



TransAlta Renewables Inc.

Management's Discussion and Analysis

December 31, 2021

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Table of Contents

Forward-Looking Statements	M2	Liquidity and Capital Resources	M26
Operations of the Company	M4	Financial Instruments	M30
Strategy and Capability to Deliver Results	M5	Other Consolidated Results	M31
Significant and Subsequent Events	M7	Related-Party Transactions and Balances	M33
Highlights	M10	Critical Accounting Policies and Estimates	M35
Discussion of Annual Operating Results	M11	Accounting Changes	M40
Fourth Quarter Results	M13	2021 Outlook	M41
Selected Quarterly Information	M15	Business Environment	M43
Additional IFRS Measures	M16	Environmental, Social and Governance ("ESG")	M49
Non-IFRS Measures	M16	Risk Management	M62
Reconciliation of Non-IFRS Measures	M22	Controls and Procedures	M71

This Management's Discussion and Analysis ("MD&A") should be read in conjunction with our 2021 audited annual consolidated financial statements (the "Consolidated Financial Statements") and our 2021 annual information form ("AIF") for the year ended Dec. 31, 2021. 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, 2021. 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. 23, 2022. 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," "believe," "expect," "anticipate," "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 capitalizing on strategic growth opportunities in the renewable and natural gas power generation and other infrastructure sectors and paying out 80 to 85 per cent of cash available for distribution to the shareholders of the Company on an annual basis; the potential impact of COVID-19 on the Company and the actions undertaken by the Company or TransAlta in response to the COVID-19 pandemic; the Northern Goldfields Solar Project, including the timing and associated construction capital; the ability to secure other growth opportunities with BHP (as defined below); our 2022 Outlook, including adjusted EBITDA, FCF and CAFD (each, as defined below), interest expense, and sustaining capital and productivity expenditures; the foundation issues at the Kent Hills 1 and 2 wind facilities and the Company's plans in response to such issues, including the timing and cost of remediation, the impact on revenue, and that an agreement will be entered into with the Trustee (as defined below) and holders of the KH Bonds (as defined below) with respect to any waivers and amendments; the dividend amounts on the tracking preferred shares; foreign exchange exposure and risk management; 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 regarding project-level debt and tax equity; 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, capacity¹ 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; expectations regarding our decommissioning and restoration activities; expectations regarding the outcome of existing or potential legal or contractual claims, regulatory investigations and disputes; and that the Company will realize on acquisition and development opportunities. 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, the impacts arising from COVID-19 not becoming significantly more onerous on the Company; and the Company being able to fund growth through project-level debt and access to credit 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: the impact, duration and severity of COVID-19, including more restrictive directives of government and public health authorities; reduced labour availability impacting our ability to continue to staff our operations and facilities; impacts on our ability to realize our growth goals, including 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; 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 if the remediation at the Kent Hills 1 and 2 wind facilities is more costly or takes longer than expected; the inability to secure waivers from the holders of the KH Bonds and Trustee and the realization of the collateral at 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; any potential default under the power purchase agreements at the Kent Hills 1 and 2 wind facilities; 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; equipment failure and our ability to carry out repairs in a cost-effective or timely manner or at all; the need for additional financing and the ability to access financing at a reasonable cost; structural subordination of securities; counterparty credit risk; insurance coverage; our provision for income taxes; contract expiries and the inability to re-contract facilities on favourable terms, or at all, including as it pertains to the Sarnia cogeneration facility; disputes with counterparties and legal and contractual proceedings involving the Company; 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, 2021, 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 Canada. 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 users 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.

During the year ended Dec. 31, 2021, Canadian Wind gross installed capacity increased by 213 MW, mainly due to the acquisition of the 206 MW Windrise wind facility and the acquisition of two turbines adjacent to our Summerview facilities at the Oldman wind facility. US Wind & Solar installed capacity increased by 189 MW through the acquisitions of a 49 per cent economic interest in the 137 MW Skookumchuck wind facility, and a 100 per cent economic interest in the 122 MW North Carolina Solar facility. US Gas installed capacity increased by 29 MW through the acquisition of 100 per cent economic interest in the 29 MW Ada cogeneration facility and is our first gas facility in the United States.

In total, we own, directly or through economic interests, an aggregate of 2,996 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").

As at Dec. 31, 2021	Owned Assets		Economic Interests				Total	
	Canada		United States		Australia			
	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	112	13	—	—	—	—	112	13
Wind & Solar ⁽²⁾	1,387	22	519	7	—	—	1,906	29
Gas	499	1	29	1	450	6	978	8
Total	1,998	36	548	8	450	6	2,996	50

(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, 2021.

(2) Canadian Wind & Solar includes a wind battery storage facility. Canadian Wind & Solar's gross installed capacity has been effected 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.

As at Dec. 31, 2020	Owned Assets		Economic Interests					
	Canada		United States		Australia		Total	
	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	112	13	—	—	—	—	112	13
Wind & Solar ⁽²⁾	1,174	20	330	5	—	—	1,504	25
Gas	499	1	—	—	450	6	949	7
Total	1,785	34	330	5	450	6	2,565	45

(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, 2020.

(2) Canadian Wind & Solar includes a wind battery storage facility.

Strategy and Capability to Deliver Results

Our objectives are to (i) provide attractive returns for investors through the ownership of, and investment in, highly contracted renewable and natural gas power generation and other infrastructure assets that provide stable cash flow, primarily through long-term contracts with strong counterparties; (ii) pursue and capitalize on strategic growth opportunities in the renewable and natural gas electricity generation and other infrastructure sectors; (iii) maintain diversity in terms of geography, generation and counterparties; and (iv) pay out 80 to 85 per cent of cash available for distribution to the shareholders of the Company on an annual basis. The Company's ability to lower its current payout ratio to within the targeted range will depend on a number of factors, including the return to service of the Kent Hills 1 and 2 wind facilities and the execution of additional growth opportunities.

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.

TransAlta, our largest shareholder, has indicated that the sale of certain contracted assets to us could form a source of growth. A key component of TransAlta's sponsorship is their ability to acquire projects and construct, integrate and operate generation facilities on our behalf. Acquisitions from TransAlta are subject to independent assessments and approval by the independent directors of the Board of Directors of TransAlta Renewables (the "Board").

During 2021, we added 431 MW through the acquisition of businesses or through investments in economic interests. This mainly consisted of:

- Acquired the 206 MW Windrise wind project on Feb. 26, 2021. Construction and commissioning was completed on Nov. 10, 2021. The Windrise wind facility is secured by a 20-year Renewable Electricity Support Agreement with the Alberta Electric System Operator ("AESO"). The facility is expected to contribute an average annual earnings before interest, taxes, depreciation and amortization ("EBITDA")³ in the range of \$20 to \$22 million.
- Acquired an economic interest in the 29 MW Ada cogeneration facility and a 49 per cent economic interest in the 137 MW Skookumchuck wind facility on Apr. 1, 2021. Both facilities are fully operational. The Ada cogeneration facility is under a power purchase agreement ("PPA") until 2026. The Skookumchuck wind facility is contracted under a PPA until 2040 with an investment-grade counterparty. These facilities are expected to contribute an average annual EBITDA⁽³⁾ in the range of \$23 to \$25 million.

³ Average annual EBITDA is not defined and has no standardized meaning under IFRS, and is forward-looking. Please refer to the Non-IFRS Measures section of this MD&A for further discussion.

- Acquired a 100 per cent economic interest in the 122 MW portfolio in the North Carolina Solar facility on Nov. 5, 2021. The facility is fully operational and is secured by long-term PPAs with Duke Energy. The PPAs have an average remaining term of 12 years that is automatically extended unless terminated by either party. Under the PPAs, Duke Energy receives the renewable electricity, capacity and environmental attributes from the facility. The solar facility is expected to contribute US\$9 million of average annual EBITDA⁽⁴⁾.

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 25 years. The weighted average remaining contractual life of our PPAs is approximately 11 years⁽⁵⁾. During 2021, the following contracting activities have occurred:

- Executed an Amended and Restated Energy Supply Agreement on May 12, 2021, with one of our large industrial customers at the Sarnia cogeneration facility that provides for the supply of electricity and steam. This agreement will extend the term of the original agreement from Dec. 31, 2022, to Dec. 31, 2032, subject to certain conditions. The Company is in active discussions with the three other existing industrial customers regarding extensions to their supply of electricity and steam from the Sarnia cogeneration facility on comparable terms. Please refer to the Significant and Subsequent Events section of this MD&A for further information.

The current contract with the Ontario Independent Electricity System Operator ("IESO") in respect of the Sarnia cogeneration facility expires on Dec. 31, 2025. On July 19, 2021, the IESO released its Annual Acquisition Report, which included draft details for medium- and long-term procurement mechanisms for capacity for 2026 and beyond for existing and new generation. The medium-term procurement process is scheduled to be run in 2022. The Company plans to bid into the process, seeking to secure a contract extension for the Sarnia cogeneration facility following the end of the current contract.

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, 2021, have been in operation from three months to 31 years, with the weighted average years of operation by capacity being 14 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 earnings before interest, taxes, depreciation and amortization ("adjusted EBITDA"), free cash flow ("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:

⁴ Average annual EBITDA is not defined and has no standardized meaning under IFRS, and is forward-looking. Please refer to the Non-IFRS Measures section of this MD&A for further discussion.

⁵ Weighted average based on capacity.

Year ended Dec. 31		2021	2020
Adjusted EBITDA	Original Target	480-520	445-475
	Revised Target	450-480	–
	Actual	463	462
FCF ⁽¹⁾	Original Target	365-395	375-405
	Revised Target	330-360	–
	Actual	357	377
CAFD	Original Target	285-315	300-330
	Revised Target	250-270	–
	Actual	275	304

(1) In the fourth quarter of 2021, the adjusted funds from operations was replaced with free cash flow to better reflect the proxy for cash generated from operating activities and the composition of the metric has been changed accordingly. Comparative figures, original and revised targets have been reclassified to conform to the current period's presentation. Please refer to the Non-IFRS Measures section of this MD&A for discussion on the composition of free cash flow.

During 2021, adjusted EBITDA guidance was lowered as we experienced weaker than anticipated results due to higher unplanned outages in the Canadian Gas segment, lower wind resources and an extended site outage at the Kent Hills wind facilities resulting from a collapsed wind tower.

CAFD guidance was lowered due to reduced adjusted EBITDA guidance and the acceleration of the acquisition of a spare turbine for the South Hedland facility. The Company's actual CAFD exceeded the revised guidance mainly due to lower than expected sustaining capital expenditures.

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.

During the second quarter of 2021, the Company was recognized by Corporate Knights as one of the Best 50 Corporate Citizens for 2021. The Best 50 Corporate Citizens list evaluates and ranks Canadian corporations against a set of 24 key performance indicators covering ESG indicators relative to their industry peers and using publicly available information. The Company is committed to continuous improvement on key ESG issues and to ensuring its economic value creation is balanced with a value proposition for the environment and its communities.

Significant and Subsequent Events

Acquisition of North Carolina Solar

On Nov. 5, 2021, the Company acquired a 100 per cent economic interest in the 122 MW portfolio of 20 operating solar sites located in North Carolina. The Company acquired the economic interest in North Carolina Solar by acquiring a US\$102 million investment in tracking preferred shares of a TransAlta subsidiary. The sites are secured by long-term PPAs with Duke Energy, which have an average remaining term of 12 years and may be automatically extended unless terminated by either party. Under the PPAs, Duke Energy receives the renewable electricity, capacity and environmental attributes from each facility. The investment was funded using existing liquidity.

Kent Hills Wind Facility Outage

On Sept. 27, 2021, the Company's subsidiary, Kent Hills Wind LP, experienced a single tower failure at the 167 MW Kent Hills wind facilities in Kent Hills, New Brunswick. The failure involved a collapsed tower located within the Kent Hills 2 facility. There were no injuries as a result of the collapse. No one was in the area when the incident occurred and there are no homes in the immediate vicinity. The Company's emergency response team secured the area to ensure safety. The Company recorded an impairment charge of \$2 million on the collapsed tower.

The facilities consist of 50 turbines at Kent Hills 1 and 2 wind facilities and five turbines at Kent Hills 3. Following extensive independent engineering assessments and root cause failure analysis, the Company announced on Jan. 11, 2022, that all 50 turbine foundations at the Kent Hills 1 and 2 wind facilities require a full foundation replacement. The root cause failure analysis indicates that deficiencies in the original design of the foundations had led to subsurface crack propagation within the foundations and that the foundations must be replaced. The Company is in the process of planning the rehabilitation of the wind facilities and currently expects the foundations to be fully replaced by the end of 2023. Based on the recommendations of independent engineers, and in order to maintain the safety of the affected facilities and turbines, the wind turbines will cease to operate until their associated foundations are replaced. The Company has recorded \$12 million of accelerated depreciation relating to the 50 foundations that will be replaced.

Foundation replacements will require expenditures of approximately \$75 million to \$100 million, in aggregate. The remediation plan is expected to begin to be implemented in 2022. The outage is expected to result in foregone revenue of approximately \$3.4 million per month on an annualized basis so long as all 50 turbines are offline, based on average historical wind production with revenue expected to be earned as wind turbines are each returned to service. TransAlta and New Brunswick Power continue discussions to enable the safe return to service of the facilities.

The foundation issues at the Kent Hills 1 and 2 wind facilities are unique to the design of those facilities and there is no indication of any foundation issue at the Kent Hills 3 facility or any other wind facility in the fleet. The Company is maintaining communication with all key stakeholders and keeping them fully apprised of the situation. The Company is actively evaluating any options that may be available to recover these costs from third parties and insurance.

As a result of the determination that all 50 foundations require replacement, as well as certain resulting amendments to applicable insurance policies, the Company's operating subsidiary, Kent Hills Wind LP, has provided notice to BNY Trust Company of Canada, as trustee (the "Trustee") for the approximately \$221 million outstanding non-recourse project bonds (the "KH Bonds") secured by, among other things, the Kent Hills 1, 2 and 3 wind facilities, that events of default may have occurred under the trust indenture governing the terms of the KH Bonds. Upon the occurrence of any events of default, holders of more than 50 per cent of the outstanding principal amount of the Bonds have the right to direct the Trustee to declare the principal and interest on the KH Bonds and all other amounts due, together with any make-whole amount as at Dec. 31, 2021 — \$39 million, to be immediately due and payable and to direct the Trustee to exercise rights against certain collateral. The Company is in discussions with the Trustee and holders of the KH Bonds to negotiate required waivers and amendments while the Company works to remedy the matters described in the notice. Although the Company expects that it will reach agreement with the Trustee and holders of the KH Bonds with respect to terms of an acceptable waiver and amendment, there can be no assurance that the Company will receive such waivers and amendments.

