. Further, the effectiveness of ICFR is subject to the risk that controls may become inadequate because of changes in conditions or that the degree of compliance with policies or procedures may change.

Management has evaluated, with the participation of our Chief Executive Officer and Chief Financial Officer, the effectiveness of our ICFR and DC&P as of the end of the period covered by this report. Based on the foregoing evaluation, our Chief Executive Officer and Chief Financial Officer have concluded that, as at Dec. 31, 2022, the end of the period covered by this report, our ICFR and DC&P were effective.