Northern Goldfields Solar Project

On July 29, 2021, the Company announced that Southern Cross Energy ("SCE"), a subsidiary of TransAlta and an entity in which the Company owns an indirect economic interest, had reached an agreement to provide BHP Nickel West Pty Ltd. ("BHP") with renewable electricity to its Goldfields-based operations through the construction of the Northern Goldfields Solar Project. The project will consist of the 27 MW Mount Keith Solar Farm, 11 MW Leinster Solar Farm, 10 MW/5MWh Leinster battery energy storage system and interconnecting transmission infrastructure, all of which will be integrated into our existing 169 MW Southern Cross Energy North remote network in Western Australia. Construction commenced in the first quarter of 2022 with completion of the projects expected in the second half of 2022. Total construction capital of the project is estimated at approximately AU\$69 million to AU\$73 million. The project is expected to generate total average annual EBITDA⁽⁶⁾ of approximately AU\$9 million to AU\$10 million.

⁶ Average annual EBITDA is not defined and has no standardized meaning under IFRS, and is forward-looking. Please refer to the Non-IFRS Measures section of this MD&A for further discussion.

On Oct. 22, 2020, SCE replaced and extended its current PPA with BHP. SCE is composed of four generation facilities with a combined capacity of 245 MW in the Goldfields region of Western Australia. The new agreement was effective Dec. 1, 2020, and replaces the previous contract that was scheduled to expire Dec. 31, 2023. The amendment to the PPA extends the term to Dec. 31, 2038, and provides SCE with the exclusive right to supply thermal and electrical energy from the Southern Cross facilities for BHP's mining operations located in the Goldfields region of Western Australia. The extension will provide SCE a return on new capital investments, which will be required to support BHP's future power requirements and recently announced emission reduction targets. The amendments within the PPA also provide BHP with participation rights in integrating renewable electricity generation, including solar and wind, with energy storage technologies, subject to the satisfaction of certain conditions. In addition to the Northern Goldfields Solar Project, evaluation of further renewable energy supply and carbon emissions reduction initiatives under the extended PPA with BHP are underway, including wind generation and lower emission firming generation to support BHP's future power requirements.

Sarnia Cogeneration Facility Contract Extension

On May 12, 2021, the Company executed an Amended and Restated Energy Supply Agreement with one of its large industrial customers at the Sarnia cogeneration facility that provides for the supply of electricity and steam. This agreement extends the term of the original agreement from Dec. 31, 2022 to Dec. 31, 2032. The agreement provides that if the Company is unable to enter into a new contract with the IESO or enter into agreements with its other industrial customers at the Sarnia cogeneration facility that extend past Dec. 31, 2025, then the Company has the option to provide notice of termination in 2022 that would terminate the Amended and Restated Energy Supply Agreement four years following such notice. The Company is in active discussions with the three other existing industrial customers regarding extensions to their supply of electricity and steam from the Sarnia cogeneration facility on comparable terms. The current contract with the IESO in respect of the Sarnia cogeneration facility expires on Dec. 31, 2025. On July 19, 2021, the IESO released its Annual Acquisition Report, which included draft details for medium- and long-term procurement mechanisms for capacity for 2026 and beyond for existing and new generation. The medium-term procurement process is scheduled to be run in 2022. The Company plans to bid into the process, seeking to secure a contract extension for the Sarnia cogeneration facility following the end of the current contract.

Acquisition of Economic Interests in the Skookumchuck Wind Facility and the Ada Cogeneration Facility

On April 1, 2021, the Company completed the acquisition, through a subsidiary of TransAlta, of a 100 per cent economic interest in the 29 MW Ada cogeneration facility and a 49 per cent economic interest in the 137 MW Skookumchuck wind facility. The Company acquired the economic interest in the Ada cogeneration facility and the Skookumchuck wind facility by acquiring a \$43 million and a \$103 million investment, respectively, in tracking preferred shares of a TransAlta subsidiary. The economic benefit of each transaction was effective as at Jan. 1, 2021. Both facilities are fully operational. The Ada cogeneration facility is under a PPA until 2026. The Skookumchuck wind facility is under a PPA until 2040 with an investment grade counterparty.

Acquisition, Commercial Operation and Project Financing of the Windrise Wind Facility

On Feb. 26, 2021, the Company acquired a 100 per cent direct interest in the 206 MW Windrise wind project located in Municipal District of Willow Creek Alberta for \$213 million and assumed the balance of the remaining construction costs.

The results of operations of the Windrise wind facility have been included in the Company's Consolidated Statements of Earnings prospectively from the Feb. 26, 2021, acquisition date, and prior period comparative financial statements have not been restated. On Nov. 10, 2021, the Windrise wind facility achieved commercial operations.

On Dec. 6, 2021, the Company's indirect wholly owned subsidiary, Windrise Wind LP, secured a green bond financing by way of private placement for \$173 million. The bonds are amortizing, bear interest from their date of issue at a rate of 3.41 per cent per annum and mature on Sept. 30, 2041.

Board of Director Changes

On May 18, 2021, the Company announced that the Board elected three new directors: Ms. Georganne Hodges, Ms. Kerry O'Reilly Wilks and Ms. Susan M. Ward, each of whom provide the Board diverse expertise and perspectives. Ms. Kathryn B. McQuade did not stand for re-election and retired from the Board immediately following the Annual Meeting of Shareholders on May 18, 2021.

COVID-19

The World Health Organization declared a Public Health Emergency of International Concern relating to COVID-19 on Jan. 30, 2020, which they subsequently declared, on March 11, 2020, as a global pandemic.

In response, TransAlta, as the manager and operator of the Company's business and assets, continues to operate under its business continuity plan, which focuses on ensuring that: (i) TransAlta employees who can work remotely do so and (ii) TransAlta employees who operate and maintain our facilities, and who are not able to work remotely, are able to work safely and in a manner that ensures they remain safe and healthy. TransAlta is following local public health authority and government guidelines in all jurisdictions in which we operate to promote the health and safety of all employees and contractors with our health and safety protocols. All of TransAlta's offices and sites follow health screening and social distancing protocols, including the use of personal protective equipment. Employees can be exempt from rapid testing if they are able to provide proof of vaccination. Further, TransAlta maintains travel limitations that are aligned to local jurisdictional guidance, enhanced cleaning procedures, revised work schedules, contingent work teams and the reorganization of processes and procedures to minimize any workplace transmission of the virus.

Notwithstanding the challenges associated with the pandemic, all of our facilities, including those in which we have economic interests through TransAlta, continue to remain fully operational and are capable of meeting our customers' needs, with the exception of the Kent Hills 1 and 2 wind facilities, which as described above, is not related to the pandemic. The Company continues to work and serve all of our customers and counterparties under the terms of their contracts. We have not experienced interruptions to service requirements as a result of COVID-19. Electricity and steam supply continue to remain a critical service requirement to all of our customers and have been deemed an essential service in our jurisdictions.

Highlights

Consolidated Financial Highlights

Year ended Dec. 31	2021	2020	2019
Renewable energy production (GWh) ⁽¹⁾	4,332	4,471	3,747
Revenues	470	436	446
Adjusted EBITDA ⁽²⁾⁽³⁾	463	462	438
Earnings before income taxes	150	122	191
Net earnings attributable to common shareholders	140	92	179
Cash flow from operating activities	336	267	331
Free cash flow ⁽²⁾⁽⁵⁾	357	377	348
Cash available for distribution ⁽²⁾	275	304	293
Net earnings per share attributable to common shareholders, basic and diluted	0.52	0.35	0.68
Dividends declared and paid per common share ⁽⁴⁾	0.94	0.94	0.94
Free cash flow per share ⁽²⁾⁽⁵⁾⁽⁶⁾	1.34	1.42	1.32
Cash available for distribution per share ⁽²⁾	1.03	1.14	1.11

(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) In the fourth quarter of 2021, comparable EBITDA was relabelled as adjusted EBITDA to align with industry standard terminology.

(4) Includes Dividend Reinvestment Plan ("DRIP") payments in 2020. The DRIP was suspended in the fourth quarter of 2020.

(5) In the fourth quarter of 2021, the adjusted funds from operations was replaced with free cash flow to better reflect the proxy for cash generated from operating activities and the composition of the metric has been changed accordingly. Comparative figures have been reclassified to conform to the current period's presentation. Please refer to the Non-IFRS Measures section of this MD&A for discussion on the composition of free cash flow.

(6) 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 as at Dec. 31, 2021 (2020 – 266 million shares, 2019 – 264 million shares).

As at Dec. 31	2021	2020	2019
Gas installed capacity (MW) ⁽¹⁾	978	949	949
Renewables gross installed capacity (MW) ⁽²⁾	2,018	1,616	1,609
Total assets	3,749	3,656	3,702
TEA demand loan ⁽³⁾	167	195	–
Debt and lease obligations ⁽⁴⁾	814	692	961
Total long-term liabilities	1,033	987	1,237

(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 is unsecured, due on demand and bears interest at 4.32 per cent, with interest payable quarterly until maturity on Oct. 26, 2022.

(4) Including current portion.

Renewable energy production for the year ended Dec. 31, 2021, decreased by 139 GWh compared to 2020. This decrease was mainly due to the extended facility outage at the Kent Hills 1 and 2 wind facilities in Canadian Wind and lower wind resources in the Canadian Wind and US Wind segments, partially offset by the production from the commissioning of the Windrise wind facility and the acquisition of the economic interest in the Skookumchuck wind facility and the North Carolina Solar facility.

The Company's adjusted EBITDA for the year ended Dec. 31, 2021, increased by \$1 million compared to 2020. There was increased production from the additions of Skookumchuck wind, Ada cogeneration, Windrise wind and North Carolina Solar facility. This was partially offset by lower wind resources throughout the year, a steam supply disruption at our Sarnia facility in the second quarter of 2021 and an extended outage at the Kent Hills 1 and 2 wind facilities in the fourth quarter of 2021.

Net earnings attributable to common shareholders for the year ended Dec. 31, 2021, increased by \$48 million compared to the same period in 2020, primarily due to higher finance income from investments in subsidiaries of TransAlta, no fair value losses recognized in the year and lower income tax expense. This increase was partially offset by impacts of a steam supply disruption event and reconciliation adjustments in Canadian Gas, lower wind production and the extended forced outage at the Kent Hills 1 and 2 wind facilities in the Canadian wind fleet, increased depreciation, lower foreign exchange gains and higher asset impairments. Finance income from investments in subsidiaries was higher in the current period compared to the same period in 2020, due to higher distributions received from the Australian economic interest. No fair value losses were recognized in the year as the preferred shares tracking the amortizing term loan were redeemed on Oct. 23, 2020.

Overall, our cash flow from operating activities increased by \$69 million from 2020 primarily due to higher net earnings.

Overall, our FCF decreased by \$20 million from 2020 due to higher sustaining capital expenditures within our gas segments including the purchase of a spare engine at our Australian Gas facilities, higher interest expense, partially offset by higher realized foreign exchange gains.

CAFD decreased by \$29 million year over year, due to lower FCF and an increase in tax equity distributions. The increase in tax equity distributions is a result of the Skookumchuck wind and North Carolina Solar additions.

Our payout ratio of dividends to CAFD in 2021 was 91 per cent (2020 - 83 per cent) which is above our target range due to lower CAFD.

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 users 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⁾	
		2021	2020	2021	2020
Canadian Wind	3,389	2,802	3,118	170	181
Canadian Hydro	433	434	429	17	21
US Wind and Solar ⁽³⁾	1,108	1,096	924	78	75
Total – Renewable energy	4,930	4,332	4,471	265	277
Canadian Gas		1,371	1,140	68	80
US Gas ⁽³⁾		193	–	8	–
Australian Gas		1,672	1,779	141	125
Corporate		–	–	(19)	(20)
Total		7,568	7,390	463	462
Total earnings before income taxes				150	122

(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) US Wind and Solar includes the Skookumchuck wind facility and US Gas consists of the Ada cogeneration facility, which were acquired through investment in tracking preferred shares on Apr. 1, 2021. The economic benefit of the transaction was effective as at Jan. 1, 2021. US Wind and Solar also includes the North Carolina Solar facility, which was acquired through an investment in tracking preferred shares on Nov. 5, 2021.

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

Canadian Wind

Production for the year ended Dec. 31, 2021, decreased by 316 GWh compared to 2020, mainly due to lower wind resource and the facility outages at Kent Hills 1 and 2 in the fourth quarter of 2021. This was partially offset by production from the newly commissioned Windrise wind facility.

Adjusted EBITDA decreased by \$11 million compared to 2020, mainly due to lower production and the expiry of wind power production incentives. This decrease was partially offset by the sale of 2020 environmental credits to TransAlta in the first quarter of 2021.

Canadian Hydro

Production for the year ended Dec. 31, 2021, increased by 5 GWh compared to 2020, mainly due to higher production in British Columbia and Alberta, partially offset by lower production in Ontario from lower water resources.

Adjusted EBITDA decreased by \$4 million compared to 2020, mainly due to a one-time recovery from the AESO transmission line loss proceeding recognized in 2020. This was partially offset by higher production.

US Wind and Solar

Production for the year ended Dec. 31, 2021, increased by 172 GWh compared to 2020, mainly due to a full year of production generated from the Skookumchuck wind facility and the acquisition of North Carolina Solar in November 2021.

Adjusted EBITDA increased by \$3 million compared to 2020, mainly due to the addition of the Skookumchuck wind facility and the North Carolina Solar facility.

Canadian Gas

Canadian Gas is comprised solely of the Sarnia cogeneration facility. Production for the year ended Dec. 31, 2021, increased by 231 GWh compared to 2020, mainly due to stronger market conditions in Ontario. 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 pass-through of fuel costs. During the second quarter of 2021, the Sarnia facility experienced short-term steam supply outages, which had a minimal impact on production.

Adjusted EBITDA decreased by \$12 million compared to 2020 mainly due to steam interruption events and an unfavourable steam reconciliation adjustment, partially offset by stronger gas prices on steam revenue payments.

US Gas

US Gas assets are comprised solely of the Ada cogeneration facility. The acquisition of the 100 per cent economic interest in the 29 MW Ada cogeneration facility closed on April 1, 2021, with the economic benefit of the transaction effective as at Jan. 1, 2021.

Australian Gas

Production for the year ended Dec. 31, 2021, decreased by 107 GWh compared to 2020, mainly due to changes in customer demand. The contracts in Australia are capacity contracts and results are largely unaffected by generation.

Adjusted EBITDA increased by \$16 million compared to 2020, mainly due to the South Hedland PPA settlement, Solomon meter station revenues recognized in 2021, timing of legal fees and the strengthening of the Australian dollar relative to the Canadian dollar.

Fourth Quarter Results

Consolidated Financial Highlights

Three months ended Dec. 31	2021	2020
Renewable energy production (GWh) ⁽¹⁾	1,319	1,336
Revenues	138	128
Adjusted EBITDA ⁽²⁾⁽³⁾	141	133
Earnings before income taxes	40	66
Net earnings attributable to common shareholders	43	53
Cash flow from operating activities	71	49
Free cash flow ⁽²⁾⁽⁵⁾	123	101
Cash available for distribution ⁽²⁾	91	72
Net earnings per share attributable to common shareholders, basic and diluted	0.16	0.20
Dividends declared and paid per common share ⁽⁴⁾	0.23	0.23
Free cash flow per share ⁽²⁾⁽⁵⁾⁽⁶⁾	0.46	0.38
Cash available for distribution per share ⁽²⁾	0.34	0.27

(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) In the fourth quarter of 2021, comparable EBITDA was relabelled as adjusted EBITDA to align with industry standard terminology.

(4) Includes DRIP payments.

(5) In the fourth quarter of 2021, the adjusted funds from operations was replaced with FCF to better reflect the proxy for cash generated from operating activities and the composition of the metric has been changed accordingly. Comparative figures have been reclassified to conform to the current period's presentation. Please refer to the Non-IFRS Measures section of this MD&A for discussion on the composition of FCF.

(6) 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, 2021 (three month ended Dec. 31, 2020 - 267 million shares).

Renewable energy production decreased by 17 GWh compared to 2020, mainly due to lower wind resources and the extended outage at the Kent Hills 1 and 2 wind facilities in the Canadian Wind segment. This decrease is partially offset by production from the commissioning of the Windrise wind facility in the Canadian Wind segment, the acquisition of the North Carolina Solar facility and incremental production from the added Skookumchuck wind facility in the US Wind and Solar segment.

Adjusted EBITDA increased by \$8 million in the fourth quarter of 2021, mainly due to an increase in the sale of environmental credits in the period, the South Hedland PPA settlement recognized within the Australian Gas segment and the strengthening of the Australian dollar relative to the Canadian dollar. This increase is partially offset by lower production from the extended outage at the Kent Hills 1 and 2 wind facilities.

Net earnings attributable to common shareholders decreased by \$10 million, primarily due to lower earnings from the extended outage at Kent Hills 1 and 2 wind facilities, accelerated depreciation on the Kent Hills foundations, increased impairments, and increased losses on foreign exchange. This decrease is partially offset by a decrease in income tax expenses and an increase in finance income.

Overall, our cash flow from operating activities increased by \$22 million from 2020 primarily due to favourable changes in working capital balances, partially offset by lower net earnings attributable to common shareholders.

FCF and CAFD increased by \$22 million and \$19 million, respectively, in the fourth quarter of 2021 primarily driven by higher cash flows from the South Hedland PPA settlement, higher income tax recoveries and lower interest expense. CAFD is further impacted by an increase in tax equity distributions.

Discussion of Operational Results for the Three Months Ended Dec. 31, 2021

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⁾	
		2021	2020	2021	2020
Canadian Wind	1,189	866	976	50	55
Canadian Hydro	71	96	83	3	7
US Wind and Solar ⁽³⁾	329	357	277	26	22
Total – Renewable energy	1,589	1,319	1,336	79	84
Canadian Gas		374	281	23	22
US Gas ⁽³⁾		60	–	1	–
Australian Gas		428	435	42	31
Corporate		–	–	(4)	(4)
Total		2,181	2,052	141	133
Total earnings before income taxes				40	66

(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) US Wind and Solar includes the Skookumchuck wind facility and US Gas consists of the Ada cogeneration facility, which were acquired through investment in tracking preferred shares on Apr. 1, 2021. The economic benefit of the transaction was effective as at Jan. 1, 2021. US Wind and Solar also includes the North Carolina Solar facility, which was acquired through an investment in tracking preferred shares on Nov. 5, 2021.

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

Canadian Wind

Production for the three months ended Dec. 31, 2021, decreased by 110 GWh compared to the same period in 2020, as a result of the extended forced outage at the Kent Hills 1 and 2 wind facilities along with lower wind resource. This decrease was partially offset by the commissioning of the Windrise wind facility. Commercial operations of Windrise wind facility were achieved on Nov. 10, 2021.

Adjusted EBITDA for the three months ended Dec. 31, 2021, decreased by \$5 million compared to the same period in 2020, mainly due to lower wind production in Eastern Canada. This decrease was partially offset by new production from Windrise and the sale of emission offsets to TransAlta.

Canadian Hydro

Production for the three months ended Dec. 31, 2021, increased by 13 GWh compared to the same period in 2020, mainly due to higher production in British Columbia due to increased water flows.

Adjusted EBITDA for the three months ended Dec. 31, 2021, decreased by \$4 million compared to the same period in 2020, mainly due to a one-time recovery from the AESO transmission line loss proceeding recognized in 2020. This decrease was partially offset by higher production in British Columbia.

US Wind and Solar

Production for the three months ended Dec. 31, 2021, increased by 80 GWh compared to the same period in 2020, mainly due to incremental production generated from the Skookumchuck wind facility for the full quarter and from the acquisition of the North Carolina Solar facility in November 2021. This increase was partially offset by lower wind resource at the remaining wind fleet.

Adjusted EBITDA for the three months ended Dec. 31, 2021, increased by \$4 million compared to the same period in 2020, due to incremental production from the Skookumchuck wind facility and North Carolina Solar facility.

Canadian Gas

Canadian Gas is comprised solely of the Sarnia cogeneration facility. Production for the three months ended Dec. 31, 2021, increased by 93 GWh compared to the same period in 2020, mainly due to stronger market conditions in Ontario.

Adjusted EBITDA for the three months ended Dec. 31, 2021, increased by \$1 million compared to the same period in 2020, mainly due to higher customer demand.

US Gas

US Gas is comprised solely of the Ada cogeneration facility. The acquisition of the 100 per cent economic interest in the 29 MW Ada cogeneration facility closed on April 1, 2021, with the economic benefit of the transaction effective as at Jan. 1, 2021.

Australian Gas

Production for the three months ended Dec. 31, 2021, remained consistent compared to the same period in 2020. The contracts in Australia are capacity contracts, and our results are largely unaffected by generation.

Adjusted EBITDA for the three months ended Dec. 31, 2021, increased by \$11 million compared to the same period in 2020, mainly due to the South Hedland PPA settlement and the strengthening of the Australian dollar relative to the Canadian dollar.

Selected Quarterly Information

	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
FCF ⁽¹⁾	99	71	64	123
CAFD ⁽¹⁾	90	40	54	91
Net earnings per share attributable to common shareholders, basic and diluted ⁽²⁾	0.19	0.09	0.07	0.16
CAFD per share ⁽¹⁾	0.34	0.15	0.20	0.34
	Q1 2020	Q2 2020	Q3 2020	Q4 2020
Revenue	110	103	95	128
Net earnings attributable to common shareholders	3	30	6	53
Cash flow from operating activities	82	71	65	49
FCF ⁽¹⁾	100	95	80	101
CAFD ⁽¹⁾	91	67	73	72
Net earnings per share attributable to common shareholders, basic and diluted ⁽²⁾	0.01	0.11	0.02	0.20
CAFD per share ⁽¹⁾	0.34	0.25	0.27	0.27

(1) 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.

(2) Basic and diluted earnings per share attributable to common shareholders is 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 of \$7 million, \$4 million and \$8 million related to the sale of Alberta carbon offsets and Emission Performance Credits ("EPC") to TransAlta occurred in the first, third and fourth quarters of 2021, respectively;
- 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 extended outage of the Kent Hills 1 and 2 wind facilities in the fourth quarter of 2021;
- The impact on depreciation in the fourth quarter of 2021, and accelerating the depreciation of the foundations related to Kent Hills 1 and 2 wind facilities;
- The effects of asset impairments recognized in 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 and the last three quarters of 2020.

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 (Preferred Shares Tracking Australia Cash Flows, the Preferred Shares Tracking Earnings and Distributions of US Wind and Solar Facilities and the Preferred Shares Tracking Earnings and Distributions of US Gas).
- Interim results for the changes in fair value of financial assets will vary due to changes in cash flow assumptions, discount rates and forecast foreign exchange translation rates. As the Preferred Shares Tracking the Amortizing Term Loan were redeemed on Oct. 23, 2020, there are no changes in fair value of financial assets recognized in earnings subsequent to the fourth quarter of 2020.
- Fluctuations in the strength of the Canadian dollar relative to the US dollar result in foreign exchange gains and losses on US-dollar-denominated investments and promissory notes. Foreign exchange gains were recognized in the the second quarter in 2020 and the first, second and third quarters in 2021; and losses were recognized in the fourth quarter of 2019 and first, third and fourth quarters of 2020.

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, or as a substitute for, or as an alternative to, or to be 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. In the fourth quarter of 2021, comparable EBITDA was relabelled as adjusted EBITDA to align with industry standard terminology. The adjusted funds from operations ("AFFO") was replaced with FCF to better reflect the proxy for cash generated from operating activities. The composition of the metric has been changed accordingly. Notably, tax equity distributions have been removed from the composition of AFFO in the determination of FCF and it has been included in CAFD, as it reflects a settlement of a financial liability. Comparative figures have been reclassified to conform to the current period's presentation.

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, changes in fair value of financial assets, foreign exchange gains and losses and asset impairments, plus the adjusted EBITDA of the facilities in which we hold an economic interest, which is the facilities' reported EBITDA adjusted for: (i) finance lease income and the change in the finance lease receivable amount; (ii) contractually fixed management costs; (iii) interest earned on the prepayment of certain transmission costs; (iv) insurance recovery; and (v) the impact of unrealized mark-to-market gains or losses.

Average Annual EBITDA

Average annual EBITDA is a non-IFRS financial measure that is forward-looking. It is used to show the average annual EBITDA that a project currently under construction is expected to generate upon completion.

FCF

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, to repay maturing debt, to pay common share dividends or to 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 currency adjustments. FCF per share is calculated using the weighted average number of common shares outstanding during the period.

CAFD

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 and lease obligations.

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

Reconciliation of Adjusted EBITDA to Earnings before Income Tax for the Three Months Ended

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.

Three months ended Dec. 31, 2021	Owned Assets				Economic Interests			Total	Investments in economic interests and adjustments	IFRS financials
	Canadian Wind	Canadian Hydro	Canadian Gas	Corporate	US Wind and Solar ⁽¹⁾	US Gas ⁽¹⁾	Australian Gas			
Revenues ⁽²⁾	65	6	68	—	32	6	52	229	(91)	138
Fuel, royalties and other costs ⁽³⁾	3	—	38	—	—	4	1	46	(5)	41
Gross margin	62	6	30	—	32	2	51	183	(86)	97
Operations, maintenance and administration ⁽⁴⁾	11	2	8	4	4	1	9	39	(14)	25
Taxes, other than income taxes	1	1	(1)	—	2	—	—	3	(2)	1
Adjusted EBITDA ⁽⁵⁾	50	3	23	(4)	26	1	42	141	(70)	71
Depreciation and amortization										(49)
Asset impairment charge										(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) US Wind and Solar includes the Skookumchuck wind facility and the North Carolina Solar facility which were acquired through an investment in tracking preferred shares on Apr. 1, 2021, and Nov. 5, 2021, respectively. US Gas includes the Ada cogeneration facility that was acquired through an investment in tracking preferred shares on Apr. 1, 2021. The economic benefit of the Skookumchuck and Ada transactions were effective as at Jan. 1, 2021, and the economic benefit of the North Carolina Solar transaction was effective Nov. 5, 2021.

(2) 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.

(3) Amounts related to economic interests include interest earned on the prepayment of certain transmission costs.

(4) Amounts related to economic interests include the effect of contractually fixed management costs.

(5) Adjusted EBITDA 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.

Three months ended Dec. 31, 2020	Owned Assets				Economic Interests				Investments in economic interests and adjustments	IFRS financials
	Canadian Wind	Canadian Hydro	Canadian Gas	Corporate	US Wind and Solar	US Gas	Australian Gas	Total		
Revenues ⁽¹⁾	75	5	46	—	26	—	41	193	(66)	127
Government incentives	1	—	—	—	—	—	—	1	—	1
Revenues ⁽¹⁾	76	5	46	—	26	—	41	194	(66)	128
Fuel, royalties and other costs ⁽²⁾	10	(3)	17	—	—	—	1	25	(1)	24
Gross margin	66	8	29	—	26	—	40	169	(65)	104
Operations, maintenance and administration ⁽³⁾	9	1	7	4	4	—	9	34	(13)	21
Taxes, other than income taxes	2	—	—	—	—	—	—	2	—	2
Adjusted EBITDA ⁽⁴⁾	55	7	22	(4)	22	—	31	133	(52)	81
Depreciation and amortization										(34)
Finance income related to subsidiaries of TransAlta										38
Interest income										2
Interest expense										(14)
Change in fair value of financial assets										(15)
Foreign exchange gain										8
Earnings before income tax										66

(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 the Additional IFRS Measures and Non-IFRS Measures sections for further details.

Reconciliation of Cash Flow from Operating Activities to FCF and CAFD for Three Months Ended

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

Three months ended Dec. 31	2021	2020
Cash flow from operating activities	71	49
Change in non-cash operating working capital balances	44	61
Cash flow from operations before changes in working capital	115	110
Adjustments:		
Sustaining capital expenditures – owned assets	(8)	(5)
Distributions paid to subsidiaries' non-controlling interest	–	(1)
Finance and interest income – economic interests ⁽¹⁾	(40)	(38)
FCF – economic interests ⁽¹⁾	56	35
FCF⁽²⁾	123	101
Deduct:		
Tax equity distributions	(9)	(7)
Principal repayments of amortizing debt	(23)	(22)
CAFD⁽²⁾	91	72
Weighted average number of common shares outstanding in the period (millions)	267	267
FCF per share⁽²⁾	0.46	0.38
CAFD per share⁽²⁾	0.34	0.27

(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	2021	2020
Finance income related to subsidiaries of TransAlta	40	38
Tax equity distributions	9	7
Return of capital and redemptions	7	5
Effects of changes in working capital and other timing	–	(15)
FCF⁽¹⁾	56	35

(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 for Three Months Ended

Three months ended Dec. 31, 2021	Owned Assets				Economic Interests			Total
	Canadian Wind	Canadian Hydro	Canadian Gas	Corporate	US Wind and Solar ⁽¹⁾	US Gas ⁽¹⁾	Australian Gas	
Adjusted EBITDA ⁽²⁾	50	3	23	(4)	26	1	42	141
Interest expense	—	—	—	(8)	(1)	—	(6)	(15)
Current income tax expense	12	—	—	(2)	(1)	—	(2)	7
Realized foreign exchange gain	—	—	—	1	—	—	—	1
Sustaining capital expenditures	(4)	(1)	(4)	—	—	(3)	—	(12)
Interest income	—	—	—	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) US Wind and Solar includes the Skookumchuck wind facility and the North Carolina Solar facility which were acquired through an investment in tracking preferred shares on Apr. 1, 2021, and Nov. 5, 2021, respectively. US Gas includes the Ada cogeneration facility that was acquired through an investment in tracking preferred shares on Apr. 1, 2021. The economic benefit of the Skookumchuck and Ada transaction's were effective as at Jan. 1, 2021, and 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 section and reconciled to earnings before income taxes above.

(3) FCF and CAFD are defined in the Additional IFRS Measures and Non-IFRS Measures section and reconciled to cash flow from operating activities above.

Three months ended Dec. 31, 2020	Owned Assets				Economic Interests			Total
	Canadian Wind	Canadian Hydro	Canadian Gas	Corporate	US Wind and Solar	US Gas	Australian Gas	
Adjusted EBITDA ⁽¹⁾	55	7	22	(4)	22	—	31	133
Provisions	2	1	—	—	—	—	—	3
Interest expense	—	—	—	(12)	(2)	—	(4)	(18)
Current income tax expense	—	—	—	—	2	—	(6)	(4)
Realized foreign exchange loss	—	—	—	(1)	—	—	—	(1)
Sustaining capital expenditures	(3)	(2)	—	—	—	—	(7)	(12)
Distributions paid to subsidiaries' non-controlling interest	(1)	—	—	—	—	—	—	(1)
Currency adjustment and interest income	—	—	—	2	(3)	—	2	1
FCF⁽²⁾	53	6	22	(15)	19	—	16	101
Deduct:								
Tax equity distributions	—	—	—	—	(7)	—	—	(7)
Principal repayments of amortizing debt	(22)	—	—	—	—	—	—	(22)
CAFD⁽²⁾	31	6	22	(15)	12	—	16	72

(1) Adjusted EBITDA is defined in the Additional IFRS Measures and Non-IFRS Measures section and reconciled to earnings before income taxes above.

(2) FCF and CAFD are defined in the Additional IFRS Measures and Non-IFRS Measures section and reconciled to cash flow from operating activities above.

Reconciliation of Non-IFRS Measures

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.

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

(1) US Wind and Solar includes the Skookumchuck wind facility and the North Carolina Solar facility, which were acquired through an investment in tracking preferred shares on Apr. 1, 2021, and Nov. 5, 2021, respectively. US Gas includes the Ada cogeneration facility that was acquired through an investment in tracking preferred shares on Apr. 1, 2021. The economic benefit of the Skookumchuck and Ada transactions were effective as at Jan. 1, 2021, and the economic benefit of the North Carolina Solar transaction was effective Nov. 5, 2021.

(2) 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.

(3) Amounts related to economic interests include interest earned on the prepayment of certain transmission costs.

(4) Amounts related to economic interests include the effect of contractually fixed management costs.

(5) Adjusted EBITDA 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.

Year ended Dec. 31, 2020	Owned Assets				Economic Interests			Total	Investments in economic interests	IFRS financials
	Canadian Wind	Canadian Hydro	Canadian Gas	Corporate	US Wind and Solar	US Gas	Australian Gas			
Revenues ⁽¹⁾	243	30	163	—	91	—	162	689	(253)	436
Fuel, royalties and other costs ⁽²⁾	21	2	54	—	2	—	6	85	(8)	77
Gross margin	222	28	109	—	89	—	156	604	(245)	359
Operations, maintenance and administration ⁽³⁾	35	6	28	20	12	—	31	132	(43)	89
Taxes, other than income taxes	6	1	1	—	2	—	—	10	(2)	8
Adjusted EBITDA ⁽⁴⁾	181	21	80	(20)	75	—	125	462	(200)	262
Depreciation and amortization										(135)
Asset impairment charge										(2)
Finance income related to subsidiaries of TransAlta										69
Interest income										6
Interest expense										(46)
Change in fair value of financial assets										(59)
Foreign exchange gain										27
Earnings before income tax										122

(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 the Additional IFRS Measures and Non-IFRS Measures sections for further details.

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

Year ended Dec. 31	2021	2020
Cash flow from operating activities	336	267
Change in non-cash operating working capital balances	(13)	31
Cash flow from operations before changes in working capital	323	298
Adjustments:		
Sustaining capital expenditures – owned assets	(19)	(17)
Distributions paid to subsidiaries' non-controlling interest	(3)	(5)
Finance income – economic interests ⁽¹⁾	(108)	(69)
Principal repayments of lease obligations ⁽²⁾	(1)	(1)
FCF – economic interest	165	171
FCF⁽³⁾	357	377
Deduct:		
Tax equity distributions	(30)	(23)
Principal repayments of amortizing debt	(52)	(50)
CAFD⁽³⁾	275	304
Weighted average number of common shares outstanding in the period (millions)	267	266
FCF per share⁽³⁾	1.34	1.42
CAFD per share⁽³⁾	1.03	1.14

(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	2021	2020
Finance income related to subsidiaries of TransAlta	108	69
Tax equity distributions	30	23
Return of Solomon proceeds	–	(8)
Return of capital and redemptions	24	87
Effects of changes in working capital and other timing	3	–
FCF⁽¹⁾	165	171

(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

Year ended Dec. 31, 2021	Owned Assets				Economic Interests			Total
	Canadian Wind	Canadian Hydro	Canadian Gas	Corporate	US Wind and Solar ⁽¹⁾	US Gas ⁽¹⁾	Australian Gas	
Adjusted EBITDA⁽²⁾	170	17	68	(19)	78	8	141	463
Provisions and contract liabilities	(6)	—	12	—	—	—	—	6
Interest expense	—	—	—	(33)	(2)	—	(24)	(59)
Current income tax expense	—	—	—	(2)	(2)	—	(11)	(15)
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)
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) US Wind and Solar includes the Skookumchuck wind facility and the North Carolina Solar facility which were acquired through an investment in tracking preferred shares on Apr. 1, 2021, and Nov. 5, 2021, respectively. US Gas includes the Ada cogeneration facility that was acquired through an investment in tracking preferred shares on Apr. 1, 2021. The economic benefit of the Skookumchuck and Ada transaction's were effective as at Jan. 1, 2021, and 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 section and reconciled to earnings before income taxes above.

(3) FCF and CAFD are defined in the Additional IFRS Measures and Non-IFRS Measures section and reconciled to cash flow from operating activities above.

Year ended Dec. 31, 2020	Owned Assets				Economic Interests			Total
	Canadian Wind	Canadian Hydro	Canadian Gas	Corporate	US Wind and Solar	US Gas	Australian Gas	
Adjusted EBITDA ⁽¹⁾	181	21	80	(20)	75	—	125	462
Provisions	5	2	—	—	—	—	—	7
Interest expense	—	—	—	(41)	(2)	—	(4)	(47)
Current income tax expense	(1)	—	—	—	—	—	(12)	(13)
Realized foreign exchange loss	—	—	—	(4)	—	—	—	(4)
Sustaining capital expenditures	(12)	(3)	(2)	—	(1)	—	(9)	(27)
Distributions paid to subsidiaries' non-controlling interest	(5)	—	—	—	—	—	—	(5)
Currency adjustment and interest income	—	—	—	6	(3)	—	2	5
Principal repayments lease obligations	(1)	—	—	—	—	—	—	(1)
FCF ⁽²⁾	167	20	78	(59)	69	—	102	377
Deduct:								
Tax equity distributions	—	—	—	—	(23)	—	—	(23)
Principal repayments of amortizing debt	(50)	—	—	—	—	—	—	(50)
CAFD ⁽²⁾	117	20	78	(59)	46	—	102	304

(1) Adjusted EBITDA is defined in the Additional IFRS Measures and Non-IFRS Measures section and reconciled to earnings before income taxes above.

(2) FCF and CAFD are defined in the Additional IFRS Measures and Non-IFRS Measures section 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.

The Company's objective is to maintain significant 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, 2020:

	Dec. 31, 2021	Dec. 31, 2020	Increase/ (decrease)	Primary factors explaining change
Cash and cash equivalents	244	582	(338)	Impacted by the acquisition of Windrise wind project, economic interest in the Skookumchuck wind facility, Ada cogeneration facility and North Carolina Solar facility, partially offset by the proceeds from the Windrise green bond. Refer to the Cash Flows and the Significant and Subsequent Events sections of this MD&A for further details.
Accounts receivable	120	134	(14)	Timing of receipts and collections.
Property, plant and equipment, net	1,897	1,617	280	Increase due to the acquisition of the Windrise wind project and additions, increase in wind asset reclamation, partially offset by depreciation.
Intangible assets	92	103	(11)	Decrease due to amortization expense.
Investments in subsidiaries of TransAlta	1,270	1,087	183	Increase mainly due to the investments in the Skookumchuck wind facility, the Ada cogeneration facility and the North Carolina Solar facility, and an increase in fair value on the Preferred Shares Tracking Earnings and distributions of US Wind and Solar facilities, partially offset by lower fair values in the Preferred Shares Tracking Australia Cash Flows and return of capital on the US tracking preferred shares.
Other assets (including current portion)	64	74	(10)	Decrease in other assets, mainly due to the repayments of the Big Level promissory notes offset by an increase in Windrise wind facility prepaids and advances on the Kent Hills Wind promissory note.
TEA demand loan	167	195	(28)	Due to the partial repayment of the demand loan and weakening of the Australian dollar relative to the Canadian dollar.
Accounts payable and accrued liabilities	82	51	31	Timing of payments and accruals.
Contract liabilities (including current portion)	19	6	13	Increase mainly due to liquidated damages as a result of the Sarnia outages in the the second quarter of 2021.
Long-term debt (including current portion)	814	692	122	Increased due to the issuance of the Windrise green bond, partially offset by scheduled principal repayments on non-recourse bonds.
Deferred income tax liabilities	301	290	11	The increase is mainly due to the increase in earnings before tax.
Equity attributable to shareholders	2,074	2,255	(181)	Decrease due to dividends and other comprehensive loss from unfavourable fair value changes, partially offset by net earnings.

Debt and Lease Obligations

	As at Dec. 31, 2021			
	Total facility limit	Utilized		Available capacity
		Outstanding letters of credit ⁽¹⁾	Drawings	
Committed credit facility	700	98	—	602

(1) Letters of credit were issued from uncommitted demand facilities. These obligations are backstopped and reduce the available capacity on the syndicated credit facility.

On March 30, 2021, the credit facility was amended to extend to June 30, 2025. As at Dec. 31, 2021, there were no drawings under the credit facility.

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, 2021 (2020 – \$92 million).

Debt and lease obligations, including the TEA demand loan, totalled \$981 million as at Dec. 31, 2021, compared to \$887 million as at Dec. 31, 2020. The increase in debt is due to the issuance of the Windrise green bond of \$173 million, partially offset by the repayments of non-recourse bonds of \$52 million and partial repayment of the TEA demand loan to TransAlta Energy (Australia), of AU\$17 million.

We are subject to customary positive and negative covenants related to debt and are not in violation of any of these covenants with the exception of the KH Bonds. Moreover, as a result of the determination that all 50 foundations at Kent Hills 1 and 2 wind facilities require replacement, as well as certain resulting amendments to applicable insurance policies, the Company has provided notice to BNY Trust Company of Canada, the Trustee that events of default may have occurred under the trust indenture governing the terms of the KH Bonds. Upon the occurrence of any events of default, holders of more than 50 per cent of the outstanding principal amount of the KH Bonds have the right to direct the Trustee to declare the principal and interest on the KH Bonds and all other amounts due, together with any make-whole amount as at Dec. 31, 2021 – \$39 million, to be immediately due and payable and to direct the Trustee to exercise rights against certain collateral. The Company is in discussions with the Trustee and holders of the KH Bonds to negotiate required waivers and amendments while the Company works to remedy the matters described in the notice. Although the Company expects that it will reach agreement with the Trustee and holders of the KH Bonds with respect to terms of an acceptable waiver and amendment, there can be no assurance that the Company will receive such waivers and amendments. Accordingly, the Company has classified the entire carrying value of the bond as a current liability as at Dec. 31, 2021.

The Melancthon Wolfe Wind, Pingston, New Richmond 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 2022. As at Dec. 31, 2021, \$41 million of cash was subject to these financial restrictions (2020 – \$24 million).

Proceeds received from the Windrise financing in the amount of \$23 million cannot be accessed by other corporate entities as the funds must be solely used by the project entity for the purpose of paying construction costs.

Kent Hills Wind LP funds available for distribution are not able to be accessed by other corporate entities due to events of default that may have occurred.

The Company had no restricted cash as at Dec. 31, 2021, and Dec. 31, 2020.

Share Capital

On Dec. 31, 2021, we had approximately 266.9 million (2020 – 266.9 million) common shares issued and outstanding.

In the fourth quarter of 2020, the Company suspended its DRIP in respect of any future declared dividends until further notice. See Note 19 of the Consolidated Financial Statements for additional information.

As at Feb. 23, 2022, we had approximately 266.9 million common shares issued and outstanding.

Capital Structure

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

As at Dec. 31	2021		2020	
	Amount	%	Amount	%
Total debt ⁽¹⁾	981	34	887	34
Cash and cash equivalents	(244)	(9)	(582)	(22)
Non-controlling interest	49	2	50	2
Equity attributable to shareholders	2,074	73	2,255	86
Total capital	2,860	100	2,610	100

(1) Total debt includes TEA demand loan, long-term debt and lease obligations (see Note 17 of the Annual Financial Statements for more detail).

Total debt increased mainly due to the issuance of the Windrise green bonds and is partially offset by the repayments on the Melancthon Wolfe Wind bonds, New Richmond Wind bonds, KH Bonds and the TEA demand loan. Cash and cash equivalents decreased compared to 2020, mainly due to the acquisition of the Windrise wind project and economic interests in the Skookumchuck wind facility, Ada cogeneration facility and North Carolina Solar facility.

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⁾	TEA demand loan ⁽³⁾	Long-term debt and lease obligations ⁽⁴⁾	Interest on debt and lease obligations	Other ⁽⁵⁾	Total
2022	89	21	167	264	36	24	601
2023	46	24	—	95	19	8	192
2024	43	21	—	53	17	2	136
2025	32	21	—	55	15	2	125
2026	25	18	—	52	13	2	110
2027 and thereafter	54	105	—	300	68	37	564
Total	289	210	167	819	168	75	1,728

(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) Scheduled maturity repayment of TEA demand loan on Oct. 26, 2022.

(4) The KH bonds has been classified as current as at Dec. 31, 2021.

(5) 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.

Transmission Line Loss Rule Proceeding

The Company has been participating in a transmission line loss rule proceeding before the Alberta Utilities Commission ("AUC"). The AUC determined that it has the ability to retroactively adjust line loss charges going back to 2006 and directed the AESO to recalculate loss factors for 2006 to 2016. The AUC approved an invoice settlement process and all three planned settlements have been received. The first two invoices were settled by the first quarter of 2021 and the third invoice settled in the second quarter of 2021. The true-up invoices issued by the AESO in the fourth quarter of 2021 were settled by Dec. 31, 2021, with no further invoices expected.

Fortescue Metals Group Ltd. ("FMG") Dispute at South Hedland Power Station

The Company's investment in the Australian assets is through an economic interest that provides after-tax finance income based on EBITDA of the underlying facilities, after deducting debt-service and sustaining capital expenditures. On May 2, 2021, TransAlta entered into a conditional settlement with FMG. The settlement was concluded and the actions were formally dismissed in the Supreme Court of Western Australia on Dec. 7, 2021. The settlement amount has been captured in finance income in the fourth quarter of 2021. The settlement has resulted in FMG continuing as a customer of FMG in respect of the South Hedland facility.

Sarnia Outages

The Sarnia cogeneration facility experienced three separate outage events between May 19 and June 9, 2021, that resulted in steam interruptions to its industrial customers. As a result, the customers have submitted claims for liquidated damages. Steam supply interruptions of this nature are atypical and infrequent at the Sarnia cogeneration facility. The Company conducted an investigation to determine the root cause of each of the three events, which concluded that all three events do not qualify as events of force majeure. As such, liquidated damages in an amount dictated by the applicable agreements are payable by the Company to the customers for the three outages and have been accrued within contract liabilities.

Cash Flows

The following table highlights significant changes in the Consolidated Statements of Cash Flows for the year ended Dec. 31, 2021, compared to the year ended Dec. 31, 2020:

Year ended Dec. 31	2021	2020	Change	Primary factors explaining change
Cash and cash equivalents, beginning of year	582	63	519	
Provided by (used in):				
Operating activities	336	267	69	Higher finance income from investments in subsidiaries of TransAlta, the recognition of environmental attributes revenues in the first quarter of 2021, partially offset by an increase in current income tax expense.
Investing activities	(525)	555	(1,080)	The acquisition of the Windrise wind project, acquisition of the economic interests in the Skookumchuck wind facility, the Ada cogeneration facility and the North Carolina Solar facility and an increase in construction costs associated with the construction of the Windrise wind facility. In 2020, the Company received proceeds from the redemption of the Preferred Shares Tracking the Amortizing Term Loan.
Financing activities	(149)	(303)	154	The credit facility was repaid in 2020. This was offset by an increase in dividends paid on common shares in 2021 and the financing of the Windrise green bond.
Cash and cash equivalents, end of year	244	582	(338)	

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, 2021		Dec. 31, 2020	
	Fair value Level II	Fair value Level III	Fair value Level II	Fair value Level III
Preferred Shares Tracking Australia Cash Flows	–	697	–	771
Preferred Shares Tracking Earnings and Distributions of US Wind and Solar Facilities	–	539	–	316
Preferred Shares Tracking Earnings and Distributions of US Gas	–	34	–	–
Net risk management liabilities	(3)	–	(2)	–

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, 2021, Level III financial instruments were comprised of financial assets with a carrying value of \$1,270 million (2020 – \$1,087 million).

The investment in Preferred Shares Tracking Australia Cash Flows decreased by \$74 million compared to 2020, reflecting a change in future cash flow assumptions, including changes in the discount rate, foreign exchange impacts and recontracting assumptions, partially offset by the execution of a new PPA with FMG in respect of the South Hedland facility and the agreement with SCE to provide BHP with renewable electricity to its Goldfields-based operations through the construction of the Northern Goldfields Solar Project.

The investment in Preferred Shares Tracking Earnings and Distributions of US Wind and Solar Facilities increased as a result of the investment in the North Carolina Solar facility of \$127 million, the investment in the Skookumchuck wind facility of \$103 million and a \$7 million incremental investment in Big Level and Antrim wind facilities. There was also an increase in fair value of \$7 million primarily due to a decrease in discount rates, partially offset by return of capital of \$21 million, transaction costs related to the Skookumchuck wind facility investment and the North Carolina Solar facility investment that were recognized through other comprehensive income ("OCI"), weakening forward merchant prices in the Eastern US region and foreign exchange impacts.

The Preferred Shares Tracking Earnings and Distributions of US Gas increased as a result of the acquisition of the economic interest in the Ada cogeneration facility by acquiring a \$43 million investment in tracking preferred shares of a TransAlta subsidiary. This increase is partially offset by a decrease in fair value of \$6 million and return of capital of \$3 million.

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

At Dec. 31, 2021, Level II financial instruments comprised financial assets with a carrying value of \$3 million related to net risk management liabilities (2020 – \$2 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, TEA preferred shares, preferred shares tracking earnings and distributions of Wyoming wind, 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 \$64 million increase (decrease) in other comprehensive income as at Dec. 31, 2021. 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 11 of the Consolidated Financial Statements for additional information.

Other Consolidated Results

Interest Expense

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

Year ended Dec. 31	2021	2020
Interest on long-term debt	31	34
Interest on lease obligations	1	1
Interest on TEA demand loan	8	1
Capitalized interest	(7)	—
Other net interest ⁽¹⁾	4	5
Interest on line loss rule proceeding	—	2
Accretion of provisions	5	3
Interest expense	42	46

⁽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, 2021, interest on letters of credit and guarantees pledged by TransAlta was \$2 million (2020 – \$2 million).

For the year ended Dec. 31, 2021, interest expense decreased compared to 2020, primarily due to capitalized interest related to Windrise and lower interest resulting from repayment of the credit facility and repayments on non-recourse bonds, partially offset by higher interest on the TEA demand loan which was outstanding for the entire year and higher accretion.

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 2021, the deferred income tax expense related to changes in future tax rates was nil (2020 - \$2 million expense).

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 losses attributable to the non-controlling interest were \$1 million for the year ended Dec. 31, 2021, a decrease of \$6 million compared to 2020, primarily due to the Kent Hills 1 and 2 wind facilities outages in 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, 2021, we recognized a \$73 million decrease in fair value in OCI (2020 - \$126 million increase). The decrease during 2021 is primarily attributable to unfavourable foreign exchange rate impacts from a weakening Australian dollar, changes in cash flow assumptions of the Preferred Shares Tracking Australia Cash Flows to reflect re-contracting assumptions, transaction costs related to the Skookumchuck wind facility, the Ada cogeneration facility and the North Carolina Solar facility and weakening forward merchant prices in the Eastern US region. This decrease was partially offset by a decrease in the discount rates of the Preferred Shares Tracking Earnings and distributions of US Wind and Solar facilities and an adjustment to the cash flows associated with the extended PPA and Northern Goldfields Solar Project with BHP.

See Note 7 of the Consolidated Financial Statements for additional information related to the investments for which changes in fair value are recognized in OCI.

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
2021 Total sustaining expenditures	11	3	1	6	4	20	45
2020 Total sustaining expenditures	12	3	1	2	—	9	27

Sustaining capital expenditures increased by \$18 million compared to 2020 mainly due to planned major maintenance and the purchase of a spare engine at our Australian Gas facilities, the sustaining capital incurred by the Ada cogeneration facility and planned major maintenance at the Canadian Gas facility.

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	2021	2020
Revenue from TransAlta PPAs (I)	40	44
Revenue from environmental attributes ⁽¹⁾	19	6
Finance income from investments in subsidiaries of TransAlta	108	69
Interest income – promissory notes and investments in subsidiaries of TransAlta	1	3
G&A reimbursement fee (II)	16	17
Natural gas purchases (III)	11	2
Financial power swap sales – gain (III)	—	(1)
Interest expense on TEA demand loan	8	1
Asset optimization fee ⁽²⁾	2	2
Interest expense on credit facility and letter of credit and guarantee fees	2	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 2021 for output under the TransAlta PPAs was approximately \$33.77 per MWh for wind facilities and \$50.66 per MWh for hydroelectric facilities, which are 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. On Feb. 28, 2020, the Management Agreement was amended so that 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. This amendment was not expected to significantly change the amount of the G&A Reimbursement Fee. 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. ("TEMCO"), 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 TEMCO in consideration of TEMCO 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 TEMCO 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;
- TEMCO 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 TEMCO at the ICE NGX Union Gas Dawn Day-Ahead Index; and
- In exchange for the gas, Sarnia grants TEMCO 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 Union Gas 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 project and economic interests in the Ada cogeneration facility, Skookumchuck wind facility and North Carolina Solar facility from TransAlta. In 2020, we acquired the WindCharger battery storage project from TransAlta.

Related-Party Balances

Related-party balances include the following:

As at	Dec. 31, 2021	Dec. 31, 2020
Trade and other receivables	50	39
Accounts payable and accrued liabilities (including interest payable)	11	11
Dividends payable	38	38
Investments in subsidiaries of TransAlta	1,270	1,087
Big Level and Antrim promissory notes	—	18
Finance lease receivable ⁽¹⁾	7	7
TEA demand loan	167	195
Guarantees provided by TransAlta on behalf of the Company (I) ⁽²⁾	583	207
Long-term prepaid – management fee (II)	2	2
Indemnification guarantee provided by the Company to TransAlta (III) ⁽²⁾	516	540

(1) Finance lease receivable relates to the 10 MW WindCharger battery storage project, which was acquired in August 2020.

(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. Long-Term Prepaid – Management Fee

In the fourth quarter of 2018, the Company paid a \$2 million one-time upfront fee upon achieving commercial operation of Kent Hills 3. The upfront fee will be recognized over a 30-year period, in lieu of the annual five per cent of incremental EBITDA that would otherwise have been paid pursuant to the Management Agreement.

III. 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.

Critical Accounting Policies and 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, which are 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.

Fair Value

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 wind, Big Level and 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 7 of the Annual Financial Statements:

Unobservable input	Dec. 31, 2021	Dec. 31, 2020
Preferred Shares Tracking Australia Cash Flows		
Discount rate	5.5 %	5.8 %
Quarterly cash flows (millions)	Average of \$11	Average of \$13
Preferred Shares Tracking Earnings and Distributions of US Wind and Solar Facilities		
Discount rate (range)	5.8 %-8.5 %	6.8 %-10.3 %
Quarterly cash flows (range, in millions)	Average of \$1-\$4	Average of \$1-\$4
Preferred Shares Tracking Earnings and Distributions of US Gas		
Discount rate	12.4 %	—
Quarterly cash flows (millions)	Average of \$3	—

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, 2021	Change in fair value as at Dec. 31, 2020
Preferred Shares Tracking Australia Cash Flows			
Basis point change in discount rates	-50 basis points decrease	28	31
	+50 basis points increase	(26)	(28)
Quarterly cash flows	+5% increase ⁽¹⁾	35	39
	- 5% decrease ⁽¹⁾	(35)	(39)
Preferred Shares Tracking Earnings and Distributions of US Wind and Solar Facilities⁽²⁾			
Basis point change in discount rates	-50 basis points decrease	24	12
	+50 basis points increase	(23)	(11)
Quarterly cash flows	+5% increase ⁽¹⁾	27	16
	- 5% decrease ⁽¹⁾	(27)	(16)
Preferred Shares Tracking Earnings and Distributions of US Gas⁽³⁾			
Basis point change in discount rates	-50 basis points decrease	—	—
	+50 basis points increase	—	—
Quarterly cash flows	+5% increase ⁽¹⁾	2	—
	- 5% decrease ⁽¹⁾	(2)	—

(1) Quarterly cash flows could vary by a higher rate than the assumed five percent factor.

(2) The fair value changes in 2021 presented relate to Big Level and Antrim, Mass Solar, North Carolina Solar, Lakeswind, Wyoming wind and Skookumchuck in total. The fair value changes in 2020 presented relate to Big Level and Antrim, Mass Solar, Lakeswind and Wyoming Wind in total.

(3) The fair value changes from the assumed discount rate changes as at Dec. 31, 2021 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 8 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 accordingly, 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.

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.

Provisions for Decommissioning and Restoration Activities

We recognize provisions for decommissioning and restoration obligations in the period in which they are incurred if there is a legal or constructive obligation to reclaim the facility or site. Initial decommissioning provisions, and subsequent changes thereto, are determined using the Company's best estimate of the required cash expenditures, adjusted to reflect the risks and uncertainties inherent in the timing and amount of settlement. The estimated cash expenditures are present valued using a current, risk-adjusted, market-based, pre-tax discount rate. A change in estimated cash flows, market interest rates or timing could have a material impact on the carrying amount of the provision.

During the third quarter of 2021, the Company adjusted the estimated cash flows for our wind assets as estimates were updated after the review of a recent engineering study. The Company's current best estimate of the decommissioning and restoration provision increased by \$113 million, which also resulted in an increase in the related assets in property, plant and equipment ("PP&E").

Impairment of PP&E

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 2021 the following impairments were recognized: \$5 million for one of our hydro facilities; \$10 million for a wind asset as result of an increase in estimated decommissioning costs after the review of a recent engineering study; and \$2 million related to the Kent Hills Wind LP tower failure.

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 IAS 1 Presentation of Financial Statements: Material Accounting Policies

Effective for the 2021 annual financial statements, the Company early adopted amendments to IAS 1 *Presentation of Financial Statements* in advance of its mandatory effective date of Jan. 1, 2023, which requires entities to disclose their material accounting policy information rather than their significant accounting policies. The Company has updated the accounting policies disclosed in Note 2 of the financial statements based on its assessment of the amended standard.

Amendments to IAS 16 Property, Plant and Equipment: Proceeds before Intended Use

Effective Jan. 1, 2021, the Company early adopted amendments to IAS 16 *Property, Plant and Equipment* ("IAS 16 Amendments") in advance of its mandatory effective date of Jan 1, 2022. The Company adopted the IAS 16 Amendments retroactively. No cumulative effect of initially applying the guidance arose. The IAS 16 Amendments prohibit deducting from the cost of an item of PP&E any proceeds from selling items produced while bringing that asset to the location and condition necessary for it to be capable of operating in a manner intended by management. Instead, an entity recognizes the proceeds from selling such items, and the cost of producing those items, in profit or loss. No adjustments resulted from early adopting the amendments.

IFRS 7 Financial Instruments: Disclosures — Interest Rate Benchmark Reform

The transition of the London Interbank Offered Rates ("LIBOR") has begun with the cessation of the publication of one-week and two-month USD LIBOR occurring on Dec. 31, 2021. The remaining overnight, one-, three-, six-, and 12-month USD LIBOR will continue to be published until their cessation date on June 30, 2023. Existing financial instruments may continue to use USD LIBOR while they are published until they mature, however, new financial instruments will not be using USD LIBOR if entered into after Dec. 31, 2021. The IASB issued Interest Rate Benchmark Reform — Phase 2 in August 2020, which amends IFRS 9 Financial Instruments, IAS 39 Financial Instruments: Recognition and Measurement, IFRS 7 Financial Instruments: Disclosures and IFRS 16 Leases. The amendments were effective Jan. 1, 2021, and were adopted by the Company on Jan. 1, 2021.

The credit facility references USD LIBOR for US-dollar drawings and the Canadian Dollar Offered Rate for Canadian drawings, and includes appropriate fallback language to replace these benchmark rates if a benchmark transition event were to occur. There was no financial impact upon adoption.

Future Accounting Changes

Amendments to 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 will be adopted by the Company in 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 financial impact is expected upon adoption.

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 therefore, no financial impact is expected upon adoption on the effective date.

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

In January 2020, 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, provide 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, 2023, and are to be applied retrospectively. The Company has not yet determined the impact of these amendments on its consolidated financial statements.

2022 Outlook

The following table outlines our expectation on key financial targets for 2022:

Measure	Target	2021 Actuals
Adjusted EBITDA ⁽¹⁾	\$485 million to \$525 million	\$463 million
Free cash flow ⁽¹⁾	\$345 million to \$385 million	\$357 million
Cash available for distribution ⁽¹⁾	\$245 million to \$285 million	\$275 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 section of this MD&A.

Adjusted EBITDA is estimated to be between \$485 million and \$525 million. The midpoint of the range represents a nine per cent increase to 2021. Adjusted EBITDA is expected to increase due to the full-year operations of the Windrise wind facility that reached full commercial operations in November 2021, the acquisition of North Carolina Solar facility that was acquired in November 2021, no reoccurrence of the Sarnia steam supply outages that occurred in 2021 and an expected return-to-normal wind resource for 2022. These impacts are expected to be partially offset by reduced revenue expectations at Kent Hills due to the ongoing outage at the Kent Hills 1 and 2 wind facilities as it undertake its rehabilitation expenditures. CAFD is estimated to be between \$245 million and \$285 million, or a four per cent decline from the midpoint as compared to 2021 and excludes the impact of rehabilitation capital expenditures required at Kent Hills. The decrease is attributable to the expected settlement of the Sarnia steam supply provision currently expected in the first quarter, higher financing, and higher sustaining capital driven by maintenance events at Sarnia.

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

Operations

Production

In 2022, we expect renewable energy production from our wind, solar and hydroelectric assets, including those owned through economic interests, to be in the range of 4,100 GWh to 4,600 GWh. This is a decrease from the prior year and is mainly due to the loss in production from Kent Hills 1 and 2 wind facilities not being in service. This is will be partially offset by the Windrise wind facility commencing commercial operations in November 2021 and the acquisition of North Carolina Solar, which was finalized on Nov. 5 2021.

Kent Hills Wind Facility Outage

It is expected that the outage at Kent Hills 1 and 2 wind facilities will continue and rehabilitation efforts for the foundations is expected to commence during the second quarter of 2022, with the aim of fully returning the wind facilities to service by the end of 2023. The outage is expected to result in foregone revenue of approximately \$3.4 million per month on an annualized basis so long as 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.

Addition of Windrise and North Carolina Solar

On Nov. 5, 2021, the Company completed the acquisition of the fully contracted 122 MW North Carolina Solar portfolio which is expected to generate an average annual EBITDA⁽⁷⁾ of approximately US\$9 million.

On Dec. 2, 2021, the Company announced commercial operation of the Windrise wind facility in Alberta was achieved on Nov. 10, 2021. Windrise is expected to generate an average annual EBITDA⁽⁷⁾ of approximately \$20 million to \$22 million.

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 11 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 2022 is expected to be higher than 2021, mainly due to lower capitalized interest resulting from the completion of Windrise, and interest on Windrise green bonds issued in December 2021. The interest expense is also subject to any growth projects or acquisitions undertaken by the Company in 2022. 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 higher due to the full-year impact of the investments in Skookumchuck, Ada and North Carolina Solar.

Net Debt, Liquidity and Capital Resources

We expect to maintain adequate available liquidity under our credit facility. We currently have access to \$846 million in liquidity, including \$244 million in cash.

Income Taxes

The Company's statutory blended tax rate is 26.06 per cent. The effective income tax rate can change depending on the blended earnings from various countries and certain deductions that do not fluctuate with earnings.

⁷ Average annual EBITDA is not defined and has no standardized meaning under IFRS, and is forward-looking. Please refer to the Non-IFRS Measures section of this MD&A for further discussion.

The Company's anticipated cash tax horizon is subject to risks, uncertainties and other factors that could cause the cash tax horizon to occur sooner than our current projection of approximately two years. 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. In the event we become cash taxable sooner than projected, or we are unable to lengthen the cash tax horizon through tax planning opportunities, or the acquisition and development of additional growth projects and related tax pools, then our cash available for distribution and our dividend could decrease.

Environmental Legislation

The new Technology Innovation and Emissions Reduction ("TIER") Regulation replaced the Carbon Competitiveness Incentive Regulation ("CCIR") in the Province of Alberta on Jan. 1, 2020. Under TIER, renewables wind projects will continue to generate carbon credits — offsets and EPC's — as they did under the CCIR.

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 2022, 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. The initial estimate range for the rehabilitation at the Kent Hills 1 and 2 wind facilities is between \$75 million and \$100 million with approximately \$40 million to \$60 million estimated to be incurred in 2022.

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

On Dec. 11, 2020, the Government of Canada released its climate strategy, "A Healthy Environment and a Healthy Economy" (the "Climate Plan") that outlines how the federal government intends to use policies, regulations and funding to achieve Canada's Paris Agreement emissions reduction target. The three major aspects of the plan include increasing carbon prices and obligations, increased funding for clean technology and the implementation of the Clean Fuel Regulation ("CFR"). The 2021 federal budget proposed significant spending to undertake the elements of the Climate Plan as well as additional measures, including a potential tax credit for carbon capture, utilization and storage ("CCUS"). On Apr. 22, 2021, Prime Minister Trudeau increased Canada's greenhouse gas reduction target from 40 to 45 per cent below 2005 levels by 2030. The government stated that it will consult with provinces and industry regarding many elements of the Climate Plan. Therefore, significant uncertainty remains regarding the final form of the related regulations and other initiatives. TransAlta continues to engage with governments to mitigate risks and identify opportunities within the new federal plan.

As part of its Climate Plan, the federal government committed to achieving net-zero electricity grid prior to 2050. Then, during the 2021 federal election campaign, the government committed to achieving a net-zero electricity grid by 2035 by adopting a national clean electricity standard. The government has not publicly shared how such a standard might be structured. TransAlta will actively engage the federal government as it designs the new standard. This policy may create new opportunities for the development of renewables and energy storage projects in the lead up to 2035.

Clean Fuel Regulation

The 2016 Pan-Canadian Framework on Clean Growth and Climate Change included a plan by the federal government to work with provincial and territorial governments, industry, and other stakeholders to develop a clean fuel standard to reduce emissions from fuels used in transportation, buildings and industry. The objective of the regulation was to achieve 30 million metric tonnes of annual reductions in greenhouse gas ("GHG") emissions by 2030.

On Dec. 19, 2020, the Canadian federal government published its draft version of the Clean Fuel Regulation ("CFR") with the accompanying supporting documents. As a result of gaseous and solid fuels no longer being regulated by the CFR, the CFR will have a limited impact on the electricity sector as its scope has been narrowed to gasoline and diesel, liquid fossil fuels used predominately in transportation. The publication of the Canada Gazette I on Dec. 19, 2020, started a 75-day obligatory public consultation period that ended on March 4, 2021, pursuant to which the public was able to submit comments.

The Government of Canada is currently undertaking various engagements on the quantification methodologies, and Fuel Life Cycle Analysis Model while targeting publication of the final CFR's Canada Gazette II along with other supporting documents by spring 2022.

Federal Carbon Pricing on Greenhouse Gases

On June 21, 2018, the Canadian federal *Greenhouse Gas Pollution Pricing Act* ("GGPPA") came into force. Under the GGPPA, the federal government implemented a national price on GHG emissions. On Jan. 1, 2019, the GGPPA's backstop mechanisms came into force in provinces and territories that did not have an independent carbon pricing program or where the existing program was not deemed equivalent to the federal system. The backstop mechanism has two components: a carbon levy for small emitters ("carbon tax") and regulation for large emitters called the Output-Based Pricing System ("OBPS"). The carbon tax sets a carbon price per tonne of GHG emissions related to transportation fuels, heating fuels and other small emission sources. The carbon price is also the OBPS compliance price for carbon obligations.

On Feb. 12, 2021, the federal government began planning for a 2022 review of the OBPS and other aspects of the GGPPA. On June 5, 2021, the federal government published draft amendments to the GGPPA regulations clarifying the treatment of boilers. If adopted, this clarification will provide greater certainty regarding the treatment of gas-fired generating facilities under the OBPS. On Aug. 5, 2021, the federal government published updated benchmark criteria for provincial carbon pricing systems that will come into force for the 2023 compliance year.

The Canadian government released an OBPS consultation paper Dec. 10, 2021, to initiate a 2022 engagement process. TransAlta made a submission regarding the consultation paper and will closely engage governments regarding the review, amendments and any regulatory clarifications.

Net-Zero Emissions Accountability Act

The federal government has committed to a net-zero emission target by 2050. The *Canadian Net-Zero Emissions Accountability Act*, which received Royal Assent on Jun. 30, 2021, requires the federal government to set an interim target for 2026 and set emission targets for the years 2030, 2035, 2040 and 2045, at least five years before each target date. When setting targets, the government will also publish an action plan of measures that it will be implementing to support the achievement of the target. The federal Department of Finance will provide an annual report on the costs of the measures and progress.

On Dec. 10, 2021, the federal government launched consultations to establish Canada's Emissions Reduction Plan—as required by the new *Canadian Net-Zero Emissions Accountability Act*—by March, 2022. They will be releasing a series of discussion papers for early consultation, including the transition to a net-zero emitting electricity grid by 2035. The federal government requested those interested in making a submission specific to the 2030 emissions reduction plan to do so by Jan. 21, 2022. TransAlta made a submission to the 2030 emissions reduction plan and will continue to engage with governments to mitigate risks and identify opportunities within the new federal plan.

Alberta

Large Emitter Greenhouse Gas Regulations

On Jan. 1, 2020, the Government of Alberta replaced the previous CCIR with TIER. For the electricity sector, there were negligible changes between CCIR and TIER with renewable facilities continuing to receive crediting. The carbon price for TIER in 2022 will be \$50/tonne of carbon dioxide equivalent ("CO₂e"), aligned with the GGPPA requirements. The performance standard benchmark remained at 0.370 tonnes CO₂e/MWh. A review of TIER is expected in 2022. 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. As required by the GGPPA, the Alberta government files annual reports on TIER program details with the federal government. The federal government reviewed TIER and found it compliant with the GGPPA for 2022. The price to obtain a fund credit for 2022 under Alberta TIER has been established by Ministerial Order at \$50/tonne of CO₂e/MWh.

Further to our request, Alberta Environment and Parks has updated their TIER compliance reporting policies to enable renewable generators to submit compliance reports early by March 31 with a government target of early serialization by June 1 of the same year. This update is effective immediately so TransAlta would be able to follow this process for its 2021 compliance reporting and be able to receive serialized emission performance credits by mid-2022. The Company will continue to receive offsets and emission performance credits for its renewable facilities under TIER ensuring expected revenues are realized.

Ontario

Large Emitter Greenhouse Gas Regulations

On Oct. 23, 2018, the federal government announced that Ontario large emitters would be subject to the federal backstop OBPS regulation. For 2019, 2020 and 2021, this meant that Ontario large emitters have been subject to the OBPS.

On July 4, 2019, the Government of Ontario released its own final regulations for the provincial Greenhouse Gas Emissions Performance Standards ("EPS"). On Sept. 21, 2020, the federal government accepted the Ontario government's EPS as meeting the requirements of the GGPPA. In December 2020, the Ontario government published amendments to align the EPS with the GGPPA requirements. As of Jan. 1, 2022, the federal OBPS transitioned to the Ontario EPS program. The federal fuel charge will continue to apply in Ontario. Therefore, Ontario's large emitters were covered by the OBPS for the 2019, 2020 and 2021 compliance years and will subsequently be covered by the EPS.

The EPS proposed stand-alone facility electricity performance standard differs from the performance standard for cogeneration facilities. This may place cogeneration electricity at a carbon-pricing disadvantage relative to stand-alone electricity facilities as the efficiency benefits of cogeneration are not fully recognized. However, as carbon costs are passed through under current contracts, risks related to changes under the EPS are reduced. Notwithstanding, TransAlta is working to understand the interpretation of the policy in terms of the applicable quantification methodologies and any potential implications to the Company's thermal asset contracts in Ontario.

The OBPS and the EPS apply to Sarnia. This requires Sarnia to track and make compliance filings annually and to meet the carbon emission obligations of the applicable government. There are minor differences between between the EPS and OBPS. Sarnia will meet compliance requirements through payments and alternative compliance units under the OBPS and EPS. However, change-of-law provisions in contracts allow the Company to flow carbon regulation-related costs to customers, resulting in negligible cost increases to the Company.

Quebec

Under the Le Nordais contract with Hydro-Quebec, the Company retains the rights to the renewable energy credits ("RECs"). As a directly adjacent region, these RECs can be sold into the New England Renewable Portfolio Standard ("RPS") market and Le Nordais receives value from the sale of RECs into the New England RPS markets. These RPS markets continue to grow and the acceptability of RECs from Quebec has expanded.

Massachusetts has proposed a lower compliance cost ceiling on its RPS standard that will effectively cap the value of RECs. This could have a negative impact on Le Nordais' REC sales price. The change in regulation published July 9, 2021, stated that the alternative compliance payment rate for the RPS Class I Minimum Standard would be \$60 per MWh in compliance year beginning in 2021, \$50 per MWh in Compliance Year 2022, and \$40 per MWh, beginning in compliance year 2023. The RECs are currently trading at \$38/MWh, which is below the \$50/MWh 2022 ceiling price. Le Nordais is currently hedged to 2023 so the Company will likely be insulated from any changes. The Company will continue to market these RECs at the best available market price in the New England region.

Massachusetts

The Massachusetts solar assets generate Solar Renewable Electricity Credit I ("SREC I") credits. The SREC I program was carved out from Massachusetts' RPS requiring an initial quantity of 400 MW from small solar facilities of 10 MW or less. The initial SREC I program's volume target was achieved, and qualified projects under SREC I continue to generate SREC I credits for their first 10 years post-commercial operation date ("COD"). SREC I facilities then generate Class 1 RECs under the Massachusetts RPS for the remainder of their operational life.

The market for SREC I was designed to be a closed market where demand roughly equals supply. As a result, the Company will continue to market SREC I credits and realize at least the compliance price faced by RPS-regulated electricity retailers in the state.

Under Massachusetts' net metering program, qualified facilities connect with the local utility and generate net metering credits. Net metering credits offset the delivery, supply and customer charges and can be sold to customers from remote or on-site qualifying facilities. In 2016, the net metering program was updated to reduce the value of the net metering credits by reducing the offset to only energy costs. New projects are impacted once the net metering program volume reaches 1,600 MW. TransAlta Renewables' and other existing facilities were grandfathered and continue to receive the full, original cost offset treatment for a period of 25 years from initial COD.

British Columbia

Beginning April 1, 2018, the British Columbia (BC) government increased its carbon tax price to \$35 per tonne CO₂e and committed to raise the price by \$5 per tonne each year until it reaches \$50 per tonne. The BC carbon tax is scheduled to increase to \$50 per tonne CO₂e in April 2022.

In October 2021, BC launched a climate plan to deliver on its commitment to reduce climate pollution and build a cleaner and stronger economy. The CleanBC Roadmap to 2030 plan introduces pathways to help BC achieve the Paris emissions reduction targets by 2030 and reach net-zero by 2050. TransAlta continues to monitor the implementation of the plan. No adverse impacts are expected to TransAlta's business.

Australia

In October 2021, the Australian government announced a target to reach net-zero emissions by 2050 and maintained its target to cut emissions by 26 to 28 per cent below 2005 levels by 2030. With the announcement, the Commonwealth Government is now fully aligned with all states and territories within the country that have all had a target of net-zero emissions by or before 2050 for some time. Apart from the Australian Capital Territory and the State of Victoria, none of the targets are legislated.

The Australian government's plan to achieve the necessary reductions is focused on technology development and cost reduction, enabling deployment at scale through incentives and infrastructure development and seizing opportunities in new markets such as clean hydrogen exports, as well as expanding markets for minerals and metals required for low emissions economies such as copper, nickel and lithium. The Australian government provides variety of targeted funding in this area, including the Australian Renewable Energy Agency which administers a funding application process for projects seeking to develop or commercialize technologies related to emissions reductions.

For businesses, the main legislated compliance mechanisms include the Renewable Energy Target (RET) and the Safeguard Mechanism. The RET has been in place since 2001 to achieve legislated targets of renewable energy penetration in Australia. The current target of 33,000 GWh per year of renewable energy production has applied from 2020 and will continue until 2030 when the program is due to expire. Under the program, renewable energy providers create tradable certificates (one for every MWh) with an obligation on electricity retailers to purchase certificates in proportion to their customers' load requirements.

On Dec. 13, 2014, the Australian government enacted legislation to implement the Emissions Reduction Fund (the "ERF"). The ERF's safeguard mechanism, commenced on July 1, 2016, is designed to ensure emissions reductions purchased by the Australian government through the ERF are not displaced by significant increases in emissions elsewhere in the economy. The ERF and its safeguard mechanism provide incentives to reduce emissions across the Australian economy.

The ERF is not expected to have a material impact on our Australian assets. In Australia, electricity has a single sectoral baseline applied to all electricity generators' emissions for units connected to one of Australia's five main electricity grids. The electricity sector baseline has been set at 198 million tonnes CO₂e per year. In the most recent high-emission years of 2015 and 2016, the total emissions were 179 million tonnes CO₂e per year.

If the baseline is exceeded, then all large emitter generation facilities will need to comply with individual facility baselines. The electricity sector should never exceed the sectoral emission target as no new coal generation is to be built and older coal facilities are retiring. The Company's gas facilities will not be subject to carbon costs under current regulations unless changes are made.

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 Nov. 17, 2021, the Government of Alberta introduced *Bill 86: Electricity Statutes Amendment Act*, which amends the *Alberta Utilities Commission Act*, *Electric Utilities Act*, and the *Hydro and Electric Energy Act*. Bill 86 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 86 specifies that the Minister shall develop further regulation to provide greater transparency on the planning activities of distribution utilities. Bill 86 passed first and second readings on Nov. 17 and 24, 2021, respectively, but did not get proposed for final reading or proclamation. The Government is expected to re-introduce the bill in the spring session when the accompanying regulations are drafted and proposed.

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 requests for proposals (RFP) and improving market operations and reliability. The energy market changes are planned to be implemented at the end of 2023.

The IESO has also actively engaged market participants on the design of its medium-term RFP and medium-term capacity contract. The first medium-term RFP is restricted to existing resource that will be uncontracted in mid-2027. The medium-term RFP is scheduled to take place in 2022 and will award contracts with terms of three to five years and commencement date of May 1, 2026. Furthermore, the IESO intends to provide mechanisms to bridge resources between contracts (e.g., extending an existing contract to the start date of a medium-term contract or starting a medium-term contract early). The Sarnia and Melancthon 1 facilities will participate in the medium-term RFP. 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 ("IPPs") 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 to 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.

Current Clean Power 2040 initial results indicate BC Hydro continues to find a need to renew Energy 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 integrated market rules and wholesale sales from generators.

TransAlta Renewables' wind facilities in the US, with the exception of the Wyoming wind facility, are part of integrated wholesale 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 wind facilities 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 wind 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 flow their generation directly to the utilities so 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 ("ESG")

The Company places a high priority on ESG or sustainability management and performance. TransAlta has reported on sustainability for over 25 years and fiscal 2021 reporting marked TransAlta's seventh year of integrated financial and sustainability disclosure. TransAlta provides 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 third 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"). Greenhouse gas ("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 2021, the Company was recognized by Corporate Knights as one of the Best 50 Corporate Citizens for 2021. Corporate Knights evaluates and ranks Canadian companies against a set of 24 key performance indicators covering ESG indicators relative to their industry peers and using publicly available information to set out the the Best 50 Corporate Citizens list.

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, providing low-emission baseload and peaking generation to support system demands and enable intermittent renewable generation. 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 green bond financing. This demonstrates our commitment to delivering on our customers' needs for clean electricity. For further details, please refer to the Acquisition, Commercial Operation and Project Financing of the Windrise Wind Facility section of this MD&A.

Environmental and Social (E&S) 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 regulation. Our major social risk factors include public health and safety, employee and contractor health and safety, local communities, employee 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 so that we support the goals proposed under the Paris Agreement and those solidified during successive meetings, such as the 26th UN Climate Change Conference of the Parties.

Our customers are increasingly integrating ESG risk into their business decisions; therefore, we see an advantage in growing our clean power business to support our customers' sustainability goals. Our assets cover both renewable and natural gas assets, with the rationale that 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 through the construction of the Northern Goldfields Solar Project in Western Australia. 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 CO₂e over the first 10 years of operation.

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 emission 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.

In 2021, a Supreme Court of Canada decision gave the federal government significant authority to set national carbon pricing standards. We anticipate the federal government will use this authority to align provincial carbon pricing systems with national carbon targets. 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 ESG and policy-aligned 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 and create new opportunities for contracted clean generation.

Management Response

- The Company's growth trajectory will reduce the proportional corporate exposure to potential policy and regulatory decision 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, which makes the US policy environment less predictable than in other countries where we operate.

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

- Given overall political uncertainty, renewable growth projects face elevated uncertainty with respect to long-term federal incentive programs.

Opportunities

- Achieving US climate goals requires continued growth in zero-emissions 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 26 to 28 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 has stated it does not plan to adopt carbon pricing but intends to offer incentives for energy transition. 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-emissions 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.

Management Response

- The Company's assets are predominantly contracted and serving 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. Our teams continuously adopt improved technology at each of our new developments, which helps protect our shareholder value and maintain reliable and affordable electricity delivery. We will continue monitoring new technologies such as 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 Impact Risks of Climate Change

Acute 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 Risks

We continuously investigate the physical impacts of chronic climate change 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 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 2021, CDP (the global disclosure system for environmental impacts known formerly as Carbon Disclosure Project) recognized TransAlta's climate change practices with a B score, ranking us above the North American regional average of C and representing the highest score achieved by companies in the thermal power generation sector.

GHG Disclosures

The following tables detail our GHG emissions by scope and country in million tonnes of CO₂e. Some values do not sum to the indicated total due to rounding of tabulated emissions. Zeros (0.0) indicate truncated values:

GHG emissions	2021	2020	2019
Scope 1 (million tonnes CO ₂ e)	2.1	2.0	2.0
Scope 2 (million tonnes CO ₂ e)	0.0	0.0	0.0
Total GHG emissions from operations (million tonnes CO₂e)	2.2	2.1	2.1
<i>GHG emission intensity all facilities (tonnes CO₂e/MWh)</i>	<i>0.29</i>	<i>0.27</i>	<i>0.30</i>
Year ended Dec. 31	2021	2020	2019
Australia (million tonnes CO ₂ e)	0.9	1.0	1.0
Canada (million tonnes CO ₂ e)	1.1	1.0	1.0
United States (million tonnes CO ₂ e)	0.1	0.0	0.0
Total GHG emissions (million tonnes CO₂e)	2.2	2.1	2.1

Our GHG emission exposure in 2021 was 2.2 million tonnes CO₂e (2020 – 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 2021 offset the equivalent of approximately 1.6 million tonnes of CO₂e. These offsets support our customers in achieving their renewable energy procurement and/or GHG reduction goals. In 2021, our carbon intensity exposure was 0.29 tonnes CO₂e/MWh (2020 – 0.27 tonnes CO₂e/MWh). Our GHG emissions and carbon intensity increased from 2020 to 2021 due to three outages at Sarnia with diesel equipment running concurrently and the first full year inclusion of Ada, which has lower efficiency compared to some of our other assets. 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 2021 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 and Performance

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 any environmental impacts.

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. The importance of environmental protection is outlined under our Total Safety Management Policy as a corporate responsibility for TransAlta, and the personal responsibility of each employee and contractor working on TransAlta's behalf.

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.

Biodiversity

The importance of environmental protection and biodiversity is outlined in our Total Safety Management Policy as a corporate responsibility for TransAlta, and a responsibility of each employee and contractor 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. 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 assess 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 (e.g., Wildlife Directive for Alberta Wind Energy Projects, US Fish & Wildlife Service Land-Based Wind Energy Guidelines, etc.). 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, TransAlta provides a detailed wildlife mitigation plan to environmental regulators outlining specific measures that will be employed to mitigate the effects that project construction and operation activities may have on wildlife, wildlife habitat and specific wildlife features identified by the environmental studies completed during the development stage.

Each greenfield development project has a detailed stakeholder consultation plan designed to ensure all potentially impacted host landowners, stakeholders, agencies, businesses, non-governmental organizations ("NGOs"), environmental NGOs and Indigenous communities understand the nature of the projects, have multiple and varied opportunities for meaningful engagement and feedback with the Company and its representatives. The ultimate goal is identifying, addressing, solving and mitigating stakeholder or Indigenous community concerns (including biodiversity 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, the business unit has established the WiSPER (Wind Stewardship Planning and Environmental Reporting) Program. The goal of the program is to provide continuous improvement and ongoing environmental monitoring programs beyond applicable regulatory requirements. This is achieved through periodic verification and inspection programs and through collaboration with industry and the scientific community to address environmental concerns and impacts. An Operational Environmental Management Plan has been developed for each renewable asset to ensure that our facilities use environmentally sound and responsible practices that are based on a philosophy of continuous improvement of environmental protection through a program of inspection, monitoring and review.

Examples of WiSPER initiatives to support our biodiversity focus include our Avian Protection Program (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 such as raptor nests and sharp-tailed grouse leks), long-term dataset collections (e.g., wildlife studies pre-construction and post-construction) and community wind education programs.

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 2021, we recorded zero significant environmental incidents (2020 – six incidents). We recorded one regulatory non-compliance environmental incident in 2021 (2020 – two incidents). The incident occurred at our Sarnia facility and was a wastewater discharge exceedance from our neutralization sump during water treatment. This incident had negligible environmental impact.

Environmental incidents	2021	2020	2019
Significant environmental incidents	0	6	3
Regulatory environmental incidents	1	2	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 2021 was 2 m³ (2020 – 1 m³).

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 ("SO₂") 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 our 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 SO₂ figures below have been rounded to the nearest 10 tonnes:

Air emissions	2021	2020	2019
NO _x emissions (tonnes)	3,500	3,400	3,500
SO ₂ emissions (tonnes)	10	10	10
PM emissions (tonnes)	170	160	120

Water Use

Our principal use of water is for water flow in our hydro operations. 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 approximately 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 2021, our gas facilities were responsible for the withdrawal of 210 million m³ of water, and returned 200 million m³ or 97 per cent. 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. Despite large withdrawals from the adjacent St. Clair River to support our Sarnia operations, we return approximately 96 per cent of the water withdrawn. 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 stayed dry and 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 m³) over the last three years. Figures below have been rounded to the nearest 10 million m³:

Water management	2021	2020	2019
Water intake (million m ³)	210	190	220
Water discharge (million m ³)	200	180	200
Water consumption (million m³)	10	10	20

Land Use

Land use associated with our operations is approximately 1,776 hectares (4,400 acres or 17.8 km²). For comparability, this is the equivalent of approximately two per cent of land use in Calgary, Alberta, where our head office is located. 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 2021, the facilities we own, directly and through economic interests, generated approximately 28,300 tonnes of non-hazardous and hazardous waste (2020 – 23,800). Waste diversion from landfill is a focus area for TransAlta and in 2021, approximately 98 per cent (2020 – 99 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 (2020 – 91 per cent). Non-hazardous waste generation accounted for 13 per cent (2020 – 9 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	2021	2020	2019
Total waste generation (tonnes eq.)	28,300	23,800	24,500
Waste to landfill (tonne eq.)	500	200	200
Waste recycled (tonne eq.)	27,800	23,600	24,300
Waste reuse (tonne eq.)	0	0	0
% of total waste to landfill	2	1	1
% of total waste: hazardous	87	91	84
% 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. For example, in 2019, we supported a study conducted by Stanford University to understand how to improve wind production. The research showed that angling turbines slightly away from the wind can boost energy produced and even out variable supply.

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

Resource or energy use	2021	2020	2019
Natural gas (GJ): <i>combustion/power generation and heating</i>	49,727,000	39,875,000	38,945,000
Diesel (L): <i>combustion/power generation and vehicle use</i>	4,813,000	4,873,000	7,107,000
Gasoline (L): <i>vehicle use</i>	171,000	175,000	158,000
Propane (L): <i>vehicle use and heating</i>	76,000	82,000	89,000
Electricity (MWh): <i>building operations</i>	17,000	14,000	18,000
Total resource or energy use (GJ)	49,988,000	40,126,000	39,299,000

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 applicable safety incidents, customer interactions, or community and Indigenous developments.

Human Rights

The Company is committed to honouring 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 2021, 20 per cent of TransAlta's annual incentive plan was linked to achieving specific ESG objectives (i.e., pay for performance).

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 2021 was 1.16 compared to 0.76 in 2020. TRIF tracks the number of more serious injuries, and excludes minor first aids, relative to exposure hours worked. Our TRIF increased year-over-year due to an increase in minor medical aid incidents. In 2021, substantial progress was made on initiatives related to our three key targets: mature our safety culture, assess and address risk tolerance, and standardize safety information and technology. In 2022, we are expanding 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	2021	2020	2019
Medical aid incidents	4	1	1
Lost-time injury incidents	1	1	1
Restricted working injury incidents	0	0	0
Exposure hours	865,000	589,000	630,000
<i>Total recordable injury frequency rate</i>	1.16	0.76	0.63

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 focuses on four key areas: community engagement and consultation; business development; community investment and employment. Our Indigenous Relations Policy 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.

TransAlta is a member of the Canadian Council for Aboriginal Business ("CCAB") and is certified at the bronze level in the CCAB's Progressive Aboriginal Relations program. In 2021, the Company was honoured to participate in Indigenous ceremonies with Elders and other representatives from Indigenous communities in Canada, including a Water Ceremony at the Aamjiwnaang First Nation in Ontario.

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 2021, TransAlta provided more than \$375,000 to support Indigenous youth, education and employment programs, representing 13 per cent of TransAlta's total community investment.

Highlights include:

- Continued partnership with the Mount Royal University Foundation in support of the Indigenous Family Housing Program, which features an Indigenous family tipi in an outdoor space dedicated to Indigenous students and supporting Indigenous cultural programming.
- Continued TransAlta's partnership with Indspire, Canada's national Indigenous registered charity, and through this program, 14 bursaries of \$3,000 each were given to recipients from the following communities: Blood (Kanai) First Nation, Ermineskin Cree Nation, Enoch Cree Nation, Montana First Nation, Simpcw First Nation and Squamish First Nation.
- Continued TransAlta's support of Indigenous students with the Southern Alberta Institute of Technology Gap program. This program provides critical financial support needed for aspiring Indigenous students who require high school upgrading in order to qualify for a trade program where there is a "gap" in available funding.
- In partnership with the United Way of Calgary & Area, designated funding to the Diamond Willow Youth Lodge, a safe place for Calgary Indigenous youth to connect with peers and participate in a variety of programs that promote health and wellness, education and employment preparation.
- Continued TransAlta's ongoing partnership with the Banff Centre for Arts and Creativity with scholarship funding allocated to Indigenous community members to participate in Indigenous Leadership programming.

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.

During 2021, TransAlta increased its community investments by 36 per cent and contributed approximately \$3.0 million in donations and sponsorships (2020 - \$2.2 million) across its operations, with a significant portion of this impacting our operating regions.

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 renewable power targets and/or GHG reduction targets. Production from renewable electricity in 2021 resulted in the avoidance of approximately 1.6 million tonnes of CO₂e for our customers.

Examples of renewable energy projects in 2021 include 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. In consultation with TransAlta, we regularly 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 through 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.

In 2021, the Board approved our revised Supplier Code of Conduct that 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:

- Code of Business Conduct for Directors and Officers
- 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

Our sustainability memberships include key sustainability organizations and working groups such as the EXCEL Partnership, the Canadian Business for Social Responsibility and the Canadian Electricity Association 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, 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' Charter, 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.

TransAlta, on behalf of the Company, has adopted a number of risk mitigation measures in response to the COVID-19 pandemic, including the formal implementation of a business continuity plan on March 9, 2020. The Board and management have been monitoring the development of the pandemic and are continually assessing its impact on the Company's operations, supply chains and customers as well as, more generally, to the business and affairs of the Company. Potential impacts of the pandemic on the business and affairs of the Company include, but are not limited to: potential interruptions of production, supply chain disruptions, unavailability of employees at TransAlta, potential delays in growth projects, increased credit risk with counterparties and increased volatility in commodity prices as well as valuations of financial instruments. In addition, the broader impacts to the global economy and financial markets could have potential adverse impacts on the availability of capital for investment and the demand for power and commodity pricing.

To manage the risks resulting from COVID-19, TransAlta, as our manager under the Management Agreement, has taken a number of steps in furtherance of the Company's business continuity efforts:

Management Responses:

- Regularly communicated with the Board and employees in regard to the Company's response to COVID-19;
- Maintained and updated COVID-19 safety protocols, including a back-to-office and site strategy, remote work strategy that will remain in place until the pandemic becomes an endemic; and
- Developed leadership plans, including contingent authorities.

Policy Changes

- We continue to align all non-essential travel and quarantine requirements with local jurisdictional guidance for all TransAlta employees and contractors for all jurisdictions in which we operate.

Employee Changes

- Provided continued assurances to employees that their employment with TransAlta would not be impacted by the COVID-19 pandemic;
- Implemented and have maintained health screening procedures, including questionnaires and temperature tests, enhanced cleaning measures and strict work protocols at the Company's offices and facilities in accordance with our back-to-office and site strategy to ensure that employees remain safe;
- Maintained policies to seamlessly allow non-essential employees to work remotely, as appropriate; and
- Provided COVID-19 related town halls and information sessions for employees featuring medical and epidemiologists.

Operational Changes

- Modified our operating procedures and implemented restrictions to non-essential access to our facilities to support continued operations through the pandemic;
- Reviewed the supply chain risk associated with all key power-generation process inputs and implemented weekly monitoring for changes in risk;
- Reached out to key supply chain contacts to determine strategies and contingencies to ensure we are able to continue to progress our growth projects, wherever possible; and
- Identified new cybersecurity risks associated with phishing emails and enhanced security protocols and increased awareness of potential threats.

Financial Oversight

- Continued to monitor counterparties for changes in creditworthiness, as well as monitor their ability to meet obligations; and
- Continued to monitor the situation and communicate with our Board of Directors on any foreseeable impacts and on our response to the crisis. We maintain a strong financial position and significant liquidity with our existing committed credit facilities.

Overall, we continue to actively monitor the situation and advice from public health officials with a view to responding to changing recommendations and adapting our response and approach as necessary.

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 fulfill 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 2021 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;
- 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 and/or revised environmental regulations. New emission 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 emission caps or tax, requiring additional capital investments in emission 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 emission 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, 2020. We had no material counterparty losses in 2021. 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, 2021, is provided below:

Counterparty credit rating	Direct exposure	Indirect exposure ⁽²⁾
	Receivables ⁽¹⁾	Trade accounts receivable
Investment grade	57	119
Non-investment grade	14	1
TransAlta and subsidiaries of TransAlta	113	—
No external rating	55	—

(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 \$16 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, 2021, 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 \$20 million primarily as a result of changes in the values of our investments in subsidiaries being recorded in other comprehensive income.

The Wyoming wind, Big Level and Antrim, Lakeswind, Mass Solar, Skookumchuck wind facility, Ada cogeneration facility 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 \$15 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, 2021, our total debt portfolio was not subject to changes in interest rates. In 2020, our total debt portfolio was not subject to changes in interest rates.

The Canadian credit facility references USD LIBOR for US-dollar drawings and the Canadian Dollar Offered Rate for Canadian drawings. As at Dec. 31, 2021, there were no drawings under the credit facility and no financial impact from the phasing out of LIBOR. See also the Accounting Changes section of this MD&A for additional information.

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:

- 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 a capacity market for electricity in Ontario, potential market bid mitigation in Alberta, 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 quicker 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. In addition, we rely on TransAlta to identify acquisition and growth opportunities. As a result, TransAlta is able to exercise substantial influence over our operations, administration and growth. Any failure to effectively manage our operations or to implement 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 incorporating 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

Following the investments in economic interests of the Australian Assets, Wyoming wind, Lakeswind, Big Level and Antrim, Mass Solar, Skookumchuck wind facility, Ada cogeneration facility and North Carolina Solar, all owned by TransAlta, some, but not all, additional risk factors that could affect our future results, and our activities in mitigating those risks, are outlined below:

Nature of interests

The Company indirectly retains an economic interest in, and has no legal rights in respect of, the Australian Assets, Wyoming wind, Lakeswind, Big Level and Antrim, Mass Solar, Skookumchuck wind facility, Ada cogeneration facility and North Carolina Solar. 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.

The sensitivity of a change in income tax rates of 1 per cent upon our net earnings is less than \$1 million.

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

Legal Contingencies

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

Other Contingencies

We maintain a level of insurance coverage deemed appropriate by management. During renewal of the insurance policies on December, 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, 2021. 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 systems to process, transmit and store electronic information and data used for the safe operation of our assets. In today's ever-evolving cybersecurity-threat landscape, any attacks or breaches of our network or information systems may cause disruptions to our business operations. Cyberattackers may use a range of techniques, from exploiting vulnerabilities within our user-base to using sophisticated malicious code on a single or distributed basis to try to breach our network security controls. Attackers may also use a combination of techniques in their attempt to evade safeguards such as firewalls, intrusion prevention systems and antivirus software that exist on our network infrastructure systems. A successful cyberattack may allow for the unauthorized interception, destruction, use or dissemination of our information and may cause disruptions to our business operations.

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

While we have cyber insurance, as well as systems, policies, hardware, practices, data backups and procedures designed to prevent or limit the effect of security breaches of our generation facilities and infrastructure, there can be no assurance that these measures will be sufficient and that such security breaches will not occur or, if they do occur, that they will be adequately addressed in a timely manner. We closely monitor both preventive and detective measures to manage these risks.

Growth Risk

Our growth strategy is to be a leader in clean electricity by delivering customer centered power solutions. Our strategy is to develop or acquire stable cash flows associated with high-quality contracted renewables in onshore wind, solar and battery storage and other infrastructure assets, with the objective of achieving returns on invested capital. Our business plan includes growth through identifying suitable acquisitions or contracted new build opportunities. 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 increase the amount of cash available for distribution, or that we will be able to increase or sustain the amount of cash available for distribution and dividends or that growth opportunities will be successfully integrated into our existing operations. The successful execution of the growth strategy requires careful timing and business judgment, as well as the resources to complete the due diligence and evaluation of such opportunities and to acquire and successfully integrate those assets into our business.

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, 2021, the end of the period covered by this report, our ICFR and DC&P were effective.